

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 43.

CONTENTS FOR JULY, 1927

No. 4.

COPYRIGHT, 1927, BY AMERICAN CARPENTER & BUILDER CO.

| | Page | | Page |
|--|----------------------|---|---------|
| Around the Family Table..... | 95 | Our Front Cover Home..... | 125-129 |
| High Standards of Living the Cause of Continuing Building Activity. | | Photograph and Full Set of Building Plans Drawn to Eighth Inch Scale of the Beautiful Brick Bungalow Illustrated in Full Colors on Our Front Cover. | |
| Editorial Page | 97 | Details of Home Building..... | 130 |
| Everybody's Business—By Floyd W. Parsons | 99 | Norman Architecture. | |
| Full Size Model Exhibited at Architectural Exposition | 101 | Furnace Heating | 132 |
| Use Short Length Lumber for Building Economy | 102 | Why Heating Plants Need Good Chimneys. | |
| Real Estate and Subdivision Work..... | 104 | Law for the Builder..... | 135 |
| The Development of an Ideal Subdivision Property. | | Instructions in Roof Framing..... | 136 |
| The White House Remodeling..... | 106 | Stepping Off the Length of a Rafter with the Steel Square. | |
| Sanctum—A Home Builder's Poem..... | 107 | Eaton Tower—A New Skyscraper Nearing Completion in Detroit..... | 138 |
| Chips and Quips..... | 108 | Filling Station Design—Part IV..... | 139 |
| COLORKEED HOME PLANS..... | 109-124 | A Hillside Apartment with an Interesting Garage | 140 |
| Mr. Radford's Monthly Talk on Home Building | Colorplate I | HOW DAN DOES IT..... | 141-143 |
| The Most Salable Home Today Is the Home That Features Well-Known Nationally Advertised Building Materials and Equipment. | | Testing the Level; Built-Up Wood Beams; Economy in Sheathing; Shrinkage of Rafters; For Trimming Doors; Handy Staging Support; Around the Switch Plate; To Get Siding Straight; Laying Out Window Stairs; To Cut Joist Bridging; A Simple Bench Stop. | |
| The Idana | Colorplates II & III | WHAT'S NEW DEPARTMENT— | |
| The Idaho | Colorplate IV | Portable Electric Generator..... | 144 |
| The Ipswich | Colorplate V | Moth Repellant Closet Rod..... | 144 |
| The Island Heights | Colorplate VI | House Number Plates..... | 144 |
| The Irondale | Colorplate VII | Copper Stucco Corner..... | 148 |
| Two Economy Homes..... | Colorplate VIII | Builders' Specialties | 148 |
| The Ivydale. | | A New Type of Electric Cooking..... | 148 |
| The Ivyland. | | Hanger Appliances for Closets..... | 150 |
| Two Narrow Lot Designs..... | Colorplate IX | One-Eighth Inch Plate Glass..... | 150 |
| The Irving. | | Economical Window Sash Holder..... | 150 |
| The Ionia. | | Economical Electric Sander..... | 150 |
| The Isabella | Colorplate X | Inexpensive Magnetic Switch..... | 152 |
| The Ireland | Colorplate XI | Simple Dishwashing Appliance..... | 152 |
| Four Home Interiors—Photographs..... | | Speedy Versatile Woodworker..... | 152 |
| | | News of the Field..... | 154 |
| The Iowa Park | Colorplate XIV | Books, Bulletins and Catalogs..... | 160 |
| The Ithaca | Colorplate XV | ADVERTISERS INDEX | 237-239 |
| The Ironton | Colorplate XVI | | |

Published on the first day of each month by American Carpenter and Builder Co.; Wm. A. Radford, *President, Treasurer and Editor-in-Chief*; Wm. A. Radford, Jr., *Vice-President*; E. L. Hatfield, *Vice-President and General Manager*; Bernard L. Johnson, *Vice-President and Editor*; Roland D. Radford, *Secretary*; S. C. Kellenberger, *Dealer Service*; Charles G. Paker, *Eastern Editor*; Delbert W. Smith, E. B. Wolfrom, C. R. W. Edgcumbe, L. H. Reich, O. H. Sutter, Cecil W. Blashill, H. P. Sessions, J. J. Dubro, *Advertising Staff*.

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PROTECTION FOR OUR READERS—The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interest of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

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AROUND THE FAMILY TABLE

High Standards of Living the Cause of Continuing Building Activity

Advertising the Great Educating Force

UNDER the suggestive title, "Prosperity in Harness," the Literary Digest recently presented a very interesting survey of the building situation of today.

The Department of Commerce reported that the shortage in building requirements had been met by August, 1925. How then, the Digest asks, shall we explain the fact that great building activity continues and 1927 promises to be another big year?

John W. O'Leary, president of the Chamber of Commerce of the United States, wrote in the "Nation's Business" last January:

"Many of us are today judging the present entirely by the historic past. Cycles become almost a religion with us. To ignore the experience of the past is folly. To determine the future by past experiences without recognizing the new factors in our economic life is more folly."

If we take a cross-section through the construction industry today we find a certain awareness of the situation that is indicative of a new era. Architects, engineers, contractors, manufacturers of materials, and labor are all better informed; and it is their purpose to maintain a great basic industry in a flourishing condition through intelligent co-operation.

Intelligent co-operation and the diffusion of knowledge have a direct bearing upon the trend of business.

Industry is educating itself, through every medium at its disposal—so that now it not only understands an economic situation but in addition it is prepared to exert some wise controlling influence.

An article in the Literary Digest of May 23, 1925, began:

"THERE WAS ONCE A CAMEL—One of the highly intelligent beasts known to Aesop—who, when questioned by his master whether he preferred to carry his load up-hill or down-hill, made reply: 'But has the long, level road over the desert been closed?'"

A quotation of Mr. Carl Snyder, statistician for the Federal Reserve Bank of New York, followed:

"If every business man were fully informed of the facts which are now available, the chances are large that we should have no such wild booms as we have had in the past, and even as late as five years ago. And

with no booms—no depressions and no hard times. This at least seems certain. We have now, it would seem, a very simple and almost automatic safeguard against these periods of excessive optimism and over-expansion and consequent over-production—if our business men can be familiarized with the new knowledge which we now possess."

It is not only education within the industry but education outside the industry that has made prevailing good times. The increasing desire on the part of the people for newer and better things is not instinctive. It has been created by advertising. As the effectiveness of their advertising has been brought home to them, manufacturers have been stimulated to use even greater courage and more advertising.

The intelligent have realized for some time that the manufacturers' advertising is doing more than simply strengthening the position of the individual product, more than lending a helping hand in the competition of industry with industry. It is creating new wants and stimulating old ones, and so keeping money liquid and business advancing.

The preponderance of the advertising printed in magazines has dealt with sanitation, convenience, durability and the economy of good quality. Another tremendous field, the surface of which has only been scratched, should now receive greater emphasis.

Art in industry is the next great stride.

To be successful this effort must have the interest as well as the moral and financial support of the manufacturer, and it is noteworthy that the manufacturer is now giving it:

The era of great commerce that must precede great architecture is in full swing. We shall have beautiful factories as well as beautiful office buildings and homes.

We are led to look differently at the advertisements in magazines when we realize the broad general service they perform. Not only do they bring profitable returns to the manufacturer who pays the bill, but they represent an absolutely necessary educational program.

The advertisers in magazines have done more than all other factors to set the high standard of living in this country. They cultivate an appreciation of the difference between existing and living; between a house and a home; between a plodding people and a progressive nation.



MOTOR TRUCKS AND TRAILERS

Answers to the Driver Problem

EVERY owner of a building or contracting business knows that his drivers will make or break the success of his truck transportation system.

How can you select men that will help rather than hinder the service? How can you help them to take interest in their work? What discipline system is the best.

These are important questions. They are questions that are receiving a great deal of new thought among the larger builders and contractors today. Many plans have been tried out and many have been successful, while others have been discarded.

Points on Choosing Drivers

The best method of securing and holding the best drivers is to set a wage a little above the average for your locality. Then you can afford to demand more of the applicant.

In one company every applicant who makes a favorable impression in an interview with the personnel officer of the company and gives surface indications of being likely material, must submit a list of his previous activities as far as employment is concerned for a period of five years. The truck superintendent, through letters and personal inquiry, checks up on the record of the applicant, not in a casual, incidental way, but in a systematic and thorough manner. Preference is invariably given to married men.

