AMERICAN CARPENTER AND BUILDER

The World's Greatest Building Paper

THIRD ANNIVERSARY NUMBER
The Madisonville Lumber Co., Cincinnati, Ohio

From FACTORY DIRECT to YOU

Doors, Sash, Interior Trim, Stair Work, Mouldings. In

Birch
Oak
Southern Mahogany
Yellow Pine

AND

White Pine

WRITE for OUR CATALOG or send us your list of "WANTS"

QUALITY FIRST AND PRICES TO SUIT

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
Let Us

Have Your Inquiries Before You Buy A Scraper, for Our Price is Right And We Can Save You Money

Contractors Supply & Equipment Co.
Old Colony Building, Chicago

The Weight is where it should be, ON THE KNIFE and not on the Handle.
**THE WEBER DOUBLE ACTING FLOOR SCRAPER**

Takes only three-fourths the time of any other Scraper, and one-sixth the time of any Hand Scraper.

The Weber is a Double Acting Ball Bearing, with Half Ball Bearing Sockets which keeps the Machine from Jumping. Knife can easily be adjusted to the best cutting position.

Illustration No. 2 shows the Machine in position for shoving, and No. 3 for pulling.

Write for fully illustrated Circulard and Testimonials.


Manufacturers of the Weber Double-Acting Floor Scraper, the Weber Sand Paper and Polisher, the Weber Bowling Alley Jointer and Scraper Shoe, the Weber Automatic Sharpening Device.

665-667 71st Ave.

WEST ALLIS, WIS.

---

**Tell Your Friend**

That this Saw will cut through Nails or any untempered metal as well as wood, making a smooth cut suitable for tight fitting work (adjustable handle). It can be filed; is especially adapted to repair work. Also tell him about the Hand Saw made from Bishop's Greyhound Steel. It is guaranteed to cut faster and run easier in all kinds of wood, keep its shape, hold its sharpness and set longer than any other make of saw in the world. Money back if it don't do it. Thirty days trial. Try it. See your dealer. Full information. Use Postal Card.

GEO. H. BISHOP & CO., Lawrenceburg, Ind.

(Makers of many other good things in saws—also the Greyhound Trowel.)

---

**HIGHEST CLASS RATCHET BRACE MADE**

This tool is designed and made for the class of mechanics who desire to use the finest tools that can be made.

No expense has been spared in its production and the machinery used in its manufacture is of the latest and most expensive makes.

The tools are finely polished and full nickel plated, have a handsome metal clad head which is ball bearing, cocobolo head and handle and all the working parts are of steel.

The chucks are designed to firmly hold all of the sizes of square shank bits, and the smaller sizes of round shank drills.

Made in following sizes,—6 1/2, 10, 12 and 14 inch sweep.

LANCASTER MACHINE & KNIFE WORKS

918 Court Street : : Lancaster, N. Y.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
and accomplishments by PRACTICAL CARPENTERS and BUILDERS (who by the way are the only men capable of passing judgment on machines of the nature here advertised) the FACT still remains that the ACME MACHINES constitute the BEST EQUIPMENT for floor scraping. The opinions of MEN who KNOW what they are talking about and who render judgment on RESULTS and ACHIEVEMENTS, are worth more consideration than the decision (?) of a couple of inexperienced and impractical men in this line. It takes a CONTRACTOR or BUILDER to know what FEATURES a floor scraping outfit must possess in order to meet all requirements, for he is the man who handles the machine, and A SINGLE EXPRESSION from him is worth HUNDREDS of decisions of impractical persons. Note what a few users of the ACME MACHINES have to say, for they are OPINIONS based upon FACTS as THEY ARE. None of these men are in any way interested in the sale of my machines, nor stockholders in the company, so their opinions are based entirely upon the merits of same.

HOOD & TULLGREN
Architects and Builders
Milwaukee, Wis.

Mr. Jos. Miotke, City
Dear Sir: Some time ago we purchased from you the ACME FLOOR SCRAPPER, and we are pleased to inform you that we are entirely satisfied with the work it does, and the amount of labor it saves.

Your sharpening device is a strong addition to your scraper, for it overcomes the difficulty we have had in getting the right edge on the knife. With your device we can sharpen a knife in a very few minutes.

Your machines should meet with great success, for they accomplish the purpose for which they are intended. Respectfully,
Hood & Tullgren

JEROME MILLER
Contractor
Oshkosh, Wis.

Jos. Miotke, Milwaukee, Wis.

Dear Sir: Some time ago we purchased from you the ACME FLOOR SCRAPPER and Blade Sharpener purchased from you some weeks ago, have by this time paid for themselves in the saving of labor on several jobs of floor scraping which I have had.

Working with your floor scraper my men say is a pleasure. They do not complain of lame backs and learn to operate the machine after a single trial. I would not be without the outfit now that I have used it and know its worth to me.

Jerome Miller

JOHNSON, RIDDLE & CHILD
Contractors and Builders
Oshkosh, Wis.

Mr. Jos. Miotke, Milwaukee, Wis.

Dear Sir: Enclosed find a draft in full for Floor Scraper sent to us. Same is proving satisfactory. Please state your price on extra sets of blades. Yours truly,
Johnson & Child

CHAS. SPAETH
Carpenter, Builder and General Contractor
New York, N. Y.

Mr. Jos. Miotke, Milwaukee, Wis.

Dear Sir: Your Floor Scraper is O. K., works better than I expected. Enclosed is a certified check for the amount due you.

Yours respectfully,
Chas. Spaeth

Upon request I will mail to you an illustrated booklet which describes in detail the ACME Floor Scraping Machine and equipment

Jos. Miotke 247 247 LAKE STREET Milwaukee, U.S.A.
DISSTON SAW WORKS
AND BY THE DISSTON METHOD
OF MANUFACTURING,
THIS BRAND
ON SAWS AND TOOLS
Will continue to be recognized in the future as in the past
SIXTY-EIGHT YEARS
as a guarantee of HIGHEST
QUALITY and EFFICIENCY.
HENRY DISSTON & SONS, INC., PHILADELPHIA, PA.

THE MARSHALLTOWN TROWELS
BEST MADE

Brick Hammers,
Brick Chisels,
Cork Floats,
Canvas Tool Bags,
Beading Tools.

Steel Sidewalk Edgers and Bronze Groovers,
All Sizes.
Finishing and Browning Trowels, all sizes and gauges.

CARPENTERS’ WRECKING BAR
Made of the best quality tool steel, \( \frac{1}{2} \) in. Octagon, 30 in. long. Will pull any size nail. Just the thing for the mechanic.

MARSHALLTOWN TROWEL CO.
Marshalltown, Iowa U. S. A.
"LITTLE GIANT" FLOOR SCRAPER
Sent Free On Trial

WE DO NOT REQUIRE YOU TO DEPOSIT ANY MONEY
WE PAY THE FREIGHT BOTH WAYS IF NOT SATISFACTORY

HURLEY MACHINE COMPANY  :  : Chicago
General Office and Works: 155 So. Jefferson Street
Branches: NEW YORK and SAN FRANCISCO

A. B. C.
Send particulars of your Free trial offer on the "Little Giant" Floor Scraper.

Name
Town
State

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
The American Floor Surfacing Machine
Does the Work of 20 Men

BETTER  QUICKER  CHEAPER

The only machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior woodwork. It has surfaced and polished millions of square feet on every kind of floor, from common pine to the finest parquetry, from bowling alleys to skyscrapers. It is self-propelling, no pushing or pulling, no blades to dull or sharpen. Used and endorsed by leading contractors everywhere. Big money in floor surfacing as a business, one machine earned over $1850.00 in seven weeks. Guaranteed and sold on its merits.

Write for Booklet and Particulars
The American Floor Surfacing Machine Company
TOLEDO, OHIO

Perfect Results Are Easily Obtained by Leasing the SCHLUETER RAPID FLOOR SURFACER

This machine is built on the only correct principle. It is guaranteed to be THE BEST machine with which to produce an even, smooth surface on any kind of wood floor, old or new, hard or soft and in all buildings; Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc. THE SCHLUETER will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner.

Profits for Contractors

The contractor leasing a SCHLUETER Rapid Floor Surfacer and advertising the fact that he is prepared to do perfect work will soon have all the work he can do. We can prove to any contractor that the SCHLUETER machine will easily earn a net profit of not less than $10 a day when in operation.

Sand Paper the Only Perfect Way

The SCHLUETER RAPID FLOOR SURFACER is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of 600 revolutions a minute. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine will surface from one to two thousand square feet in eight hours. Cost of sandpaper and electric power from $1.00 to $2.00.

What One Contractor Says
Richmond, Ind., Feb. 5, 1908

TO WHOM IT MAY CONCERN: I am a floor contractor, have been in the business many years and I lay floors in the front of residences, and therefore require a fine finish. Now to overcome the hardest work in the business, which is scraping the floors, I have been looking for a machine to do the work. I have tried all kinds of scrapers and floor surfacing machines but have not found one that did the job satisfactory. I am just now using the SCHLUETER Rapid Surfacer, and I am sure it will be found to be the best machine on the market. I am [-] years old. I am yours truly, ELI. F. JONES, Contractor and Builder.

Write for Free Illustrated Booklet Containing Full Information Sent Free to Contractors.

CHICAGO
M. L. SCHLUETER
61 South Canal Street

FR We manufacture WOOD BORING and HOLLOW MORTISING TOOLS

FOREST CITY BIT AND TOOL COMPANY
ROCKFORD ILLINOIS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
ACKERMANN’S

RAPID FLOOR SCRAPER

Patented by J. B. Ackermann, June, 1907

THIS MACHINE WILL DO

MORE

Than any other Scraper on the market.

BTTER

EASIER

WORK

Weight 120 lbs.

The Machine is FREE if the above statement is not strictly true. (See offer Below.)

Knife Advantages of the “Rapid”

By means of a simple eccentric device, the knife blades of the “Rapid” can be instantly moved or set at any angle, thus securing a “drawing cut.” No floor scraper can be a success that does not bring the knife blade across the floor surface with a natural, hand-like movement. The “Rapid” does this perfectly. Any size blade up to 4½ x 8 inches can be used on this machine.

Exclusive Knife-Sharpening Feature

By simply reversing the position of the machine (turning it over) it forms its own knife-sharpening vise, the blade being brought into a perfect upright position, ready to sharpen, without removing it from the machine. This saves time, and time is money. The operator proceeds to sharpen the knife, then turns the machine over and goes ahead.

Our Special Guarantee Offer

We will ship a Rapid Floor Scraper, charges prepaid, subject to use FREE for three days, by any responsible person. If you are then satisfied the machine is all we claim for it you can purchase it, if not we will have the machine returned at our expense. Further, if after you purchase this machine, you find that, at any time under equal conditions it will not do “More” Better” and “Easier” work in a given number of hours than any other floor scraper, we will return your money and you can keep the machine free of cost. This is a straight offer, without any strings to it, made to anyone desiring to secure the best floor scraper made without risking their money until THEY KNOW what they are buying. We refer to the State Bank of Michigan, Grand Rapids, Mich., as to our guarantee and responsibility.

J.B. ACKERMANN & CO.

I contemplate purchasing a floor scraper and would like to see yours operate before agreeing to buy it. Please send me full details covering your manufacturer’s guarantee and special terms.

Name

Town

State

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
TOLES' RAPID ACTING VISE FOR WOODWORKERS

A Guaranteed Time Saver

Piece-Workers say they save the price of their vise in a month's time

YOUR TIME IS MONEY—SAVE IT!

It takes 24 turns of the ordinary wood screw, 1-inch pitch, to open a vise 12 inches, and 24 turns more to close it. We advise any mechanic while he is resting, to time the other fellow while he is doing this, and also figure in the time it takes to adjust the bolt at the bottom of the vise to keep the jaws parallel. THE TOLES RAPID-ACTING VISE obtains adjustment without the use of RACKS, PAWLS, TRIGGERS, WEDGES, LEVERS, FRICTIONS, WORM GEARS, ETC., therefore they do not slip, clog up, wear out or break.

SPECIAL Send us your dealer's name and we will mail you FREE a fine catalog showing FORTY DIFFERENT STYLES of TOLES VISES.

W. C. TOLES COMPANY
Main St., Irving Park, CHICAGO, ILL.

Are You Interested in Mitre Boxes?

If you are it will pay you to investigate the Langdon Acme. It has all the advantages of any other box made and several that others do not comprise. Our pocket catalogue "D," representing our full line of tools, will be sent if asked for.

MILLERS FALLS COMPANY
28 Warren Street, NEW YORK

Wood Bar Clamp Fixtures Per Set 50c

OVER 12,000 OF OUR STEEL RACK VISES IN USE

25 oz. Clamp Fixtures bought by one mill last year. We ship on approval to rated firms, and guarantee our goods unconditionally. Write for list of Steel Bar, Clamps, Vises, Bench Stops, etc.

E. H. SHELDON & CO.
281 Madison St. - - CHICAGO

BLAKE QUICK ACTING VISE

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

Prentiss Vise Company, Makers
44 Barclay Street, New York, U. S. A.

PARKER VISES

MADE SPECIALLY FOR WOOD WORKERS

FOR SALE BY DEALERS

SEND FOR CATALOG

CHAS. PARKER CO.
MERIDEN, CONN.
THE NEW IDEAL

THE ONLY

AUTOMATIC FLOOR-SCRAPER

A strictly new departure from other machines now on the market. Does better work, much more quickly than others. Its strongest features are

Automatic Action—Simplicity

Made from best material, by skilled workers. The weight of the machine is in the wheels and therefore directly on the floor.

The Knife is Not Removed for Sharpening, as the frame is hinged at the axle, allowing knife to be raised. By means of adjusting rod on top of frame, WEIGHT ON KNIFE may be increased or diminished for use on different kinds of floors. There is at all times a UNIFORM PRESSURE ON KNIFE

Automatic Shield in front of knife protects woodwork and also prevents knife from leaving any mark or cut on the floor whatsoever. Pressure on handle has absolutely no effect on action of knife.

IT WILL PAY YOU TO WRITE FOR ILLUSTRATED CATALOG

SAMUEL DREW, 191 Genesee Street, ROCHESTER, N. Y.

LEONHART'S STRAIGHT EDGE LEVEL

Proved Glasses Nickel Plated

Handiest Level on the Market for setting Door Jamb and Partitions. Can be Attached to any Piece of Wood.

Try one. Money refunded if not satisfied.

Ask your dealer, or send 50c to R. LEONHART San Anselmo, Calif.

THE CROWN NAIL-PULLER AND BAND CUTTER

Pulls nails faster than others, cuts, and rips off band like magic, all parts interchangeable.

SAVES NAILS, TIME, STRENGTH.

Write for price of prepaid sample.

SNOW & PETRELLI MFG. CO.

NEW HAVEN, Chapel St., CONNECTICUT
Their superiority over others is acknowledged by thousands of users. Made-to-order steel used in their manufacture adopted only after most careful experimenting gives them their value.

**TOOLS FOR SLATERS MANUFACTURED BY Belden**

**OUR HAMMERS**
are perfectly balanced and are provided with

**Leather Handles**
to prevent hand from slipping

**One Hammer 12 in.**
**One Ripper 15 in.**
**One Stake 4 1/2 in. long.**
**One Punch 5 1/2 in. long.**

Constitute a Set

If Your Dealer Cannot Supply You, Write Us Direct

**THE Belden MCH. CO.,**

Whalley Ave. and Tryon St.
NEW HAVEN, CONN., U.S.A.

---

**Here is a Gimlet**

Equal in quality and usefulness to any Brace Bit

HANDLE OF SELECTED COCOBOLO WOOD

**THREE SIZES ONLY**

Cutting 4-32, 6-32, and 8-32 Holes

Price Postpaid 15 cents each

**H. H. MAYHEW COMPANY**

SHELBURNE FALLS, MASS.

---

**Miller’s Hand Mortiser**

WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for Mortise Locks.

The time is Three Minutes. The Material is Hard, Soft, Gross Grained and Kind 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 3 inch to 1/2 inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO., Cincinnati, O.

---

**Lufkin**

STEEL TAPES and RULES
ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY The Lufkin Rule Co.
Saginaw, Mich., U.S.A.
New York London
For Sale Everywhere.
Send for Catalogue.
When you think of Floor Scrapers—Think of the FOX FLOOR SCRAPER

Money Pays Dividends

It Will Save You Money

We Don't make hard work of Floor Scraping

Send the Fox Floor Scraper on Three Days' Trial—Write for Proposition

The handiest wood scraping device on the market. Body of tool slides on the floor, insuring a uniform cut, blade is held by a clamp and can be adjusted or reversed in a second's time. Unexcelled for any kind of wood scraping. Never jumps or leaves waves. Every carpenter needs this tool. Price of Fox Cabinet Scraper, $1.25.

WRITE US BEFORE BUYING

FOX MFG. CO., 187 Second St., MILWAUKEE, WIS.

"FORSTNER" BRACE AND MACHINE BITS
FOR FINE CARPENTER, CABINET AND PATTERN WORK

Specially Adapted for Hardwood Working

The Forstner Labor-Saving Auger Bit, unlike other bits, is guided by its Circular Rim instead of its centre; consequently it will bore any area of a circle and can be guided in any direction regardless of grain or knot, leaving a true polished surface. It is preferable and more expeditious than chisel, gouge, scroll saw, or lathe tool combined, for core boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding and mortising, etc.

Manufactured by

THE PROGRESSIVE MFG. CO., Torrington, Conn.

Enquire of your Hardware Dealers or write us direct.

Write for Catalogue.

To thoroughly introduce this high grade tool among carpenters, pattern makers and others, we will mail to any reader of the American Carpenter and Builder upon receipt of 50 cents any bit we make from one-quarter inch to one inch in size.

OUR LATEST CATALOGUE No. 20.

Smooth, tough "leads" are the result of skilful and careful grinding, working and firing. It is this care and skill that make Dixon's Carpenter Pencils standard. Send 16c for generous sample lot 183 J.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.
SUCCESSFUL Draftsmanship
TAUGHT PERSONALLY AND INDIVIDUALLY BY
CHIEF DRAFTSMAN of large concern, who guarantees you a first-class drafting-room knowledge, experience and high salaried position in few months, home instruction.
Complete Drawing Outfit, Highest Quality, FREE Address, Chief Draftsman, Div. 17, Engineers' Equipment Co. (Inc.), Chicago, Ill.
VALUE $13.85
FREE TO MY STUDENTS Delivered at once

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

CHAPLIN'S IMPROVED PLANES
Patented Feb. 14, 1899; Oct. 30, 1900; Dec. 24, 1902
We invite the Severest Comparative Tests

Tower & Lyon Company, 95 Chambers Street, New York

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

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

ONLY SELF-SETTING PLANE
The Bench is the Creator
We want you to have a copy of our booklet
"A ‘Plane’ Talk About a Good Plane!"

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

Tower & Lyon Company, 95 Chambers Street, New York

Nicholls Common Sense Miter Box
We have endeavored to place on the market a Miter Box suitable for practical work, and having tested it thoroughly, we are satisfied we have succeeded in doing so, and are placing this Miter Box on the market warranted in every respect.
Nicholls Manufacturing Co. Ottumwa, Iowa

The S. & W. MITRE
GUARANTEED ABSOLUTELY ACCURATE
We write us for particulars
SEYMOUR & WHITLOCK
1 GARDEN ST., NEWARK, N. J.
COMBINATION SQUARES

Goodell-Pratt quality all the way through. Thoroughly well made from best materials; unusual accuracy in the graduations, in which point we particularly excel.

Quality is what you want and quality is what you get here. Ask your dealer for them. We will send Catalog on request.

GOODELL-PRATT COMPANY
GREENFIELD, MASS., U. S. A.

STANLEY
CONCEALED RATCHET BRACE.

No projections to injure the hands.

Send For Catalogue No. 34.

We make a complete line of Bit Braces

Sold by all Hardware Dealers.
Stanley Rule & Level Co.
New Britain, Conn., U. S. A.

THE AMERICAN
Combined Level and Grade Finder

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 the same time, and will at once give the exact distance need to plumb up to a true level.

A Civil Engineer that you may have with you at all times. The most practical, durable and convenient instrument of the day. The longitudinal recess which is shown in cut is well worth the low price of the instrument. For terms and agency apply at once to

EDWARD HELB, Manufacturer, :: Railroad, Pa.

The RICH Handy Drawing Outfit

SAVES TIME for the draughtsman, and is a great aid to the learner. It holds a number of sheets or a pad, which requires no fastenings. The Protractor T Square gives accurate angles direct. You get measurements from the board. Has a drawer for instruments and can be carried around to make drawings on the spot. Circulars free.

"PROTECTED HANDLE—SOLID SHANK" CHISEL

A STRICTLY HIGH GRADE TOOL. WARRANTED WITH FAIR USAGE.

MANUFACTURED BY
R. H. SHAILER,
FORESTVILLE, CONN.

CUSTOM MADE FLY SCREENS

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

For outside screens we use the identical finish of the outside of Pullman cars.

The best grades of Wire Cloth, enameled, galvanized, genuine bronze, etc. Fastened by racks or by the "lock-strip" process.

Intending purchasers may have free by mail samples of woods, finishes, and wire cloth and copy of catalog and price list. Agencies in many cities. Special terms to contractors and builders.

The A. J. PHILLIPS CO.
FENTON, MICH.
23 Years' Experience 35 Acres of Floors

PLATE GLASS

Bath Room Fixtures FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT BUILDINGS

Absolutely sanitary, require no cleaning, never wear out or show the effects of use. Not affected by hot or cold water. The modern 20th century toilet and lavatory fittings.

PLATE GLASS TOWEL BAR

Price $1.50

No. 141 24 inches, adjustable. Also made in 30, 36, 42 and 48 inch lengths at slightly higher prices.

Round glass towel bars, $2.00
Adjustable glass towel shelves, $3.50, $4.00, $6.00

We also sell plate glass with polished edges for table tops, any size, and glass push plates for use in fine residences and apartments, manufacture and re-silver mirrors, etc.

CATALOGUE SENT FREE ON APPLICATION

Geo. H. Anderson & Co.
Manufacturers and Jobbers of Plate Glass Specialties
281-291 W. Superior Street - - CHICAGO

THE "ZIMMERMANN" IRON BASE FOR WOOD COLUMNS

"The Column Never Rots"

All Sizes for Round or Square Columns. Thousands in use. Send for Circular "Z."

C. E. ZIMMERMANN, : Syracuse, N. Y.

On the Square

On the Square

every builder should have my little work and be a constant reader of the "CEMENT WORLD," the leading paper of its kind published,

STEEL SQUARE POCKET BOOK ...................$ .50
FOLDER (in case with pockets) .................. .25
DESIGNING (fairly illustrated) .................. .50
CEMENT WORLD .................. 1.00
All for $1.75 $2.25

Dwight L. Stoddard, Author of "Steel Square Pocket Book"
228 W. Raymond Street, Indianapolis, Ind.

Send for Other Combination Offers.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
HERE THEY ARE

A Selection of Our Machines Will Make Complete Up-to-Date

WOOD-WORKING SHOPS Practical Time-Savers

FOR CARPENTERS CONTRACTORS MILL-WORK MEN

THINK OF THE TIME and MONEY SAVED

Making Your Own Mill-Work

You will be surprised at the small investment required to make yourself independent.

Chicago No. 7 Improved Swing Saw

Chicago Nos. 16 and 17 Jointer 8", 12", 16"

Chicago No. 5 Combination Rip and Cut-Off Saw

Chicago No. 19 Shaper

Chicago No. 1 Band Saw 36 inch.

Chicago No. 10 Tilting Table Improved Variety Saw Bench

Chicago No. 35 Pony Planer

Chicago No. 10 Tilling Table Improved Variety Saw Bench

Baxter D. Whitney & Son's Celebrated Cabinet Planer

Chicago No. 35 Piano Planer

Baxter D. Whitney & Son's Celebrated Cabinet Planer

EXCLUSIVE REPRESENTATIVES


Hermance Machine Co.

Greaves Klusman & Co.

C. O. & A. D. Porter

Jos. O. Colladay Co.

CHICAGO MACHINERY EXCHANGE

WOOD-WORKING MACHINERY MERCHANTS

7 11 N. Canal St., CHICAGO, U. S. A.

The first cost of our machines may be a little more than some others, but they are the cheapest in time, as you will have no repair-bills to pay. We will assist you to arrange for a shop. We have over 500 machines on exhibition. Come in and let us talk it over. We have also a large stock of modern slightly used machines conscientiously rebuilt.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
FOOT, HAND AND POWER

Wood-Working Machinery

For Carpenters, Builders, Cabinet-Makers, and Other Wood-Workers

BUILT FOR HARD WORK, ACCURATE WORK AND LONG SERVICE

ONE MAN with one of these machines will do the work of four to six men using hand tools; will do it easier, will do it better.

WE GUARANTEE each machine to be thoroughly practical and accurate. Machines sent on trial, and if not found entirely satisfactory, may be returned at our expense.

SEND FOR CATALOG "A"

The Seneca Falls Manufacturing Co.

218 Water Street, Seneca Falls, N. Y., U. S. A.

COMPLETE OUTFIT PRICE $15.00

HAND AND FOOT-POWER MACHINERY

Our No. 1 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

Send for Catalogue.


74 Ruby St. ROCKFORD, ILL.

LOOK! Only $50.00 for an all iron SAW BENCH with countershaft complete. It will pay you to investigate. Send for circular giving full particulars

R. E. KIDDER,

6 Hermon Street - - WORCESTER, MASS.

Marston's Patent Hand and Foot and Steam Power Wood Working Machinery

20-in. Hand and Foot Power Band Saw

J. M. MARSTON & CO.

227 Ruggles St., Boston, Mass., U. S. A.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
EVERY user of machinery knows that if he were obliged to reduce his equipment to one machine he would retain a Universal Saw. The Circular Saw is the indispensable tool—the beginning of all things in a shop—therefore why not make a wise selection? We build 21 different types of sawing machines and feel competent to consult intelligently with you on this subject. The Machine shown here-with is very useful for general work, and a great labor-saver when operated on specific wood working problems. Please bear in mind that all machines designed by Smith of Smithville always contain approved features for the elimination of danger to the operator. We also guard against the annoyance and expense of breakage by building machines sturdy and well, regardless of the influence of low priced competition. The name Smith in connection with wood working machinery is a synonym of Quality. Write for special circulars and prices.

H. B. SMITH MACHINE CO.
SMITHVILLE, N. J., U. S. A.
BRANCHES:
CHICAGO
NEW YORK
ATLANTA
A Combination Machine
That Users Claim is Indispensable to Every Jobbing Shop in the Building Line

No. 6 Universal Turning and Block Machine
Not only because it does Turning, Etc., at one-sixth the cost of Hand Work, but because it is so convenient and quickly set up for all kinds of odd jobs.

Here are a Few of Its Uses:
- Makes all kinds of Round and Square Balusters and Spindles, Corner Beads, Rose Angles, Kitchen Table Legs, Raised Panel Balusters, Twisted Center Balusters, Shelf Spindles, Square Columnic Base- and Head Blocks, Fan and Star Corner Blocks, Fence Pickets, Sunrise Panels, Twisted Moulding, Fancy Butt Shingles, Window and Door Frames, does Panel Racing, Moulding Circle Casings, Rounding Steps, Dadoing, Rabbetting, Jointing is a first class Cabinet Saw in fact there is almost no limit to its use.

Our large circular describing the machine is very interesting, as is also our Special Proposition. Drop us a line and we'll do the rest.

C. Mattison Machine Works
879 5th St.
BELOIT, WISCONSIN

BURLINGTON

Venetian and Sliding BLINDS
Screens and Screen Doors

Venetian Blind for inside window and ward. Perfect privacy. Any wood; any finish to match trim.

PHOENIX
INSIDE SLIDING BLINDS
WILKES BARRE, PA.

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

C. W. MILLER.
Comfort! Economy! Convenience!

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

STANDARD MACHINE TOOL AND SUPPLY CO.
7 E. Levee : KANSAS CITY, MO.

Wood Working Machinery for Contractors and Builders


PLUMBERS' SUPPLIES AT WHOLESALE

If you need anything in my line and wish to SAVE 20 to 40 Per Cent on every article, write for my free illustrated Catalog. Shipments promptly made from a very complete stock of guaranteed goods. Small orders are as carefully handled as large ones.

B. B. KAROL, 233 W. Harrison St., Chicago, Ill.

MALLORY'S
Standard Shutter Worker

Opens and closes the blinds without raising the window. Automatically locks the blinds in any position desired.

Made of gray and malleable iron. The best and most durable blind hinge. Incomparable for strength, durability and power. Can be applied to old or new houses of brick, stone or frame. Send for Illustrated Circular. If your hardware dealer does not keep them send direct to

FLEMINGTON, NEW JERSEY
A NEW TOOL FOR CARPENTERS

PRICE $3.50. A. O. Calhoon, Patentee, Victor, Mo.

The Rafter and Polygon Bevel is a handsome, practical, durable tool particularly adapted to cutting rafters, etc., and it should be in the hands of every carpenter and joiner in the country. The calculations in cuts, pitches, lengths, etc., given on this tool are more nearly correct than can be found on any square on the market, the calculations having been carried out to the hundredth part of an inch. It is the embodiment of the draft-board, square, try-square, bevel-square, plumb, level and bevel-protractor in one small compact and convenient tool.

WHAT SOME MECHANICS SAY ABOUT IT:

Indianapolis, July 15, 1907.
Mr. Calhoon has demonstrated the workings of the tool before the various local unions and District Council of this city, and we believe it is in the best mechanical device of its kind ever put on the market. Chas E. Bacon President. Z. F. Carrigan, Secretary.

Cleveland, Ohio. Oct. 7, 1907
Mr. Calhoon: After examining your Rafter and Polygon Bevel I would say that I consider it one of the most complete framing tools I have seen. O. C. Riegelmeier, Mechanical Laboratory, Case School Applied Science.

Any reader of this Magazine can secure one of these tools by remitting $3.50 direct to

J. R. CALHOON, Paris, Mo.

ALFRED W. WOODS'
KEY TO THE STEEL SQUARE.

This is it.
The Key, Book of Instruction and Morocco Case.
Full Size 4x5 inches.

It tells the whole story of how to use the common steel square for all kinds of framing.

Price $1.50, Postpaid

American Carpenter and Builder
185 Jackson Boulevard, CHICAGO

OUR NEW STEEL SQUARE

Aside from excellence of material and workmanship, the greatest difference between the best Carpenter's Steel Square and the old iron square of the blacksmith, consists of the scales and markings on the improved tool. Our Square, as recently improved, enables the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before known.

Our Steel Square Book, describing the new tool, is a veritable PRACTICAL TREATISE ON THE STEEL SQUARE and we will send a copy, without charge, to anyone who in writing us will mention the American Carpenter and Builder.

SARGENT & COMPANY
1149 Leonard Street NEW YORK

ANCHORS
Write us for Prices. Estimates Cheerfully Furnished
ST. LOUIS HARDWARE MFG. CO.
1519-21 North 18th St., ST. LOUIS, MO.

The GADE Air Cooled Gasoline Engines
Made in 2, 3 and 6 horse power sizes. What's the use of paying good money for an old style engine, when you can get something better in the "Gade Air Cooled" at the same cost? Buy one. It will not freeze up or go back on you in cold weather. It's ready for business all the time. We know it will please. By all means write for descriptive circulars and price list of the "Gade." Address, GADE BROS. MFG. COMPANY, 13 Sherman St., Iowa Falls, Iowa

The BERGEN IRON WORKS, Inc.
133-159 51st St., Brooklyn, N. Y.
NEW "YANKEE" TOOLS

Ratchet Driver with Screw Holder (3 Styles, 5 Sizes)

Magazine Ratchet Screw Driver No. 65. 1 or 6 in. Shank (4 Bits)

Ratchet "Screw Eye" Driver (2 Sizes)

They're in the same high class with our other Tools.

Send for our New TOOL BOOK—it's FREE

NORTH BROS. MFG. CO., Philadelphia, Pa.

Rip Saw, Band Saw and Boring Machine

To the above machine we can add 3-inch Jointer and Tenoning Attachment, two heads, 3 inches wide. For Foot, Hand or Belt Power. Also making heavier machines with long, heavy base, on which countershaft is mounted, with light and heavy Boring Attachments, 3-inch and 6-inch Jointer, either of three size band saws. Sand drum and disk combined, and swing cut-off saw from countershaft. Each ready for use without change, driven from same countershaft with friction clutches if preferred.

Special Attention given to getting a number of machines in small space all driven with one belt direct from engine or line shaft.

If you don't believe it, write us.

Catalogue and Special Price List FREE.

PARKS Ball Bearing Machine Co.
FERGUS & C. N. & D., Cincinnati, O.

The rigid construction and modern design of the new 32-inch Crescent Band Saw insure a machine of the very highest efficiency as a rapid producer of accurate work.

Crescent machines cost less than others of equal merit. They are best because they are strong, durable and practical. They are low in price because they are in big demand and we have to build them in large quantities.

Send at once for catalogue describing our complete line of Band Saws, Saw Tables and Jointers.

THE CRESCENT MACHINE COMPANY
224 Main St., Leetonia, Ohio, U.S.A.
PERFECTION
ELEVATORS
ARE
“BEST BY EVERY TEST”
For PASSENGER or FREIGHT SERVICE in Factories, Stores and
Dwelling Houses.
Our Elevators are noted for their Easy Running and Serviceable Qualities. They are prac-
tically self contained and can be erected by any carpenter in a few hours. We furnish Plans for
erecting. When writing, state your requirements.
Sidney Elevator & Mfg. Co., Sidney, O.

EASY TO PAY FOR — Eaton & Prince hand-power elevators are so economical, so
simple, so safe, so satisfactory and so serviceable that it is always a pleasure to send a
check therefor.

Eaton & Prince hand-power elevators are carried regularly in stock in Chicago in both corner-lift and
center-lift patterns in various sizes.

Orders are thus filled immediately upon receipt.

Illustrated plans, details, sizes and prices in Folder No. 99 will permit you to intelligently order therefrom—write

Eaton & Prince COMPANY
CHICAGO

The Reliance Hoist
will elevate 1,000 lbs.
125 feet per minute

PRICE
$150.00
Without Power
Power furnished when desired.

Write for descriptive circular.
Secord & Weatherwax
Jackson, Mich.

With
Peerless Hoisting Outfit
You can hoist your material cheaper and quicker than with any other

Peerless Motor Co.
1217 Clinton St.
Lansing, Mich.

MYERS BROS.
128 LEE ST.
POUGHKEEPSIE, N.Y.

Hand ELEVATORS
OF THE MOST IMPROVED
AUTOMATIC CONSTRUCTION

Invalid Lifts,
Trunk, Carriage,
Sidewalk and
Freight Elevators

Sedwick Machine Works
POUGHKEEPSIE, N.Y.
And
128 Liberty St., New York

Catalogs and
Estimates Furnished
SEE SWEET’S INDEX

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
"RELIABLE" PARLOR DOOR HANGERS
ARE A STANDARD OF QUALITY

They have the same smooth running, noiseless motion that the ALLITH ROUND TRACK
Gives to the ALLITH HANGERS

The simplest, most efficient and least in cost of installation. Both adjustable and non-adjustable track.

"ALLITH" is assurance of the best BARN DOOR HANGERS, WAREHOUSE and FIRE DOOR HANGERS—STORE LADDERS.

ASK FOR CATALOG "A"

ALLITH MANUFACTURING COMPANY
CHICAGO

LATEST IMPROVED ALL IRON SWING CUT-OFF SAW alone of its kind

Properly Counter-Balanced

Adjustable Hanger
With 6 Inch Adjustment

CAN BE HUNG ANYWHERE

On the Floor
Under the Floor
On the Wall
With same ease of operation

Write for FREE Catalog of our complete line.

LOVELL MACHINE WORKS, Gardner, Mass.
The Taylor Shingle Bracket
Adjustable to any pitch of roof; shingles laid over bracket, which is removed without leaving exposed nail holes.
Made entirely of steel, and folds up when not in use.
List $5.00 Per Dozen
Catalogue on request.
JAMES L. TAYLOR MFG. CO., Bloomfield, N. J.

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 in red on the 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.

JAMES L. TAYLOR MFG. CO., Bloomfield, N. J.

GRAND RAPIDS
All-Steel Sash Pulleys
Are sold DIRECT to Builders, Contractors and Mills at prices under the common ordinary goods.

