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AMERICAN CARPENTER AND BUILDER

THE WORLD'S GREATEST BUILDING PAPER

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Modern Homes for Workingmen
Practical Sanitary Dairy Barn
Eight Room School Building

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Bracing and Truss Construction
How to Build a Porch Swing
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Modern Methods

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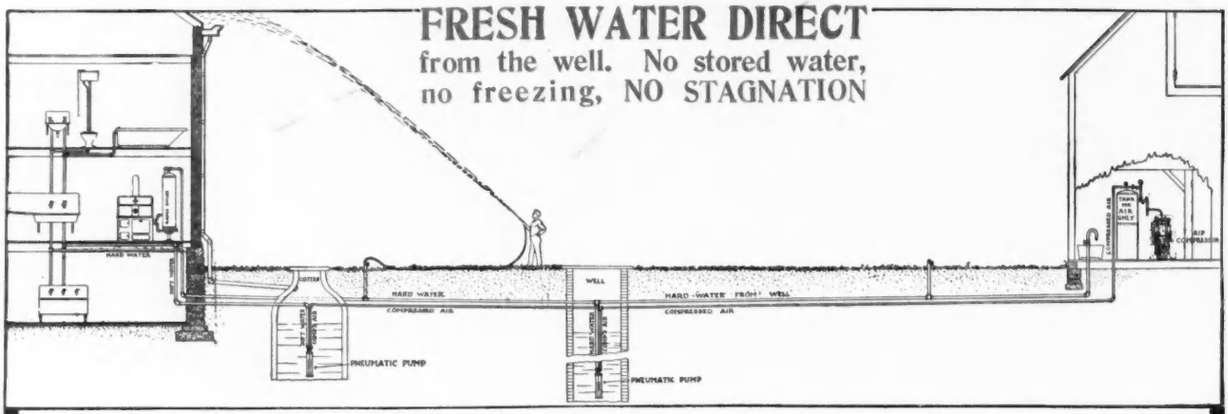
Power for Carpenter Shops

The Perry Pneumatic Water System

(DESCRIBED IN THE AMERICAN CARPENTER & BUILDER, JUNE, 1907)

A Complete and Efficient System of Water Supply Without a Water Tank



The **PERRY PNEUMATIC WATER SYSTEM** furnishes water at any given pressure at the faucets by means of compressed air. Power and air compressor operate only occasionally to keep air reservoir charged. This stored air is used, and the Perry Pneumatic Pump operates only when water is drawn. Air may be piped to pumps in widely separated wells. Well and cistern water may be obtained with one air reservoir, as illustration shows.

Air is compressed by electric motor, gas, gasoline or steam engine, windmill or, for small domestic outfits, by hand. The Perry System is adapted to wells of small bore, cisterns, springs or any sources of water supply. Send for booklet and descriptive matter.

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OLD COLONY BUILDING :: :: :: :: :: **CHICAGO**

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.

The American Floor Surfacing Machine

Does the Work of 20 Men

BETTER QUICKER CHEAPER

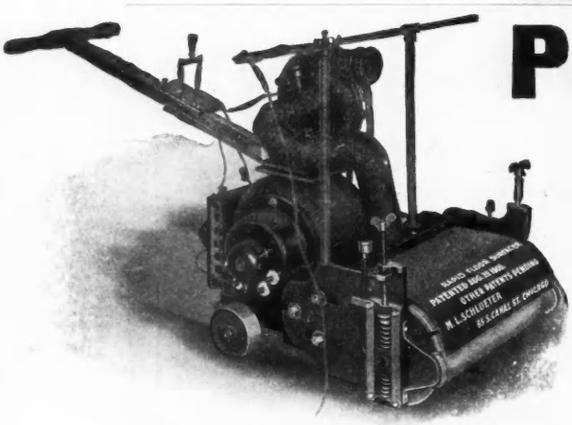
*The **only** machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior wood work.*

It has surfaced and polished millions of square feet on every kind of floors, from common pine to the finest parquetry, from bowling alleys to sky scrapers. It is self-propelling, no pushing or pulling, no blades to dull or sharpen. Used and indorsed 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 our New Booklet. "Surfacing Floors as a business"

The American Floor Surfacing Machine Company

TOLEDO, OHIO



Perfect Results

Are Easily Obtained by using

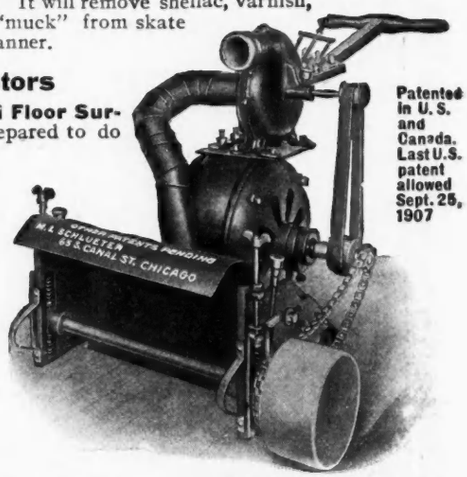
SCHLUETER RAPID FLOOR SURFACER

The 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.

Type "B" Machine 18x8 In. Roller
Type "D" Machine 16x7 In. Roller

Profits for Contractors

The contractor using 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 from $10 to $25.00 a day when in operation.



Patented in U. S. and Canada. Last U.S. patent allowed Sept. 25, 1907

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 per day.

What One Contractor Says

TO WHOM IN MAY CONCERN: DES MOINES, IA., Feb. 28, 1908.

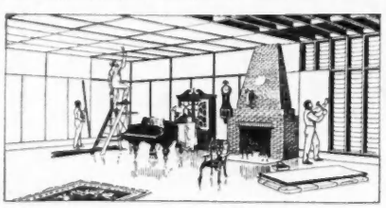
Dear Sir: We have used your rapid floor surfacing machine at the Harbach Apartment Houses, this city. We consider it to be a labor-saving device of high order. We believe there is no comparison between work done by the machine and hand work, the sander giving a smooth, uniform surface, much preferable to that usually obtained by hand work. Yours very truly,

CHARLES WEITZ' SONS.

FREE Illustrated booklet containing full information sent free to contractors. **M. L. SCHLUETER** 28 S. Canal St. CHICAGO

Eastern Agents:—New York & New Jersey Floor Laying & Surfacing Co., Lawyers Bldg., 164 Market St., Newark, N. J.

Edge Roller Attachment
Interchangeable to either side of machine. Works close to baseboard.



Beaver Boards

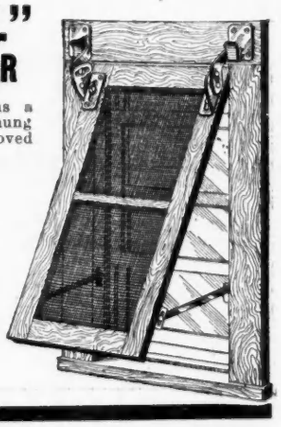
The Modern Wall and Ceiling Material

Takes Place of Both Lath and Plaster

The carpenter nails it direct to the studding. It is then painted. No waiting for plaster to dry. Susceptible to finest decoration. "Determining Facts in Wall Building and Decoration" tells about the six kinds. A copy and sample free. Write today.

The Beaver Mfg. Co., 247 Perry St., Buffalo, N. Y.

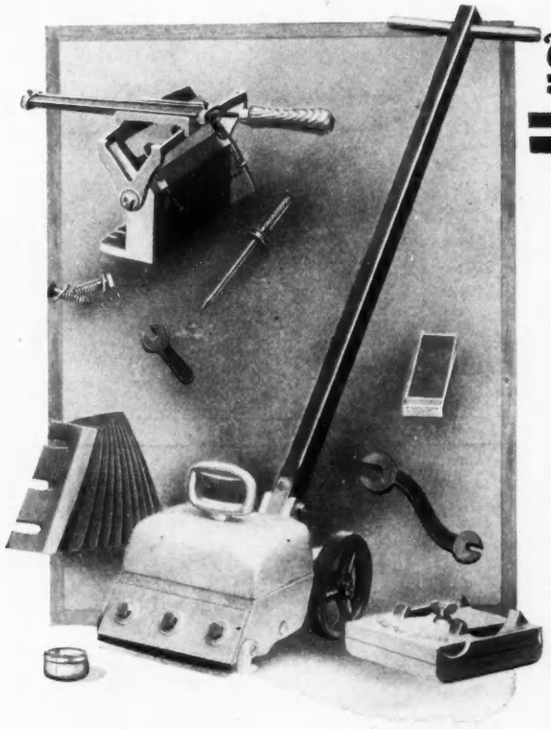
The "UNIVERSAL" ADJUSTABLE HANGER



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

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

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



The ACME FLOOR SCRAPING OUTFIT

IT IS NOT A QUESTION OF PRICE

but a question of efficiency that establishes the value of a machine. **BARGAIN SALES** or **CUT PRICES** are never associated with an article of merit. When investing your money in a **FLOOR SCRAPER** do not be guided by price, look for **RESULTS,** that's what counts. Cheapness is no recommendation. **INVESTIGATE, COMPARE, TRY,** then **JUDGE FOR YOURSELF.** It costs you nothing to try the **ACME MACHINES,** they will be sent to you upon request. If not satisfactory return them at my expense.

Illustrated booklet mailed upon request

JOS. MIOTKE

247 Lake St. Milwaukee, U. S. A.

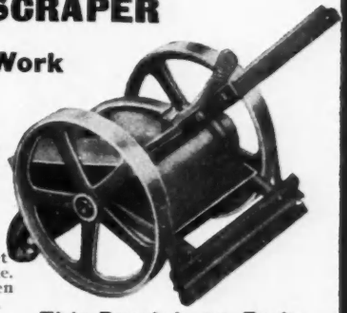
This outfit will be sent on trial to any responsible party.

NO QUESTION ABOUT IT

IT'S THE BEST

ACKERMANN'S RAPID FLOOR SCRAPER

Is Guaranteed to do More, Better and Easier Work than any other on the market.



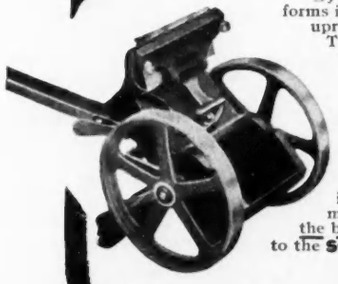
This Brush is an Exclusive Patented Feature. NO OTHER MACHINE HAS OR CAN USE IT. Patent Allowed Nov. 1907

Knife Advantages

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 4½x8 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 with his work.



Cut Showing Machine in Reverse Position Ready to Sharpen the Knife-Blade

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, 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.

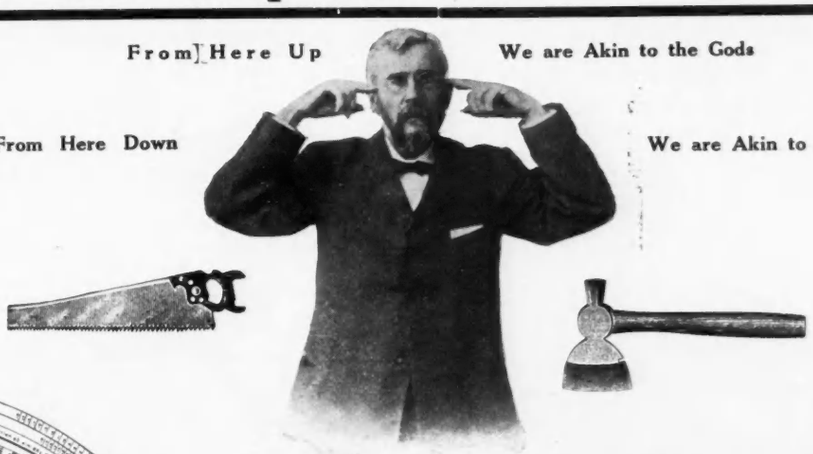
J. B. ACKERMANN CO.

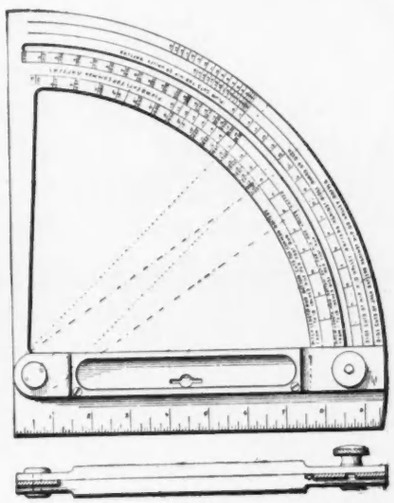
Sole Manufacturers

Board of Trade Building .·. GRAND RAPIDS, MICH.

CARPENTERS

Would You Keep Abreast of the Times?





THE CALHOON
Rafter and Polygon Bevel

Every bevel in the universe is contained in a quadrant; pass a line through it, from the center of the square to any degree or pitch, register on it the length (per foot run) and the opposite blades of the square will automatically (from that line) give bevels desired. See?

All calculations are based on 12 inches the unit of *base run* and 24 inches the unit of *pitch* or *rise*, and all hip, valley, octagon and jack, or cripple rafters on run and rise of principal or common rafter. We all know how difficult it is to read and apply the square. This tool will help you do both, or, rather, do both for you, as it is a practical tool.

The relative use of this tool in a carpenter's hands is that of an X-Ray machine to the surgeon, or of an interest book to a banker, or the computing scale or cash register to the merchant.

It is an organization of draft-board, square, tri-square, bevel-square, plumb, level and bevel-protractor into one tool.

This is a su bstantial TOOL 9½—10½. **Made of Nickeled Steel.**

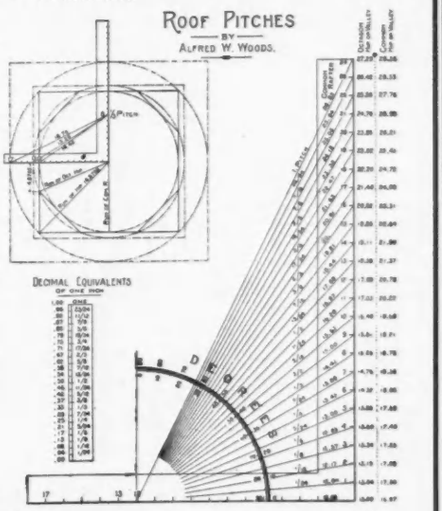
Testimonials

"The best framing tool in existence."—O. C. Kagelmacher, Case School Applied Science, Cleveland, Ohio.

"The most complete tool I have ever seen."—M. M. Lloyd, Master Mechanic, East St. Louis & Suburban Railway Company.

"The best mechanical device ever put on the market."—District Council, Kansas City, Mo., C. J. Huston, president, Edd. S. Abdill, secretary; District Council, Indianapolis, Ind., Chas. E. Bacon, president, Z. F. Carrigan, secretary; District Council, Cleveland, Ohio, Phil. Hyle, president, Jno. B. Melcher, secretary; District Council, St. Louis, Mo., Wm. M. Davis, secretary

This illustration gives an idea of adjustment. The book of instruction will explain its full uses and application. Booklet of instruction with each tool.



Ask your Retail Hardware Dealers for them, or write to the following Jobbers for one:

Standart Bros. Hardware Company	**Detroit, Mich.**
Vonnegut Hardware Company	**Indianapolis, Ind.**
The W. Bingham Hardware Company	**Cleveland, Ohio**
The McIntosh Hardware Company	**Cleveland, Ohio**
Geller Ward & Hassner Hardware Company	**St. Louis, Mo.**
Witte Hardware Company	**St. Louis, Mo.**
Tenk Hardware Company	**Quincy, Ill.**
Townsley Metal & Hardware Company	**Kansas City, Mo.**

Or Send $3.50 to - A. O. CALHOON & COMPANY - Perry, Mo.

AMERICAN CARPENTER AND BUILDER

American Carpenter and Builder

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

Published monthly by

American Carpenter and Builder Company

185 JACKSON BOULEVARD, CHICAGO.

VOL. V JULY, 1908 No. 4

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.

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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 man who smiles has half the battle won.

✤

EVERY day we discover how little we know about most things.

✤

DON'T go through a house and guess a certain size furnace will heat it properly. Take the cubic contents, etc., then plan your lay out for that particular house. How often do you find two conditions just alike?

✤

IN THE art of holding a customer, the next best thing to furnishing good work is to treat him with the consideration due a gentleman.

✤

IT DOES not matter whether a man's grandfather was on the bench as a judge or a cobbler, so long as the man himself is right.

✤

WHAT we need at this day and age is more of the pride of workmanship and less of the desire to turn out something quickly and sell it for a big profit.

✤

A GOOD boss uses his brains more than his feet. But he doesn't necessarily wear his trousers through at the seat. He keeps brain, feet, and hands in good training.

✤

SAFETY devices pay in the long run. The man who must keep one eye on his machine to keep from losing a finger or an arm, can not turn out as much or as good work as he who devotes his entire attention to the work, knowing that with reasonable care his fingers are safe.

✤

Co-operation

AT THIRTY-FIVE the crash and boom of the cannon cracker is not the source of unmixed delight that it was at fifteen; the pin-wheel does not throw such radiant stars; nor does the rocket pierce the heavens to such a height. Yet who will prove, by that, that patriotism has grown less?

In this year of grace, 1908, the builder is no longer able to go forth into the forest and hew out the materials for his house, complete—or rather, he does not have to, as our Revolutionary fathers did. And we

might conclude, unthinkingly, from this, that independence is no more.

Yet, just as the quiet fervor of the man marks a higher patriotism than does the thoughtless noise of the boy, so the orderly co-operation of modern industry is a truer independence than the old, primitive, every-man-for-himself condition. The man who once had to toil all alone to make his rude, comfortless dwelling, now has a dozen experts at his service. The carpenter, the mason, the plumber, the electrician, the roofer, the painter, the plasterer, the decorator—all are ready with their materials and skill. Modern building is done by specialists, all working together to the same end. By co-operation we have developed; and today it is only by pulling together that success, progress and independence can be gained.

✤

National Prosperity

THEY have formed a somewhat unique organization in St. Louis, which they have named "The National Prosperity Association of St. Louis." Behind the movement are all of the business interests of the city, large and small. The purposes are stated in a circular letter to be: To keep the dinner pail full, the factory busy, the pay-car going, the present wages up, the workmen employed. And a mighty good platform it is.

The occasion, some time ago, for the birth of this association, was as follows. A number of manufacturers, contractors, business men, discovered that their business showed a profit last month—where no profit had been for the three months before. They came together informally and compared notes. The situation was much better than they had thought. The investigation was pushed further, enlarged to take in all the different lines of trade. Much evidence of restored confidence and returning prosperity was found.

Feeling that the community ought to be fully informed, and that the encouragement ought to be extended beyond St. Louis, the organization of the National Prosperity Association followed. This association has nothing to do with the past. It looks forward. It is not political, yet it has a platform. The two planks are a square deal and a square meal for every man.

There is nothing fundamentally wrong with the business situation. The financial clouds have rolled by. The crop prospects—that basis of all things for all of us—are exceptionally good. We believe we can get back to normal conditions quickly, if we will. We do not see why we should wait for the closing months of 1908, or for the spring of 1909. We have passed the low level. The commercial sun is shining. The time for this movement is ripe now. It was not ripe before.

The National Prosperity Association has definite plans to expedite its purposes. To carry out these plans it asks the co-operation of every newspaper, every business, industrial and labor organization in the country. The movement must spread; for prosperity is national. No city or town can monopolize a good thing in business. We prosper, we stagnate, we recede, we grow, all together. That is the lesson of the season through which we have passed. Every man from Sandy Hook to the Golden Gate is invited to talk the gospel of good cheer.

The plans and methods of the Natioanl Prosperity Association are available to any business organization or any individual anywhere. The association will welcome any helpful suggestion to increase its efficiency. We are confident that if the business men of the United States join in this movement, prosperity will be at full tide before the end of the year; that 1909 will be the best business year our country has known. Instead of waiting for something to turn up, let's turn up something, and do it quick.

✤

Prize Contest

THE winners of monthly cash prizes for June in Our Great Prize Contest were: First, J. M. Heinonen, Negaunee, Mich., $50; second, T. J. Holler, R. R. No. 2, Peabody, Kan., $25.

We have been intensely interested in this contest and in the splendid work done by so many of our readers; we know that you are all interested, too. In next month's magazine (August) we will be able to announce the final results and the winners of the two Grand Prizes.

✤

The Conference of Governors

TWO facts stand in large prominence from the recent conference between the President and the governors of the states.

One of these facts is that the nation is making prodigal use of its natural resources to an extent that may be designated alarming.

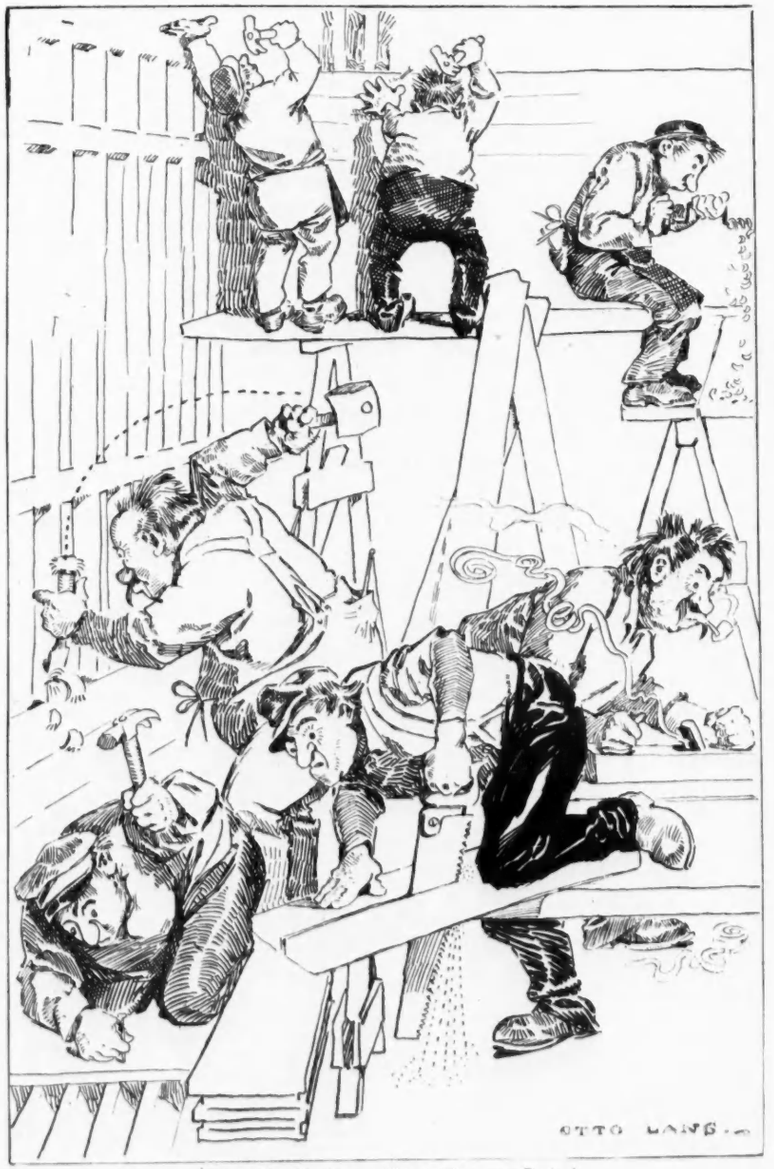
The other is that a determination has been formed among the governmental heads of the nation, including the states, to take active steps to conserve the natural resources and to resuscitate them where exhausted, at least in the case of forests and the natural fertility of the soil.

The President and other speakers at the conferences and public functions made strong statements about the development of the natural resources of the nation to the point of danger. These warnings are wise, and no one will think, or can think, that the statements made are much exaggerated. Coal, lumber, building material, iron, and various minerals are being consumed at an enormous rate, and, with conditions as they are, without taking into consideration the cumulative rate of consumption, it is possible to foresee the end of the terrible strain put upon mountain, forest and farm to support modern life.

In another part of this magazine is given the declaration of principles adopted by this conference.

WORKING BY THE DAY

What the Owner Thinks the Workmen are Doing



What the Workmen Think They are Doing

MODERN HOMES for WORKINGMEN

By Will Lawrence Hammons

ONE of the most pleasing and important signs of the country's general advancement is noted in its recent architectural development. From the modest cottage to the towering skyscraper wonderful progress has been made, and both homes and business structures have been made the very embodiment of architectural excellence.

But it is in the building of modern residences that the greatest universal benefit results. Recently marked attention has been given to the building of modest, attractive homes for workingmen; not only by the real estate dealers of the cities, but also by great corporations, some of which have built whole towns of modern residences for their employes.

No greater agency than attractive homes is found for aesthetic and ethical improvements of our people. Let a workingman return after a day of toil at the mills to a small, dingy, unattractive dwelling, and he will find little to encourage, cheer and uplift him.

But let him really live in a modest, attractive and well arranged house and his condition will be bettered in many ways. He takes interest and pride in his home; he takes a deeper interest in his daily work; he becomes more ambitious for the higher possibilities of life, and his whole career is bettered and made brighter. Realizing this fact, some of our greatest corporations have spent millions of dollars in building modern residence towns for their employes. Probably the greatest undertaking of this character is the building of Gary, Ind., the new, made-to-order city of the United States Steel Corporation.

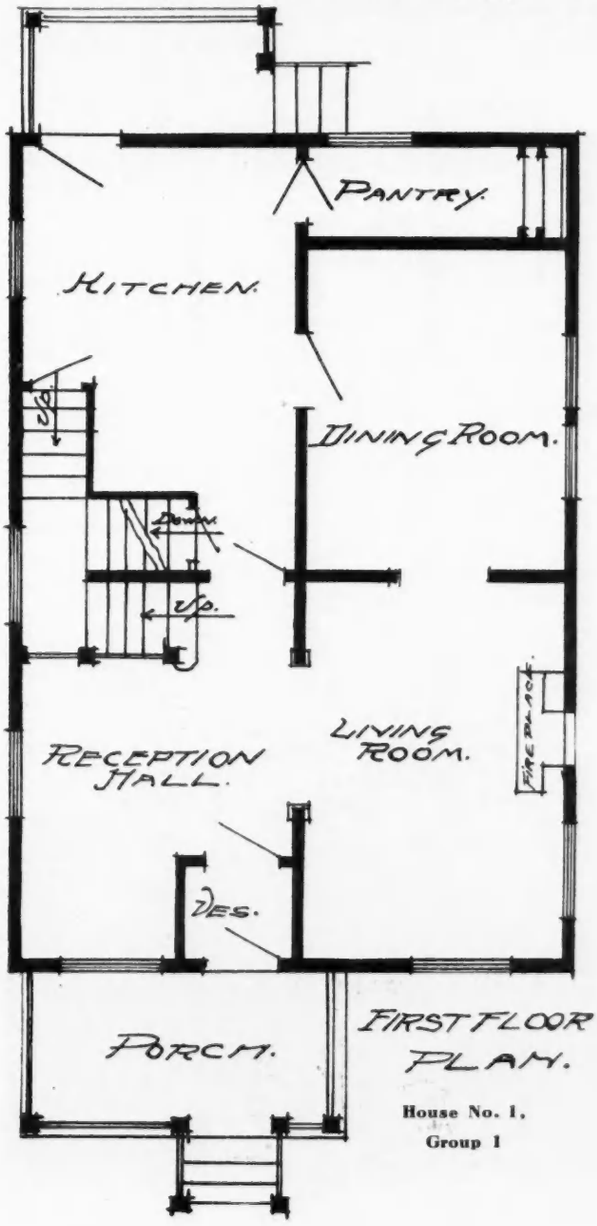
Two years ago there was a vast stretch of waste sand dunes and swamps along the southernmost shore of Lake Michigan, twenty-six miles from the heart of

Brick, Cement Plaster, Timber and Tile Enter into the Exterior Construction of the Houses

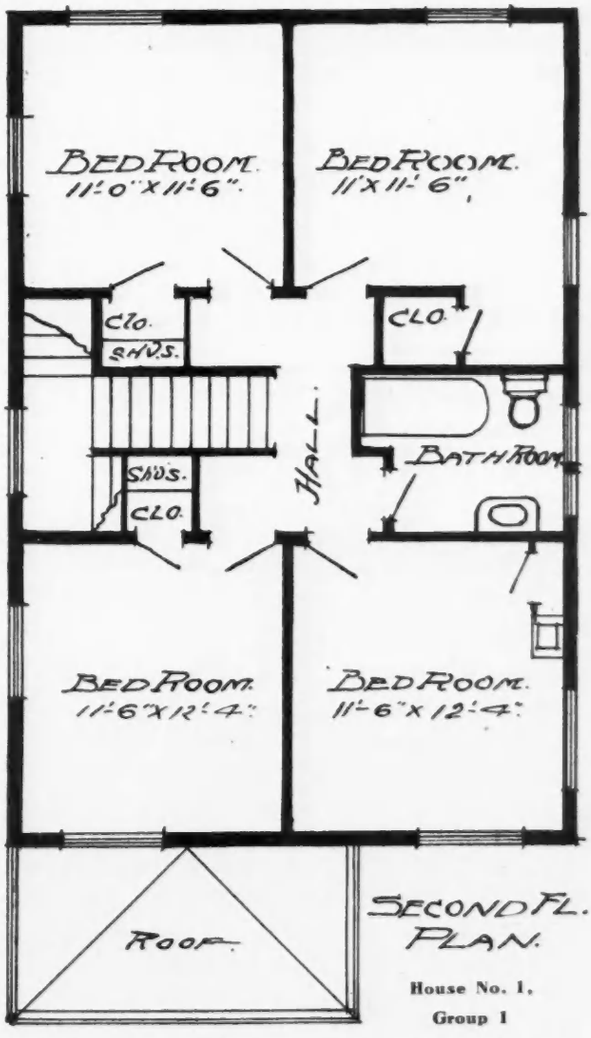
Group No. 1, Attractive and Substantial Six and Eight Room Houses, No Two Alike

Chicago. But, desolate as this country was then, the United States Steel Corporation saw at this spot excellent advantages for a great manufacturing plant and a city of modern industrial homes. Nine thousand acres of land were purchased, with eleven miles of lake front, and an army of men set to work to build the greatest steel and iron mills in the world.

As everything at the plant was to include the most modern improvements known to the technical world, so the homes and all public utilities of the city were to be the most modern in every resepect.

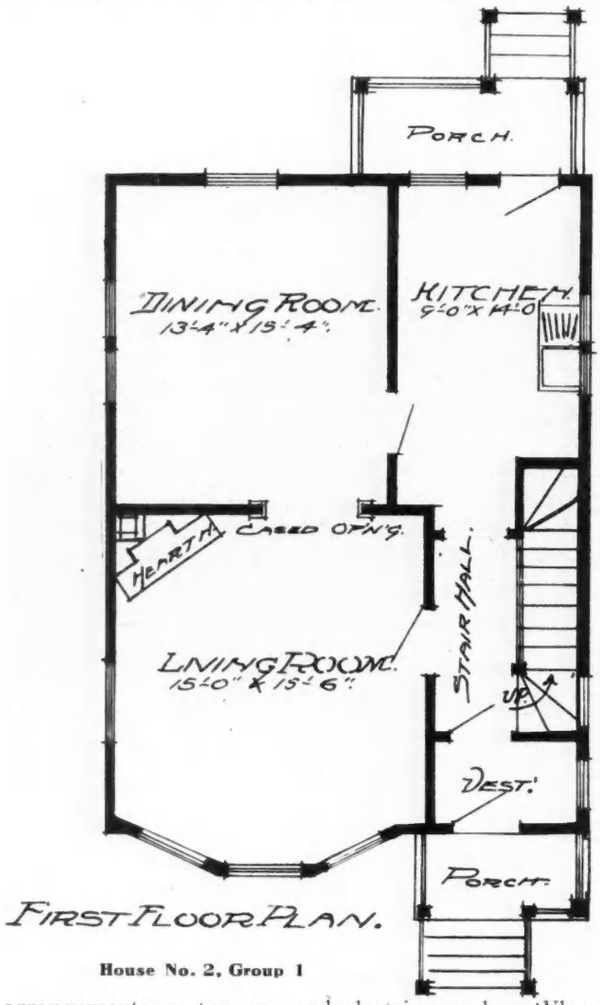


House No. 1, Group 1



House No. 1, Group 1

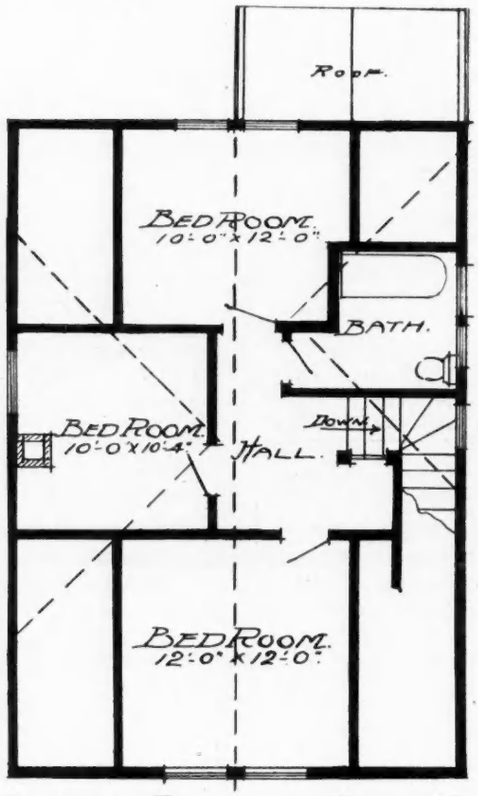
Last summer the steel company erected eight hundred residences, costing from $1,500 to $6,500, each including basement, complete plumbing and sanitary



FIRST FLOOR PLAN.

House No. 2, Group 1

arrangements, water, gas and electric supply. When the great mills are completed and in full operation according to the present plans, there will be 15,000 men at work, meaning a population of at least 50,000 for the new city. There will be a demand for hundreds of houses besides those built by the company, and the building of residences in Gary offers an excellent investment.



SECOND FLOOR & ROOF PLAN.

House No. 2, Group 1

The Steel Company has built twenty-seven miles of paved streets along which these modern dwellings are erected. All houses are set back thirty-five feet from the side walk, giving excellent space for lawn and landscape effects, and a uniform building line. All houses

The Temporary Shacks Have Been Replaced by Modern Residences

are two stories and basement, and are built of a variety of materials and designs. Some are half timbered, others cement plastered exteriors, some entirely of frame and others of half brick with these different materials above.

House No. 1, of group 1, contains eight rooms and bath, with basement under the whole. This house, like the others, has wide open fireplace, with polished floors in reception hall, living room and dining room. Most of these larger houses are intended to be occupied by foremen at the mills.

House No. 2, of group 1, is a very attractive and well arranged dwelling of six rooms, with vestibule, stair hall and bath room. The lower exterior walls are of cement plaster on metal lath, paneled off by four inch strips of cypress, finished with weathered stain. The two side gables give accommodations for two of the rooms on the second floor, and add to the general appearance of the house. There are hundreds of these smaller houses in Gary, and they are intended for the average workingman, who, with the same rent as paid elsewhere, can enjoy a modern, attractive home, with all improvements and public utilities.

House No. 4, of group 1, is arranged about the same as No. 2, the chief difference being in the elevations. The long, sloping roof, broken by a broad gable, gives it a distinctive style without taking up valuable space on the second floor. It is this variety of design, bold outlines, strong contrasts in color and material, and the harmony of the whole, that will make this one of the most pleasing and attractive cities of workingmen's homes in the country.

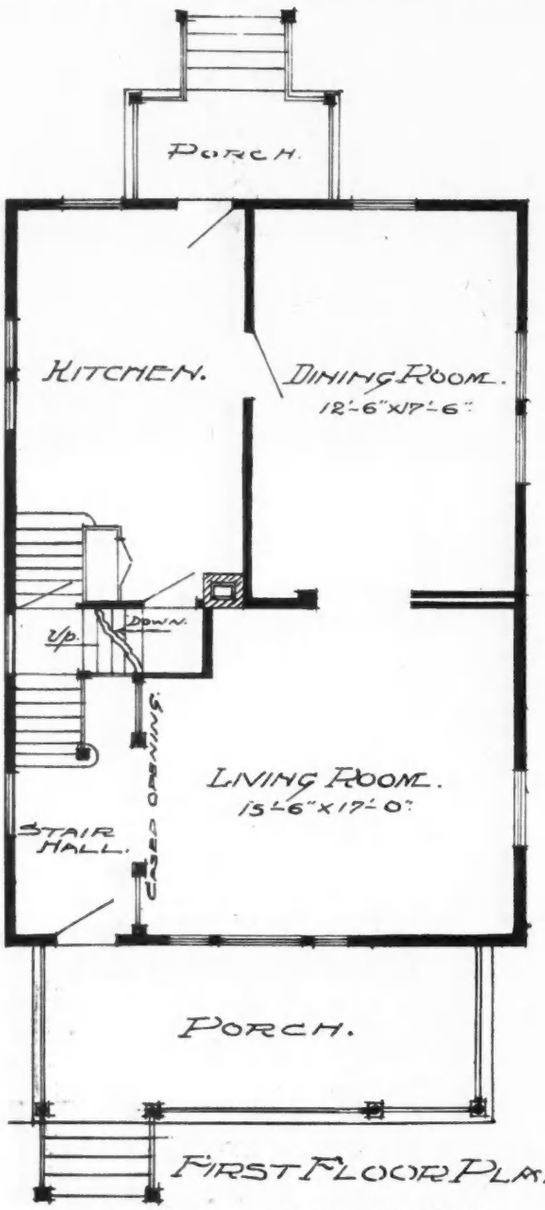
The frame cottage shown in the elevation, taken from the arcihtect's drawings, is a fair example of the many frame residences erected and in course of construction. The exterior walls are 1 inch by 10 inch rough siding, mitered at the corners, and stained in weathered finish. The gables and roof are of shingles, with creosote stains. Provision for plenty of light is afforded by the many large windows, several

Group No. 2, Cozy, Well-Built Frame Houses—Floor Plan Reversed in Every Second House

Group No. 3, A Comfortable Roomy Design—Variety of Roof Treatment Prevents Monotony

of which are of leaded glass in plain design. The cased opening offers the suggestion of separation between the stair hall and living room, while still leaving it as one broad room. The double window and the long high window of leaded glass give light and style, so important to the comfort of the dining room. Advantage is taken of the space near the stairway in the kitchen for a china cabinet.

The roof plan and design provide four large gables, affording four rooms and closets on the second floor.