The two salient things that are looked for in the analysis of an applicant center around the questions:

1. "Is he of a nature to yield to training and discipline, and to recognize and assume responsibility?"
2. "Does he actually want permanent employment?"

Experience as a driver is a minor factor in considering an applicant's qualifications. This company's system calls for a thorough course of schooling before a man is given charge of a truck, and while previous experience in handling automotive equipment is of value to him, it is not essential.

When an applicant has been found, after inquiry, to be worthy of employment he then is required to pass a complete physical examination.

Every driver should be examined for imperfect vision, poor hearing or any other physical ailments, such as heart trouble, nervous disorders, etc. Next his character and home life should be carefully scrutinized. A man who has an unhappy home environment will not make an efficient driver. A married man between the ages of 24 and 40 is the most dependable.

General intelligence is the driver's most important asset

and it is extremely unprofitable to hire a driver who lacks ordinary intelligence. Some concerns are using psychological tests which may be applied to the driver applicant in a few minutes. These tests reveal whether the driver is cautious or careless, what his general standard of intelligence is and whether he is dependable in a crisis. Shortcomings in any of these qualities are sufficient reason for ineligibility.

One test is designed to find out the applicant's power of attention, observation, memory and ability to follow directions, etc. He is required to glance over a sheet containing various figures, to describe them, to divide lines into various portions, to recognize opposites and similar problems. The applicant need not be intellectually a giant but he must be able to carry out simple directions, recognize objects under unusual conditions, learn simple things and have a normal memory.

However, intelligence is not the only qualification for a safe driver. A man may have a very alert mind and at the same time be habitually careless or reckless. These two failings are largely a matter of habit and lack of training. To test the driver's "bump of caution," he is taken into a room and told to handle certain objects and perform cer-

tain operations. The manner in which he follows direction and the time he requires to fully grasp the situation are carefully noted. To determine his presence of mind, he is told to operate an electrical board which is designed to give him an unexpected scare. He is cautioned beforehand that should anything unusual develop to shut off the switch and step on what corresponds to the brake of a truck. The driver's quickness and steadiness under the emergencies of modern street traffic are thus determined.

Right and Wrong Discipline

The right kind of discipline needs a firm hand and cannot be compromised with soft-hearted methods.

A case of point is that of a concern in a large eastern city. This concern found that it was losing money through looseness in the direction of its driver personnel. The drivers at this time were under the direct supervision of a manager who knew his business thoroughly but lacked the proper executive ability to get 100 per cent efficiency from his force. The manager was entirely too good-hearted.

Of course the drivers termed him a "good fellow," and vowed they would do anything within their power for him. But therein lay the difficulty. Their good intentions ended with their avowals.



This Man Who Drives Your Truck Can Make or Break Your Transportation System.



A New Line of Heavy-Duty Internationals

THE new International Heavy-Duty Trucks range in capacity from $1\frac{1}{2}$ to 5-ton, and they are available with wheelbase and body best suited for the jobs they are to do.

The many important features of International design and construction enables these trucks to establish high records in performance and low records in cost. The removable cylinders, the steer-easy steering gear, the ball-bearing crankshaft, the accessibility of

the engine and working parts make it easy to get good service out of these trucks and easy to give good service to them.

The new International Chain-Drive Dump Trucks are rendering a more effective service than ever to road builders, construction contractors, and excavators—both in heavy-duty ability and low operating cost. When you need a Heavy-Duty Truck that will live up to its name, see this new International line.

The International line also includes the Special Delivery for loads up to $\frac{3}{4}$ -ton, 4 and 6-cylinder Speed Trucks of $1\frac{1}{4}$ -ton and $1\frac{1}{2}$ -ton sizes, Motor Coaches, and McCormick-Deering Industrial Tractors

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. of America Chicago, Illinois
[Incorporated]

INTERNATIONAL

HARVESTER TRUCKS COMPANY



The Selection of Truck Drivers Is a Problem Worthy of Serious Study and Careful Analysis.

The natural consequence was a big falling off of business. The drivers became tardy, were frequently absent, and carelessly covered their routes.

The officials were stumped. In their estimation the man in charge of the delivery department was competent beyond a particle of doubt. However, the department was examined. The explanation was found. Discipline was lax; the driver-salesmen had become demoralized; leniency and weak enforcement of rules and regulations were responsible.

The new manager upon taking over the reins was confronted with an overwhelming problem. Whipping into shape a demoralized delivery organization was not the easiest thing in the world. At first, opposition met his every move. Courage and determination finally won out, but not until many of the men had quit or had been discharged.

But those who remained and the newcomers were made to recognize that discipline would be strictly enforced.

The new manager, although very much disliked at first, soon gained the respect of the entire personnel. He did not run his organization in a high manner. He merely let it be understood that any fracture of regulation meant instant dismissal.

Today the delivery organization of this company is considered the strongest of its kind in its city. The labor turnover is unusually low and the men are contented.

Things Drivers Don't Like

It is almost impossible to get a good driver to work with poor, run-down or dirty equipment. Good, clean trucks attract the same kind of drivers. Install a systematic method of keeping your vehicles clean and in good condition and you will inspire cleanliness and interest on the part of your driver force.

Drivers don't like to be changed from one truck to another, they prefer to drive one truck steadily, then they will take more interest in their job and will take better care of the truck they regularly drive.

They don't like to be sent off to a poor start. So send the new driver out with one of experience for a few days, so he will get familiar with your merchandise and methods of serving your customers.

They don't like to be reprimanded in the presence of others. If you have positive reason to believe your chauffeur is getting careless, call him aside and talk to him as a friend. Be fair, but firm.

If the pay day happens to fall on a

holiday or the day following a holiday, they think a considerate employer would arrange to have wages paid the day before the holiday.

They don't like a boss who is unfair, or unreasonable, or one to whom they can't tell their troubles, real or imaginary.

Driver Meetings Help Morale

Several concerns are finding that they can increase driver efficiency by holding what they call "driver meetings" for their route men. These are usually dinners held in the evening during which driver problems are discussed. The H. C. Bohack Co., of Brooklyn, N. Y., recently held a "safety meeting" at which the drivers met a traffic court judge and heard his side of the story on traffic troubles. This company's monthly

meetings have helped from the start.

Here is another good idea that helps to reduce the accident liabilities. Any police officer will bear witness to the fact that no two stories of the same accident will agree in detail. Experienced truck operators likewise know how difficult it is to get a clear idea of what occurred from the description of the driver involved. To overcome this and arrive more or less at the true facts of the case, J. A. Henley, the well-known delivery superintendent of the Hudson Store at Detroit, has had made a model of a street intersection incorporating a variety of corners and crossings, with street car tracks and a traffic tower.

On this is placed miniature street cars, automobiles and trucks which can be located as desired. When the driver is reporting an accident, this board is placed before him so that he can demonstrate the conditions and relative positions of the obstacles involved and a truer comprehension of the facts of the case obtained. On several occasions this model has been of great value in court.



A. G. C. Executives Meet

A MEETING of the executive groups of the Associated General Contractors of America was held at Washington, D. C., May 2 to 5, for the purpose of "stock taking" of current affairs in the construction industry. The discussions and actions that developed were divided into efforts to increase the efficiency of construction operations of all types, mainly by routing the irresponsible bidders, and efforts to eliminate unethical practices.



There Are Many Ways of Getting Your Drivers to Take an Interest in Their Work and Such Interest Is Essential to Your Success.

New Engine!

GRAHAM BROTHERS TRUCKS

This is the finest engine ever used in Graham Brothers Trucks and Commercial Cars . . . Every advanced engineering feature that is proven.

See this new engine! . . . See it today! . . . Compare it with *any* engine *ever* built into *any* truck!

GRAHAM BROTHERS

EVANSVILLE - DETROIT - STOCKTON
 A DIVISION OF DODGE BROTHERS, INC.
 GRAHAM BROTHERS (CANADA) LIMITED, TORONTO, ONTARIO

\$670

¾-TON

\$885

1-TON

\$1245

1½-TON

\$1445

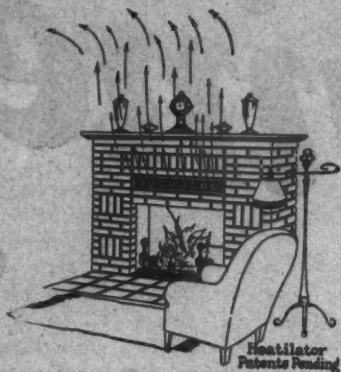
2-TON

Chassis prices,
 f. o. b. Detroit

**MORE POWER—MORE SPEED
 FASTER ACCELERATION
 MORE ECONOMY—MORE VALUE**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Before You Have Another
Fireplace
 Constructed
 Know What the HEATILATOR
 Will Do for You



Fireplaces have been expensive luxuries. They have smoked and actually chilled the rooms by drawing in cold air from windows and doors. Ninety per cent of the heat has gone up the chimney. Now all is changed. Don't have another fireplace constructed in your homes—whether built under contract or for sale—until you learn all about the

HEATILATOR FIREPLACE

It insures an efficient, satisfactory fireplace. The principle is similar to the hot air furnace with its fresh air intake, its heating chamber and its warm air register or grille.