If you make ten or ten thousand window frames, we can save you money and give you a superior sash pulley. We are the largest sash pulley makers in the world. We ship direct, or through dealers and jobbers everywhere.
Write for catalogue and free samples and prices on gross, barrel, or any quantity.
Direct from the makers to you. Inquiries welcome.

GRAND RAPIDS HARDWARE CO.
34 Pearl St., Grand Rapids, Mich.

Goodell Mitre Box
MADE ENTIRELY OF STEEL
No More Breaking # # First in Quality and Improvements
Automatic stops for holding up saw. Corrugated backs. Graduated. Gauge for duplicate cuts and many other features
If you want the best you will take no other
Send for Circular G

GOODELL MANUFACTURING COMPANY, Greenfield, Mass.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
Our Line of Ornamental Butts and Hinges will

Save
One-Half Your
Time

in hanging door. Live contractors are using them exclusively wherever they have been introduced. Will have nothing else. Only one side to mortise. All sizes from 1½ in. to 4 in. Any finish desired. Small sizes fine for cabinet work. Send for catalogue and give dealer’s name.

National Manufacturing Co.
Sterling, Ill.

JOIST HANGERS
For Concrete Blocks
Wood or Iron Beams
Many Sizes in Stock
Special Shapes to Order
STEEL POST CAPS
WIRE FLOOR CLIPS
STRAPS, BOLTS
PIN ANCHORS
CHAS. MULVEY MFG. CO.
15 So. Jefferson Street
CHICAGO

HIGH GRADE BUILDING PAPERS
“Venetia” Sheathing—The Best Red Rosin Sized Sheathing made.
U. S. Fibre Plaster Board—A paper substitute for plaster; can be painted, varnished or kalsomined.
Red Hawk Red Rope Roofing Paper.
“No Noise” Felt—The best sound deadener and damp-proof protector made.
Black Hawk Water-Proof Sheathing.
SEND FOR SAMPLES AND PRICES
C. B. HEWITT & BROS., 50 Beekman St., N. Y. City

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
ALL IN A NUT SHELL

THE SLIDING door problem has been solved at last, and the carpenter, contractor and user has an opportunity to use an Automatic Storm and Bird Proof Rail.

A new feature indeed, and the neatest article ever offered the public for that purpose. It is fully guaranteed. It saves time and money.

Send for our catalog, it's free for the asking. Agents Wanted.

AUTOMATIC DOOR RAIL CO.
Hillsdale Michigan

SAMSON SPOT SASH CORD
Nobody will kick about their sash cord breaking if you use Spot Cord.
DROP US A POSTAL AND WE'LL TELL YOU WHY AND SEND YOU SAMPLES.
SAMSON CORDAGE WORKS, BOSTON, MASS.

The Wagner Roof Bracket
POINTS OF ADVANTAGE
The safety hook. Timber can't slip off. Is the only roof bracket which can be used both for shingling and sheeting. Over 80,000 in daily use.

Ask your dealer
or write to

The Wonderful American Door Catch

Ready to Catch
Closed

Points of Advantage
The Catch that Latches
The Latch that Catches
Holds every time. Catches with a spring quick as lightning. Releases with a push and is then ready to catch the closing door again. Automatic—never fails.

Spring has never been known to break, nor the catch to wear out or come apart. It is wonder for others.

Doors, Screens, Office Gates, Swinging Windows, Pantry Doors, Cabinets, Closet Doors and a hundred other uses. The door will never sag, rattle or spring.

Have Some Handy Complete with screws, staple and templet—all in envelope. Price 15c each, $1.50 per dozen. Sold by hardware dealers, jobbers and AMERICAN HARDWARE MFG. CO. Dept. 79, Ottawa, Ill.

CARPENTERS AND BUILDERS
WHY DON'T YOU
Build Incubators and Brooders
PLANS FREE

You can start a profitable side line manufacturing Incubators and Brooders from our Free Plans. Easy and simple to follow. We supply all parts such as Lamps, Regulators, Tanks, Doors, Legs, etc., not convenient for you to make, at a very small cost. There's a big demand. Some manufacturers turned down thousands of orders last year. Why not pick up some of this extra money? A postal brings full information; our big catalogue and plans free.

H. M. SHEER CO., 210 Hampshire St., Quincy, Ill.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
We Want You

to know us; to get our catalogs and see what we have to offer in goods and prices. Get a catalog and look it over. It will put you under no obligation and you will not be bothered by a lot of advertising matter that is no good to you.

ORDER CATALOG BY NUMBER

Number 371
WOODWORKERS' TOOLS—Contains tools for the cabinet maker, car builder, carpenter, carriage builder, cooper, draftsman, furniture maker, lather, manual training school, millwright, pattern maker, ship builder, wagon maker, and for carvers, engravers, turners and all workers in wood. The only complete catalog ever issued of this line.

Number 372
BUILDERS' HARDWARE—Contractors' Edition. 198 pages of the finest hardware in the world. Shows everything necessary to equip any building. Sent free to contractors, architects or owners of proposed buildings.

Number 376
REFRIGERATORS, HOUSEHOLD—An abridged catalog which explains the reasons for the superior ice-keeping qualities of our "A" Refrigerators.

Number 377
DUMB WAITERS AND HAND ELEVATORS—Giving details required to enable us to quote you intelligently. Sent free.

Number 3714
CONTRACTORS' TOOLS—Showing tools for the bricklayer, cement contractor, mason contractor, sewer builder, lather, plasterer, Slater, stonecutter, stone mason. Is the most complete work for contractors ever issued.

MORRILL
REG. U. S. PAT. OFF.
ON A TOOL MEANS THAT THERE IS NONE BETTER OF ITS CLASS.

WE WARRANT all our Tools to be of the best Material and Workmanship, and will replace any part (not the entire tool, unless the frame breaks) that breaks during legitimate usage and within a reasonable time after purchase. Mail in broken part only, not the entire tool.

CHAS. MORRILL, 283 Broadway, New York

The NEW MARSH-LANGDON and IMPROVED MITER BOXES

All have corrugated Metal Bed Plates—same are ground true and cannot warp and split like thin Wooden Plates. Made in 4 sizes and 40 numbers. Ask your dealer to show you one, and if he does not carry them in stock, ask him to order one for you, for you want the best. Write for circulars and prices.

Manufactured only by
H. C. MARSH
666 Race Street
Rockford, Illinois

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
American Carpenter and Builder
Entered as second-class matter July 1, 1905, at the postoffice at Chicago, III., under the Act of Congress of March 3, 1879.
WILLIAM A. RADFORD, EDITOR-IN-CHIEF.
WILLIAM REUTHER, EDITOR.
ALFRED W. WOODS, ASSOCIATE EDITOR.
Published monthly by
American Carpenter and Builder Company
185 JACKSON BOULEVARD, CHICAGO.
WILLIAM A. RADFORD, President.
CHARLES W. RADFORD, Vice-President.

VOL. V APRIL, 1908 No. 1

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades. Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

SUBSCRIPTION RATES.
One year, $2.00; six months, $1.00; payable always in advance.
Canadian subscriptions, $2.00. Foreign subscriptions, $1.00.
Subscriptions may be sent by check, express or money order, or registered letter. Make all remittances payable to the American Carpenter and Builder Company.

SUBSCRIPTIONS may be sent by check, express or money order, or registered letter. Make all remittances payable to the American Carpenter and Builder Company. Postage stamps are not desirable, but if necessary to remit them, two-cent stamps are preferred.

IMPORTANT TO SUBSCRIBERS—Do not fail to notify us promptly if you wish your magazine forwarded to another address than that originally ordered. We will not guarantee to furnish missing numbers in cases where subscribers have neglected to inform us of their change of residence. We will be pleased to change the address of any subscriber at any time, but have no means of knowing that they have moved unless they notify us of the fact. The postoffice authorities will not forward newspapers or magazines from one address to another unless extra postage is paid by the subscriber. Write us as soon as you move, giving your new address, and we will correct our mailing list and there will be no delay in your getting your magazine.

ADVERTISING RATES.
Furnished on application. The value of the AMERICAN CARPENTER AND BUILDER as an advertising medium is unquestioned. The character of the advertisements now in its columns, and the number of them, tell the whole story. Circulation considered, it is the cheapest trade journal in the United States to advertise in. Advertisements, to insure insertion in the issue of any month, should reach this office not later than the 20th of the month preceding.

The best workman doesn’t always have the best manners—but he ought to.

Perhaps there isn’t a newcomer in your neighborhood—but if there was, would you have made a business call?

From England

Time to time it is brought home forcibly to us that the American Carpenter and Builder enjoys an international reputation. In its last issue, after quoting an article from a recent number of the American Carpenter and Builder, the Slate Trade Gazette, of Hull, England, remarks:

"By the way, as an evidence of the enterprise of our American contemporary, we might mention that they are offering two houses in addition to valuable monthly cash prizes as awards in a competition. The proprietors of this journal are nothing if not 'go-ahead.'"

We are not surprised, however, that our Great Prize Contest is attracting such wide attention and such favorable comment, for it is indeed a most remarkable offer—two beautiful homes free, for the two who secure the most subscribers to the American Carpenter and Builder before July 1, 1908! And, in addition to this, there are the monthly cash prizes and the liberal commission on each subscription! It is a wonderful offer; and new workers are availing themselves of it every day.

In a contest of this kind, a late start need not prove a handicap; for there is plenty of time still to thoroughly cover any field. What your home town will yield if properly and systematically worked will be a revelation to you.

The winners of the monthly cash prizes for February were J. M. Neinonen, Negaunee, Mich., $50; and T. J. Holler, R. R. No. 2, Peabody, Kan., $25. These cash prizes are repeated each month, and go to the two securing the greatest number of subscriptions during that month. Make the next month yours.

Home Building

There is something in the chirp-chirp of the first robin, in the reawakening trees and grass, in the pungent scent of the newly plowed soil, that gets away down into the real heart of a man—reviving old hopes, and kindling new ones. However deeply he may have become buried in city flats or however long he may have roamed as a village renter, that old instinct remains—every man wants a home, a real chunk of good old Mother Earth, where he can stand firm, build me my house; here spade in my garden, if I like, and train my cucumber vine along the back fence; here teach my boys to become men."

The flood of new life in the spring strengthens this feeling; and thousands are responding to it.

And sentiment of this kind, if it is a sentiment, is a good thing, especially since it is backed up with the solid facts of a good business proposition. Merely as an investment, considering nothing but the money involved in the rent vs. home-of-your-own question, there are very few localities where one can afford to
continue long a “renter.” It is a safe investment, too, more than ever attractive this year—over which the bulls and bears can not play! There is no need, however, of going into the figures here; for very often the matter of money is not the important one, not the compelling motive to home building. And it should not be; it enters only to determine how expensive a place it can be.

The great inducement for building, with most men, is the home itself. Few of us have time to analyze our state of mind on this subject; we just feel the need. We want to get away from the periodic “moving day,” that hopeless institution always in search of sentiment but never finding it; we want our own hearth stone, where the family circle may gather; we want a place where improvements will be worth while.

There are many hungers a man has in this world, some bad, some partly bad, some good. This home-hunger is one of the best. It encourages law and peace; it makes good citizens, it leads to consistent contentment but never finding it; we want our own home—of going into the figures here; for very often the matter of money is not the important one, not the compelling motive to home building. And it should not be; it enters only to determine how expensive a place it can be.

The great inducement for building, with most men, is the home itself. Few of us have time to analyze our state of mind on this subject; we just feel the need. We want to get away from the periodic “moving day,” that hopeless institution always in search of sentiment but never finding it; we want our own hearth stone, where the family circle may gather; we want a place where improvements will be worth while.

There are many hungers a man has in this world, some bad, some partly bad, some good. This home-hunger is one of the best. It encourages law and peace; it makes good citizens, it leads to consistent effort and puts a stop to the rolling stone by building it into the foundation wall.

The man who would teach his son a practical home lesson of sticking right to a job and fighting it out, feels a trifle embarrassed when he has to move the scene of his instructions the first of each May!

We feel that the home life should have a fixed center, something substantial to tie to, a place always to be looked upon with a peculiar pleasure and reverence. So build; but build thoughtfully and well. For the influence of the house is great upon the character of the people living within.

**Chimney Construction**

ONE-FIFTH or fully 20 per cent of the losses by fire in dwellings in the United States are caused by defective flues; all chimneys should be built from the ground; the walls should not be less than eight inches in thickness and the flues will be improved from fire-resisting and draft view points if lined with terra cotta flue lining. It is quite common to erect chimney flues only four inches, or half a brick, in thickness. Such flues are very dangerous. In view of the fact that it costs very little more to make the flue-wall eight inches in thickness instead of four, such negligence is simply criminal. Before deciding upon a “half-brick” chimney, ask your architect or builder how much additional it would cost you to build an eight inch chimney. You will probably not only build an eight inch chimney, but you will line it with burnt clay pipe.

**Proposed National Paint Law**

ON SATURDAY, February 22, Congressman Marshall, of North Dakota, introduced in the House of Representatives a national bill, modeled along the lines of the Pure Food and Drug Law, for the purpose of preventing the sale or transportation of adulterated or unlabeled paint, oil and turpentine. This bill has been referred to the Committee on Interstate and Foreign Commerce, and hearings will be held to enable any whose interests might be affected by the enactment of such a law to express their views before it is brought up for passage. This bill is in part the result of a conference held at Washington on January 19, between Congressman Marshall and gentlemen representing various interests in the paint trade, and in addition has been improved and modified by Prof. E. F. Ladd, of North Dakota, who has charge of the enforcement of the pure paint law in that state.

The Marshall bill provides fines or imprisonment for any one who shall sell or expose for sale any paint, oil or turpentine which is adulterated or mislabeled, and defines these terms, providing for a form or method of labeling by which the contents of the packages will be clearly indicated. Following the precedent established by the Pure Food and Drug Law, the Marshall bill contains a guaranty clause, by which the painter or retail dealer would be able to avoid penalties under the act, if he could establish a guaranty signed by the manufacturer or wholesale dealer, from whom he purchased the goods, that they were labeled in accordance with the provisions of the law. The penalty would then fall upon the manufacturer, who alone would be responsible for violation of the law. This is a very just provision, for of course the painter or retail dealer has no means of knowing whether an unbroken, original package of paint complies with the statement on the label or not. All the state laws, so far passed, put the penalty upon the retail dealer—and under the law the painter who contracts to furnish labor and material is as much a retail dealer as the man who keeps a paint store. The reason for this is that the painter or dealer frequently buys goods manufactured outside of the state, and in such a case it would be impossible to enforce the penalty for violation of a state law upon the manufacturer, hence in order to protect the public, it is necessary to fix the responsibility upon the painter or retail dealer. To be sure, he has recourse to a suit at law before the United States Court, against the manufacturer, but this does him very little good if, meanwhile, he is in jail. A national paint law, such as the Marshall bill, is therefore a protection to the retailer.

Of course it is quite possible that the trade may find objections to the bill now before the house, and that it may be necessary to modify it in some particulars; but it is more than likely that any modifications that may be offered will be more in the nature of a change of language, or in matters of detail, rather than in the broad general principle, aimed at by the Marshall bill, of a law which shall provide for the protection of the property owner and the painter in the purchase of paints, oil and turpentine, and insuring that the consumer shall get exactly what he pays for and what the label indicates the package to contain.
Just a Little "April Fool Joke"  
April Showers  

A Willing Leap Year Victim  
A Chance for a Big Contract! What?  

A Contractor Preparing for This Year's Business  
Puzzles: Find the Man Who's Going to Build  

Cartoonlets
A NARROW ribbon of a canal ties the lazy blue town of Delft to Rotterdam, and a broader band of water connects Rotterdam and Antwerp. The traveler who lands at Antwerp, worn out with the discomforts of a long voyage, will do well to find the little canal boat the morning after his arrival and go aboard. It is very certain that if he has chosen his hotel near the cathedral he will want to take passage in something, even if it sails for parts unknown.

If you have read your guide book faithfully you know that the most interesting thing in Antwerp is the cathedral, and accordingly you chose a hotel in the cathedral square, congratulating yourself that you may go as often as you please to see the famous Rubens pictures, and that at night the chimes of the church tower will be the vesper hymn that lulls you to sleep.

At 10 o'clock a hymn peals forth in the darkness, clear and loud above the noises of the city; at every quarter-hour the chimes ring out a different melody. At midnight you conclude that eight numbers of this program are enough, and you are willing to dispense with further music and go to sleep.

Now your one object in life is to lose consciousness before the next quarter strikes. You are just going off when the chimes startle you with their sharp call. Then begins a fresh race with time, and always when sleep and oblivion have almost sealed your ears, the pealing bells break in again until, in the gray dawn, the slumber of utter exhaustion gives a few hours' respite from the jangling noise.
At breakfast the man at the table next to yours grumbles, "If it were only a cat you could relieve your feelings by throwing boots at it, but a decent man feels that he can't even hurl the words he wants to at a Christian hymn in a church spire." The landlord looks not too well pleased when a solemn procession files out of his hotel at an early hour in the morning. His look of displeasure changes to blank astonishment, when, observing from his doorway the retreating figures of this company, he sees two seemingly sane men deliberately stop, put down their suit cases and shake their fists at an unoffending church steeple, whose only response is the gentle answer—a melancholy and persuasive hymn—which in this case does not turn away wrath.

A day on the lovely waterway leading from Antwerp to Delft makes one forget not only the miseries of the North Atlantic, but even the first awful night in the City of Chimes. No journey affords a more beautiful or more picturesque view of Holland, or a more delightful rest, than this trip on the canal boat that slowly threads its way between the dykes that outline the path to Delft.

Antwerp fades in the distance, first its towers and medieval fortresses, and then the wonderful cathedral spire which Napoleon, who loved it, used to say was made out of Mechlin lace. You know before an hour has passed that you are in Holland—what else can these monster windmills mean, or the fishermen in great baggy trousers and wooden clogs. At the first landing the peasant women, who are old friends because you have met them so often in the backs of magazines, come to sell, not the cocoa that is "grateful and comforting," but strawberries and cherries and early spring vegetables.

A Street in Delft, Showing the Old Church Where Van Tromp Is Buried

Most Pretentious Piece of Architecture in Delft

About the Dutch women it is possible to say—how strange! how interesting! how quaint—you cannot truthfully say—how beautiful! Sometimes it takes half
an hour of close study to convince yourself that a young girl is pretty in spite of the fact that she is masquerading in a lace cap pinned on with clumsy metal knobs, an awkward full skirt, and an ill-fitting bodice. The bare arms, purple with cold, are free for the hard work that is demanded of them; and the wooden clogs can travel miles along the tow path without being worn through; so the costume is perhaps adapted to the life these women lead.

The dogs that bear such heavy burdens, and drag the freighted canal boats, the women who are their weary comrades in ceaseless labor, awaken sympathy and indignation at first; but when it becomes evident what a continuous warfare Holland must wage against a relentless and ever encroaching ocean, it becomes evident also that men and women and every living thing must join in the struggle, if man, and not the sea, is to win in the conflict.

Holland, people and landscape, can never seem a strange country to one who has frequented art galleries. The Dutch knew how to paint perfectly the things they loved best—their simple home life, the green meadows, their beloved cattle, and the uncertain skies. Uncertain skies they are, for one moment the heavens are serenely blue, the next instant a cloud hides the sun, the wind blows with fury and the world becomes a dreary gray. After a quick, drenching rain, lines of white streak the horizon, the wind blows the over-shadowing clouds away and it is June again.

The Dutch artists have caught so well the varying light on sky and meadow, that, as one glides along the canal, with the green pastures, dotted with black and white cattle, stretching away on either side, it
all seems a part of some familiar painting, and the traveler feels himself a part of it—caught and held fast in the gray cobweb mist, which is so often the atmosphere of a Dutch picture.

In the early afternoon Rotterdam appears through a veil of fog—a confusion of ships, houses and windmills. Sober and staid as Rotterdam is, the houses present an almost hilarious appearance, leaning as they do in every direction, as though they were in the act of reeling, at the same time making a violent effort to stand erect and convince you that they are sober. Sometimes the buildings the entire length of the street lean in one direction, like a field of grain swept by the wind; sometimes the upper stories lean far over the street. At the street corners the friendly houses gossip away with their heads together. The effect, some one has written, is "an indescribable confusion of lines, a real architectural frolic, a dance of houses, a disorder that seems animated." The reason that these old houses refuse to stand erect is that the soil of nearly all of Holland is reclaimed from the sea, and as a foundation cannot wholly withstand the pressure of the heavy piles of brick; the unequal yielding gives the streets this peculiar appearance, seen nowhere else unless in a town recently shaken by an earthquake.

The houses of Holland, viewed singly, are not interesting, except as neatness, regularity and mediocrity are interesting. Study in detail a group of three or four houses in any city street, and you have studied them all. The buildings are usually of brick, sometimes plastered over. The front wall is carried on up beyond the roof, and at the top usually takes on the form of a triangle with many variations. Little steps, plain or with fancy pinnacles, may be cut in, or the sides may curve inward or outward, to be adorned at the base and the apex with ugly plaster ornaments. The decoration near the top of the roof or above the door may serve a purpose and indicate the wares sold within. Another outward embellish-
in the pavement—escapes. Water flies in all directions, and water is certainly the element in which Holland revels. What wonder, then, that everything is spotless—being so often washed!

The forests at the end of the city streets are unusual—an amazing confusion of trees, masts of vessels, and network of cordage. Looking along an avenue, the scene at the end is suddenly obscured by a curtain, then the ship and its sail slip by. Boats seem to move upon the land, and water seems here as sure and stable an element as the earth. One loses the fear of the sea, and even the sense of distinction between land and water.

After the canals and dykes, nothing that man has constructed in Holland is better worth man's study than the windmills. This is one feature at least in the architecture that is distinctive. Like everything else in this country, they may be picturesque if they choose, but they must be useful first. Their great moving arms press into service the four winds of heaven—they raise water from lower levels, they saw wood, and grind everything that is to be ground, from rock and shells to flour and tobacco. As wealth is counted in Africa in terms of cattle so it is sometimes counted in Holland in terms of windmills, and to marry even one windmill is no small achievement. A girl with three windmills is an unusual prize. A Dutch mill is usually several stories high—near the middle a sort of a balcony encircles it. Windows and curtains show there is a habitation of some sort within, though oftentimes the little house is affixed to the side of the mill. Living under a great pump, or upon a canal boat with water flowing either above or below or in any case on the very bank of a canal seems to give the amphibious Dutchman a feeling of home. It seems that he would be homesick in an
ordinary house on dry land away from the water.
A people who stay at home and do well the thing they ought to do, a people with whom duty is a habit, can be heroic at need. Every little town shows with pride some place of historical interest—buildings held sacred because a hero has dwelt within. It was at the grim old castle in the historic town of Delft that the greatest of heroes of Holland met his death. The gates of the Prinsenhof—the scene of the murder of William the Silent—still cast a gloom over those who leave the sunlight for its dark court yard, in spite of the quaint and humorous little Dutch figures carved in relief over the gate. The oldest church in Delft stands near, its tall tower surmounted by four queer conical pillars.

An hour and a half on the loveliest of tiny canals and one has passed from old-fashioned Delft to the very modern and wealthy city of The Hague. It is, of course, the center of fashion during the season, for the summer home of the queen is there. But the cities that are typically Dutch are far more interesting than The Hague with its French atmosphere, or Amsterdam, with its element of modern commercial activity.

Holland is lovely, not deliberately, but merely because it cannot possibly help itself—the meadows are green because of the abundant rainfall—the black and white cattle are there because of the meadows—the windmills are not for scenic effect—the wonderful little canals exist for the transportation of cabbages—and the women and dogs who drag the canal boats along the tow path do not undertake this task to furnish the bit of life and color needed.

Along the canal from The Hague to Delft are many summer houses with orderly little gardens and orderly little inscriptions over the garden gates, which seem to sum up the character and spirit of the Dutch people. Industrious, practical and self-respecting, they deserve to be what one of their mottoes enjoins them to be: “Tranquil and content.”

A Curious Moroccan House

A DISTINCTIVE STRUCTURE OF THE NORMANESQUE GOTHIC SCHOOL—DONE IN MUD AND STRAW

By R. W. Emerson

O NE day while enjoying a ride about a dozen miles from Tangier, in a vicinity where the straw huts were plastered upon every hillside, I came across a curious house which, it occurred to me, American builders would like to see through the medium of my camera. I thought that I had seen and classified most of the species of buildings in Morocco, but this one was distinctly of a new variety. There was a faint suggestion of the Norman about it—or was it Gothic?—and yet the grass of which it was made bespoke Morocco. However, the house could no more be called a native house than St. Peter’s at Rome could be called an Indian wigwam. To begin with, there was architectural design. Now, in most Moorish grass houses there is no more attempt made at originality than a wasp makes when it builds a mud nest. The only way a Moor knows where he lives is by the dogs or the women, and when the dogs are away he is apt to be mistaken even then.

This house had evidently been built by a person who had a faint idea of what a house should be, I thought. It was big enough for a person to lie down in without doubling up. And it had a door through which it was not necessary to crawl upon one’s hands and knees. Also windows—a great novelty in Moorish houses! Even that was not all, for the windows were not mere holes punched through the walls, but well constructed windows. It would have surprised me to have found glass in them—but I didn’t.

Making inquiries as to who had built the house—thinking that I had found one progressive and original Moor—I was at first unable to get any information, but finally a native said solemnly: “It was Hadj Muhammed, son of Muhammed Ali—may Allah bring him rest! He saw the house of the Infidel—the frown of Allah be upon him!—and Allah took away his senses for looking upon it. Then he built this house! Allah is great!”

Wife (looking up from her book)—“You know a great many things, John; now, what do you think should be done in a case of drowning?”

Husband—“Have a funeral, I should think.”
Bungalows

We present on this and the page following six designs, typical of this delightful and increasingly popular form of home construction. In selecting these examples an effort has been made to show a variety of tasteful designs, with a view to giving the readers of the American Carpenter and Builder a good idea of the possibilities of the neat, well planned bungalow.

A very effective use of cobble stone has been made in this case. Generous window space has been provided, assuring an abundance of light and air. The construction throughout is strong and substantial, suitable for any climate. There are six rooms and bath, conveniently arranged.

A very pleasing result is here attained at small expense. The low sweeping gable roof with exposed framing extends far out, protecting the entrance, thus giving a unique porch treatment that is especially good. The interior is finished in most approved craftsman style.

This quaint little house suggests the "simple life," yet it has all the modern conveniences, with five rooms and bath. The broad open rafter cornice as here used is very popular, while the rough stone work chimneys and porch piers give a distinctive touch.
Bungalows

Two of these attractive little homes illustrated represent a very modest outlay of money; two are more expensive, being very carefully built and finished; the completed costs range from $1,000 to $3,000. The cozy charm of the bungalow style and its convenience—all the rooms being on one floor—is making a strong appeal to many northern as well as southern home builders.

A STURDY, independent little structure this is, suitable alike for summer and for winter use. There are five rooms and bath. The long living room, finished in rich weathered oak, with beam ceiling and wide cobble-stone fireplace, is delightful.

STURDY, independent little structure this is, suitable alike for summer and for winter use. There are five rooms and bath. The long living room, finished in rich weathered oak, with beam ceiling and wide cobble-stone fireplace, is delightful.

THE Swiss gable is very popular in bungalow construction. It adds a pleasing touch to this well-built little cottage; and the dormer in the roof having similar lines, carries out the effect. The interior having five rooms and bath, would delight any housewife.

THE Swiss gable is very popular in bungalow construction. It adds a pleasing touch to this well-built little cottage; and the dormer in the roof having similar lines, carries out the effect. The interior having five rooms and bath, would delight any housewife.
Summer Houses
How Some Pleasing Results Have Been Attained
By Herbert Franklin

As the country grows older the demand increases for arbors, summer houses, children's play houses, band stands, bird cotes, etc. A day's work with a camera in almost any section of the country will gather a whole lot of ideas along this line.

Fig. 1 shows a bird cote in a back yard, about 100 feet from the house. It is placed on the top of a good stiff pole that is about sixteen feet high above the ground. Wires were originally hung from the corners of the little bird house reaching to the ground as a support for the Virginia creeper that covers it; presumably they are there yet, but the climber conceals them so effectually that it would be difficult to find them.

Fig. 2 is a small hexagon shaped band stand, sixteen feet in diameter. The posts are four by four pine, placed about eight feet apart, and boxed above the coping with seven-eighths finishing boards chamfered at the corners. A heavy joist extends across from one of these posts to the post opposite. The other joists, two by eight in size, are mitered into this main joist near the center. Below the floor are inch cross braces eight inches wide, thoroughly well spiked into the four by fours and clinch nailed at the center crossings. A pair of such braces is placed between each two posts. In addition to this bracing the shape of the roof makes it very rigid and the roof is well tied to the posts and the plates. The rafters, plates and upper ends of the posts are all thoroughly well tied together to prevent the roof from lifting. The shape and the bracing make the structure very rigid in spite of its frail appearance.

Fig. 3 is a summer house built on the side lawn in connection with a residence in one of our prettiest towns. It is built entirely of rustic work with seats extending along the sides and a rustic table in the center. This little summer house is often used for afternoon teas, and it has been the setting for many a bon mot of interesting feminine gossip. In size it is about ten by twelve feet. It is built of cedar limbs and the stems of small cedar trees. About the only tools necessary are an ax and a hammer, but it requires good mechanical ingenuity to get the parts together so they look right and to brace the building gracefully from different directions.
Figs. 4 and 5 are fishing shacks belonging to two different clubs which are composed of city business men, who go out to their respective club houses for fish suppers at night. There are no sleeping accommodations except for the steward and his wife who do the cooking, look after the boats and take care of things generally, during the summer months. Both these fishing shacks are temporary structures built on valuable ground, so their removal is likely to be ordered at any time.

Fig. 6 is a very pretty summer cottage built in the woods along the shore of a large lake within an hour's ride by train from the business section of one of our large cities. The structure is a light frame covered with stucco plaster on metal lath. The principal attractions of this pretty little cottage are in the simple proportions combined with the arched doorway at the side, the artistic arrangement of the windows and the arched ends to the veranda. This neat little summer cottage is a very interesting example of simple architectural lines so blended as to form almost a perfect picture. Although not expensive in any particular it attracts a great deal of attention and favorable comment.

Sure of Her Ground

Mistress—"Jane, I saw the milkman kiss you this morning. In the future I will take the milk in."

Jane—"'Twouldn't be no use, mum. He's promised never to kiss anybody but me."
BUILDINGS of a utilitarian character and their location seldom receive proper artistic consideration. It seems as though the popular idea of art is an extravagance of millinery. It is not. The work of artistic design is to bring order out of confusion. Only the designer can take matters as they exist in a chaotic mess and organize them into system. The workman, the manufacturer and the contractor are more successful as they bring their operations into appropriate working order; so too, when such influence is extended to include the buildings and grounds and their location; it not only assures greater business, but the result is clean, wholesome and attractive.

When a lot of industrial buildings are an eyesore to their whole neighborhood, and make undesirable alleys of the streets, it can be safely concluded that affairs are in bad shape.

There is a rough cleanliness that is necessary to good work. There is a workmanlike manner of build-
the fishermen who should be bringing the wharves up to date, but the people habitually employed on shore. It seems to be a case of leaving the busy providers to inconvenient ways as long as they will toil.

The other water front shows where a great deal of pleasant recreation might be gained. The shores are free highways that should be improved along park lines in the interest of clean and wholesome recreation.

In the absence of foresight, street opening and drainage grading are undertaken with extra expense at a later day.

The church illustrated was left below grade. It was raised and a brick basement built underneath; it was also altered to conform with modern building requirements.

In the street view the buildings were raised and attractive porches built. The building line should have been enforced; but the new building juts out,
occupying all its front ground. It takes an unfair advantage of the reasonable position occupied by the older buildings, and becomes a permanent injury to the appearance of the street.

In modern city lots it is very difficult to secure pleasing variety. Where the lots are of uniform size the designs are bound to gravitate into like results. Occupants are forced into similar routine regardless of the varying tastes they wish to cultivate. People are often disappointed in their endeavors without realizing the unsuitability of their building plan may be the cause.

Where the country is growing at a lively pace the location of out buildings is often poorly considered; and it is frequently the practice to knock a few boards together without thought of durability. A new shed is often located where it will be out of the way of the wandering hens and chickens, or it will be plumped right down where most convenient for immediate use without regard for the future. Outbuildings stand around at random and at different angles. Foundations are of the most hasty sort. Bracing is viewed as a waste of material. It was not so with the old pioneer type in New England, of which an example is illustrated.

Their mode was to have all the outhouses connected with the main structure. It enables a builder to be saving of material without abandoning strength. The systematic grouping is desirable in cold weather or in the absence of hired help; it secures the greatest amount of shelter.

The plan and perspective shown represent this style in detail. Unlike the town dwelling, there is here no
effort at compactness, for which there is no need in the liberal country grounds.

The main building extends from the parlor to the kitchen and cellar stairs. The extensions back of that do not call for any more outlay than usual for summer kitchens and sheds. The improved appearance secured adds immensely to the prosperous appearance of the property. It is a style well adapted to any form of building material; and will prove convenient and satisfactory for the farm home.

**Shacks**

**How to Build and Furnish a Log Cabin for Solid Vacation Comfort in an Outing Camp**

*By Herbert Shearer*

Carpenters are often called upon to build summer outing camps or shacks as they are often dubbed. Some of these little shacks provide sleeping quarters only, although in most cases some provision is wanted for cooking inside, especially on rainy days.

The most attractive looking shacks, and often the most comfortable ones, are made from logs after the fashion established by our great grandparents when the country was new. The roof may extend out in front to form the veranda, or it may be a cheaper affair made with poles extending across the front and simply roofed with boards, but some kind of a porch is needed.

One feature necessary to make a log shack complete is a good solid chimney and a good big fireplace. The chimney should pass up through the peak of the roof at the gable end, because it is easier to make the roof rain-tight at the peak, and because the chimney looks better placed in that way. A shack may be built without a door or without a floor, but it
must have a roof that will shed the rain, and you must have a place to build a fire when it is too wet outdoors. People soon get tired of camp life if the roof leaks or the fire won’t burn without filling the room with smoke. In fine weather you can live outdoors, but the weather usually takes on a freaky spell just after you get your summer togs unpacked and before the sun really smiles at you again in dead earnest you are obliged to put in a three-day siege under cover. It is at such times that you really and fully appreciate a good tight roof and a fireplace that knows how to fire.

These little log shacks are not necessarily very large. The ones shown by the photographs are about ten by twelve feet. There is a bed in one corner, a cupboard for dishes in another corner, and there are a few boards laid overhead, making a sort of old-fashioned excuse for a loft, a place to hold extra camp paraphernalia that you have no room for anywhere else. The cooking is done Indian fashion over an open fire, and for this reason a crane is necessary, which may be made at the nearest blacksmith shop; but irons for hanging it must be put in the brick or stone work when the chimney is being built.

Home-made furniture looks best in one of these log shacks, and a carpenter possessing a little originality may pick up a good many dollars making chairs, tables, desks, wall cabinets, lockers with hinged cover to fit between the chimney and door, and many other little accessories which add so much comfort to a month’s stay in the woods. Besides, such primitive furniture is so thoroughly in keeping with a little camp outfit of this kind that it adds a great deal to the charm of a summer outing. Millionaires may build castles and call them cottages, but they can never incorporate the home-made comfort that a poor man with his wife and babies finds in a little twelve-foot cabin built like this.

**Effective**

"Doctor, I want to thank you for your valuable medicine."

"It helped you, did it?" asked the doctor, very much pleased.

"It helped me wonderfully."

"How many bottles did you find it necessary to take?"

"Oh, I didn’t take any of it. My uncle took one bottle, and I am his sole heir."
In former articles, we have shown many illustrations of how to use, and what may be accomplished by the aid of the steel square in framing all kinds of angles in building construction, many of which, we are aware, would never be considered practical because of the little demand for their use, but the principle involved remains the same and applies to all angles alike.

The whole subject is solvable with the right angle triangle from which it has its beginning and ending. The cuts, the shape of the building and the rafters themselves, together with the run and rise, form the triangle. This is where the usefulness of the steel square comes in as an aid in helping to solve these problems. The blade and tongue being at right angles to each other, furnish two sides of the angle—i.e., base and perpendicular; the third, hypothenuse, is furnished by taking a diagonal line from one arm of the square to the other. This is furnished by applying the square to the straight edge of the timber at the required angle to obtain the cuts; the hypothenuse being changeable as to its position with the base and perpendicular according to the cut desired. Taking these parts for the plan layout, they are as follows:

The base represents the tangent or one-half of the length of the sides, as A-B in Figs. 183-4. The perpendicular represents the run of the common rafter, as B-C, and the hypothenuse represents the run of the hip, as A-C. These figures represent the plan for the square and octagon buildings. The hypothenuse and perpendicular in the former rest at an angle of 45 and in the latter at 22½ degrees. The hexagon would be at 30 degrees and so on to the end, each equal-sided or regular polygonal building having an angle in degrees that is readily arrived at as illustrated and described a number of times in former articles; therefore, we will not take space to repeat it here.