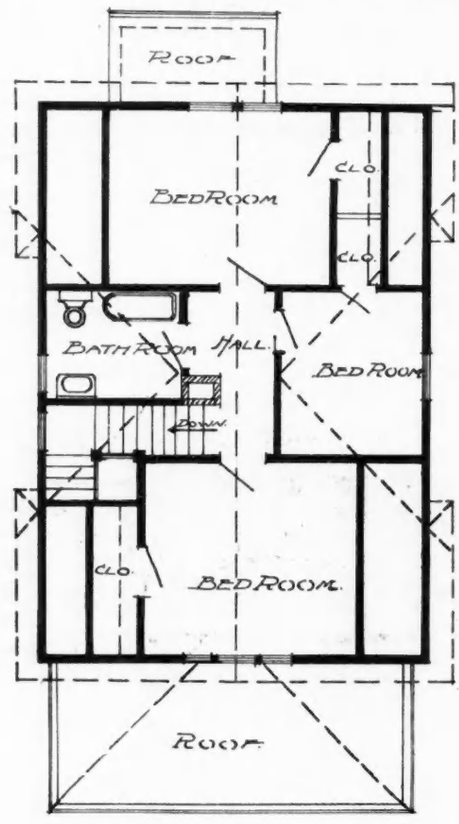


Seven Room Frame Cottage, Cost $1,800

The added attractiveness of the long plate glass door and the leaded glass windows more than compensate for the difference in cost from the common stock. The approximate cost of this house is $1,800.

One of the most attractive, if not most costly, residences in Gary, is the little bungalow, the plan and photograph of which is shown herewith. The bungalow is the simplest form of house construction; it affords freedom and comfort with the least amount of effort. It never fails to harmonize with its surroundings because its low, broad proportions and absolute lack of ornamentation give it a character so unaffected that it seems to sink into and blend with any landscape. It can be constructed of any local material and

Seven Room Frame Cottage, Cost $1,800

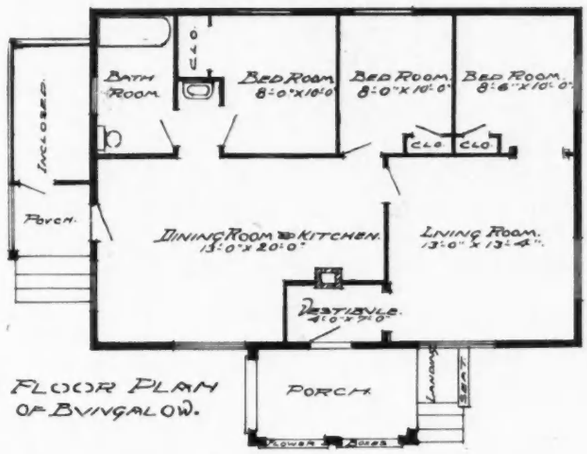


Seven Room Frame Cottage, Cost $1,800

An Artistic Homelike Little Bungalow, the Home of Mr. J. E. Hammons; Cost $1,000

with the aid of such help as local workmen can afford, so it is never expensive unless elaborated out of all kinship with its real character. It is beautiful because it is planned and built to meet simple needs in the most direct and simple way; and it is individual for the same reason, as the needs of no two families are alike.

The bungalow shown herewith is 24 feet by 35 feet, and contains five ample rooms with bath and vestibule. The mission door opens into the vestibule, in which an umbrella rack and shelf is built below the projection



of the chimney, which starts about five feet above the floor. A wainscot of sized burlap extends around each room, above which are wall-papered panels up to the square of the walls. The ceiling follows the roof about three feet; and the entire ceiling is plastered and frescoed. All interior woodwork is finished in dark craftsman stain. The exterior walls are of 1 inch by 10 inch boards, with mitered corners. The roof projects two feet and the shingles are finished with moss-green stain. All trimmings of the exterior are painted pure white, the body a copper brown. The porch railing is shingled and contains flower boxes, so characteristic of the bungalow. Cost of bungalow complete, $1,000.

The houses shown in group No. 2 are entirely of frame construction. The exterior walls of the first story are of beveled siding, the upper walls of shingles. Each house contains seven rooms, including bath. The front porches are of simple yet attractive design, showing the details of the massive construction.

The houses of group No. 3 are well planned on the interior and give several comfortable rooms, but the houses are set too near the ground to give the best exterior appearance. The porches, while spacious, could be improved in design.

Every house in Gary has been built within the last year, so time has not yet been found for beautifying the surroundings. Nature furnished nothing but sand; train loads of black soil, however, have been brought in and all residence sections will soon have green lawns and growing shrubbery. Two large parks have been laid out in the residence districts, costly school houses erected, church structures begun and every thing that will go to make this a modern city of homes has been included.

Miles of cement sidewalks have been constructed, and the two main business streets are unsurpassed anywhere. Broadway is one hundred feet wide, with seventeen foot sidewalks, twenty foot roadways and space for double track electric lines in the center. Fifth avenue is ninety feet wide, and like Broadway, is already paved for two miles of its length.

The largest sewers of Gary are seven feet in diameter, and built of brick and reinforced concrete. A structural steel water tower of 300,000 gallons capacity, and a pumping station of 1,000,000 gallons daily capacity, will furnish the city with water, taken from a crib two miles out in Lake Michigan.

Vines and Shrubs in Home Making

HOW SOME UGLY PLACES HAVE BEEN MADE BEAUTIFUL—PROPER TRELLIS-WORK CONSTRUCTION—SUGGESTIONS AS TO PLANTING

By George E. Walsh

THE cost of a building does not always decide its comfort, architectural beauty and general attractiveness. Good taste, sometimes, in developing the grounds more than compensates for lack of structural harmony. A home, no matter how humble it may be, can be redeemed from positive ugliness by proper arrangement of trees, shrubs and flowers, so that it will often outshine more pretentious buildings.

The builder is sometimes called upon to construct houses from plans which do not appeal to him; but, on account of the cost, the owners cannot afford to adopt any others. The builder is not a landscape gardener; but, if he understands something about the ornamental effects of flowers and shrubs he can often suggest to owners a way to get around the problem of making an attractive place on a very small sum. One of the prettiest town homes of a small New England village is occupied by an architect, who purchased a small, square brick house that had been noted for its ugliness, and by covering it with ivy and planting trees and shrubs around it, converted it into one of the show places of the town. Another living in a plain wooden structure that had no exterior view that could be called attractive built a front and back porch to it, and then proceeded to cover the pillars and sides with climbing, flowering vines. One would never think today of calling the place ugly or even plain. It is a veritable bower of sweet-scented flowers that attracts every stranger.

What may be done with plants and vines in redeeming an old place or ornamenting a new one at little expense may be seen in the illustrations. One is an old-fashioned house placed close on the ground, with scarcely any foundations above the soil level. It was built in the days when it was not considered necessary to raise the floor level several feet above the ground to keep out the dampness. Inside, the house was roomy and pleasant, with high ceilings and good timbers—too good in fact to tear down. But the exterior view was not as pleasant as modern conditions require.

A Simple Cottage Covered with Flowering Vines

The owner built a stout trellis just outside of the back porch posts and planted vines there to climb up it. His intention was to train them to about the height of his head, but the plants got the better of him. They grew so rampantly and developed such colors of flowers and foliage that he finally stretched a screen of thick woven wire from the top of the porch to the peak of the roof. Up this wire screen the plants climbed, reaching the roof and overhanging in places until the house was almost inclosed by the flowers. The effect is so startling today that the owner has many

A Bungalow Trimmed with Roses

imitators, and the little flower-embowered house is the most attractive in the town.

Another picture shows a modern bungalow relieved of its straight lines by a piazza extending on four sides and supporting clusters of flowering vines. This picture was taken in California, and shows the remarkable effect produced by climbing rose bushes. In the flowering season the atmosphere is heavily scented by the roses. It is such a simple thing to cultivate flowers and shrubs around a home that the wonder is we do not see more embowered among foliage and flowers.

The back yard should also receive attention. What a little stimulation in this direction has done for the backyards in a small factory village is here illustrated. Five years ago the backyard view was a dreary affair. Nothing was visible but plain board fences, and ragged gardens. The authorities offered a series of prizes for the best backyard gardens, the judges to be disinterested persons. A second prize was offered for a block view, which included half a dozen and more adjoining yards. As a result of this offer the dreary backyards became veritable show places. In glancing across the backyards one found it difficult to decide which deserved the prize; moreover, the effect of the experiment was noticeable every year after. Nearly every fence is concealed from view by the climbing vines, while annuals and perennials rear their gorgeous heads above in the most pleasing way. It may easily be assumed that the owners find more pleasure in sitting at their back windows than they did before the change was made.

A new house should have its plants and trees placed in front of it just as soon as the grade is finished. It is remarkable how much can be accomplished in one season. The last picture is a second year view of a new house. The shrubbery has already nearly reached a height which will shut out the unpleasant side building. In two more years this unsightly object will be completely concealed from the front view. The house

Accomplished in One Year

itself will take on a very different appearance as soon as this has been accomplished.

There has always been a prejudice against planting vines and flowers against the side of wooden houses on account of the injury to the wood and the difficulty

experienced in painting the house every few years. There is also the contention that the thick shade collects dampness and makes the interior moist. However this may be, the relief the foliage gives to the eyes and the shade afforded more than offsets any disadvantages. So far as injuring the wood and paint is concerned it is possible to raise the vines on thick, stout woven wire which can be taken down when necessary. The very thickest galvanized wire should be used for this purpose, and it should be fastened at the base so that it cannot be pulled up. It should then be trained on separate posts and carried toward the house on a trellis work. In this way the vines need not touch the house at any point. Careful trimming and pruning every season will keep the vines where they are needed. When the house is painted the wire can be taken down and laid carefully on the ground without seriously breaking or injuring the vines.

The planting of dense shade trees near the house is condemned today by all landscape gardeners and sanitary experts. Trees which attain any great dimensions should never be planted nearer than fifty feet to the house. Their appearance on a restricted lawn or front garden is of doubtful value anyway. The ground within a radius of forty or fifty feet from their trunks will never yield a good crop of grass or foliage on account of the dense shade. Small trees and shrubs, however, do not shade the surrounding ground and unless banked close to the house do not collect dampness and so prove at all objectionable.

The growing popularity of the pergola is stimulating the cultivation of vines and flowering plants without incurring any of the disadvantages which some see in the growing of plants around the house itself. The pergola in its final completion today is really an evolution of the old-fashioned grape trellis or grape arbor so common in New England. Instead of being constructed primarily for utilitarian purposes without any pretense to beauty, the modern pergola is designed first for ornament and second for service. There is no reason why the pergola should not be made a place for quiet enjoyment of the outside air, but usually it is a stiff ornament without much suggestion of comfort. Unless the flowering vines and shrubs are made to give adequate shade from the sun, the pergola is not a practical adjunct to the house or garden. Some of the handsomest pergolas are found in California, where dense masses of climbing roses form a complete overhead shade and fill the space with their heavy odor. Even the Crimson Rambler rose of our eastern states, when protected in the winter season, can be made to form a perfect rose bower when trained over the sides and roof of a pergola. The white posts and sides of the pergola then contrast beautifully with the green of the leaves and the color of the flowers.

Flowers and Shrubs for the Back Door Gardens of City Homes

Awkward

"I did not see you in church last Sunday."

"I do not doubt it. I took up the collection."

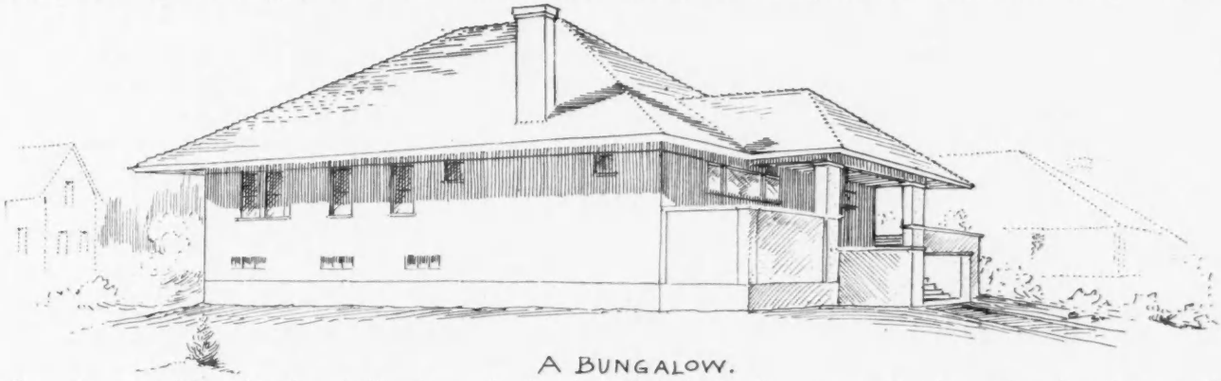
NEW SUBURBAN WORK

By C. Bryant Schaefer.

RENAISSANCE. UNDERCUT CARVING.

SINCE a review of the most recent work in residence building will be helpful in meeting coming demands, the accompanying sketches are given; they are of new buildings in progress in Chicago's western suburbs. In most cases the houses were not quite finished but have been shown complete in the illustrations; they represent the latest tendencies in suburban building.

The ideas which the owners seek to express are more than ever solidity, protection and refinement.



A BUNGALOW.

Generous provision for hospitality is made in the houses.

The point in designing a house is to have the good features of the interior indicated on the exterior also. This is the art language of the building, making the

A STORY AND A HALF.

house interesting and worthy of notice. This consistency of design is becoming more general every season. Stair halls are indicated by the two-story windows. Libraries are recognized by the broad, hinged window sash. It is pleasant to step from assembly rooms through low French windows onto sheltered verandas. Even the "den" is distinguished by a cozy, tucked-in appearance.

It will be seen that the walls of a great many of the new houses are straight, with unbroken surfaces. The windows are arranged in groups. Their location is symmetrical. Basement windows are placed in the rear as much as possible. Sill courses are continuous. This helps the structural unity and makes the use of a variety of materials satisfactory.

The porches are large. The word porch fails to describe them. Occupants of the houses call them their out-of-doors rooms. Here furniture and other comforts are safe in most kinds of weather. Sometimes they are provided with lighting fixtures. Sometimes there are screens on the cold side or lattice frames on the sunny side for vines.

Many porches are made to receive storm sash in cold weather. For this purpose solid paneling is built under the rails. Often the basement wall is extended to the window sill height. This makes a good place for winter recreation.

Suburbanites often remark the expensiveness of lumber and that masonry therefore costs but little more. As a result brick walls are favored. Brick veneers are used more than formerly and cement plaster on metal lath is adopted for the whole house.

People like tight, warm construction and freely criticise buildings that become draughty in cold weather. They are quick to remark the hasty work which sometimes enters the cheap house built to sell.

One of the new ideas is a style of house planned to look massive. A few instances are found where broad piers evidently contain closets or recesses. Doors and windows occupy limited spaces between. They give variety to a neighborhood. Two of the illustrations show how bays and porches are brought under one roof.

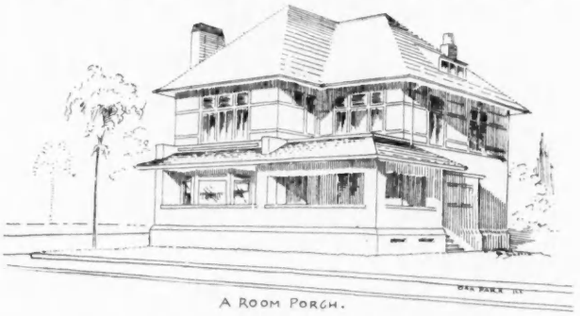
When commercial builders succeed in erecting a

BASEMENT WATER-TABLE.

popular type of house they seem determined to repeat it until they make a failure of their success by glutting the locality. Many people change their residence because they have worn out the experiences of a house and desire something different.

The houses are often too close together for the style of plan. When standing in rows, all alike, a slight variation is made in the details. The inclosing corners of the porches are made slightly different or there is a change in the style of dormer windows. Sometimes a plan is reversed.

The most cheerful of the new houses are the one-

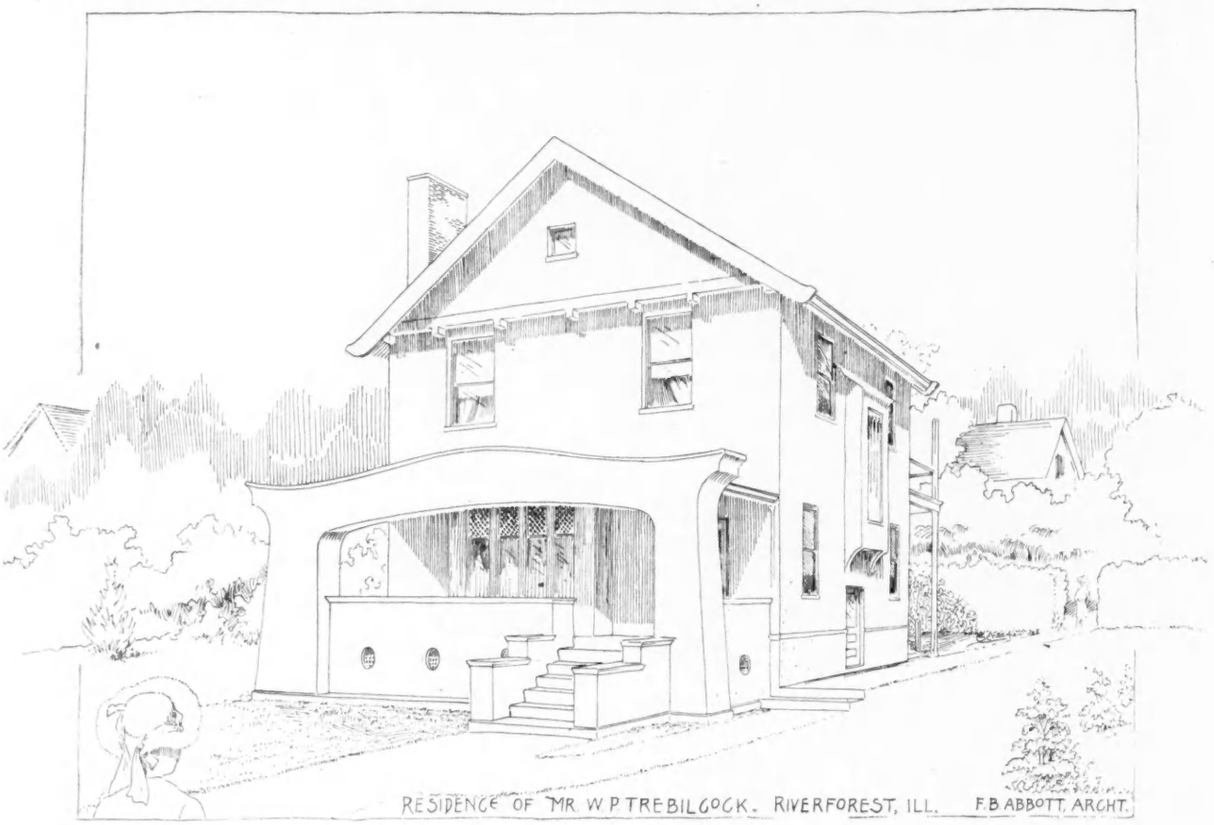


A ROOM PORCH.

story bungalows. They harmonize well with shrubbery and half-grown trees, making an inviting home. Cottages with a half story under the roof are also attractive.

Another noticeable advance over the past is the skill with which every available building material is utilized. An appropriate place is found for all kinds. Panels, dadoes, corners, posts, friezes and roofs may all be of different materials. Manufacturers present a great assortment of materials from which to choose.

The old timers used to think it dreadful to vary from the one general material of which a house was constructed. It was either wood or brick or stone. At first stone trimmings in brick walls were allowed. Then the brick chimney was made to peep through the side of the frame house. But now there are a



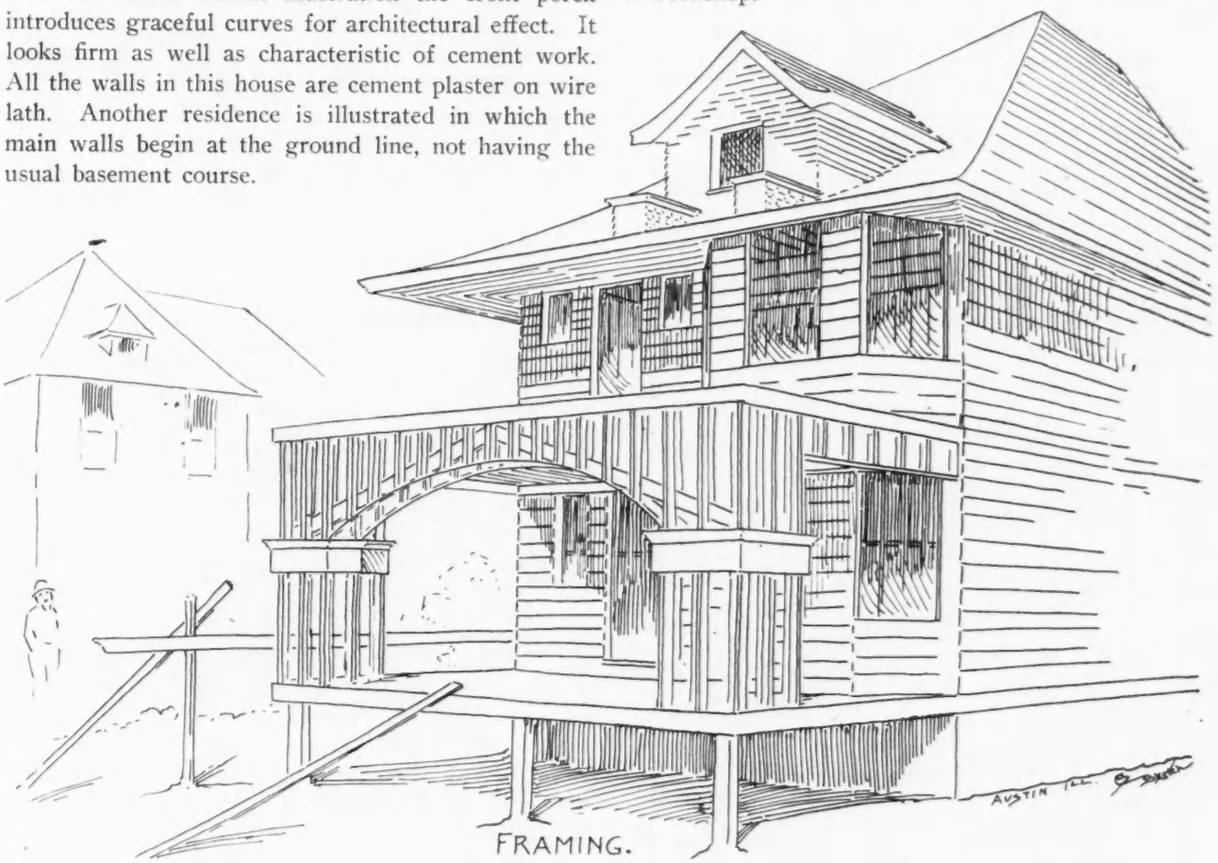
RESIDENCE OF MR. W.P.TREBILCOCK. RIVERFOREST, ILL. F.B.ABBOTT, ARCHT.

great many beautiful effects secured by a little rustic stone work, or timber effect, in contrast to the rest of the building. Terraces and trellises are incorporated in the design that lead flowers and vines to become a part of the picturesque grouping.

In the River Forest illustration the front porch introduces graceful curves for architectural effect. It looks firm as well as characteristic of cement work. All the walls in this house are cement plaster on wire lath. Another residence is illustrated in which the main walls begin at the ground line, not having the usual basement course.

proves serviceable and is very much appreciated.

Sometimes certain features of a house are calculated to be changed from time to time. Sometimes there is spare space which may be utilized as a play room in bad weather. Later, as children grow up, it becomes a workshop.



FRAMING.

There are many kinds of square columns being used in place of the customary classic patterns. Often simple carpentry work accomplishes very good results.

Regarding special features it looks nice and convenient to see a side entrance level with the grade. Roofs extending over nooks and recesses give a comfortable air of shelter.

It is always satisfactory when the common utilities

BUTTESS PIERS.

are also incorporated in a design. They used to be left to straggle about the yard and disfigure the rears in a most forgetful way. A place by the door for hanging out clothes is very convenient. A balcony on the second floor where bedding may be aired always

There is not much detail on modern buildings, and it has been the loss of much employment to workmen. It is because ornamentation was formerly used in such a trifling way that people soon tired of it. There was no idea in it. It did not appeal to mature intelligence. This was because the workmen who turned and sawed out fancy work would not study up a little. They were not acquainted with previous styles with which their work should have harmonized. There is nothing better than to study the art work and history of our predecessors in crafts and trades. It fits one to guard against many mistakes and failures. It is the way to rise above competition and do good work that will always increase in demand instead of going out of use.

House plans seem to have been brought to perfection. All the changes or additions of various materials do not necessarily affect the general lay out. A good plan is the best basis from which to work the building problem.

The suburban owner pursues wholesome ideals. He seeks recreation and natural life. It is well when part of the house can be thrown open to the air with ease, so that nature may be enjoyed.

STEEL SQUARE

ALFRED W. WOODS

How to Use the Steel Square

SHOWING THE FIGURES TO USE ON THE STEEL SQUARE FOR EITHER THE MITER OR LAP JOINT OF REGULAR POLYGONAL CORNERS—THE DEGREE IN CONNECTION WITH SAME ILLUSTRATED

IN OUR last article we were talking of miters; how they were founded and how to obtain them with the aid of the steel square. Our article for this month is a continuation of the subject. In Figs.

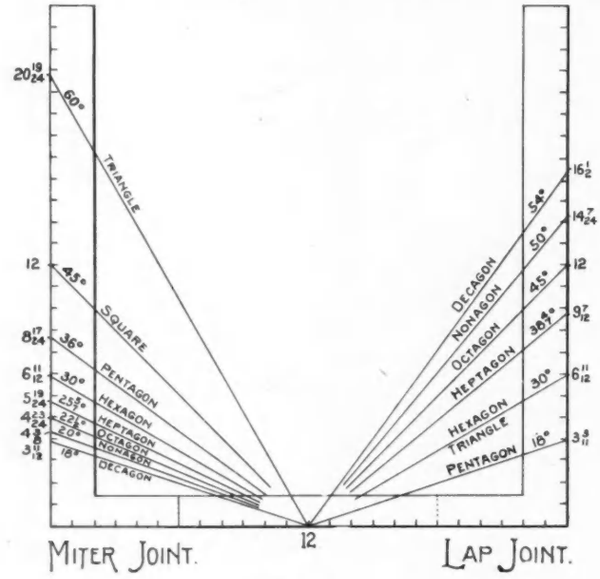


FIG. 200.

193 and 194 we showed how they are reckoned on the steel square from a central point. In this we show the miter lines in connection with the steel square from the triangle to the decagon and the figures to use to obtain them, as shown in Fig. 200. Here are shown two squares with their tongues lapping, with twelve on each at the central point. The lines radiating to the blade on the left represent the figures to use for the miter joints of the different polygons, as shown by their names and degrees they represent. The lines radiating to the blade on the right represent the figures to use for the lap joint, as shown by their name on the respective lines. The degrees are also shown from which the cut is reckoned, from either the square end or the outer edge of the timber. The blade in each case, whether for the miter or lap joint, gives the cut.

The following illustrations exemplify the different angles in degrees and the application of the square to obtain the cuts. Beginning with the triangle, as shown in Fig. 201, 12 and 20 19-24 give the miter, and 12 and 6 11-12 give the lap joint. However, in this case, either of the above set of figures will give both cuts, because their angles are 30 and 60 degrees. Therefore, when the larger figures are used, the blade will give the miter joint and the tongue will give the lap joint, or vice versa, if the lesser figures are used.

In the case of the tetragon, as shown in Fig. 202, 45 degrees gives the miter and 12 and 12 give the cut. For the lap joint, it is 90 degrees, which being the same as the angle formed by the blade and tongue, requires no figures on the square; simply place one

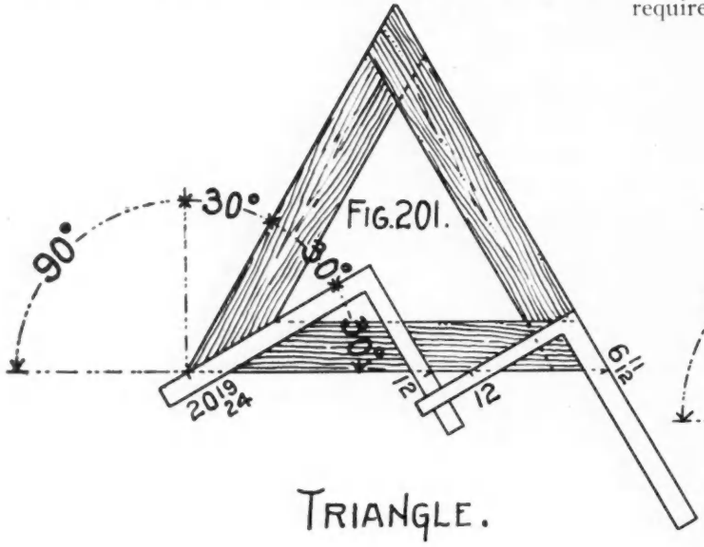


FIG. 201.

TRIANGLE.

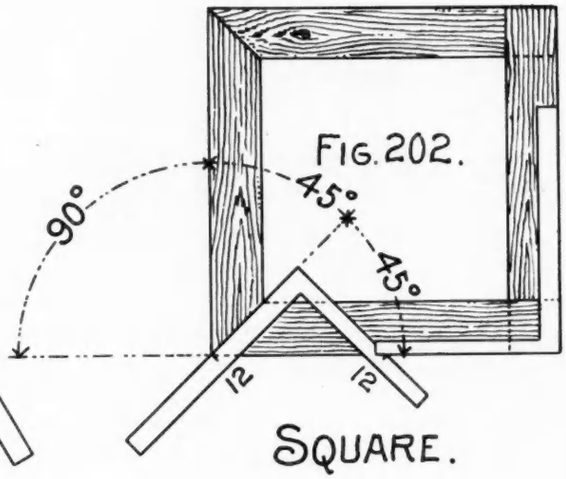
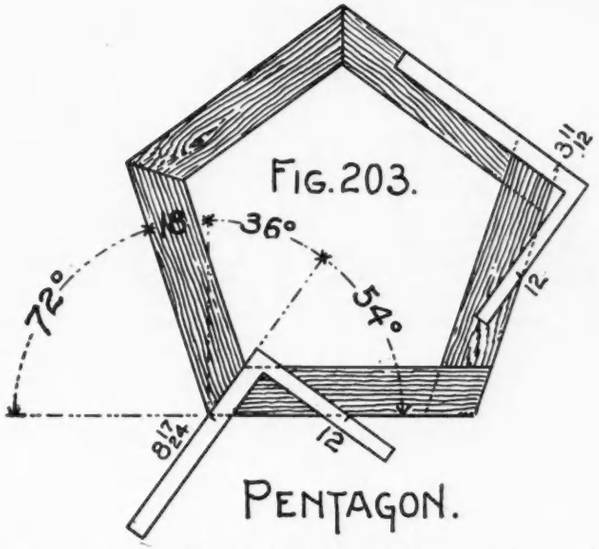
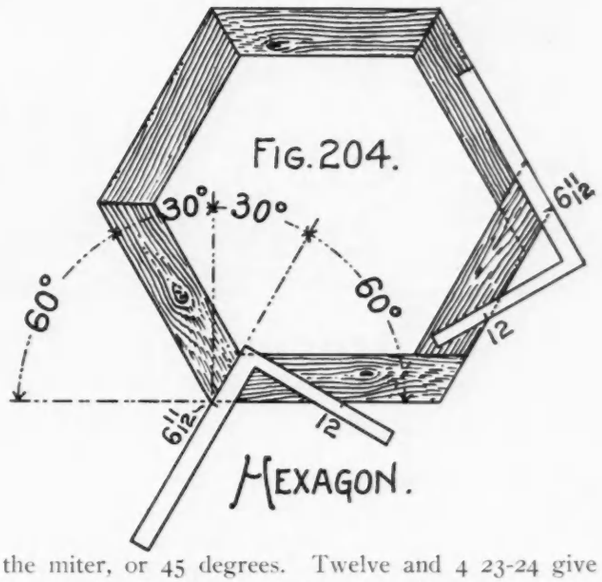


FIG. 202.

SQUARE.



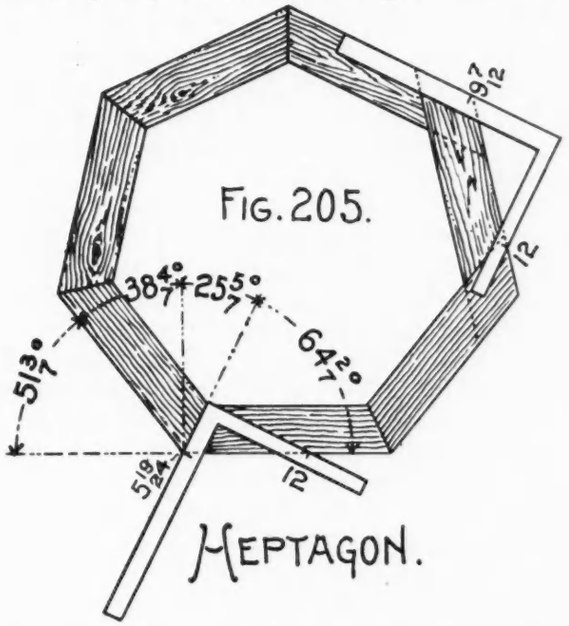


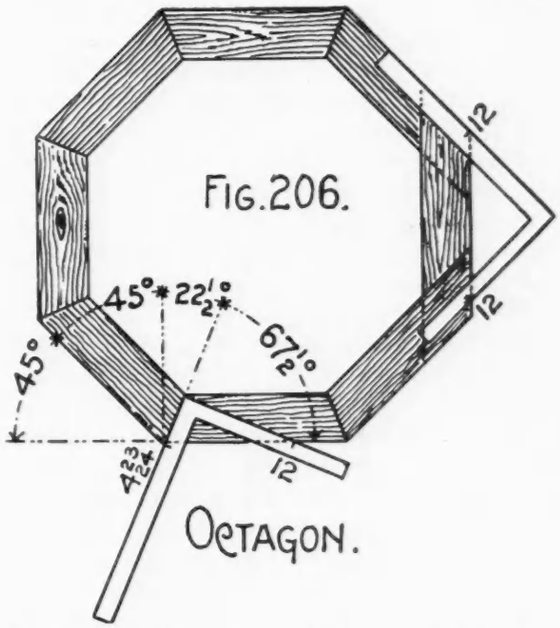
of the arms parallel with the edge of the timber and cut along the other.

In Fig. 203 is shown that for the pentagon. Fifty-four degrees on the square gives the miter joint and 18 the lap joint. The figures to use on the square are 12 and 8 17-24 in the former and 12 and 3 11-12 in the latter.

In Fig. 204 is shown the hexagon. Like that of the miter, or 45 degrees. Twelve and 4 23-24 give the cut for the miter and 12 and 12 for the lap joint.

We could go on and on illustrating polygonal figures till their sides are no longer discernable; that is, revert back to the circle from which their divisions are reckoned as before described in Figs. 193 and 194. Other figures, of course, may be used on the square





the triangle, the same figures on the square will give either joint. Twelve and 20 19-24 (60 degrees) will give the same result, but the cuts will be on the tongue instead of the blade.

The heptagon, shown in Fig. 205, results in fractions in the degrees, it being 25 5-7 degrees for the miter joint and 38 4-7 for the lap joint, 12 and 5 19-24 giving the cut in the former and 12 and 9 7-12 in the latter.

The octagon, at Fig. 206, also results in fractions in the degree (22½) for the miter joint, but this is not so in the lap joint, which is double the amount for than shown, but these are standard, and when others are substituted, they must be in the ratio to the figures here given.

✤

The man who thinks twice before speaking once may not say much, but he won't have to take any of it back.

✤

The grouch has a hard time maintaining his pessimism in the country these mornings with forty-'leven meadow larks trying to drown out the chorus of all the other birds.

PRACTICAL CARPENTRY

Bracing and Truss Construction

THE SIMPLE BASIC PRINCIPLES OF TENSION AND COMPRESSION BRACING—SOME COMMON MISTAKES POINTED OUT—PRACTICAL TRUSS DESIGNS SHOWN

By T. B. Kidner

SOME years ago the writer, who has always found much difficulty in keeping his money in his pocket when a new book relating to the art of building was in question, purchased a small volume purporting to be for the guidance of the young carpenter and of amateurs in woodwork in general. The first part of the book was devoted to simple outdoor structures such as rustic summer houses, fences, wicket gates, etc., and almost the first illustration was of one of the last named. Unfortunately, however, the writer of the book (or, perhaps, the artist) had made a serious error in a most important particular; namely, in the brace of his gate, which he showed as in the accompanying sketch, Fig. 1, where it was placed just opposite to the way it should have been. The writer of this article called the publisher's attention to the error, and it was corrected in a subsequent edition. Ever since that occasion the writer has made a note of similar errors which he has seen in actual practice, and from the number of them it would appear that the little book was not alone in its error, but that a great number of practical men make the same mistake in placing the brace on a gate in the wrong position altogether.

The case of the brace is a very simple example of what is known as the principle of triangulation. A four-sided frame can be racked in any direction, and made to assume various shapes; but if a frame is made of three pieces fastened together at the ends to form a triangle, it is, of course, impossible to alter its shape. The device of nailing a piece across the angle of a door frame to hold it square while it is being fixed is familiar to all carpenters and is an example of this principle. All trusses and similar composite structures depend for their rigidity upon the same principle and an understanding of it is therefore necessary for the practical builder.

An ordinary wicket gate, or a ledge and batten door will, if unbraced, tend to drop at the end farthest from the hanging stile. In other words, the square or oblong becomes diamond-shaped as in Fig. 2; one diagonal, B to D, becoming longer and the other, A to C, shorter. The proper use of a brace in such a case is to prevent A and C coming together, thereby keeping the door or gate in shape. It is clear that a wooden brace cut in between A and C cannot become shorter, although it is in compression, and therefore it will do all that is required of it.