It heats and ventilates the whole room. Smokeless regardless of wind or weather. Saves time, material and labor in fireplace construction. Pays for itself in heat saved. No cold drafts. Plenty of pure heated air.

Write today for your free copy of "Fireplace Perfection." It tells and proves the whole interesting story.

Want to see a Heatilator? No obligation. Just say so and give your supply dealer's name.

HEATILATOR CO.
 651 Glen Ave., Colvin Sta. P. O., Syracuse, N.Y.

Fire Blazes Atop Skyscraper

(Continued from page 179)

"The effective operation of the fire department in tall buildings is almost wholly dependent upon the proper operation of standpipe systems whether the building is completed and occupied or whether it is still in the course of construction and when such systems fail to operate as intended, the efforts of the fire department may be so seriously hampered that they will be almost futile and the fire loss proportionately excessive."

It is emphasized that standpipe systems should be carried forward from floor to floor as rapidly as the building is erected so that they will be available at all times during construction. Other points relative to the necessary equipment for supplying water in case of fire are also covered in the report.

+

Government Construction Report

THE supervising architect's offices, of the U. S. Treasury Department, reports considerable progress in the execution of the \$165,000,000 public buildings program recently authorized by Congress. A number of buildings in various parts of the country are under construction and plans are being made for others.

Of the sum authorized, \$50,000,000 is to be spent in Washington, D. C., for much needed buildings. It is expected that the next Congress will authorize the purchase of the entire triangle between Pennsylvania Avenue and the Mall, approximately a mile in length, for the erection of public buildings along the south side of Pennsylvania Avenue from the Capitol to the Treasury.

+

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

of AMERICAN BUILDER, published monthly at Chicago, Ill., for April 1, 1927.

State of Illinois }
 County of Cook } ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared E. L. Hatfield, who, having been duly sworn according to law, deposes and says that he is the General Manager of the AMERICAN BUILDER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—American Carpenter & Builder Co., Chicago, Ill.

Editor—Wm. A. Radford, Chicago, Ill.

Managing Editor—B. L. Johnson, Chicago, Ill.

Business Manager—E. L. Hatfield, Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereupon the names and addresses of stockholders owning or holding one per cent or more of the total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Wm. A. Radford, Chicago, Ill.; H. M. Radford, Chicago, Ill.; R. D. Radford, Chicago, Ill.; Wm. A. Radford, Jr., Chicago, Ill.; B. L. Johnson, Chicago, Ill.; E. L. Hatfield, Chicago, Ill.; G. W. Ashby, Berwyn, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

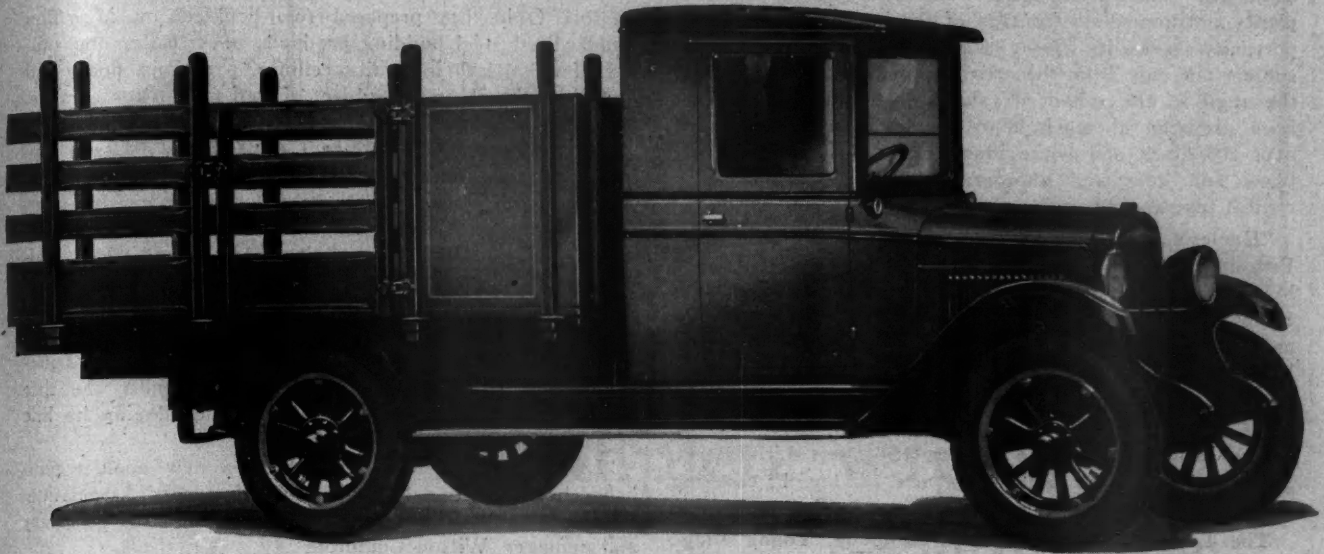
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

E. L. HATFIELD,
 Business Manager.

Sworn to and subscribed before me this 1st day of April, 1927.
 ANDREW JOHN NAUMANN.

(My commission expires October 25, 1929.)

for Economical Transportation

Specially fitted for the Requirements of Builders

— at these
Low Prices!

1-Ton Truck with Stake Body **\$680**

1-Ton Truck with Panel Body **755**

1-Ton Truck Chassis with Cab **610**

1-Ton Truck Chassis **495**

½-Ton Truck Chassis **395**

All prices f. o. b. Flint, Mich.

**Check Chevrolet
Delivered Prices**

*They include the lowest
handling and financing
charges available.*

Powered by a motor that is famous the world over for its remarkable performance and operating economy, and offering the most advanced modern design in every feature of the chassis—Chevrolet has revolutionized every idea of how fine a truck you can buy for little money.

Builders in every section of the country are turning to Chevrolet in increasing numbers—for never before has any low-priced truck so admirably met the requirements of the building industry.

Sturdy and durable, Chevro-

let provides a performance of astonishing dependability, under every condition of road and load.

And Chevrolet economy, based on low first cost, low operating cost and the very minimum of upkeep expense—has long been traditional wherever trucks are used.

There is a wide range of body types available for almost any purpose.

See your nearest Chevrolet dealer. He will gladly arrange a trial load demonstration under your own delivery or haulage conditions.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

The **WORLD'S LARGEST BUILDER OF GEAR-SHIFT TRUCKS**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Foundation Planting," by Leonard H. Johnson, published by A. T. De La Mare Company, Inc., 448 West, 37th Street, New York City, is an authoritative book on the subject of "The art and science of beautifying by means of plants and immediate frontage of the house and when opportunity serves, its sides and rear as well." It treats this subject not only from the artistic standpoint but also from the angle of the enhanced value to the property and has been prepared at much labor and expense. It contains over 200 black and white illustrations, including planting plans and keys and photographs, with descriptive and critical text accompanying them. Price, by mail, \$3.65.

"Henley's 20th Century Book of Recipes, Formulas and Process," edited by Gardner D. Hiscox, M. E., published by The Norman W. Henley Publishing Co., 2 West 45th Street, New York City, has recently been revised and enlarged in a new 1927 edition. It contains 10,000 selected, household, workshop and scientific formulas, trade secrets, chemical recipes, processes and money making ideas. Price \$4.

The Sedgwick Machine Works, 154 West 15th Street, New York City, has published a new catalog, P, covering its line of dumb waiters and elevators and allied equipment.

The Lehigh Portland Cement Company, Young Bldg., Allentown, Pa., offers three interesting booklets under the titles "Getting the Most Out of Building," "The Age of Concrete" and "He Works for You."

The Youngstown Pressed Steel Company, Warren, Ohio, has published a pamphlet containing a description of "The

Stucco Method" for correctly reinforcing portland cement stucco for wood construction which it has developed in co-operation with architects, builders and dealers.