Knowing these angles and the figures to use on the steel square to obtain them, the operator can instantly apply the square for correct results. In the irregular, or where the roof contains different pitches, then the figures to use are not so easily understood and require a special calculation. In most cases, it is better to lay off a scale diagram of the plan to find the measurements.

The position of the rafter when in place in relation to its run and rise forms a triangle as follows:

The base represents the run; the perpendicular the
rise, and the hypothenuse the rafter itself. The corresponding cuts for the rafters, as mentioned before, are also obtained by a triangle whose proportions partake of the triangles that go to form the plan and

\[ \frac{a}{b} = \frac{c}{d} \]

where \( a \) is the base, \( b \) is the height, \( c \) is the hypotenuse, and \( d \) is the angle.

The corresponding cuts for the rafters, as mentioned before, are also obtained by a triangle whose proportions partake of the triangles that go to form the plan and

\[ \frac{a}{b} = \frac{c}{d} \]

where \( a \) is the base, \( b \) is the height, \( c \) is the hypotenuse, and \( d \) is the angle.

The position of the rafter as above described. The cut itself and the edge of the timber from which the cut is reckoned, forms two parts of the triangle, as follows:

The seat cut of the rafter is formed by the hypothenuse and base, with cut on the latter. The plumb cut by the hypothenuse and perpendicular with cut on the latter.

The side cut of the jack is formed from the triangle whose measurements are based on the proportions of the triangle that forms the plan, as shown in Figs. 183-4, and the one as above mentioned in connection with the common rafter and are as follows:

A-B (the tangent) represents the base and B-C (the length of the common rafter) the perpendicular; cut on the latter. When these proportions are taken on the tongue and blade of the square, the cut will be found on the latter. The perpendicular and the edge of the rafter will be to it as the hypothenuse to the angle.

This also applies to the side cut of the hip; the proportions being taken from the triangles that represent its parts the same as described above for the side cut of the jack.

**Geometrical Figures in Roof Framing**

Now that we have explained the angles for the individual rafter, we will go a little further and show them in connection with the plan under different conditions.

In Fig. 183-4 they are shown in the plan as men-

\[ \frac{a}{b} = \frac{c}{d} \]

where \( a \) is the base, \( b \) is the height, \( c \) is the hypotenuse, and \( d \) is the angle.

tioned before for the square and octagon building, but only those for the common rafter and hips are shown. The view point is from above looking straight down and in that case the rafters are shown in their place, but there is nothing in this to indicate the pitch, so we will refer to Fig. 185 and 186. Here are the same plans, but showing the second set of angles, i.e., the triangle, of which the hypothenuse represents the rafter. The pitch is one-third and the rafters are represented as if they were lying down with the foot of each resting in its proper place and the upper end at an equal distance from the center, which is governed by the rise given the rafters. Now just imagine that we could take hold of the upper end of the rafters and raise them up till they rest over the dotted lines, they would all be resting in their respective places and show the same as in Figs. 183-4. Thus it will be seen that the subject of roof framing furnishes an interesting study. The least change in the rise
changes the cuts and for that reason complicates the work in the minds of many good mechanics.

If the pitch be \( \frac{1}{2} \), then the upper ends of the common rafters would intersect the outer line of the plate when shown under like conditions, as in Fig. 185-6. Thus, when the pitch is less than \( \frac{1}{2} \), the layout of the rafters will fall inside and when over \( \frac{1}{2} \), they will fall outside of the plate lines, as shown in Figs. 187-8. Here the pitch is represented to be full, or 24 inches rise to the foot. The radius of the dotted circle represents the rise. If we could raise the rafters as mentioned in the previous figures, their points would all come to a common center and would show the same as the first figures given in connection with this article.

A Neat Well Built Cottage

The six-room cottage illustrated herewith was planned and built by C. E. Spaulding at Centralia, Ill. It will appeal to many because of its convenient arrangement and substantial construction. There is a good basement under the entire house, the foundation walls being of concrete block. Furnace flues were built so that a heating plant may be easily installed at any time. The floor plan gives a good idea of the size and arrangement of the rooms. The interior finish is yellow pine in the natural colors. The cost in 1907, complete with bath, hot and cold water systems and gas, was $2,350.

Emery

All the emery used in the world comes from the little island of Naxos, near Greece. As it is one of the hardest substances known, the ordinary quarrying tools cannot be used to cut it out.

A Mistake

Client.—“Didn’t you make a mistake in going into law instead of the army?”
Lawyer—“Why?”

“By the way you charge there would be little left of the enemy.”

“We Will Put Your Name on File”

The Needy One—“I say, old man, could you lend me a dollar for a day or two?”

The Other One—“My dear fellow, the dollar I lend is out at present, and I’ve several names down for it when it comes back.” —Harper’s Weekly.
How to Make and Read Drawings

BEING THE FOURTH OF A SERIES OF ARTICLES ON MAKING AND READING DRAWINGS FOR A BUILDING—SECTIONS AND FRONT ELEVATION SHOWN

By Wm. C. A. Stevenson

At the conclusion of the last article, we finished with the different plans; we will now take up the sections and elevations. At Fig. 7: (A) and (B) is shown two different sections. At (A) we have the section of the side wall, which shows the wall from the basement to top of chimney:

F shows concrete footing; C F cement floor; S W, stone wall. It will be seen here that we have not shown the full height of stone wall, it being broken into with the zigzag lines. We have also dimensioned the height of each floor as will be seen, the basement 6 feet 6 inches, the ground floor ceiling 9 feet, first floor 8 feet 6 inches, the attic 8 feet. The main stairs and the stairs to the attic are outlined here in an upright position showing the room they take up. The chimney and soil pipe are shown by the dotted lines where they come down through the building. The windows over the stair landings are seen here in sec-

At G is shown the 8 by 10 girder on top
of brick pier in basement to support the first joist, showing how the joist is to be cut over it so as to provide for headroom in the basement; note the line showing the strapping on the wall; L P P shows the lath and plaster lines.

The partitions between the hall and parlor, on the ground floor, and the hall and bed rooms on the first floor, are shown as they support the joist. Since the partitions between the dining room and kitchen, and bed rooms on the first floor do not run all the way to the back of the house, they are shown by the dotted lines; these also support the joist. In the attic is shown the partition that supports the roof joist, and comes at one side of the circle top window, as will be seen by referring to the attic and roof plan at Fig. 6, in article number 3. It will be noticed here that the front wall of building is 8 inches higher than the rear wall as seen by the lines F W and R W—this is done in order to get the wide projection of the roof in the front and not drop too low over the bay window.

The dotted lines show the form of the circle top window. We will deal with this in detail later on.

At (B) is shown the section of the building cut into through the front wall. In this view, instead of looking at the side of joist, we look at the end view. We see the section of the large front window and the smaller one above on the first floor, also the outline of the bay window, showing how it stops under the projection of the main roof. V J shows a portion of the veranda joist, V C veranda ceiling, V R veranda roof, S S stone sills of windows, S H stone heads of windows—as in the front, we are putting in stone heads instead of the brick arches, over the windows. I shows the wood lintel over the large bay window opening to support the brick wall above. P is the wall plate, showing the main rafter cut over it and stopping at the roof joist; and the piece B, planted on top of the main rafter at the bottom to form the projection of roof and the belcast in the roof. W S shows the wood sills under the bay window and the circle window in roof. C S shows the cove soffit of the circle top window.

A great deal more might have been shown on this section but I do not consider it wise to confuse the reader with too many lines at a time. At Fig. 8 is shown the front elevation. Now by drawing the section first you can project the main points, such as floor lines, etc., over to the elevation, as seen by the broken and dotted lines, and save considerable measuring. Although these lines are not shown on the elevation it is necessary to have them in order to establish the proper places for the openings, etc. The windows must be placed in the proper place between the floors and the cornice lines must be shown in the proper place. The first to be done in drawing the elevation is to outline the outside of it, then get all the objects outlined in their proper places, starting with those that are in front, in this case the brick piers of the veranda, the steps, lattice work, hand rails, columns, veranda roof, etc. After all of the first appearing objects have been drawn, fill in whatever can be seen of the wall proper.

Always take care that your windows, doors, etc., are shown in the elevations in the same position as in the plans; unless your plans will all work together they are useless. This is a point to be carefully watched. It is proper to mark all the sizes of glass on the windows. When drawing plans to a small scale it is not required to show working details on the plans, in fact it is not possible to do so; full size or half size details are made of the cornices, frames, stairs, veranda, cupboards, etc., in order that a proper conception of what is required can be gained from them. These details will be taken up later on.

I have shown on these drawings indication letters that would not be shown on drawings made for working purposes, being shown here in order to indicate each part so that the reader can get the idea more clearly. In the next issue we will show the side and rear elevations.

**Proper Furnace Installation**

**BLUNDERS IN BUILDING WHICH ARE COSTLY AND A SOURCE OF INCONVENIENCE—PROPER METHOD OF HEATING AND VENTILATING**

_by I. P. Hicks_

The first question we wish to take up in this article is in regard to laying out the framing of a house for the convenience of cutting the openings for furnace pipes. Many houses are heated with the warm air furnace, which makes it necessary for openings to be cut through floors and partitions to accommodate the pipes. Now, when a contractor has a house to build that is to be heated with a furnace, the first thing he should do is to properly locate all the registers on the plans, if they have not been located by the architect. Some architects leave the location of the registers to the furnace contractor, but a competent architect can locate the pipes and outlets for furnace heating to just as good advantage as the furnace contractor, and in making plans the architect should locate the place for registers and everything pertaining to the heating of the house.

When the contractor lays out the joists and partitions he should see that the joists on the floor above are directly over the lower ones, and that the studding are directly under the joists and in line with them, see Fig. 1. When this is done there is no trouble in cutting the openings for the pipes and registers. On the other hand, if this is not done, and the studding...
and joists are put in without any regard to furnace pipes, then the contractor will find his troubles begin to multiply as soon as he begins to cut for the furnace pipes. He will find studding that must be moved; he will find joists that must be moved or cut into and headers put in; all this will consume three or four times as much time as will be required to cut the openings where a little care is exercised in spacing and setting the joists and partitions. The time taken to set the partitions to accommodate the pipes is practically nothing. We have heard a contractor state that he would take a contract for a house heated with hot water or steam for fifty dollars less than he would if heated with a warm air furnace, because of the immense amount of cutting the furnace work requires. We consider the above statement not well founded; a contractor with such an opinion surely does not properly lay out the framing of the house, if such has been his experience. Let us lay out the house and we will agree to do all the cutting for the furnace pipes for five dollars. No man should be over one day cutting for furnace pipes in the average residence, and in some cases half this time would be plenty. The way to cut for furnace pipes is to have every pipe located and have one man, skilled in this kind of work, do the cutting; then when he starts to cut let him keep at it till the job is completed.

It is a great loss of time for a contractor to take men haphazard to do this work, calling a man away from his usual work at various times to cut for the furnace man as he happens to want it. All the cutting should be done at one time, in advance of the furnace man, by someone who understands it. Working here and there and cutting for furnace pipes by piece-meal does not pay.

If a contractor has the cutting to do for steam or hot water heating, he finds that there is no great amount of difference between cutting for steam or hot water heating and in cutting for the furnace, if some care is taken in setting joists and partitions.

Fig. 2 shows how studding and joists should be laid out on sills and girders where they lap by one another to keep them in line across the building. The studding on one sill are set the thickness of the studding to one side of the studding on the opposite sill. Then when the joists are placed they can be lapped on the girder in the center, and each tier of joists will line up square across the building. How often we see joists put in lapped on a girder or partition, and scarcely a joist in the entire floor is square with the building. This frequently makes it bad in setting partitions that run parallel with the joists and sometimes makes extra cutting necessary.

It pays to be a little particular and exact in laying out work, the little extra time it takes is a mere nothing, while its advantages are very great and are apparent everywhere about a building laid out by a competent man who looks ahead a little in his work. The old saying, "Never cross a bridge till you come to it," may be handy for people to say at times, but be sure the bridge is there when you want it; it saves trouble.

We wish next to impress upon the minds of people the importance of good chimneys and some means of proper ventilation.

As the price of brick and bricklayers' wages are now unusually high, it makes the average house chimney run up to a high figure; consequently many people try to economize in chimney construction much to the detriment of the heating and ventilation system of the building. There are many six and seven room houses being built in Omaha with only one 8 by 12 single flue chimney, which is expected to take care of the heating plant, the kitchen range and a laundry stove in the cellar, making three separate pipes to enter a single 8 by 12 flue chimney. A chimney of this kind may work, and then again it may be very unsatisfactory. If it does fail there is no remedy except to build another chimney in some other corner of the house; and sometimes there is no available space. It is surely false economy to build this kind of a chimney—the chances are that there will not be sufficient draft to operate the laundry stove, the kitchen range and the heating plant; and the efficiency of one, or perhaps all, will be greatly impaired. Fig. 3 shows the comparative size of the ordinary 8 by 12 flue chimney; the average cost of construction is $1.00 per lineal foot. With a chimney of this kind there is no system of ventilation, a thing that is being greatly overlooked even in the better class buildings.

Fig. 4 shows a 12 by 12 flue chimney, which is none too large for operating a laundry stove, kitchen range and the heating plant. This is a flue that will furnish
the necessary draft and can be depended upon to do the work required of it. Its cost is $1.20 to $1.25 per lineal foot. This chimney, like the one previously described, does not carry with it any means of ventilation.

Fig. 5 shows a chimney with a 12 by 12 flue to take care of the smoke from the heating plant, laundry stove and kitchen range, and an 8 by 12 flue for ventilation purposes. There is no doubt at all that every house should have at least one ventilating flue and it should be 12 by 12; still an 8 by 12 is better than none at all. When buildings are heated with a furnace, there should be a ventilating flue, to which a proper size ventilating pipe from each room should connect. The air comes into a room heated from a furnace and must displace the same volume of cold air that is in the room. This cold air must have some way to get out to make room for the incoming warm air. For the sake of saving a few dollars, no provision is now being made to properly take care of the cold, foul air, or to provide a way for its escape from the room; it is left for the warm air to force it out through little cracks under and around doors and windows. This is wrong; a way should be provided for the cold air to escape, and it should go into the ventilating flue, part of it at least. This purifies the air and the air that comes from the furnace is freshly heated pure air. Some take the dead air from the rooms and return it to the furnace to be continually heated over and over again and sent back to the rooms, claiming that it takes less fuel to heat the air because it is not so cold as the air from the outside air duct would be. This looks plausible on the face of it, but we have had experience with outside air ducts and with inside air ducts, and we will take the outside air duct; for, as a rule, the inside air duct does not furnish sufficient air, and if the furnace does not get the air, it surely can not heat it, nor deliver it to the rooms when wanted. Ample air supply should always be provided; if too much, part of it can be shut off, but if the supply is insufficient it is difficult to remedy the defect. No matter how cold the air is, the furnace will heat better with plenty of air supply than it will with an insufficient amount of half heated air; and the cost in the heating will be no greater.

How about steam and hot water heat? As installed in the ordinary residence at the present time, there is no system whatever of ventilation—they simply heat continuously the same air that is in the room from morning till night and from day to day, except what little fresh air gets in through windows and door cracks. This is a fact and it is only in school houses or some government buildings that any system of ventilation is provided for with steam or hot water heat. In these buildings ventilation is provided for because it has to be; but in the residence the radiators are placed near or under a window—and they call it a system of ventilation.

In a flue there is a continual, natural upward draft; and this flue, if properly connected with ventilation pipes from the different rooms, will remove the foul air from the rooms connected with it in proportion to the size of the flue and of the rooms with which it connects. No matter what system of heating is installed, some ventilation should be provided for; this matter should not be left to take care of itself.

In the time of our forefathers, when mammoth fireplaces were in every house, and when houses were not nearly as tightly built as now, people lived longer and with less sickness than at the present. There were not as many weak and frail and puny people as now. Why? Those old fireplaces afforded ventilation and it took bone and muscle to keep them supplied with fuel. This manual exercise developed strength and health. Air tight boxes to live in, with no ventilation, and idleness develops a race of puny, sickly people.

Fig. 6 shows another form of chimney which has two 8 by 12 flues and a 12 by 12 ventilation flue. In this, one 8 by 12 flue is designed for the laundry stove and the kitchen range, the other 8 by 12 flue exclusively for the heater, and the 12 by 12 flue for the ventilator.

Fig. 7 is another form with ventilating flue 8 by 20. Chimneys do not necessarily need to be after these particular patterns, but to be right should have an adequate flue for ventilation purposes, a flue exclusively for the heater and one for the stoves. Too much economy in building flues is detrimental to the heating and ventilating proposition.

**Noiseless Room Under House**

In a house in Riverside Drive, New York City, there is one noise proof room. It is hewn out of solid rock under the house, and its roof and entrances are so arranged that no noise can reach the occupants. The room was built to gratify the owner's love of quiet while playing chess. Every week leading players of the city meet there. It is said that hardly the sound of the heaviest thunder reaches the ears of the occupants of this silent room.

**Wasted Caution**

Church—"What's that piece of cord tied around your finger for?"

Gotham—"My wife put it there to remind me to mail her letter."

"And did you mail it?"

"No; she forgot to give it to me!"
IN DESIGNING a public school building the first thing to consider and to bear in mind all the way through is the special need or requirement of the particular locality where it is to be built. This has been done in a most admirable manner by G. W. Ashby in planning the eight-room school building shown herewith. Its location is in a southern state where the heating question is not a serious one. The expensive basement furnace system has accordingly been omitted. This has made possible a very excellent part of this design, the large and airy dining rooms, with attached kitchens, in the basement. Wherever pupils are obliged to come from quite a distance, as in this case, this feature is to be recommended.

The exterior is plain and simple, yet pleasing; the interior is so arranged that all the rooms are large and easily accessible. It is a school house design giving maximum conveniences at minimum structural cost. The front elevation and the basement, main and second floor plans are given on the following page.
Buyers' Club Building for St. Louis

A new type of business building is under way in St. Louis which presents many practical features never before carried out on such a large scale, and others of perhaps equal value which have never been utilized anywhere before.

It is to be called the "Buyers' Club Building," and its cost, it is estimated, will be fully $4,000,000. It will be eighteen stories high, with a tower extending ten stories above the building, and will be given up entirely to the display of merchandise with the exception of the top floor, which is to be sumptuously furnished for club purposes exclusively for visiting buyers, convention delegates, etc., and the tower, which will contain offices. The club floor will comprise a convention hall with committee rooms, etc., the use of which will be given free, together with all the club privileges, to all visiting buyers and to conventions where the delegates are in a position to buy goods or influence their purchase.

The first floor will be devoted to general display, demonstration and advertising purposes. The basement to demonstrating machinery, engines, tools, etc., with provisions for power of every nature. Sixteen floors will be used exclusively for sample rooms.

The most important feature the Buyers' Club presents is the plan for bringing the buyer to the seller. The fare of 10,000 buyers will be paid to St. Louis annually by the building company, and the exhibitors will choose the buyers who are to be brought. Special trains will be hired by the company and run from distant points where dealers from a considerable radius can be gathered and brought to St. Louis.
The popularity and use of the flat building is no longer confined to the large cities. It advantages as a profitable investment to the builder are just as great in the smaller cities; and, as a place of residence, it can be made even more attractive and desirable there, since the nature of the surrounding property usually makes possible a free exposure with windows on three sides of each apartment. It is in response to requests from a number of builders in our smaller cities we are showing herewith the full work-
ing plans of a very attractive and thoroughly up-to-date flat building, recently designed by G. W. Ashby, architect, to be erected at Lafayette, Ind.

It is for a fifty foot lot and contains six apartments, each having six good sized rooms and a bath. It will be noticed, however, that on the first floor plan two of these rooms are thrown into one, making a very large living room and providing for the outside vestibule on that floor. The arrangement of rooms is the one that has been often tested and found most satisfactory for buildings of this kind.

A very pleasing feature of the design is the large,
A Modern Flat Building—Forward Section

finely lighted dining room with built-in sideboard and china case, details of which are shown. This room will often prove to be the real home room of the family, and the conveniences and comforts here provided, together with the ample space, are sure to be appreciated. The kitchen arrangement, with its ice-closet, combination sink and work table, and pantries, is also good.

The front living room is suitable for a library, having a serviceable fireplace, with book cases on either side. Very much is added to the attractiveness and comfort of the front part of the building by the porch and balconies as shown. The exterior treatment is in pressed brick and stone.

A Small House at Moderate Cost

This house, built by C. E. Spaulding at Centralia, Ill., makes a very satisfactory small house for a large family. Every inch of room is put to good use. The
first floor has reception hall, living room and dining room, all connecting with wide sliding doors, also kitchen and pantry. On the second floor are four sleeping rooms, each with a clothes closet. The bath room is on this floor and is conveniently located. The broad porch, clear across the front, with roof constructed as a second floor balcony, is a much valued feature. There is a basement under the whole house, the foundation walls being of hard pressed brick. The interior finish is cypress in natural grain. This house was built in 1906, complete with plumbing, electric lights and furnace, for $2,875.
A Thoroughly Modern House

There is a look of snug cozyness and comfort about the little residence designed by A. Raymond Ellis, architect, of Hartford, Conn., and erected in Battle Creek, Mich., full plans of which are here given, that appeals strongly to the home seeker of quiet, artistic tastes. The impression is of good cheer, airiness and sunshine.

The lines of the house rise gently from the building site, an effect produced by the gambrel roof with broad extending cornice, and also by the use of stained shingles down to the foundation wall. The front elevation is simple and direct, the window treatment, both for the first floor and in the dormers above, being very good. The side elevations are made very effective by the rough masonry chimneys as here constructed; and they give an appearance of stability to the whole structure.

The gambrel roof is admirably suited for small cottages, as it combines a minimum amount of material for roof and walls. If this was built at the shore or country, where the cost of labor and material is not so high, it should cost $1,800; if built to live in the year around, it would cost $2,500.

A shore cottage requires a foundation of only stone piers or cedar posts. This is, of course, a saving over the entire stone foundation as required in this house. Small cottages do not require many details or the continuous supervision of an architect. Much in this case depends upon the builder; a reliable man will use good stock patterns and moldings to gain the effect the architect would desire. The construction is about the same as that of a more pretentious house. There is a plank sill, with a doubled 2 by 4 stud for corner posts, and

2 by 4 studs for all walls and partitions. The floor joists in the first and second floor are of 2 by 9 spruce. The interior could be sheathed up with hard pine; this method would save lathing and plastering the entire house. Such woods as cypress or white-wood stained natural, are used for the finish and trim, and are inexpensive; but when stained, are very effective.

A small house can be well heated with a hot air furnace for from $125 up. The plumbing varies with the quality of the fixtures used; in this case $250 allows good second quality enameled iron and the other material of first-class quality.

There are several unusual features in this cottage:
First, the omission of the dining room, the dining table being placed at one end of the large living room. The large serving room or pantry accommodates all china, silver and table linen; therefore, the double purpose of the living room is not apparent. This is a gain in simple living and is a sensible fashion. The serving room is spacious, light and well fitted with shelves, cupboards and drawers, while direct access is given to the kitchen and hall. From here the cellar is also conveniently reached by a flight of stairs descending under the front stairs, which lead to the second floor. Access to the cellar is also gained from without by means of a flight of stairs covered with a bulkhead, located beside the back porch.

The cellar as constructed is of good height, well lighted and is finished for laundry and for general storage purposes. Reference to the first floor plan will show the convenient arrangement there, with the successful separation, even in a small house, of the library from the busier portion. The very large, well lighted living room, with its serviceable fireplace, window seat and beam ceiling, has proved very homelike and attractive.

On the second floor are three large, well lighted chambers, each with an ample clothes closet and box seat by the windows. The owner's chamber has a small dressing room attached. The bath room is of good size and is easily accessible. The halls, both upper and lower, together with the stairs, are broad and satisfactory.

The plans here given are very accurate and complete, being reductions from working drawings made one-quarter inch to the foot. The first and second floor plans, together with the side and rear elevations are given on the three pages following.

The "Ultimate" Skyscraper
One of the great captains of construction, writing of the "ultimate" building in New York, says:

"The top stories of the tall buildings are great places to live in, and, of all things, to sleep in; so quiet, so well ventilated." Then follows the prediction that "some chap will come along with hotels and apartments in one end of his building and with a market-place and a theater in the middle and an office building at the other end, with a railway terminus under it all.
If there’s a roof garden on the top you have the whole thing."

This is a vision of the simple life luxurious. Whoso enters into it will leave behind the nightmare of subway atmospheres, bridge crushes and ferry-boat uncertainties. There need be only the provision of roof-garden gymnasiums and swimming-tanks—and perhaps skating-rinks in winter—to remove the hygienic objections to a constant existence within the limit of one block.

One musical instrument is permitted in each flat, but no flowers may be placed on the window sills, and the tenants must sign an agreement to wear slippers indoors.

**Fireproof Houses**

"Because our fathers did it that way" seems, to some of our builders, no excuse today for being content with fire-traps to sleep in, when we are taking so much trouble to fireproof the places where we work. This point is worth considering, especially by those who are to build in the country, or in places where means for checking a fire are few. In some cases also the increasing cost of lumber and the decreasing cost of cement, metal lath, terra cotta, etc., make the difference in cost very slight between material that will burn and material that will not.

**Rules for Life in Flats**

In Berlin a remarkable clause is contained in the will of a wealthy landlord named Boernitz, who died last week. The testator bequeaths a large number of flats to his heirs on the condition that they do not let them to persons keeping servants, or having children, dogs, cats or birds. Tenants may not be engaged in night work which will cause them to return home while the other occupants are sleeping.

**How to Use Glue**

For glue to be properly effective, it requires to penetrate the pores of the wood; and the more a body
of glue penetrates the wood, the more substantial the joint will remain. Glues that take the longest to dry are to be preferred to those that dry quickly, the slow-drying glues being always the strongest, other things being equal. For general use no method gives such good results as the following: Break the glue up small, put it into an iron kettle, cover the glue with water, and allow it to soak twelve hours; after soaking, boil until done. Then pour it into an airtight box, leave the cover off till cold, then cover up tight. As glue is required, cut a portion and melt in the usual way. Expose no more of the made glue to the atmosphere for any length of time than is necessary, as the atmosphere is very destructive to made glue. Never heat made glue in a pot that is subject to the direct heat of the fire or a lamp. All such methods of heating glue cannot be condemned in terms too severe.

**Big Stick Statements**

The president of the United States must realize that he isn’t the only man who has a big stick. Recently some big sticks were sawed by the Portland Lumber Company and the Associated Press passed out the word that they were the largest sticks ever shipped from any port in the world. The sticks were 36 by 36 by 60 feet. These sticks went to the Panama canal. Bellingham, Wash., not wishing to be too modest, came to the front and reported a stick cut by the Bellingham Bay Lumber Company for a dredge spud stick which was 40 by 40 by 90 feet. The Tacoma Mill Company cut a keel for the Steamer Mexico which was 24 by 24 by 136. Then there was the big spruce stick at the St. Louis Exposition from the Grays Harbor Commercial Company, of Cosmopolis, Wash., which was 121 by 121 by 9. It took a Missouri farmer boy to find out how that was sawed with a nine foot band. Manager White one day heard him explaining to a crowd that it was set up on end and run through that way.

Don’t be stewing over nothing all the while; Don’t imagine there is danger in a smile. There’s for growling and for grouching no excuse; Fretting never gets you “nowhere”—what’s the use?
AMERICAN CARPENTER AND BUILDER

EAST ELEVATION

Note: Concrete foundation weakened by fieldstone walls.

SECTION

SOUTH ELEVATION

Shingled roof

Shingled roof

Shingled

7.6'
HERE is every year a more pronounced tendency in this country among progressive farmers to treat agriculture, dairying and stock raising as a productive manufacturing industry, and to provide proper buildings and equipment on that basis. Some very practical, labor saving barns have been designed along this line. The plans we are showing this month are for a thoroughly up-to-date combination barn for Mr. J. H. Rice, at Houghton, Mich., and embody a number of excellent features.

It is an economical design of the rectangular type, 109 feet 4 inches long and 53 feet wide. The basement is high, light and dry; the 18 inch masonry wall and the well fitted windows assure good warmth in the coldest weather. On one side of the broad driveway, which extends through the middle from end to end, are the cow and horse stables. Provision is made for thirty-two milch cows in a double row of stalls with feed alley between. There are stalls for ten horses. Good ventilation is secured by means of the approved fresh air ducts through the wall and vents to the roof. The floor in both stables is plank laid on cement; and the mangers are of cement. The feed mixing room is located centrally, just below the feed bins on the floor above.

The space on the other side of the driveway is divided into root cellar, box stall, harness room and office. This last is made very snug and comfortable, being furred and ceiled.

The main floor is used for the storage of hay and grain; and the self-supporting roof construction gives...
great capacity. There are trap doors in floor over the root cellar and the stables. These are a great convenience, and make possible the easy unloading and disposition of heavy feed supplies right from the wagon into the place where they are to be stored or used. The "man's room" provided on this floor is a novel feature and one that very often proves desirable. It is well lighted and is clean and dry. The exterior of the barn is sided with matched siding and the roof is of shingles.
IN ERCTING a mausoleum of concrete we have many advantages over other materials, but one great objection to overcome, viz.: The idea that it must be built along the same lines as though granite or cut stone were used.

The design shown is practically concrete throughout, except interior finish, and to satisfy the purchaser, was made to resemble cut stone on the exposed exterior. While the vault is of modern concrete construction, the foundation is the plain type of concrete with drain tile for freeing it from dampness; the walls are double hollow concrete blocks with a quarter inch asphaltum between them; this waterproofing layer also extends over the main reinforced concrete roof slab, thus insuring an absolutely dry interior.

The exposed walls and roof are of artificial stone, made in molds and faced with one part Portland cement, one part crushed blue granite and one part crushed blue furnace slag. This gives them a light blue granite effect.

The interior finishes are all quarry products, white Vermont marble floor tiling and white Italian marble veneer on walls and ceiling. The doors are of bronze.

The catacomb covers are marble and the horizontal separations slate; all being materials universally used in granite and cut stone mausoleum construction.

The system of ventilation for the catacombs is also of the much used type; the air enters at the sides and is conveyed in copper conductors to the lower catacombs, thence through openings in the slate to the

**By Fred W. Hagloch**
top, reaching the ventilating grate in the rear roof gable through a copper conductor embedded in the concrete, all as shown in the sectional drawing.

The mausoleum of this construction will cost $4,000 and had the purchaser consented to a marbleized concrete interior it would have made a better structure at a saving of 10 per cent of the cost. An estimate, contemplating the use of Barre, Vt., granite throughout, and with exterior waterproofing applied only to the covered parts, was made, and the cost placed at $5,400.

**Lead and Oil Paints on Concrete**

I have attempted many experiments to make lead and oil paints hold to concrete walls and floors and have found one that has proven durable through nearly two winters and one summer without discoloring, scaling or checking, and feel that it is lasting. For floors and walls that are badly discolored it is ideal, as it makes a permanent white finish possible, and is a good waterproofing as well.

If old concrete, it should first be cleaned by dry rubbing with a wire or steel foundry brush and followed by a wash consisting of three-fourths pound of blue vitriol dissolved in one gallon of water. This wash may be applied with a kalsomine brush; one day later apply the priming coat, for which raw linseed oil alone cannot be excelled. After same has become dry, which requires about five days, the lead and oil paint of any shade may be put on. Should the paint require thinning, turpentine should be used.

Recently, examination of work done October, 1906, on floors and walls has surprised me, as the white walls had but little tint of yellow, which is so prominent with lead paints on concrete; and the floor paint, which had been varnished over, was little the worse after sixteen months daily wear.

**Concrete Block Fire Escape**

For apartments, industrial plants and public buildings, the circular concrete block fire escape, a section of which is detailed in the accompanying illustration, offers many advantages over the present steel types. It stands independent of the building and may be utilized by the firemen in suppressing the flames.

When once erected on a firm foundation it never requires paint or repairs, and therefore never becomes a dangerous trap, as is often the case in steel escapes.

Its cost for four and five story buildings is about $5.00 per foot, this being for six foot outside diameter, as shown, which gives a two foot stairway to the ground. There is an eight inch outside wall and eight inch center post, built by laying the steps as shown.

When erected inside of a building, the openings must be protected with either closed or automatic closing fire doors.

The limit of height for these towers is as follows: Six feet diameter, eight inch walls, 48 feet; eight feet diameter, ten inch walls, 64 feet; twelve inch walls, 92 feet.

Its first cost being about the same as for steel escapes and the fact that no repairs are required, leave but one objection—that of space occupied. When built into the rear corner of a building it saves material and adds to the stability of the walls to which it is attached, while steel escapes injure and load the wall.
Suggestions for the Get-Ready Season

PRACTICAL MONEY-MAKING IDEAS ON MILLWORK—WORK THAT CAN BE GOTTEN OUT IN ADVANCE AND KEPT IN STOCK

By J. Crow Taylor

AFTER a while, when you get right busy on spring orders and find that you have to set up the sticker for every little job in pattern work which you might as well have had long ahead of time, and kept in stock, you will likely wonder why you didn't think of that sooner and get ready for the spring rush of work and prepare a lot of material that is commonly used in building operations so as to have it ready.

Among the things which can be worked out and kept in stock ready for spring trade is window frame stock of various kinds; it is a pity that one can't go a little further with this and have window frames themselves ready made up and kept in stock. This, however, seems impractical at the present time, because of the varying notions of people who build, about their requirements in windows. It is not only a difference in sizes of windows, but different ideas and different kinds of sash and various other things of that kind which seem to make it impractical to make and carry in stock window frames ready made up. There is, of course, a chance to do a certain amount of this where one has house plans before him of buildings that he has designed himself, knowing in advance what is to be used for windows. But, aside from this, it is not generally safe to make frames up in advance. What one can do is to run a lot of window frame stock, a lot of sills, a lot of small strips that have accumulated, a lot of molding of different kinds, and have prepared a fair amount of stock of this kind, so that when in the spring there come rush orders for frames of this kind or that kind all that is necessary to do is to put them together.

Molding is one thing you should be a little careful about running too heavily on, especially intricate patterns of molding, because there is a general tendency now to use molding sparingly, and to use the simpler patterns where it is used. So study carefully the tendencies of the trade in your community before working up much stock into molding, otherwise you may get a white elephant on your hands in the shape of a lot of molding you can't make use of.

In this connection there is one thing you can do a lot of without getting into danger of being burdened with a white elephant. You can put in a lot of spare time fitting up molding bits to cut various patterns of molding, and not only grind them and place them away carefully at hand where they can be gotten at, but also run some sample sticks and number them for identification and have them carefully racked so they can be gotten at conveniently. Then when you get busy and have to make frequent changes in your machines for every little job, you can do it promptly, and not have to go grinding and fitting up a set of bits; they will be there at hand and just a few minutes will serve to make the changes for certain numbers of stock. So you will find a little time spent getting your bits ready in advance will pay you in a full measure of satisfaction in the busy times of spring and summer.

Quite frequently it is possible in talking with prospective builders and helping them figure on their plans for spring building to determine definitely in advance quite a lot of the interior work, including stairways, grilles, columns, and mantels. For example, a mantel of special design is wanted—and by the way there are quite a number of them these days—this work can be done, milled out and frequently put together in advance of the beginning of the spring building work, not only furnishing employment during the get-ready season but also facilitating matters when you come to build. At times it will be desirable to get up special features of this kind in anticipation of the possible wants of customers, because many people, when they see something already put up that appeals to them, will be induced to buy it, whereas, if you were to try to talk to them about making the same thing, they wouldn't be able to understand or appreciate its good qualities, and might not be induced to give an order. This idea, of course, has a chance to work both ways, and you might get up something that couldn't readily be disposed of, but if a man knows his trade well it is worth taking the chance, because having stuff ready to sell of any
appealing character will do more to help sell it than any amount of talk with nothing but plans and general ideas to show.