But if the brace be placed the other way (from B to D) where the tendency is to pull apart, it is obvious that it would depend wholly for its efficiency on the fastening of its ends to the frame of the gate. The result is that a brace placed as in Fig. 1 fails to keep the distance from B to D from becoming greater, and the outer end of the gate drops in consequence. If, however, an iron rod with proper fastenings at the ends were substituted, its effect would be satisfactory. In point of fact, this is often done in gates for farms, driveways, parks, etc.; being generally carried out as in Fig. 3. The hanging stile of the gate is formed from a selected hardwood knee or other curved piece of timber, and a stout iron rod carried to the lower outer end of the gate. But tension braces, as these are termed, are not as satisfactory as compression ones, and a piece of wood placed the other way and properly cut in between the rails and stiles so as to have good bearing surfaces to resist the compression set up through the brace by the weight of the gate, would be more effective.

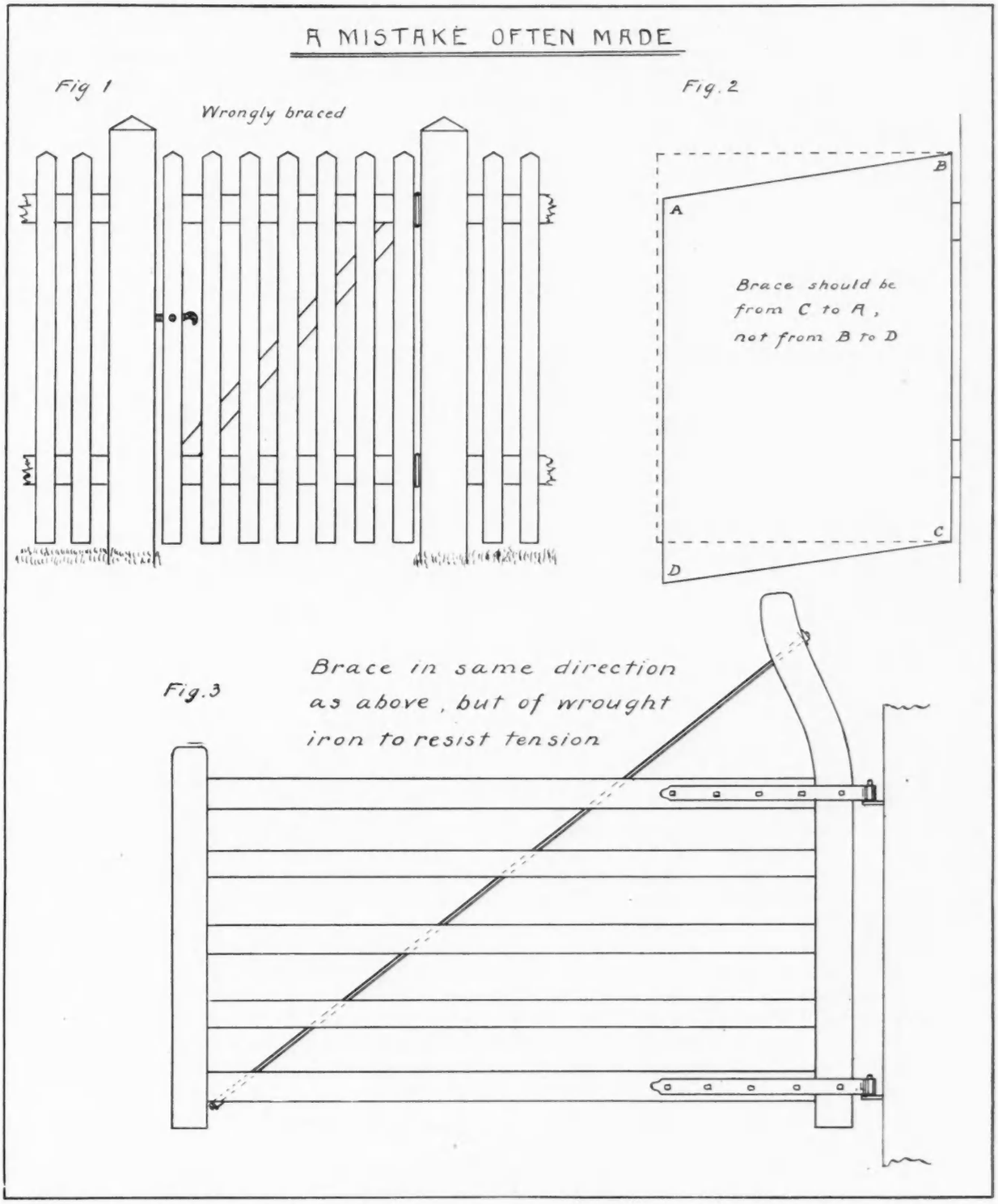
Another simple structure which is sometimes misunderstood is a common king-post roof truss such as is shown in Fig. 4.

If two rafters are placed as in Fig. 5 they will, of course, tend to spread at the bottom and push the walls apart. This is prevented by a wooden tie-beam as in Fig. 6, or an iron tie-rod as in Fig. 7. But after a certain span has been exceeded, the tie-beam commences to sag and has to be supported either by a king-post or a bolt from the apex of the rafters, as in Figs. 4 and 8. The writer has found many carpenters with the impression that the king-post rests on the tie-beam to support the ridge, but a little reflection and a study of the foregoing diagrams should convince even the beginner in roof framing of the fallacy of that view. As a matter of fact, both the tie-beam and king-post are in tension; that is, they are being pulled,

and their work can be, and often is, done equally well with a wrought iron rod.

But, as the span becomes so great as to necessitate the support of the tie-beam from above, the rafters will also become so long as to tend to sag in the center, iron roof or other roof of heavy construction.

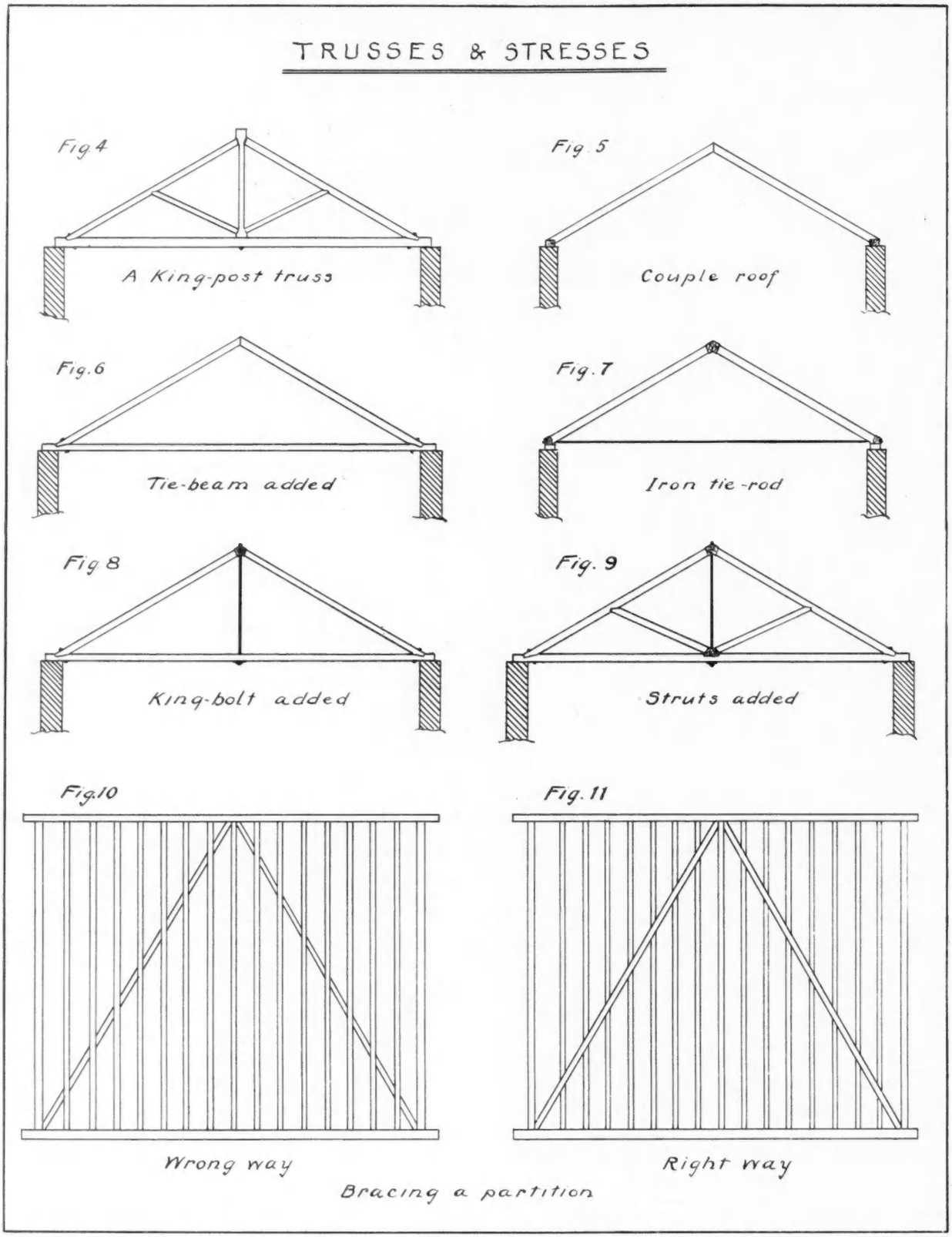
There are thus two kinds of stresses in such a truss; the tie-beam and king-post being pulled or in tension; and the struts and rafters being pressed or in compression. For the former, a flexible material, such



and they in turn must be supported. This is done by struts from the foot of the king-post or rod, as in Fig. 9. It is clear that these struts are in compression and that they must be of wood or some other stiff material, such as angle or T-iron in the case of an

as a wrought iron rod, is suitable; but for the latter, a stiff and unyielding material must be employed, so as to resist the tendency to buckle or bend under the weight of the roof.

One other case of bracing will serve to conclude.



Quite recently the writer noted for the second time only, in a somewhat wide experience of construction, a very curious and mistaken way of putting braces in a partition. The carpenter had placed the head and sill in position and then cut and nailed up all the studs in position before the braces. The latter were cut in between the studs, as shown in Fig. 10, and while they did their duty perhaps, in preventing to some extent the racking of the partition, yet they were not nearly as effective as if they had been fitted in first in one piece and the studs cut in after, as in Fig. 11. By putting the braces in first, not only is their

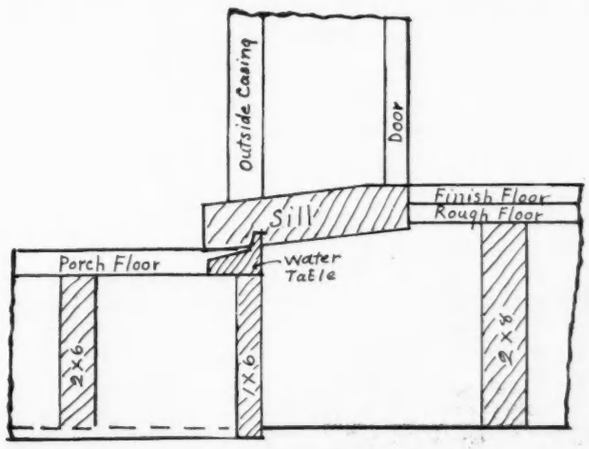
full strength obtained, but the frame of the partition can be properly squared by measuring or testing the diagonals with a rod in the usual way, and adjusting if necessary; an almost impossible thing to do if the studs are all spiked into position first. Numerous small details of this sort mark the difference between the thoughtful craftsman and the bungler. Such mistakes come from carelessness or lack of knowledge.

Door Frame Construction

PRACTICAL SUGGESTIONS IN REGARD TO THE FRAMING OF OUTSIDE DOOR WAYS—PROPER WIDTH FOR OUTSIDE BASE—DETAILS OF CONSTRUCTION SHOWN

By I. P. Hicks

IN CONSTRUCTING a porch it is a matter of some importance that the details be properly worked out so that in putting an outside base and watertable around the building, it will finish properly with the porch floor, being neither too high nor too low. The door frame must be set so that the finish floor comes level with the top of the door sill and the sill should be dressed off on top so that it is level for about 2½ inches, so that a threshold can be



put down in proper shape without leaving a gaping crack underneath it on the front side.

It is quite essential to have the outside base exactly the right size so that when the watertable is put on it will finish up to the porch floor in proper shape. In the sketch we show the watertable stopping against the porch floor. With 2 by 8 joists in the house and 2 by 6 joists for the porch, the base would have to be six inches wide.

If it is desired to run the watertable along on top of the porch floor and let it finish against the door sill, then the base should be just the thickness of the floor wider, that is, with a ⅞ floor it would be ⅞ of an inch wider; the base in this case would be 7 inches wide. This works out well from the 8 inch, so-called, stock boards. These 8 inch boards vary all the way from 7½ to 8 inches, and we know of cases where contractors, trying to rush work, dress the edges and put them on without paying much attention to the width; the consequence is that when they come to the porch the base is either too high to finish one way or too low to finish the other; and the result is that the job looks more or less botchy where it joins the porch. Of course it takes a little more time to figure these things out and dress the boards all to a width, but then the reputation for doing things right ought to be inducement enough to pay a contractor to do this much on a job. It does not pay a contractor to finish up work that is going to leave the trade mark of poor workmanship standing right out where everybody can see it. Now, if the house has 2 by 10 floor joists and 2 by 8 porch joists, the base finished either way, as shown in the sketch, would have to be just 2 inches wider.

✦

Floor Jack

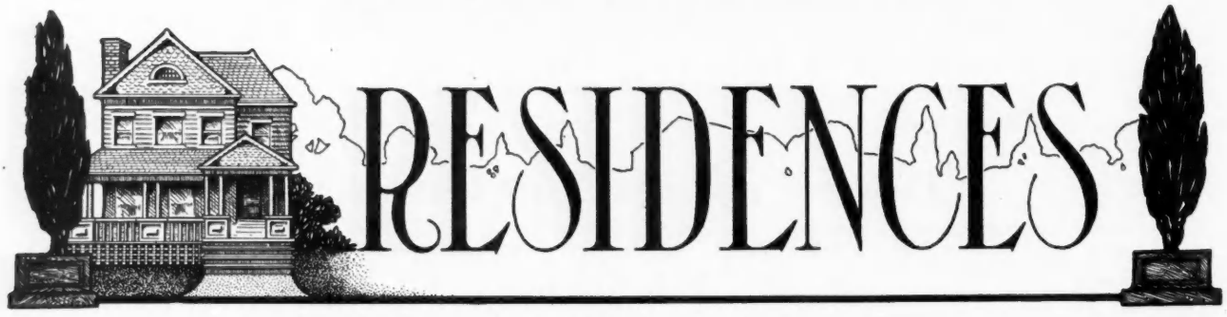
Among inventions recently patented is the floor jack shown in the accompanying illustration, an exceedingly handy and convenient implement for setting up tongue-and-groove flooring. It is simple in construction, and is especially arranged for convenient handling, so as to facilitate the engagement of the device with a piece of flooring and is readily manipulated for forcing the successive floor pieces into position. This floor jack is operated by a lever, at the end of which is a foot having a pointed end designed to bite into a floor beam. Pivoted to the foot is a shank to which is clamped a grooved section of flooring.

In practice the floor jack is placed in position adjacent to the piece of flooring to be nailed as shown. The pointed end is forced into the floor beam and the lever swung to force the last piece of flooring snugly against those pieces which have already been laid. The flooring strip is then nailed in the usual manner and the jack removed to make room for another piece.

✦

Built by One Man

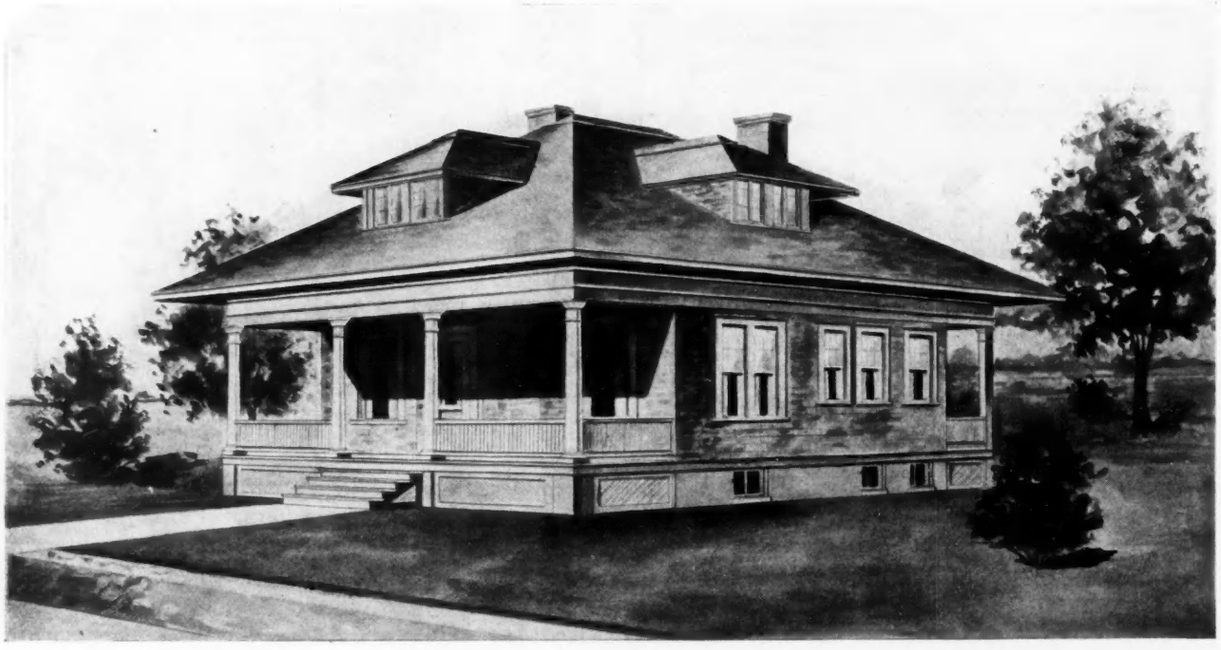
At Stivichal, near Coventry, there is a church which is unique among places of worship. In 1810 a stonemason named John Green laid the first stone of the building, and seven years later he completed the edifice. During that period he declined assistance from anyone, doing all the work himself until the building was ready for its interior fittings. This, it is said, is the only stone structure in England of which every stone was laid by one man.



Attractive House Designs

COMPLETE WORKING DRAWINGS OF A MODERN STORY AND A HALF SHINGLED COTTAGE OF EXCEPTIONAL BEAUTY—ATTRACTIVE FEATURES SHOWN

ALTHOUGH any architect will tell you that the designing of residences, and especially the smaller ones, brings him less in the way of fees and fame than any other class of work, still that is just what the average man is vitally interested in. The average man, whether as builder or as owner, rarely puts up a library, a cathedral, or a skyscraper; but he does build a home. And it is gratifying to know that there are skilled, experienced architects who are giving careful thought to small residence work.



The accompanying design is of a remarkably attractive and convenient little house, which can be very easily and economically constructed. In general exterior effect it is of the popular bungalow order; this in spite of the fact that three roomy bedrooms with closets are provided in the dormered half-story which makes up the second floor. The side walls are shingled and stained a dark brown; the roof and dormer shingles are stained an olive green; the trimming is white.

The floor plan is almost square, 37 feet long by 38 feet wide; but to this length must be added 9 feet for the porch, which extends clear across the front and is under the main roof. As will be seen from the floor plan, the entrance is through a small square vestibule (with a closet for wraps at one side) into the large living room. To the right, through a cased opening 6 by 7½ feet, is the dining room, very light and airy. The arrangement of kitchen and pantries for the preparation and serving of meals is exceptionally good. A small pantry, with china closets and serving table, separates the dining room and kitchen; another larger pantry at the rear is equipped with shelves, bins and work table. The kitchen itself is well lighted and not too large; the back porch is 7 feet square.

Immediately back of the living room are two bedrooms, each 10 by 14 feet. The bath room, opening from the back hall, is conveniently located. The stairway arrangement is good; it is open to the living room up to the first landing, and a back stair from the kitchen joins at that place.

Although the second floor is all "under the roof," the rooms are good size, well lighted and ventilated. Such dormer window rooms are always very cosy and attractive. There are three bedrooms, besides a large hall and a number of closets and storage rooms.

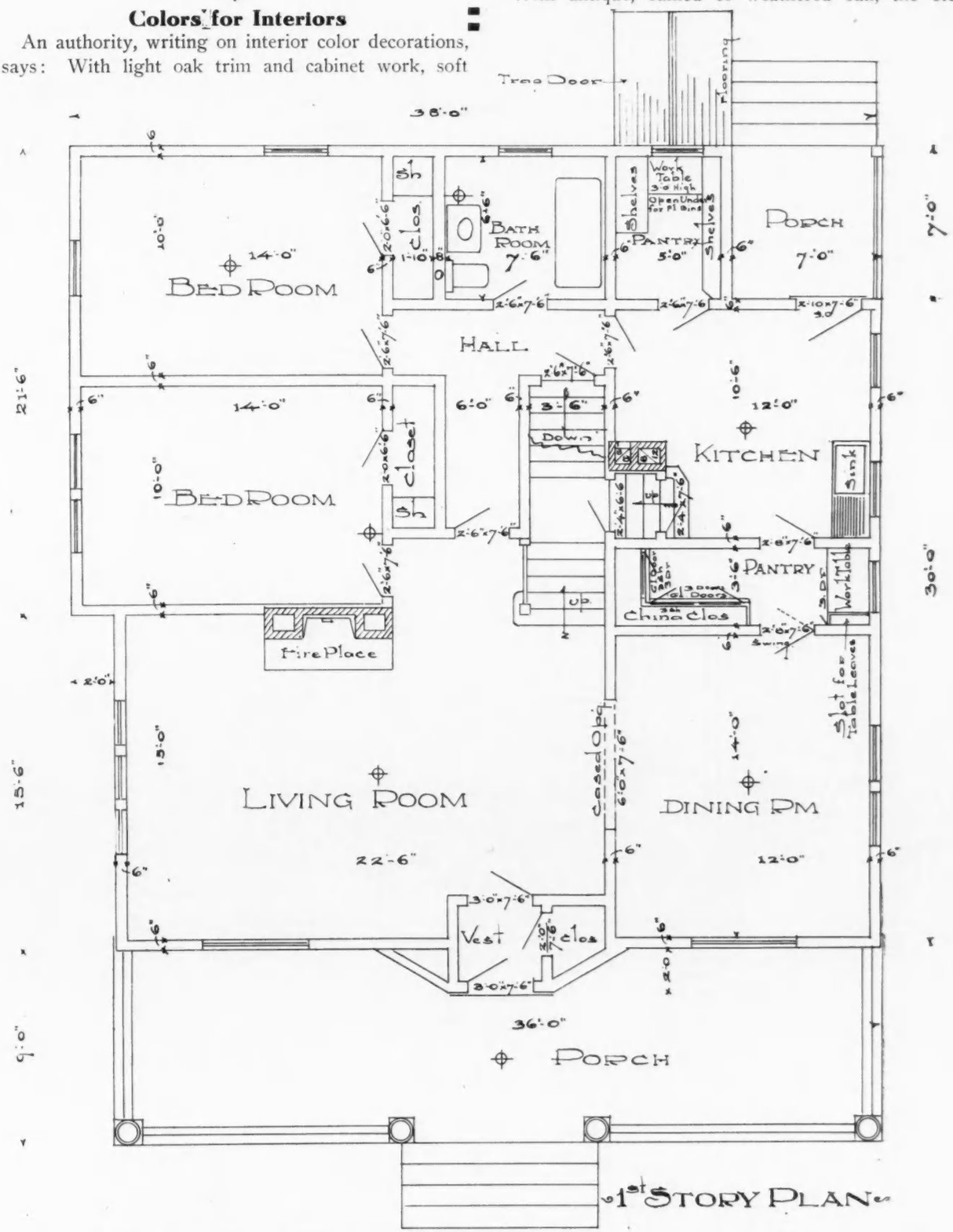
There is a cemented basement under the whole house. This will prove, in many ways, a very desirable house to build. The full working plans, including details of finish and construction, are here given.

Colors for Interiors

An authority, writing on interior color decorations, says: With light oak trim and cabinet work, soft warm greens, peacock blue and deep rich reds, free from purple shade with gildings for metallic effects, are appropriate.

Medium dark oak looks well with stronger, browner greens, richer reds and lighter and greener tones of blue. The gildings should tend to deep-hued gold in this case.

With antique, fumed or weathered oak, the old Gothic colors, such as sage green, deep peacock blue, dulled red and yellows and as the sole relieving tint, ivory, are in keeping. Old Italian gold and bronze

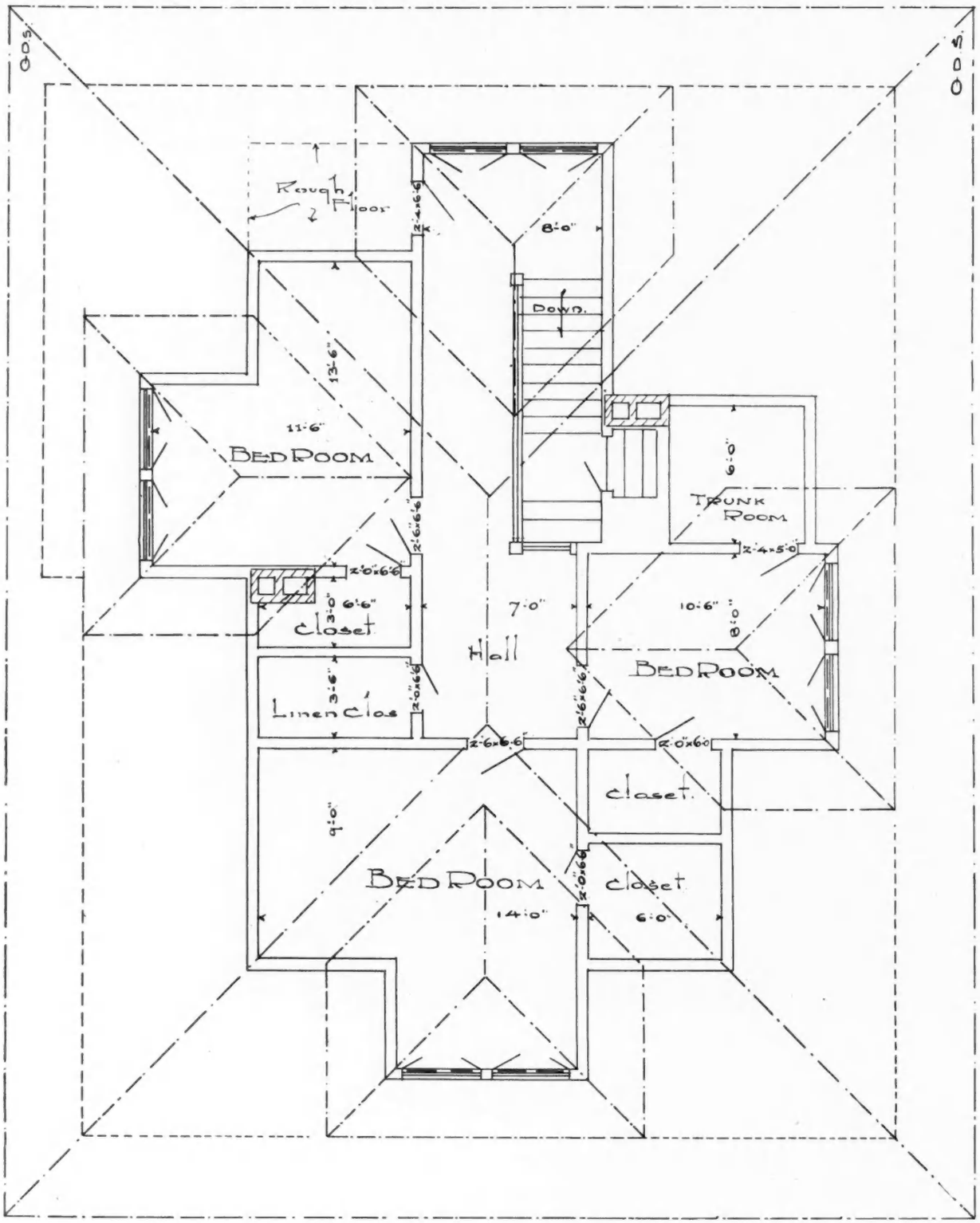


should be used for beautiful metallic relief effects.

With maple-wood, satin wood and similar light colored finish, delicate greys, ivory tints of raw sienna and raw umber, silver (indigo tinted) and subdued tints of old rose, are appropriate. Metal ornamentation should be in silver or gold.

American walnut calls for rich, deep yellow or old gold and the old reds and blues, into which the brown hue of the walnut distinctly enters.

Cherry should be accompanied with turquoise or greenish blues, with olive browns and transparent yellows and metals.



ATTIC & ROOF PLAN

FRONT ELEVATION

Mahogany, especially for dining room, study or library use, looks best with rich, deep olive greens, the metal ornaments should be of a rich golden color. For salon purposes, all yellow tones, from old gold to cinnamon brown and soft neutral reds, are most fitting. Deep pure colors, in harmony with the color of the wood, can also be used with good effect.

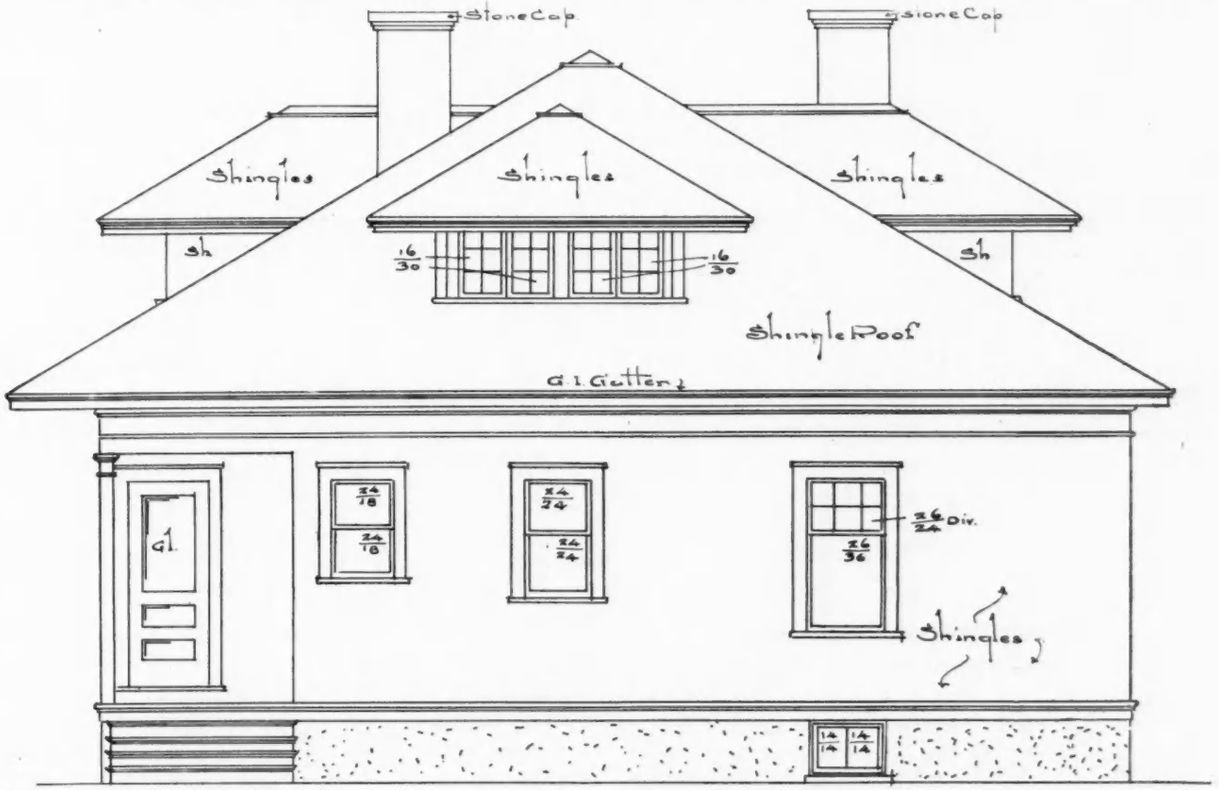
With white wood use Venetian red, ivory and light tints of ochre and green or blue, softened and warmed with raw umber.

White enamel or ivory white finish calls for gold, light blue or pink, in delicate shades.

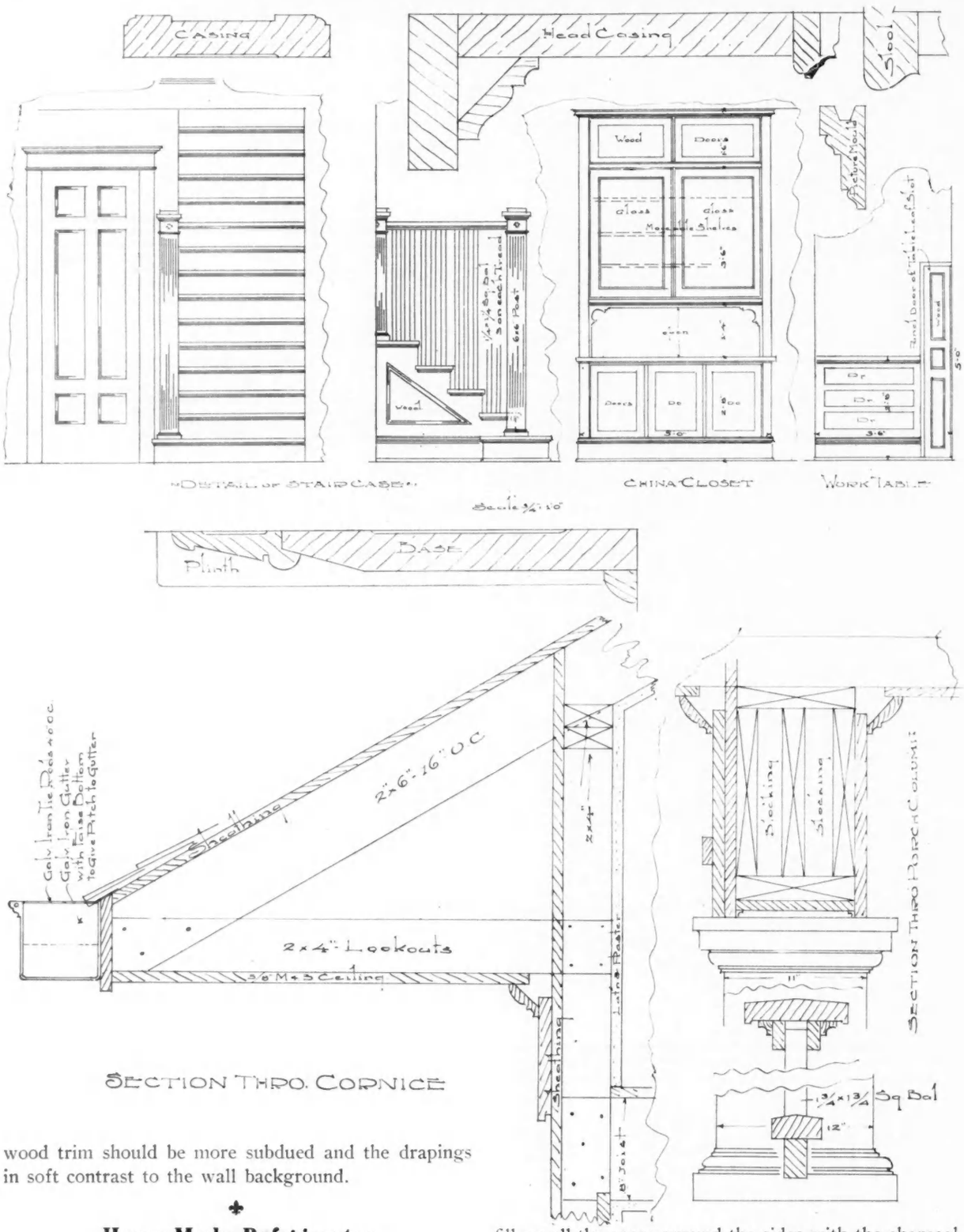
Ebony allows the use of all rich reds and yellows, deep gold and ivory.

Rosewood harmonizes exquisitely with soft old rose, old golds, ivory tints and tones of empire green.

The best "balance" in decorative effect is produced by having the wall tint predominate. The color of the



REAR ELEVATION



wood trim should be more subdued and the drapings in soft contrast to the wall background.

✤

Home-Made Refrigerator

Take two large boxes, the second one somewhat smaller on all sides, and bore two one inch holes in each correspondingly, to give drainage and ventilation. Fill up the bottom of the larger box with powdered charcoal (or sawdust, if charcoal cannot be procured) until the smaller box will stand on a level with the top of the larger box. Put the inner box in place, and fill up all the space around the sides with the charcoal. Fasten lids on both boxes to fit tightly. On each side of the inner box, by means of cleats, put several shelves, leaving a space in the center for the ice.

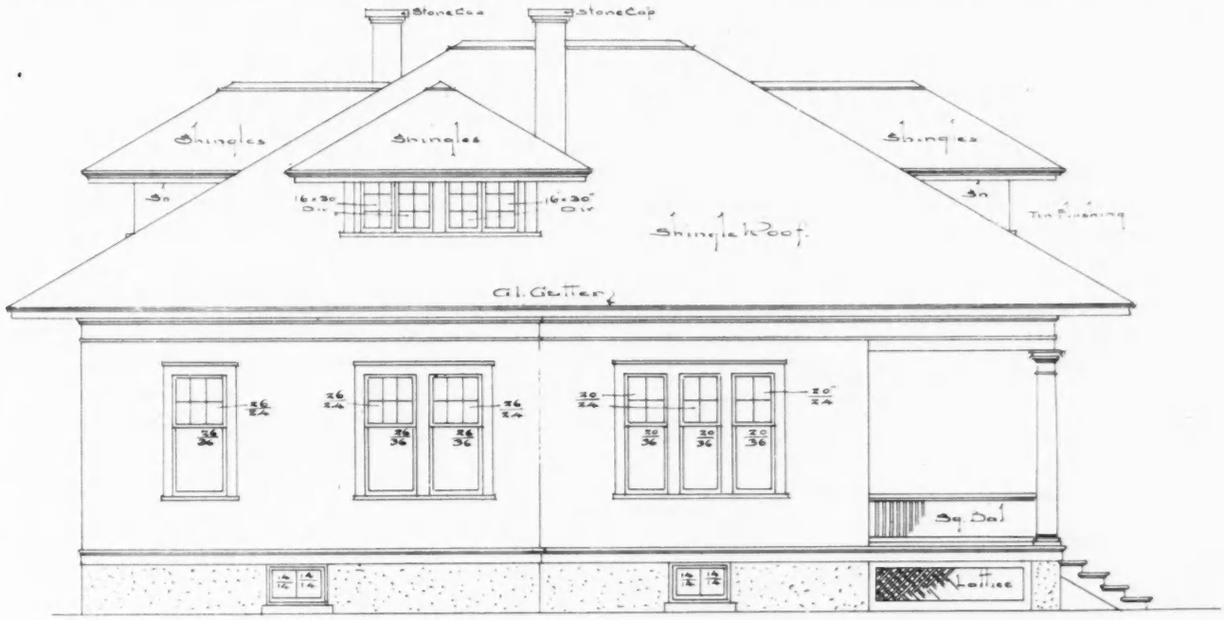
A rack made of lathing may be laid at the bottom, for the ice to rest upon. Legs may be added, also, and the drainage and ventilation in this way be improved. This is a rough refrigerator, to be sure, but

one that has been successfully used in our home for years.