The Graver Corporation, East Chicago, Ind., has published a new catalog covering its bulk storage tanks which is well illustrated and printed in two colors. This company also offers a booklet under the title "How Los Angeles Protects Her Bathers" on the subject of swimming pool water purification.

The Macomber Steel Company, 909 Belden Avenue, N. E., Canton, Ohio, has prepared two booklets on Massillon standardized steel building products, one treating the subject of metal lath for walls, ceilings, partitions, floors and roofs, and the other the subject of roof trusses for garages, auditoriums, industrial and commercial buildings.

The Bommer Spring Hinge Company, 263 Classon Avenue, Brooklyn, N. Y., has published a new catalog, No. 50, which is very completely illustrated and covers this company's complete line of spring hinges.

The Concealed Bed Corporation, 813 Garland Bldg., Chicago, offers a most attractive booklet, illustrated in colors and containing plans for the installation of the Holmes concealed bed under varying requirements.

The Buffalo Gas Radiator Corporation, North Tonawanda, N. Y., offers its booklet No. 10 under the title "Gas and Electric Heating Equipment" cataloging its line of heating appliances and equipment.

"Looking Ahead from Behind" is a new booklet published by the National Lumber Manufacturers' Association, Washington, D. C., containing the report of the secretary and manager, Wilson Compton.

"Illumination Terms" is the title of Bulletin LD155 of the Lighting Data series published by the Edison Lamp Works of the General Electric Company, Harrison, N. J., and "Lighting for Street Traffic Control" is Bulletin LD147A in this series.

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Artistic planting about the foundation of buildings adds to the beauty and value of homes, apartment houses, factory buildings, schools, garages, etc.

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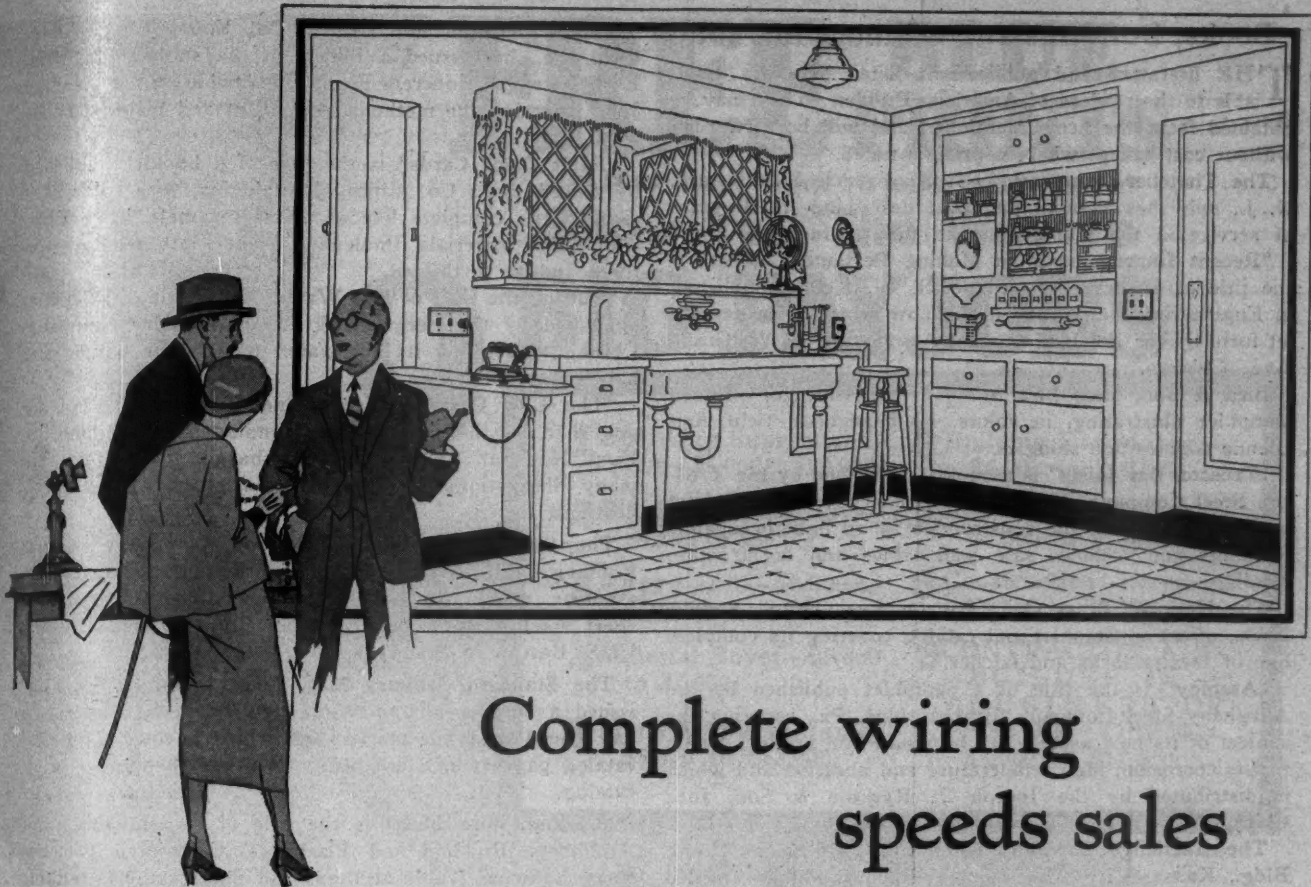
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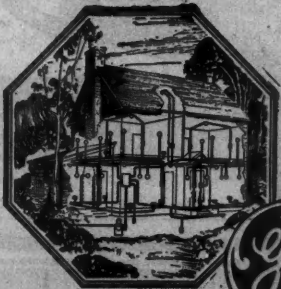
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Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Thatcher Company, 39-41 St. Francis St., Newark, N. J., publishes a small pamphlet describing its 50 years of service in the manufacture of tubular furnaces.

"Recent Improvements in Making Portland Cement" is the title of an article by Frederick W. Kelley, published in Engineering News-Record and now reprinted in pamphlet form by the Portland Cement Association, 33 W. Grand Ave., Chicago.

Bird & Son, Inc., 1472 W. 76th St., Chicago, offers a pamphlet illustrating, in colors, its hexagonal, twin Art-Blende composition shingles.

"Truscon Bar Joists" is a booklet published by the Truscon Steel Company, Youngstown, Ohio, covering this joist designed for use in the construction of all light occupancy buildings and includes safe load tables and construction details.

The National Brass Co., Madison Ave., Grand Rapids, Mich., offers a pamphlet and catalog covering its complete line of Dexter locks and latches.

"Ascoloy" is the title of a pamphlet published by the Allegheny Steel Company, Brackenridge, Pa., covering the subject of its new ascoloy, a chromium-iron product which resists corrosion, high temperature and abrasion and which is distributed by the Joseph T. Ryerson & Son, Inc., Chicago.

The Exchange Sawmills Sales Co., 1116 R. A. Long Bldg., Kansas City, Mo., has published a booklet entitled "A Sun Room for Your Home" illustrating the possibilities of sun rooms as constructed with its products, and providing a cover space for the dealer's name and address.

The Lehigh Portland Cement Co., Young Bldg., Allentown, Pa., has issued a folder on the subject of "High Early Strength Concrete Easily Obtainable on the Average Job," covering the methods, equipment and material to be used.

"Paint Color Cards" is the title of a booklet published by Alfred Peats Co., Chicago, cataloging, with color card samples, its complete line of paints, enamels, kalsomines, wall finish materials, linoleums, shade cloth window fixtures and so forth.

"Cutting the Cost of Hot Water" is the title of a booklet published by the Ferguson & Lange Foundry Company, Chicago, describing its hot water systems for homes and buildings of all types.

"The Low Cost of Dignity and Beauty" is a booklet published by the Plate Glass Manufacturers of America, First National Bank Bldg., Pittsburgh, Pa., containing many illustrations of plate glass installations and specifications.

The Sheet Steel Trade Extension Committee, Oliver Building, Pittsburgh, Pa., is distributing an attractive calendar which contains illustrations of two attractive sheet steel garages, details and a fire test made by the U. S. Bureau of Standards.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has issued a circular announcing a new model sink which it has placed upon the market and which is covered in new catalog pages which are being furnished to holders of its catalog.