If you expect to do anything with window and door screens in the early summer the time to get ready for this work is in advance, and about the only chance to make any money out of it is to run your stock for this work in large quantities and have it ready. If you take an order for a set of screens and then have to get busy and set up the machine and run the stock, and then take another order and run a set, too much profit is eaten up by the time it takes to change the machines. If you are going into the screen business, go into it right and get ready in advance. Take your scrap pile and work it over into stock for screen frames and have a good supply ready so that when the time comes to do the work, all you will have to do is to frame the stock together.

**Heating a Modern Cottage**

**BEING THE THIRD OF A SERIES OF ARTICLES ON HEATING OF VARIOUS CLASSES OF BUILDINGS—ONE PIPE CIRCUIT HOT WATER HEATING SYSTEM FOR COTTAGE SHOWN**

**By Perry Weber Rathbun**

The heating system shown and described on these pages is one that appeals to many prospective builders and house owners, on account of its neat appearance and the use of less material, which is supposed to lower the first cost; but it does not, as larger pipe and fittings must be used, while with a two-pipe system of water heating much smaller pipe and fittings are used, thereby making the cost of both systems about the same at time of installation.

From an engineering standpoint the one pipe circuit system requires a wider experience, also considerable caution to perfect a proper installation. The flow main at boiler should rise up as near as possible to the ceiling of basement, circling around the entire or a part of basement to the return connection, at all
times having a pitch of at least 1 inch in every 10 feet down in direction of return connection. All branches should have a pitch of \( \frac{3}{4} \) to \( \frac{3}{4} \) inch down toward mains. Great care should be taken to see that the main equals the combined areas of all flow branches taken therefrom, and the main nowhere in the circuit is to be reduced in size, returning to boiler same size as it leaves.

The greatest trouble with one-pipe systems now being installed, the mains are, in many jobs, too small to give satisfaction and convey the proper amount of hot water to all radiators on the job. All flow connections should be taken off the main by the use of a reducing tee tilted to a 45 degree angle, or with opening facing up on which place a nipple with a 45 degree or 90 degree elbow; then run branch over horizontally to a point where a vertical riser connects to the valve at radiator. Return connections should be taken from the other end of radiator, drop vertically, and then with a slight pitch down, run over to the side opening of the other tee, which should be placed in the main as shown right after the flow tee.

As will be noticed by radiation schedule, the author has figured a 38 inch dining room radiator with warming closet, which is sure to pay for itself many times over by the convenience and comfort derived from same. In the living room indirect radiation has been figured to insure good ventilation; indirect radiation is from a coil hung from the basement ceiling enclosed in galvanized iron boxing with connections to both cold and warm air ducts in such a manner that the cool, fresh air from exterior will enter and circulate around and through the radiator before passing into warm air duct and up into the room.

When figuring necessary boiler capacity, add 75 per cent to indirect radiation and 50 per cent to the actual direct radiation to derive the proper rating of the boiler required, which in this case makes a total capacity of 800 square feet of heating surface.

<table>
<thead>
<tr>
<th>ROOMS</th>
<th>HEIGHT</th>
<th>END</th>
<th>AMOUNT DEGREES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception hall</td>
<td>38&quot;</td>
<td>Direct</td>
<td>35° 70°</td>
</tr>
<tr>
<td>Parlor</td>
<td>20&quot;</td>
<td>Direct</td>
<td>84° 70°</td>
</tr>
<tr>
<td>Living room</td>
<td></td>
<td>Indirect</td>
<td>140° 70°</td>
</tr>
<tr>
<td>Dining room, with warming closet</td>
<td>38&quot;</td>
<td>Direct</td>
<td>70° 70°</td>
</tr>
<tr>
<td>Front bed room</td>
<td>32&quot;</td>
<td>Direct</td>
<td>40° 65°</td>
</tr>
<tr>
<td>Back bed room</td>
<td>32&quot;</td>
<td>Direct</td>
<td>40° 65°</td>
</tr>
<tr>
<td>Kitchen</td>
<td>38&quot;</td>
<td>Direct</td>
<td>70° 65°</td>
</tr>
<tr>
<td>Bath room</td>
<td>44&quot;</td>
<td>Direct</td>
<td>32° 75°</td>
</tr>
<tr>
<td>Total</td>
<td>511 square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**An Inexpensive Library**

**Perspective and Floor Plans of a Modern Well Planned Library Built Complete for $7000—Details of Arrangement and Finish**

We are this month showing the perspective and floor plans of an artistic and yet inexpensive library building, which was recently erected at Glenwood, Ia., after plans were prepared by Woods & Cordner, of Lincoln, Neb.

This is one of the Carnegie libraries, and the appro-
The appropriation for same was $7,000. The plans were completed and contract let, including the bookcases, at that figure, which speaks well for the calculation on the part of the architects in preparing the plans to meet the appropriation.

The main floor contains two large reading rooms, librarian's room and book room, besides the large distributing hall in the center of the building. There is a fireproof vault on this floor, for the safe keeping of the records, etc.

The basement rooms are reached by stairways from the main entrance and contains club rooms, a large work room, furnace, fuel and toilet rooms, all well arranged, ventilated and lighted.

The walls are of brick, the basement being faced with common paving brick laid in black mortar, while that above the watertable is faced with buff pressed brick. The entire finish is of yellow pine, stained mahogany color, varnished and rubbed down to a dull finish. The steps, columns and trimming stone are of Bedford limestone. The cornice is of galvanized iron, painted and sanded to match the trimming stone in color.

The heating is by furnace and the ventilating system, in connection with same, is perfect in its workings. The building is very satisfactory throughout and one of which the patrons may justly feel proud.

**AConcrete House Dream**

"Your concrete house proposition amuses me more than anything I have seen in America," said Mr. W. W. Dunwood, of Manchester, England.

"Now, you propose to build a mold of metal and duplicate all of the houses from this original mold. What a jolly looking country you will soon have. The railway trust, I can see, for example, will in time buy a depot mold and it will turn out one hundred thousand depots and plant them around the states. They will all be precisely alike.

"Then you will have contracting firms which own molds for special houses. All the seven room houses in all the states will be the same.

"This might not appeal to the Italian or the Frenchman as extremely artistic, but I can see one advantage. When a man lives in a seven room house in Indiana and suddenly switches out to California he will feel quite at home, and his furniture will fit, and possibly even the house cat will think it her old Indiana homestead and not even bother to return to her native state.

"All your barns, garages, municipal buildings, post offices, jails, etc., I suppose will be alike. The idea is delightful, and so thoroughly American and original!

"It will also save visitors from Europe lots of trouble. They can visit only one city, and when they return home they can safely talk about any American city which comes up for discussion."

**Strongest Known Wood**

Recent tests of the hardwoods of Western Australia have revealed the extraordinary properties of yate, believed to be the strongest of all known woods. Its average tensile strength is 24,000 pounds to the square inch, equaling that of cast iron. Many specimens are much stronger, and one was tested up to 17 and 1/2 tons to the square inch, which is equal to the tensile strength of wrought iron. The tree grows to a height of 100 feet, and a diameter of two and a half.
IN MOST parts of the country, the painting season is on in earnest, or soon will be, and painters will be considering the purchases of stock for their approaching contracts. It may be well, therefore, in this connection to reiterate a statement that has been made heretofore in these columns, that the painter will always find that the best materials are the most economical in the end. Take for example, white lead, which seems to be recognized as a standard of comparison. The numerous individual factories have within recent years been consolidated into larger corporations, and at the present time there are only about half a dozen different corporations engaged in the manufacture of this material. For this reason, there is little or no competition except in the matter of quality, and prices are fairly well maintained. Except when sold in large quantities, the prices quoted by the corrodors (or manufacturers) in their current lists, will not be broken, and even in carload lots of dry white lead—that is to say, of lead before it is ground in oil—a drop of one-eighth of a cent a pound to a favored customer, is sufficiently important to excite comment in the trade. For this reason a painter should always view with suspicion any salesman who offers to sell him "pure white lead" at any figure less than the established rate for the quantity and size packages that he desires to purchase. Of course, it is well understood that it costs more by the pound to purchase white lead in twelve and a half, twenty-five, fifty or one hundred pound kegs than in the larger size packages, on account of the greater relative cost of the container.

Cheap Material—Extra Labor
As every painter knows, the cost of the labor is at least three-fifths the total cost of painting, and frequently more, so that the cost of the paint is relatively small. Now if the smooth-tongued salesman comes into your shop and offers the tempting bait of a cent a pound less on the price of the "white lead" which he is interested in selling, do you stop to ask yourself how, in view of existing conditions, he is able to sell you "white lead" at this much less than the ruling market price? To the man who knows, there is but one explanation. The material he will furnish, if he secures your order, may be labeled "white-lead," but you may be certain that a sufficient proportion of the contents will consist of cheaper materials to enable him to sell it at the low price he has quoted. Now whether this cheaper material has any merit or not does not enter into the question at this point. It does explain, however, why the material in question can be offered at less than the price for pure white lead. Moreover, as the temptation to get as much profit as possible is strong with the average manufacturer, and as it is almost impossible for the ordinary purchaser to detect the amount of makematerial or extender that has been added, there is always a probability that it will be present in excess of the amount that would be needed to reduce the pound price by one cent. Whatever may be the effect on the durability of the paint caused by these so-called inert pigments, or the other materials that are used to produce the cheaper grades of white paints sold as white lead, it is very certain that they lack both spreading and covering capacity, so that even though you may save a cent a pound—or even more—on the purchase price, this saving will be neutralized by the added cost of the additional quantity of material needed to cover the surface and the extra labor in spreading. And after all, does the saving amount to anything? Two hundred pounds of lead will coat a large house, and at one cent a pound, the saving on the house will be but two dollars. Whereas it may readily cost you an extra day's labor in spreading, and possibly may mean that the work will eventually give dissatisfaction to the owner and cause you the loss of a customer.

Avoid Cheap Ochre Paints
Then there is the case of ochre. Perhaps there is no other pigment of which there are so many inferior grades as there are of ochre. Every day, almost, we hear of the discovery of a "paint mine" in some part
of the country, and the local newspapers are full of glowing stories of the prosperity that is to fall upon the community by exploiting this new source of wealth. It is true that the material is usually an ochre, but of such an inferior grade that it is practically useless. Nevertheless, great quantities of these inferior ochres are sold to painters who buy them because they are cheap, often buying them in the dry state, mixing them with oil by stirring it in with a paddle, and using this material for a priming coat. Nothing more unsuitable for the purpose could possibly be found. In the first place these American ochres almost always contain an excess of clay, which in its natural state contains a large amount of moisture. When mixed with oil and applied to a building, the moisture dries out and, especially if the priming be a heavy coat, such as is usually applied in two coat work, the wood is covered with an impervious skin that is almost as impermeable as oil is concerned, has almost the non-absorbent nature of a piece of glass, so that the subsequent coats of paint applied over this ochre priming, will not take hold of it, but will simply lie upon the surface, and when they are dry will peel off in flakes.

**White Lead Best Priming Coat**

Although there may be often an apparent saving in first cost in the use of an ochre priming, experience has demonstrated very conclusively that a white lead priming coat, tinted with not more than 2 per cent of lampblack, in order to hide discolorations in the wood, is the cheapest and the best material for the first coat on new wood.

Ochre is very often used as a finishing coat, on account of its pleasing color, or the agreeable tints that can be produced with it when mixed with a white base. For this purpose the painter will find it cheapest in the end to pay a higher price and secure a good quality French ochre. In the first place it produces a stronger tint with less of the tinting color, and in the second place it is more permanent. Many ochres of inferior color, and consequently of lower price, are toned up by mixing them with chrome yellow so that their color will be more pleasing. Now, while this may be perfectly legitimate, if the fact that it has been done is stated on the label, it is wrong if they are sold as "pure ochre." Chrome yellow, through a very beautiful color, is not fast to light and will soon fade, and a house painted with a chrome-toned ochre will fade to a dirty or dingy brownish yellow color, that will invariably cause the owner to become dissatisfied. For a saving of twenty-five or fifty cents, the painter risks losing a customer, when he uses one of these inferior ochres. Moreover, chrome yellow is apt to discolor and blacken in the presence of sulphur gases, so that in a factory district, or where much soft coal is burned, there is an added danger from its use.

**Makeweight Adulterants**

Almost all the tinting colors can be adulterated by the addition of barytes or other makeweights or extenders. When ground in oil, these materials have absolutely no tinting capacity. Four coats of barytes ground in oil and thinned to the consistency of paint, may be applied to the surface of a board without hiding the grain. From fifty to seventy-five per cent of barytes can be added to any of the stronger tinting colors, without possibility of detection except by chemical analysis, when the color is looked at in the can. Nor will there be much difference in appearance when a little of the straight color is spread upon a board. But it will require two pounds of Indian red with fifty per cent barytes, for example, when added to 100 pounds of white lead to produce a tint of the same strength as will be produced by one pound of the pure Indian red, while the reduction in cost will not be over twenty-five per cent. A very little arithmetical knowledge will enable the painter to figure out how much he loses by buying the cheaper material.

**In Regard to Mixed Paints**

While it may not be so susceptible of demonstration, the same thing is equally true when it applies to mixed paints. When put up in a can with a fancy label, the mixed paint that is loaded with useless makeweights, that is, carelessly compounded or not thoroughly ground, that contains water or benzine in excess, does not appear very different from the much higher priced article that is made from honest materials, thoroughly ground together and mixed with care, and that is the result of years of observation and experience on the part of a manufacturer who values his reputation. The sample cards may show the same shade, and the customer who knows nothing of paint will naturally be beguiled into purchasing the cheaper article. No greater mistake can be made, for not only is an inferior mixed paint deficient in covering power, but it will invariably be found that it will require more labor to apply it, so that the actual cost of painting the house with the material that is cheaper by the gallon, will be in excess of the cost of painting with the higher priced mixed paint, whose manufacturer cares more for maintaining the quality of his product than he does for making a larger percentage of profit on a low priced, but inferior article. In selecting a brand of mixed paint—and there are many excellent materials of this kind on the market—the painter or the property owner will do well to look first to what that paint will do. Inquire carefully to find out how well it has stood on other houses, and look out especially for the manner of its peeling and ascertain if any expensive scraping or burning off is necessary when renewal is required. There are some mixed paints that answer every requirement that can be demanded of them, while others are totally unfit to use. Here, as everywhere else in painting, the best will be found the cheapest in the end and saving in first cost is very poor and very short sighted economy.
The atmosphere of bustle and thrift that has made Marshalltown, Iowa, famous in the commercial and industrial world is nowhere more in evidence than in the great plant of the A. E. Shorthill Company, manufacturers of bridges, boilers and structural iron. Most of the readers of the AMERICAN CARPENTER AND BUILDER know this establishment as the maker of the famous Phillips Hot Water Heater, the hot water heating system that is considered by architects, builders and plumbers as perfection in that line.

It was to make a personal study of this institution, and to make our readers personally acquainted with it, that the writer went to Marshalltown a few days ago. He was conducted through the various departments of the plant by Mr. C. R. Speers, the president and manager, and was permitted to follow the processes through which the heater goes in the hands of expert workmen, from the raw material to the finished plant, ready for installation in a residence, school, church or other structure where perfect heating arrangements are wanted.

Mr. Speers, by the way, impresses one unconsciously, with his marvelous business ability. There is no ostentation, but he believes in the heater. He believes in the structural iron work he turns out. He believes in every thing his plant produces, for it is the best that can be produced.

Like most every other big concern in the manufacturing world that amounts to anything, the Shorthill Company had a small beginning. It started in a little plow repair shop forty-five years ago. Now, through merit alone, it is a $250,000 corporation, and its business covers the entire country. The causes for the remarkable growth of the company are not hard to discover. It has always had an aggressive business policy, which, combined with a willingness to supply every demand in structural iron and steel work and boilers, and a central location, has made possible steady advancement. The company has the reputation of never being "stumped" on any structural proposition. Today, for instance, you will find men busy at work in the assembling department on the long steel smoke conveyor that is to connect a battery of boilers with the stack in the new United States custom house at Seattle. At another point you will see engineers laying out the trusses and beams of a bridge that will span a mountain torrent or a gorge. Here is one crew making a system of fire escapes. There is another putting the finishing touch on a heater.

The reader doubtless is more interested in the heater because it is one of the staples in modern construction where good hygien is wanted.

The principle of the Phillips Hot Water Heater produces the largest volume of intense heat with the smallest consumption of fuel. The best authorities on heater construction, say that at least 70 per cent of the aggregate fire surface should be direct heating surface, but in the Phillips construction we have fully 90 per cent.

The center column running up through the center of the fire and the hottest possible place in the fire, carries fully one-half of the amount of water that passes through the Heater, producing rapid circulation, and consequently quicker action upon the temperature of the space to be heated. The fire pot is much deeper, contains a larger bed of fire than any other heater on the market. The combustion space above the fire is much higher and produces per-
perature so hot that the gases coming in contact with this surface do not condense and form the black, thick soot so common in heaters where such condensing surfaces are found. The baffle plate damper will be found very important in controlling the draft and utilizing all heating surface.

One of the desirable features of the construction is its simplicity from the ground up. The larger sizes being made in two sections can be rolled like a barrel through an ordinary door. The ease with which it can be set up, the time required to do this work are the important items for a contractor to consider.

The durability of the cast iron boiler for heating water has never been tested, that is to say, for the forty or fifty years that cast iron has been used for this purpose has not been sufficient to thoroughly test its durability. That it will last practically a life time is not disputed.

There are a great many points of merit that could be mentioned regarding the construction of this heater, all of which are good, reasonable, common sense features, and are in advance of the ordinary appliances that have been used for years by most manufacturers.

In fact the heating surface of the Phillips Hot Water Heater cannot be figured by the same rules or methods that have been in practice by engineers for reasons that the large portion of the heat is not applied to what might be termed "one-sided heating surface," but surface that is entirely surrounded by the fire. It is the only construction where the fire is entirely surrounded by water and water entirely surrounded by fire, thus giving almost double capacity from the same fire.

The illustrations show the reader the interiors of some of the buildings and give some idea of the varied character of the machinery necessary in a plant covering a field so wide. Imagine the amount of boiler flues, boiler fronts, boiler grates, bridges, bridge cylinders, bridge steel joist, castings, cast grates, channels, cleanout doors and frames, coal chutes, coal hole rings and covers, columns, cast and steel, corrugated bars, culvert pipe, dipping tanks, door plates, duplex joist hangers, elevators, engines, steam, expanded metal, expansion bolts, fire escapes, fire proof doors, fire proof shutters, flues, flue cleaners, flue expanders, galvanized sheets, Gardner governors, Gardner pumps, girders, grates, I beams, iron stairs and steps, Johnson corrugated bars, joist anchors, joist hangers, joist ties, lintels, lubricators, manhole rings and covers, marine type boilers, metal lath, pig iron, pipe and fittings, plates, post caps, railings, reinforcing bars, return tubular boilers, rods, sand, foundry, safes, sash bars, shutter eyes, sidewalk lights, sky lights, stacks, steam gauges, steam pumps, steam engines, steel post caps, steel shutters, structural iron and steel, tanks, truss rods, Van Dorn joist hangers, vault doors and wall ties.

The employees include civil engineers, draughtsmen, bookkeepers, stenographers, machinists, boiler makers, blacksmiths, molders, pattern makers, steam and pipe fitters and laborers.

In conversation with a number of leading business men of Marshalltown the fact was further gleaned that the Company has been able to make prompt delivery of all the products it manufactures, and this is really one of the most important factors in a manufacturing business. Patrons never have to wait. The peculiarly advantageous location of Marshalltown, the shipping facilities, stock on hand, complete equipment of the plant and close proximity to three lines of railroad that tap the country far and wide are conditions that have been of assistance to the A. E. Shorthill Company and make certain its future business.

Contractors or others who will require a heater of the best quality may rest assured that they will secure prompt service from this company if they place an order with it.
WHEREVER you go you will see the Torrid Zone hot air furnace. The wonderful success that the Lennox Furnace Company has won with this heater is shown by the steady growth of the great plant at Marshalltown, Iowa. The company is one of the great institutions of this thriving center and its success has added much to the prosperity of the city. Two hundred men are employed in the factory and foundry and offices, besides a dozen salesmen are constantly on the road and as many more are employed by jobbers who handle the company’s output.

The fact that the plant has trebled in size during the last three years of its fourteen years of history, is of itself a proof of the merits of the furnace it makes, for if the product was inferior to some other, the business would not have grown; the building public demands the best, and if it does not get it the maker of the inferior article gives way to the one producing a better article.

The Torrid Zone furnace has revolutionized the heating of residences, schools, churches and other buildings. The cast iron formerly used in furnaces, and now used in many, showed many imperfections. The expansion and contraction under the influence of varying temperatures loosened the joints and allowed smoke and soot to get into the air chamber and vitiate the air. David Lennox spent many years in studying the problems presented by the furnace and devised a steel furnace built of steel plates riveted together like a boiler under hydraulic pressure. It was made absolutely gas tight. The steel, possessing quick radiating qualities, has proved a more powerful heater than iron, and the addition of an extra crescent shaped radiator has practically doubled the radiating power, making it the most satisfactory heater that is on the market. It is simple to operate as a stove, and is the most economical furnace that ever has been produced. The firepot is made of cast iron sections that are enclosed entirely within the steel shell and put in place quickly within the fuel door. The parts can be easily replaced with new ones when worn out, without tearing down the furnace or pipes.

Mr. W. J. Heald, who has spent his lifetime in the furnace business, is general manager and vice president of the company. Mr. T. I. Wasson, for many years general auditor of the Iowa Central Railway, is secretary and treasurer of the company. These two men are in active management of the business, each owning one-fourth of its stock. Mr. D. W. Norris, Jr., editor of the Times-Republican, is president and the only other stockholder.

Every department is manned by experts. The output is close to five thousand furnaces per year, and the large sum of $110,000 per year is now being expended in Marshalltown for the item of labor alone.
The gasoline engine has come to be one of the necessities in the up-to-date contractor's equipment. It is needed in the operation of concrete mixers, conveyors, hoisting machinery and in numerous other ways. The carpenter, too, has use for it in the operation of saws and other machinery in his shop.

Another institution that interested the writer in Marshalltown, Iowa, while he was there visiting machinery men who are making things to help the carpenter and builder in his work, was the Lennox Machine Company, 40 Ninth avenue. Here were the "O. K." engine, in two styles, water and air cooled, and the Standard, both of which are well known the world over. The engines are used in every country for wood sawing and feed grinding.

David Lennox is president of the company, and Charles Glick is secretary-treasurer. These gentlemen have built their institution up till now it is one of the largest of its kind in the world. The company occupies a block of ground with $30,000 worth of buildings, and fully equipped with machines and lathes, and housing over 100 busy workmen. Twenty-five years ago Mr. Lennox had a small repair business in Marshalltown, but his salesmanship and his inventive genius brought him to the front. Mr. Glick has been with him since 1893. Among the inventions of Mr. Lennox's creation are the steel splitting shears in use in all the great railroad shops and in all the principal iron works, and the pitless scale. But for the enlightenment of the carpenter and builder, attention is directed now to the gasoline engines. The "O. K." is a neat, compact little engine, mounted on trucks so that it is easily portable. It is made in three sizes, 2½, 5 and 7 horsepower. It is equipped with an electric ignitor, so constructed that the contact points can be cleaned while the engine is in operation. The special features of this engine are its durability and ease of operation. The Lennox Standard horizontal gasoline engine is equipped with electric spark and hot tube ignitor. This engine is perfectly balanced and can be mounted on trucks when so desired. It has a friction clutch pulley. This pulley can be placed on the 5 or 7 horsepower "O. K." engine at a small additional cost.

Mention has been made of the pitless scale and the steel splitting shears. For years manufacturers had struggled to contrive a wagon scale which could be built without the expense of digging a pit and putting in costly timbers, to decay and add more expense for repairs. But the result of nearly every effort was a machine which was so costly to manufacture that its selling price was necessarily prohibitive, and therefore these efforts failed.

Mr. Lennox went to work on the problem and mastered it. He produced a pitless scale that was perfect, yet simple enough in construction to be manufactured within a reasonable price limit. The result was not achieved, however, on the first effort. Trial after trial has been made. Grief has been met and swallowed; defects discovered and remedied; thousands of dollars spent in experimenting; special machines devised and made to manufacture the scale parts economically, until today the Lennox Pitless Scale has been brought to the point at which it needs only to be explained and advertised to sell in tremendous volume. The sale on these scales has been enormous and future prospects give promise of doubling the employment of the factory within the next five years.

The writer was conducted through the vast plant of the company where scores of men were busy at the machines turning out the parts of engines. On every hand was the evidence of rush and push. It matters not whether it is an "O. K." engine, a Standard, a pitless scale or a steel shears that is ordered, the company's equipment enables it to fill the order at once. The company has every advantages of location and shipping facilities which, combined with a strong management, assures its continued success. A fair test of its capabilities in meeting all demands is being made now when the rush season is on, but the organization of the big plant moves along smoothly and without a jar, turning out its product to go to every part of the country.

Contractors who may require the quick delivery of a gasoline engine like any of those described may be assured that they will not have to suffer delays if they place an order.
IN RESPONSE to requests for a plan and description of a workbench, the following is offered.

This is the plan usually used by carpenters. It makes a good, strong bench, one that can be built by any boy of average skill. It does not possess the beauty nor the advantages of benches such as are used in manual training rooms, but it will answer every purpose for home work. In a future number we shall describe a modern bench with rapid acting vises, etc.

For the bench shown in Fig. 1, there will be needed five pieces of one inch stock ten inches wide by twelve feet ten inches. It should be clean and sound. Begin work by squaring a line across one side and one edge of the “two by four” as near the end as its condition will allow. Measure from this line two feet seven inches and square a line across one side and one edge. Saw out this piece, sawing the end off first. Use this piece as a pattern and mark off the length for the other three legs. Use the square to mark lines across one side and one edge at these points. A mechanic would probably saw the end of the pattern accurately enough that a line made from it would make the use of the square unnecessary; a beginner would better use the square, however.

Next, prepare the cross pieces. Square one end of the ten foot board; measure off two feet two and one-half inches and again square a line. Cut out four pieces like this in the same manner as was done with the legs. One edge of each of these pieces must be straight and square. If necessary, joint, or plane them.

Two of these cross pieces are to be fastened to the narrow edges of the legs as shown in Fig. 2. Place two legs on the floor with their narrow edges up and place a cross-piece on them. Fasten the cross-piece to the legs with one nail each. With the square, see that the side of the leg squares up with the edge of

---

**Fig. 1.**

---

Feet long; one piece of the same thickness and width with a length of ten feet; one piece two inches by four inches by twelve feet. The one inch stock may be pine and should be mill-planed on two surfaces. The “two by four” should be mill-planed on four surfaces. It may be of pine also. The top, sides, cross pieces and legs may be got from these. There will be sufficient waste for the lower part of the vise.

For the vise, secure a piece of oak mill-planed to one and one-half inches by five inches with a length of...
the cross-piece, then put in the rest of the nails. It is a pretty good plan to start all of the nails into the board before attempting to nail any of them into the studding.

The side pieces may be prepared and placed now. Joint, plane straight and square an edge on each of two twelve foot boards. Square one end, measure eleven feet and eight inches and saw to length. The second piece should be similarly cut.

From each end of each board measure one foot then three and three-quarter inches and square lines across on outside of face and on joint edge. This is to indicate the position of the legs.

"Start" the nails between these lines. Turn the legs "on side"; lay a side on them and drive one nail home. Square the edge of the leg to the edge of the side piece—use the steel square—then drive the remaining nails. The other leg may be fastened, the

After the top has been nailed, take a straight-edge and mark lines across each end to indicate where the ends of these top boards are to be sawed off. They should be of the same length as the sides, Fig. 1.

The vise may be made next. There are various ways of making this very important part of the bench. The kind which seems to be most commonly used by carpenters nowadays—aside from the rapid acting vise—is the one shown in Fig. 1.

In Fig. 3 is shown a vise in which the movable jaw is inclined toward the worker somewhat. There is an advantage in this kind of vise in that vertical

frame turned so as to rest this side on the floor and the other side placed and nailed.

Set the frame upon its legs, divide the space between the two end cross-pieces into three equal parts, square lines across the sides to show where the other cross-pieces are to be placed. Start the nails, place the cross-pieces and drive the nails home.

The three boards of the top must have each of their edges jointed. Two of them may be jointed irrespective of width, but the third must be so planed as to make the top of the same width as the frame. Square the frame by placing the steel square against side and cross-piece.

Nail the outer top boards to the side pieces as well as to the cross-pieces. Set all nails below the surface. Eight or ten-penny common wire nails will be about right for all the nailing.

After the top has been nailed, take a straight-edge and mark lines across each end to indicate where the ends of these top boards are to be sawed off. They should be of the same length as the sides, Fig. 1.

The vise may be made next. There are various ways of making this very important part of the bench. The kind which seems to be most commonly used by carpenters nowadays—aside from the rapid acting vise—is the one shown in Fig. 1.

In Fig. 3 is shown a vise in which the movable jaw is inclined toward the worker somewhat. There is an advantage in this kind of vise in that vertical
through a mortise in the leg. A dowel pin or a bolt, Fig. 1, is passed through one of these holes and holds the jaw as desired.

Plane up the seven-eighths by two and one-half by twelve inch piece and bore one-half inch holes as indicated in Fig. 4.

With trysquare and gauge lay out a mortise in the jaw, Fig. 3, and cut it. Lay out and cut a corresponding mortise in the leg. The mortise in the leg should be cut slightly larger than the piece which enters it so that it may not bind the piece which enters it.

Fit the piece with the half inch holes into the mortise of the movable jaw. With the steel square hold its edge square to the face of the jaw and fasten the two together, using dowels, screws or nails through the edge of the jaw. Set and fasten to the inside of the bench leg the "nut" for the vise screw and the vise is ready for use.

The vise shown in Fig. 1 is somewhat easier to make. The hole for the screw is to be bored so that it will pass through the middle of the single "two by four" leg. The mortise for the seven-eighths by two and one-half inch piece with the holes in it is to be cut directly below this hole, that is, in the middle of the leg. It would better be laid out and cut, however, after the corresponding mortise has been cut in the movable jaw.

Square up the stock for the jaw to the width desired with a length less by an inch or two than the height of the bench. This is to keep the end of the jaw off the floor. The top should be rounded and the sides sloped from a point nine or ten inches below the top so that the width at the bottom shall be about three or four inches. Before putting the slope on the joint edge, lay off the mortise at the bottom and the screw hole at the top.

For holding long boards, bore a series of three-quarters or seven-eighths inch holes as indicated in Fig. 1. Make a wooden peg that can be forced into these holes. Whittle it so that it will wedge slightly and cut it out so that it may have a "lip" to keep springy boards up against the bench. Fig. 1.

For a bench stop, there are various devices in common use. Iron bench stops can be purchased. A couple of nails or screws put into the bench top are often used for holding thin stock. Sometimes mortises are cut and one-inch square hardwood plugs are snugly fitted. If this is done on a bench with a thin board top, such as this one is, a heavy block should be fastened to the under side, else the mortise would soon lose its shape and the pin would fall through.

Such mortises are usually cut slightly inclined at the top towards the worker. A block with a cut in one end does quite well, but is likely to injure the ends of soft wood. Fig. 1.

Fig. 4 shows a bench in which the top has been made more substantial by the placing of a heavy plank on the working side. That there might be no offset, the two lighter boards were raised to a level by the placing of thin pieces upon the cross-pieces. Care should be taken in the selection of a plank for this purpose to get one that will keep its shape.

Of course, the dimensions given are merely suggestive. The bench might be made longer, more cross-pieces should then be added, or shorter. The height given is about the average. A tall man would probably want it a little higher; a boy or short man lower.

Deposit Vaults for the Home

Among the novel features which add to the completeness of the plans for new houses, and particularly for apartment houses, is the specification for safe deposit vaults built in the walls. These wall safes are a great protection against burglary, as their location is known only to the builder and tenant. These safes are strongly made and form a part of the wall. The openings are but hand holes, large enough, but easier to guard, with less expense to adjust evenly in walls. Little more than the dial and its small knob is seen—no handles, no bolts, nor hinges.
To the Editor: Laceyville, Pa.

We wish to build a reservoir 24 feet by 30 feet by 9 feet 6 inches inside measure. Will be banked up on outside within a foot of top with dirt. Sides built 3 feet wide at bottom, 1 foot at top; bottom 6 inches thick. Four iron rods (3/4 inch) in each side wall laid lengthways to reinforce concrete.

Materials: Clean river sand, 3 parts; cement, Portland, 1 part; all the small gravel and stone this will hold. Bed is to be proofed by Sylvester process. Will this be all right? Any suggestions appreciated.

Whipple Bros.

Answer: In constructing a concrete wall for a basin 24 feet by 36 feet by 9 feet 6 inches deep there is little pressure—on the wall when same is filled, as the soil on one side and the water on the other equalize each other. If the basin is always full of water a 4 inch concrete wall would do; but, as the basin may be drained at times, a retaining wall for the soil is essential. This is shown in the two sketches, both the plain and reinforced concrete being about equal strength; either will withstand four times the strain a basin of above dimensions can thrust upon it.

If the plain concrete is used the composition should consist of one part cement, three parts sand and five parts gravel of pea to walnut size, together with some larger stones. Before leaving a day’s work, rods, pipes or other irons about one inch thick and one foot long, should be set half their length into the concrete, letting the other half project above, thus keying the various batches of concrete together. These keys are set in the center of the wall and spaced three to four feet centers. Do not save labor in tamping the concrete into the forms.

For the reinforced wall use one part cement, two parts sand and four parts pea to walnut gravel, and add moistened stone same as for plain concrete. Place steel rods as shown. Should the strongest work possible be desired, no stone over six inch diameter should be thrown into the concrete, which will admit placing the vertical rods within four inches of the soil side of the wall. In this position they will act as a counterfort and be stronger. The vertical rods should be placed four feet centers and should be tied to the top horizontal rod with No. 8 wire.

Always make work continuous with as little delay as possible unless keyed together as mentioned above. Tamp hard and keep well moistened for six or eight days, when the forms may be removed. The water side of the wall should then be plastered with a fourth inch coat of one part cement and two parts sand mixed to the consistency of stiff mortar; wet the walls well just before plastering and keep moist for a week. When dry add two applications of Sylvester process of waterproofing.

The bottom should be six inches thick of same concrete as for walls and a wire fence netting of six inch mesh should be placed not less than two inches below top of concrete as shown. Finish with plaster and waterproofing, same as wall.

Fred W. Hagloch.

To the Editor: Novelty, Ohio.

The accompanying pictures show some of the construction of a plank frame basement barn put up last fall in Newbury, Ohio, for dairy purposes.

The barn is 40 ft. by 120 ft. and 39 ft. from ground to peak. The first picture shows basement framework and how bents were raised. The other shows completed frame
when last rafter was being put up and the basement siding on. There are sixteen double windows and six single windows in the barn. The work was started Oct. 29, 1907, and in nine and one-half working days of nine hours each, with eight men working, the barn was as shown in photo. W. S. Ford, of Burton Ohio, was the contractor.

O. H. Albaugh.

Shelving for Stores

To the Editor:

Valley City, N. Dak.

I have taken your magazine for two years now; but have seen nothing on shelving for stores. Can you help me in that line?

Wm. J. Peterman.

Answer: I give here a front elevation and section of a design for shelving suitable for the average store. The sections are intended to be about 3 feet between the standards.

How much live weight can be safely placed on a post 3 inches in diameter, 7 feet high? The posts in question are made of 4 pieces of first quality York pine, firmly joined together and turned to above size.

Harry Rawling.

Answer: The breaking, or crushing weight for a round post of yellow pine 7 feet high and 3 inches in diameter is, approximately, 3 1-10 tons. This is for a solid post and as yours are built up, one-fourth must be deducted on account of the joints. This would give about 2¼ tons as their breaking weights.

Authorities are generally agreed in allowing a high factor of safety for wooden posts, and in the best practice, engineers are careful not to trust such posts with more than one-eighth to one-sixth of their breaking weight, and for live loads, not more than one-tenth. One-tenth of the breaking weight of your posts gives 91-400 of a ton, or 455 pounds, as the safe live load.

T. B. Kidner.

Front Elevation

The bottom part is about twice as wide as the top and forms a countershelf. The first self is raised off the floor about 4 inches. The top part has saw tooth strips nailed to each edge of the standards so that the shelves may be adjusted.

I. P. Hicks.

Strength of a Three-Inch Post

To the Editor:

Roadhouse, Ill.

Having been a constant reader of your valuable magazine since its beginning, I now request the following information:

To the Editor:

Swiftwater, Pa.