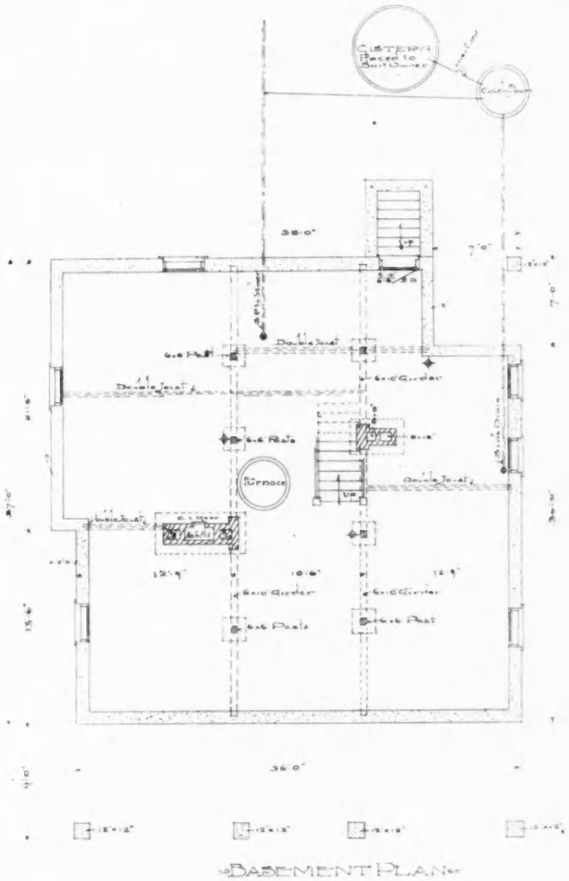
✤

Miles of Scaffolding

In a gale of wind, and at a height of 250 feet, the Archbishop of Canterbury and his wife recently performed a remarkable ceremony. On the top of the Bell Harry Tower of Canterbury Cathedral the primate laid the final stone of the pinnacle, and Mrs. Davidson fixed the vane. The ceremony marked the completion of the work of restoring the tower and spires of the cathedral. The work, which has been in progress for between three and four years, has involved an expenditure of $75,000. It is calculated that about twenty miles of scaffolding were used, and it is a remarkable fact that during the whole of the operations not a single accident occurred. The stone-laying exercises took place on about six square yards of scaffolding, on which fewer than a dozen people stood, and which swayed about with the force of the wind. Taking a trowel, the archbishop laid the cement on the base of the coping, imbedded a tube containing a record of the event, and then, with an appropriate prayer, declared the stone "well and truly laid."



SIDE ELEVATION



BASEMENT PLAN

✤

Mrs. Johnson to Command

Henpecque—Johnson has joined the silent army.
Henderson—Dead!
Henpecque—No, married.

✤

A Pair

"An Ohio hen chews tobacco," says an exchange. Chewing tobacco ought to be confined to all animals that can not spit. A Massachusetts hen laid an egg with a quarter in it. We have always heard that there is money in hens.

✤

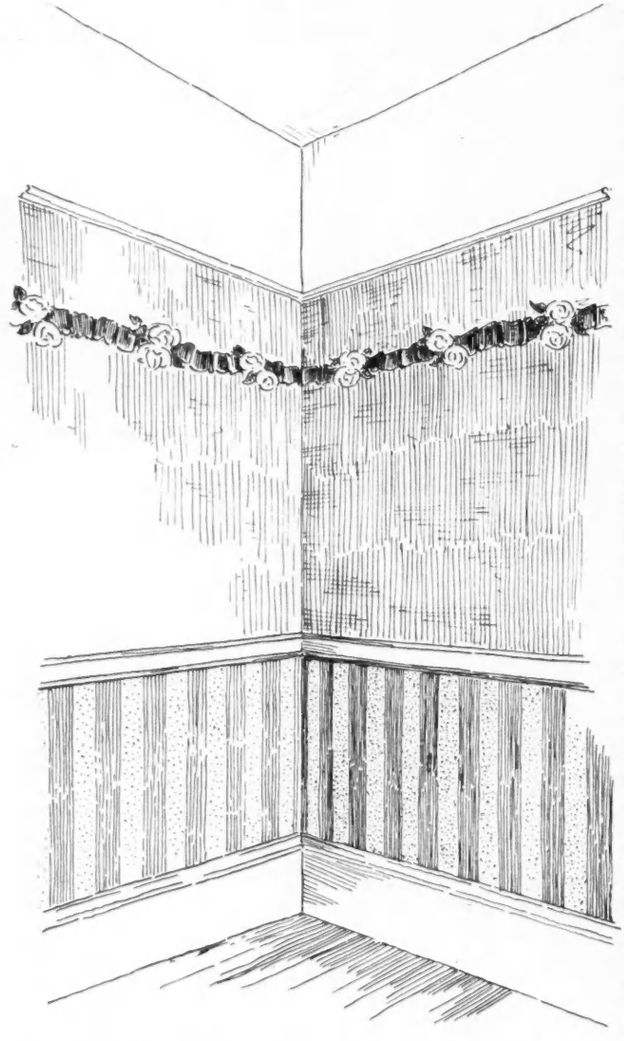
A man in my town won't buy colored supplements to put under his carpets because the funny papers tickle his wife's feet.

Some Suggestions for Up-to-Date Decorations

GIVING HINTS FOR THE USE OF PICTURE FRIEZES, CUT OUT DECORATIONS, AND OTHER MODERN EFFECTS—EFFECTIVE COLOR SCHEMES SUGGESTED

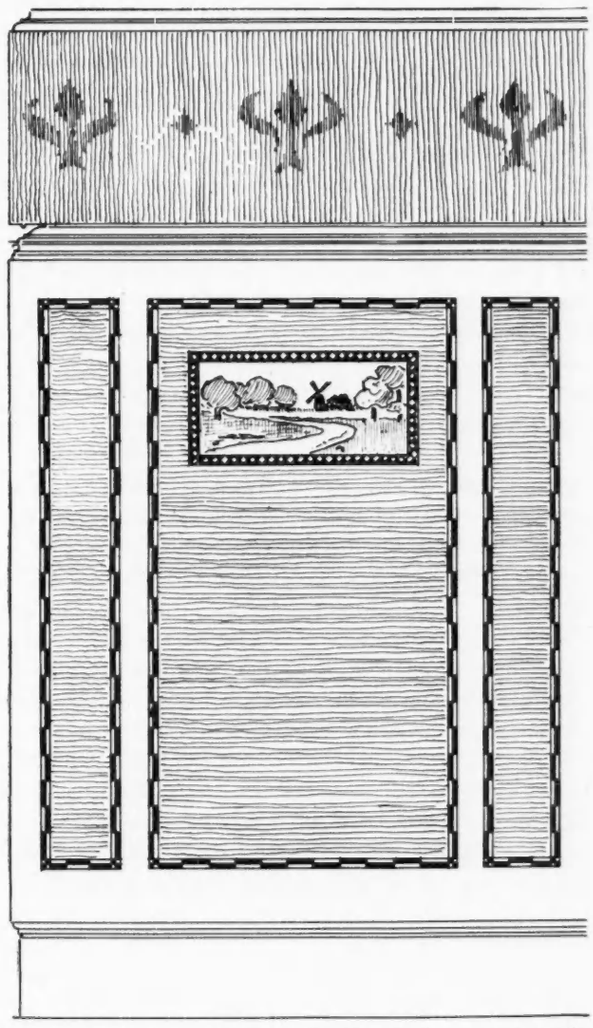
By Sidney Phillips

THE decorator of today finds the field full of opportunities for novel and effective treatments that are out of the commonplace, yet at the same time comparatively inexpensive. The manufacturers of wall papers and other decorative materials have been vying with one another to produce novel and up-to-date materials which can be used to obtain original effects, and there is no excuse for the decorator with brains following in the beaten rut, or for the house owner whose home does not reflect an individuality of taste in the wall decorations, the hang-



ings and other features of that character. The wall papers of the present season are noteworthy for their artistic design and beauty of coloring, and while, of course, every manufacturer is obliged to put out each season a number of patterns that are showy and commonplace and intended to meet a demand from an uneducated class, yet even these so called "bread and butter" designs are better, both in their drawing and coloring, than similar patterns of previous seasons. But almost every line of wall paper shows the influence of the education along decorative art lines which is being carried on by the popular magazines and in the schools of the country. People know a great deal more of the harmony of color, and of what is good taste and what is bad, than they did a few years back They have learned that decoration does not look to garish display, but depends on breadth of color treatment and is effective because of its simplicity. The mission and craftsman styles are direct results of this revulsion of feeling against the too ornate and the vulgarly tawdry display of the past generation. It is true that refinement of decoration does not necessarily need to go to such extremes as this, but the popularity of these styles indicates that simplicity as a keynote in decoration meets with the popular approval. To meet this demand for broad color effects, and yet at the same time to avoid the use of perfectly plain papers, which are not economical because they so readily show disfigurations from the unavoidable knocks which the walls almost always get, or the irregularity of the plaster, or stains due to the action of lime in the walls or to dirt on the surface of the paper, almost all the wall paper manufacturers offer a more or less extensive line of fabric effects. Some of these imitate plain burlaps, denims or grass cloths, while in others these effects form a background upon which conventional figures are powdered or a more or less intricate all-over pattern appears in a darker tone of the background color, giving the effect of a woven or printed fabric. One of the most popular of these grounds, for bed room decoration, is the chambray, or linen effect, in almost all the colors that one would see the actual goods, such as blue, green, ox-blood, pink and brown—resembling, in some cases, a dark unbleached linen. These chambray papers are either used to cover the entire wall, with a narrow floral or landscape border at the top; or they may be used in panels, with some one of the narrow "binders," or floral or ribbon and bow-knot borders, that are found in almost every line of wall paper. Another treatment is to use the chambray paper for the lower two-thirds of the wall, capped with a white enamel photograph rail—a narrow shelf molding with a groove in the top for the purpose of holding photographs, with a picture molding underneath. Above this rail, there is a frieze treatment, formed by using a cretonne or chintz paper of an appropriate color. Many of these papers are made to match imported cretonnes and chintzes that can be used for the window hangings, giving a very dainty and attractive room. Again, a chambray paper may be used to cover the ceiling, and run down

upon the side walls for a couple of feet, a floral cretonne or other figured paper being used for the base. For a small room with a low ceiling a very pretty effect may be obtained by running a plain chambray from the baseboard to the ceiling angle, a picture molding being used in lieu of a cornice. A



few inches below the ceiling, one of the popular ribbon patterns, showing a ribbon about two inches wide with occasional bow-knots and roses, should be neatly cut from its white background and run round the room as a border. The ribbon, of course, should be of a contrasting color, as for example, pink on a light green ground; buff on a blue chambray, or blue on a pink ground.

These chambray papers are also made with borders having the effect of white applique embroidery or white lace against a ground of the same fabric. Some of these lace borders may be used very appropriately for the purpose of forming large French panels. Or in a low room, the side wall may be a plain chambray with a lace border at the top and just above the baseboard.

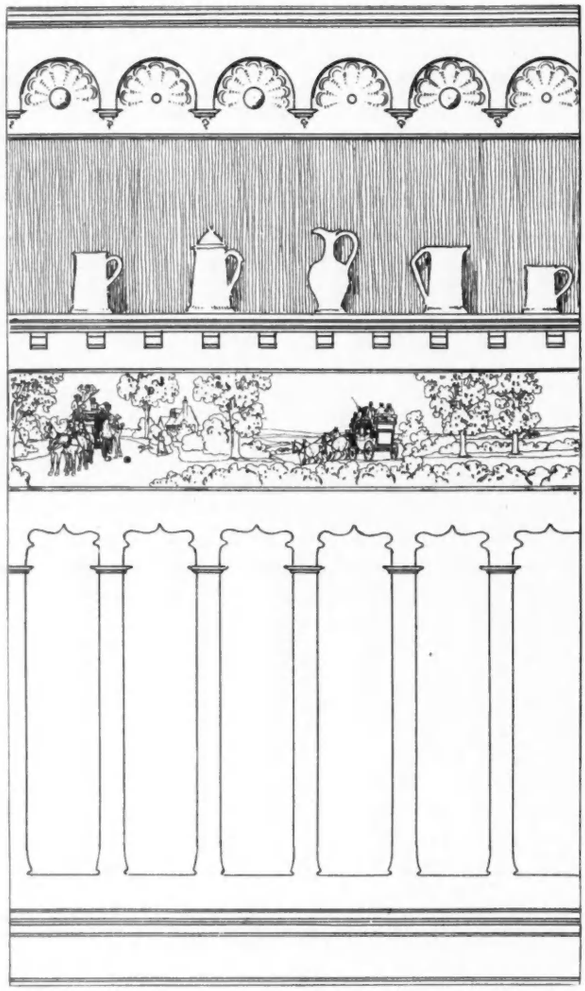
Another class of papers that are much used in making up original decorative treatments are what are known in the trade as "clothy" effects. These are two-toned papers in which small conventional figures are thickly sprinkled over a background one or two shades lighter in tone, giving the effect of woven goods, although there is no attempt to indicate the texture by overprinted lines as in a tapestry or a chambray paper. The figures are simply printed in solid color upon a plain ground color. They are made in all grades of wall paper from blanks or flats—a cheap grade printed on white stock—to the more expensive ingrains or cartridge papers and the "duplex" papers, which have an ingrain face and a backing of a harder surface paper. Of course, in these latter papers, the resemblance to a cloth fabric is very much stronger than in the lower priced goods. But in all classes, the general decorative effect is excellent. These papers are specially suited for dadoes, or for panel fillers, or are well adapted for use with the independent pictorial friezes that can be obtained in such variety, both in the imported and American papers. These friezes may also be used very satisfactorily in combination with two-tone stripe papers. Some of these are very beautiful, having dull stripes alternating with others of a silky or satin like luster. Of course, the plain cartridge or ingrain papers meet with much favor, but they unfortunately are very apt to stain and being colored in the pulp, insead of having the color applied to the surface like ordinary papers, are very apt to run uneven in color, one edge of the roll being often a shade or two lighter than the other edge. As a consequence, if these papers are hung just as they are cut from the roll, with the same end toward the ceiling, a very disagreeable streaked effect will be observed. This can be obviated by the careful paper hanger, who will cut two lengths of paper from the roll and reverse them, thus bringing the light edge of one length next the light edge of the adjoining strip, and so on. By exercising care in matching the papers, the unevenness in the color will not be observed.

Where the increased expense does not prove a detriment, grass cloth is one of the most beautiful wall decorations, where broad, single color effects are desired. This material is imported from Japan, and as its name indicates, is a fabric woven from some of the fine grasses or materials of that nature found in that country, and mounted on a light yet very tough paper. The total thickness is about the same as that of a heavy ingrain paper. It is very pliable and just as easily cut and trimmed as any high-class wall paper. It comes in all the prevailing decorative colors, and owing to its texture, there is a very pretty play of color over the surface, which makes it particularly effective. The writer recently saw a very attractive parlor in a suburban house, the walls of which were hung with a green grass cloth. About two feet below the rather low ceiling a white enameled photograph and picture rail was used, that served as a resting place for small pictures, plaster casts, bits of pottery and other small pieces of bric-a-brac. A two inch

white molding served to break the angle of the ceiling, which was tinted a cream white. The plain green surface of the lower wall made an excellent background for a number of good pictures.

In regard to cut out ornaments, a New York wall paper house has recently brought out some very beautiful lithographed ornaments of this character that are sold ready cut out. Those already introduced show swags of flowers, with cupids, baskets of flowers, bouquets of roses and the like, suspended within the swag. These patterns are made eighteen inches wide, or just the width of ordinary wall paper after it is trimmed, and they can of course be used on any color or kind of background, from a plain tint or a mica or silk stripe to a chambray. Of course they would not look well on a figured background, and being themselves printed in delicate colors, naturally look best when used upon light backgrounds.

The pictorial friezes already spoken of can be used in a great many original ways by the decorator who



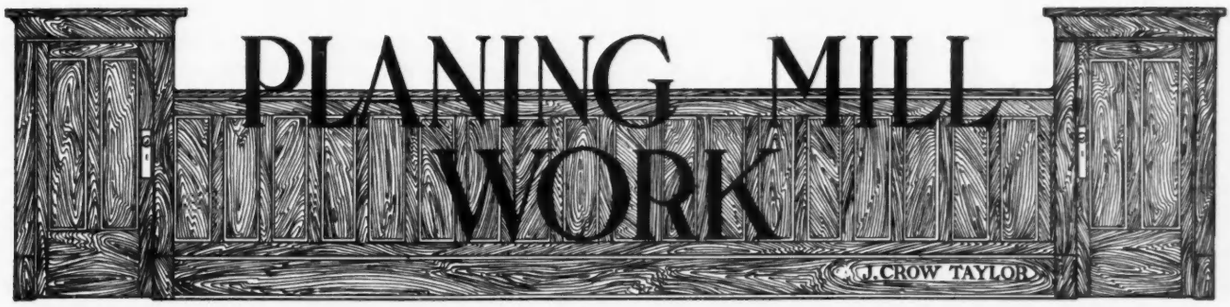
is awake to their possibilities. We illustrate a suggestion in which a coaching frieze is utilized in the decoraton of a dining room. This frieze is made in six foot lithographed sections, printed in oil colors. Each section is different and the complete design is thirty feet long before it repeats. The sections may be used indiscriminately, in any order preferred, so that practically there is no continued repetition in the room. They are made by a Cleveland firm, who devote practically their entire energies to the production of these pictorial friezes. In the decorative treatment illustrated, the frieze forms the key note of the design and is used as the crowning feature of the tall paneled dado, which can be made of wood, or the panels may be filled in with buckram or burlap and the stiling only made of wood. The dado is capped with a shelf molding that serves as a resting place for steins and jugs, the upper portion of the wall being hung with a grass cloth. The cornice is made up of a series of arches, with plaster or plastic relief shell ornaments, and under every other arch is an electric light bulb. This cornice should be in ivory white, of the tone of old ivory, the ceiling being somewhat lighter. The wainscot and the other woodwork of the room may either be in forest green or fumed oak or may be finished in white or ivory enamel.

Some of the pictorial friezes are well adapted for cutting into short lengths, framing them up with narrow borders of wall paper binders, and centering them in the upper part of large French panels.

Pictorial friezes are made with what are known as extensions. For example, on one roll may be printed a series of pictures of hunters in red coats leaping a five barred fence, with a pack of hounds in full cry, after a fox or deer, while another roll is a forest scene without figures. The decorator may space his huntsmen at will upon the wall, depending on the shape and size of the room, filling in the space between them with the forest extension. The writer recently saw a den decorated with a pictorial frieze of this character. The ceiling was covered with a mustard yellow ingrain paper, and a breadth of this paper, which was twenty-two inches wide, was run round the room, instead of up and down, just below the frieze. Below this was a photograph rail, while the lower portion of the wall was a striped Oriental tapestry effect, the principal color tone of which was red. This merely gives a suggestion for the use of these extension friezes, which are made in many different designs and characters of subjects.

The cut out poster friezes for dens and nurseries also offer many opportunities for original treatment. These come in sheets or panels, the figures from which are to be cut out and arranged at will against a plain ground, for in these poster pictures, backgrounds are looked upon as superfluous. Of course, a little ingenuity enables the decorator to tell a story with the pictures that will interest the children in the nursery or please the grown people in the den.

We have hinted in this article at only a few of the possibilities that can be achieved by the decorator who uses modern inexpensive materials and have endeavored to suggest how easy it is for the man with ideas to get out of the commonplace.



The Carpenter and His Gasoline Engine

MOST ECONOMICAL SIZE OF ENGINE TO INSTALL—HOW THE CARPENTER SHOP MACHINERY SHOULD BE GROUPED AND CONNECTED FOR BEST SERVICE

THE advantages in a general way of the small gasoline engine for a carpenter who operates a few light wood working machines have probably been discussed enough for everybody to be perfectly familiar with the matter in a general way. There are, however, some peculiar phases of the subject that may well have attention.

Economy in fuel, that is in gasoline, is one point aimed at all the time, and sometimes for the sake of this economy in fuel, the engine used is smaller than would be required to drive all the machinery equipment at once. Usually where a carpenter has a few machines, he only operates one or two at a time, consequently, practically all the power he needs is that required to operate whatever number of machines are likely to be at work at the same time. So a plant that might require, say, 12 or 15 horsepower to pull all the machines may be run with a 6 horsepower gasoline engine and thus quite a saving in fuel be effected. To get fuel economy out of an engine, it should be run at something like its normal capacity. It is not meant by this that one should hook all the machines on and run them empty in order to have the engine work to full power, but rather that the engine, for the sake of economy, should be purchased small enough that it will take practically its full power to operate what few machines it is desired to run at any one time.

We find, therefore, that economy in fuel carries with it also economy in first cost, by making it an advantage frequently to use a smaller engine than one might figure was needed.

This combination of economy is too great a thing to overlook. Of course it might prove some handicap at times when a carpenter is crowded with work and puts on a lot of extra help, because then he will find that he hasn't power enough to pull all his machines at once. These are things, however, he must figure on beforehand and determine whether there will be enough of such occasions where he has to put on extra help and run all the machines to justify investing in an engine of full capacity, and spending during light periods the extra amount for fuel involved in producing the limited horsepower with the larger engine as compared to the smaller one. If he is turning the shop into a regular planing mill, it might be advisable to use the larger one, but for the average carpenter who simply runs a shop in a small way, it generally pays to be rather modest in the size of the engine, thus getting economy not so much in the first cost as in future operations.

There is another chance to save power and thus economize in gasoline which is sometimes overlooked in equipping a plant with a number of machines. Say, for example, there are six or seven machines scattered all through the shop, including maybe a turning lathe at one end, a pony planer at the other end, band saw, rip saw, etc., in the middle. To reach all these machines it takes quite a stretch of line shafting sometimes, and it is in this line shafting that one can frequently expend quite a lot of power. The first precaution to be taken, therefore, is to have the shafting, pulleys and belting as light as practical for the work they have to do. This would seem contrary to the inclinations of some old time mechanics, who believe in making things extra heavy, but it is a good policy just the same. For one of the important things in connection with the gasoline engine is reducing the quantity of gasoline required to keep it going. To keep this quantity down to minimum means that you should eliminate all useless weight of machinery and friction in both shafting and belts. Not only should the shafting, pulleys, and belts be made light and carefully fitted and well lubricated so that they will run as light as possible, but frequently, especially where the shop is very long and it is necessary to get a line of shafting the full length, it pays to have some means by which you can cut off at least a part of the line shafting while you are operating the other part. This may be done very easily if your gasoline engine is somewhere near the middle of your line of shafting, which it should be, provided the machines are all practically the same in power requirements. Then you can put your drive belt from the engine onto a short length of shafting or a jack shaft with a coupling on each end, attaching it to the line shafting in each direction. By having these couplings and convenient levers to throw them in and out one can

let half the line shaft stand idle while operating the other half and thus economize considerably in power. It costs a little more to equip with these couplings in the manner suggested, but money expended here will be made up for by economy in gasoline, and it will save wear and tear on machinery and belting as well.

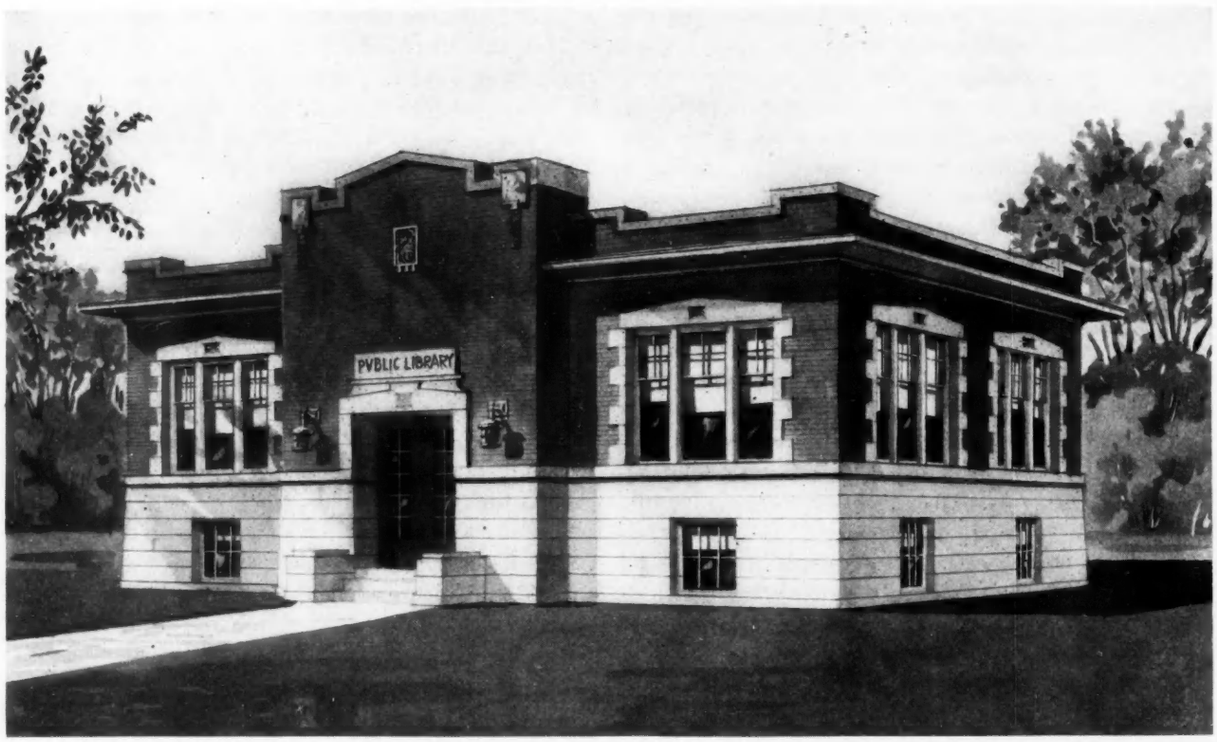
In case there should be a planer at one end requiring considerably more power than any of the other machines it would be better to put the gasoline engine at that end and let the line shafting extend through from that to reach the lighter machines.

Then, for the sake of power economy, when only the planer is being operated, and the other machines are idle, put a coupling in the line shafting just beyond where the planer drive comes off and you will take off useless friction and leave the engine more power with which to drive the planer. In addition to this, machines that are only used once in a great while may have the belts taken off the pulleys entirely when you are done with them to save strain on both the belts and the machinery, and it only takes a moment to put the belt on when you want the machine, provided you can get at it conveniently. For machines that are in use practically every day, however, this changing of belts off and on is generally too much trouble, and it is better to arrange so as to cut off and leave idle that section of the line shaft driving the machinery. Also, in so far as practical, avoid the use of extra shafting of what is termed counter shafting, because every bit of shafting and every extra pulley means a waste of power. In the small shop such as we are discussing here, practically all machines can be driven directly from the line shaft, but where they cannot—where it is imperative to use a counter shaft—strive to make the counter shafting and pulleys as light as practical. In fact, observe this matter of lightness for the sake of economy in all your machine arrangements if you desire to get the best service.

A Small Neat Library

PERSPECTIVE AND FLOOR PLANS OF A WELL DESIGNED MODERN LITTLE BUILDING ADAPTED TO THE NEEDS OF A SMALL TOWN OR VILLAGE

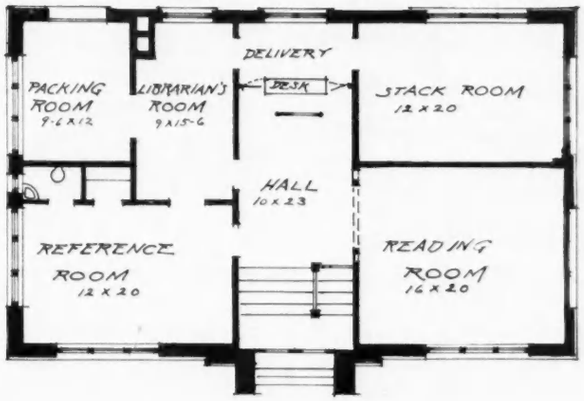
THE accompanying design for a small library building, the work of G. W. Ashby, architect, presents a remarkably striking and distinctive appearance. The lines are simple and there is very little ornament, yet the general effect is rich and harmonious.



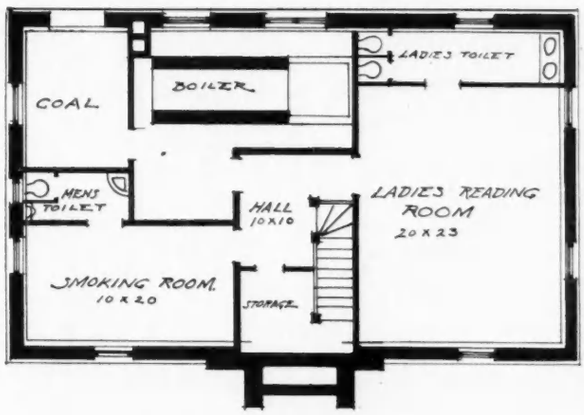
The foundation up to the sill course is of Bedford limestone, which material is used also to face the door and window openings. Red pressed brick is employed for the body of the wall. Small panels of ornamental terra cotta appear over the doorway. The perspective view shows very nicely the artistic and general harmonious effect of this combination.

This library is 50 feet wide by 30 feet deep, a very convenient size for town or village. The space is well distributed; on the main floor are reference and reading rooms, broad hall with delivery desk, stack room, librarian's room and packing room.

The basement is high and is well lighted. It contains a smoking room, ladies' reading room, toilet rooms and heating plant. The interior finish throughout is oak; the walls are finished with hard plaster, tinted and frescoed.



PLAN OF MAIN FLOOR



PLAN OF BASEMENT

Quaint Old Carpenters of the South

The following, taken from a sketch written by Harry Stillwell Edwards and published in *The Century Magazine* a few years ago, recalls in a graphic manner the quaint old negro carpenters of the south and the importance of their labors on the plantations before and for some years after the war:

"The carpenter's bench stood under a group of majestic pines, and I had been idling upon one end of it, watching the pretty shavings curl out from under the plane, while the old man ran over the incidents of his early youth. Although seventy years of age, he was still as active as a boy, and his skill with tools was, as it had always been, marvelous to me. He was the last of the old-time plantation carpenters, and as the rear-guard of a vanishing civilization they deserve especial mention. Within their province lay the building of gin-houses, mills, cribs, cabins, dwellings, gates, sheds, and in fact everything needed in country carpentry. The ingenuity and inventive powers of the old fellows would astonish the city mechanic; their gates still swing on abandoned plantations, without hinges, their latches still defy the efforts of roving cattle, and I know of a mill-wheel, pivoted on a pine-knot, that has run true for a quarter of a century. It is true, they ever preferred odd jobs to a long one; that there probably never lived one that, given a shed to build, did not put a helve to an ax, make a wheelbarrow, fit standards to a wagon, nail on palings, hew out a sill, patch a roof, mend a well-windlass, make a beehive, and yoke a jumping cow, before he finished the shed. If he had to cut a plank he would lift first one end and then the other, measure both ways, reflect, and wander off. But afterward the plank was always cut to advantage.

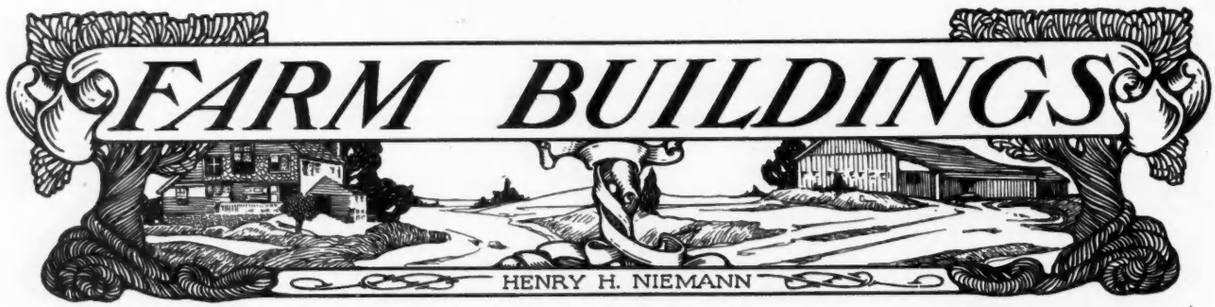
"These accomplishments were all based upon a hatchet, broad-ax, chisel, saw, hammer and square, which were carried in a bag, and made the owners privileged characters. Brought into contact with many kinds of people, naturally the carpenters lost something of their ignorance, and suffered likewise from the irreligious tendencies of the age."

The Charm of Houseboating

The essential charm of houseboating is its leisureliness, its irresistible invitation to loaf and invite one's soul, says Earl Mayo in an article on "Ideal Summer Homes Afloat" in *Broadway Magazine* for June. The English, who know how to rest, after some centuries of practice, have developed it into a veritable cult, although they are confined practically to one small river, as compared to the thousands of miles of waterways available to Americans for this purpose. All summer long the Thames, with its gay and beflowered houseboats, presents a delightful picture of comfortable aquatic life, and in Henley week some two hundred such craft, of almost as many shapes as sizes, form the chief feature of the most attractive water carnival to be witnessed anywhere.

The houseboat, however, is steadily making its way into popular favor in America. While there are more about New York than any other American city, little colonies are springing up here and there in every part of the country.

The material features of houseboating are important in so far as they affect the enjoyment of its ideal features which present the side of real importance and attractiveness. Realization of the latter proceeds only from experience. One cannot impart by ink or spoken word the sense of freedom and calm content that comes to the houseboatman as he tilts his chair against the rail in the soft summer evening and surveys the watery domain of his particular lake or bay or river stretch —his by right of adoption and possession, yet without cost or care of maintenance. His is the unbought glory of the gorgeous sunset, of the slow-gathering purple shadows of the soft summer night. For him the breezes gather the fragrance of wood and field or the more acrid but no less pleasant odors of the salt meadows.



Modern Dairy Barn

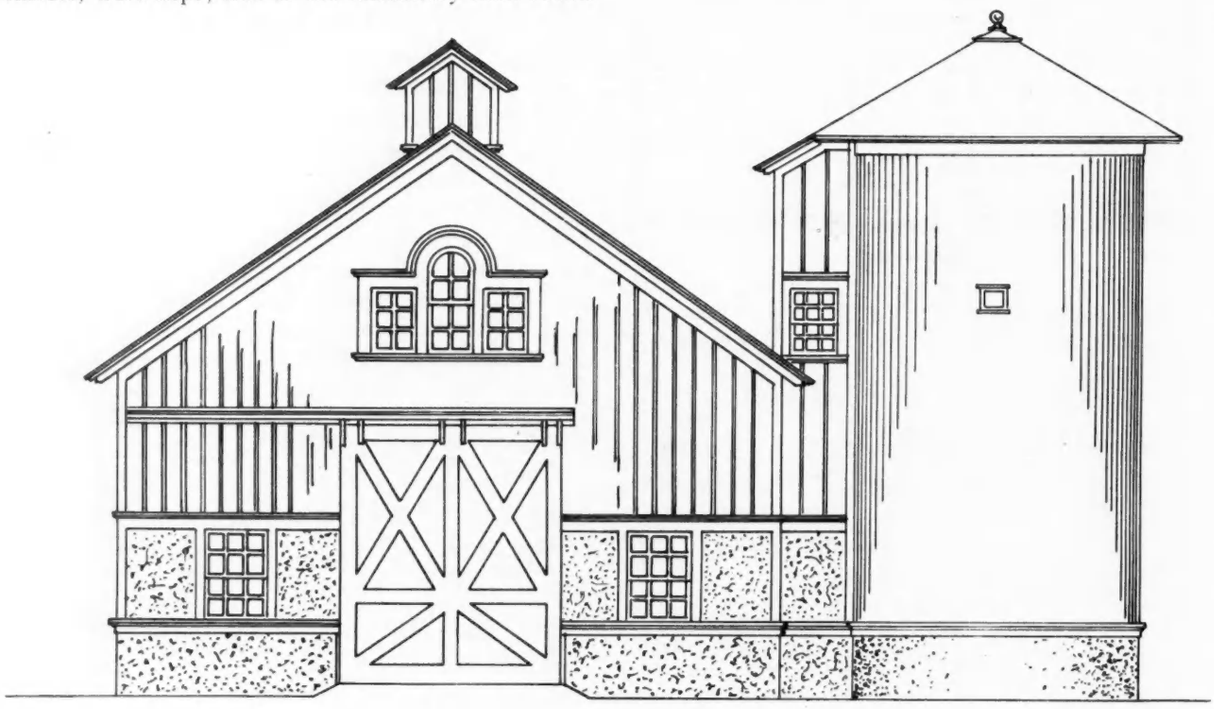
ELEVATIONS AND PLAN OF A MODERN SANITARY DAIRY STABLE AND FARM CREAMERY—MATERIALS, CONSTRUCTION AND ARRANGEMENT

THE commission of doctors and business men, appointed some time ago, to investigate the "milk situation" in and about Chicago, recently made its report. It was found that, while practically all the milk was well up to grade as to richness, a surprisingly large percentage showed traces of dirt and filth. This, it was found, was due to the dirty, dilapidated stables in which the cows, in many instances, were kept; also to the unsanitary milk rooms adjoining. As pointed out in the report, this is a very bad state of affairs, both from a sanitary and from a business point of view. The dairy cow is an animal which is extremely sensitive to careless treatment and to improper housing; the milk falls off both in quality and quantity when feeding is irregular and when the stable is dirty, cold and poorly ventilated. But, on the other hand, the dairy cow is highly responsive to care and to comfortable quarters. The increased value of the dairy products, both in quality and in quantity, more than repays in a short time the extra expense of building warm, sanitary stables.