"Clinton Wire Lath" is the title of "A Handbook for Architects, Builders and Plasterers, Containing Descriptions, Drawing, Table Methods and Specifications Relating Especially to Furring, Lathing and Plastering," published by the Wickwire Spencer Co., 41 E. 42nd St., New York City.



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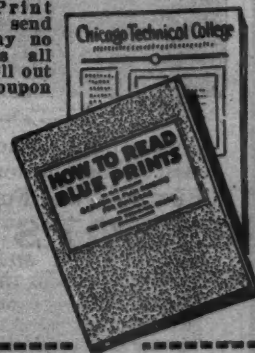
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The United Cork Companies, Lyndhurst, N. J., offers a booklet on the subject of "Crescent Cork Board Roof Insulation for Reducing Heat Loss and Preventing Condensation," which is well illustrated and includes specifications.

The Columbia Mantel Co., Inc., Louisville, Ky., offers its catalog No. 27 which handsomely illustrates its extensive line of wood mantelpieces and hand carved ornaments.

"The Rota-Floor Garage System" is the title of a pamphlet from the Graves Elevator Co., Inc., Rochester, N. Y., describing this new and efficient system of garage construction.

The United States Gypsum Company, 205 W. Monroe St., Chicago, has just issued five new booklets under the following titles: "Architectural Data Pyrobar Roof Construction," "Sheetrock Pyrofill Construction Roofs and Floors," "Pyrobar Voids," "Structolite for Industrial Buildings" and "Structolite Concrete."

The National Terra Cotta Society, 19 W. 44th Street, New York City, has published four booklets under the following titles: "The Church, Its Architectural Treatment"; "The Small Apartment Building, How You May Beautify It"; "Your New Apartment Building, Will Its Exterior Attract?"; and "Your New Store Front, Why Not Distinctive and Beautiful?"; all illustrating the use of terra cotta for the purposes suggested.

The Alpha Portland Cement Company, Easton, Pa., has published a booklet under the title "Use Alpha Cement for

High Early Strength Concrete" which explains the practical method of obtaining this result.

The New Jersey Wire Cloth Company, 614 S. Broad Street, Trenton, N. J., offers a booklet, No. 3880, "Why Copper?" containing much valuable information on screens in general and its copper wire screening in particular.

The Celotex Company, Dept. T-504, 645 N. Michigan Avenue, Chicago, offers three folders containing charts and information designed to aid in solving the problems of radiation, fuel saving and roof condensation, quickly and accurately.

The Portland Cement Association, 33 W. Grand Avenue, Chicago, has published a booklet illustrating in color the numerous ways in which concrete was utilized in the association's new building.

The Electra Manufacturing Company, 26 Chestnut Street, Albany, N. Y., offers an interesting booklet covering the subject of lightning protection according to the modern scientific methods.

The Truscon Steel Company, Youngstown, Ohio, has published a brochure on the subject of "Truscon 'T' Plates for Steeldeck Roofs" which offers a solution of the problem of securing an economical roof that is incombustible yet light in weight.

The Stedman Products Company, South Braintree, Mass., offers several interesting and informative pamphlets on the use of its reinforced rubber flooring.

"Electric Range Book for Architects" is the title of a booklet from the Westinghouse Electric & Manufacturing Company, Mansfield, Ohio, describing and cataloging the Westinghouse line of electric ranges for modern homes, apartments and commercial uses.

The Automatic Pimer Co., 111 W. Washington St., Chicago, offers a pamphlet descriptive of its Apco automatic primer for sump pumps.



Residence of H. F. Carkeek, Youngtown, Pa.
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Mr. Carkeek writes:

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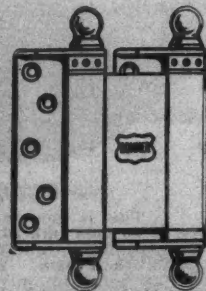


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For more than 50 years Bommer Spring Hinges have maintained their leadership and proven their superiority over all others.

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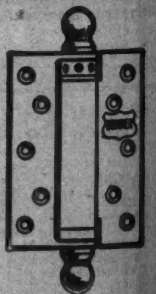
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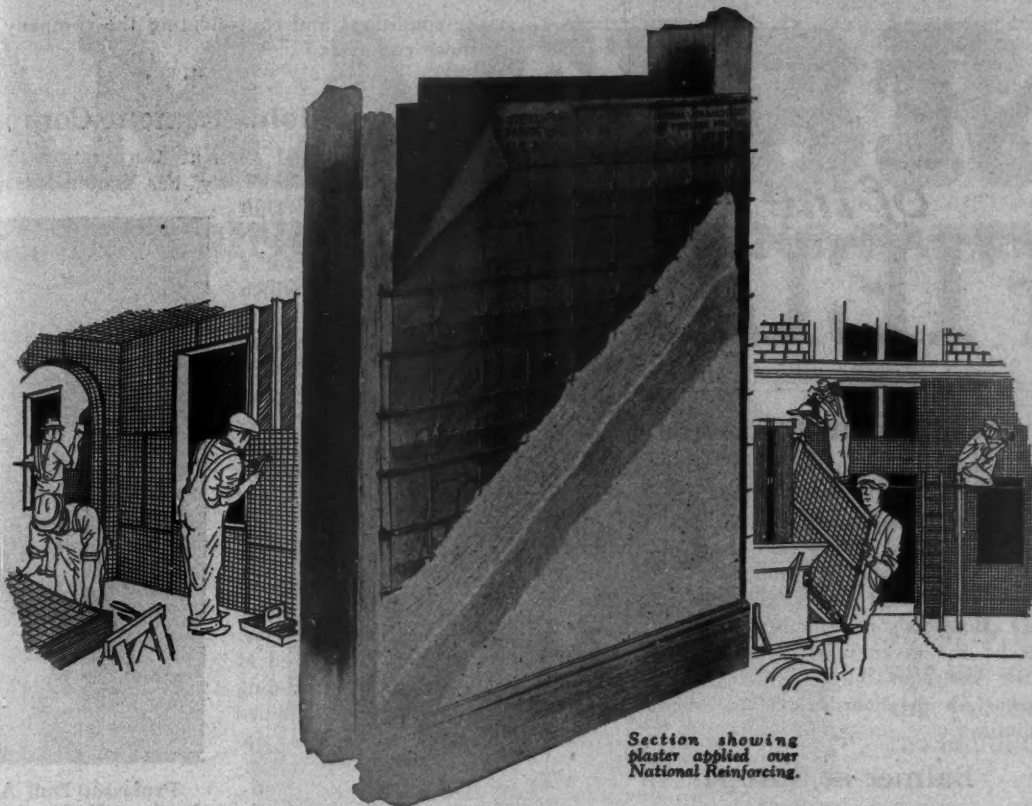
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Your dealer handles them.

Send for New Catalog 50. It is a big help in ordering.

Bommer Spring Hinge Company
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Time is money in building construction work. National Reinforcing saves money for the contractor.

The time saved by National Reinforcing is important in that it speeds up work so that you can handle more jobs a season—thus indirectly making greater profits.

You save, too, in that there is no danger of a job being done over due to cracked walls, fallen ceilings, lath marks, stains, etc. National Reinforcing protects the plaster for the life of the building against these defects—and at the same time gives a job that is moisture-proof, insulated against heat and cold and with a greater degree of sound-deadening.

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NEWS of the FIELD

Audit Bureau Elections

THE election of S. E. Conybeare, advertising manager of the Armstrong Cork Company, of Lancaster, Pa., and president of the Association of National Advertisers, as a member of the board of directors of the Audit Bureau of Circulations, has recently been announced. He will fill out the unexpired term of B. H. Bramble who recently resigned. Mr. Bramble's resignation came as a result of the fact that he has given up his position as advertising manager of the American Chicle Company and is no longer eligible to serve on the board as a representative of the advertising division.

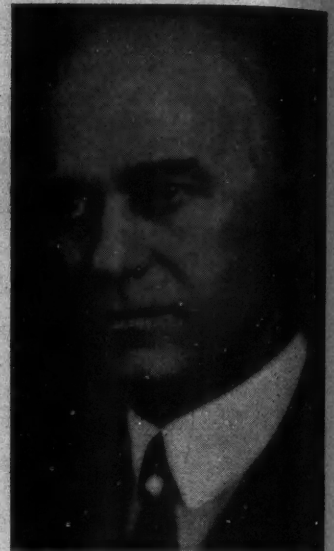
Balmer in Europe

AN April 30, J. H. Balmer, president of the J. H. Balmer Manufacturing Company, 259-267 Plane Street, Newark, N. J., well-known manufacturer of bathroom fixtures, sailed for Europe. Mr. Balmer will make an extensive trip including England, France, Holland, Belgium and Germany in his itinerary, for the purpose of observing

trade conditions and consolidating the company's contracts in those countries.