For the last two years I have been looking for a blind staple sticker, the kind used for repairing window blinds. If you could help me out in this I will be very thankful.

Geo. H. Warner.

Answer: This is an instance which illustrates the fact that now and then it is difficult with a fairly good equipment of catalogs and with the advertising of the trade papers before one to lay hand on some special machine that is
wanted. In order to be able to answer questions of this kind, the writer frequently requests complete circulars and catalogs from machinery people and has quite a fair equipment of these things. Yet, it is a peculiar fact, after quite a lot of research, that this particular machine has not been found. There have been other instances of the same kind, enough of them to suggest that the makers of different machines, which are frequently wanted, should make it a point now and then, to illustrate or feature their machines in the advertising pages, or in some manner publish a list of the different machines they make, so that the seeker after machinery can find what he wants. Names of the people thought likely to have this machine were furnished this correspondent by mail. J. Crow Taylor.

Safe Load for a Beam

To the Editor: Convent, La.

I am interested in the strength of materials, and offer for solution a beam 6 inches by 12 inches, the span to be 12 feet, supported at the ends. Working strength is 800 pounds per square inch, load to be distributed. What will be the safe load for the beam? Would like to know also what provisions are made for weight of beams and for bending moments in different spans. B. P. Turcend.

Answer: The best way to work this question is to use the well-known formula

\[ W = \frac{Sb}{9L}d^2 \]

which is expressed in words thus: The safe uniformly distributed load in pounds for a rectangular beam is equal to the safe unit fiber stress multiplied by the breadth in inches, and by the square of the depth in inches, and the product divided by nine times the span in feet."

In the formula \( W \) stands for the weight or load; \( S \) for the working strength, or "fiber stress" as it is termed; \( b \) is the breadth; \( d \) the depth squared; and \( L \) the length. Your calculation is as follows:

\[ \frac{800 \times 6 \times 12 \times 12}{9 \times 12} = 6400 \text{ lbs} \]

The foregoing formula takes into account the bending moment as well as the fiber stress, being a combination of two formulas; one dealing with the bending moments for rectangular beams; the other with the breaking weight or "modulus of rupture," as it is termed in the books.

It is usual to neglect the weight of the beam in short spans, but in long spans the weight of the beam is added to the load, and calculations made accordingly.

T. B. Kipner.

Obtaining Cuts of Molding

To the Editor: Barrie, Vt.

Will you inform me through the pages of your journal of a method by the square to obtain the cuts of molding in paneling of the stair strings, as shown in the enclosed sketch? E. Blaine.

Answer: In Fig. 1 is shown the face of the stair string with diamond shaped panels, as shown in Mr. Blaine's sketch. To begin with, all cuts of moldings of this kind should be made in a miter box. Then the question is, how to find the angle on the square by which to make the proper cut on the miter box.

In Fig. 2 is shown an enlarged panel with the application of the square for finding the miter line, or the line of juncture of the molds. In this, it will be seen that there are two angles in the panel. The sharper one is known as an acute and the other as an obtuse angle. The former is less than 90 and the latter more than 90 degrees. However, by this method of finding the miter line for one, also answers for the other, because when the blade is giving the miter line for the acute, the tongue is giving it for the obtuse. In the illustration, we have shown the application for both, and it will be seen that the blade and tongue of like squares are resting parallel with each other. Now, as to the placing of these squares to get the proper angle, simply take like figures on square No. 1, say 10 and 10, place so that these figures are at the edge of the panel, as shown, and with the heel of square No. 2 resting on the former, and with the blade intersecting the corner of the panel, the figures intersected by the edge of the panel, as at A A will be the figures to use to make the cut on the miter box for either angle. However, this is not the usual way of finding the miters for this kind of work, but the question was asked "How to find the cuts with the square?" and we give the foregoing in answer.

The same results may be had by bisecting the angle with the compass, as shown in the two lower corners of Fig. 2, and by setting a bevel square to the angles thus formed.
obtain the miter in this way. A more common way, however, among workmen, is to take a block of any convenient width and with parallel edges and with it set each way in the corner mark along the outer sides, the crossing of these lines will be the point for the bisecting or miter line.

A. W. Woods.

**Roof Framing for a Store**

To the Editor: Durango, Colo.

I am going to do carpenter work on a storage building 50 feet wide and 50 feet long. The roof to slope from front

Sectional view through trusses

with a pitch of 6 inches to the foot; the other room 40 feet wide. This is to be used for a lodge room. How should I frame the roof and of what size material; would you recommend a lattice truss?

Leonard Zipperian.

Answer: The simplest way to roof the building would be to make your partition strong enough to carry the ends of trusses, 40 foot span, and to frame three simple plank trusses as shown in the drawings. Bottom chords 4 inches by 10 inches, top chords 4 inches by 8 inches; bracing, double (that is, on each face of truss) of 2 inches by 7 inches, well spiked or trenailed to chords. Vertical rods of 1 inch iron with nuts and washers top and bottom. The last or narrowest truss is made of sufficient depth to safely carry the load; and the other trusses have an added depth to give the roof pitch.

T. B. Kinner.

**Value of Sub Floors**

To the Editor: Logan, Nev.

Please tell me the necessity of sub floors in a house in a warm country. Building is two story, hollow concrete blocks.

G. E. McIlvairy.

Answer: As far as warmth is concerned, there may not be any necessity for the double floor for houses in warm countries. There are other reasons for double floors besides the heat and cold question. The rough floor is a great convenience to work on during the construction of the building, and in case of a brick, stone or hollow block building, the rough floor is almost indispensable. Even if one did do without it there would be the labor of covering the most part of the floor space with a temporary floor to work on during the construction of the building.

Then again the finish floor can not be laid in advance, so it can be used to work on, for if so it would be spoiled, and unht to be seen when the building was completed.

If hardwood floors are wanted, such as maple, birch or oak, the best job can be obtained with the 3/4 thickness laid over a 3/8 sub floor; the 3/4 flooring is not thick enough for a single floor. Rough floors ought to be laid diagonal and the finish floor laid across them. The finish floor should never be laid in a building till the plastering is all done and thoroughly dry; in fact, if a nice floor is wanted, it should be the very last part of finishing the building. All the base boards, casings, and door hanging, in fact everything, should be done before the finish floor is put down. Carpets are not used as much now as formerly, and nice floors are much desired, and these are not possible without the first rough floor to take the wear and tear of the building construction.

If anything like a good building is desired, it is false economy to dispense with the rough floor, no matter what the climate may be; hot or cold, the rough floor has merits that make it worth while to put in. It also adds largely to the strength of a building, both in the floor and for wind pressure when it is a second story rough floor.

I. P. Hicks.

**Sheathing Inside and Out**

To the Editor: Louisville, Ky.

In looking around among new frame houses that are being built there is to be discovered every once in a while something new or something different. In looking after these things the other day I found a new house going up in which the storm sheathing, instead of being put on the outside, was put on the inside of the studding.

Inquiry as to the "whyfore" of this brought the explanation that the builder thought it was better that way, to use the inside sheathing as a base for his plastering and lath and plaster against it by first running some lath up and down the wall to hold the regular lath off far enough from the sheathing to give the plasterers room to work behind it. Then the sheathing would furnish a sound and positive backing for the walls. Another argument was that when the sheathing is put on the outside and then the weatherboard, there is some tendency for the moisture to get in between the two and cause decay, so it was thought better to have the sheathing inside and the weatherboarding simply as an outside protection on the outside of the studding. Talking over the matter with others, I found there was a difference of opinion in regard to this, and some contended that sheathing on the inside is a mistake instead of an advantage, and that plaster will break and fall from it quicker, if anything, than the regular lath, because it has no spring to it, and a bump will cause it to break; whereas, if it had the spring of the regulation lath, it would not do so. I would like to have an expression from readers of the American Carpenter and Builder on this subject of the relative advantages of outside and inside sheathing.

L. K.

**Concrete Block House**

To the Editor: Wallace, Neb.

I hereby send you a picture of a neat and substantial house of cement blocks I have built this winter twelve miles south of Wallace, in Hays County, Nebraska.

H. J. Rasmussen.
Roof Design for Colonial House

To the Editor: Pottstown, Pa.

I am a reader of your magazine, and am at present thinking of building a home and have the plans pretty well laid, excepting the roof. I would be very thankful if you would suggest a few roof designs for a double front, colonial house.

The width of the house to be about 38 feet.

Answer: The house being a double house and somewhat wide, I think a hip roof with wide cornice and wide dormers would give it a good appearance. Would also put on wide corner casings with mold caps, Fig. 1. The roof is half pitch and the dormers made with mullion windows in order to get a greater width of dormer. The main cornice is wide, with a deep frieze and dental work. The gables of the dormers should be shingled, also the sides and space each side of the window on the front. The ridge cresting for main roof and ridge of dormers should be not less than 1 3/4 inches thick and about 10 inches high at highest point on the end. This cresting can be made of wood, and if of wood, it is best made of white pine.

Fig. 2 shows another suitable design, differing from the first in that it has only one dormer. This is placed in the center of the house and has a space between the windows to widen the dormer. This has a hip roof and corbal...
brackets under the cornice, with bed molding cut in between the brackets. The dormer should be shingled up to the frieze.

The main cornice is wide with corbel brackets underneath and bed mold cut in between. These corbel brackets look nice and add very much to the appearance of the cornice. We think either one of these designs suitable for the house, although the arrangement of the windows in the second story and the style of porch in front might be such that some other style of roof would be better; that we could only tell by seeing the entire layout of the porch and front rooms of the house.

I. P. Hicks.

**A Well Built Barn**

To the Editor: Churchtown, Pa.

I am sending you herewith a photograph of a frame plank barn which I built the past summer. This barn is mortised and tenoned throughout, and is said to be one of the best framed barns built in this vicinity for a number of years.

It is 46 feet by 74 feet, and is 18 feet from the floor to the plate. This barn was built with two floors and two mows and nice stables underneath. There is also an addition built to the barn of the same height. This is 21 feet by 30 feet, having a corn crib on each side and a floor through the center, and a cellar underneath arranged for handling tobacco. The best of timber was used.

F. Glass.

**Proper Paint for Tin Roof**

To the Editor: Philadelphia, Pa.

We have read with much interest, in your December issue, an article on painting, which includes suggestions for the care of tin roofs. These suggestions are, on the whole, excellent, and we are glad to see them given publicity in this manner. We must, however, take exception to the author's recommendation of graphite paint for this purpose.

If you are familiar with the work of the joint committee on tinplate, appointed by the National Association of Master Sheet Metal Workers to investigate matters of importance to the roofing trade, you will know that one of their first duties was to investigate the matter of painting tin roofs. We quote from their report on this subject, read before the annual meeting of the association at Indianapolis in 1906:

"The paint should be of the best metallic brand, pure linseed oil, well rubbed in; litharge only as a drier. No patent drier or turpentine should be allowed. Graphite and coal-tar paints are positively injurious to tin, and should never be used—neither should cheap paints."

"Six months after laying, the roof should have its third coat of paint."

These recommendations, we remind you, were made as the result of very careful investigations carried out by the committee. The caution against the use of graphite paint is, we believe, endorsed by every leading tinplate manufacturer, and by leading tin roofers generally. We mention no particular brands of graphite paint in this connection, as our experience has been that the high-priced graphite paints give as much trouble as the cheaper kinds.

The committee in its investigations has run across many interesting cases in which graphite paint has been used alongside of other, non-injurious paints, with the result that trouble has been experienced with the graphite paint, and the balance of the roof has remained in perfect condition. Therefore, we regret, in the interests of the trade and of the reputation of its products, that this recommendation should have been made through your columns.

N. & G. Taylor & Co.

Answer: The writer has taken up this subject of the effect of graphite paint on tin plate with a number of prominent painters from all sections of the country, at three recent Master Painters' conventions. Only one of all those spoken to had ever heard that graphite paint was injurious to tin, although all agreed that Prince's Mineral Brown was probably the best paint that could be used on a tin roof. The suggestion was made that as graphite can be thinned down almost indefinitely, there might be a tendency to apply it too thin, and in that case it would be little more than an oil coat. Oil alone, with no pigment, or with but little pigment, is more or less porous, and will permit water to pass through and affect the metal. Several recommended graphite as an excellent paint over a priming coat of mineral brown.

Edward Hurst Brown.

**Answer to Dove-Tail Block Puzzle**

To the Editor: Philadelphia, Pa.

The accompanying is a sketch illustrating my solution of Mr. J. B. Hoffman's dove-tail block puzzle in the March number. I can make one out of a block quicker than the time it takes me to draw this sketch, as I am no draftsman.

Is there any reader of the American Carpenter and Builder who knows how to make a Japanese dove-tail? If so, I would be glad to see a sketch by him in this column.

O. B. Fettets.

**Another Block Puzzle Answer**

To the Editor: Excelsior Springs, Mo.

In Mr. Hoffman's dove-tail puzzle, the dove-tails do not run straight through as most people think, but run diagonally through. It is put together cornerwise; then, when glued together and smoothed up, if the points are perfect they look as though they run straight through, making a neat puzzle.

W. T. Courtney.

**Paint for Basement Ceiling**

To the Editor: Akron, Ohio.

I have a basement where the flooring is surfaced, but the joists are rough. Would kalsomine adhere to it and not peel off; or what would be the best? John Partch.

Answer: A good kalsomine, or, better yet, a so-called washable cold-water paint would in all probability give very good satisfaction.

Edward Hurst Brown.
The old adage, "Necessity is the mother of invention," is possessed of greater and more far-reaching truth and force than is apparent at the first glance. Supply and demand are said to be complementary, yet, as a rule, demand precedes supply and stimulates invention or constructive genius to produce the thing demanded. In these times many new things are constantly being devised, advertised and, so far as possible, forced upon the attention of the public in the hope of exciting a demand. Sometimes such overtures succeed, it is true, but scarcely ever where they do not fill some "long-felt want" or public yearning, except, indeed, when they act the part of successful and advantageous substitutes for things already in use.

A remarkable instance of a demand, none the less real because it has not found expression in words, is seen in metal ceilings, which though less than twenty years in use, have won wide, almost universal favor and are through certain modifications, coming to occupy an ever broadening field, to the extent of which it would be unwise to set arbitrary limits.

Like most advancements of real and lasting value, metal ceilings were in the nature of an evolution. Their suggestion was found in the corrugated iron ceilings that preceded them and rendered highly valuable service to the builder, the elements of a beauty and finish being the only things lacking.

In addition to being highly ornamental and attractive, metal ceilings possess many characteristics of a decidedly utilitarian nature, which would seem quite sufficient to alone justify their slight increase in cost over lath and plaster. Closely joined, or interlocked, so as to make them easy and economical to install, they present an almost air-tight surface, and being incombustible, they tend to greatly protect floors and woodwork in cases of fire, and have many times, by preventing the spread of flames until the arrival of the fire department, saved buildings from destruction. Being of light weight they reduce to a minimum the strain upon trusses and joists. They neither crack or fall as plaster is prone to do, nor shrink as wood often does.

The field for metal ceilings is almost universal and is constantly widening. They are largely employed in dwellings, vestibules, apartment houses, bath rooms, kitchens, banks, buffets, restaurants, theaters, public halls, churches, educational institutions, and in many other places.

We illustrate herewith a view in Lanham & Sons Company store, Rome, Ga., showing the application of "The Edwards" Gothic Ceiling Design No. 1966, one of the many handsome and artistic patterns manufactured by the Edwards Manufacturing Co., "The Sheet Metal Folks," main office and works, 401 to 417 Eggleston avenue, Cincinnati, Ohio.

The company are at the present time arranging and expect to issue shortly a new catalog "A," which will contain 148 pages, illustrating their complete line of metal ceilings and side walls, together with other useful information for carpenters, contractors, etc., and will be pleased to forward copy of same to interested parties on request.

The Wolverine Tubular Furnace

The Wolverine Furnace manufactured by the Marshall Furnace Company, of Marshall, Mich., is based mechanically on the tubular construction idea. This tubular construction means that large, heavy, cast iron tubes run diagonally through the firebox or combustion chamber of the furnace. These tubes connect with the cold air supply at a point near the base of the furnace and extending upward through the body of the combustion chamber and open through the dome into the warm air chamber. Around these tubes all the heat and flame has to pass in escaping to the radiator above. The tubes being much larger at the top, or outlet, than at the bottom, or inlet, the circulation caused by the heating of the tubes draws immense quantities of additional cold air up through the furnace. As an extension of these tubes runs from the bottom of the combustion chamber downward and away from the fire-pot the cold air does not become heated until it rises to a point even with the bottom of the combustion chamber. After the air reaches this point, it is forced upward because of the conical shape of the tubes and action of the heat. The currents of air passing through these tubes are so strong that it is easy to throw heat to isolated portions of the house and those rooms badly exposed to wind and weather. Although the flow of air is rapid, the immense radiating power of the furnace thoroughly warms every particle of air to the right temperature. All radiating surface is in intimate contact with the fire, but not so close as to
superheat the air. Another thing about these tubes is, they cannot be burned out. As fast as heat is generated on the outside of these tubes it is radiated through the iron and absorbed by the air on the inside, and as the air must move through the tubes as long as there is any fire in the furnace, therefore cold air must be constantly taking the place of warm air, absorbing the heat as fast as it is generated and radiated. The volume of heat passing through the tubes increases in proportion to the heat applied. Wolverine Furnaces burn hard or soft coal, wood, coke, or natural gas. Due allowance is made for expansion and contraction in all parts and every furnace is set up and rigidly inspected before leaving the factory. Write them for their descriptive catalogue and circular, “Wolverine Furnaces.”

Runyan Concrete Machine Company

The Runyan Concrete Machine Company, of Canal Dover, Ohio, are manufacturing a line of concrete machinery designed especially to meet the requirements of carpenters and builders. Their block machine with the vertical core is the only successful mechanical combination on the market that will make either equally as well, either side face or down face blocks; furthermore, it is the only machine that will make a down face block and not tamp it on its face. It will make the standard widths (8 inch, 10 inch and 12 inch) on one width pallet, thus saving two-thirds of the money necessary to be spent for pallets with other machines to obtain similar results. They guarantee to make from 10 per cent to 25 per cent more blocks than can be made on any other machine; blocks are made in two sizes, 24 inch and 32 inch lengths.

Their small machine with the longitudinal-horizontal core is distinctively their own invention. The blocks made on it are indorsed by the best authorities on concrete construction. It also possesses the qualification of making different width blocks on one width pallet; the extreme length of this block is 16 inches; widths 8 inches and 10 inches.

The automatic tamper is an innovation in itself; this tamper is the result of two years’ experimenting by competent mechanics. It is simple, durable and easy to operate; it is automatically adjustable, the strokes being regulated for any number, 50 to 250 per minute, while the length of this stroke is about 3 inches. A force not to exceed 3⁄4 H. P. is necessary to operate it. Another important feature lays in the fact that they can tamp with it in any direction and at any angle, using any shaped rammer to meet the requirements. This tamper has been seen, examined and tested by mechanical experts with the result that they have the highest indorsements for it.

They also manufacture a combination screen and mixer which possesses the unusual qualifications of being able to screen and mix at the same time, or will perform either operation independently of the other. This is one of the greatest labor-saving devices on the market today, and the company has letters showing that it is doing the work of six men, though requiring but one attendant. Any one contemplating installing concrete machinery of any kind should get in touch with this company.

New Ceiling Catalogue Free

We herewith present two illustrations taken from the catalogue of Wm. Foster & Sons Company, whose main factory is located at Springfield, Ill. They issue an eighty-seven page catalogue devoted exclusively to metal ceilings and side wall material.

This firm takes great pride in the fact that they manufacture the only beaded metal ceiling on the market in which the bead is cut in the die after being cast at the foundry. The common way of doing this is to cast the bead in the iron die at the foundry, and in cooling off there is an irregular shrinkage which causes the field plate to shrink more or less than the border plate. This makes imperfect plates and causes a great deal of trouble in erection. Where a square and accurate plate is used one-third of your time is saved in

One Cause of Purity

in Ivory Soap 99-89 pure—is the fresh pure atmosphere in which it is made.

This good ventilation in the Ivory Soap factories is furnished by

Burt Ventilators

No other ventilators have so great a “pull,” no other ventilators are made better, no other ventilators are provided with the patented sliding sleeve damper, which can be adjusted to any degree of opening desired, and is storm and dust proof, opened or closed.

Burt Ventilators are made with glass or metal tops as desired, and can be arranged to close automatically by heat in case of fire.

Send for our new 80-page catalog giving fine illustrations of mills, shops, foundries, and residences where Burt Ventilators are in successful use.

The Burt Mfg. Co., 500 Main Street, Akron, O.
READ THIS GREAT FREE BOOK OFFER TO ROOFERS—

Contractors—Builders

The Heppes Co., of Chicago, manufacturers of the famous Heppes No-Tar Roofing, announces that another big edition of its Roofers' Book and of its Instruction Sheet have just come from the press. The American Carpenter and Builder is authorized to make this free offer:

To each and every reader who writes at once to the Heppes Company, they will send free, postage prepaid, a copy of the Roofers' Book and Diagramed Instruction Sheet, one copy to each address.

We urge every reader to hasten to take advantage of this offer. The Heppes Roofers Book has already proved so popular with leading men in the building trades everywhere that the supply is subject to a heavy demand.

Write to-day. Address THE HEPPES CO., 631 South 45th Ave., Chicago, and be sure to get both the Book and the Sheet.

The Heppes Roofers Book

is a valuable aid to any man who has anything to do with roofing, no matter how much or how little experience he has. In addition to a complete catalog of Heppes No-Tar Roofing—which property owners are specifying in all parts of the country—it contains more roofing helps than any work of its size ever published. It explains the difference between Heppes No-Tar and "tar felt" and "building paper." It tells just what ply roofing to put on a store building and what ply to put on a shed. It shows the difference, in the cost of Heppes No-Tar and shingles. Why Heppes No-Tar, which costs only half as much as shingles will last three times as long. It tells why rain, snow, ice, heat or cold do not crack Heppes No-Tar or damage it in any way. It makes you thoroughly familiar with roofing values—so you can convince your customers—and make others want this durable roofing.

The Heppes Instruction Sheet makes you an expert roofing layer, saves you time, and saves you work. It shows how to cut Heppes No-Tar Roofing to avoid waste in going around steeples, chimneys, smoke stacks, etc. How to make a perfect flashing. How to cement laps to avoid leaks. How to lay a skin-tight, perfectly smooth roof. How to make gutters and valleys. How to finish eaves. How far apart to place special nails to have best wearing roof. How to cover old shingles. How to roof on sheathing, etc.

Remember, you get both the Book and the Instruction Sheet simply by sending your name and address to the Heppes Company.

HEPPES NO-TAR ROOFING

It is the roofing that will build up business and make money for you. It is the roofing for farm and city homes—factories—stores—churches—steeples—barns—silos—out-buildings—poultry houses—for every job, the largest and smallest. There are hundreds of dollars in it for the wide awake man in every community. We will send you our special contractors' samples. We will also put your name on our mailing list for all our literature. Get in touch with the best in the business. Let us help you. We are willing and anxious to cooperate with every man that comes to us for our advice and assistance. Write today.

THE HEPPES CO., 631 S. 45th Ave., CHICAGO
The Best Paint and Varnish Remover

FREE TO YOU

JOHNSON'S Electric Solvo is not like any other paint and varnish remover. Perhaps you've tried other paint and varnish removers that were said to be the best. Perhaps you've been led to believe that all high-grade paint and varnish removers are exactly the same.

It's true that they all sell for the same price.

But (a big but) Johnson's Electric Solvo is different from all the rest because it won't—it can't injure the new finish and spoil your work.

We'll tell you why:

All the paint and varnish removers that are worth anything at all are made through license, under a certain patent. The patent calls for a large percentage of paraffin and it is the quantity of pure paraffin used in other paint and varnish removers that prevents your new finish from drying properly.

Now in Johnson's Electric Solvo we use a special secret combination which contains only about one-fourth of the specified amount of paraffin.

As a consequence, Johnson's Electric Solvo gives the very best results in removing the old finish but does not leave an excess of paraffin to spoil the new finish.

Now you know why Johnson's Electric Solvo is the only safe paint and varnish remover for you to buy—and it costs no more than the unsafe kind.

Perhaps you've had an unfortunate experience with the new finish not drying properly after the use of a paint and varnish remover.

Now you can forget all that.

Tear out the coupon on the opposite page, fill it out and mail it to us now before you forget it.

We will send you, all prepaid at our expense, a sample of Johnson's Electric Solvo.

Address:

S. C. Johnson & Son
Station AOB-4, Racine, Wis.
"The Wood Finishing Authorities"

FREE Wood Panels For You

When you cut out the coupon on the opposite page, and send it to us, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishes if you can make good use of them and will so write on the coupon.

This set of wood panels will be mighty handy to show your customers so they can pick out just exactly what they want. And then you will give them just what they want, because you will find that Johnson's Wood Dyes will always match up exactly with the samples.

For all woods to be finished Natural and in Golden Oak, Dark Oak, Antwerp Oak and Green Antwerp Oak, we advise the use of Johnson's Paste Wood Filler and Johnson's Prepared Wax.

For all woods to be finished in all other shades, we recommend Johnson's Wood Dyes, and for filled-grained effect on open-grained woods, the use of Johnson's Paste Wood-Filler over the Dye, followed by Johnson's Prepared Wax.

The wood panels will show you the superiority of such finishes.
Finished Wood Panel Samples
FREE TO YOU

Cut out the coupon below and send it to us for a sample of Johnson's Electric Solvo, our handsome 48-page book and if you can use them and request it, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishes—Johnson's Wood Dyes, Johnson's Paste Wood Filler and Johnson's Prepared Wax.

The book tells all about finishing, re-finishing and polishing woods. It's full of practical ideas of great value to painters and wood finishers.

Johnson's Paste Wood Filler will never disappoint you or your customers.

Our special study of the wood finishing problem and our twenty-four years of experience as specialists in the handling of fine woodwork and wood finishes have proved that it is impossible to combine a filler with a finish as one preparation.

Anyway, most liquid fillers are simply very cheap grades of varnish which do not penetrate the wood at all—simply remain on the surface and show every scratch and heel print.

Some paste wood fillers are made of corn starch and like all vegetable products they decay in a short time—other fillers are made of whiting, talc, plaster of paris or other cheap stuff, and when dry they become loose and leave the wood worse than before—still others are made of cheap, round-grained silex, and do not properly penetrate the grain of the wood and so do not hold fast in it.

Johnson's Paste Wood Filler is made from the best and most expensive needle-like silex crystals, linseed oil and the best japan dryer—thus Johnson's Paste Wood Filler penetrates, and the crystals fit themselves perfectly to the grain of the wood and hold fast to it.

Johnson's Paste Wood Filler is prepared in six shades as follows: No. 10, Natural; No. 20, Golden Oak; No. 30, Dark Oak; No. 40, Antwerp Oak; No. 50, Green Antwerp Oak; No. 60, German Gray.

S. C. Johnson & Son
Station AOB-4, Racine, Wis.
"The Wood Finishing Authorities"
Send This Coupon To Us Now

and we will send you the sample of Johnson's Electric Solvo, our handsome 48-page book, "The Proper Treatment for Floors, Woodwork and Furniture," and wood panels, if you ask for them.

FREE

His address is

My name is

City

When writing advertisers please mention The American Carpenter and Builder
erection. Any practical mechanic who can work to a straight line can erect their metal ceilings. With each order they send a blueprint showing the exact arrangement of each plate, by which aid it is impossible to go wrong in erecting one of Foster's ceilings. Every plate is stamped and re-stamped to bring out the fine details and outlines in the figure. After stamping the plates are re-sheared and are then dipped in the dipping tank, where they are painted a coat of special blue ceiling primer on each side. The plates are all painted after stamping and not before, as is commonly done by most manufacturers. By this method an even coat is on every plate. They carry a large stock and are in a position to ship promptly.

The other illustration is of Foster's ornamental hip shingle, which, since it has been on the market, has rapidly taken the place of plain tin strips. This shingle is specially designed for covering the hips of roofs, either straight or curved, and is intended to take the place of plain tin strips, wood and metal ridge rolls. They can be adjusted to different widths and make a very ornamental finish. These can also be furnished in long lengths of several shingles in one piece up to five feet in length. For slate the standard size is 5 inches by 12 inches, and for wood the standard size is 4 inches by 9 inches. They are made of tin and galvanized iron and packed with two hundred and fifty in a box.

Wm. Foster & Sons Company also manufacture a full line of fireproof metal window frames and sash, galvanized iron brick and rock-faced siding, galvanized iron cornices, skylights, ventilators, zinc ornaments, radiator shields, and in fact anything in sheet metal building material. The firm invites the request of all contractors or builders for their ceiling catalogue No. 2, which will be mailed them prepaid, free on request.

---

MORGAN

MAKES AND GUARANTEES

THESE PRODUCTS

The Materials named below are the development of ONE BASIC VEHICLE, but each is different in character and has a specific use of its own. Singly and collectively they form the GREATEST DISCOVERY OF THIS IN 1917. BUILDING, FOR WATERPROOFING, COATING, COLORING, OR PLASTERING CONCRETE, CEMENT BLOCKS, AND BRICK wherever employed below or above the ground.

WE SUPPLY FREE SAMPLES

of any of these materials to any contractor, builder, owner or dealer. To do so, we must know exactly what purpose the material is for and difficulties to be overcome. This often requires us to make a chemical analysis of a piece of the brick, stone, block or substance to be waterproofed, whether it is below or above ground, and if for application to exterior or interior. In requesting samples, give details on the above points.

COATINE is a cement that is made of silicates and oxides with the addition of Our Vehicle. It produces a cement that is water-proof and can be used for all concrete work, also, on top of or below regular concrete. In either case it will make the concrete absolutely watertight at the same time it will make a very attractive finish. It makes a beautiful cement for all cement walls and in fact, any place where you want to put a coating that will adhere to any and all kinds of surfaces, making them positively watertight. The adhesive and wearing qualities of our COATINE are beyond question. It will stand all scientific and service tests. It is made in non-fading colors.

MORGANITE is a liquid form (not a paint). It is one of the greatest productions that has been put on the market of late, as it answers the present demand for something that will waterproof, thus preserving and protecting cement and masonry and at the same time making it strong and weather-resistant. It makes a waterproof stainless wall. It saves 70% in labor and material over the usual method of plastering. It does away with the crude proposition of only partially waterproofing as in the case with all other forms of damp-proofing materials. Morganwall Plaster contains lime, silicates and oxides, together with our Vehicle for thoroughly mixing. It prevents staining or discoloring and has greater adhesive qualities than cement or plaster.

WRITE NOW—TODAY

H. B. MORGAN & CO.

1107-1111 Seventy-Sixth St.

CHICAGO...

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
YOUR HOME—Everybody's home should have a mantel. A mantel is useful as well as artistic and decorative. It saves you furnace heat on chill Spring and Autumn days, and diffuses cheer and comfort more than does any other piece of furniture in the house.

CHARACTER and QUALITY

Lorenzen Mantels have a distinct character and quality both in design and workmanship, not possessed by others. This has made for them world-wide reputation and enormous sales. The great volume of our output is what enables us to sell Lorenzen Mantels at such low prices. We have more than 100 designs and styles selling at from $2.50 to $250.00.

STYLES

Lorenzen Mantels embrace Colonial, Craftsman, Modern Mission and numerous other styles, and all woods and finishes. Our modern factory, large stock of air-seasoned lumber, and expert, skilled workmen all mean beautiful mantels, far above the ordinary. We are at all times prepared to furnish designs of mantels and fireplaces in the historic periods of architecture, such as Louis XIV, Louis XV, Louis XVI, Renaissance, Gothic, Rococo, Empire, Early English, Colonial, Chippendale, Sheraton, Adam, etc.

FREE CATALOGUE—The largest and finest catalogue of wood mantels ever issued, with photographic reproductions. Each copy costs us nearly a dollar to issue, but we send it free to all Carpenters and Builders. If you write for it now you won't forget.

CHAS. F. LORENZEN & CO., Inc.
299 N. ASHLAND AVE., CHICAGO
Mantel and Fireplace Catalogues Free

The A. W. Burritt Company, known throughout the country as "The Mantel Folks," make announcement in another column to the effect that their 1908 catalogue is ready for distribution to all persons interested in mantels, tiles and fireplace furniture.

While this firm has been selling mantels for a period of only four years, it has met with splendid success and is now doing an extensive business throughout the country. By a generous, yet judicious use of "printer's ink" it's name is well and favorably known in every state of the union and its satisfied customers are legion.

Carpenters and builders who are constantly buying mantels for themselves or their patrons are rapidly learning that "Burritt Mantels" are dependable in every sense of the word and prove a constant source of satisfaction to both owner and builder. The A. W. Burritt Company pride themselves upon their past record of fair dealing, prompt shipments and the unvarying excellence of their goods and cordially invite everyone interested to write for their Catalogues. The mantels shown herewith give some idea of the variety of design, material and workmanship which characterizes "Burritt Mantels."

The stock is perfectly seasoned and kiln-dried, carefully

WHITNEY PLANERS

If you want a Planer that will take the roughest, toughest, warped, uneven, twisted boards and turn them out with the smoothest of smooth surfaces, and
A Planer that will take, plane two or more boards of different thicknesses at the same time, and
A Planer that is staunch enough to stand anything short of actual abuse, and
A Planer that can be used for common box boards as well as fine cabinet work, and
A Planer that can be depended upon at all times, under any conditions,

Then Buy a Whitney

Either Single or Double Surfacer

For Further Information Write

BAXTER D. WHITNEY & SON, Winchendon, Mass., U.S.A.
Vulcanite is a natural Mineral Rubber which we control. It is mined the same as coal and costs us $100 a ton. It is the best and most expensive material used to manufacture ready-to-lay roofing. Vulcanite was first made in Europe sixty years ago. It is the most extensively used roofing in European countries today. Vulcanite was awarded the highest honors in America at the Philadelphia Exposition thirty years ago. It is not the cheapest roofing at first cost but is cheapest in the end.

In the process of manufacture Vulcanite is all subject to enormous pressure, consequently is made dense and very firm. Each square weighs considerably more than other roofings, and ply for ply is much thicker.

Vulcanite Roofing is composed of a pure all-wool felt—there is not a particle of paper or other cheap filler in it. The base of most cheap prepared roofings is a felt composed of a large percentage of waste paper added to the wool pulp. Our free booklet tells the entire process of manufacturing Vulcanite—write for it.

WE GIVE GOOD GUARANTEES

Vulcanite is guaranteed by us as follows: Three Ply to wear fifteen years. Two Ply to wear ten years. One Ply to wear five years. We are manufacturers and our guarantees are good.

TO DEALERS WHO SELL IT.—Vulcanite is guaranteed as above and dealers are authorized to give customers written guarantees in our name.

TO CONTRACTORS WHO LAY IT.—In bidding on roof contracts the contractor is authorized to guarantee Vulcanite as above. We will stand behind every contract guaranteed.

TO OWNERS WHO BUY IT.—Owners of buildings on which Vulcanite roofing is laid can have a direct guarantee from us through the dealer and contractor as above named.

FREE SAMPLES

Vulcanite will not freeze or crack in winter—will not crumble in dry weather—will absolutely refuse to leak in wet weather. If your dealer does not carry "Vulcanite," write us for samples and free booklet. See "Vulcanite" before you buy other roofings.

WRITE TODAY—SURE
We are Specialists in our particular Line of Millwork Product

OUR SHOP EQUIPMENT IS SUCH THAT ECONOMY AND QUALITY ARE PRESENT IN EVERY ARTICLE MADE

Send for our New Catalog No. 17

CHICAGO EMBOSSED MOULDING CO.
Big Inducements to Consumers are always on Our Slate

CAPS
GRILLES
COLUMNS
SPINDELS
BRACKETS
BALUSTERS
MANTELS
MOULDINGS
STAIR WORK
PORCH WORK
GABLE ORNAMENTS
ETC.

We Manufacture Everything in the Cabinet Line

VERY PROMPT SHIPMENTS

583-587 Austin Ave.
CHICAGO
MAJESTIC
ALL CAST IRON
WARM AIR FURNACE

Manufactured in three styles, suitable for burning Hard or Soft Coal, Coke or Wood. Send us your plans. We will make heating plans and quote best wholesale price on complete outfit.

THE MAJESTIC
COAL or WOOD CHUTE

A modern up-to-date convenience. The cost is so small that no residence, old or new, should be without one.