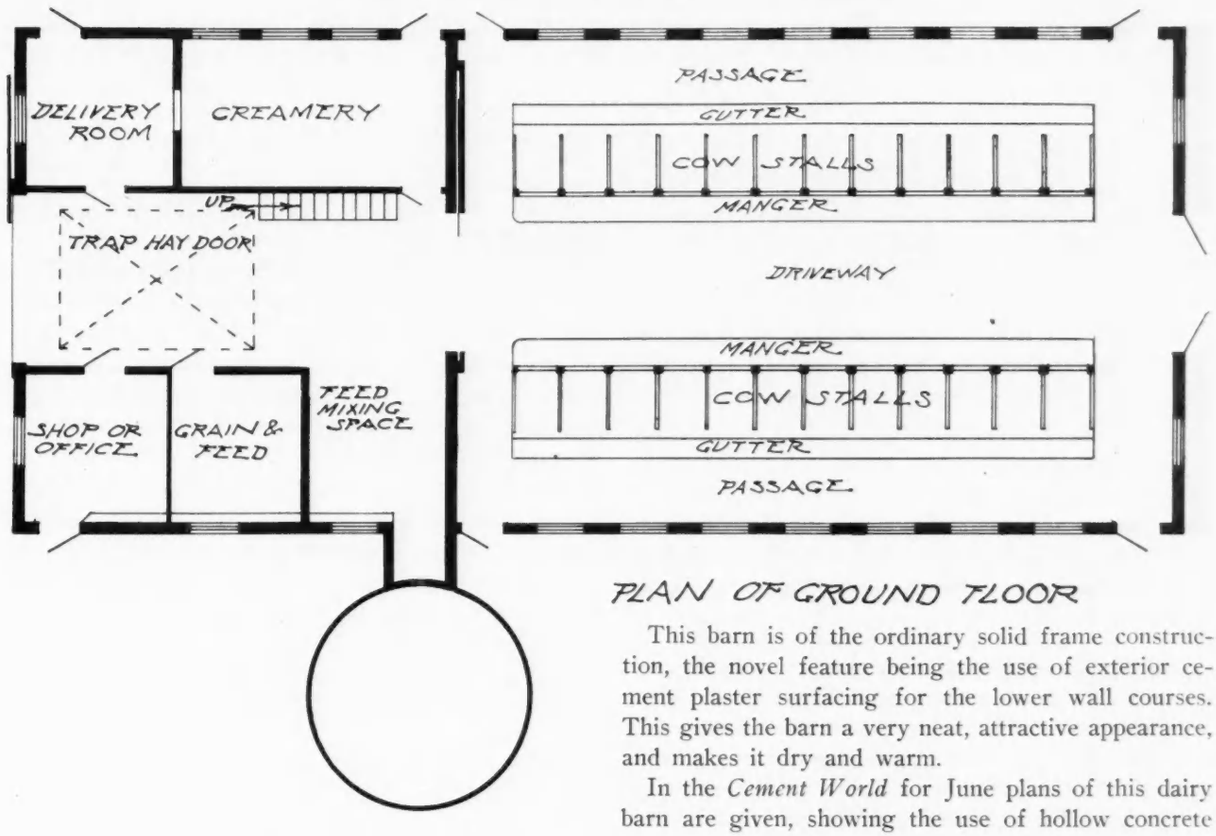
The accompanying design is thoroughly modern, embodying the latest ideas in sanitary and convenient dairy barn construction. Complete provision is made for twenty-four cows—there is a warm, well ventilated stable, ample provision for feed storage, and separate, well equipped milk cooling and handling rooms.

The main floor is divided by a solid, fireproof partition into two general parts; one, having a little more than a third of the entire floor space, contains the office, feed rooms and milk rooms. This part is finished throughout with matched lumber. In the other part are twenty-four stalls in a double row. The stanchions are of the improved metal swing type; the feed mangers are concrete. There is a cement floor in all the stable with a plank upper-floor for the stalls. There is a driveway through the building from end to end.

Ensilage has come to be the staple food for dairy



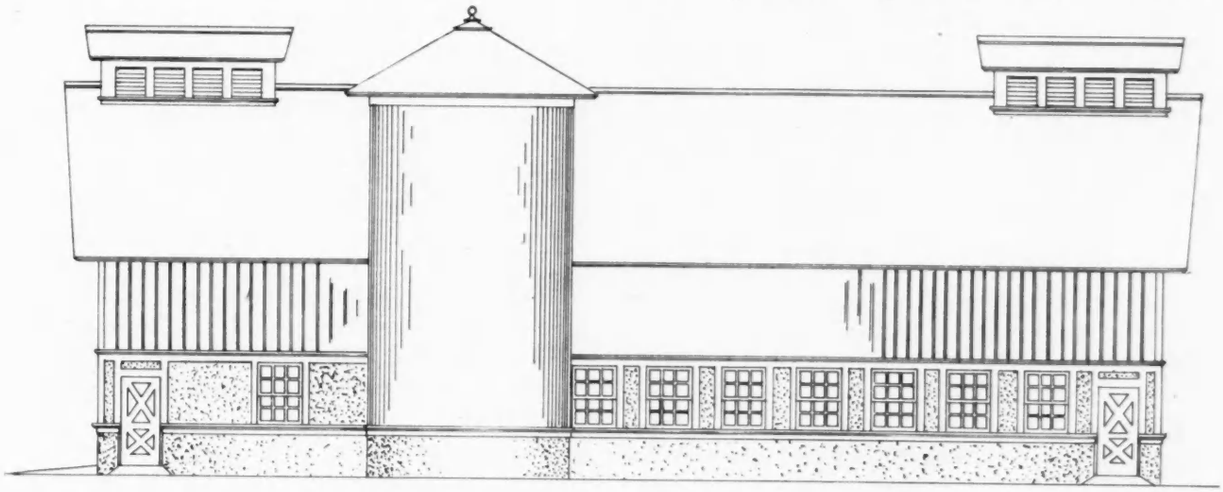
END ELEVATION



PLAN OF GROUND FLOOR

This barn is of the ordinary solid frame construction, the novel feature being the use of exterior cement plaster surfacing for the lower wall courses. This gives the barn a very neat, attractive appearance, and makes it dry and warm.

In the *Cement World* for June plans of this dairy barn are given, showing the use of hollow concrete blocks for the silo and for the lower courses of the stable walls. This material is being used more and more about the farm, and is proving economical and satisfactory.



SIDE ELEVATION

cattle, being used in some cases practically the year round. A stave silo is here provided of ample capacity. The space above the entire stable is used for storage of hay, stalks and coarse fodder.

Conserving Our National Resources

DECLARATION OF PRINCIPLES ADOPTED BY THE CONFERENCE OF GOVERNORS AT THE WHITE HOUSE AFTER A THREE DAYS' SESSION

THE action taken by the conference of governors that was called by President Roosevelt and held at the White House, May 12-14, was embodied in a declaration of principles which the conference adopted the day before its adjournment. The importance of that declaration and the value of the conference in thus directing public attention to the necessity of conserving our natural resources will be apparent to any one who will give it even casual consideration. We commend it to your careful reading,

and we trust that the recommendations made will not be permitted to go unnoticed in any section of the country. Every man, woman and child of the present is vitally interested in conserving the resources on which his or her children and children's children must depend for sustenance. The full text of the declaration is as follows:

"We, the governors of the states and territories of the United States of America, in conference assembled do hereby declare the conviction that the great prosperity of the country rests upon the abundant resources of the land chosen by our forefathers for their homes, and where they laid the foundation of this great nation.

"We look upon these resources as a heritage to be made use of in establishing and promoting the comfort, prosperity and happiness of the American people, but not to be wasted, deteriorated or needlessly destroyed.

"We agree that our country's future is involved in this; that the great natural resources supply the material basis upon which our civilization must continue to depend, and upon which the perpetuity of the nation rests.

"We agree, in the light of facts brought to our knowledge, and from information received from sources which we cannot doubt, that this material basis is threatened with exhaustion. Even as each succeeding generation from the birth of the nation has performed its part in promoting the progress and development of the republic, so do we in this generation recognize it as a high duty to perform our part, and this duty in a large degree is in the adoption of measures for the conservation of the natural wealth of the country.

"We declare our firm conviction that this conservatism of our natural resources is a subject of transcendent importance which should engage unremittingly the attention of the nation, the states and the people in earnest co-operation.

"We agree that the land should be so used that erosion and soil wash should cease, that there should be reclamation of arid and semi-arid regions by means of irrigation, and of swamp and overflowed regions by means of drainage; that the waters should be so conserved and used as to promote navigation to enable the arid regions to be reclaimed by irrigation and to develop power in the interest of the people; that the forests, which regulate our rivers, support our industries and promote the fertility and productiveness of the soil, should be preserved and perpetuated; that the minerals found so abundantly beneath the surface should be used as to prolong their utility; that the beauty, healthfulness and habitability of our country should be preserved and increased; that the sources of national wealth exist for the benefit of all the people and that the monopoly thereof should not be tolerated.

"We commend the wise forethought of the President in sounding the note of warning as to the waste and exhaustion of the natural resources of the country and signify our appreciation of his action in calling this conference to consider the same and to seek remedies therefor.

"We agree that this co-operation should find expression in suitable action by the congress within the limits of, and co-extensive with the national jurisdiction of the subject, and, complementary thereto, by the legislatures of the several states.

"We declare the conviction that in the use of the natural resources our independent states are interdependent and bound together by ties of mutual benefits, responsibilities and duties.

"We agree in the wisdom of future conferences between the president, members of congress and the governors of states regarding the conservation of our natural resources, with the view of co-operation and action on the lines suggested. And to this end we advise that from time to time, as in his judgment may seem wise, the President call the governors of the states, members of congress and others into conference.

"We agree that further action is advisable to ascertain the present condition of our natural resources and to promote the conservation of the same. And to that end we recommend the appointment by each state of a commission on the conservation of natural resources, to co-operate with each other and any similar commission on behalf of the federal government.

"We urge the continuation and extension of forest policies adapted to secure the husbanding and renewal of our diminishing timber supply, the prevention of soil erosion, the protection of headwaters and the maintenance of the purity and navigability of our streams. We recognize that the private ownership of forest lands entails responsibilities in the interests of all the people, and we favor the enactment of laws looking to the protection and replacement of privately owned forests.

"We realize in our waters a most valuable asset of the people of the United States, and we recommend the enactment of laws looking to their conservation, to the end that navigable and source streams may be brought under complete control and fully utilized for every purpose. We especially urge on the federal congress the immediate adoption of a wise and thorough waterway policy, providing for the prompt improvement of our streams and conservation of their watersheds required for the uses of commerce and the protection of the interests of our people.

"We recommend the enactment of laws looking to the prevention of waste in the mining and extraction of coal, oil, gas and other minerals, with a view to their wise conservation for the use of the people and to the protection of human life in the mines.

"Let us conserve the foundations of our prosperity."

Foundations on Soft Soil

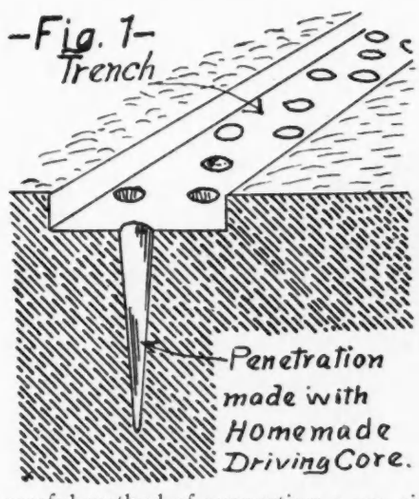
A SYSTEM OF CONCRETE PILING FOR SUB-FOUNDATION WORK DESCRIBED—ADVANTAGES OVER COMMON METHOD OF EXCAVATING AND FILLING

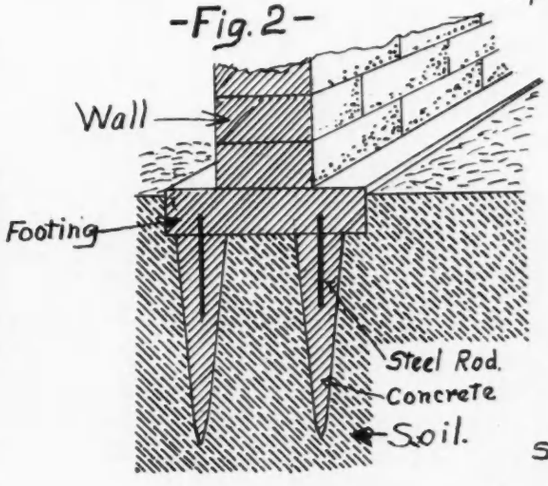
By Fred W. Hagloch

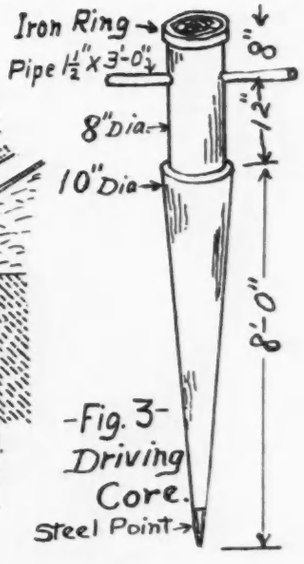
THE old expensive method of excavating through sand or spongy soil to hard pan is unnecessary, as large buildings erected the past five years on foundations made without excavating prove. The method by which any builder can execute this work, for buildings up to three or four stories high, is described in this article.

The concrete piling system has proved its superiority for substructure of our largest buildings, and is used by the government at the naval stations for erecting large buildings on sand and marshy shores. This method applied to smaller structures has made a saving of over half the cost and nearly half the time required by the method of excavating, cribbing and filling.

The illustrations show how a wall is supported; but this method is equally applicable to bridge and machinery foundations, and has proved the only successful method of supporting a gas pipe main through a swamp.







The driver, as shown in Fig. 3, is made of hard wood with metal point. For very soft soil the upper five feet of the cone is covered with a removable jacket made of 20 gauge sheet steel. This jacket is slipped over the core before same is driven into the soil with mauls or sledges; the core is then withdrawn, the jacket remaining in the cavity until the lower part is filled with concrete or grout, when the shell is withdrawn and the remaining cavity filled, tamped and the steel rod inserted to key same to the footing.

Always fill each cavity with concrete as soon as core is drawn to prevent caving.

The number and spacing of the piling depends upon the condition of the soil, length and diameter of the piling and the load to be placed upon the foundation.

The driving of the core compresses the soil around it, thereby giving it more sustaining power.

For supporting a wall sixteen inches thick and fifty feet high, dig the footing trench below frost; have the width three to four feet, spongy soils requiring four feet; and drive three or four rows of piling staggered, as shown in Fig. 1. Drive core until twenty-four blows wtih sledge are required per inch of penetration. Have one pile for every three square feet of footing or trench area. All piling need not be plumb, in fact, I have driven them as much as ten degrees off plumb to compact soil beyond the footing area.

The load a pile built in this manner will support can only be positively known by loading it, after concrete is twenty-eight days old, with double the weight of the total load to be placed upon it.

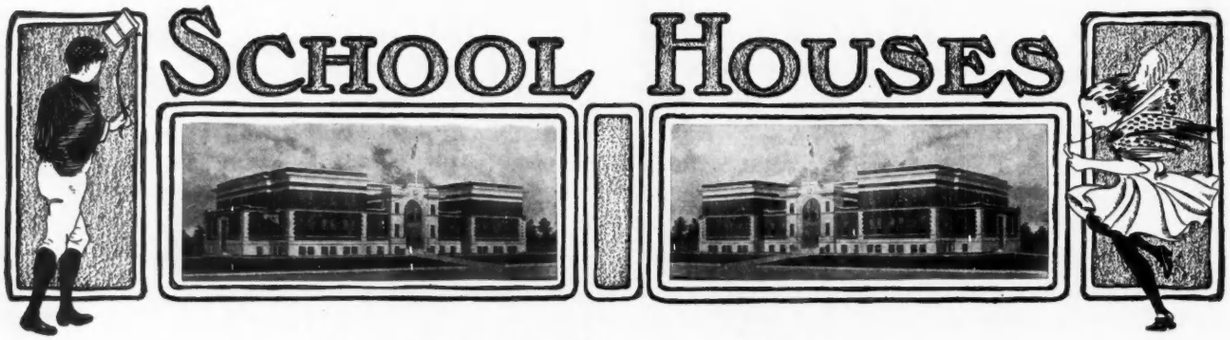
Piling made in this manner, whether four or eight feet long, should carry without settling a twenty-two ton load for each three square feet of area allotted to each piling. This gives a loading of over seven tons per square foot area.

The piling may be increased in length if the soft soil is deep; and the diameter may be increased for softer soils, since the object is to make the soil more sustaining by compressing it.

The only disadvantage this style of foundation has when compared with more expensive is that no method of waterproofing has been found practical for it.

The piling should be made of one part Portland cement, two parts sharp sand and four parts pea to walnut gravel; mix to consistency of grout for pouring and tamp well. The driving of the core near a newly filled cavity does much to compact the soft concrete.

For small bridge and culvert foundations along sandy or mucky streams this system of piling makes a firm foundation at one-third the cost of any other.



An Eight Room School

PERSPECTIVE AND FLOOR PLANS OF A VERY ATTRACTIVE SCHOOL BUILDING OF SIMPLE AND CONVENIENT DESIGN

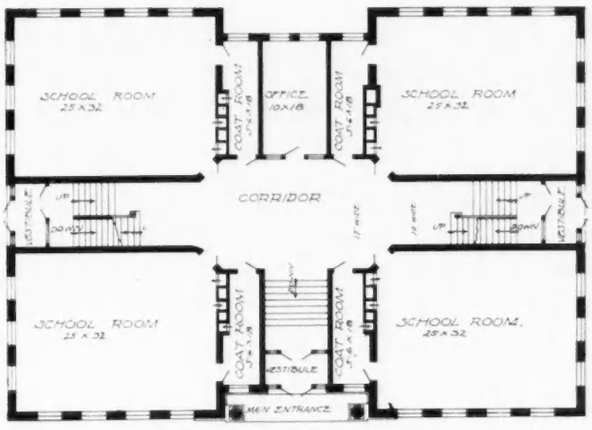
THERE is no class of buildings in which simplicity and directness of treatment are so desirable and produce such satisfactory results as in our public school buildings. Where children are brought together to be taught, the matter of first importance is to have plenty of fresh air and plenty of sunshine; next, the school rooms should be of good size and the corridors short and broad, with ample exits, so that the building can be easily emptied. The simple rectangular type of building, if properly designed, possesses all these desirable features at lowest cost. Moreover, such a building may be so proportioned as to be very pleasing in its external appearance. Such a building, an eight room school, is illustrated herewith. It is the work of Geo. W. Barkman and G. W. Ashby, associated architects.

Four large school rooms, 25 by 32 feet, are provided on each floor; each room has an ample coat room attached. All of these rooms are very well lighted and ventilated. The principal's office is centrally located on the first floor; the library has a corresponding position on the second. In the basement are the manual training rooms, lunch rooms, toilet rooms and hot air furnace.

The exterior is of yellow pressed brick, with Bedford lime stone for the foundation courses and the corner trimming. The entrance is especially well designed; a classic stone column either side the doorway supports the wall above, the door itself being slightly recessed to form an entry. The roof is of slate.

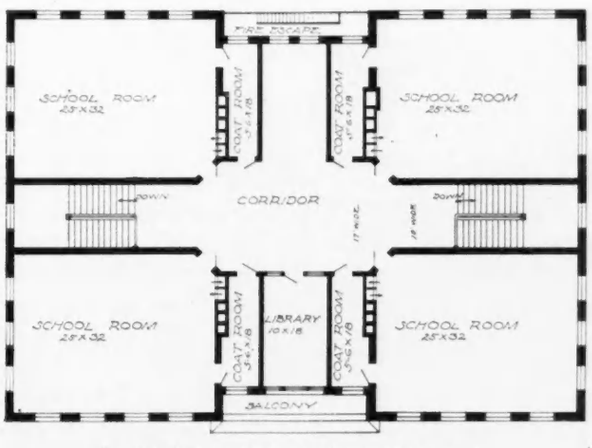
Ship Decks of Sawdust

The *Shipping World,* published in London, England, says that on account of labor troubles, ship owners and ship builders have been looking for a substitute for decking and other portions of vessels now built



An Eight Room School—First Floor Plan

of wood. A substitute known as Conolite has been tested and so far is receiving many compliments. The basis of Conolite is sawdust. Where hard wear is required, sawdust is taken from harder woods. Where the wear is light, sawdust from lighter woods can be used. The sawdust is treated and mixed with cement



An Eight Room School—Second Floor Plan

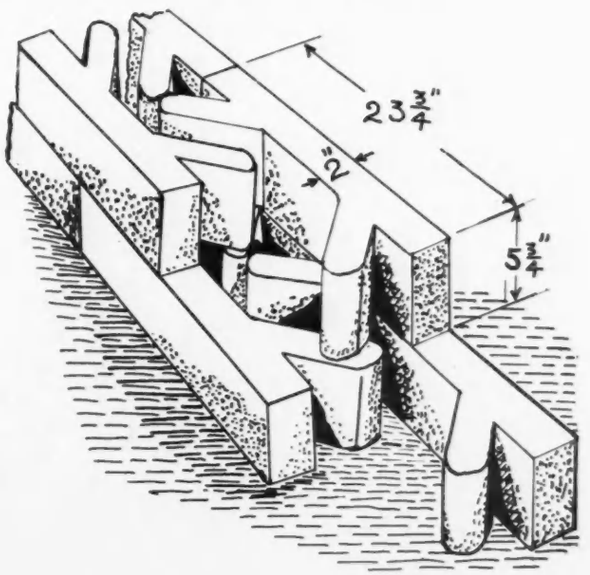
and a binding liquid, it is then laid on a steel deck very much like cement. If desired, the surface can be polished. It adheres well to a steel deck and seals up all spaces around pillars, etc. It seems to be sufficiently elastic to give with the movements of the ship. It is said the board of trade of London has accepted this substitute for wood.

Cement Storage House

In constructing the Big Rapids dam near Big Rapids, Mich., the following plan was adopted for storing the cement. The cement was shipped in cloth bags in January and February, and hauled in the snow 1½ miles. It was stored in sheds 40 by 90 feet, with one-third pitch bottom roof covered with tar paper, in the usual manner of lumber camp construction. The floor consisted of two layers of 6 inch poles laid on the ground, the second layer being at right angles to the first. The poles were covered with about a foot of loose straw, on top of which was placed a single layer of tarred felt. The bags were then piled 5 feet high on end. No cement was lost by caking. The only cement showing effects of dampness was that on top, which gathered some moisture from the air and caked in places about ½ inch thick. If tarred paper had been put over the tops of the sacks it is thought that this caking would probably not have occurred.

A Block for Damp Proof Wall

The concrete block illustrated was designed by G. W. O'Kelley, Commerce, Ga., and is another of the piece block patterns to build hollow walls.



The wall will unquestionably be damp proof, and can be varied in thickness with the same size blocks.

We are informed that no patent will be applied for for this block; therefore our readers are at liberty to use same without interference.

Regular hollow concrete blocks will be required for corners unless a design for corner block is produced.

Objectively Considered

Ruggles—What horse power is your new automobile?

Ramage—Two, I guess. That's the horsepower it took to haul it to the repair shop when it broke down on a country road the other day.

Once more the glad season of the summer garden approaches, the time when a man may sit in the shade with his soul's mate and suck soda through a straw, while the strains of a little German band rise and fall in the bewitching crescendoes and diminuendoes of rhapsody! Ach, Louie!

MANUAL TRAINING

IRA S. GRIFFITH

Something the Boys Can Make

FULL DETAILED INSTRUCTIONS FOR MAKING A PORCH SWING OF CRAFTSMAN DESIGN—HOW IT SHOULD BE FINISHED AND HUNG

THIS is the season of year when the thoughts of most amateur woodworkers turn to porch furniture. This month we offer a design for a porch swing. It can be made of hard wood and finished so as to show the natural grain of the wood, or it may be made of soft wood, such as pine, and given two or three coats of some appropriately colored paint. Hard wood will look prettier but soft wood makes a lighter swing and therefore one more easily handled at the opening and close of the season.

If possible, get the stock mill-planed and sanded on four surfaces. It costs but little more. Stock could be got from the rough if necessary, of course.

There will be needed nine lineal feet of stock, surfaced on four sides to one and three-quarters by one and three-quarters inches for the posts. For the lower frame or base there will be needed two pieecs surfaced on four sides (s-4-s) to one and three-quarters by three and three-quarters with a length of ten feet. Out of each may be got a side and an end.

The lower rail will require a piece one and one-eighth by three inches with a length of ten feet six inches. The upper rail requires the same length and thickness with a width of four and one-half inches. The slats are five-eighths by three and three-quarters, and there will be needed about sixteen lineal feet.

In the swing shown in the photograph the bottom was made solid of one-half inch stock. There will be needed for this about thirteen square feet. It need not be matched.

Begin by making the lower part, the base of the frame. Saw off and square with the plane the ends off two pieces, Fig. 1, eighty-four and one-half inches long. Bevel the ends about one-eighth inch or more as desired. For the end pieces saw off and square two pieces to a length of twenty-two and one-half inches.

Since the weight of the swing comes upon the two long pieces, the short pieces need not be framed into them. To do so would be to weaken the long pieces unnecessarily. Two one-half inch dowels properly placed and glued in each end will serve to hold the parts together. If made of soft wood even these may be dispensed with, several spikes being used instead. Their heads can be puttied up before the swing is painted. Care must be taken to spike low enough to keep clear of the mortises for the posts.

To lay off the two long pieces, Fig. 2, measure from the middle in each direction, thirty-six and and three-fourths inches; square knife lines across the top edges at these parts. From these lines measure towards the ends three-quarters of an inch and mark the second end of the mortises. The gauge settings will be one-half and one and one-quarter inches respectively. These mortises are for the tenons on the lower end of the posts to rest in and are to be cut one inch deep.

There should be rabbeted from these four pieces recesses the full length of the two short pieces one-half on the edge by one-half inch down the faces, the inside surfaces. The two long pieces have the same sized rabbets but these rabbets are to be but seventy-three and one-half inches long. Fig. 1. It will be necessary to gauge and use the chisel to cut these rabbets at their ends.

The posts, Fig. 3, should have one end of each sawed square. From these squared ends measure one inch, then three and three-eighths, two and one-quar-

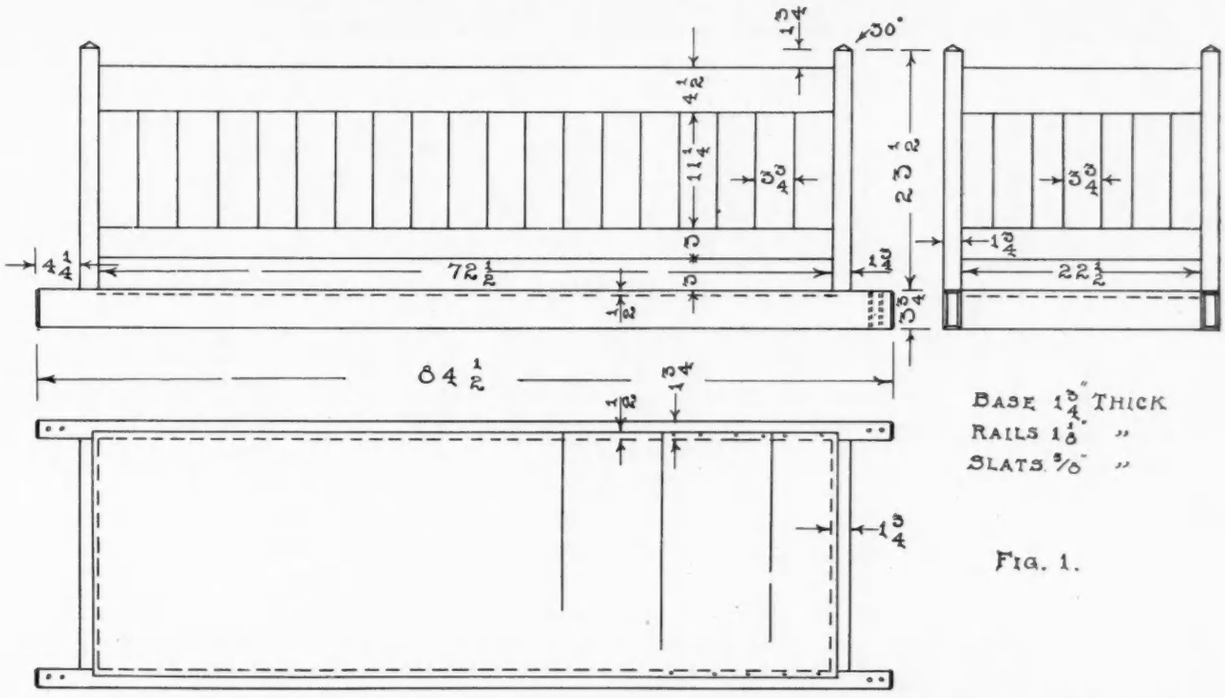


FIG. 1.

ter, twelve, three and three-quarters, two and one-eighth inches. This last point gives the location of the lower edge of the slopes which are to be made on the tops. But one post needs be measured; the rest are to be marked by placing them alongside this one, evening their ends and squaring lines across all at once. A sharp pencil should be used for this. The lines are to be carried across two sides of the two back posts. The shoulder lines are to be carried entirely around. On the front posts the mortises enter from one side only of each. It is a good plan to set the posts up in the positions they are to have with reference to one another and indicate in some way the approximate location of the mortises. The face sides should be made to turn in. The settings of the gauge for the five-eighths inch mortises are nine-sixteenths, and one and three-sixteenths respectively. These mortises are to be cut fully one inch deep.

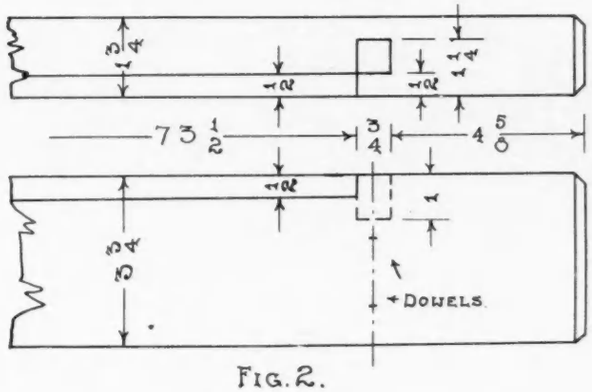


FIG. 2.

The tops of the posts are to slope thirty degrees or any other angle that may be desired.

The tenon at the lower end of the post is to be three-quarters of an inch square and is obtained by gauging one-half inch from each of the faces, then one and one-quarter—saw it out with the tenon saw.

The back rails should be laid off together. The length of the long rails, including the tenons, is to be seventy-four and one-half inches. The ends should be sawed square. Measure from the middle towards either end thirty-six and one-fourth inches to locate the shoulders of the tenons, or place them alongside the base. The ends of the mortises for the slats are to be laid off as follows: To either side of the middle of the length of the rail lay off and mark lines across the joint edges as follows: one and one-half inches, then measure from this, alternately, first, four and five-eighths, then three inches, out to the shoulders. These measurements allow for a three-eighths inch shoulder on each edge of the tenons of the slats, making the openings between the slats three and seven-eighths inches.

The four end rails should be laid off before any of the tenons of the long rails are laid off. Their entire length is to be twenty-four and one-half inches. The distance between shoulders is to be twenty-two and

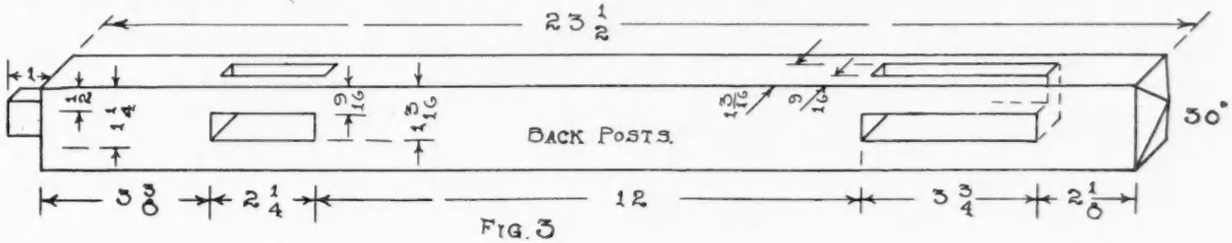


FIG. 3

one-half inches. They are one and one-eighth inches thick.

The ends of the mortises of the slats are located thus: Measure to either side of the middle of the length one and one-half inches, then from this measure first three and three-eighths inches, then three inches; this allows three slats to each of the ends. The photograph shows a fewer number of slats in both ends and back than are here specified. If fewer are desired, the proper spacings can be readily figured.

The sides of these mortises are obtained by gauging first to one-quarter then to seven-eighths, gauging from the working faces, the inside faces.

The thickness of the tenons for these pieces is obtained with the same settings and should be made at the same time the sides of the mortises are being marked.

For the wider rails the width of tenon is obtained

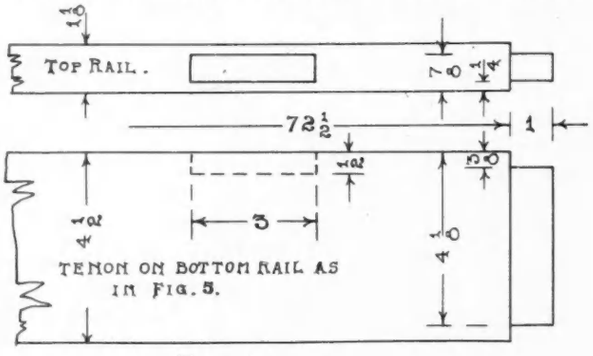


FIG. 4.

by setting first to three-eighths, then to four and one-eighth inches, Fig. 4. For the narrower lower rails, the settings are three-eighths, then two and five-eighths inches. These mortises are to be cut one-half an inch deep.

It will be necessary to miter the ends of these rails slightly; the amount can be determined by a trial fit.

The slats are shouldered on the two edges only, gauging first three-eighths of an inch, then three and three-eighths inches. The distance between the shoulders is to be eleven and one-quarter inches and the tenons are one-half an inch long. Fig. 6.

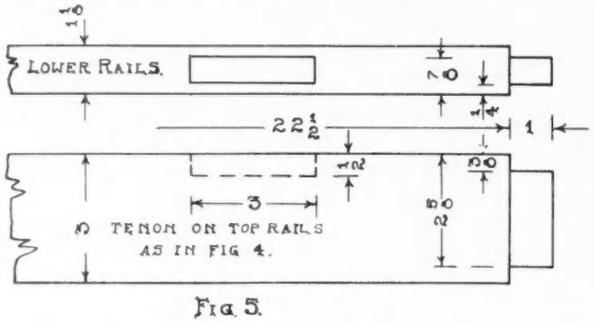


FIG. 5.

Before assembling the parts they should be sandpapered clean and smooth. The slats in the back may be glued, placed and clamped, after which the slats, rails and posts of the ends may be put together. While the glue is hardening on these, the base may be assembled, being doweled or nailed as suggested above. The bottom of one-half inch boards is to be fitted to the rabbets and nailed fast.

With the setting of the glue, the back may be glued to the ends and the posts to the base.

Since porch swings are exposed to all kinds of weather it might be well to reinforce the glue joints

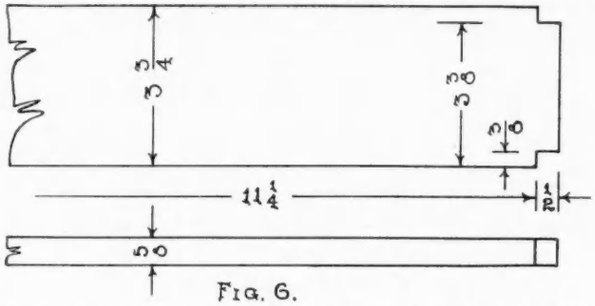


FIG. 6.

by pinning the tenons in the mortises. Three-eighths inch dowel pins placed through the mortises and tenons will insure the swings standing the most severe usage.

The picture illustrates quite well the manner of fastening the supporting chains. The staples extend entirely through the base rails and have nuts on the under side.

To Study Southern Forests

An important step in the general movement to bring many of the rich stands of timber in the south under a scientific plan of forest management is the offer made by the school of forestry of the University of Georgia at Athens, Ga., to furnish timber owners experts who will examine and report upon any of the forests in the state.

The object of the offer is to collect information in regard to the forest resources of the state, to spread a knowledge of forestry and to improve forest conditions. The forest school will furnish the experts free and the only expense which will be borne by the forest owner will be paid for the traveling and subsistence expenses of the expert while making the examination. In cases where several owners of the same locality apply the expenses will be prorated.

When applications for examination are made, the owners have been asked to give their names and post-office addresses, location of tract, area of tract, character of forest as shown by the kinds of trees growing on the land, the conditions of the forest, whether mature, original or second growth, whether the land has been burned or cut over, and the wishes of the owner regarding the use of the land.

The Shoe Fitted

A trolley car collided with a milk cart and gallons of milk splashed into the street. A crowd gathered; a small man had to stand on tiptoe and keep dodging about to see past a fat lady in front of him. "Goodness," he finally exclaimed, "what an awful waste!" The fat lady faced about and glared at him darkly. "Mind your own business," she snapped.

List of Subjects Covered in

"CEMENT HOUSES *and* HOW TO BUILD THEM"

PART I.—Preface—Introductory Notes—Why You Should Build With Cement—Definition of Terms Used in the Cement Industry—Different Kinds of Cement.

PART II.—Specifications for Portland Cement—How to Test Cement.