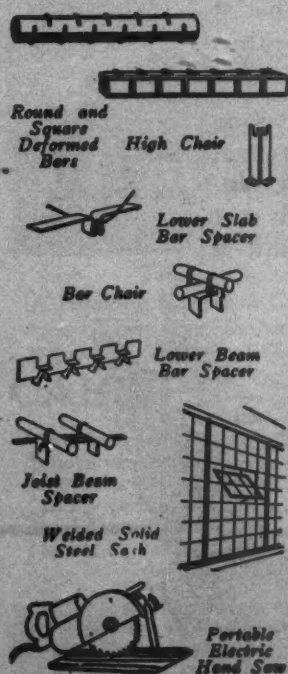
Abrams Joins Cement Company

THE International Cement Corporation, 342 Madison Avenue, New York City, has announced the appointment of Professor Duff A. Abrams as director of research and plans for a research laboratory which will be under the direction of Mr. Abrams. Since 1916 Mr. Abrams has been in direct charge of the Structural Materials Research Laboratory, a joint activity of the Lewis Institute, of Chicago, and the Portland Cement Association. The work carried on by this laboratory under his direction during the last 10 years is recognized as one of the outstanding achievements in applied research in American industry. His most important work was in connection with the development of standard methods of testing concrete and concrete materials and the discovery of the laws on which the water-ratio method of designing and specifying concrete mixtures are based.



Professor Duff A. Abrams is Known Everywhere for His Work with the Structural Materials Research Laboratory.

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The Special Contractors and Builders Division of Ryerson Steel-Service is without parallel in the building fields.

This department has its own warehouses and provides complete service on all reinforcing for concrete, Steel Joist, Metal Lath, Steel Sash, and all the various steel building products are also included.

In addition, structurals, bars, plates, sheets, rivets, bolts, wire, etc., are furnished from the general steel departments. Trench braces, jacks, electric drills, and hundreds of other tools needed on every job are supplied by the machinery and small tool departments.

Contractors use the Ryerson Warehouses as if they were their own. Reinforcing steel, lath, sash and other miscellaneous materials are kept under cover until they are ready to use each item. Delivery is according to their schedule.

Large fleets of trucks and private switch tracks help provide service unequalled by any other source of supply.

All types of jobs are figured and lump sum or pound price quotations prepared.

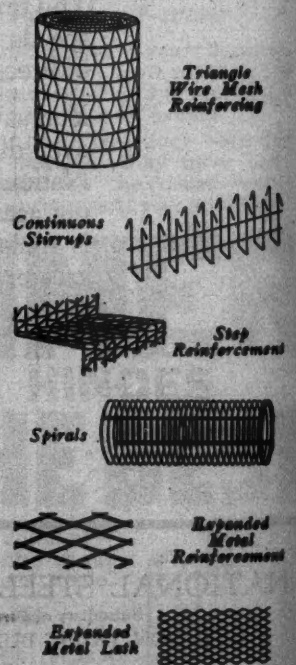
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Amafibre doesn't have to be nailed on in small sections. Because of its great strength it can be put up in lengths the full height of the building.

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One look at this free sample will convince you that Amafibre is the best building and sheathing paper on the market. Twist it, tear it, subject it to any test you can devise, it will stand it. Amafibre is made of pure white spruce fibre—treated chemically. There is no rosin or makeshift filler in it. Its strength will support a man and you can work in the wind without danger of tearing it. It will not crumble or rot and will stand up as long as the building. Used everywhere for all sheathing purposes and many other uses. Save money and give your customers a better job by using Amafibre on your next building. Send for your free sample.

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Waste Prevention Prize Awards

THE first prize of \$1,000 cash in the Waste Prevention Contest of the National Lumber Manufacturers' Association was awarded this year to Wm. J. McHale, sawmill superintendent of the Menominee Bay Shore Lumber Company, of Soperton, Wis., for his invention known as the Multiple Guide Dimension Mill. This invention affords a means for the profitable utilization of thick slabs, wide edgings and long trimmings unavoidably produced in every lumber manufacturing operation and long a problem before the industry. Mr. McHale was also awarded the first prize of \$100 in the Northern Hemlock and Hardwood Manufacturers' Association Waste Prevention Contest for the same invention.

Second prize, \$500, in the National Lumber Manufacturers' Contest was awarded to A. L. Thomas, of the A. C. Tuxbury Lumber Company, Charles, S. C., for his scale and indicator attachment for lumber edgings. Three other cash prizes of \$100 each and four of \$50 each were also awarded. One of the former went to Fred Wiebner, of the Kneeland McLurg Lumber Co., of Phillips, Wis., for his practical scheme of holding the pressure rolls more tightly as the lumber and timber passes through the resaw, thereby eliminating much mis-sawn lumber and waste. This invention was also awarded the \$50 second prize in the contest of the Northern Hemlock and Hardwood Manufacturers' Association.

Chain Belt Elects Officers

AT the annual stockholders' meeting of the Chain Belt Company, Milwaukee, Wis., the following officers were elected: C. R. Messinger, president; Clifford F. Messinger, first vice-president; J. C. Merwin, second vice-president;

Brinton Welsler, secretary; W. H. Brandt, assistant secretary; C. L. Pfeifer, treasurer; F. M. Lowum, assistant treasurer. The officials of the company reported that the year 1926 had broken the previous sales record, that of 1925, exceeding it by 10 per cent.

Roberts Joins Metal Lath

THE Associated Metal Lath Manufacturers, 123 West Madison Street, Chicago, have added John Roberts, formerly plastering inspector of Minneapolis, to the personnel of their organization. During the last seven years Mr. Roberts has established a national reputation by his work in Minneapolis which has been responsible for the high class of plastering work for which that city is known.

Paint and Varnish Conference

THE sixth annual conference of Paint and Varnish Sales and Advertising Managers, attended by about 125 members, was held at the Palmer House, Chicago, May 12 and 13. Among the important features of the conference was the consolidation of the two groups, the Advertising Conference Committee and the Sales Managers' Council, under the name Paint and Varnish Advertising and Sales Managers' Conference, with Granville Breinig as chairman; William Knust, vice-chairman, and William R. McComb, secretary, for the 1928 sessions.

Appoints New Distributor

THE T. L. Smith Company, Milwaukee, Wis., announces the appointment of the George B. Curd Equipment Co., 609 Reading Road, Cincinnati, Ohio, as distributors of its mixers and pavers for the Cincinnati and Dayton territories.

Painting the modern, improved DeVilbiss way Insures BIGGER PROFITS For You

How to provide for a worth-while increase in your profits: the easier, improved DeVilbiss way of painting will most successfully solve that part of your business problem.

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Investigate now the increased profits to be made painting the DeVilbiss way. Complete facts will be promptly mailed to you. Address—

THE DEVILBISS COMPANY
238 Phillips Ave. TOLEDO, OHIO

New York—Philadelphia—Chicago—Detroit
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Cincinnati—Milwaukee—Minneapolis—St. Louis
Windsor, Ontario



DeVilbiss
Spray-painting System



The Frantz Hardware illustrated on this page is a set of popular No. 411 Garage Door Fixtures, one of the items in the Frantz Line that has been a factor in building up the reputation that makes the Red Labels stand for the best.

Why it Pays to Look for Frantz Red Labels

Frantz Red Labels are your guide to the best in Builders' Hardware—an assurance of perfect satisfaction both to you and your customers.

Back of every label lies not only a guarantee of expert workmanship and highest quality materials but a reputation, 15 years old, that has been built up by constantly giving the best the human skill can produce.

Each Frantz product is carefully designed to fit the work for which it is intended, to do the work efficiently and to give long, satisfactory service.

Look for Frantz Red Labels on your Dealer's shelves—ask him for a demonstration of one or more items. Your own judgment will convince you of their many superior features. Send for your copy of the handy wall hanger that illustrates the entire Frantz line of Guaranteed Builders' Hardware. Hang it in a conveniently seen location as you will find it a great help in specifying or estimating the hardware for any home, garage or barn.

FRANTZ MANUFACTURING COMPANY
Dept. A-7, STERLING, ILLINOIS

No Hardware is Genuine **FRANTZ QUALITY** without the Red Label

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 43.