GOOD LIVE AGENTS WANTED
Write us for catalogue and our special proposition to contractors

Majestic Furnace & Foundry Co.
101 to 109 West St. Huntington, Ind.

selected for handsome grain effects and put together according to the most improved methods by thoroughly competent workmen. The finishing receives special care and attention and sufficient time is always allowed to produce the most pleasing and satisfactory results. “Burritt Mantels” may be had in the polished or dull rubbed finish, three coats flat white or any of the popular mission finishes.

While urging, so far as possible, the use of stock patterns and sizes, this concern is prepared to elaborate or modify any design shown in their catalogue and furnish same in larger or smaller size to meet special conditions at the job.

The fireplace goods handled by this company and shown in Catalogue “D” are of the same high standard of excellence as their mantels, and while handsome in appearance, are nevertheless built for real service. The variety of patterns in grates, portable baskets, fire sets, frames and summer pieces makes it an easy matter for anyone to select a suitable design to meet one’s own fancy.

Tiles are an important feature of fire place decoration and when carefully selected greatly improve the appearance of the mantel. Tiles of every description for fireplaces are furnished by this company at attractive prices, as well as sanitary wall and floor tiles for bath rooms.

When writing for catalogues address Department M and mention the fact that you saw their advertisement in the American Carpenter and Builder.

Genuine Bangor Slate
Slate roofs have stood the tests of time, wind and fire on all kinds of buildings. Slate is one of the oldest, yet most popular materials for roofing purposes. The very best slate roofing for structural purposes and blackboards comes from Bangor, Pa., which is the home of the East Bangor Consolidated Slate Co., which has an ad. in this issue. This company will be pleased to furnish valuable advice and information about slate in general and slate roofs in particular to all who write.

Specialties in Roofing and Sheathing Papers
To carpenters, builders and contractors who wish to buy building, roofing and insulating papers in any quantities, Messrs. C. B. Hewitt & Bros. are sending their latest price list and sample book. Stock of this company comprises fiber plaster board, deafening felt and all special papers used in construction work. Information concerning their line will be sent to any one writing for same and mentioning this paper.

Specialties in Slate
To all contractors and builders interested in specialties in slate, the Pittsburgh Slate Company is sending its latest price list for this season. Works of this concern are situated right in the heart of the famous Bangor slate district, and everything in slate products is comprised in its line. Copy of this new list will be sent to anybody writing for same and mentioning this paper.

Clamp and Vise Economy
There is probably no problem that has to be solved and re-solved more frequently than that of clamping work in a modern wood-working shop. This is particularly true in a factory where quantities of work of various kinds, requiring gluing and clamping, are being turned out from day to day. While the average shop’s supply of clamps to start with seems ample, the gluing operations come to an untimely end very soon after it begins, owing to their scarcity. This will be more readily appreciated by those experienced in the
For Good and Bad Ready Roofing?

There are some atrocious materials masked under the general term "ready roofing," manufactured from Petroleum sludge, refuse from soap factories, etc.

It costs no more to lay good roofing than poor roofing, and yet it saves you a large after-expense in maintainence, repairs, and damage caused by leaks.

**Bad Roofing**—when finished with soapstone, looks well—but when exposed to the weather and atmospheric conditions, time soon demonstrates its inferior qualities.

**Good Roofing**—proves its value by durability on the roof under the stress of weather and atmospheric conditions.

I know what materials are under the soap-stone finish in my Compo-Rubber Roofing. I manufacture the Foundation Felts, as well as the Saturating and Coating compounds. Therefore, I absolutely control the quality through every stage of its manufacture, and can safely guarantee the Durability of the fabric. And there is only one way to insure you on this point. We are the only Company that have adopted a method which does not necessitate your investigating any further than to ascertain whether or not every roll sold bears on the wrapper Woodley's certificate of quality, which lifts all risk from your shoulders and places it where we are willing to have it located—on our own.

An Individual Written Guarantee Furnished With Every Roll

A mere verbal guarantee can be easily forgotten or dodged by a dealer, but we Cannot Dodge our responsibilities under our guarantee plan. In a nutshell, we claim to be the only Company furnishing with every roll that is made, roof insurance that can't be questioned.

Be sure our certificate of quality is pasted on every roll of roofing you purchase.

WOODLEY'S IS THE ONLY READY ROOFING WITH THE REAL GUARANTEE

If goods bearing this guarantee are not sold in your city, write us for samples and prices.

Jas. C. Woodley & Co.

2264 LUMBER ST., CHICAGO

Branch House St. Louis
making of table tops, desk tops, dresser tops, etc., where five to eight clamps are necessary on each top and should be allowed to remain on the work at least twenty-four hours before removing the pressure.

When we stop to think, the top of a desk is by no means a whole desk, but it has many other parts to be clamped during its construction. Further, that desks to be more economically manufactured, must not only be made in lots of hundreds, but thousands, and these operations to be done economically must so far as possible be continuous, we begin to realize one factor of the manufacturer's clamp problem.

The next and equally as discouraging is the constant breakage, unless the clamps are prohibitively heavy or expensive. The average gluer in his excitement and haste to get the pressure on his work before his glue chills, is a clamp wrecker.

The inventor of the Sheldon line of clamps and vises began his career in the machine shop, then into the wood shop, where he was confronted with the usual clamp problem. He was asked to get up a quantity of wood bar clamps with iron heads and screws for a piano manufacturer, that would not split and break loose from the bars under excessive pressure, that would not let the screw get out of line with the bars, that would provide against uneven or angular strains, bending the screw, the head turning by the friction of the screw under excessive pressure thereby throwing the clamp out of position, or sliding off of the work at the critical moment. With the machinist's anxiety for strength, the woodworker's ambition for serviceableness, rapidity and economy, by much hard work, expense and experience, he solved the problem not only on the wood bar clamp, but steel bar clamps.

His Woodworkers' Rapid Acting Vises were developed in a similar manner, with the conviction that a woodworker's vise should not be built on the principles that would make a machinist's vise an utter failure so far as rigidity and positive action were concerned, that the slide and outer jaw must necessarily be of one solid piece of metal to accomplish this, that the pressure must be applied as near as possible to the resistance, that the wearing parts must be adjustable and either of steel forgings or malleable iron to stand the excessive strains that they are continuously subject to, that they must not cost from $5.00 to $10.00, when a woodworker can buy a vise screw for fifty cents and make himself a vise, which while inefficient and inconvenient, can be made to do.

The Sheldon Company ask no better proof of the correctness of these convictions than the records of their sales. The wood-working trade has appreciated their efforts, their guarantees, and their values, to the extent of 25,000 clamps, and 15,000 vises since their introduction. They are now installed in their new plant at 86 N. May street, Chicago, and have some literature on these subjects that will be interesting to any wood worker.

---

**Composition Models for all Purposes**

The illustration on this page shows a section of stucco work manufactured by the Acorn Modeling Works, of Indianapolis, Ind., which was placed in the banquet hall, Scottish Rites, Fort Scott, Kans. This concern makes a specialty of original designs for ornamental stucco work, for halls, lodges, theaters, churches and other buildings of like character. They also produce machinery for metal ceiling manufacturers, and original designs in dies in plaster and iron. One of their special features is the making of models of buildings for architects direct from their plans. These are made out of a special composition, correctly to scale. From such models a good photographic perspective view can be obtained without difficulty. The composition from which these models are made, which is patented, is very strong and can be shipped by express without danger of breaking. Mr. Newak, the proprietor, has personal charge of the modeling and building department, and has associated with him, Mr. Koffend, a graduated civil and mechanical engineer, who acts as constructor.

Every architect who gives their models a trial becomes a steady customer. Their works, which are located at 2238 Shelby street, Indianapolis, Ind., started on a small scale, but have been growing constantly.

---

**The Floor of the Future**

Wisdom directs and experience has taught that the floor of the future, be it in hall or in home, in factory or in palace, is to be of smooth and highly finished wood. There is a robust elegance about a hardwood floor which combines the delicacy of great natural beauty with the wearing qualities of iron. In points of economy and sanitation, the smooth-surfaced wood floor is virtually a necessity. It harbors no germs, and for sanitary reasons is recommended by the best physicians, scientists and architects. Until recent date the hardwood floor was considered an expensive luxury, principally because of the great amount of labor required to properly finish it, as well as of the additional labor required to keep its surface presentable where much in use. But
The Story of the Street Car

Side by side they sit; the one filling an important position in the world, enjoying a good income, and with every mark of prosperity—the other bent down with hard toil, working in a by-the-day job at poor wages. Why is it so? The answer is training.

Probably they started on an even footing 10 or 15 years ago but, the one man secured the training that enabled him to rise to the highest position in his chosen trade, the other either would not take the trouble to secure this training or did not realize the immense value of it.

If you are an untrained man and want to advance, write today to the International Correspondence Schools and learn how you can better your position, and how you can have your salary raised. You will be surprised when you learn what a practical plan this is—how you can secure in your own home, in your spare time, without leaving your present position the training that will qualify you for rapid and sure advancement. Last year I.C.S. training brought increased salaries amounting in one year to over two million dollars to the small percentage of I.C.S. trained men that voluntarily reported their advancement. If you want your position bettered and your salary raised, mark and mail this coupon. It puts you under no obligation to do this much, so do it now.

International Correspondence Schools
Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position below which I have marked X.

<table>
<thead>
<tr>
<th>Architect</th>
<th>Civil Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Draftsman</td>
<td>Mechanical Engineer</td>
</tr>
<tr>
<td>Contractor and Builder</td>
<td>Mechanical Draftsman</td>
</tr>
<tr>
<td>Structural Engineer</td>
<td>Electric Power Station Supvt.</td>
</tr>
<tr>
<td>Structural Draftsman</td>
<td>Foreman Machinist</td>
</tr>
<tr>
<td>Plumber, Gas &amp; Heat's Inst.</td>
<td>Sheet Metal Pat. Draftsman</td>
</tr>
<tr>
<td>Sup't of Planning</td>
<td>Mining Engineer</td>
</tr>
<tr>
<td>Foreman Steam Fitter</td>
<td>Railroad Construction Eng.</td>
</tr>
<tr>
<td>Planning Engineer</td>
<td>Bookkeeper</td>
</tr>
<tr>
<td>Bridge Engineer</td>
<td>Civil Service Exams.</td>
</tr>
</tbody>
</table>

Name:

St. and No.:

City: State:

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
today this is all changed. Manufacturers of the various forms of flooring have succeeded in improving their product to such an extent that its practicability has been greatly increased and cost reduced, and all that remained was for perfect machinery to be invented that would take the place of the old, tedious, expensive and uneven method of hand scraping in finishing and refinishing wood floors. Through the invention of the Schlüeter Rapid Floor Surfacer, this has been accomplished in a way that has overcome every difficulty as to method and means and left nothing to be desired in point of cost or effectiveness.

With a Schlüeter a wood floor of any kind in any building, from an Auditorium or great Exposition building containing thousands of square feet in one unbroken surface, to the smallest room in the humblest home, can be made and kept the acme of perfection in smooth-surfaced finish, appearance and cleanliness. The Schlüeter Rapid Floor Surfacer is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of 600 revolutions a minute. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine is guaranteed to be the best machine adapted to produce an even, smooth surface on any kind of old or new wood floor, hard or soft, and in all buildings, from residence and stores, to factories, bowling alleys, roller skating rinks, reception and dance halls, etc. It will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner. In another place in this issue will be found an advertisement illustrating this machine. A fine illustrated booklet on floor surfacing will be sent free to all who write M. L. Schlüeter, 61 South Canal street, Chicago, and mention the AMERICAN CARPENTER AND BUILDER.

Woodley’s Real Roofing Guarantee

The manufacturer of any kind of product and the dealer selling the product can easily say, “We guarantee it,” but in the matter of ready roofing a mere verbal guarantee is not worth much, because time is the true test of the qualities of a roofing, and unless the purchaser has documentary evidence of an actual guarantee, direct from the manufacturer, which means something, and can be presented years after the roofing is laid, he really has no guarantee at all.

James C. Woodley & Co., the manufacturers of the celebrated product known as “Woodley’s Compo-Rubber Roofing,” are the first and only house to protect the contractor, dealer, consumer and themselves by issuing to the purchaser a written guarantee in an official and legal documentary form that absolutely protects all concerned, and their selling method is such that no consumer or contractor need be imposed upon by having some other brand of roofing substituted for Woodley’s Compo-Rubber.

On this page is shown an illustration in fac-simile of the form of Woodley’s guarantee, that goes to each purchaser with every roll of their roofing and can be obtained from any dealer selling their brand.

The new mill of James C. Woodley & Co. manufactures ten carloads of...
Are you thinking about building soon? What about your lumber? Hope you haven't ordered it yet—for if you have, you've surely missed a chance to save money.

You see, we get timber from our own forests—keep four mills running night and day cutting up lumber, and ship direct from the mill to you. Every farmer, carpenter, contractor or owner can buy lumber from us at just the same price as the largest lumber dealer.

You know right well that the retail lumber dealer has to make a big profit at your expense. Why should you help pay for his teams, wagons, big rent, clerks' and yardmen's wages? Don't you also pay the wholesalers a profit and help pay his traveling salesmen's big salaries and expenses, too?

Now, we have started out to build up the largest lumber business in the United States, and we believe that in cutting out the middle man's profits—giving you the benefit of them—we are moving in the right direction. You've had to work hard for what you've got, and if you're planning to build another house, why should you let this opportunity to save money on your lumber bill slip through your fingers.

Please don't confuse us with any wrecking company. We do not handle second-hand lumber—neither are we in any way connected with the trust. We're proud of the fact that the retail lumber dealer has to make a big profit at your expense. Why should you help pay for his teams, wagons, big rent, clerks' and yardmen's wages? Don't you also pay the wholesalers a profit and help pay his traveling salesmen's big salaries and expenses, too?

Every farmer, carpenter, contractor or owner can buy lumber direct from the mill to you. Every farmer, carpenter, contractor or owner can buy lumber direct from the mill to you. We ship all kinds of lumber from round to heavy timbers, also laths, shingles, mill work, sash, doors, hardware, paints, plaster-boards, lime, cement and roofing paper. Quick delivery guaranteed. Let us know your needs and we'll quote lowest prices on all builders' supplies laid down in your city.

We've a host of satisfied customers throughout the Central Western States and we are pretty well satisfied that one shipment of lumber would put you on the list of the finest. We don't ask one penny in advance—bills paid after you pay one cent.

Independent Lumber Company
Yard 6, St. Louis, Mo.
is shown on page 104. It is sent to anyone upon receipt of 25 cents to cover postage. This box contains neat samples of the following building materials:

Woodley's Compo-Rubber Roofing.
Woodley's Flint-Covered Roofing.
Woodley's Ready Gravel Roofing.
Woodley's Asphalted Felts.
Woodley's Tarred Felts.
Woodley's Threaded Felts.
Woodley's Slaters' Felts, etc.
Building Papers.
Deafening Felts.
Linofelt Sound Deafener.
Lath Insulator.
Compo Board.
Blue Plaster Board, etc.
Carpet Linings.
Dry Roofing Felts.
Asphalt Roof Coating.
Structural and Metal Paints, etc.

This sample box should be in every contractor's and architect's office. The illustration shown at the beginning of this article is of a roll of Woodley's Linofelt Sound Deafener. This material is made from degummed Flax Fiber, sewed between two thicknesses of three-ply building paper and is a sound deafener of great efficiency. The flax fiber is degummed by a special patented process, rendering it clean and odorless. It will not decay as hair felt does, and is rat and vermin proof. Put up in rolls 36 in. wide, containing 120 square feet. For more information see the full page display ad. or write James C. Woodley & Co., 22nd and Lumber, Chicago, Ill.

The New Ideal

The inventive mind of man has devised many and various methods for lightening labor. Nowadays things must be accomplished quickly, and machinery is, and always has been, quicker and better than hand work.

There are many floor scraping devices on the market at the present time, some good and others not so good, but as a rule they are great labor savers. Most of the machines now on the market resemble each other greatly, but the New Ideal Floor Scraper is totally different from the others in almost every respect. In the first place it is strictly automatic in its movements, and it is essentially not a "pivot" machine.

By referring to the below cuts the differences between this and other machines is plainly manifest. It is made with all the latest devices for fast and accurate work, and it will positively surface and finish the floor, leaving the floor absolutely level. It is, as was said before, automatic in its action, with automatic levers that operate the knife. The handle is not raised while scraping, as is customary in most other machines, and the angle of the knife can be adjusted so that it will cut either deep or shallow for different kinds of wood. It is claimed that this machine will work where others have signal-ly failed, and that more work and better work can be done with it than on others. Strength and simplicity are its chief characteristics. The entire weight of the machine is practically in its wheels, which are at all times bearing directly on the floor, and by an adjusting rod on top of the frame, this weight may be either increased or diminished as desired.

The knife arrangement in the New Ideal stands alone of its kind, and its superiority can be seen at a glance. The front section of the frame which is hinged at the axle and to which the knife is attached can be swung upwards instantly to sharpen or buff the knife, which saves the opera-

The New Ideal Floor Scraper is totally different from the others in almost every respect. In the first place it is strictly automatic in its movements, and it is essentially not a "pivot" machine.

Spring cushions attached to the rockshaft and operating on the roller at the rear of the frame, keeps a uniform pressure of the knife on the floor at all times while cutting. This machine was invented by Mr. Samuel Drew, 191 Genesee street, Rochester, New York, and from letters shown to a representative of this paper, all the claims made for it are fully substantiated. It is a good machine. Write him, mentioning this paper, for further information.

Latest Improved Swing Cut-off Saw

One of the latest inventions upon the market is the new improved swing cut-off saw now being manufactured by the Lovell Machine Works, of Gardner, Mass. It is adapted for use in shops of any description, it being made in any required size to carry from 14 inch to 54 inch saws, according to the size of work desired. The cut here shows a regular 16 inch machine, and particular attention is called to the adjustable hanger which is so construct-ed that the box which carries the weight of the swing frame relieves all friction from the countershaft, and may be adjusted six inches up or down, in aligning the saw. This adjustment allows for the taking up of all the wear in the saw, which is not only a great saving, but it also gets all possible wear out of a saw.

The frame swings on a turned sleeve, outside of the box and the countershaft and inside of the sleeve, making a perfect swing, free from all friction caused by the weight of the frame.

For a more complete description of this machine and for information relative to the extensive line manufactured by this company, a card addressed to the Lovell Machine Works, Gardner, Mass., will bring a complete, handsomely illustrated catalogue.
Save 30 to 60 Per Cent. Buy Direct. Building Supplies of Every Kind. Every part of the United States. No matter where you live you can save money by buying direct. We save money.

Our Grand 1908 Offer

FIFTY MILLION FEET AT REDUCED PRICES

Bought at Forced Sales from Manufacturers. It makes us Headquarters for Thousands of Genuine Bargains in Lumber and Building Supplies. We save money.

*Good Advertisement for Us*

Hundreds of Big Money Saving Bargains for Every Builder. Don't Buy Your House, Barn, Store, Corn Cribs, Church, etc., without this. Supply Outfit. We invite you to examine this outfit. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouses and yards at Chicago, Cleveland, and see the lumber we are offering and you will recognize that it all was we say of it. We make your own selection and see it loaded. It is not necessary for you to come to Chicago, however, unless you wish to. We can fill your order by mail with what you want and guarantee you absolute satisfaction. Our business demands quick action. We ship to the consumer and lumber headquarters in the world. We sell millions of feet annually. Orders filled from 100,000 feet of new lumber.

The Chicago House Wrecking Co.,

*Parshley, Rowe & Co.*

Supply Line, including light and heavy hardware. Send us your lumber bill for our estimate. Ask for our new special mill work catalog. It prices everything in mill work, all brand new, best quality.

FREE CATALOG COUPON.

Fill out, cut out, and Mail to Us.

FREE! Building and Barn Plans—Architect's Advice FREE!

*A Good Advertisement for Us*

Ainsworth, Ind.—I received my carload of Nevada, Mo.—Will say I am very much pleased lumber from you and it was O. K. in...and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of the worry of selecting materials. You can include in this same car, pipe, plumbing material, roofing, siding, and anything else you want.

Send us your lumber bill for our estimate. Feel free to write for anything you want to know about along the line of building and supplies.

DOORS 40c WALLS 20c

Everything in mill work, All brand new, best quality. We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can...outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 50 per cent less than your local dealers or lumber yards ask for it.

IMPORTANT! Send Us Your Lumber Bill For Our Estimate.

Rubberized-Valo Roofing, $1.25 per sq. Many times thicker than ordinary. Guaranteed waterproof. Easy to apply. Requires no preparation, no priming, no...contains no bad,决战 or infectious compositions. This exclusive rubberized roof is made from mastagum, a by product of the rubber tree. With each order, sufficient primer to make the roof water tight. This does not affect the price.

FREE! Building and Barn Plans—Architect's Advice FREE!

A Good Advertisement for Us*

Edward, Ill.—I received my largest order...cotton. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouses and yards at Chicago, Cleveland, and see the lumber we are offering and you will recognize that it all was we say of it. We make your own selection and see it loaded.

Mr. Shelby, Wabash, Ind. — Will order 8 or 110 cars in the spring.

Mr. P. M. Raschka, Wiese, Minn. — Bring you several orders from...they were well pleased with it. Will order 8 or 110 cars in the spring.

Free CATALOG COUPON.

Fill out, cut out, and Mail to Us.

DOORS 40c WALLS 20c

Everything in mill work, All brand new, best quality. We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can...outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 50 per cent less than your local dealers or lumber yards ask for it.

IMPORTANT! Send Us Your Lumber Bill For Our Estimate.
Roofing Slate Now Superseding Shingles

In the March number (page 733) an interesting and comprehensive article appears relative to roofing slate. Among the other facts stated, it is set forth that roofing slate is among the very oldest forms of roofing known, having been in use for over 600 years in Europe.

Owing to the almost total exhaustion of timber and the fact that the shingles and timber imported from Finland and other remote points is excessively high through the heavy cost of importation, slate is practically the only roofing material available and in use in England, Germany and France.

Conditions in the United States are fast approaching those of Europe. The enormous and wasteful consumption of timber, devastating forest fires and the inroads of the wood pulp mills are rapidly depleting our timber supply. The best quality of shingles are now prohibitively high and will soon be entirely out of the market. The cheaper grades made from soft wood are of a very inferior and unsatisfactory nature. The result is that roofing slate, on account of its extreme durability and reasonableness of cost, is now coming into general use in all localities. Within a short time, every permanent building of value will have a roof of slate. It is therefore self-evident there is practically unlimited amount of work available for carpenters, builders and others who are in a position to handle slate roofing. As to a good slate roof being the cheapest and best in the long run for the property owner, there can be no question, and slate roofing should yield steady, substantial profits in any neighborhood. It is a business that can be carried on advantageously either as an exclusive business or in conjunction with other lines, and is one that does not require a large amount of technical knowledge or previous experience or a heavy outlay for tools. For some unknown reason, it is a prevailing opinion of people not familiar with the use of slate that a building must be constructed very much stronger for slate than for other roofing material. This is a great mistake, as any building strong enough for shingles, tin or iron is strong enough for slate, for the following reasons:

The weak points of any roof are the valleys, or other breaks in the roof where snow drifts in and lodges, and when the snow melts with rain the weight at points where the snow has drifted is much heavier than any two slate roofs. It is well known that snow will not stick on a slate roof as it will on shingles or on a metal roof, as the slate, being of a warmer nature, causes the snow to melt and slide off; while with shingles or metal it freezes on, causing greater weight than a slate roof is ever called on to bear. Two by six rafters, eighteen feet long, two feet from centers, gives a roof all the strength necessary for a slate roof. The writer has seen hundreds of houses roofed with slate where the rafters were two by four, two feet from centers, sixteen feet long, with collar beam nailed across one-third of the way down from the top.

Slate can be depended upon to make a roof perfectly water tight on any pitch down to one-fifth. Half pitch or steeper makes the best roof, both for looks and strength, as it throws the weight on the walls more than on the rafters, and causes the snow to slide off clean, thereby never overloading any one part of the roof. From the facts given above, it will be noted that practically any kind of a building, new or old, is suited for a slate roof. Considering the possibilities of the slate roofing business in the way of a large volume of work and good profits, it would certainly pay our readers to write at once to the American Sea Green Slate Company, Box 36, Granville, N. Y., for full particulars and their free book of instructions.

AMERICAN SEA GREEN SLATE CO.,
Box 36, Granville, N. Y.

This proposition does not apply to territory now covered by a slate roofer.
1908 Catalog of Hot Water and Steam Heating

Our new catalog explains fully the principles and advantages of hot water heating, based on 18 years' experience in the cold Northwest, and describes how any carpenter or mechanic can erect the Andrews System in any building from complete plans and directions which we will send with each heating plant.

This book should be in the hands of every contractor and builder. Send your address and names of others who expect to buy heating plants, and we will send our catalog complete (see our special offer for such service).

WE DO IT RIGHT IN 44 STATES, CANADA AND ALASKA. Our catalog contains a partial list of our customers from all parts of the country. Look up and examine the Andrews System in your vicinity.

PRICES. We will sell you the plant with all material complete, pipe cut to fit so you can erect it yourself. The cost of each heating plant here shown is based on Minnesota climate and includes an Andrews Steel Boiler, nicely ornamented radiators, for every room except the kitchen, pipe cut to fit, fittings, valves, gold bronze, brushes and all other material ready for use, with diagrams and directions for erecting simple that any man handy with tools can erect the plant and save money. You can in this way include the heating plant in your general contract for the building.

FACTORY TO USER. We design, manufacture, guarantee and sell each plant direct from Factory to User, giving you the lowest price for the value. Estimates free. ALL PLANTS GUARANTEED AND SOLD ON 360 DAYS' TRIAL FREE. Freight rates equalized. Old Houses Easily Heated.

ANDREWS HEATING COMPANY 606 La Salle Building, Chicago
664 Heating Building, Minneapolis.

MANUFACTURERS CONTRACTORS CONSULTING ENGINEERS

FROM MANUFACTURER DIRECT

COLONIAL COLUMNS

HERE ARE TWO SPECIAL BARGAINS

These Columns are the very best Staved Columns on the market. No better built-up post can be manufactured.

OUR BUILT-UP COLUMNS WILL NOT OPEN UP

This cut shows the "V" lock-joint giving one-third more pressure gluing surface than any other built-up column on the market.

JUST NOTE THESE NET PRICES

<table>
<thead>
<tr>
<th>STOCK SIZES</th>
<th>C-1525 Wood Cap</th>
<th>C-1525 Comp. Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 6, 8 Feet</td>
<td>In Stock $2.00</td>
<td>$2.90</td>
</tr>
<tr>
<td>8 x 8, 8 Feet</td>
<td>Ready $3.35</td>
<td>$3.35</td>
</tr>
<tr>
<td>8 x 8, 9 Feet</td>
<td>To Ship $4.55</td>
<td>$4.95</td>
</tr>
<tr>
<td>10 x 10, 9 Feet</td>
<td>$4.55</td>
<td>$4.55</td>
</tr>
<tr>
<td>10 x 10, 9 Feet</td>
<td>$4.55</td>
<td>$4.55</td>
</tr>
<tr>
<td>10 x 10, 9 Feet</td>
<td>$4.55</td>
<td>$4.55</td>
</tr>
</tbody>
</table>

C-1525
Primed No. 1
44 in. Staves
New proportion and top and bottom members of 2 in. stock.

CHICAGO MILLWORK SUPPLY CO.
240 W. 20th St., CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
A New Way to Buy Lumber

Nowadays all sorts of merchandise is being sold direct from the manufacturer to the consumer, but it remained for the Independent Lumber Company to inaugurate a decided novelty in merchandising by offering lumber in carload lots direct from the mill to the consumer. Of course this means a saving of $60 to $100 on each carload to the small builder, carpenter or owner who is keen to appreciate the difference in cost of material after being freed from the middleman's margin of profit.

The popularity of this direct method of dealing is fully attested by the fact that the mill shown in the illustration is but one of the four belonging to the Independent Lumber Company that are kept busy day and night cutting up lumber for their mill-to-consumer business.

Any person interested in building will do well to write the

Independent Lumber Company, Yard 6, St. Louis, Mo., for their prices, which are the same they quote to the largest lumber dealer in the country.

New Type of Mixer

Since February 1, the Cement Machinery Co., of Jackson, Mich., has been in a position to furnish to the trade a new mixer to be called Advance concrete mixer. This new mixing device has recently been tried and tested and proved to be very successful. It mixes accurately for any proportion from one to one to eight, and will mix gravel or stone as large as 3 or 4 inches in diameter. Heretofore continuance mixers have been furnished with screens of about 1½ mesh. With the Advance mixer materials down to 98 fineness and up to crushed stone and very coarse gravel for heavy concrete work can be mixed. The feeding device is of the simplest, and operates on a well-known principle, which produces an accurate feed without any annoyance caused by materials clogging. The flights are a special pattern and are fitted loosely to the main shaft of the pug so that the material is not only thoroughly mixed by them but they can be taken off and cleaned in an instant when the mixer is not in use, in case the operator wishes to do so. The mixing barrel is of the best steel. The front wheels are 28 inches in diameter and the rear wheels 40 inches, thus enabling the operator to move this machine around from job to job just as easily as he could move a wagon. The lower side of the hopper is claimed to be one-third lower than on
MOST ready roofings require a certain amount of repairs and painting every season or two in order to keep them free from leaks.

This expense is now unnecessary. With an Amatite roof it is cut out entirely.

Paint offers only temporary protection at best. Every few years it must be renewed. When you buy a roofing that requires painting you are really buying two articles — roofing and paint — to do the work that Amatite can do alone.

Amatite has a real mineral surface. This top surface will withstand the severest kind of weather for many years and insures an amount of protection to your buildings that no other ready roofing can offer. Beneath this mineral surface are double layers of Felt and Coal Tar Pitch — the same waterproofing that is used by the United States Government at West Point, at some of the Navy Yards, at the New York Custom House, and many other such buildings.

It is the greatest waterproofing material known and you are sure of getting it only when you buy Amatite.

With Amatite once on your buildings you do not have to bother with painting and coating. This is necessary with all smooth surfaced roofings, but with Amatite that expense and trouble are entirely done away with.

Although it has so many points of superiority, its cost is no more than the usual run of roofings; in fact, in many cases it is lower.

Is it any wonder that last year we were unable to supply the demand for Amatite?

FREE SAMPLE

Let us send you a Free Sample and Booklet which tells the story in detail and shows photographs of buildings in many sections of the country which depend on Amatite for their protection against storms and weather.
other machines, thus enabling the operator to feed into them on either side with ease. The discharge end of this machine is high enough to allow for a wheelbarrow of any size to go under it. The company exhibited this mixer and a full line of cement machinery at the recent Buffalo show, where, it states, an excellent business was done. Write them for their Booklet “A,” mentioning the American Carpenter and Builder.

New Style of Yankee Tools

The need of a tool to drive screw eyes is evidenced in the number of attempts made to provide it, though nothing has been produced to be of practical value until now. The Yankee Screw Eye Driver has been tried practically and thoroughly by those who have to drive screw eyes largely, and pronounce it not only practical, but a tool that is much needed, as screw eyes are troublesome and tiresome to drive and only done slowly.

The Yankee Screw Driver consists of regular Ratchet Driver, with holder or fork on one end of blade. Outside there are two spring steel jaws fastened together at lower end, kept in place by ring surrounding them, which ring is fastened to fork on end of blade. A spring between fork and lower end of jaws keeps latter in position to hold screw eye, as shown in illustration. Pushing up the jaws with thumb of hand holding driver, the point of jaws readily open to insert screw eye, which should be pushed down into holder so it rests solidly in V-shaped groove. The jaws are then released and grasp screw eye as shown in illustration.

The ratchet movement is same as other Yankee Tools, right and left hand or rigid. The quality of materials and workmanship are of same high standard as all other Yankee Tools.

This Screw Holder is a simple, inexpensive, attachment to hold screw, put it in place, drive it in, especially in places difficult to reach and where only one hand can be used, and that does the work effectually without interfering with the ordinary use of the Screw Driver.

The attachment consists of two jaws, fastened to a head at one end, a ring to limit spread of jaws at other end and a spring to operate jaws.

When screw is ratcheted in place the jaws will open as the head of the screw sinks into wood, so screw can be driven in flush with surface without having to unfasten holder. It releases automatically. In many places where it would be annoying to drop a screw in removal, it can be partly turned out, holder slipped over it and removed in holder. In ordinary work where screw holder is not required it is pushed back on blade toward handle, as in illustration, where it will stay out of way and yet ready for use at any moment.

The Screw Holder Attachment is furnished only attached to “Yankee” Ratchet Screw Drivers. It cannot be furnished separately for tools already in use, as the holder must be fitted to blade. For full particulars and circular write to North Bros. Manufacturing Company, Philadelphia, Pa.

means much. Our Boss Carpenter gives some points on our saw.

"Every carpenter wants a good cutting saw, for a dull saw means extra labor and most of us get tired enough."

You can't keep your saw sharp unless it's tempered right, this is where the Simonds people are strong. They have a special patented process.

Another point, because the SIMONDS SAW IS MADE OF SIMONDS STEEL you are sure of getting the finest crucible steel, made especially for this saw in their own mills.

Now here's another point, you're never sure of a saw that isn't trade marked. The trade mark means the makers are back of it.

It's a fact

THE SIMONDS SAWS ARE BEST
And They ARE Best

In a nutshell:—Buy a Simonds Saw, because it's made right, tempered right and cuts right.

You'll know it by the trade mark. Save extra work by using a Simonds Saw and my advise is buy it now.

If your dealer don't keep them write to headquarters. Tell them what kind of a saw you want and ask for a free copy of "Simonds Carpenter Guide," a valuable booklet.
It's ambition that distinguishes MAN from the lower animal. MAN'S natural tendency is to climb—to seek higher levels. If you are not advancing it is your own fault. Here is an opportunity for YOU NOW.

CYCLOPEDIA OF
Architecture, Carpentry and Building

Ten Massive Volumes, each nearly one foot high, handsomely bound in red half morocco. Over 4,000 pages; 3,000 illustrations, full page plates, plans, sections, etc. Printed on highest grade paper; entirely new type—DE LUXE books in every particular. This work fully covers everything pertaining to building. It is a masterpiece of concise, practical "ready-to-use" information. Every demonstration is derived from the practical experience of the greatest expert in the building industries of the world. We employ no agents to annoy you, thus giving us the opportunity of selling direct to you at the very lowest price.

To the up-to-date builder, the most important subject today is the use and possibilities of Reinforced Concrete. The cyclopedia contains the latest and most comprehensive information on this subject, written especially for home study by the men who are responsible for the tremendous advance and popularity of this new building material.

In the every day matters of the trade the Cyclopedia is an invaluable guide. It tells you how to plan a house, estimate its cost, buy the material, decorate it inside and out, and save money for yourself and your client. It is especially good on house sanitation—plumbing, heating, and ventilation—a subject concerning which you cannot know too much.

Free for Examination $19.80 instead of $60.00 No Advance Payment

Sent by prepaid express. Pay $2.00 within 5 days and $2.00 per month if you wish to keep the books; otherwise notify us to send for them at our expense. In any case you lose nothing.

The work contains over 200 plans of artistic moderate priced houses, chosen by a staff of architects as typical of the best work of the best architects of the entire country—invaluable to anyone contemplating building or alterations. Also over 40 practical problems in construction with solutions.


PARTIAL LIST OF CONTENTS


AMERICAN SCHOOL of CORRESPONDENCE

CHICAGO

AMERICAN CARPENTER AND BUILDER
A Perfect Safety Razor for 25 cents

One of the most practical, popular-priced articles on the market is the Shrp-Shavr Razor ("It's all in our blade"), which is being manufactured by Smith & Hemenway Co., an old established hardware and cutlery manufacturers of 108-110 Duane street, New York. This concern has been in the razor business for the last twenty-eight years and are thoroughly conversant with what is required for a razor to make it satisfactory to the user.

In bringing out the Shrp-Shavr, at such a phenomenally low price, they have put all the value in the razor blade, and just enough money in the frame to make it neat and attractive. They reason from this standpoint: They could make an attractive frame to cost four or five dollars, but that the cutting qualities of the razor blades is what is wanted more than a fancy frame.

Figure 1 represents the No. 77 Shrp-Shavr razor, which retails in the United states at a popular price of 25 cents, with one blade, put up in a neat cardboard carton, with a circular wrap-around, giving full instructions to use it.

Fig. 2 represents a package consisting of five No. 78 Shrp-Shavr Blades, sold at a popular price of 5 cents each, or 25 cents for the package.

Fig. 3 represents a No. 79 Stropper. This stropper the blades can be used an indefinite length of time.