PART III.—CEMENT BLOCK ARCHITECTURE—Concrete Building Blocks—A Word of Caution—General Rules—Standard Specifications for Concrete Blocks—ESTABLISHING A CONCRETE BLOCK BUSINESS—Location of plant; building; equipment; accessories; importance of skilled labor; patterns. CONCRETE BLOCK SYSTEMS—Block machines; mixing; concrete mixers; facing; caps and sills; stonettes. PROPORTIONS. CONCRETE AGGREGATES—Watertight concrete; porous aggregates; fireproof aggregates; voids in aggregates; percentage of voids. SAND—Clean sand; allowance for voids; rich mixture; medium mixture; ordinary mixture; lean mixture; test for sand; test for strength; sand and tensile strength; principles for selecting sand; standard sand; weight of sand; coarseness of sand; cleanness of sand; sand vs. broken stone and screenings. STONE AND GRAVEL—Values of different stones; selection of stone; hardness of stone; stone and gravel compared; screening the gravel; best sizes to use. WATER—Cleanness of water; amount of water; injury by too little water; immersing concrete blocks. HOW TO OVERCOME CONCRETE TROUBLES—Crazing or hair cracks; expansion and contraction; efflorescence; endurance. CURING STONE BY STEAM—Tunnel Steaming process; blocks must be kept damp. COLOR OF CONCRETE BLOCKS—Coloring artificial stone; black stone; blue stone; red stone; brown stone; table of color results; mixing coloring with cement.

PART IV.—WATERPROOFING—Compounds and liquids; hydrated lime.

PART V.—CEMENT PLASTER OR STUCCO WORK—Applying stucco to old walls; stucco on frame buildings; cutting with hammer; painting the surface; use of colored aggregates; metal lath. CEMENT MORTAR—Expansion and contraction; fireproof qualities; hardness and resistance; fine cement best.

PART VI.—MONOLITHIC CONCRETE CONSTRUCTION—Advantages; care in tamping; forms; removing forms; proper time to remove forms; color variations; proper finish; rubbing down.

PART VII.—REINFORCED CONCRETE—Expanded metal meshing; columns and piles; reinforced walls; examples of strength; tension and compression; adhesion; vibration; placing reinforcing rods; dimensions for beams; large beams; reinforcement for tanks; concrete as a fireproof material.

PART VIII.—SIDEWALKS, PAVEMENTS and FLOORS.—Foundations; measurements; troweling; pavement foundations; laying pavements; good foundations. EXPANSION JOINTS—Sand joints; curbing; mixture; finishing coat. CONCRETE FLOORS—Veranda floors; basement floors; stable floors; jointless floors; grooved and roughened surfaces.

PART IX.—WALLS AND FOUNDATIONS—House foundations; excavating; partition walls; barn foundations; comparative cost of walls; blocks for foundation walls; corrugated concrete piles.

PART X.—STEPS AND STAIRS—The risers; steps out of doors; reinforcement; concrete steps; steps on terraced grounds; porch steps; flying stairs or steps; platform steps; cast steps; side walls for steps; slabs; paving slabs.

PART XI.—CONCRETE ON THE FARM—Concrete sewer pipes; culverts; concrete fountain; greenhouses; frames for hot beds; concrete ice house; storage buildings; root cellar; mushroom cellar; concrete fence posts; concrete silo; silo of concrete blocks; windmill foundation; poultry house of concrete blocks; hog pens.

PART XII.—CONCRETE TANKS AND CISTERNS—Concrete tanks; waterproof concrete tanks; building a concrete cistern; concrete well curbs.

PART XIII.—ROOFS, CHIMNEYS, Etc.—Concrete roofs, cement brick for chimneys, chimney caps, fireplace of concrete, concrete for hearths.

PART XIV.— MISCELLANEOUS INFORMATION—An ideal concrete; artificial marble molds; causes of failure; freezing; effect of lye; influence of tamping on strength; ramming concrete; troweling concrete; piers and posts; rubble stone and its use; gauging concrete; parts of cubic yard of concrete; decoration of colored clays; concrete sinks; concrete graves.

PART XV.—PERSPECTIVE VIEWS and FLOOR PLANS OF CONCRETE BLOCK AND CEMENT PLASTER HOUSES, finest ever designed. All houses illustrated with fine half-tone cuts, printed on enameled paper. The illustrations show the houses exactly as they will look when built and give a very clear idea of their appearance. All the floor plans are shown, giving the location and dimensions of all rooms, closets, porches, etc., with detailed information as to both interior and exterior. The houses illustrated range from the small to the medium large in size, such as will appeal to the average man or woman who intends to build a home.

(See Next Page.)

Now Is the Time to Build

FIGURES ON THE COST OF MATERIALS IN COMPARISON WITH THOSE OF LAST YEAR PROVE NOW IS THE ADVANTAGEOUS TIME

PRESENT day commerce is based upon the idea of specialization. One man raises produce, another builds houses, another makes clothes; others engage in transporting various commodities; still others work in factories, shops, foundries and mills. The men who build houses can not consume all the potatoes raised by the farmers. The farmers can not give all the carpenters, masons and plasterers steady employment. When the artisans are out of employment they can not secure the means of purchasing for their requirements and the result is a lighter demand all along the line. Start one faction to work and you start them all.

When the call for carpenters is greater than the supply men unskilled in the work can secure employment at high wages and skilled workers can command special prices. Here enters and becomes active the law of supply and demand which may not be reversed or defied with impunity.

When the supply of labor is greater than the demand workmen can be secured on better terms and will give greater and better service. This is the logic of the law mentioned and of human nature.

Labor Is Better

Labor is cheaper now than it was a year ago, although nominally wages are the same. It is cheaper because it is better.

Materials are cheaper than they were a year ago, not for the same reason that labor is cheaper but in the actual prices that must be paid.

Last year the majority of the dealers in building material had all the trade they could handle. This year business has been fair, as shown by the building records, but there is room for a very considerable improvement.

The one great reason why building operations should be undertaken now or why contracts for supplies should be entered into is that they can be made on more advantageous terms.

Lower Prices Rule

Materials can be secured for lower prices, will be delivered more promptly and in a more satisfactory manner than during either 1906 or 1907.

As a general proposition lumber now is being sold for 10 to 15 per cent less than during last year. In some cases where the trade is supplied with special woods a reduction to that extent has not been made. However, 10 per cent probably represents about the general decline in the retail price of building material.

Figures Do Not Lie

A Cleveland operator has supplied some specific information showing the relative cost of building in 1907 and 1908, which is reproduced herewith:

	1907	1908	Per cent of Decrease
Masonry and grading	$1,329	$944	29.0
Plastering	585	313	46.8
Plumbing	640	500	21.9
Heating	730	570	22.0
Painting	530	400	24.5

Lumber, $4 to $6 a thousand less.

The foregoing comparative values represent actual figures secured by a gentleman who wished to build. The 1907 prices were made during the latter part of that year and the 1908 prices this month.

It is high time the general public informs itself of this condition of affairs and profits by the opportunity now presented, one which probably will not long be available.

Reduction Not Uniform

No uniform reduction in the retail prices of lumber has been made by the dealers of the country. Some have very materially reduced their prices and claim to have encouraged building by this policy. In other sections, however, cheap lumber now being offered has to be transported such great distances that the freight rates put a high value on the products. This particularly is true throughout the eastern section of the country, and to a more limited extent in the northern territory where local supplies are inadequate.

Referring again to the comparative schedule of values submitted, it will be seen that the total cost in 1907 would have been $3,814 for the items mentioned. For 1908 the bids put in represented a cost of only $2,727, a saving of $1,087 on the building for which prices were secured, representing a decrease of 28.5 per cent. This reduction possibly may be out of the ordinary. It scarcely is possible that building could be done for a third less now than in 1907, but the figures given represent estimates made by contractors during the two periods.

Now Is the Opportunity

This showing is sufficiently strong to warrant every prospective builder or everyone who is in a position to build in taking this matter up and making a thorough investigation of the subject.

Conditions in different parts of the country vary. What is said of one town may not be applicable to another and probably would not be applicable to all the country, but in every city and every village in the United States it is a comparatively easy matter to determine the relative cost this year and last, and beyond question it will be found that buildings can be put up this year at a saving of anywhere from 10 to 25 per cent of the cost in 1907.

Pre-eminently, emphatically and conclusively this is the time to build.—*The American Lumberman.*

"Cone Pines"

To the Editor: Cherokee, Iowa.

I send you a photograph of our home, "Cone Pines," for the Magazine. I remodeled it from a six room colonial cottage; cost $2,800.

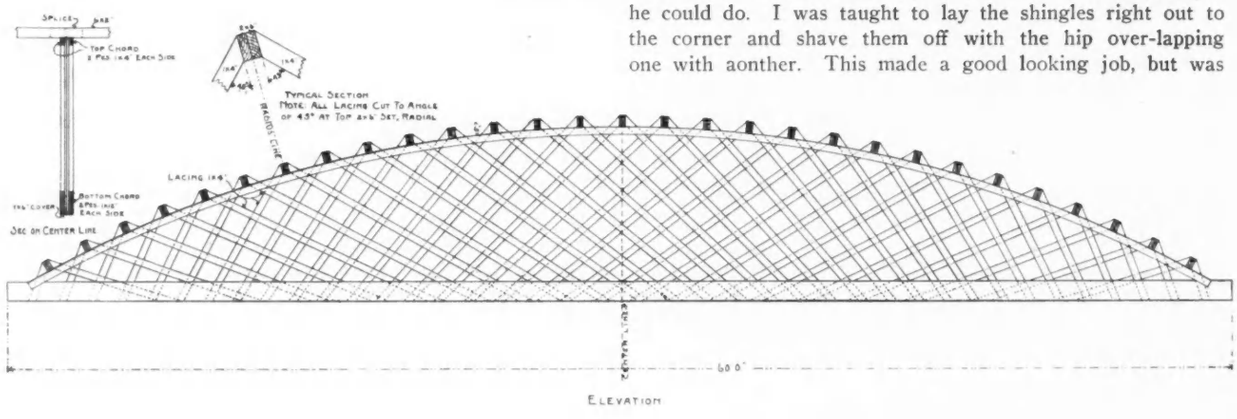
The veranda is 72 feet long, extending full length across the front and the two sides of main part. The veranda foundation is 5 feet high, made of figured concrete blocks set in open-work lattice style. J. M. WILKIE.

Roof Truss for Rink

To the Editor: Gibson City, Ill.

Please give me an idea of a truss roof to span a 60 foot building, to be used for a skating rink. I want something cheap, yet substantial and safe. MART ROBERTS.

Answer: We presume that only the roof is to be carried with allowance for wind pressure; for this we believe the accompanying illustration furnishes one of the best form of trusses, as it is built of light dimension lumber. These trusses to be placed 10 or 12 feet apart with 2 by 6 inch rafters placed on the curve, as shown. The roof boards are nailed to these rafters and can be covered with most any composition roofing material. It is taken for granted, of course, that the joints in this, as well as in any form of truss, should be tight, with perfect bearing at all parts and well nailed. A. W. WOODS.



To Shingle a Hip

To the Editor: Highland, Mich.

I think the question asked in the May number of the AMERICAN CARPENTER AND BUILDER in regard to saddling a hip, was intended to mean laying the shingles. I have noticed many different ways of shingling hips, some of which looked as though some one was trying to see how clumsy a job he could do. I was taught to lay the shingles right out to the corner and shave them off with the hip over-lapping one with aonther. This made a good looking job, but was

not first class on account of the corners splitting off. The metal hip shingles are the things to use now, and for a plain roof, I make what I use from sheet tin. I get the tin cut about 3½ by 9 inches and turn the corners of one end over on a shingle. Select a shingle the same width as the tins, and cut the corners of the butt to conform to the courses of shingles, then tack it to the side of the work bench. See Fig. 1. Proceed by placing the tin against the shingle,

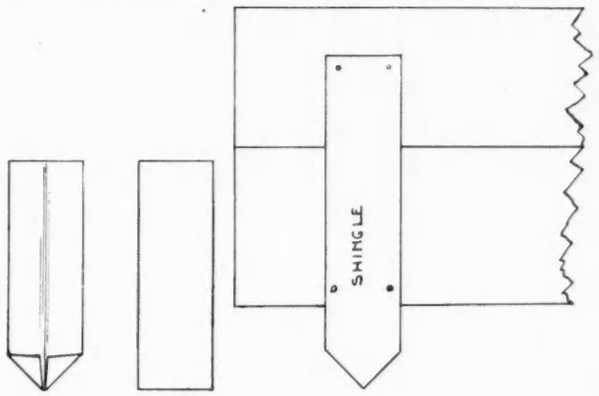


FIG. 3. FIG. 2. FIG. 1.

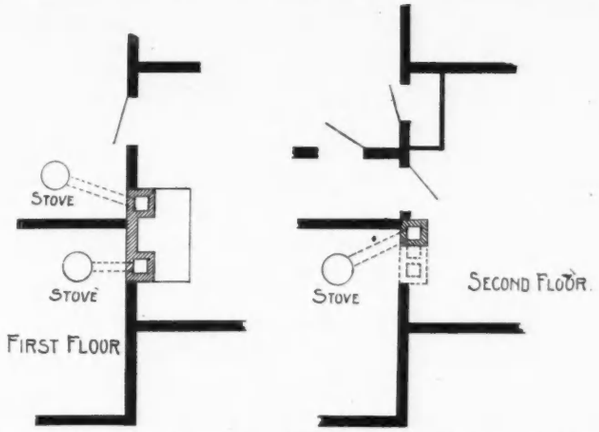
top end of tin even with the point of shingle, and turn corners down over shingle. Then bend them lengthwise down through the center and telescope them together. These can be made very quickly and require no tools whatever. Figs. 2 and 3 show the tin before and after being bent. In using the metal hip shingles, it is only necessary to saw the shingles to conform with the hip and butt them together. I use the butts sawed from valley shingles just as they are, if I happen to be shingling a valley the same pitch.

ALBERT GONNE.

Flue Construction in Connection with Fireplace

To the Editor: Vincennes, Ind.

I am enclosing a sketch of part floor plans of first and second floors. The fireplace and flue construction puzzles me a little. The two outer flues will start in the basement, and I am to bring them all together just below the second



floor. I want to know if this will work all right, or had I better run up two flue holes?

I also want to know how to fix the fireplace all ready for use, but do not want to set up the mantel for a while. That being the case, please show how I can best do this economically. GEO. SCHLAMERSDORF.

Answer: The accompanying illustration is a reproduction of Mr. Schamersdorf's sketch, which shows that he desires to have three stove connections besides that for the fireplace, with but one flue from the second floor without enlarging the opening. This is not a good arrangement. It is better to always make the fireplace flue independent of the other flues, then there can be no downward draught, which will occur when the capacity of the opening is overtaxed in certain conditions of the weather. Two flues might answer all right, but for the little extra expense, would recommend that there be three separate flues, as shown by the two extra ones indicated by the dotted lines. This can be done by drawing over to a plumb line at one end of the fireplace. The central hole should be used for the fireplace. The stove on the second floor should connect with either of the end flues, as desired.

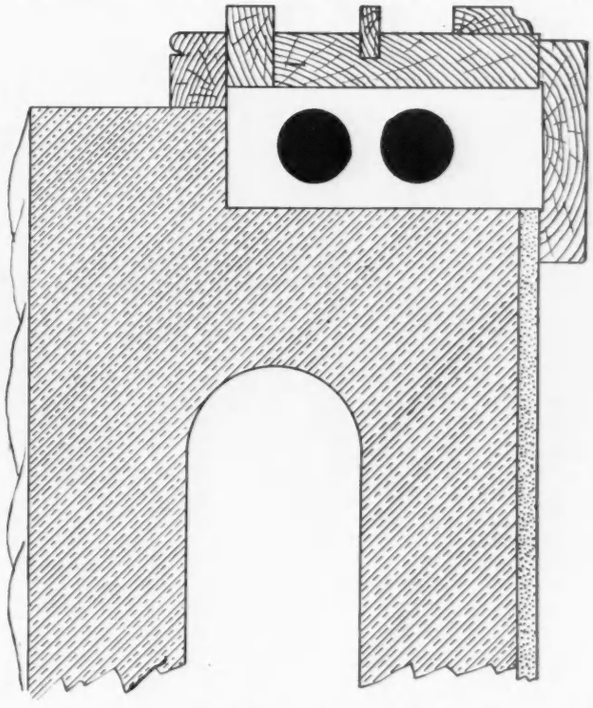
As to the second question, would plaster the brick work same as other walls and make a form to fill the opening, which could be ornamented as desired. A. W. WOODS.

Window Frame for Concrete Blocks

To the Editor: Tiskilwa, Ill.

I would like to know if it is practical to put in window frames without box for weights, using instead concrete blocks with the inner corner cut out to form the box, as shown in sketch. E. A. KENNEY.

Answer: We herewith produce Mr. Kenney's sketch, showing the sectional part of the frame in connection with the block. While it is true that frames may be made in this way, at a saving over the ordinary box frame, we do not



think it possesses enough merit for its adoption, because it cannot be as rigidly anchored and made as storm proof as the solid box frame, which can be more easily fastened to the blocks and furnishes a nailing for the casings. A. W. WOODS.

A Problem

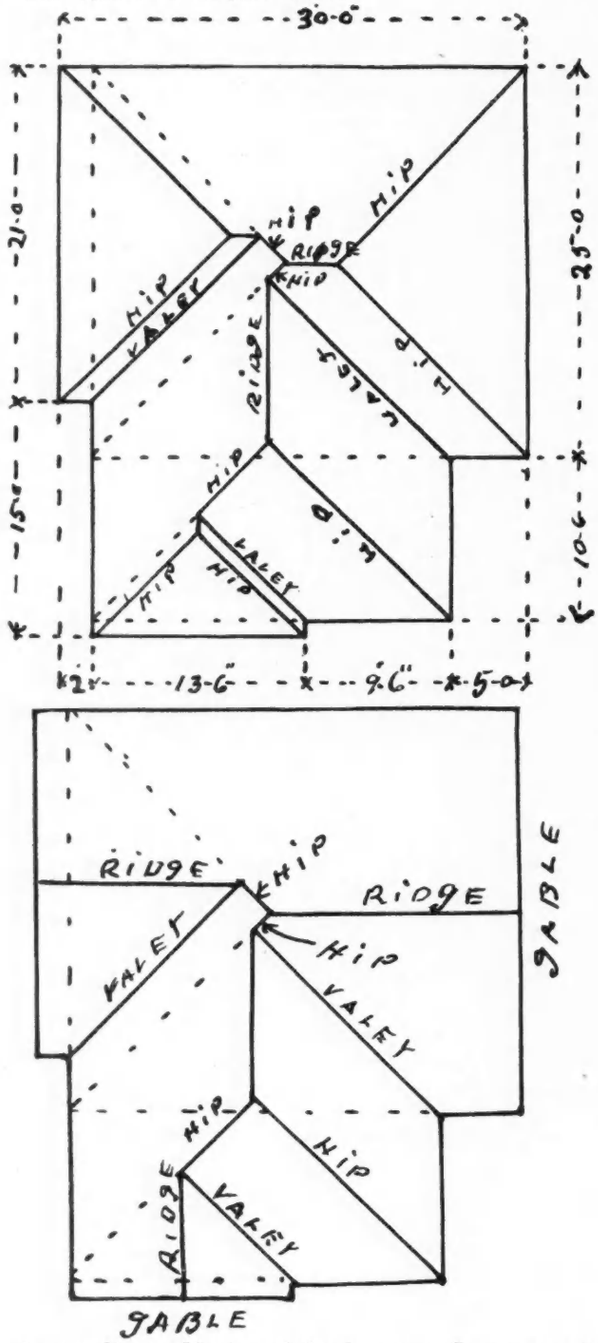
To the Editor: Coden, Ala.

Here is a problem for your readers. How far from the top end must a timber be cut which is 30 feet long, 10 inches square at top and 12 inches square at bottom, so that the top piece will contain as many feet of lumber as the bottom piece? If you have time to fool with this I would like an answer. I have worked overtime on it and think I have it, but I want someone else to figure it. H. E. GRAHAM

Roof Plans

To the Editor: Brooklyn, N. Y.

I enclose two sketches in reply to F. R. Wright's inquiry which appeared in the June number.



I am a Charter Member of the AMERICAN CARPENTER AND BUILDER and am glad of it. You are certainly publishing a great magazine. GEO. E. THOMAS.

Finish for Concrete Floors

To the Editor: Staunton, Va.

I have laid a concrete floor in a basement room intended to be used as a den. Same has been marked off in imitation Dutch tiling seven inches square. The wearing surface was colored a pressed brick red by the adding of Venetian red in the mixing. While this has produced fairly good results it is not quite as uniform as I expected by reason of the color fading slightly when drying. How can a stain be made that will give me a pressed brick red? And could a shellac or any finish be used on top of it to bring out the color? Also, would it be advisable to fill the joints with anything? And if so, what? M. W. MERCEREAU.

Answer: Please refer to the answer given to E. A. Bean on page 232 of the May issue of the AMERICAN CARPENTER AND BUILDER, headed "Paint for Asphalt Floors." The formula mentioned there has been very successfully used for painting cement floors. This could be tinted with Venetian red to produce the shade desired. Shellac should on no account be used, as it will not stand moisture. Whether the joints can be filled or not, would depend upon their depth. The best thing to use would be thin cement and sand, or marble dust. It would be necessary first to thoroughly wet the joints and keep them wet, while the cement is setting, in order to insure the permanency of the filling. Unless these joints are deep, would say they had better remain unfilled.

EDWARD HURST BROWN.

Appreciation

To the Editor: Highland, Mich.

I have been very much pleased and interested with your paper during the short time that I have been receiving it, and I realize now what a help it would have been to me when I was learning the trade if I could have had such helps as you are printing now. I get many helpful ideas now; but if I had known them twenty years ago they would have been valuable many times. I think the contributors to the AMERICAN CARPENTER AND BUILDER are doing great work in helping out those who are now learning.

ALBERT GONNE.

To Lay Off a Square Corner with a Tape Line

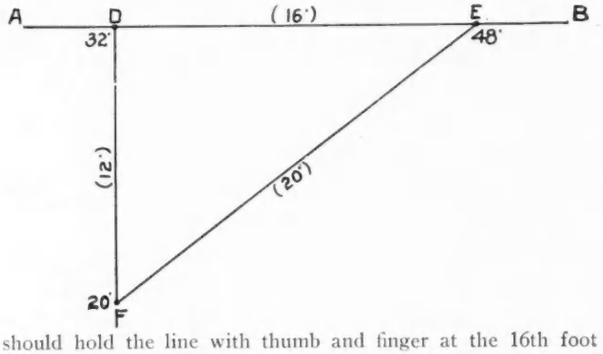
To the Editor: Fort Wayne, Ind.

Will you tell how to square an excavation for a building with a tape line without the use of other lines and stakes? I know there is a way of doing it, and would like to see it illustrated in the AMERICAN CARPENTER AND BUILDER.

A SUBSCRIBER.

Answer: The method is simple and may be quickly done by three parties, as follows:

Run off 24 feet, then the first party should take the end of the tape and hold it at the 24th foot. The second party



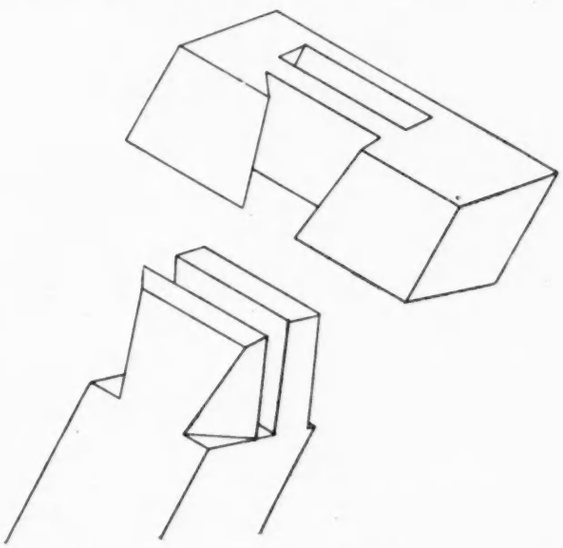
should hold the line with thumb and finger at the 16th foot and the third party in like manner at the 10th foot. Draw till the line is tight, and it will form a right angled corner true enough for proving up excavation work. The figures given are absolutely correct, but as a little is liable to be lost at the corners in not being able to hold the tape so as to make sharp bends, may cause a trifle variation, but it will be true enough for the purpose stated. However, this may be largely obviated by holding a nail, allowing the tape line to pass by it at the figures mentioned above, which is simply the 6, 8 and 10 rule, as will be seen by the length

of the different sides. Other figures may be used provided they are in the same proportion, as 12, 16 and 20, which will be seen are double those mentioned above. The illustration shows the latter figures applied to a straight line as at A-B. Now suppose we wish to square cut from this line at D. Measure back on the line from this point 16 feet, as at E, and with the end of the tape drawn to 48 and stationed at E, the 32 foot mark will be at D and the third point will be at the 20 foot mark at F, then D-F will be at right angles to A-B. A. W. Woods.

Mortise Puzzle and Answer

To the Editor: Highland, Mich.

I have at home a T puzzle similar to the one offered for solution in May number of the American Carpenter and Builder, with the exception that it has another mortise and tenon. The puzzle is one that my father made many years



ago, and is much prized by myself and the rest of the family. I have seen several quite good mechanics mystified by it until shown how it was made. The cut will show the solution of both ours and the one by Mr. Strobus.

Albert Gonne.

How to Frame Intersecting Roofs

To the Editor: Peoria, Ill.

Enclosed herewith you will find a diagram which I have intended to be the plan of a corner of a building on which there is an octagon tower with roof intersecting the main roof. The pitch of the two roofs may be any pitch desired.

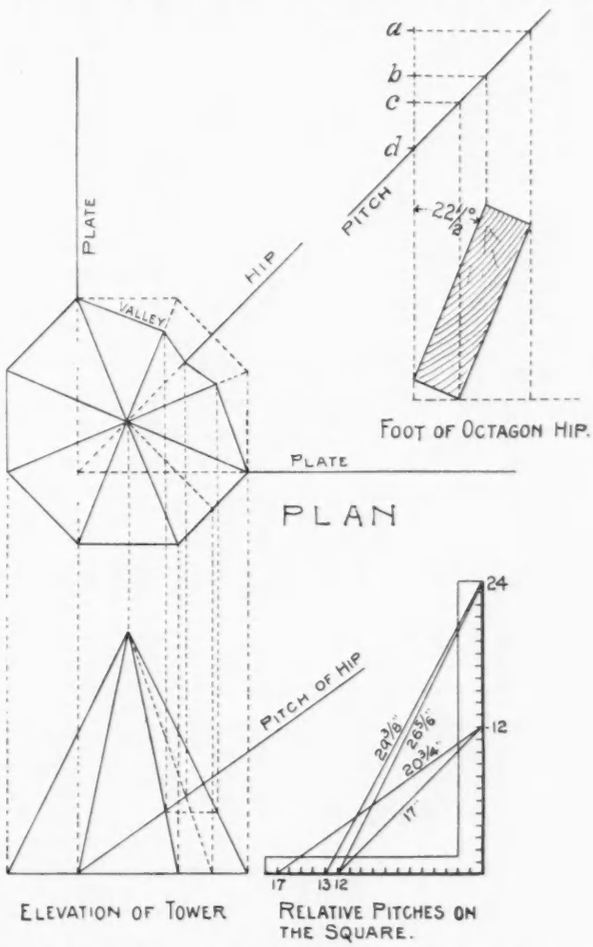
First. How could I proceed to lay off such a figure to make the distances come right or to determine the length of the sides of the octagon?

Second. How could the various bevels and lengths be obtained if the octagon roof is framed into the main roof before the latter is sheathed? B. F. Oswald.

Answer: In answer to the first question: To find the side of an octagon, multiply the inscribed diameter by 4.97 and divide by 12, which will represent the feet and inches. Thus, if the diameter is 10 feet, it would be 10 times 4.97 equals 49.7, divided by 12 equals 4 feet 1 7-12 inches. Answer.

The operation may be simplified by multiplying by 5 instead of 4.97 and divide by 12 and then deduct 1-32 of an inch for each foot.

Second. Would treat them as individual roofs, and as no pitch is given, will assume that the main roof is one-half pitch or 12 inch rise to the foot and one pitch or 24 inch rise for the octagon, as shown by the lines on the square in the illustration. Taking the main part first, 12 and 12 will give the seat and plumb cuts for the common rafter. 17 and 12 will give the same for the hip, 12 and 17 will give the side cut of the jack (cut on 17 side); 17 and 20¾ will give the side cut on the hip (cut on 20¾ side); 20¾ and 12 will give the backing of the hip (the angle being on the 12 side). For the octagon, it is 12 and 24 for the seat and plumb cuts for the common and jack rafters. 13 and 24 seat and plumb cuts for the hip. 5 and 26 5-6 will give the side cut of the octagon jack (cut on the 26 5-6 side). However, the latter figures are beyond the length of the blade, consequently other proportions must be substituted,



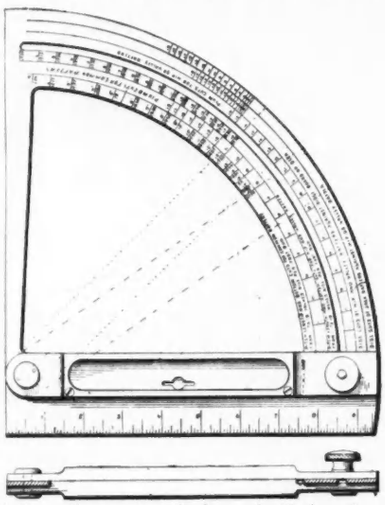
as one half of the above figures. Then 2½ and 13 5-12 will give the same result (cut on the 13 5-12 side). The figures that give the side cut of the jack in either case, also give the face cut across the roof boards to fit to the hip, but the cuts are reversed on the square. As to the lengths of the rafters, the figures shown on the diagonal lines represent the length for one foot run and by multiplying these figures by the feet and fractions of a foot in the run, will give their lengths. If a ridge board is used, allowance for one-half of its thickness should be made.

Most carpenters find the length of the rafters by what is called running the square, that is, by placing the square on the rafter at the figures shown as many times as there are feet in the run and mark along the blade and tongue. If there are fractions in the run, simply measure off the amount, square out from the last plumb line, which will give the proper point for the plumb cut. This requires careful work, and when properly done, the lengths will take care of themselves; therefore it is not necessary that the carpenter know the lengths. A. W. Woods.

PRACTICAL TRADE APPLIANCES

Steel Square Framing for All

As was recently stated by Alfred W. Woods in this magazine, the Steel Square contains within itself—for the steel square specialist—the easy solution of all framing problems; to read and make use of the information contained, however, takes a great deal of skill and technical knowledge—more, in fact, than the majority of builders possess or feel that they can take time to acquire. We all know how difficult it is to read and apply the Steel Square; we also know the immense handicap a workman is under who does not understand its use.



It has been truly said, "Every day we find out how little we know about most things!" That is emphatically the case with most, when it comes to steel square framing. It was therefore with a great deal of interest and surprised approval that we examined, a short time ago, a newly patented tool, the "Calhoon Computing Square," illustrated herewith; for on it, expressed so clearly and so simply that even a child could read and apply, were given all possible framing cuts for every class of building work.

We found it a handsome, practical, durable tool, giving the results desired. As Mr. M. M. Lloyd, master mechanic, East St. Louis & Suburban Railway Company, has said, "It is the most complete tool I have ever seen; the best framing tool in existence."

Dwight L. Stoddard has said, "The day of big chests and large kits is fast passing away." This is exactly the case for the progressive builder who uses the Calhoon Computing

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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.

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In the manufacture of **Vulcanite Roofing** all the felt used is 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.**

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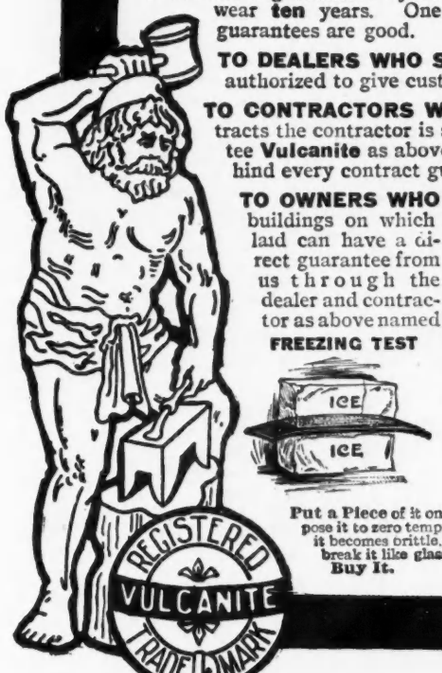
TO CONTRACTORS WHO LAY IT.—In bidding on roof contracts the contractor is authorized to guarantee **Vulcanite** as above. We will stand behind every contract guaranteed.

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



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Soak It in water over night; if it absorbs moisture and gets soft and flimsy — **Don't Buy It.**

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Square; for, although weighing but 2½ pounds, it combines within itself six different tools—and these the six necessary and cardinal tools of the building world: It is an organization of square, tri-square, bevel-square, plumb, level and bevel-protractor into one tool; when you pick it up you have any one of them ready for operation. There is nothing to detach or attach in its use, but all is in one compact tool. Virtually when you take this mechanical device with saw and hatchet in your hand, you have a kit of tools for any ordinary work. Its application covers all framing, bevel and miter cuts to be found in the carpenter world.

The Calhoon Computing Square is substantially made of steel with nickeled finish, with steel cut graduations on the quadrant or dial plate, which are automatically found and reached at a glance by the pivoted swinging handle with set screw, as shown in cut. It is guaranteed to do all that is claimed and even more. The price is in reach. The advertisement on page 437 tells you where and how to get one. Others have shown us, let us show you.

Catalogue Exceptional

We have received from the Canton Art Metal Company, Canton, Ohio, a magnificent book,—the word catalogue doesn't do it justice—entitled "Art in Metal Ceilings." It is a most complete and serviceable volume, elegantly prepared. It is a pleasure to see a fine line of goods finely represented.

In the Dedication, its mission is stated:

"To our many old, and new customers, architects, contractors, builders and dealers in building supplies, we offer this book devoted exclusively to *Ornamental Steel Ceilings* and *Side Walls*, and with the large number of varied designs to select from, we feel sure that it will assist in filling all of their requirements in this line.

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THE CANTON ART METAL CO.,
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The Hand Saw—Its Care and Use

We are indebted to Geo. H. Bishop & Co., Lawrenceburg, Ind., for the following valuable information in regard to handsaws and their use. This company has made a specialty for years of high grade hand-made handsaws, and of filing and setting devices.

Saws of different kinds occupy an important place among the tools used on hand-made work of all kinds, and of these the handsaw comes first. They are made from 14 to 28 inches in length of blade. For all work of small or moderate size, the 20 or 22 inch saw shown in Fig. 1 is the most convenient. Handsaws are of two general kinds—rip and crosscut. The ripsaw, as the name indicates, is for cutting with the grain, or lengthwise of the board to be sawed.

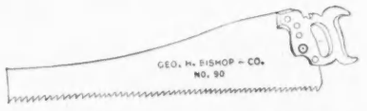
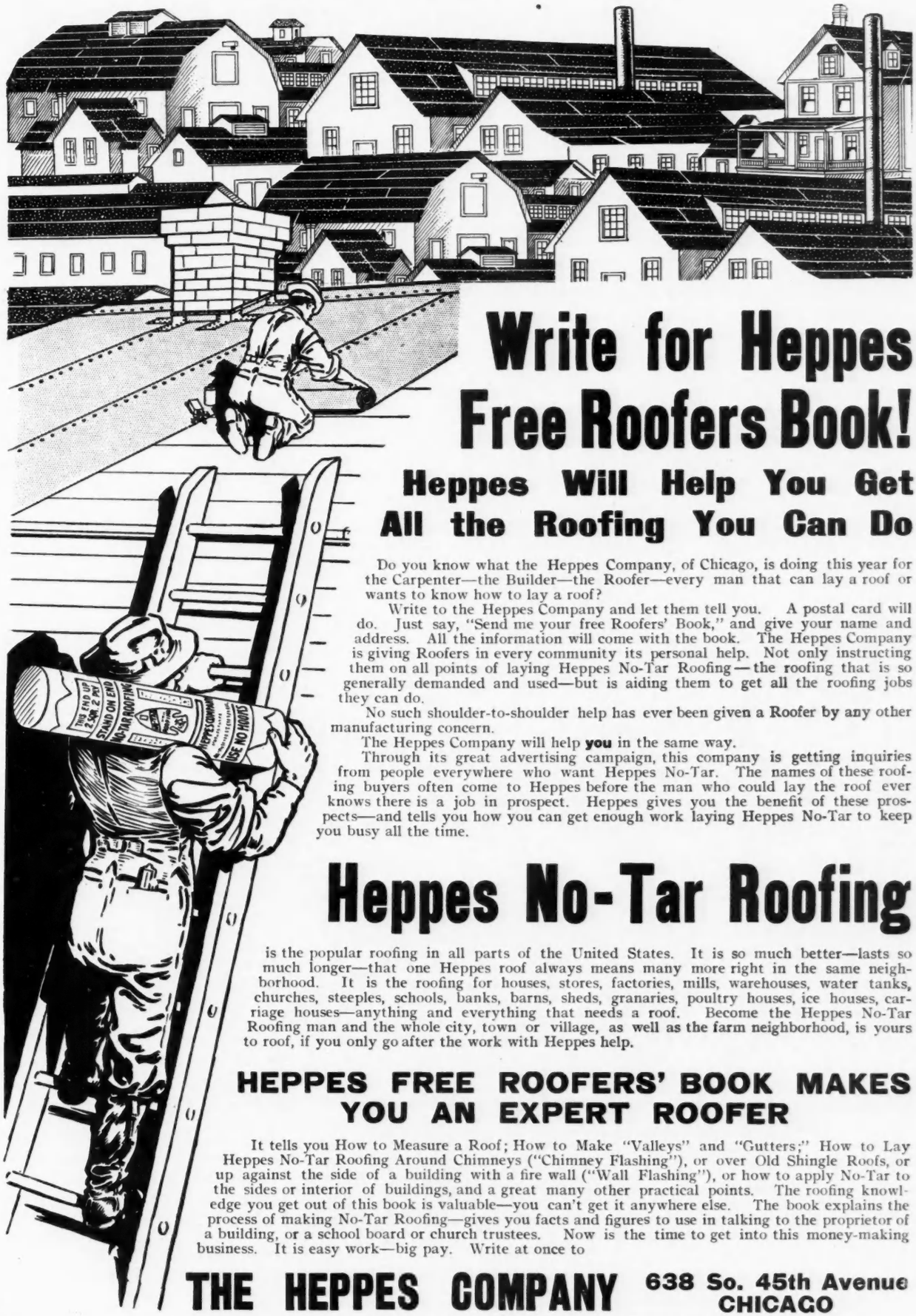


Fig. 1. Bishop No. 90 Hand Made Saw

A short section of such a saw is illustrated in Fig. 2. For pine or other soft wood, a ripsaw having three teeth, or four points to the inch, may be used, but for ordinary work, especially for hard wood, we would recommend a ripsaw having six points, and a crosscut saw of nine points to the inch. When filing



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It tells you How to Measure a Roof; How to Make "Valleys" and "Gutters;" How to Lay Heppes No-Tar Roofing Around Chimneys ("Chimney Flashing"), or over Old Shingle Roofs, or up against the side of a building with a fire wall ("Wall Flashing"), or how to apply No-Tar to the sides or interior of buildings, and a great many other practical points. The roofing knowledge you get out of this book is valuable—you can't get it anywhere else. The book explains the process of making No-Tar Roofing—gives you facts and figures to use in talking to the proprietor of a building, or a school board or church trustees. Now is the time to get into this money-making business. It is easy work—big pay. Write at once to

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the ripsaw, the file must be held horizontal and at right angles to the side of the saw.