CONTENTS FOR JULY, 1927

No. 4.

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| | Page | | Page |
|--|------------------------|---|---------|
| Around the Family Table..... | 95 | Our Front Cover Home..... | 125-129 |
| High Standards of Living the Cause of Continuing Building Activity. | | Photograph and Full Set of Building Plans Drawn to Eighth Inch Scale of the Beautiful Brick Bungalow Illustrated in Full Colors on Our Front Cover. | |
| Editorial Page | 97 | Details of Home Building..... | 130 |
| Everybody's Business—By Floyd W. Parsons | 99 | Norman Architecture. | |
| Full Size Model Exhibited at Architectural Exposition | 101 | Furnace Heating | 132 |
| Use Short Length Lumber for Building Economy | 102 | Why Heating Plants Need Good Chimneys. | |
| Real Estate and Subdivision Work..... | 104 | Law for the Builder..... | 135 |
| The Development of an Ideal Subdivision Property. | | Instructions in Roof Framing..... | 136 |
| The White House Remodeling..... | 106 | Stepping Off the Length of a Rafter with the Steel Square. | |
| Sanctum—A Home Builder's Poem..... | 107 | Eaton Tower—A New Skyscraper Nearing Completion in Detroit..... | 138 |
| Chips and Quips..... | 108 | Filling Station Design—Part IV..... | 139 |
| COLORKEED HOME PLANS..... | 109-124 | A Hillside Apartment with an Interesting Garage | 140 |
| Mr. Radford's Monthly Talk on Home Building | Colorplate I | HOW DAN DOES IT..... | 141-143 |
| The Most Salable Home Today Is the Home That Features Well-Known Nationally Advertised Building Materials and Equipment. | | Testing the Level; Built-Up Wood Beams; Economy in Sheathing; Shrinkage of Rafters; For Trimming Doors; Handy Staging Support; Around the Switch Plate; To Get Siding Straight; Laying Out Window Stairs; To Cut Joist Bridging; A Simple Bench Stop. | |
| The Idana | Colorplates II & III | WHAT'S NEW DEPARTMENT— | |
| The Idahome | Colorplate IV | Portable Electric Generator..... | 144 |
| The Ipswich | Colorplate V | Moth Repellant Closet Rod..... | 144 |
| The Island Heights | Colorplate VI | House Number Plates..... | 144 |
| The Irondale | Colorplate VII | Copper Stucco Corner..... | 148 |
| Two Economy Homes..... | Colorplate VIII | Builders' Specialties | 148 |
| The Ivydale. | | A New Type of Electric Cooking..... | 148 |
| The Ivyland. | | Hanger Appliances for Closets..... | 150 |
| Two Narrow Lot Designs..... | Colorplate IX | One-Eighth Inch Plate Glass..... | 150 |
| The Irving. | | Economical Window Sash Holder..... | 150 |
| The Ionia. | | Economical Electric Sander..... | 150 |
| The Isabella | Colorplate X | Inexpensive Magnetic Switch..... | 152 |
| The Ireland | Colorplate XI | Simple Dishwashing Appliance..... | 152 |
| Four Home Interiors—Photographs..... | | Speedy Versatile Woodworker..... | 152 |
| | Colorplates XII & XIII | News of the Field..... | 154 |
| The Iowa Park | Colorplate XIV | Books, Bulletins and Catalogs..... | 160 |
| The Ithaca | Colorplate XV | ADVERTISERS INDEX | 237-239 |
| The Ironton | Colorplate XVI | | |

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ADVERTISING RATES—Furnished on application. Advertising forms close on the 10th of the month preceding date of publication.

MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS



High Standards of Living the Cause of Continuing Building Activity

Advertising the Great Educating Force

UNDER the suggestive title, "Prosperity in Harness," the Literary Digest recently presented a very interesting survey of the building situation of today.

The Department of Commerce reported that the shortage in building requirements had been met by August, 1925. How then, the Digest asks, shall we explain the fact that great building activity continues and 1927 promises to be another big year?

John W. O'Leary, president of the Chamber of Commerce of the United States, wrote in the "Nation's Business" last January:

"Many of us are today judging the present entirely by the historic past. Cycles become almost a religion with us. To ignore the experience of the past is folly. To determine the future by past experiences without recognizing the new factors in our economic life is more folly."

If we take a cross-section through the construction industry today we find a certain awareness of the situation that is indicative of a new era. Architects, engineers, contractors, manufacturers of materials, and labor are all better informed; and it is their purpose to maintain a great basic industry in a flourishing condition through intelligent co-operation.

Intelligent co-operation and the diffusion of knowledge have a direct bearing upon the trend of business.

Industry is educating itself, through every medium at its disposal—so that now it not only understands an economic situation but in addition it is prepared to exert some wise controlling influence.

An article in the Literary Digest of May 23, 1925, began:

"THERE WAS ONCE A CAMEL—One of the highly intelligent beasts known to Aesop—who, when questioned by his master whether he preferred to carry his load up-hill or down-hill, made reply: 'But has the long, level road over the desert been closed?'"

A quotation of Mr. Carl Snyder, statistician for the Federal Reserve Bank of New York, followed:

"If every business man were fully informed of the facts which are now available, the chances are large that we should have no such wild booms as we have had in the past, and even as late as five years ago. And

with no booms—no depressions and no hard times. This at least seems certain. We have now, it would seem, a very simple and almost automatic safeguard against these periods of excessive optimism and over-expansion and consequent over-production—if our business men can be familiarized with the new knowledge which we now possess."

It is not only education within the industry but education outside the industry that has made prevailing good times. The increasing desire on the part of the people for newer and better things is not instinctive. It has been created by advertising. As the effectiveness of their advertising has been brought home to them, manufacturers have been stimulated to use even greater courage and more advertising.

The intelligent have realized for some time that the manufacturers' advertising is doing more than simply strengthening the position of the individual product, more than lending a helping hand in the competition of industry with industry. It is creating new wants and stimulating old ones, and so keeping money liquid and business advancing.

The preponderance of the advertising printed in magazines has dealt with sanitation, convenience, durability and the economy of good quality. Another tremendous field, the surface of which has only been scratched, should now receive greater emphasis.

Art in industry is the next great stride.

To be successful this effort must have the interest as well as the moral and financial support of the manufacturer, and it is noteworthy that the manufacturer is now giving it.

The era of great commerce that must precede great architecture is in full swing. We shall have beautiful factories as well as beautiful office buildings and homes.

We are led to look differently at the advertisements in magazines when we realize the broad general service they perform. Not only do they bring profitable returns to the manufacturer who pays the bill, but they represent an absolutely necessary educational program.

The advertisers in magazines have done more than all other factors to set the high standard of living in this country. They cultivate an appreciation of the difference between existing and living; between a house and a home; between a plodding people and a progressive nation.



Spanish

Apply a tight coat of Sanite and double-back with trowel coat. Use wet brush when mortar is firm enough, with random, curving strokes—being careful not to allow mortar to accumulate on brush.

Interiors of rich color and texture in 3 to 4 weeks less time!

TAKE any job of high-grade oil decoration. At least 4 weeks for the plaster to season before painting. 1 to 2 weeks for painting. 5 to 6 weeks in all—after the finish coat of plaster has been applied.

Take Bishopric Sanite—beautiful, permanent color decoration, and finish coat of plaster—in one material. A revolutionary achievement in building! After the usual scratch and brown coats of plaster, Sanite is applied in sand float or texture—by the plasterer. Thus the plaster and decoration are completed together.

A clear saving of 3 to 4 weeks time! No complication, no delays. A simple job—simply done.

Walls finished in Sanite are in every way as beautiful as with high-grade oil decoration, and far more permanent. Sanite is three times as strong as ordinary plaster finish.

The cost of Sanite ranges from \$1.00 to \$5.00 less per yard than high-grade oil decoration. Sanite is even less expensive than medium-priced wall paper over plaster!

22 distinct, beautiful colors are available—specially selected for purity and permanence. These

colors may be combined in no less than 500 original tone harmonies to suit the individual taste.

Every variety of texture is possible with Sanite. Its extreme plasticity makes Period, Modern, Travertine and French Trowel effects remarkably easy to secure.

Send for interesting folder

We are mailing free to builders an illustrated folder on Sanite, showing color and textural effects. No progressive builder should be without one. Send for yours—now!

THE BISHOPRIC MANUFACTURING CO.