One purchaser makes the statement that he has used one blade continually since he bought his razor, two months ago, and that it shaves as perfectly now as it did the first days that he bought it. The manufacturers state that the material they use in the Shrp-Shavr Blades is the best that money can buy, and their motto is: "Satisfaction guaranteed or money refunded, without any questions asked."

See their advertisement on page 123.

Ancient vs. Modern Methods

The last few years have brought many great changes in building and building construction. The old methods used in fastening woodwork to brick, stone or cement walls are no longer in vogue. Buildings and building construction. The old methods used in fastening woodwork to brick, stone or cement walls are no longer in vogue.

Fig. 1

Fig. 2

Fig. 3
SUCCESS!

IS YOURS, Mr. Contractor, if you can estimate accurately. Failure is usually the result of a lack of accurate and reliable methods used in estimating the cost. The up-to-date builders are adopting The Lightning Estimator as the standard for estimating residence work. Why? Because it teaches easy, simple, rapid, reliable and accurate methods, all based upon actual cost of labor and material. Largest endorsement and sale of any book of its kind now on the market.

Lessens the risk of errors and omissions which often cause loss. Based on actual experience, not theories. Treats residence work from start to finish exclusive of plumbing and heating. While it is a book particularly for the carpenter, it includes masonry and concrete work, as required on residence work. It is brief and to the point, each subject being easily found and plainly treated. Put your business on a better basis by sending a one dollar money order today for a copy of the new fifth edition.

BRADT PUBLISHING CO.

Examine This Point Carefully

Progressive merchants are now insisting on store fronts that are handsome in appearance with a maximum of display room and light in their windows. The Petz system is strong, sightly and allows the glass to be set from the outside, saving time and trouble. Its handsome finish appeals to the highest class of trade, and contractors will please their customers and add to their business reputations by specifying in every instance the Petz store front construction. Endorsed by all plate glass insurance companies. Our valuable booklet on modern store fronts sent free. Write for it.

DETROIT SHOW CASE CO.
491 West Fort Street

WE CAN SAVE YOU MONEY

ON—
Jail Cells and Window Guards
FIRE ESCAPES, IRON STAIRS, FENCING AND ARCHITECTURAL AND ORNAMENTAL IRON WORK
Catalogue on Request
OHIO STRUCTURAL IRON COMPANY
Warren Street SANDUSKY, OHIO

LIGNINE CARVINGS, UNBREAKABLE
Will they break or check? No Sir! Will they crack or shrink? No Sir!
LIGNINE CARVINGS are stronger than wood.
Are attached by nailing and gluing. Are finished with filler or stain.
Write for sample and catalogue showing Capitals, Pilasters, Newel Ornamentals, Drops, Rosettes, Scrolled Shields, etc.
ORNAMENTAL PRODUCTS CO., 552 W. Fort St., DETROIT, MICH.

“NICE” LIQUID WOOD FILLER
THE RECOGNIZED STANDARD SURFACER

It dries flat, works freely, does not show laps and requires little, if any, sandpapering. Light shade is perfectly transparent and will not mar the color of the lightest woods. It enables the finisher every time to make a high-class job with two coats, one of “Nice” Filler and one of Varnish or Hard Oil. It makes the very best flat stain by simply adding color in oil to suit. It has remarkable covering capacity (800 square feet to gallon) and is the most durable coating known for natural woods.

Will you let us send you our booklet “Natural Wood Finishing,” just off the press? It’s worth having and will only cost you a postal.

EUGENE E. NICE, Manufacturer of everything in Paints, Fillers and Varnishes for Interior and Exterior painting and finishing 272-274 S. 2d St., Philadelphia

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
now obsolete. Instead of nailing into the mortar joint or nailing into wooden plugs driven into the wall—which was by far the best of the old methods—the modern builder uses the metal wall plug, and uses it at less cost, when time is taken into consideration.

J. B. Prescott & Son, of Webster, Mass., are, and having been placing on the market for several years the Rutty Metal Wall Plug, which holds the nail with a grip of steel so that it virtually becomes as a unit with the masonry. They can be depended upon at all times to hold and hold fast. It pays to use them.

Not only do the Prescots manufacture wall plugs, but also a complete line of non-furring plugs, steel wall ties, steel veneer ties, steel anchors and steel corner head.

A card mentioning the American Carpenter and Builder will bring you descriptive literature which will interest you.

**Good Tools vs. Mere Tools**

There are on the market at the present time many brands of tools, some of which are worthy of the name, while others are not, and in tool making, experience is the very best teacher.

In 1832, G. R. Barton started in this line, not to make a passable tool, but to make the best tool possible, and apparently he accomplished his end. A few years later, W. W. Mack became a partner in the firm, and after the death of Mr. Barton, the business was left in the hands of Mr. Mack, who pursued the same policies as those of Mr. Barton, viz., to make the best tool possible regardless of expense.

And today the policy of the firm is still the same. Practically all the work done on the celebrated Barton Tool is accomplished by hand, and consequently where others in this line of work have had difficulty in running at all during this recent financial flurry, Mack & Co., of Rochester, N. Y., have been running their plant steadily.

Mr. Carpenter, you need good tools. Write these people for their catalog, specifying that you want particularly the "Carpenters' Catalog," and your stamp and time consumed in doing so will be a good investment.

**Heating a Home**

There is absolutely nothing that enters a home upon which the health and comfort of the family so much depend as a furnace, and too much care cannot be taken in making a selection. We take pleasure in bringing to our readers' attention in this issue the advertisement of the Schill Brothers Co., Crestline, Ohio., manufacturers of high grade warm air furnaces.

The Schill furnaces have found their way into every state where furnaces are used. With becoming modesty this company does not attribute its rapid growth to shrewd manage-
Preservation of Steel and Iron in all Structures

The corrosion of steel, reinforcing fabrics, and exposed iron in buildings causes constant concern.

The preservation and protection of steel has been the subject of scientific and practical experiment by our corps of experts for many years.

Red Lead mixed by hand used to be regarded as the best coating, but it works hard and settles quickly.

Lowe Brothers
Red Lead Metal Preservative

being a highly ground paint, overcomes these difficulties, covering perfectly, spreading easily, remaining in suspension indefinitely. It is the best preservative offered today, and is specified and used by many of the largest railroads and contracting bridge companies in the country.

A few dollars invested in the early part of the building means years of wear and assures safety. "Preservative and Protective Metal Coatings" tells how to do it. Shall we send it to you? See Sweet's Index, pages 1378-1379.

The Lowe Brothers Company
Established 1862
Paintmakers—Varnishmakers
630-632 E. Third St., Dayton, O. Chicago New York Kansas City
sired, any of the above named fuel and gas may be burned at the same time. Without doubt this is the most perfect combination furnace ever invented. Those who have used them recommend them very highly.

In durability the Schill furnaces lead all others. Other manufacturers have spent fortunes trying to get a fire pot that will not crack after a few years' hard service. In the Schill furnaces the fire pot is already full of holes and if it should crack or break from any cause it would only add to its good qualities, as the steel jacket around it forms the gas joint, which prevents all dust from escaping.

Space does not permit us to bring forth the many strong points of the Schill furnaces. This Company will be glad to send their beautiful catalogue and full information to interested readers. Why not send them the plans of your house also, and let them send you an estimate for a heating system that is guaranteed to give satisfaction to your customers? Address The Schill Brothers Co., Crestline, Ohio.

The Weber Double-Acting Floor Scraper

Undoubtedly the most practical floor scraper yet placed on the market is advertised on page 4 of this issue. It is the Weber Double-Acting Floor Scraper, which may be operated in either direction. John F. Weber, the inventor, has gone over every possible requirement for the perfect scraper, and before placing his machine on the market was sure that he had it perfected.

The Weber double action ball-bearing scraper fulfills the long felt want in that it takes only three-fourths of the time of any other scraper and one-sixth of the time of any hand scraper. The force exerted is always the same so that it is impossible to do uneven work. The knife shoes work on half ball bearings, and are ready always for work. A lever on the handle releases the clutch so that the knives may be raised and lowered as the machine is moved backward and forward. The machine is so simple that it can't get out of order, and the knives are of the finest grade of steel, and will last for years.

The Weber Double-Acting Floor Scraper has knives both in front and in back, so that it can be either pushed or pulled. The adjustment of the handle is such that it may be raised to a vertical position, so that the machine may be worked in a narrow hall, even if it is not more than two feet in width.

The Weber Manufacturing Co., of 665-667 71st avenue, West Allis, Wis., manufactures the machines, and will be glad to send to those interested fully illustrated circulars and testimonials. This company also manufactures the Weber Sand Paperer and Polisher, the Weber Bowling Alley Jointer and Scraper Shoe, and the Weber Automatic Sharp-ening Device. This last is the most remarkable little tool ever invented, making the best possible cutting edge, and may be used on any machine.

Some Books Worth Having

Would you like to know the ins and outs of plumbing and gas fitting? Then read the offer of The Marvin Publishing Company on page 119. This firm offers to our readers four of the best books ever published on the subject of plumbing and gas fitting.

If you are interested in building, either as a contractor, architect or owner, or in any other capacity, these books will be found indispensable, and the price at which you can own them is so moderate as to put them easily within your reach.

Note the books and contents:

- **Practical Plumbing by Questions and Answers.**—Covering the theory and practice of plumbing and sanitary engineering in all its branches.
- **Practical Lead Worker and Joint Wiper.**—Covering every detail in joint wiping from cutting and preparing the pipe, wiping every kind of joint, soldering lead pipe, bending, etc., etc.
- **Modern Plumbing Plans.**—Over 125 plans, elevations, drawings and details showing how to connect every kind of fixture, etc.
- **Modern Gas Fitting Plans and Rules.**—Over 100 plans, elevations, details, etc., covering the piping of stores, buildings, dwellings, flats, schools, etc.
- **Spring building is now under way—perhaps the very thing you want to know or decide, can be found answered in one of these books. The price for the set complete may be saved you many times over.**

Send your order in today—do it now. Address, The Marvin Publishing Company, 402 Century building, Kansas City, Mo., and mention the American Carpenter and Builder.

Steel Miter Box

The Goodell Manufacturing Company, of Greenfield, Mass., in designing their miter box, ad. for which appears on another page in this magazine, have endeavored to see how good a box could be made, regardless of cost, and they believe that in quality it will be found in a class by itself, not only in quality of material used, but also in many improvements.

First of all, it is made from Bessemer steel, thus doing away with all liability of breakage and making it much stronger and firmer than most of the other boxes now on the market.

It will last a lifetime, and will be greatly appreciated by those who have been having so much trouble with broken parts from boxes made from other metal.

This miter box is graduated and thereby much time is saved in making changes, especially if two opposite cuts are wanted at exactly the same angle.

It has automatic stops to hold up the saw, allowing the operator to use both hands in placing work.

Its operation is extremely simple, there being no complicated parts.

Full description of the "Goodell" may be had by dropping them a card. In writing the Goodell Manufacturing Company, Greenfield, Mass., please mention this paper.

Sanford Concrete Machinery Company

The Sanford Concrete Machinery Company has been evolved from the old firm of the Sanford & Painter Company,
HERE is one kind of ready roofing which is absolutely waterproof and meets all the requirements of a ready roofing; that is Congo.

It is aptly known as the "never-leak" roofing. But Congo is not only waterproof; it is also proof against heat, cold and acid fumes. It is made to last and experience shows that it does last. The strong point about Congo is the wonderful pliability. It bends like rubber, looks like it, and keeps the water out the same as real rubber would.

FREE SAMPLE

Don't buy your roofing this Spring until you examine a sample of Congo; and remember, Congo samples are not special pieces prepared for the purpose, but are cut from our regular stock. We mention this because Congo is so attractive looking, so tough and pliable that people sometimes think the samples must be specially prepared.

UNITED ROOFING AND M'FG. CO.
Successors to Buchanan Foster Co.
555 West End Trust Bldg., PHILADELPHIA, PA.
CHICAGO
SAN FRANCISCO

"EASTLAKE" Metal Shingles

For roofing all buildings with one-quarter pitch or more.

NEVER LEAK
They reduce the fire risk, and cost of insurance. Superior and cheaper than wood shingles. Any good carpenter or mechanic can lay our shingles.

Tools Required—Hammer and Shears

THE W. J. BURTON CO.
Manufacturers of all kind of Roof Trimmings
DETROIT
MICHIGAN

ANDREWS HEATING CO.
949 Heating Bldg., Minneapolis.
978 LaSalle Bldg., Chicago.

WHO WANTS SLATE?

Roofing Slate for Houses, Barns, etc. Always clean, beautiful and fireproof.
BLACKBOARD for Schools, Colleges, etc. Need no commutation; universally used all over this and other countries.
Structural Slatc, Electrical Slatc, Slatc, Graphite, etc. Superior to all others for each purpose.

Write for prices and I will tell you all about Slate.
DAVID MCKENNA, Islantington, Pa., U. S. A.
of Toledo, O., manufacturers of the well-known Sanford veneer and hollow block press. E. J. Long, a manufacturer of Cleveland, O., is president of the new company; Hon. A. M. Abbott, of Toledo, O., is secretary-treasurer, and Jos. I. Cox, general manager. The company has moved to larger offices than they formerly occupied, the general offices now being at 1645, 1646, 1647 Nicholas building, Toledo, O.

A new and important improvement upon the Sanford press has been made, and the new company will push the manufacture of this machine, and will be able to take care of a large number of orders that have been coming their way.

The new organization will also carry a full line of mixers, cars, architectural molds of all designs, lintels, caps and step molds, burial vault molds, and in fact, a complete line of cement working machinery.

They are going to open a large demonstrating room, at which place all of the various machines may be seen in operation in Toledo, at once, and they also expect to establish two more in different sections later on.

A new and competent sales force is being organized, and the Sanford press, together with the other equipment carried, will be put upon the market in the same old way, strictly upon their merits.

The Crown

The Crown nail puller and band cutter for sale by the Snow & Petrelli Manufacturing Company, of New Haven, Conn., has attained a large degree of popularity since its invention several years ago, among its thousands of satisfied users.

It is claimed that it will pull nails faster than any other and will cut and rip off bands very rapidly.

The jaws of this little tool will not break, this is making rather a bold assertion, but they are made from special steel, polished and tempered. In its construction, which is along very simple lines, there are no springs to break, and it is so built so that it will not pinch the fingers as so many other pullers are prone to do.

By its use you can save your time, your nails and your strength.

A card mentioning this paper will bring you illustrated catalog. Write them today.

Another Cortright Patent

Under this heading appears an article in the March issue of the Cortright Metal Shingle Advocate, issued by the Cortright Metal Roofing Company, of Philadelphia, that leaves no doubt as to the course this company intends to pursue in regard to the protection of its interests.

Evidently, from the tone of the article, they have positive proof that an attempt is being made to place on the market a shingle resembling the Cortright design, in order to protect their customers from being deceived they announce that commencing with January 1, 1908, every shingle turned out by them will bear the embossed stamp "Cortright," Reg. U. S. Pat. Off. on the first corrugation at the top of the shingle.

There does not seem to be any excuse for infringement of designs, especially at this time when architects, contractors, builders, and general roofers are giving so much attention to metal shingle roofing. It would seem to us that every manufacturer would be anxious to get as far away from other designs as possible in order to have something distinctly different to offer those interested.

The Cortright Company have repeatedly made the statement in the Advocate that they are not trying to compete with the cheap make of shingles.

Their slogan has always been: “Not how cheap, but how good.” Quality talks in the long run.

"Cortright Shingles last as long as the building itself" is a statement repeated in practically everything they issue.

An Aluminum Letter-Opener Free

The Eller Manufacturing Company, of Canton, Ohio, are sending out a neat little aluminum letter opener, which also contains a six-inch rule, to those who are interested in fine metal ceilings. If you will write them on your letter head, they will be very glad to send you one of these little devices.

Capacity of Roofing Factory Trebled

One of the strong evidences of the healthy conditions in the building industry is the increase in the factory capacity of the Heppes Company, Chicago, manufacturers of Heppes No-Tar Roofing. To cope with the big demand for No-Tar Roofing, the company found it necessary to treble its factory capacity. The roofing demand is a good barometer of the building situation.

Heppes No-Tar Roofing stands very high in the estimation of builders. It is a standard product handled by the best hardware and lumber dealers throughout the country. There are so many inferior brands of roofing on the market that the building contractor cannot be too careful to specify the tested brand, that has a reputation behind it. Heppes No-Tar Roofing has won out on its merits. It is not in competition with the “Tar Felt” counterfeits. It sells at a fair price and every square is full value, made of genuine long-fiber wool felt, water-proofed with the best asphalts, coated with flint on the weather side and mica on the under surface.

The Heppes Company puts out a valuable "Roofers' Book" and "Diagrammed Instruction Sheet," which any carpenter and builder can get free upon request.

Now is the time for carpenters and contractors to get prices and samples of Heppes No-Tar Roofing, so as to be ready for spring business with a line of roofing that is bound to give satisfaction. Write to the Heppes Company, 624 S. 45th avenue, Chicago, and ask for their special prices to contractors. They send large samples of all the different weights of No-Tar Roofing free, together with instructions for making ten tests. These tests tell the story of quality. Don't be afraid to ask for the free book and samples, for the Heppes Company will be glad to supply them. Their advice and help will prove of great assistance to you in building up a profitable roofing business.

Wall Hanger Free

The Hartman-Sanders Co., of Chicago, III., with a New York office at 1123 Broadway, sole manufacturers of Koll's Patent Lock Joint Columns, announce that they have ready for distribution a very interesting wall hanger, showing thirty views of porch columns. This covers all of the classic and modern designs and makes a valuable reference chart for anyone interested in the design or sale of goods of this character. With the present facilities, they can produce 50,000 high grade columns at an average cost of $3.00, or 5,000 columns at $50.00, per annum. They have, without a question, the largest plant of its kind in the world, devoted exclusively to the production of columns and porch material. The chart mentioned will be sent free of expense on asking for No. 38.
FORD'S GALVANIZED RUBBER ROOFING

Forty Years of Reputation Behind it

"GALVANIZED" That Word Means Something

In the manufacture of Ford's Galvanized Rubber Roofing a special process is used which is the development of forty years experience. The process involves extreme heat and great pressure. The result is a roofing which absolutely resists the elements, wind, rain, hail, heat and cold. The quality of the elastic mineral coating is such that extremes of temperature do not affect it.

It is equally good on the shack on the Yukon, the factory, home, school or shed in a temperate climate, or the bungalow in the tropics.

"As Good as the Best and Better than the Rest"

This view shows Three Ply "Ford's Galvanized Rubber Roofing" being laid on the New Hampton Auditorium, New Hampton, La.

The cut below shows the completed structure.

THE POSITIVE GUARANTEES WE GIVE

The guarantees named below are positive and are Based on Actual Time Tests in all climates and under all conditions.

ON THREE PLY
We give guarantee through dealers direct to consumer or contractor for **15 Years** on Three Ply.

ON TWO PLY
We give guarantee through dealers direct to consumer or contractor for **10 Years** on Two Ply.

ON ONE PLY
We give guarantee through dealers direct to consumers or contractor for **5 Years** on One Ply.

WARNING

This roofing cannot be bought of "mail order" or catalog houses, and the public is warned against cheap imitations sold under names closely resembling our brand.

FREE: We will send free samples, special roofing information, and names of nearest dealers, free to all who write.

SEND FOR FREE SAMPLES TODAY

FORD MAN'FC. CO. 131 W. Wash. St. CHICAGO
Increased Use of Concrete in Porto Rico

The value of concrete as a building material has been fully recognized on the island of Porto Rico and today is playing a most important part in construction of all kinds. Credit is due the Century Cement Machine Company of Rochester, N. Y., who through their able representative, F. B. Hatch, of San Juan, introduced the first concrete block machine on the island, and today have seventeen of their well known Hercules machine in active operation in various parts of Porto Rico.

Mr. F. B. Hatch alone constructed in 1906 buildings costing over $80,000, and among these a warehouse for the Porto Rican American Tobacco Company, 368 feet long. The Board of Education has recommended and endorsed concrete blocks as made on Hercules machines, and as a result, they are being used in the construction of all educational institutions throughout the island.

While concrete blocks have been playing a great part in construction, there is also a wide field for street improvement. The Century Cement Machine Company recently placed in the city of Arecibo one of their outfits for making and laying combined curbing and gutter, and as a result, Mr. Arturo Prado has the honor of laying the first concrete curbing and gutter ever seen in Porto Rico. The mayor of Arecibo and the city engineer have both complimented him highly upon the fine appearance of the city streets and it is but a question of a short time before all the leading cities will specify concrete curb and gutter.

Their Largest Year's Business

The W. J. Burton Company report their business for the past year has succeeded any other year by a good margin, and that the prospects show a very large increase on their celebrated Eastlake Metal Shingles shown in this cut, manufactured by them for more than twenty years. These shingles are more durable than wood shingles or slate, and can be laid for one quarter the cost of labor, which makes them considerably cheaper. A very important feature of this shingle is a telescopic side lock, so constructed as to allow for expansion, and their system of joints makes leakage and wear impossible. The Eastlake is made in plates twenty by twenty-eight inches, each embossed with the pattern of nine slate shingles, and when painted black closely duplicate the appearance of the most expensive black slate, with cut corners.

This firm also manufactures fireproof metal window and door frames, galvanized iron cornices, skylights, eaves troughs, ridge rolls, metal ceilings, steel roofings, and are jobbers, carrying a full line of timbers and roofers' supplies, including a complete stock of assorted metal and composition roofings.

Prices and information will gladly be furnished by them on request. Address The W. J. Burton Company, Detroit, Mich.

New Selling Assortment

The success of the first Sharpening Stone Assortments put out has led the Pike Manufacturing Co. of Pike, N. H., to add several new items to the oilstone and scythe stone lines. These are smaller than the original assortments and are intended for hardware merchants who wish to carry small but well-assorted stocks of oilstones, scythe stones and razor hone.

This assortment idea is the outgrowth of over eighty years' experience, which the Pike Manufacturing Co. has had in the manufacture and sale of sharpening stones. They claim that these assortments invariably increase sales on account of the careful selections of stones to meet the needs of all users of edge-tools and the attractive display afforded. The Pike Manufacturing Co. have gotten out a new booklet, rightly called "Money Makers," which gives full description and prices of all these different assortments. They will be glad to send this to dealers on request.

FLINT-COAT ROOFING

One Ply $1.35
Two Ply $1.65
Three Ply $1.90
Four Ply $2.20

KANSAS CITY SLATE & TILE ROOFING CO.
CONTRACTORS AND WHOLESALE DEALERS IN
ROOFING SLATE AND TILE
2027--2029 Forest Ave., KANSAS CITY, MO.
DON'T WORK IN THE DARK. Don't let opportunities for advancement slip by you just because you can't see them. Turn the searchlight of knowledge upon your everyday work; learn all there is to know about your own trade, and get an insight into the trades related to it. You can't know too much, when you look for a different place or a better one.

The American School of Correspondence has brought the light of special knowledge into the homes of thousands of young wage-earners and shown them the way to a better position with a better future. It has lightened the gloom of thousands of discouraged older men, who thought themselves hopelessly handicapped by lack of special training. Whatever your age, education and circumstances are, it can help you by home study without interrupting your work, to get easier work, shorter hours and better pay. Learn more and you will earn more.

No matter what your position in the building trades, we can increase your knowledge, pay and prospects. Half an hour a day, spent in home study instead of amusement, will fit you for any position and teach you to do any kind of work. We offer practical, up-to-date courses in every line of carpentry and building—for the carpenter: estimating, planning, strength of materials, framing, etc.; how to read drawings or make sketches for clients; for the architect: theory of design of trusses, girders, beams, columns and framing; for the contractor and builder: materials, sheet metal work, fire-proofing, wiring, piping, heating and ventilating systems; building superstendence, specifications and contracts, building laws and permits.

Mark on the coupon the subject that interests you most, sign your name and address plainly, give your occupation, and mail at once. Take the first step today.

=== SPECIAL ===

To demonstrate the high standard of our instruction, we will mail a copy of our "FIRST BOOK ON ESTIMATING" to any reader of American Carpenter and Builder who sends us the name, address, and occupations of three persons interested in engineering or building subjects, together with ten cents in stamps to cover cost of mailing.


American School of Correspondence

CHICAGO

- - - - COUPON—Clip and mail today - - - -

American School of Correspondence:

Please send me FREE illustrated 200-page handbook of information. I am interested in the course marked "X."  

Carpenter's Course  Heating, Ventilating and  Plumbing
Conductors’ and Builders’ Course  Corning Work
Reinforced Concrete  Timemaking
Steel Construction  Structural Engineering
Complete Architecture  Mechanical Engineering
Mechanical Drawing  Civil Engineering
Architectural Drawing  Electrical Engineering
Architectural Engineering  College Preparatory Course
Metal Roofing

Name:
Address:
Occupation:

T. F. PADDELL, - - - Proprietor
What will the profits be?

Is the all important question with every contractor and builder. One practical answer always holds good—Put "Cortright" Metal Shingles on the Roof—you'll make money—please your clients—and advertise your work.

Cortright Shingles are easiest and cheapest to lay—they last as long as the building itself. Their beauty catches the eye and gives that distinguished appearance to the building that causes the passerby to remember it.


Cortright Metal Roofing Co.
Philadelphia and Chicago

From The Foundation To The Last Brick

We are experts in producing designs, illustrations, zinc etchings, half tones and color plates; for all advertising purposes.

We print folders, circulars, booklets and catalogues.

In fact, we handle your advertising from start to finish.

You do yourself an injustice by not conferring with us on your next order for engraving and printing.

Write for "Graven Message"

Dearborn Engraving Company

ENGRAVERS

1322 Wabash Avenue, Chicago, Ill.
Don't Turn Your Back To Opportunity

Opportunity knocks once at every man’s door. Are you prepared to grasp it? A knowledge of drawing has given many a man an opportunity to gain a position of responsibility and trust with fine pay.

CYCLOPEDIA of DRAWING

Four volumes, 2,000 pages, 7x10 inches in size, 1,500 illustrations, tables, formulas, etc. Bound in half red morocco leather. The most complete general reference work on drawing yet published for carpenters and builders.

The carpenter who cannot read or make drawings can never do anything more than push a saw or drive nails; the man who can understand the architect’s plans, or make plans of his own, has the biggest job, the easiest work and the best pay. The Cyclopaedia enables you to get a good working knowledge of drawing in your own home, during your spare time. It contains innumerable hints, "short cuts" and explanations of practical problems that will save you dollars every time you use it.

Less Than Half Price
FREE FOR EXAMINATION

Sent by prepaid express for 5 days' free examination. Send $2.00 within five days and $2.00 a month until you have paid the special price of $9.80. If the books do not meet your requirements, notify us within five days and we will remove them at our expense.

A FEW OF THE SUBJECTS

Mechanical, Architectural, Perspective, Isometric and Freehand Drawing; Blue Printing; Mechanical and Architectural Lettering; Rendering in Pen and Ink and Water Color; Water Color Hints for Draftsmen; Shades and Shadows; The Tuscan, Doric, Ionic, Corinthian and Composite Styles of Roman Architecture; Shop Drawings; Machine Drawing; Machine Design; Sheet Metal Pattern Drafting; Tinsmithing; Architectural Sheet Metal Work; Skylights; Cornices; Roofing, etc.; Practical Problems; Tables, etc.

AMERICAN SCHOOL of CORRESPONDENCE

CHICAGO

— — — — — — COUPON—Clip and Mail Today — — — — — —

AMERICAN SCHOOL of CORRESPONDENCE:

Please send set Cyclopaedia of Drawing for 5 days' free examination. I will send $2 within 5 days and $2 a month until I have paid $9.80; otherwise I will notify you to send for books.

Name ..............................................................
Address ...........................................................
Occupation ....................................................
Employer ........................................................

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
We Give Particular Attention
To Special Designs
and are fully equipped to execute the most intricate and delicate work ever attempted in sheet metal.

Mullins
Art Architectural
Sheet Metal Work
is far in advance in architectural design and artistic execution and has won an enviable reputation for excellence.

Estimates, Designs, etc., submitted to architects, builders and contractors on request.

The W. H. Mullins Co.
214 Franklin St., Salem, Ohio.

Northwestern Expanded Metal Company
D. D.
Expanded Steel Plastering Lath

<table>
<thead>
<tr>
<th>Weight</th>
<th>Yards</th>
<th>Bundles</th>
<th>Bundle</th>
<th>Wt. in</th>
<th>Yard 100 lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 27 Gauge</td>
<td>27 lbs.</td>
<td>12</td>
<td>2 lbs.</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>No. 26 &quot;</td>
<td>30 lbs.</td>
<td>12</td>
<td>3 lbs.</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>No. 24 &quot;</td>
<td>40 lbs.</td>
<td>12</td>
<td>3.4 lbs.</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

Telephones: Harrison 799
945 Old Colony Building
CHICAGO

Montross Metal Shingles

Large profits come from doing good work quickly. You can lay the best roof quickly by using Montross Metal Shingles.

They are fireproof, stormproof, handsome and inexpensive. Every roof laid brings orders for more.

Catalogue

When writing advertisers please mention The American Carpenter and Builder
"Quality" Ceilings

Our aim is to produce the best goods on the market—quality above all else. How we are succeeding is being proven every day by our products themselves. Our Ceilings and Side Walls are clear, sharp and perfect in every detail. The designs are new and artistic, the joints dust-proof and practically invisible.

Our new Catalog, explaining all about them will be sent upon request.

F. O. SCHOEDINGER, :::: Columbus, Ohio
Dept. 5
146 - North Third Street - 148

GRILLES
COLUMNS AND
CONSOLS

In quality and price our work is not surpassed.
You will make no mistake in writing us before ordering elsewhere.

Send for Catalog No. 14
It contains many fine designs of modern Grilles, Columns and Consols.
Illustration at right shows half-section of Column design No. 455.

Northwestern Grille Works
CHRISTENSON BROS., Props. 1452 Milwaukee Ave., Chicago

CONTRACTORS

We wish to convince you of the Superior Quality of our line of Patented Grates, Artistic Wood Mantels and Tiles.
A trial order is necessary to do so. Remember you run no risk, for we make shipments subject to approval and Prepay the Freight.
Large, handsomely illustrated catalogue of Original and Correct designs will be forwarded at request.
Send your business card and receive Wholesale Prices.
Our Patented Grates will heat from one to five rooms in zero weather. Contracts taken for Tile Floors and Wainscoting.

HEITLAND GRATE @ MANTEL CO.,
No. 124 S. 5th St., QUINCY, ILLINOIS
OUR NEW CATALOG

Showing

Burritt Mantels

For 1908

is now ready and we want to send it to every Carpenter and Builder interested in the finest line of medium priced mantels on the market to-day. Our best arguments, however, are the goods themselves—Let us send you at least a trial order.

Tiles and Fire Place Goods of Every Description

THE A. W. BURRITT CO.

"THE MANTEL FOLKS"

349-473 Knowlton St. : BRIDGEPORT, CONN.

Address Dept. M.

COMMONWEALTH HOTEL Opposite State House

BOSTON, MASS.

Offers rooms with hot and cold water for $1.00 per day and up; private baths for $3.00 per day and up; suites of two rooms and bath for $5.00 per day and up. Weekly rates on rooms with hot and cold water and shower baths, $6.00 to $8.00; rooms with private baths, $9.00 to $12.00; suites of two rooms and bath, $10.00 to $22.00.

Absolutely Fireproof—Stone Floors, nothing wood but the doors.

Equipped with its own Sanitary Vacuum Cleaning Plant

Long Distance Telephone in Every Room

Strictly a Temperance Hotel—Send for Booklet

STORER F. CRAFTS, Manager.

Art Leaded Glass


THE FLANAGAN & BIEDENWEG COMPANY

57 to 63 Illinois St. CHICAGO, ILL. (Near F)

Art Leaded Glass


The FLANAGAN & BIEDENWEG COMPANY

57 to 63 Illinois St. CHICAGO, ILL. (Near F)

We Have 1,000 Squares of Same Roofing "HO" BRAND

By "HO," we mean some slight defect in coating the felt, such as hole caused by a button in rug when felt is made, some short skip in coating process, etc., any of which can be cut out with small loss, leaving roll as good as "A" brand. This lot is an unusual bargain. 1-2-3-ply.

The regular market price of this roofing sold all over the world is $1.60 to $3.00 per square. We have 1,000 squares at special prices herewith quoted. "HO" BRAND.

PRICES COMPLETE

1 Ply $1.25 Sq.—35 Lbs.
2 Ply 1.45 Sq.—45 Lbs.
3 Ply 1.65 Sq.—55 Lbs.

"HO" 1.00 Sq.

All goods shipped promptly under our guarantee of satisfaction. Sample on request. Write now.

HOUSE WRECKING SALVAGE AND LUMBER COMPANY

102 East 20th Street, Kansas City, Mo.

W HEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
Before installing Steel Ceilings of any description get details of BERGER’S “CLASSIK”

Write TODAY for catalog D-55. Show your clients our handsome steel ceilings. Most complete line of artistic steel ceilings in existence. Clearly stamped, easy to erect. Appropriate designs for all kinds of rooms. Send sketch and dimensions of rooms for free suggestions and exhibition drawings.

THE BERGER MFG. CO. CANTON, O.

New York, Philadelphia, St. Louis, Boston Chicago, Atlanta, San Francisco, Minneapolis.
Steel Ceilings, Roofing, Cornices, Skylights, Etc.

A Metal Shingle Roof

THE EDWARDS KIND

“A guaranteed protection against fire and the elements, taking a very low rate of insurance. Can be applied without soldering, the use of special tools and by an ordinary mechanic.

On pitched roofs of every description the Edwards Shingles, being considerably lighter than slate, and having none of the disagreeable features, i.e., rotting and warping—of wood shingles are especially recommended.

Made of best quality Worcester Grade Terne Plate. Painted or Galvanized (galvanized after being formed) in sizes 7x10—10x14—14x20 inches. Write for descriptive Shingle Booklet and Prices.

THE EDWARDS MANUFACTURING CO.

“THE SHEET METAL FOLKS”

Main Office and Works:
401 TO 417 EGGLESTON AVE.,
CINCINNATI, U. S. A.

THE NEW CEILING AND SIDE WALL ON THAT ROOM

What shall it be? Steel, of course—because it is the most modern, sanitary and inexpensive, practically lasts forever.

Write to-day, giving dimensions and particulars. We will go into the matter with you thoroughly.

“When it has the Eller trade-mark, it’s the best in steel.”

ELLER MANUFACTURING CO.
Canton, Ohio

ART METAL CEILINGS

LET US FIGURE WITH YOU
We make PROMPT SHIPMENTS

The Kanneberg Roofing & Ceiling Co.
CANTON, OHIO.
Manufacturers of Everything in Sheet Metal
The Wolverine Furnace

and the Wolverine System of heating and ventilating are things you want to investigate before you place your contract for heating apparatus. We sell direct to you at manufacturer's prices, not only the furnace but all piping, registers and other fixtures all cut and fitted ready to put together.

Then, we send our own salaried mechanic to install your job if you live within our local territory. If not, our engineering department prepares complete plans and instructions that any good mechanic can follow.

It costs you nothing to investigate and to receive our written proposition. Write for our large illustrated catalogue that describes and illustrates these furnaces and explains the Wolverine System of installation and contains lots of other interesting and valuable information. It is mailed anywhere free postpaid on request. Drop us a postal and ask for catalogue No. 25.

Marshall Furnace Co.

221 Exchange Street

Marshall, Michigan

SCHILL FURNACES

The World's Greatest Heaters

OUR CATALOGUES ARE INTERESTING—FREE

THE SCHILL BROS. CO.

CRESTLINE, OHIO

100% More Light

in dark interiors by the use of

3-WAY PRISMS

Prism Glass of all kinds, Vault Lights, Window Lights, Skylights, Wired Prisms

See pages 522-23-24-25 in Sweet's Index, at all Architects' and Builders' offices.

AMERICAN 3-WAY PRISM COMPANY

134 North 10th Ave.

(Catalogue on request)

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
BETTER MILL WORK AT LOWER COST
RESULTS—MORE JOBS AND MORE MONEY

Buy direct from me and SAVE
at least
20 to 150
Per Cent

To Contractors and Builders

I have a special word for Contractors and Builders. And it's just this,—

If you could see how many of the Millwork products of that Millwork firm would be able to underbid your competitors, secure more jobs and make more money wouldn't you?

Well now I can supply you with that better quality Millwork at a whole lot more reasonable price than your local lumber dealer can—at from fifty to seventy-five per cent less cost to be exact.