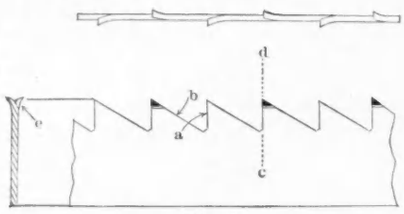

Fig. 2

The teeth should be filed with all the bevel on the back of the tooth, as shown at "B" in Fig. 2. The front or throat of the tooth must be at right angles to, or square with, the tooth edge of the blade, as at "A" in the same illustration. The position of the line "C D," whether perpendicular, as in the ripsaw, or slanting as in the crosscut saw, is called the "pitch of the tooth." In order to have the blade of the saw work freely, and to give it clearance (see Fig. 2) the points of the teeth are slightly bent—one to one side and one to the other side, as shown at "E," Fig. 2.

Fig. 3

This bending of the teeth is called the "set" of the saw, and should be on the extreme point of the saw teeth only.

When the points only are set the saw will work more freely, and the danger of springing or bending the blade of the saw while setting will be avoided.

When using the ripsaw the front or cutting edge of the saw blade should be held at an angle of about 45 degrees to the surface of the board, as shown in Fig. 4.

This brings the back of the teeth at nearly right angles to the fibres of the wood and insures an easy shearing cut.

For hard and well seasoned wood the handsaw requires very little set, but if the wood is soft, or if wet and spongy, considerable set will be required, for the reason that the fibers spring away from the advancing teeth and then press back again on the sides of the blade, causing the saw to work tight and to push hard.

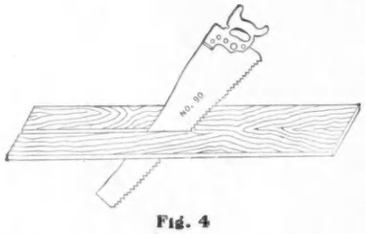

Fig. 4

In using a ripsaw the point of the tooth acts as a chisel, cutting off the fibres of the wood, each tooth chiseling off a shaving as it passes through the board. Fig. 3 "B." With the crosscut saw the sides of the teeth do the cutting, really severing the fibers of the wood twice, as shown in Fig. 3 at "A," the intervening projections being loosened and carried away as dust by the thrust of the saw.

In Fig. 5 we give a greatly enlarged view of a few teeth of a crosscut saw, showing the form of the teeth, not only on the hand saw, but on all saws designed to cut across the fibers of the wood.

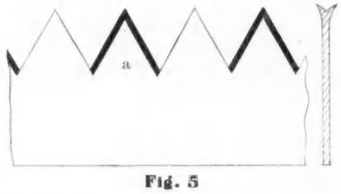

Fig. 5

As on the ripsaw, the teeth should be set on the extreme points only, and when filing the file is held horizontal, but on an angle of about 60 degrees to the side of saw blade.

It is not our intention to suggest any work for practice in the use of the handsaw, as the correct use will be acquired gradually while cutting out stock for different articles as may be required later.

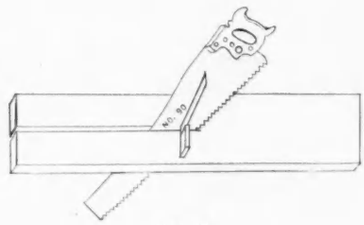

Fig. 6

In general, we would say to the beginner, do not press on or force the saw to cut too rapidly. Hold the saw firmly in the hand with the first finger pressed against the side of the handle and run it lightly and freely in the kerf, or cut, taking time to see that the line is followed exactly, and thus avoid all wasteful and crooked edges on the work, which must afterward be planed off.

While sawing, be careful to stand in such a position as to saw the edge square with the surface of the board. This position may be tested from time to time by setting a try square on the board and against the side of the saw, as in Fig. 6.

Back Saw

The backsaw shown in Fig. 7 is used on the bench, and is a bench saw, being used for light, fine work and for fitting and dovetailing. The filing and setting are the same as already described for handsaws. Backsaws are made of many sizes. A ten or 12-inch will be a convenient size for general use. As the medal back holds and stiffens the saw, when using, hold with one hand only.

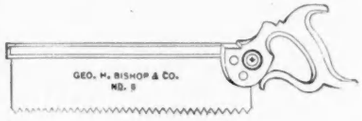

Fig. 7

Never under any circumstances press on the saw with the other hand, but run the saw very lightly on the wood. Should any trouble be found in starting the cut; first draw the saw backward against the finger of the left hand, which grips the block of wood being sawed.

Much trouble is sometimes found by beginning in starting the cut, the tendency being to cut too deeply into the wood, especially if the saw is sharp, making it hard to begin the cut close to the line, and often splitting off a corner from the wood. To avoid this trouble, hold the handle of the saw high, as shown in Fig. 8, drawing the saw backward with a pulling stroke toward the operator, and steadying the blade of the saw with the first finger of the left hand. This will make a slight kerf, which can be increased by a very light pushing stroke. At each succeeding stroke gradually lower the handle end of the saw until a horizontal position is gained. The sawing must in all cases be done with a light lifting stroke, without any forcing into the wood, using long, steady strokes so as to use the entire length of the saw, and to bring all the teeth into use.

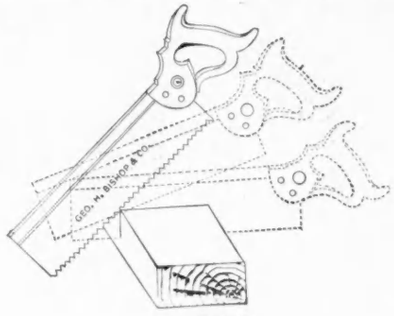
Fig. 8

To all who wish to acquire skill in the use of this important tool, we recommend the following exercise for practice: Take any block of wood from 12 to 16 inches long, about two inches wide, and from one and one-half to one and three-fourths inches in thickness, and with a try-square and a sharp-pointed pocket knife lay out lines, as partially shown in Fig. 10, on the front, upper and back sides of the block.

(*Continued on page 500*)

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The Chicago House Wrecking Company is the largest concern on earth devoted to the sale of Building Material and General Supplies direct to the Carpenter and the Contractor. By dealing with us you are purchasing at first hands. This company was organized in 1893 for the purpose of dismantling the Columbian Exposition at Chicago. Since that time we have successfully purchased and dismantled every Exposition of any note. We have from this one source alone sold over One Hundred and Sixty-five Million feet of lumber. It was from this natural cause that we engaged in the lumber business. We found that it was impossible for us to successfully take care of the thousands of our customers and supply them with lumber from this one source. As a consequence we purchased outright various saw mills and also bought at forced sales millions of feet of high grade, brand new lumber. In addition we have for sale a complete stock of **mill work, plumbing material, heating apparatus, structural iron, hardware** and everything that enters into the construction of a building of any kind or for any purpose. Our fame is National. No other firm can make the sweeping statement that we do: That you can come into our establishment and buy everything needed both to build the building and completely equip it. We invite inspection of our stock.

Fifty Million Feet In Stock

At the present time, we have for quick sale over fifty million feet of brand new, first class, high grade lumber of every kind. We can furnish you lumber for building houses, churches, barns, stores and factories. And it is the best grade of lumber. Just as good lumber as is to be found anywhere on earth. We are making special prices to those who buy at once. Never in years has lumber been offered at such prices as we offer it. The best proof of this is to allow us to make a bid on your estimates. Just make a complete list of everything you need for any particular job you may have on hand and it will surprise you what we can do in the way of prices. Nothing like it was ever heard of. The best and most convincing proof of our prices is the fact that during the past sixty days while others have been bewailing poor business, we have steadily increased and have sold vast quantities of lumber and building material. Much more in fact than we have ever sold in any corresponding period in the history of this business. You will save in dealing with us. Our broad and binding guarantee protects you absolutely. You will get from us just the material that you purchase. It stands to reason that our goods must be right. How else could our business have attained its wonderful commercial proportions? All we ask is an opportunity to convince you. Or, better yet, come on to Chicago, visit our yards, see our goods. We will show you it is all that we represent. Then and there we will make you a price so low that it is bound to secure your business. You can't overlook such a chance as we offer. It is the opportunity of a life time. You will never again be able to purchase lumber and building material at such low prices as we offer today. Write for particulars.

Satisfaction Guaranteed.

We guarantee absolute satisfaction. We mean every word of that. We want your business only on a square business-like basis. We will deal honestly and fairly with you. If you buy any material not fully up to our description, we will either refund the purchase price or exchange it for correct material. This company has a capital stock and surplus of over One Million Dollars. We refer you to any Bank or Banker anywhere. Write to any commercial agency or ask us for names of people who have bought their lumber from us recently and we will send you copies of hundreds of letters received by us daily. Our best advertisement is the vast number of satisfied customers.

Write Today For Our Low Lumber Prices

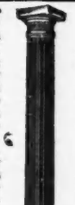
Ask us to send you our latest lumber price list. It will be sent you so clearly and plainly that you can tell at a glance just what our quotations are. The grades are clearly defined. No attempt to humbug you on quality. We want to furnish you just what you buy. We want you to be able to say you "buy your lumber and building material from us and get value for your investment." That's the way we built up this business. That's the way we intend to continue to build. We require your patronage and good will. Out-line your needs and we will make you a reply so convincing and clear that you can't help but give us the business.

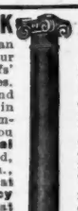
Everything Used In Building Sold At A Big Reduction

BARGAINS IN DOORS

5000 4-panel **Doors** 1 3-8 in. thick, size 2 ft. 6 in. x 6 ft. 6 in. 98c each. Size 2 ft. 8 in. x 6 ft. 8 in. $1.05 each. We carry a complete stock of brand new doors of all sizes and in every specification. Handsome high grade front and vestibule **Doors,** strictly "A" quality and the best of their respective kind. They are set with bevel plate glass, or, we can furnish them glazed with fancy lace design, double strength glass. They range in price from $3.75 to $20.00. High grade **Front Doors,** brand new, strictly "A" quality White Pine, glazed with sand blast glass size 2 ft. 6 in. x 6 ft. 6 in. $3.15. Other sizes at proportionate prices. California Redwood **Sash Doors** strictly first class glazed with clear glass, 2 ft 6 in x 6 ft. 6 in. $2.50. 2 ft. 8 in. x 6 ft 8 in. $2.60. **Double Sash Doors** for stores or vestibule strictly "A" quality White Pine, 1 3-4 in. thick, glazed, size 5 ft. x 7 ft. with double strength glass $9.00. All sizes in stock up to 6 ft. x 8 ft. Brand new 5 cross panel **O. G. Doors** with panels raised both sides, size 2 ft. 6 in. x 6 ft. 6 in., $2.07. Size 3 ft. x 7 ft. 6 in. $3.00. A complete stock of all sizes. Four Panel **O. G. Doors** White Pine size 2 ft. x 6 ft. $1.22. 10,000 **Used Doors** from various wrecking operations. In this lot we have doors taken from small cottages and buildings ranging from 2 ft. x 6 ft. up to 4 ft. x 8 ft. in good condition at 40c. Also fancy glazed **Front Doors** for residences ranging in various sizes at $1.50. and up. One lot of large barn doors used at the St. Louis Exposition, fancy designs, strongly built, each $2.00. Write at once for full particulars.

HIGH GRADE NEW MILL WORK





We are in better shape to quote low prices than any other concern on earth. We do not buy our goods in the regular way. We purchase at Sheriffs' Sales, Receivers' Sales and Manufacturers' Sales. We can furnish you mill work of every kind and character. We can furnish everything needed in mill work, both regular and special. Send us memorandum of your requirements. Let us make you an estimate. Note our low quotations: **Colonial Porch Columns** strictly No. 1 Poplar, trimmed, sizes, 6 in. x 6 in., 4 ft. long at $1.25; 8 in. x 8 in., 4 ft. long at $1.45. 6 in. x 6 in., 8 ft. long at $1.70. 8 in. x 8 in., 10 ft. long at $2.70. **Fancy Porch Columns** sizes, 4 in. x 4 in., 8 ft. long at 65c; 5 in. x 5 in., 9 ft. long at $1.15. 6 in. x 6 in., 10 ft. long at $1.80. **Fancy Porch Newels** 4 in. x 4 in., 4 ft. long at 35c. **Stair Newels** at $3.15 and up. **Angle Newels** at $1.90. **Fancy Stair Balusters** at 9c. **Porch Balusters** at 5c. **Corner Beads** at 10c. **Base Angles** per 100 ft., $1.90. **Porch Spindles** at 2c. **Porch Brackets** at 7c. **Fancy Face Brackets** at 35c. Adjustable **Gable Ornaments** at $1.25. **Corner Blocks** 2 1-4c. **Head Blocks** at 4 1-2c. **Base Blocks** at 4 1-4c. **Top Rail,** per 100 ft., $3.90. **Bottom Rail** per 100 ft., $3.90. **Quarter Round** per 100 ft., 30c. In fact we can furnish at exceedingly low prices everything you can possibly require in mill work. Get our prices on Flooring, Shingles, Ceiling, etc.

BARGAINS IN WINDOWS

5000 **Windows** from various wrecking operations at prices ranging from 29c up. In this lot are a number of windows that are very fancy that will be sold at half the price of new ones. **Fancy Front Windows** brand new, high grade 1⅜ in. check rail, they are up-to-date in design, bottom sash glazed with double strength clear glass, top sash with fancy ornamentations, size 3 ft. 8 in. x 5 ft. 2 in., $4.90. 4 ft. x 5 ft. 10 in. $6.35. **Cottage Front Windows** size 3 ft. 8 in. x 4 ft. 2 in., $3.52. 4 ft. x 5 ft. 2 in., $4.20. 4 ft. 6 in., x 6 ft. 2 in., $6.69. Two light check rail **Windows** size 1 ft. 8 1-8 in. x 3 ft. 2 in., 63c. 1 ft. 1 1-8 in. x 4 ft. 6 in., 74c. 2 ft. 1-8 in. x 3 ft. 10 in., 81c. 2 ft. 2 1-8 in. x 4 ft. 10 in., 95c. Four light check rail **Windows** size 2 ft. 1 in. x 3 ft. 10 in., 70c. 2 ft. 5 in. x 4 ft. 6 in. 95c. Eight light check rail **Windows** size 2 ft. x 4 ft. 6 in. 77c. **Cellar Sash** two lights, size 2 ft. 1 in. x 16 in. 38c. 2 ft. 9 in. x 20 in. 62c. 500 **Storm Sash,** first class, two light brand new at 74c. 265 **Fancy Windows** from the St. Louis Exposition, each 60c. 1000 second-hand **Barn Sash,** each 52c. 5000 **Used Sash** from the St. Louis Exposition glazed with 1-8 in. ribbed factory glass in all sizes which we will sell at per sq. ft. 6c. All kinds of Window Glass, Plate Glass, Ribbed Sky-light Glass and everything required in Window Glass and Sash.

DON'T BUY YOUR BUILDING MATERIAL UNTIL YOU WRITE FOR OUR ESTIMATE

Rubberized Galvo Roofing

$1.25 Per 108 Square Feet.

The greatest Roofing value on earth. No higher grade manufactured. Unexcelled as to quality, wear and economy. Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Does not require a coating after it is on the roof. Weather-proof and fire-proof. Contains no coal. tar, residuum or injurious compositions. This roofing is bought direct from manufacturers and is usually sold at double our price. It is guaranteed to give lasting service. Rubberized Galvo Roofing is slate color, tough, leather-like material made of a combination of wool felt and highest grade of natural, pure asphalt. Makes buildings warmer in winter and cooler in summer. Not affected by acids or gases. Has rubbery surface and on this account we call it Rubberized Galvo Roofing. It toughens and hardens with age. We furnish with each order sufficient cement to make the laps and large head nails to put it on with. It is appropriate for any kind of building. **1 ply per sq., $1.25. 2 ply per sq., $1.40. 3 ply per sq., $1.75.** These prices are per sq. of 108 sq. ft., and are F. O. B. Cars, Chicago. Also have in stock 1000 sqs. of pure asphalt rock surfaced roofing bought by us at manufacturers' sale. Put up two to five lengths to a roll and each roll contains 108 sq. ft. Price per 108 sq. ft. including nails and caps. **$1.50.** Red, Rosin-sized Building Paper per roll 500 sq. ft. **45c.** Slaters Roofing Felt, per roll of 500 sq. ft. **75c.** Write for free samples.

PLUMBING AND HEATING

$1.25 for a White Enameled Kitchen Sink. 3,000 handsome cast iron, flat rim, white porcelain enameled, brand new kitchen sinks 16 in. wide and 24 in. long, with nickel plated strainer and collar for connection, all ready to install. Kitchen sinks with backs, made in one piece at prices ranging from **$7** to **$15.**

Steam and Hot Water Heating Apparatus. We guarantee to save you from 30 to 50 per cent on heating jobs of every kind. Send us your blue prints and specifications for our estimate. Our plants are of the most moderate construction. Write for anything.

$3.50 for a White Enamel Lavatory. In assorted styles and shapes for straight wall or corner of room. Our price is for lavatory slab, including waste plug, nickel plated overflow and brackets. Other styles including supply pipes, basin cocks and all nickel plated appliances, ranging in price to **$20.00.** We carry in stock at all times everything needed for installing plumbing for a building of any kind. No other concern on earth has such an enormous quantity of brand new material for sale. Send today for our plumbing catalog.

White Enameled Bath Tub

$6.00 buys a White Enameled Bath Tub. 600 "New Style" bath tubs, finest galvanized steel with the enamel baked on the inside, nicely finished on the outside, heavy wood rim, 5 ft. long. **Bath Room Outfits $25.** With steel enameled tub, vitreous earthen closet bowl, polished, hardwood seat and tank, complete with nickel trimmings ready to install. Other complete outfits from **$35.00** to **$150.00.**

Plumbing Material of all kinds at prices that do not represent cost of production. We buy at Sheriffs' and Receivers' Sales only; that's why we can undersell all. Send today for our low estimates on plumbing material.

FREE CATALOG COUPON

Fill Out, Cut Out, And Mail.

Name .....

Town.....

County..... State.....

Shall we send 500-Page Catalog.....

Do you want our Plan book.....

What items in this ad most interest you?

.....

I am a reader of American Carpenter and Builder

Address Chicago House Wrecking Co.

FREE 500-PAGE CATALOG NO. 742

We urge you to write at once for this bargain book. It is just out and ready to be sent on request. It contains a full record of our wonderful stock of Building Bargains. It also shows what we have on hand from our mammoth wrecking operations. It contains a record of thousands of bargains secured by us at Sheriffs', Receivers' and other sales. It is a book that must be in your hands if you want to be posted. It also contains a complete account of our purchases of Household Goods from Sheriffs' and Receivers' Sales. Cut out the Coupon in the corner of this advertisement and mail it to us and we will immediately send you this book.

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

OUR FREE PUBLICATIONS

Building News. We publish regulary a pamphlet devoted entirely to building material. It contains some 64 pages of sound information bearing strictly on items of interest to the Contractor and the Builder. Quotes our low prices on lumber and all kinds of mill work. Acquaints you with the various bargains we are constantly purchasing. If you want it ask us to put your name on our mailing list.

Book of Plans. We issue a Catalog containing from 50 to 100 designs of modern Bungalows, Cottages and Barns. We can furnish you a proposition to supply complete, all the material needed for the construction of any one of these plans and in addition we will supply blueprints and complete specifications. It is valuable and will be sent free.

THE contractor or builder who is in business for profit nowadays finds it necessary to take advantage of every practical measure of economy at his command.

With the cost of labor high, and competition keen, the best business judgment turns to buying such materials as will save labor and give that satisfaction which builds reputations.

Natural wood finish for interior decoration is used to a greater extent than ever before. The growing demand for finishing material which would bring out the beauty of grain—save the labor of mixing—match exactly at all times, under all conditions on various parts of the work led to the expenditures of a vast sum of money in perfecting Johnson's Wood Dyes.

The artistic coloring of wood in an economical and satisfactory manner is no longer a problem.

There is no question as to the superiority of Johnson's Wood Dyes. Because "stains" of all kinds have always been and always will be unreliable. And now you are safe and always will be safe in using Johnson's Wood Dyes.

Within the past two years it has cost us over $50,000 to find out things that others who make wood finishing preparations have yet to learn—we have paid $50,000 to insure your perfect satisfaction with Johnson's Artistic Wood Finishes *every time*.

Most wood and varnish "stains" are made of such cheap, poor aniline or coloring matter that they smudge over the grain of wood and hide all its beauty because the color particles are too coarse to penetrate the pores—thus they show "laps," light and dark spots and streaks, and they "rub off" on your hands and clothes.

Now when you once get wood *stained*—maybe you can "do something with it" to rectify the error and maybe you can't—it's better not to take chances—particularly when it *isn't necessary*. The cost of labor in "matching" and "trying" exceeds the cost of material always.

JOHNSON'S WOOD DYES

Actually Dye the Wood

Johnson's Wood Dyes are really *dyes*—not mere stains—Johnson's Wood Dyes *develop* the beautiful grain of wood, accentuating the high lights and low lights, because we use the finest and most expensive colors—colors which we must import because their equal cannot be obtained in this country.

And Johnson's Wood Dyes actually *color* the wood *deeply*—because they possess a peculiar penetrative power due to the use of a liquid vehicle which we have found to be to the chemistry of wood finishing what "lanolin" is to medicine—the greatest "pore penetrator:"

That is why Johnson's Wood Dyes give an unequaled richness of tone and permanency—and a perfectly even texture which will not rub off. And they are so easily applied that any careful boy can secure perfect results with them every time.

Johnson's Prepared Wax

The only modern finish that will not scratch and mar like varnish, hard oil and shellac, and will not catch and hold dust and dirt like ordinary furniture and floor wax, is Johnson's Prepared Wax. This is because Johnson's Prepared Wax contains 20 per cent more of the hard and very costly polishing wax than any other wax on the market—thus it covers a fifth more space and can be brought to the most beautiful and lasting polish with the least labor.

And the liberal percentage of hard wax enables you to secure a rich, subdued, satiny surface impossible with any other finish.

Johnson's Dyes are Prepared in All Shades as Follows:

No. 131, Brown Weathered Oak	No. 129, Dark Mahogany
" 172, Flemish Oak	" 140, Manilla Oak
" 126, Light Oak	" 110, Bog Oak
" 123, Dark Oak	" 128, Light Mahogany
" 121, Moss Green	" 125, Mission Oak
" 178, Brown Flemish Oak	" 130, Weathered Oak

Johnson's Wood Dye, any desired Shade, is sold by the best paint dealers. Insist on getting the genuine—don't take a substitute.

Half-Pint Cans	$ .30
Pint Cans	.50
Quart Cans	.85
Gallon Cans	3.00

Send this coupon for two Cans FREE. Our 48-page book, printed in six colors, illustrated from life and written by an expert wood finisher will interest you.

S. C. Johnson & Son

"The Wood Finishing Authorities"

Edition ACB-7

Racine Wis.

FREE Coupon

ACB-7

S. C. Johnson & Son
Racine, Wis.

Gentlemen:—My paint dealer's name is

.....

His address is.....

.....

for which please send me FREE, prepaid, two (2) samples of Johnson's Wood Dye .....shades, and one (1) sample of Johnson's Prepared Wax, and copy of your new 25c book, "The Proper Treatment for Floors, Woodwork and Furniture." Edition .....all FREE as per your offer.

My name is.....

My address is .....

(*Continued from page 496*)

The knife cuts must be at least one-sixteenth inch deep, and one-fourth to three-eighths inch distance one from the other. Next proceed to saw up the block into the thin sections thus marked, sawing each time so that the saw cut (or kerf) will be just outside of, but close to, the knife line as shown by the first partial cut at "A." Each saw cut through the block should be true to each of the three lines, and while the saw passes along one side (the outside) of the line, its teeth should not scratch the opposite side of the knife cut, but must leave the smooth, clean cut of the knife on the block, as shown at "B" in the illustration, while at the same time it should be so close as to leave no wood to be smoothed off with plane or chsisel A few hours spent in careful sawing as above directed will enable anyone to use the backsaw successfully. This is one of the most important drills in the use of tools, as cutting and fittting with this saw enters into the construction of almost every article you undertake to make.

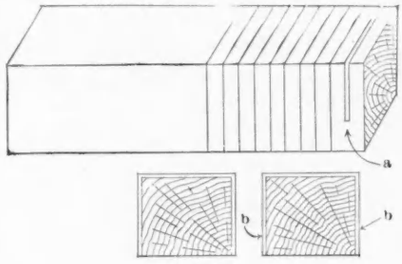


Fig. 9

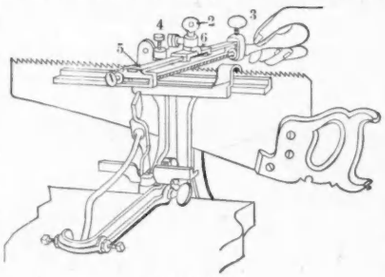
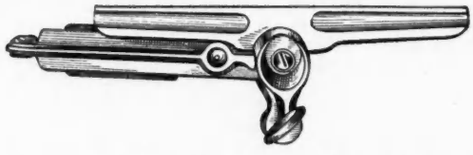


Fig. 10

One of the important features that deserves careful attention is the filing and setting of all saws. They must be kept in good order and is as necessary as the teachings of the use of the saw. Bishop automatic saw filer and setter is perfectly designed for this purpose and with little practice, a boy can set or file a saw as well as when new.

The Weber Saw-Filing Vise

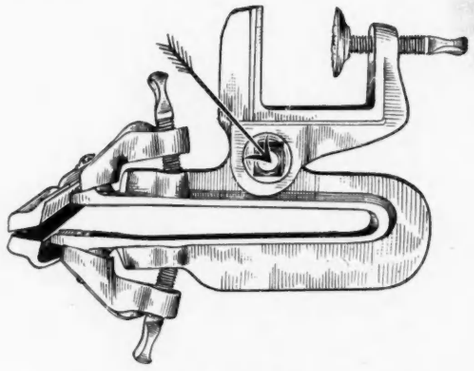
This extremely compact little saw filing vise, which is illustrated herewith, is the invention of Mr. John F. Weber, who is well known as the president of the Weber Manufacturing Company and as the inventor of the Weber double-acting floor scraper.



This saw filing vise is undoubtedly the most compact of its kind made. When not in use it can be folded up into an extremely small space, and when required again can be adjusted in less than half a minute. With the Weber saw filing vise, the saw is held firmly for sharpening, and from the clutch of the vise it is impossible for the metal to slip. It sells for only one dollar and a quarter, and will be shipped promptly to any address on receipt of express or money order.

This vise is also made with an adjustable bench attachment, which permits of its being fastened to any bench, saw-

horse, or support, at any angle desired. At the same time, the construction allows the jaws of the vise to be set upright, or in whatever other position may be wanted. The price



of the Weber saw filing vise with the adjustable bench attachment is $1.50.

A New Brick Press

We illustrate herewith a new and improved machine for making pressed cement brick by hand pressure. It is manufactured and sold by the Helm Brick Machine Company, 615 Bank Building, Traverse City, Mich., who are well known to the trade generally through their exploitation of the Helm brick press, model 5, which has been on the market for three or four years and has long been recognized as a standard machine.

This new press makes five cement bricks at one operation, face up. It has all the advantages of the Helm ten-brick press in using facing and wet material for the body. This machine compresses the material practically one and one-half inches, forming a very dense, hard product, while the face and edges are strong and beautiful. A capacity of 4,000 to 5,000 bricks when operated by one man is claimed for this machine.

This company also manufactures the model 5 Helm press which makes ten bricks at one time and is also adapted to the manufacture of veneer and two-piece blocks. This style of machine has a daily capacity of 10,000 bricks or 1,000 of the blocks. All the advantages set forth for the five-brick machine are found in this ten-brick press. The block attachments for this machine were placed on the market recently and have met with instant approval. Beautiful faces are secured and the edges are strong and sharp.

Further information can be secured by addressing the manufacturer.

Modern Methods

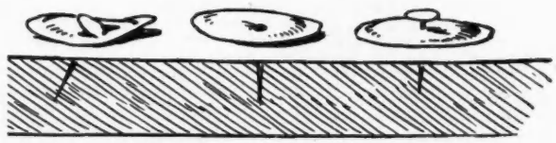
In a builder's life his roofing troubles make it anything but a path of roses. People have come to the front with inventions to relieve him from worry, but he still has it.

The H. B. Sherman Mfg. Co., Battle Creek, Michigan, are making a little article that will go further toward banishing his roofing troubles than any other invention yet put upon the market. This article is a nail—roofing nail—a

nail made expressly for the roofer and for no one else—and its name is Simplex.

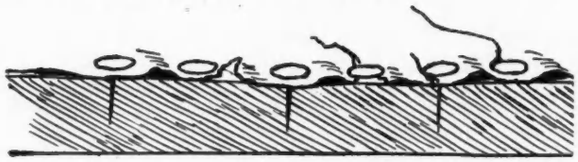
In the use of these nails the greatest feature about them is their ability to save the builder's time, and time to the average builder is money, and money talks. Cut No. 1 shows the advantages of the Simplex nails.

Simplex nails are made in one piece, the stem being riveted on both sides of the head. You do not have to put them together, as is the case with tin caps, but by one operation you drive the nail. This saves time, money, and prevents leaks. Cut No. 2 shows the tin cap trouble.



Simplex nails have a much thicker head than tin caps This prevents buckling of the head, leakage, and increases the life of the nail, and by increasing the life of the nail, the life of the roofing is also increased.

Simplex nails will cover four times as much roofing surface as the large headed wire nail, and can be driven four times as fast as a tin cap and a separate nail. What does this mean to you, Mr. Builder? It means to you that four times the time and nails are saved. The thick head resists the rust, therefore there can be no leaks around the head. Cut No. 3 shows the small nail trouble.



The next order of roofing that you order you will be greatly benefited if you insist on Simplex nails. It will cost you not one cent more, and any reputable manufacturer or dealer, if he does not already have them, should be more than glad to supply you with them. They are made in 1 inch or 1⅜ inch length of stem, the round heads being in both instances 1 inch in diameter.

The following cut No. 4 is a life-like reproduction of the Simplex nail, as further shown in the advertising columns of this paper.

The Kingstown Fire

Dong-g-g!

Before I came to myself I was sitting bolt-upright in bed.

Was it nightmare? I pinched myself. No, I was wide awake.

"Ding-dong, fire!" echoed through the midnight air. And with one bound I was out of bed. In another instant, dressed and on the street.

"She's a goner!" yelled Jim Wilson, as he shot by the house.

"Who—what—where—?" But he was gone; and like a flash I followed my natural instinct and the firelit heavens, to the other side of town.

"They're working like Trojans, but they can't save her."

ASBESTOS "CENTURY" SHINGLE ROOF—ESTATE OF SENATOR T. M. DAVIS, NEWPORT, R. I.

Asbestos "Century" Shingles

"The Roof that Outlives the Building"

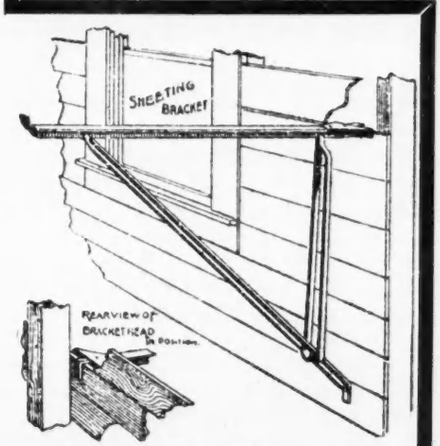
The perfection of a roof is measured by the protection it affords the building. Asbestos "Century" Shingles are absolutely unalterable by the weather. Dampness merely increases the toughness and elasticity of the cement-asbestos concrete of which the shingles are made. Freezing and thawing have the same effect. Hail cannot break the shingles. Walking over them does no damage. Fire cannot burn the slates or get through them—no flaking off or splitting at the nail holes. An Asbestos "Century" Shingle roof will outlive the building, without painting or repairs.

Asbestos "Century" Shingles are a pure cement-asbestos-fibre concrete, formed into uniform sheets under hydraulic pressure. Applied like any slate or shingle. A great variety of shapes, in several sizes, and three colors—Newport Gray (light), Slate (blue black), and Indian Red. Five cents per square foot (and upwards), at Ambler, Pennsylvania.

The Keasbey & Mattison Company

Factors - - - - - - Ambler, Pennsylvania

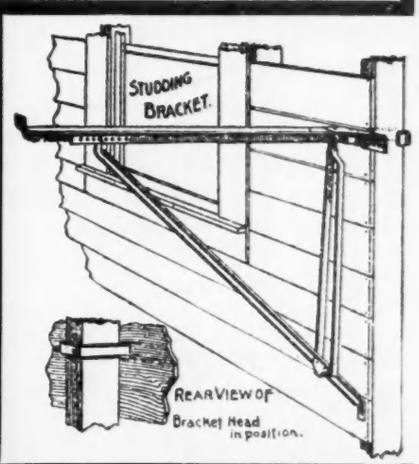
McIntyre Steel Scaffold Bracket



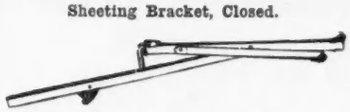
is made of Angle Steel and is designed to meet the requirements of all Contractors and Builders. It provides a safe and durable scaffold, saves labor and material, is easily put up and removed, and can be folded up when not in use.

¶These brackets are reasonable in price, being easily within reach of any Contractor.

WE WANT A
LOCAL AGENT
IN EVERY COMMUNITY
WRITE FOR TERMS



Sheeting Bracket, Closed.



No. 1. 3-ft. arm, wt. 14 lbs. ea., supports 1,500 lbs.

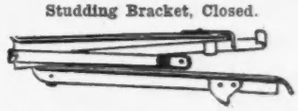
No. 2. 4-ft. arm, wt. 18 lbs. ea., supports 1,800 lbs.

Detroit, Mich., June 14.

This is to certify that I am using the McIntyre Scaffold Brackets and consider them the best I ever saw. I am sure they pay for themselves in a very short time, as they are quick to put up, save nails and lumber which you would have to use in the old fashioned scaffold, and I consider them safer. I would not be without them for double the price. I think anyone trying them will not be without them.

CHARLES A. PARKER.
Contractor and Builder, 56 Carter Avenue.

Studding Bracket, Closed.



No. 3. 3-ft. arm, wt. 18 lbs., supports 2,500 lbs.

No. 4. 4½-ft. arm, wt. 18 lbs. ea., supports 3,000 lbs.

McINTYRE STEEL SCAFFOLD BRACKET CO. 611 MAJESTIC BUILDING DETROIT, MICHIGAN

"What is it?" I asked, as I caught up to Simeon Sheldon.

"The old mill. There! Can't you see the flames licking up the lumber sheds this very minute?" Sure enough. I saw them only too plainly.

"Serves 'em right—"

"Hold on, Sim," I interrupted. "What do you mean by talking that way?"

"Yes, it does! They knew what a risk they've been running with those old 'tinder-box' shingle roofs—and right alongside the railroad too. Everybody says it was sparks from the midnight freight that did it—and I guess they're right. It started on the roof of No. 1 mill."

"Look at those houses opposite. Why didn't they catch fire, too?"

"That's easy. They're covered with Genasco. See those sparks dropping on 'em now! They burn out, and don't have the least bit effect on 'em."

"What's that name, Sim? What kind of stuff is it?"

"Stuff? Well, I'll be switched! Do you mean to say you've never heard of Genasco Ready Roofing, made by the Barber Asphalt Paving Company, Philadelphia? Where have you been living all your life—in the back woods?"

I was willing to be "the goat," and asked for more information.

"It's the greatest stuff I've ever seen for a roof," Simeon went on, "not only for resisting fire, but for lasting in all kinds of weather. You can let it pour pitchforks, and it won't leak; or let the sun boil down on it all you've a mind to, and it'll never dry out like coal-tar. Even zero weather won't crack it. The farmers around here have taken to it like ducks take to water. You see it on all their buildings whenever you go out in the country. It's a wonder, I tell you. And by the way, it's made of stuff from what they call the Eighth Wonder of the World—Trinidad Asphalt Lake. You can find out more about it than I'll be able to tell you in a month of Sundays, if you write to them Barber people for their Good Roof Guide Book.

"Yes, sir, the mill people might have had their old shacks still standing if they'd used a little common sense before it was too late. Any fool can learn from his own experience, but I tell you it's a wise man that learns from the experience of others."

"You're dead right, Sim. I'm going to remember that. Meantime, I've got to turn in and get my sleep out."

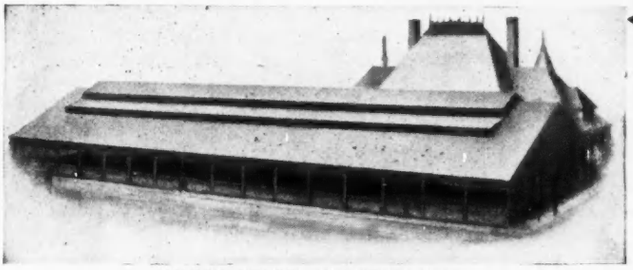
National Stamping and Electric Works

The announcement of the National Stamping & Electric Works, 153, 159 South Jefferson street, Chicago, which appears for the first time in another column, should prove of interest to many readers of the AMERICAN CARPENTER AND BUILDER. This company, from a very small beginning, has built up a very large business and have recently been forced to acquire an entire building of several stories to take care of their trade in the manufacture of special machinery, models, dies and tools, also stampings, patented specialties and every kind of novelties in metal. If you have a specialty you want manufactured at low cost, or require models, tools or machinery of any kind, you will find them a thoroughly reliable and trustworthy firm with which to do business.

A Combination Woodworking Machine

The picture of the machine shown in this column is designed and manufactured by The Sidney Tool Co., to meet the requirements of contractors and builders, wagon makers and novelty shops; and embraces practically six distinct machines in one, making it only necessary to purchase one machine to give you a complete outfit. This machine consists of the following machines: Complete 10 inch jointer, tables 14 inches wide by 4 feet long, with slotted four-side removable

FLINT-COAT ROOFING



UNION DEPOT, DULUTH, MINN.
Rock Asphalt Roofing Stands the Test on this Monster Roof

The Best Roofing On Earth

That's All We Claim

Every Roll Guaranteed

Perfect

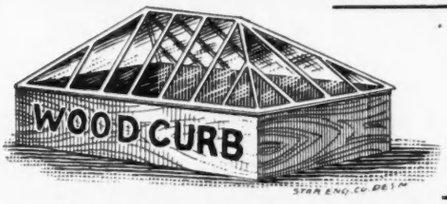
You Will Save 25 to 50 Per Cent

1-ply Flint Coat Roofing	$1.25	1-ply Rubber Roofing	$1.25
2-ply Flint Coat Roofing	1.50	2-ply Rubber Roofing	1.65
3-ply Flint Coat Roofing	1.75	3-ply Rubber Roofing	2.00
4-ply Flint Coat Roofing	2.10	5-ply Rock Asphalt Roof	2.20

IMPERVIOUS BURLAP, ASPHALT, READY ROCK ROOFING, $2.75

Above prices are for one roll of 108 square feet, **F. O. B. Chicago, all ready to lay.** Can be laid by anyone. Special prices quoted west of Mississippi River. Nails and Cement with each roll. Our roofing costs less than shingles; lasts longer; can't rust like iron or steel. **Water, Wind, Hail, and Fire Proof.** Recommended by leading architects, largest railroad companies and corporations in Northwest. Samples and Booklets **FREE.**

ROCK ASPHALT ROOFING CO., Room 1105 Y. M. C. A. Building, CHICAGO



SKY LIGHTS

All kinds of Roofings, Steel Ceilings, Cornices, and Sheet Metal Work

ST. JOHN & BARQUIST CO.

420 8th Street Write for quotations **DES MOINES, IOWA**

ROENIUS

WOOD and COAL

CHUTES

CLOSED AND LOCKED

CLOSED AND LOCKED

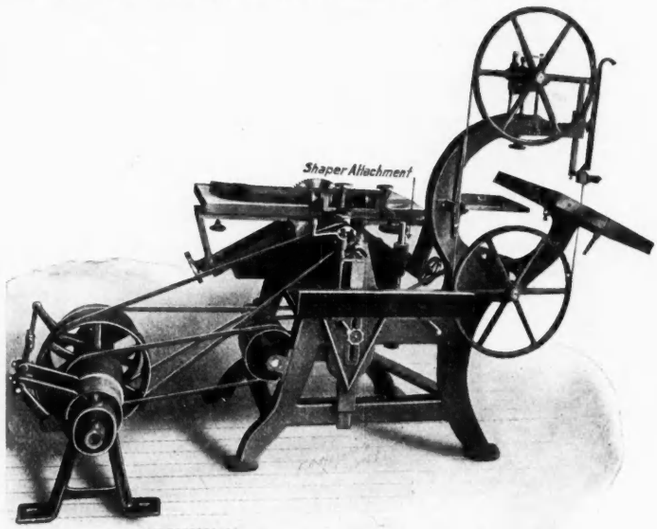
10,000 in use

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

head; complete iron top saw table, adjustable up and down for grooving and slotting, tilting ripping gauge and miter cut off gauge; complete shaper attachment with removable heads to accommodate any kind of a special molding head for side and edge molding; complete boring attachment, adjustable both up and down, in and out with hand screw; complete 20



inch band saw with tilting table 18 by 20 inches, will take saw blades from ⅛ to 1 inch wide.

All of these machines can be run independently of one another, and you will find it a very complete variety wood worker. We would be pleased to send you our catalogue with full description and also prices on this machine. This tool is also very convenient for small pattern shops, enabling the pattern maker to do all kinds of pattern work with one complete machine. We also recommend it for large contractors, to be moved from job to job, as they will find that it will save them a great many dollars at the end of the year.

We furnish other attachments aside from what are shown in cuts consisting of sand drum and tenoning attachment. In our advertisement on page 500 of this book you will find two views of this machine which will give you a better idea of the construction of same. If you will write us we will see that your inquiry has our prompt attention.

A Water Way Trip

These are the days when many bridal couples enjoy the delightful lake ride between Detroit and Buffalo. A trip on the palatial steamers, Eastern States and Western States, fills all requirements, furnishing romance and seclusion at reasonable figures. Staterooms and parlors reserved in advance. Send two-cent stamp for illustrated booklet. Address Detroit & Buffalo Steamboat Company, 5 Wayne street, Detroit, Mich.

Mantel and Grille Catalog

The architects and builders all over the country will be interested in the new catalogue of mantels, tile, parquetry flooring, grilles, grates, etc., which has just been issued from the press by Wm. G. Ostendorf, Philadelphia, Pa. Mr. Ostendorf claims that although there is report of less building throughout the country, his business has increased wonderfully, which is entirely due to the high class of goods and low prices.

Our readers when buying from Mr. Ostendorf are dealing with a man who thoroughly understands the mantel and tile business, and knows that the success of his customers in getting the best prices and quality of building materials means his success. It will pay every reader of this publica-

tion to get into communication with Mr. Ostendorf and by having his 100 page catalogue, be able to secure business, which otherwise would go to competitors.

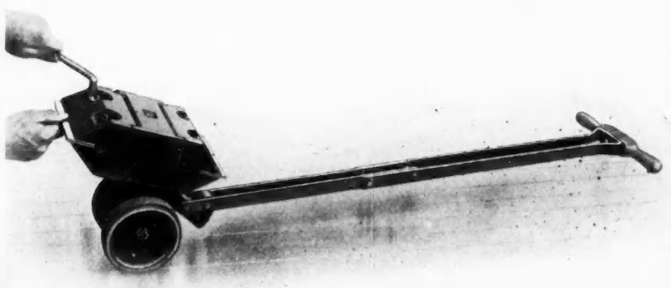
The reports we have from this well-known concern show that they have made shipment of goods to every state in the Union, as well as a great many foreign points.

The Champion Floorscraper

The Champion floorscraper manufactured by The Dosch Manufacturing Company, of Bridgeport, Conn., and illustrated in an advertisement in this issue, comprises many novel features designed to facilitate the working of a machine of this kind. The feature first to attract attention is the fact that there are four knives, with eight cutting edges, all of which can be used in turn and dulled before it is necessary to insert a new knife. The small illustration herewith shows the arrangement of the knives, the piece of steel between the knives, known as the chipbreaker, and the means for springing the jaws apart when changing the knives.

The chipbreaker supports the knives right down to the scraping edge, is used as a positive gauge for setting the knives and as a chip-breaker for bringing the shavings loose from the floor without leaving a ridge. The machine operates by pulling and when near the end of the cut the operator merely has to lift the handle a little higher, the steel taking the weight off the knife edge, which gradually comes to the surface and brings the shaving loose. The truck acts as the fulcrum of a lever and gives the operator complete control of the head. With it a shaving can be started easily and smoothly, leaving no dents.

To operate, the handle should be adjusted to the height of the mechanic. When he pulls the wheels will clear the floor about a half inch, and all the weight of the heavy head, which is bunched right around the knife, is thrown on the knife and keeps it in the floor. By loosening the bolt, and running the handle up to the highest point, again tightening the bolt, and lowering the handle, the head is raised and



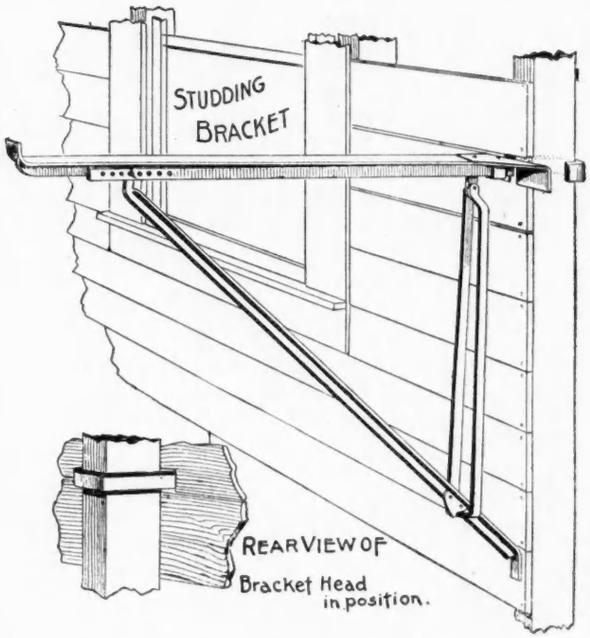
held in the air, as in illustration, greatly facilitating the changing of the knives. Any adjustment of the handle for tall or short men does not affect the angle of the knife.

This machine is guaranteed to be first class in every way, to do the work intended and the manufacturers have a very attractive trial offer. Twelve knives with twenty-four cutting edges are furnished, and the machine is offered, complete, at a reasonable price.

Modern Scaffolding

The builder of the present day cannot afford to use the old methods of scaffolding. In the first place, it is too expensive, and in the second, there is too much lost time. Now

time is money and the old time-worn axiom very truly says that "money talks." Material saved, is money saved, and the average builder of today would be more than astonished



if he figured up the amount of lumber watsed in using the old style scaffold. Outside of the lumber, however, the mechanic's time in building the scaffold and in tearing it down is an item of no mean importance.

The McIntyre Steel Scaffold Bracket shown in the accompanying cuts will immediately appeal to any builder desiring a perfect scaffold. In the two years that these brackets have been used by many hundreds of builders, there has been absolutely not one accident from them, and this is more than can be said of the old style scaffolding. Safety to the employe means an absence of law suits for injuries sustained by using poor scaffolding.

The McIntyre bracket permits of easy access to the building at all times, and when not in use it may be folded up, making transportation and storage an extremely simple matter, but it would be impossible in this limited space to tell you their numerous advantages.

This bracket is manufactured of angle iron and will wear a life time. It will pay any and every reader of this magazine to write a card asking for descriptive literature to McIntyre Steel Scaffold Bracket Co., 619-621 Majestic Bldg., Detroit, Mich. In writing, please mention the AMERICAN CARPENTER AND BUILDER.

Low Cost Roofs

Of all the materials which have been used at various periods for the making of durable waterproof roofs, experience has simmered down to the use of coal tar pitch and tarred felt in some form, as the most practical wherever considerations of cost are important. On big factories, for instance, where the areas to be covered are very large, the problem becomes one of selecting a roofing material which will cost the least per square foot per year of service. Such buildings are almost always thoroughly built and designed to endure with minimum repairs for at least a generation. The foundations are generally good, and the walls are brick. On such buildings a pitch and felt, or composition roof, is almost invariably

employed. This is true, not only of manufacturing plants, but also of railroad buildings and flat roof city buildings of all classes.

Until recently, however, there was no definite specification recognized as standard and most architects and engineers were content with leaving the matter very largely to the roofing contractor—specifying merely "a five-ply gravel roof."

The leading manufacturers of roofing materials in this country recently came to the fore with the so-called Barrett Specification, which is supposed to embody the best experience of the roofing trade. This specification calls for five plies of felt solidly cemented with an adequate amount of coal tar pitch of the proper grade. The manner of laying is indicated in a practical and simple way, and uniformity of results is thus assured. Properly laid, the durability and satisfaction of these roofs is unquestioned. There are many instances on record where roofs of this character have endured for over 20 to 30 years without repairs or attention of any kind.

The original cost is also exceptionally low, being considerably less than tin for instance, which is frequently of doubtful quality in these days. Unlike the various prepared roofings, a Barrett Specification Roof does not call for painting periodically, the gravel or slag surface being ample and permanent protection.

Barrett Specification Roofs are intended to cover buildings of the first class. For roofing temporary structures, for covering buildings with very steep roofs, and for use in localities where skilled roofing labor cannot be secured, the Barrett Manufacturing Company offer a ready roofing known as Amatite. This roofing is made on very much the same principle as the Barrett Specification Roof, but is lighter, and comes in rolls ready to lay. It is of course impossible to make a five-ply thickness of felt which can be handled like ready roofing. Amatite accordingly is limited to two thicknesses of tarred felt with a layer of pitch between and on top. The top surface is further protected by the addition of a mineral surface. Like the gravel in the Barrett Specification Roof, this mineral surface needs no paint or coating, and the roof, when once laid, can be safely left for many years without care or attention.

The low price and durability of coal tar and its products makes both Barrett Specification and Amatite roofs exceedingly economical as compared with other roofings.

The Barrett Specification Roof requires skilled labor to put it in place, and the laying of such roofs is a distinct and organized trade. Amatite, on the other hand, is all put together in the factory and comes in convenient rolls which any workman is competent to lay. The manufacturers simplify the matter by providing the nails and cement for the laps free with every roll.

Of course, the basic reason for the success of these roofing propositions lies in the natural waterproofing qualities of the pitch which is generously employed. Coal tar pitch is one of the few materials on which water has no effect whatever.

If any of our readers will write to The Barrett Manufacturing Company at New York or Chicago, they will receive free literature covering both Amatite and Barrett Specification Roofs, including full copies of the Specification mentioned.

How Long Will It Last

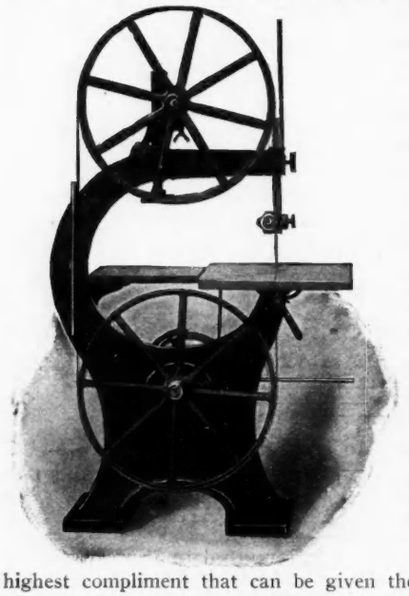
In the June issue of the Cortright Metal Shingle Advocate appears an article on metal roofing under the heading, "How Long Will It Last." This ought to prove interesting to all those who have anything to do with building. It cites a single instance of a metal roof, not Cortright, that lasted eighty-five years—Cortright shingles have only been on the market twenty-one years, but the roofs put on at that time are as good as new today. On page six of the same issue is a testimonial from a man who put on one of these roofs

in 1887. He says it is as good as the day it was put on and has only been painted once.

Anyone desiring to receive the Cortright Advocate regularly can have it without charge by making their desire known to the Cortright Metal Roofing Company, Philadelphia, Pa., or Chicago, Ill.

Crescent Quality

Crescent band-saws were originated about ten years ago and were at first manufactured only in a small way. They at once became popular, as they were from the start good honest machines. Improvements in design and detail were made from time to time, so that the present models bear little resemblance to the original machines. Today they stand unsurpassed for merit and quality, and can easily claim the distinction of being the most popular machines in the market. Probably the highest compliment that can be given them is the fact that they are in every-day use all over the world; are in use in seven different navy yards and other government institutions; and are being copied by other small manufacturers, who vainly try to produce Crescent quality or try to follow Crescent methods.



The machines are all made in the Crescent factory, located in a section affording unusual advantages of proximity to raw material, labor conditions, and other commercial facilities. The following materials are abundantly produced within a radius of one mile; lumber, natural gas, sand, coal, coke and pig iron. The Crescent factory, including foundry, is of modern construction and equipment, having been built entirely new in 1906. Everything from raw material to finished machines is made in one plant, and under one management. The entire factory is devoted to making wood-working machinery—nothing else. No agricultural machines made in Crescent factory, and no agricultural quality put into Crescent machines. Not a bit of it!

An elaborate, finely prepared catalogue, giving much valuable information in regard to these superior wood-working machines, has just been completed, and should be in the hands of every carpenter-shop man. A card will bring it; address Crescent Machine Co., Leetonia, Ohio.

How Gussie Got the Girl

Once upon a time there was a clever Gussie who was the village cut-up, and a Fast-Trotter with all the good-lookers in the stable.

The only way he was still single was because he ducked the dense thickets every Leap Year and never showed up until the following January 1st, when he was safe for three years more.

He was full of Cute Little Ways and Parlor Tricks and it was a grand sight to see him at the Church Socials surrounded by a galaxy of feminine loveliness and handing out the salve-stuff.

It was current opinion around the burgh that Gussie gave

Marshall P. Wilder all the really clever ones and that he wrote at least half of the Philistine for Hubbard.

When he got squatted in front of a Chickering and began to tear loose on the popular Rhapsodies of the day, it was with difficulty that even a Professional Tackler could have got to him on account of the blockade of Fair Sex.

Time went along, as Laura J. Libbey says, and we come to a point in Gussie's career when he fell to the charms of a beautiful little bunch of mignonette who had Fluffy Ruffles backed clean off the boards.

She was the daughter of the Richest Man "in these parts" and, while Gussie had little or no trouble lassooing her, it was a very different and much sadder piece of news when it came to chasing the old man into the corral.

The old man gave Gussie one swift, all-over, comprehensive glance and then told him as pointedly as he knew how that he "wouldn't do," and to, in future, deliver goods at the rear entrance.

But Gussie was game and came right back with the Big-Talk and wanted to know what was wrong with him.

The old man only vouchsafed that no Gilded Butterfly or Drawing-Room Troubadour would carry off his ewe lamb, and that only a man who showed unusual aptitude for business could get past the gate.

Gussie came right back strong with a suggestion that the old man give him a job as his Purchasing Agent and he would show him a few "new ones" that would make him think he (the Guv-nor) was ready to get off at the Isler House.

This so completely unnerved the millionaire Mantel and Tile Dealer that, ere he knew what had passed, Gussie was on the pay roll and using a ninety-five dollar roll-top to put his feet on.

One Fine Morning Gussie came down real early, about 10:30 A. M. and found lying on his desk a neat little book, which told about the Superiority of Lorenzen Mantels over the other kind.

"Aha!" said he, chortling with glee, "here's where I make good with his nibs and win my beautiful Genevieve."

Forthwith he unostentatiously signed a contract with the Lorenzen salesman, for fifty Lorenzen Mantels, all to be Hand-Picked and packed in Imitation Ostermoors.

When the old man found that Gussie-boy was planking down about 5 per cent more for Lorenzen Mantels than he had been paying for the other kind, he had two hemorrhages and an epileptic fit, but Gussie told him to sit quiet and tend to his knitting and he would show him in a few weeks where he got off at.

But it didn't go with the old man, and Gussie was told to take an unlimited lay-off.

Six Months Later, just when Gussie was beginning to feel as if he was a candidate for the Down-and-Out Club, he got an almost tearfully tender missive on the "Come-to-your-papa's arms" and "Bless-you-my-chldren" order.

It was from Pa himself.

The Lorenzen Mantels had done the business.

The old man acknowledged the Corn and the Curtain went down on the wedding feast—Gussie responding to the toast to the bride—and Lorenzen Mantels for the favors.

Of course, Gussie got his job right back, and why shouldn't he?

Pa had been selling the other kind of mantels for several years and had had no end of trouble with the finish, mirrors and other well-known troubles too numerous to mention.

Gussie stepped up like a little man and put in a line of Lorenzen Mantels, each of which gave entire satisfaction to the purchaser and brought much new and additional trade.

Consequently the old man noticed a 25 per cent increase in business and a 20 per cent decrease in kicks.

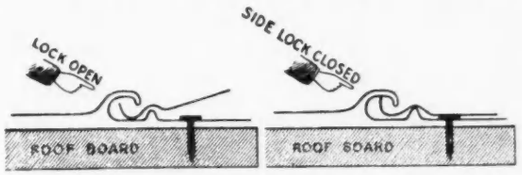
A 25 per cent increase in the Mantel business is "going some."

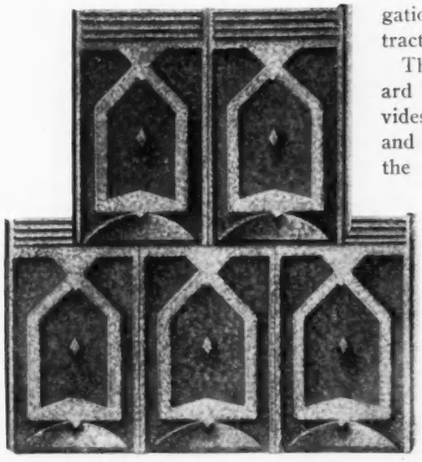
Was denken sie?

Take Gussie's tip and write right now to Chas. F. Lorenzen & Co., 276-284 No. Ashland avenue, Chicago, Ill., for a "sure thing" and one of their large handsome illustrated Catalogues, No. 46.

A New Metal Shingle

The Canton Manufacturing Company, of Canton, Ohio, have recently placed on the market a metal shingle worthy of the most careful investigation of every contractor and builder.





Their new "Standard Lock Joint" provides for expansion and contraction, and the shingles are sold under a positive guarantee to make a weather proof roof.

They are easily applied. No special construction is needed. No solder is required and no nails exposed. They are made of the best grade of materials in neat and ornamental designs suitable for any style of roof—gable, mansard or dormer.

This company also manufactures automatic self-closing, storm proof ventilators, cornice, skylights, metal ceilings, roofings, sidings, etc.

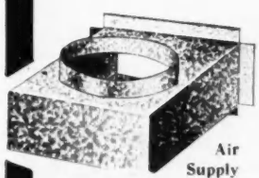
Their new catalogues set forth in a concise manner a series of price lists and illustrations which will be helpful to our readers in determining the approximate cost and style of materials they may desire. Every contractor should have a copy of this catalogue. It will save him money. Address Canton Manufacturing Company, 1310-20 East 29th street, Canton, Ohio.

HESS STEEL FURNACE

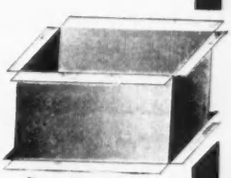
Heating Plans Free

Our No. 45 "Leader" Steel Furnace Heats 7 or 8 Rooms

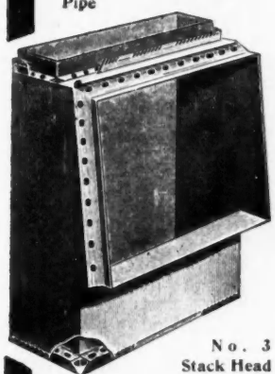
Price **$49.00** Delivered to any Station East of Omaha and North of Ohio River



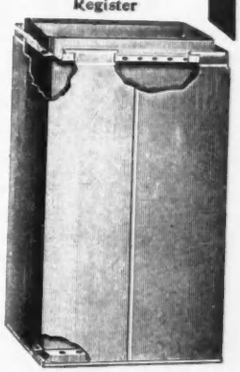
Air Supply Stub No. 2 for Metal Pipe



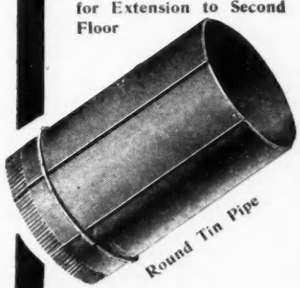
Box for Ceiling Register



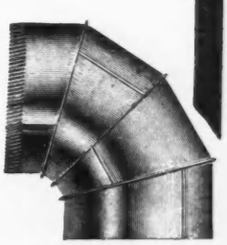
No. 3 Stack Head for 1st Floor with Collar for Extension to Second Floor



Double Partition Pipe



Round Tin Pipe



Four Piece 90° Elbow

Money Made for Builders
Money Saved to Owners

The Hess Furnace is sold direct from our factory to the builder at one small profit. All intermediate profits are therefore eliminated.

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pertaining to furnaces. A full line of **Furnace Pipes, Stacks,** Fittings, Registers—everything in fact for furnace jobs—are carried at our warehouse, and each one is guaranteed to give best results where used with the Hess Furnace. Our supplementary catalog, just out, illustrating each article; giving net prices, free on request.

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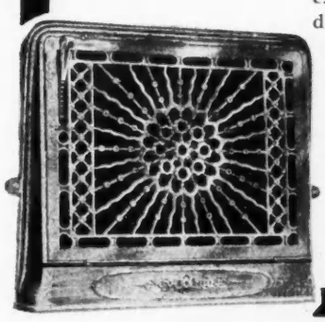
You simply send us a rough sketch of the house, and details which we name. Doesn't matter whether it's a big or little job—cottage or mansion. We give you the benefit of our years of experience in all kinds of work and can help you overcome all difficulties.

This clearly proves that Hess Furnaces **must make good** or we lose.



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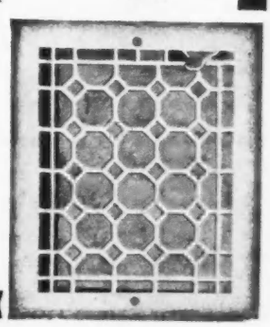

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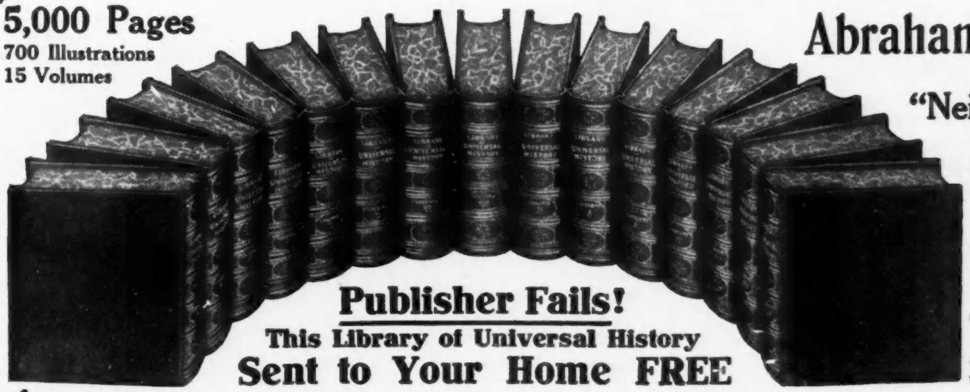


Abraham Lincoln Said:

"Neighbors, Give Your Boys and Girls A Chance"

Publisher Fails!

This Library of Universal History

Sent to Your Home FREE

Bear in mind the AMERICAN CARPENTER AND BUILDER **Invites you to examine this Library of Universal History** in your own home for an entire week absolutely free of charge.

We wish to prove to you that our enforced offer of the remaining sets of 'this magnificent publication, at less than cost, is the most stupendous book offer ever made. A new publication from cover to cover, prepared by a staff of great historians. **Cost to produce nearly $250,000.** Heartily endorsed by America's greatest scholars and teachers.

HERE is the greatest opportunity ever offered — an opportunity for our readers to secure at less than half price these fifteen beautiful volumes.

This offer is made possible by the failure of the publishers, The Union Book Co., of Chicago. Hundreds of sets of this work have been sold at $56 00 each and they are worth every cent of it, but we now name you a rock-bottom bankrupt price of only 50c after examination and $2.00 per month for 12 months. It is impossible to name a lower price for cash in full, as this is less than half the publisher's price and is made only to close out the few remaining sets quickly.

WITH THIS HISTORY you may sit beside the madman, Nero, on his awful throne; touch his mantle and hear him speak. **Walk with Caesar** and gain inspiration from this genius of the Romans. **Enter the ancient Colliseum** and behold once more the martyrdom of the Christians, whose bravery and sacrifice of life among hordes of red-jawed jungle beasts, paved the way for the Christian religion in Rome. **Ride beside Alexander** the Great, whose steel-hoofed charger dashes over the blood-stained battle fields of his career. **Stand beside the mighty Nelson** at Trafalgar, and hear his hoarse commands as the English fleet sweeps the power of France from the ocean.

Look once more at the gory battle field of Waterloo; see English and French in mortal combat; **see the mighty Napoleon** sitting like adamant, the old guard around him, scanning the field and realizing his iron reign was over; then talk with him at St. Helena, where, standing alone, he gazes over the trackless ocean, watching the mists gather and dissipate as had his power and greatness. **Travel back for sixty centuries** when man was but a being of the forest, as unlike the man of today as we are unlike the lowest in the grade of humanity. **Attend the Bacchanalian banquet** of the ancient kings of Assyria and Persia; watch their mighty armies clash. **Go to ancient Babylon,** walk its streets and see and hear as you would in the days of Balthazer.

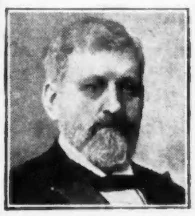
Stroll among the pyramids of Egypt and pry into the wonderful secrets which these majestic relics of antiquity possess in their enormous bosoms; **sail down the Nile** and visit the ancient cities, the great white palaced cities which flourished a thousand years before the dawn of the Christian era; yes, before the rise and fall of the eastern empires; **see Greece in her regal power,** overcome by the hordes of Rome; **watch Spain** as she rises to dominating power, only to fall and crumble and decay; then go through the wars of the English and cross the ocean to our own shores.

Watch the starving line of patriots battling against the wealth and bullets of the mother country; **grasp the hand of Washington** at Valley Forge, walk through the snow with him and hear his cheering words to his shivering, ragged army; sit with him on his wide veranda and talk with him at Mt. Vernon; **follow the thrilling rise of our own republic** and pass through the dark days when brother was arrayed against brother. **Know the mighty rail-splitter, Lincoln,** as he was. **Stand beside Grant** at Vicksburg, or Meade at Gettysburg; hear the awful cannonading, and see the dashing lines cut to pieces. **See the valor and the courage of the gray,** through the very eyes of the indomitable Lee, **view all these thrilling events** as if the world were passing once more before your own eyes.

To own this history means you need never spend a lonely evening. It is ennobling to commune with the children of destiny. To be associated with great men and events is to be great oneself, and you will add to your store of knowledge, which is power, and to the richness of your life.

Rev. Dr. F. W. Gunsaulus,
President Armour Institute and Pastor Central Church (Auditorium) Chicago, says:

"Without the slightest touch of religious or political bigotry, the editors of the **'Library of Universal History'** have dealt soberly and deeply with the forces of church and state which have ruled mankind. With great scholarship they have not become dull; with a trained and genuine power of imagination they have never become vague. **It is a work of real genius;** its thought is clear and vigorous, its English pure and eloquent. I am certain these volumes must be of immense popular service in stimulating historical study in our country."



Sen. William B. Allison,
The Grand Old Man of Iowa, Says:

"I have recently bought the **'Library of Universal History,'** and find the topical arrangement of the matter especially advantageous for ready reference and take pleasure in recommending this valuable work as well as the plan for its distribution."

The editor of this paper advises every reader to write for these splendidly written, authoritative and beautifully illustrated books for free examination in your own home for a week, without any expense or obligation on your part to purchase.

These

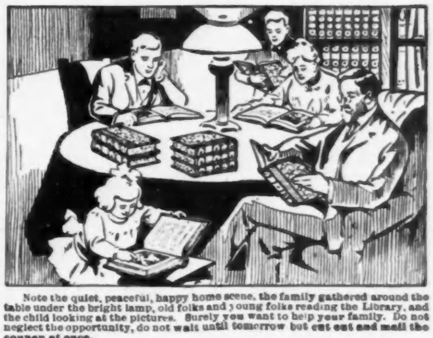
are the words used by the great emancipator in his famous speech, delivered at his old home to his friends and neighbors at Springfield, Ill.

Recalling what little opportunity he had in his early youth to get an education, and looking back to the days when **he walked miles and miles for a book** (for he then owned none of his own), Abraham Lincoln pleaded with the rural and village people, his old friends and associates to give their children a better chance—a chance to fight the battles of life successfully.

SURELY YOU want to give your boys and girls a better chance, not necessarily a college education, but better still, a home education. It is not always the school that gives the education; you can give this same opportunity or better to your family right in your own home. Good books—valuable books. Oh! how Lincoln cherished these.

What would Lincoln have said had you asked his advice on buying a great History of the World, an entertaining and educational Library for your home, **"The Library of Universal History,"** and especially if we offered it at less than half of the regular price and on easy terms?

We want you to see these volumes, examine them in your own home without any expense on your part, **then you can decide.** That is what the family in the picture below have done. Mail the coupon now before you forget it. See the volumes themselves—**it costs you nothing.**



Note the quiet, peaceful, happy home scene, the family gathered around the table under the bright lamp, old folks and young folks reading the Library, and the child looking at the pictures. Surely you want to help your family. Do not neglect the opportunity, do not wait until tomorrow but **cut out and mail the coupon at once.**

Here is Our Offer:

Send Us Your Address on the coupon or a postal telling us you would like to receive for free examination these 15 volumes of the **Library of Universal History** in your home and we will send them to you, charges prepaid. Look over these books for a week and then if you decide that you do not want them *send them back to us at our expense.* If you wish to keep this superb work send only 50 cents, and $2.00 a month for twelve months—**only $24.50 for this $56.00 Library.**

The Library of Universal History is a complete history of the whole world written by America's greatest historians and endorsed by America's greatest scholars. There are over 5,000 pages, 100 finely engraved maps and 700 full-page illustrations. Don't delay.

Write to us at once, just put your name on the coupon. Without obligation or expense we want you to examine this grand work in your home for a week before deciding. Write today.

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Send Your Name and Address

No more obligations than if you asked to look at a book in a book store —the work sent prepaid and returnable at our expense if you decide not to keep it. Look at the 700 pictures, read some of the fascinating chapters, then decide.

☞ **You are under no obligations whatever** in asking for a trial shipment. We prepay the charges—You pay nothing—No solicitor will call on you—You decide in the privacy of your own home—And we consider it **A FAVOR TO US** if you will merely give us an opportunity to ship the books. You risk nothing—You are under no obligations. Why should **anybody** refuse this offer?

American Carpenter and Builder, 185 Jackson Blvd., **Chicago**

CUT OR TEAR ON THIS LINE

American Carpenter and Builder, 185 Jackson Blvd., Chicago

Without expense or obligation, I would like to examine a set of the Library of Universal History in my home free for a week. If satisfactory, I will keep and pay your special price, otherwise books to be returned at your expense.

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CONTENTS FOR JULY, 1908

INDEX TO ADVERTISEMENTS, JULY, 1908

For Classified List of Advertisers see preceding page

NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 188 Jackson Boulevard, Chicago, not later than July 20 in order to insure insertion in the August number.

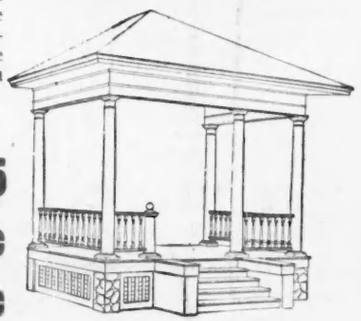
"Porch Work" Profits

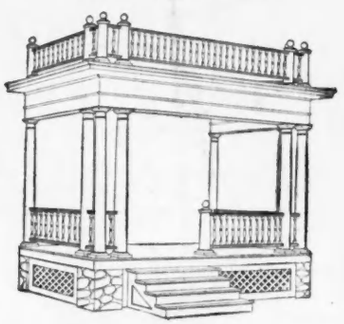
FOR

Progressive Contractors

A Big Special Run of Highest QUALITY Millwork for all Styles of Porches, Offered to Contractors

At HALF DEALER'S PRICES





CUT OUT the "ODD SIZES"

There's More Money for the Contractor in the Use of GORDON VAN TINE "STOCK" DESIGNS

On this page we show just a few of the almost innumerable styles of Porches that can be built at very low cost from our stock patterns.

The local mill man gets the big end of the profit on porch jobs built from "odd sized" millwork. **Your bread is buttered by using stock designs of Porch material.** The cost of our stock styles of porch work is only a **fraction** of the cost of made-to-order material and **50 per cent less** than the retail dealer would ask for the same material.

We offer a **variety of styles** which may be used in all sorts of combinations.

Porches made from our millwork are as handsome, durable and satisfactory as those made from made-to-order material costing five times our price.

Contracts for Building Porches are Profitable

The Porch is now regarded as an "Outdoor Living Room" for Summer, cool, shady and restful. All modern homes have plenty of Porch room. Owners of plain old houses everywhere are adding porches.

Contracts for remodeling old houses pay well. Our Porch Material offer enables a contractor to underbid on these jobs and still make a handsome profit. Send for our Special Porch Circular.

"Odd sizes" pay your local mill man, but his **profit** comes out of **your pocket!**

Use our Stock sizes and you'll find yourself **away ahead of the game at the end of the season.**

Yours for business

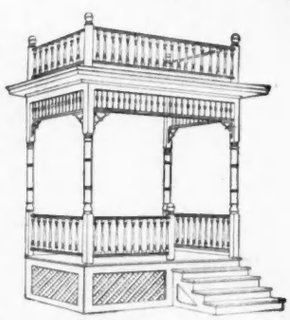
Gordon, Van Tine Co.

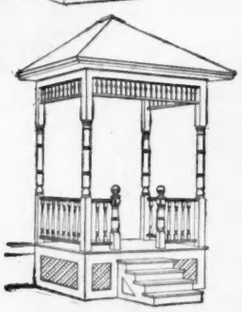
Last year, the summer rush of orders from Carpenters and Contractors for **Porch Materials** to be used in remodeling old homes and for new houses, caught us unprepared.

We are ready for you this time with the largest finest, most varied stock of Porch Millwork in America —a special run that kept our lathes and band saws humming for months. We have increased our stock patterns to a point where any style of Porch from the imposing portico of the mansion or piazza of the summer hotel down to cozy little cottage porch, can be built from Gordon, Van Tine Porch Materials. You can buy handsome

Staved Colonial Columns, wtih our Patent Lock Joint (cap and base included), each	**$1.95**
High Grade Turned Porch Columns, each	**60c**
Bead Rail, suitable for Porch Balusters or Freize, per foot	**2c**
Beautiful Porch Brackets, combination scroll and turned, each	**5½c**
Porch Newels, handsomely turned, each	**34c**
Porch Spindles (turned, crated) per 100	**$1.05**
Turned Porch Balusters (in crates of 50), each	**5c**
Porch Rail, special design, per foot	**4c**

We Sell Everything in the Line of Porch Materials, at Prices Averaging at Least 50 per cent below Retail Dealer's Prices





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5000 Bargains in Sash, Doors, Mouldings, Porch Work, Stair Work, Interior Finish, Flooring, Roofing. Screens and LUMBER

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