Remember I guarantee my Millwork.

The same materials and workmanship are given in this door, and it is very popular where a small glass is desired, which also helps to reduce the cost. A plain door that will always look well and be right in style. A guaranteed door.

Soft Wood Front Doors
Suitable for Natural Finish or Paint

Made with yellow pine raised panels, with clear soft pine stiles and rails. Bead and cove sticking around panels. Made up with hardwood dowels and carefully glued and put together. We guarantee this door or money refunded.

Hardwood Front Doors

We carry this door in stock, veneered oak only. Choice veneers of selected grain are used and the stiles and rails are built up from soft woods, thoroughly glued and set together. A door guaranteed to hold or money refunded.

Net Cash Prices
Glazed, Best Beveled Plate
2-8x6-8 \(\frac{1}{8}\) in. thick red oak . $11.40
2-10x6-10 \(\frac{1}{8}\) in. thick red oak . 12.92
2-12x6-\(\frac{1}{8}\) in. thick red oak . 13.78

We use the best grade of soft pine in our jamb, and the best make of glass (not machine made) we can get. Besides we glaze with best putty after properly filing the sash.

See our Catalog for prices on all sizes.

1\(\frac{1}{4}\) INCH COTTAGE FRONT WINDOW

Glazed double strength glass top leaded as shown.

Top Light. Bottom Light. Net Price
2 light 16x20 \(\frac{1}{8}\) inch..... $0.72
2 light 24x24 \(\frac{1}{8}\) inch..... 1.00
2 light 28x30 \(\frac{1}{8}\) inch..... 1.40
2 light 30x36 \(\frac{1}{8}\) inch..... 1.84

See our Catalog for prices on all sizes.

INTERIOR FINISH—This to give full satisfaction must be made from a first class grade of lumber, and the machine work must be smooth and even. We are able to furnish just this and quote you the very lowest prices at which you will be able to get high grade material and workmanship. Prices are per 100 feet linear.

Sash, Doors, Blinds, Mouldings, Porch Work, Stair Work, Grilles, Mantels, Cabinet Work, General Mill Work.

"BUY SASH AND DOORS FROM SCHALLER-HOERR'S"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
Hot Water Heating At Much Lower Cost

If you contemplate installing Hot Water it will be to your interest to investigate
THE HONEYWELL SYSTEM

It is not only the cheapest system to install, but by far the most sightly, efficient, responsive and economical system on the market. It contains one-third less water and heats one-third quicker with a resultant saving in fuel. The water circulates from the boiler to the radiators from three to five times faster than in the old style system, hence quick results from firing with a minimum loss of heat in transmission. No large, unattractive piping through the rooms with this simple system. Owing to the very rapid circulation of the water 1” pipes are amply large to supply any sized radiator on the upper floors.

Every Radiator heats perfectly with the water at a temperature as low as 85 degrees, which can be increased to a temperature of 240 degrees (hotter than steam) without boiling inside of a few minutes, giving the system the efficiency of steam at 10 lbs. pressure to meet extremely cold weather, while retaining all the valuable features of the mild temperatures of hot water.

Over 6000 Systems Installed In 1907

Indorsed and Sold By The Leading Manufacturers of Heating Materials.

Free engineering advice given the trade on all installations.

If you have an unsatisfactory job of hot water heating, we can cure it at a very small cost and without remodeling.

Write us for full information regarding this eminently successful system that is revolutionizing hot water heating.

HONEYWELL HEATING SPECIALTY COMPANY

Plant and General Offices

WABASH, INDIANA

Let Us Send You FREE!

Our Latest "FRONT RANK" FURNACE Catalogue.

It contains valuable heating information—just the thing you want to help you plan and figure on that new house or building you are putting up. Tell us your needs—we make no charge for furnishing estimates. Write today, and tell us, please, the name of your local furnace man.

Haynes Langenberg Mfg. Co.,
4045-4057 Forest Park Boulevard, ST. LOUIS, MO.

STEEL BEAMS & LINTELS

Caldwell & Drake Iron Works
Columbus, Indiana.

Cast-Iron Columns
Sidewalk Lights

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
"JUST TO BOOM BUSINESS"

We are naming special bargains on Stock Millwork to start the spring trade. The items here are samples of a few only. Send us your lists for estimates.

OUR GREAT CATALOG No. 15—312 PAGES—IS FREE

We would appreciate 10 cents in coin or stamps to cover cost of mailing.

Contractors and builders owe it to themselves as shrewd, business men to save middle-men's profits by buying direct of the manufacturers. Thousands do—why not you? Buying direct broadens your business experience. It will pay you to push "stock-stuff." You don't have to guess what your profits will be when you buy of us. Our immense warehouse located at Chicago, the "Great Central Market," supplemented by two large factories at the base of supply makes us the largest manufacturers of stock millwork selling direct. We ship without delays. Begin now Buy all you can direct. It will pay.

50% SAVED OVER DEALER'S PRICES ON ECONOMY ROOFING

SEND FOR FREE SAMPLES

This Building is Covered with C. M. S. Co.'s Economy Flint Coated Roofing

OUR ECONOMY BRAND ROOFING

Is a flexible asphalt fabric. Each roll contains all the nails, metal caps and cement you need in laying it. We fully guarantee every roll, carry a large stock and can ship at once any sized order.

Compare our samples and prices with your local dealer's. Look into it carefully and see that the saving is all we claim. Don't take our word for it. Look it up. Don't put on cheap beer roll shingles at a high price and have your customer kicking. Give him a modern coating at a fair price that will last and cost less.

Net Cost—C-520 Painted

<table>
<thead>
<tr>
<th>Size</th>
<th>Tw’m’s</th>
<th>Glazed</th>
<th>Glazed</th>
<th>D. S.</th>
<th>Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x6</td>
<td>6-6</td>
<td>11</td>
<td>$1.90</td>
<td>$7.75</td>
<td></td>
</tr>
</tbody>
</table>

OURL ABSOLUTE GUARANTEE GOES WITH EACH ROLL!

WRITE TODAY

CHICAGO MILLWORK SUPPLY CO., 236-242 W. 20th St., CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER.
WOOD and COAL CHUTES

10,000 in use

Have stood the test, because they are of good, common sense construction. They do the work and stand the abuse Coal Chutes are intended for. No adjustable parts, easily opened, easily locked. Notice long anchorage and long spout on both Chutes. Write for agency and prices.

Grand Rapids Foundry Co.
Grand Rapids, Wisconsin

MODELS

Models and Dies for Metal Ceilings.
Machinery for Metal Ceilings and Boats.
Mechanical Installing of Metal Ceiling Plants.
Models for Buildings, Bridges, Theaters and Railway Stations.
Made of Composition Correct to Scale from Architect’s Plans.
Models and Molds for Concrete Stone.
Models, Stucco and Composition Work.
Make Sketches and Estimates Free of Charge.

MAIL DIRECT TO THE
ACORN MODELING WORKS
2238 Shelby Street
INDIANAPOLIS, : : INDIANA

CLINCHER LATH MEANS Economy

Easy to Handle
Easy to Erect
Easy to Plaster
Level Plastering Surface

No sagging between the Studding

Write for sample and price
Dept. C

The AMERICAN Rolling Mill Co.
Middletown, Ohio
ART GLASS DIRECT OF THE MAKERS

We design and manufacture our entire product and therefore are in a position to quote the lowest factory figures. Our Catalogue which we furnish FREE will help you secure contracts.

LET US SHOW YOU HOW TO SAVE MONEY

OUR DESIGNS AND PRICES ARE WINNERS

Decorative Glass of Every Description

Art Glass of Quality

Write Us for Estimates

BEVELED PLATE DESIGNS IN LEAD OR METAL

We make a specialty of suitable designs for Homes, Churches, School Houses and all Public Buildings. Special Designs submitted. If interested in Lamp Shades and Dining Room Domes write for ART Booklet No. 10.

Art Glass, Lamp Shades, Plate Glass, Chipped, Window and Sand Blast Glass

We Ship Short Orders on Sand Blast Designs in 3 to 6 Days

SUSS ORNAMENTAL GLASS CO. 740 Threeo Street

CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
"THE WINDOW CHUTE"
A WINDOW AND A COAL CHUTE
ALL IN ONE

Coal Chutes HAVE BECOME A MODERN CONVENIENCE without which no building is really "Up-to-date."
The Window Chute closes and locks automatically from the outside by simply raising steel bottom and pushing it over lugs provided at top. Has Cast-iron Frame and Hopper with continuous heavy Sheet Steel Bottom, which, when chute is open, completely covers and absolutely protects the Window Glass below it from breaking. Useful every day in the year for light, or as a Chute. The Window Chute is the only combination Chute and Window on the market, which feature is fully protected under United States patent law.

It is Burglar Proof: for it cannot be opened except from the inside, by lifting sheet off of locking lugs. The Window Chute is made to last, and for practical utility and service has no equal. No more excuse for unsightly, soiled and blackened walls, battered frames and sash, littered walks and grass plats always found where coal and wood are put through a basement window. Equally suitable for frame, brick, stone or concrete walls, and for new or old buildings.

Standard Sizes

<table>
<thead>
<tr>
<th>Size &quot;A&quot;</th>
<th>Size &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 wide—16 high</td>
<td>24 &quot;</td>
</tr>
<tr>
<td>Price</td>
<td>.25x19</td>
</tr>
</tbody>
</table>

SHULTZ'S
Patent All Steel, Cork Bedded Corner Posts, Mullions and Transom Bars.

Also my new Acme Steel Post and Bars, in which the Glass is Bedded Between Wood.

They are the handsomest and strongest bars made. The glass is bedded on both sides, either between Spanish cork or wood, preventing any cracking or crushing of glass. No putty. Are absolutely water and dust proof.

BURGULAR PROOF COAL CHUTE: Locks itself automatically when closed up. Can only be opened from inside. Face of Chute flush with wall.

C. H. SHULTZ, Palatine and Manufacturer St. Joseph, Mo.
For Cut and Prices on Corner Posts and Coal Chutes.

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

For Sample, Price and full Description, Write
Northwestern Compo-Board Co.
MINNEAPOLIS :: MINN.
Very man has an ambition to own a home. But it is once in a lifetime that an opportunity like this is offered. Here an attractive, beautiful home is held out to you—it is within your grasp.

Own Your Own Home

Thousands and thousands of men and women work and toil for years to save enough money to build a home. It is a most laudable ambition, and one which holds out the greatest possible happiness. For what can a man desire more, particularly if he has a wife and possibly a family, than a comfortable home-like home all his own? It is worth the toil and sacrifice of years, and the reward makes all the effort seem but light.

Realizing this great and praiseworthy ambition, the American Carpenter and Builder decided to place two beautiful homes within the reach of two men who, by their efforts, show that they are most entitled to them.

It will be the work of only a few months to secure one of these homes—it will not take years to save the money. What a short cut for an ambitious and homeloving man!

This is YOUR Opportunity

Don't make the mistake of thinking that this is a good opportunity for some other fellow. It is your opportunity. It may be the other fellow's, too, but it is just as much yours. Aren't you just as capable as he? Aren't you just as entitled to the opportunities in your vicinity just as great as they are in any other? You are mistaken if you think they are not.

Russell H. Conwell, in his famous lecture on "Acres of Diamonds," says: "Where can I get rich? Right where you are. At home. Not somewhere else. Not a man has secured great wealth by going away who might not have secured as much if he had stayed at home."

Don't make the mistake of thinking that if you were located somewhere else you would win, but not where you are. Your opportunity is just as good, perhaps even better, than that of any man. Get to work where you are. And get to work right now.

Your Wife's Happiness Assured

Think of the happiness of the wife—that is, or is to be—when you can tell her that hereafter you can live in "Our Own Home." You can give her no greater pleasure in life than the possession of a home all your own. And you can have it, too. And have it this very summer. You don't have to wait and save and figure, and figure and save.

You may have been looking forward to the dim future—to prospect of saving so much a year, and have thought that about year after next, perhaps in 1910, "we will have money enough to build, providing we can take out a mortgage," and then "if we can pay off so much a year in ten years, we will have it all paid for."

How different it will be if you grasp this opportunity! Before another snow flies you and your wife and family will gather at your own fireside, in a home that is all your own. No rent to pay; no interest to pay; no mortgage to lift.

Read our liberal offer very carefully. Then don't lose one minute. Write us before you sleep.

Remember, it is the man who sees and grasps the opportunity that is before him, and is within his reach, who wins.

Great Prize Contest

This is the greatest offer ever made or ever even thought of. Two handsome homes are to be given away absolutely free to the two men who secure the largest number of subscribers to the American Carpenter and Builder before July 1, 1908. We pay you liberally for all the work you do in good solid cash, and in addition to this make you a present of a home. It will be the work of only a few months to secure one of these homes—it will not take years to save the money. What a short cut for an ambitious and homeloving man!

Don't make the mistake of thinking that this is a good opportunity for some other fellow. It is your opportunity. It may be the other fellow's, too, but it is just as much yours. Aren't you just as capable as he? Aren't you just as entitled to the opportunities in your vicinity just as great as they are in any other? You are mistaken if you think they are not.

This is not all. There are also cash prizes amounting to $450. Think of it! Four Hundred and Fifty Dollars in Cash!

This $450 and these two beautiful homes are all in addition to a liberal cash payment for every subscription you secure.

Please take note of this important point—we make no stipulation as to how many subscribers you must have to secure a home. We are taking all the risk. It may take only a very few. We want you to fully realize just what the wonderful offer means:

First.—Twenty-five per cent (25 cents) on each subscription.

Second.—$50.00 a month if you secure the most subscriptions in that month.

Third.—A beautiful and expensive home if you secure the most subscriptions during the contest.

Even if by some possibility you should miss the first home, there is still another; and if you miss the $50.00 a month you will receive $25.00 if you get the second largest number of subscribers. You certainly can get the second if you miss the first. But you are not going to miss the first. Don't think that way for one minute. Just go in with a determination to win and you will win. And we will do all we can to help you win.

Write today for 16-page booklet and full particulars.

American Carpenter and Builder

185 Jackson Boulevard, Chicago

When writing advertisers please mention The American Carpenter and Builder
ASHBY
SCHOOL HOUSES

display a composition of utility, durability and good, pure architecture without any "gingerbread."

No buildings are too large or too small for our personal and prompt attention.

We develop your own ideas into a practical set of plans and specifications with which they can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Ashby's Portfolio of School Houses will be sent to parties interested in the erection of a school building for which plans have not yet been procured.

G. W. ASHBY—ARCHITECT
11th Floor, Medinah Bldg.
CHICAGO, ILL.
THE COULSON PATENT
STORE FRONT CONSTRUCTION

we know to be the best and the only practical construction of its kind.
We can convince you of the same if you will write to us for a description and our catalogue "D-800."

J. W. COULSON & CO.
Sole Owners and Manufacturers
Main Office, 96-98 North Third St., - - COLUMBUS, OHIO

Kawneer System
of Glass Setting
FOR STORE FRONTS

GLASS HELD BY FRICTION-
NO WOOD, PUTTY, FELT, RUBBER OR CORK

PERFECT DRAINAGE

NEAT AND ATTRACTIVE NO MOIST TO WEAR OFF

GLASS SET FROM OUT

RESISTS DIRECTLY ON WOOD, CONCRETE, BRICK, OR METAL SILL

HARTMANN - SANDERS COMPANY
Sole Manufacturers of
KOLL'S PATENT LOCK JOINT COLUMNS
Elston and Webster Aves., CHICAGO, ILL.
Eastern Office, 1123 Broadway, NEW YORK CITY.
The best columns for porch, pergolas or interior use.

UNIVERSAL STORE FRONT CONSTRUCTION

ALL METAL BAR

The first bar made to set glass from the outside! Others follow. All corners and angles look alike. Bar comes fitted ready to screw to building.
WHEN WINDOWS ARE ENCLOSED GLASS WILL NOT FROST.

Our Universal Sash Bar Meets Every Condition of Store Front Construction

Always a sure fitter. Used for Corners, Divisions, Transoms, Mullions, Sills, Jambs, Circles, Domes and any and all angles. Send us your blue prints for estimates. We deliver the goods.

VOLTZ MANUFACTURING COMPANY, St. Joseph, Mo.
1101 and 1103 S. Eighth Street Two Blocks East of Union Station
EVERYTHING IN CEMENT MACHINERY

To be in the concrete making business in the Miracle way is to be in it in the most profitable way—the most satisfactory all round. For example, in tile and sewerpipe making—With

MIRACLE SEWERPIPE AND TILE MOLDS

you can start upon a small and inexpensive scale—say $57.50 for a complete outfit for making 24-inch pipe.

You can make 110 feet of this pipe per day, and when you consider that the first 68 feet you sell pays for the entire equipment you can judge how quickly you will be making clear profit on your outfit.

And you will make Tile that will sell at the same price as burnt clay at about 150 per cent profit.

OUR NEW CATALOG

We have just received our new catalog, which is more complete and attractive than ever before, has over 500 illustrations, pages 9 x 12. We want to place this catalog in the hands of all our cement working friends and while the regular price is 25 cents, if you will tell us what line you are interested in and ask for Catalog K we will be glad to mail it free.

ADDRESS

Miracle Pressed Stone Co.

Largest Manufacturers of Cement Machinery in the World

Minneapolis, U. S. A.

Miracle Concrete is our new little trade magazine, published "when the spirit moves us." Send in your name and we will place it on our complimentary list.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
THE ONLY MACHINE
WITH THE SELF-LOCKING MOLD!

THE Brandell

CONCRETE BLOCK MACHINE
It Makes MORE and BETTER Blocks with LESS LABOR and Fewer Motions

THE REASON WHY
On account of its Self-Locking Mold, which is patented and not found in any other machine,

the BRANDELL is the fastest operating and most labor-saving concrete block machine on the market. After filling and tamping a saving of 20 to 30 per cent is made in the labor required to discharge the block and prepare the machine ready to mold the next block. The Self-Locking Mold accomplishes this. This saving will make a Brandell pay for itself in a short time. All blocks are made face down on the Brandell, by which a clear, sharp impression of the face is obtained and a natural looking stone free from defects is produced. Let us tell you about all the other good points of the Brandell.

BRANDELL CONCRETE BLOCK MACH. CO.  
Cor. Madison and Dearborn Sts.  CHICAGO, ILL., U. S. A.
"The Coltrin Mixer is a Pippin"

WATERTOWN, S. DAKOTA, Nov. 5, 1907.

Mr. NILS ERICKSON,
MINNEAPOLIS, MINN.

DEAR SIR:

The Coltrin Mixer we bought of you is a pippin. Does all anyone can ask for. Will mix the concrete in fine shape as fast as ten men can wheel it away. Anyone wanting a mixer cannot beat the Coltrin.

Yours truly,

WESTERN CEMENT CONST. CO.

THE COLTRIN CONCRETE MIXER
Mfgd. Exclusively By
THE KNICKERBOCKER COMPANY
JACKSON, MICHIGAN

Bricklaying Taught by Practical Bricklayer

In Two to Three Months

Begin now. Bricklayers are in big demand. As we teach bricklaying exclusively we turn out the most expert mechanics. Individual Instructions. You start right in with the tools and learn how to lay brick.

Write for Circular

CHICAGO SCHOOL OF PRACTICAL BRICKLAYING
Henry T. Kies, Prop. 2115-17 W. Adams St., Chicago

Carpenters and Contractors

Send us a list of your requirements and get our Special Figures on SASH, DOORS and all building material. Prompt Delivery and YOU save the dealers' profit.

Eureka Supply Co.
4300 N. 21st Street, ST. LOUIS, MO.

The 1908 Leader

Advance Concrete Mixer

The talk of the Chicago and Buffalo Cement Shows

"HIGH UP AND LOW DOWN"

High rear wheels 42" in diameter; front wheels 30" in diameter (Can move it around very easily.)

Low hoppers, only 3' 6" from the ground. Has positive and accurate stoker feed for all materials. (Proportions from 1 to 2, to 1 to 10.)

The Advance is continuous in operation and continuous in satisfaction. (Its advantages solve the mixing problem.)

Furnished with Plenty of Power.

Saves Labor, Material, and Expense. Write for Booklet "A"

ADVANCE CONCRETE MIXER CO.
Jackson, Michigan

Rutty Steel Wall Plugs

HOLDS NAIL WITH A GRIP OF STEEL

The best nailing base for interior finish

Reliable
Permanent
Economical
Fire Proof

The Rutty Wall Plug has never proved defective or deficient in the qualities we claim for it.

Our Catalog Shows Complete Line.

J. B. PRESCOTT & SON
WEBSTER Tracy Avenue MASS.

About Plans

ARE YOU GOING TO BUILD RIGHT?

Then send for my new portfolio of designs, plans and complete instructions and guide for home builders—two books in one—"CLAUSEN'S PLANS AND PROBLEMS SOLVED," Price, 50c.

This book contains 142 designs and plans of original homes, beautiful fireplaces, attractive outside Yarns, picturesque window, and groups of windows, many solid oak and walnut sideboards, etc., with complete instructions on the planning and designing of all parts of the home.

The ONLY COMPLETE BOOK of the kind published, containing extensive articles solving every problem that would confront the home builder. Also send for my booklet of practical suggestions, "Just a Word About Plans," and ask about my Free Water Color Sketch Offer.

Studio, 605-7-9 Lumber Exchange, MINNEAPOLIS, MINN.

ARTHUR C. CLAUSEN, Architect.
The RUNYAN

The Latest—The Simplest—The Best

The ONLY successful Mechanical Combination of THREE machines in ONE: Side-face and Down-face Block Machine and Brick Machine. Only ONE width pallet necessary on which to make ALL the standard widths of blocks: this saves to the purchaser at least two-thirds of the money necessary to be spent for pallets with other machines to accomplish the same results.

No Advertising Deception, But a Genuine Reality

The RUNYAN, Jr.

The ONLY block machine having a LONGITUDINAL-HORIZONTAL CORE: PATENTED. The block made on this machine is endorsed by Architects, Builders, Contractors, and Government Experts; will revolutionize building operations; $125.00 buys the complete machine and 100 iron pallets; on these pallets can be made, 100-8" blocks and 100-10" blocks.

OUR AUTOMATIC TAMPER will revolutionize tamping: every blockmaker can use one—ask about it. Our combination screen and MIXER does the work of SIX men—ask about it too.

The Runyan Concrete Machinery Company
Canal Dover, Ohio

Standard Concrete Machinery

THE STANDARD CONCRETE MIXER
Handles wet or dry mix; requires little power to operate; mixes batch perfectly in one minute; self-cleaning; easily charged and dumped: 3 sizes.

THE STANDARD PORTABLE MIXER and ENGINE
Are mounted on suitable truck; well designed; convenient to operate.

WRITE FOR CATALOGUE AND PRICES

Made in 4 sizes—5, 10, 20 and 40.

THE STANDARD CEMENT BRICK MACHINE
Is the fastest Hand Brick Machine on the Market; will make plain, veneered and ornamental face and shape; all perfect, smooth brick, true to size and design.

THE STANDARD GAS and GASOLINE ENGINE
Is made in all sizes. Especially adapted to running concrete machinery.

South Bend Machine Mfg. Co., 1802 Franklin Street, SOUTH BEND, IND.
20,000 Cement Brick per Day

A Complete Power Plant
INCLUDING
MACHINE - MIXER - POWER - PALLET - SIFTER
STEEL RACK - CARS - STEEL TRACKS - ELEVATOR
Everything, in Fact, That Makes an Up-to-Date Modern Brick Plant

Our Price for a Plant of Its completeness and capacity Is the Wonder of All
WRITE FOR CATALOG AND FURTHER INFORMATION
Cement Block and Brick Machinery Company
823 Majestic Bldg., DETROIT, MICH.

Largest Profit Earner Operated

The Sanford Block Machine
IS THE FASTEST IN THE FIELD

EASY TO OPERATE Has Every Up-To-Date Feature

An Actual Pressure of from 13,000 to 16,800 pounds on every block made.
Every part of the machine is adjustable. Wooden pallets may be used. It makes ALL sizes and designs of blocks.
It makes 300 to 400 veneered hollow blocks, and 400 to 500 veneered slab blocks, in an 8-hour day.

AN ILLUSTRATED CIRCULAR FREE showing the various sizes and styles of blocks
THE SANFORD CONCRETE MACHINE CO.
1645-1646-1647 Nicholas Building
TOLEDO :: :: OHIO
Ask for Information Regarding Mixers and Cars

The Improved “MILES” No. 2

The Machine that makes TRUE, WET CONCRETE STONE
that makes BLOCK of ANY ANGLE
with MOVABLE END GATES
that is demonstrated before you buy
that makes the GREATEST RANGE of Work
that makes you want another just like it

The same principle has operated successfully for five years and is fully covered by our patents. VERTICAL CORES. Meet us at Buffalo Convention. Get Our 1908 Catalog.
THE P. B. MILES MANUFACTURING CO. Inc.
109 W. Cortland Street, Jackson, Mich.
THE USE OF WET MATERIAL combined with GREAT SPEED OF OPERATION is what every cement worker has wanted. It is found in only one machine:

THE BESSER FACE DOWN


We make perfect block, brick, mixing machines of all kinds, and at all prices. Brick machines with capacity up to 15,000 per day.

We are specialists in

Cement Tile Machinery which offers 100% profits.

Our Automatic Tamper Tile Machine makes drain tile for $8.00 per M, which sell for $15.00 to $20.00. Capacity 2,000 to 10,000 tile per day. Work easy. Machine simple and everlasting.

Our Tile Molds, in all sizes up to 48", will pay for themselves in a day. Besser has machines for every purpose. They are in use everywhere and give you all the profits. We prove every claim by our customers.

Send for free literature and 25 cents for big Catalogue and instruction book.

THE BESSER MFG. CO.
Alpena, Michigan

Write for full information and practical suggestions

RIB-LATH and RIB STUDS Meet the requirements of every practical builder

Descriptive Catalog will be sent on request.
Also sample of RIB-LATH if you will state why you are interested.

Trussed Concrete Steel Company
624 Trussed Concrete Building, DETROIT, MICH.
HERCULES SPECIAL Concrete Block Machine And Complete Outfit, for only $120

If you are going into the Concrete Block business or want an outfit to build yourself a home, the Hercules Special outfit is the best you can buy.

It makes blocks of any design from 3 inches to 32 inches in length, and height and width in proportion. It is a face down machine and is the only machine that admits of a wet mixture and coarse material, which is the secret of success in Concrete Block making.

There is big money in the Concrete Block business, but you must have the right machine in order to make good blocks. A Hercules Special outfit is all you need to go into the Concrete Block business. Investigate the Hercules Special before you buy—it is the best machine and we can prove it.

Beautiful Illustrated Catalog Free

The Hercules is known as the real concrete block maker. With this simply constructed machine you can make real concrete blocks, ranging in size from two inches to six feet in length. Besides perfect blocks, you can make water tables, sills, lintels and steps.

The Hercules is built so strongly and so mechanically perfect that it never gets out of order, and can always be depended upon at critical times to properly perform its duty.

The Hercules Concrete Mixer not only mixes properly and thoroughly, but proportions thoroughly—it is a wonderful machine. The best for Sidewalk Work.

Send for particulars.

CENTURY CEMENT MACHINE CO.
273 West Main Street, ROCHESTER, N. Y.

The U. S. Standard Concrete Mixer

1. To mix as well as the best.
2. To divide the different ingredients more reliably into any desired proportion.
3. To measure the ingredients more accurately than any known mixer.

The U. S. Standard Cement Block Machine Claims Superiority

1. For accuracy and perfection in construction.
2. For adaptability to an almost endless variety of blocks.
3. For strength and beauty of blocks.
4. For speed.
5. For moderation in price.

Manufactured by
THE ASHLAND STEEL RANGE & MFG. CO.
Ashland, Ohio

Catalogue A sent free upon application.

CABLED WIRE

Concrete Reinforcement

Thoroughly Galvanized, High Carbon, Steel Wire, Great Tensile Strength, is Elastic and conforms to any surface readily. Saves 15% to 20% in labor.

ASK FOR SAMPLES
UNION WIRE FENCE LOOM CO.
Cor. Antoine and Atwater Sts., DETROIT, MICH.
Three Reasons Why
You Should Buy The
King Cement Brick Machine

It Has a Larger Capacity
Makes a Better Quality of Brick
And Is a Greater Labor Saver
—Than Machines which Cost Twice as Much

OUR PRICE $40.00

There are no cracked or defective brick, because they do not have to be turned over to remove them from the machine.
3000 brick a day, 300 per hour, is the average capacity when operated by two men.
It makes rock face and plain face in any color.
You will be satisfied with the King Cement Brick Machine. You can prove its worth for yourself on the machine in your own town.
15 days free trial is given
That's fair, isn't it?
Send for Illustrated Catalogue

SOMERS BROS., Mfrs.
URBANA, ILLINOIS

Acme Cement Block Machine

Equals any Machine, at any Price

$40.00 Complete Outfit 8 x 8 x 16

Makes block face down. Any size from 8x8x16 to 12x12x24. All on same frame with substitution of plates. Wood or iron pallets. Dry, medium, or wet mix

WRITE TODAY FOR CATALOGUE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER
Wet Process Concrete Blocks

By the Pettyjohn System

The manufacturing of Concrete Blocks is rapidly nearing perfection, but the up-to-date manufacturer must use modern machinery and employ improved methods. Three features are important in perfect block making:

WET PROCESS

FACE DOWN

DAMP CURING

These splendid features are combined in the new Pettyjohn Invincible Machine, and no other. Made in three lengths, 16-inch, 24-inch and 40-inch. Tandem Invincibles makes two blocks at once. Price $65 and up. Single Invincibles, $35 and up. Sold on trial always, guaranteed to give satisfaction or money refunded.

With our TRIPLE TIER RACKING SYSTEM green blocks can be stacked three high direct from machine with inexpensive home-made rigging. This economizes space, reduces off-bearing distance, and above all insures slow, even, damp, perfect curing and bleaching. Plans and blue prints free to customers.

Send for our latest edition of "Stone Making" (just published), a book of valuable data for the block maker—FREE.

THE PETTYJOHN COMPANY, 634 North Sixth St., Terre Haute, Ind.
### Classified List of Advertisers

For Index See Next Page

<table>
<thead>
<tr>
<th>BARRETT MANUFACTURING CO.</th>
<th>BICYCLES</th>
<th>BLACKBOARDS</th>
<th>BLINDS</th>
<th>BOOKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARMET SPECIFICATION MATERIALS</td>
<td>BICYCLES</td>
<td>BLACKBOARDS</td>
<td>BLINDS</td>
<td>BOOKS</td>
</tr>
</tbody>
</table>

### COAL CHUTES


### COLUMNS

| Barrett Manufacturing Co. | Harriman-Sanders Co. |

### CONCRETE MIXERS


### CORNICES


### DRAWING MATERIALS


### ELEVATORS


### ENGRAVERS

| Dearborn Engraving Co. |

### FLOOR SURFACES


### FOLDING DOORS

| Flexifold Door & Shutter Co. |

### GAS AND GASOLINE ENGINES

| Caldwell & Hollowell | Gade Bros. Manufacturing Co. |

### GLASS


### GRILLES

| Northwestern Grille Works. |

### HEATERS


### HOISTS

| Peerless Motor Co. | Seacoast & Weatherwax |

### HOTELS

| Commonwealth Hotel. | Hermitage, The |

### HOUSE PLANS

| Ashby, O. W. | Sheer Co., H. M. |

### INCUBATORS


### INSTRUCTION

| American School of Correspondence. | Chicago School of Practical Bricklaying. | Engineers’ Equipment Co. | International Correspondence Schools. |

### IRON WORK


### MANTELS

| Burritt Co., A. J. | Heitland Granite & Mantel Co. | Lorenzen & Co., Chas. F. |

### METAL CEILINGS


### METAL SHINGLES


### METAL WORK


### MILLWORK


### MINERAL WOOL

| Pennsylvania Mineral Wool Co. |

### PAINTS, VARNISHES, ETC.


### PAVING MATERIALS


### PATENT VULCANITE ROOFING


### SHEETING PAPERS

| Barrett Manufacturing Co. | Hewitt, C. B. |

### SLATE ROOFING, ETC.


### STORE FRONT CONSTRUCTION


### FULLER MANUFACTURERS AND SPECIALTIES


### BUILDING STONE

| Georgia Marble Co. |

### CEMENT BLOCK MACHINES


### CEMENT BRICK MACHINES

| Miracle Pressed Stone Co. |

### CEMENT WORKERS’ TOOLS

| Miracle Pressed Stone Co. | Peerless Motor Co. | Seacoast & Weatherwax |

### CONTRACTORS’ SUPPLIES


### PAINT, VARNISHES, ETC.


### PAVING MATERIALS


### PATENT VULCANITE ROOFING


### SHEETING PAPERS

| Barrett Manufacturing Co. | Hewitt, C. B. |

### SLATE ROOFING, ETC.


### STORE FRONT CONSTRUCTION

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than April 20 in order to insure insertion in the May number.
**Sanitary Metal Tile**

**INDIA OILSTONE**

**CARPETERS**

This Is the Best All Round

Oilstone

On the Market

WHY?

Because — The India Oilstone is made by a special process which makes it hard and quick cutting.

Because — They are the Most Durable.

Because — Each Stone is Guaranteed.

More durable than Clay Tile.

No blow can break it. Germ Proof, Water Proof. Design and colors equal to the most artistic ceramics.

Set in Special Cement.

No Nails Being Used.

Manufactured Exclusively by

SANITARY METAL TILE CO.

33 Prospect Street

BROOKLYN, N. Y.

Agents in all principal cities

Write for catalogue.

---

**Something New**

The picture of our new Combination Saw Table and Jointer hardly does justice to this machine which we have designed especially to meet the requirements of contractors and builders. Five machines are combined in one, and it is really surprising what a great variety of work it can do. We have made a very reasonable price on this machine and will be glad to quote you and send further details with a large picture of it which will show more clearly the details of construction.

We also make the famous **"DEFIANCE"** line of Woodworking Machinery consisting of BAND SAWS, SAW TABLES, JOINTERS, SWING and CUT OFF SAWS, TURNING LATHES, PLANERS, SAW ARBORS and MANDRELS. Also special heads, rip and cut-off gauges.

Write us for free catalogue to-day.

When writing mention this paper.

The **Sidney Tool Co.**

SIDNEY, OHIO
Know Lowest Millwork Prices And You Will Get the Good Contracts!

GRAND FREE MILLWORK CATALOG And Monthly Bargain Bulletins

Get in line for good contracts and greater profits! Send today for our Grand Free Catalog of Millwork and Building Materials! Ask to have your name placed on the mailing list for the Special Free Bargain Bulletins! Keep in touch with the largest plant in America that sells direct to Carpenters and Contractors! Take advantage of the extraordinarily low prices we are making! Offer our goods and promises will enable you to make more money in 1908 than you ever made before. Gordon, Van Tine's low prices will attract good American Carpenter and Builder to your jobs. Read the bargain offers on this page.

SCREEN DOORS at Our Prices are Money-Makers for Carpenters and Contractors

SPECIMEN BARGAINS Handsome Profit

We sell everything needed for building and repairs—1,000 Grand Bargains from which to make selections. All material up to the high standard adopted by the Sash, Door & Blind Manufacturers of the Northwest. Note quotations below.

5,000 Bargains

DOORS 80c and up

WINDOWS 69c and up

MOULDINGS at 1-2 Price

MILLWORK for Porches at Cut Prices

INTERIOR FINISH Highest Quality

Our Our Stair Department Will Save You from $50 to $100 on a Complete Flight of Stairs

Our Stock Designs Among of Numerous Variations. Why Give All Your Profit to Your Finishing Mill Man? Write Us! Write Us!

ROOFING Fl intoathed, Waterpoof Price per roll $1.41 Absolutely Guaranteed

Spring is the time to go after roofing contracts. Thousands of old shingle roofs need re-roofing. Estimates based on these prices will get the business. Write for complete catalog.

GET YOUR NAME ON OUR FREE MAILING LIST WITHOUT DELAY

This page for Special Bargains Every Month. If you missed our Advertisement in last month's issue, look it up NOW!

WRITE for Grand Free Millwork Catalog and Special Bargain Bulletins. Everything 50% below retail dealer's prices.

QUALITY AND SAFE DELIVERY GUARANTEED

Our responsibility vouched for by three big banks. See our rating in Dun and Bradstreet.

GORDON, VAN TINE CO. 411 FEDERAL ST. DAVENPORT, IOWA

Largest Plant in America Selling Direct to Carpenters, Contractors and Builders