Este Ave., Cincinnati, Ohio

MAIL THIS COUPON

The Bishopric Mfg. Co.
707 Este Avenue, Cincinnati, Ohio
Please send me a copy of your illustrated folder on Bishopric Sanite Interior Finish.

Name.....

Address.....

BISHOPRIC SANITE

2 IN 1 INTERIOR WALL FINISH

AMERICAN BUILDER



Formerly AMERICAN CARPENTER AND BUILDER

1827 Prairie Ave., Chicago—250 Park Ave., New York City

Building for May Exceeds May, 1926

MAY building and engineering contracts continued in very satisfactory volume, according to F. W. Dodge Corporation. Last month's contract total for the 37 states east of the Rocky Mountains (including about 91 per cent of the country's total building volume) was \$552,348,500. This was only 9 per cent under April and it was about half of one per cent over May of last year.

The May contract total brought the amount of construction started since the first of this year up to \$2,555,515,300, which is only 1 per cent behind the corresponding five months of 1926, a much better showing for this year than has been generally anticipated.

Last month's record included the following important items: \$219,979,900 for residential buildings (under contract only); \$111,367,300 for public works and utilities; \$72,541,100 for commercial buildings; \$44,888,800 for industrial buildings, and \$34,545,100 for educational buildings.

Contemplated new work was reported in May to the amount of \$847,458,900. This was a 2 per cent decrease from the amount reported in April, but a 7 per cent increase over the amount reported in May of last year. The record of contemplated work indicates a slight strengthening of construction demand.



Sustained Production Forests

IN the happy-go-lucky old times of southern agriculture it was customary to till a field until the top soil was exhausted, then abandon it and clear another field. These abandoned fields of a wasteful system of agriculture, insisting on being useful in spite of neglect, are inculcating forestry practice in the South. Barred from tobacco and cotton, they have turned back to trees. Impressed by the fact that land cast off as useless 50 to 70 years ago is now covered with valuable pine timber standing 10,000 to 15,000 board feet to the acre, and worth \$50 to \$100, lumbermen of the Southeast are beginning to look forward to perpetual operations.

It is the opinion of foresters and lumbermen of this section of the country that lumbering on an extensive scale will always be a great industry in the southeastern part of the United States and that the introduction of sustained yield, whereby the forest is always producing and yet always renewing itself, will advance rapidly. There are many millions of acres of land in the Southeast which, under present-day economic conditions are likely to be more profitable when used for timber growing than for any other purpose.



Door to Door Housing Surveys

SURVEYS showing the exact situation of the city in regard to the existing number and capacity of buildings, in specific types of structures, give builders, investors, property owners and managers accurate information upon which to conduct their business, and tend to prevent periods

of either decided oversupply or underproduction of buildings, according to the report of real estate boards which are following the plan of periodic checkups of their local situations.

Actual door to door count of all dwelling house vacancies, apartment vacancies or vacant industrial or business space has come to be one of the principal instruments by which a large number of cities are insuring a stable building and real estate activity. Reports of such systematic local surveys have been made to the National Association of Real Estate Boards by many of its member boards throughout the country.



The American Home

IN a recent radio talk, A. H. Landwehr, president of the Holland Furnace Company, presented in a most interesting manner his conception of "What the American Home Should Be," both as regards the spirit pervading it and its material manifestation. In the course of his speech Mr. Landwehr made a particularly clear and effective statement of the proper method of approaching the development of the home building project. Along this line he said:

"The American home should be the greatest institution on earth for really living and enjoying our lives, for we have everything with which to make home life worth while and interesting for ourselves and our friends.

"From a material standpoint, a home should be everything in the way of beauty, convenience, comfort and health. And, while the construction should express our individual taste, it would be well for any one who plans to build a home to get in touch with a competent architect. He will be able to save you several times his fee in short cuts, standardizations and other practical as well as artistic ideas which his experience has taught him.

"No feature of the home should be overlooked, such as would tend toward durability, practicability and comfort.

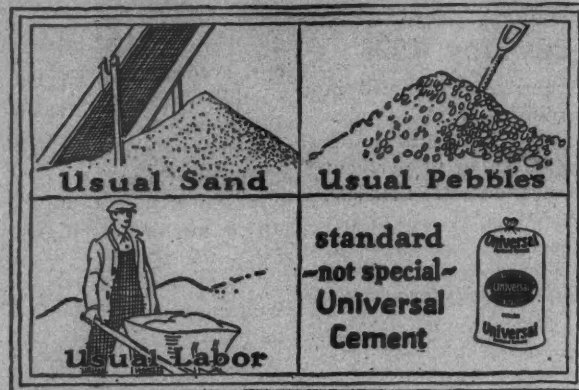
"It might also be well to consider that a home should be so built that it will be readily salable in case of eventuality.

"It pays to get the benefit of the advice to be obtained from your general contractor, your heating man, the plumber, the electrician, the decorator, etc. These people have had a great deal of experience, and they are always willing to give you all the information and assistance they can."



Zoning Is Upheld

THE right of municipalities to enact zoning regulations for the construction of buildings has been upheld by the Supreme Court of the United States in a recent decision. This decision is pointed out by the National Association of Real Estate Boards as supplementing the former decision to the same effect which has assured a permanent foundation for the work which is being done by American cities through zoning ordinances to conserve use conditions both as to home sections and business and industrial sections and so immensely to conserve real estate values.



Usual Materials Give Unusual Results

With the *usual* sand, *usual* pebbles or crushed stone, *usual* equipment and *usual* labor, you can get *unusual* results in your concrete work by using fully tested methods and standard—not special—Universal cement.

You need nothing unusual in the way of materials, labor or equipment to secure High-Early-Strength Universal Concrete that has a 3-day strength equal to the 28-day strength of ordinary concrete.

In addition to high *early* strength, concrete so made also has a higher *ultimate* strength and is therefore *permanently* better and stronger concrete.

For full details, use the accompanying coupon.

UNIVERSAL PORTLAND CEMENT CO.
210 South La Salle Street,
Chicago.

Send me detailed information on methods for securing strong concrete in 3 days with the usual materials.

Send me free book showing attractive stucco finishes with standard Universal cement.

Name _____

Street _____

City _____

A. E. Y. 37

Universal Portland Cement Co.
Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York
Concrete for Permanence

The background shows
Universal Cement Stucco-Italian Travertine Texture
Made with Universal cement—a standard cement for universal use.

Everybody's Business

By FLOYD W. PARSONS

THE greatest stumbling block in the progress of man has been what we call the natural forces. Included in this category are various forms of unharnessed energy, nearly all of them being either direct or indirect products of the action of the sun. It is for this reason that when we seek the causation of tornadoes, floods, abnormal weather variations, crop failures or static, we always end up with eyes and minds focused on the blazing star around which our earth revolves.

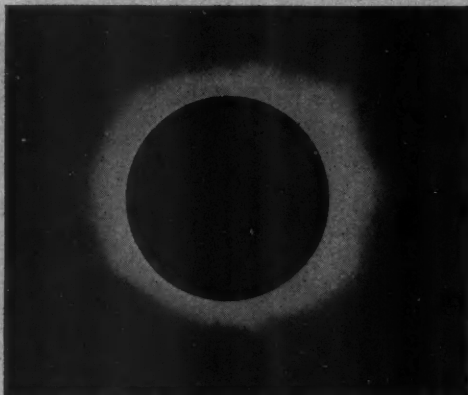
The ancient astrologers were not far wrong in their belief that the violence or inactivity of the sun's radiation has a profound influence on human health and well-being. An eminent astronomer at a recent congress of scientists said that the extra dose of radiation that reaches us from the sun near the end of each sunspot cycle stirs the nervous system and fosters unrest throughout the earth. The Russian upheaval of 1917, the French Revolution in 1789, and a long series of earlier insurrections all coincided with times of maximum sunspot activity.

We no longer believe that the positions of the planets and the

moon in the signs of the zodiac—the twelve constellations that appear to circle around the Polar Star—determine the fate of the new-born child. We have got away from the notion that the same medicine is good or bad according to the position of the stars above. And, thank Heaven, we no longer wait for a sign from the astrologer that it is now safe to proceed with the ceremonial of an annual tub bath after a winter of bodily abstinence from soap and water. But the facts at hand do clearly indicate that something causes the machinery of man to alter its speed at more or less regular intervals of time.

We smile at the belief of our forefathers that the sun controlled the heart; Saturn, the spleen; Venus, the ears; Jupiter, the liver; Mercury, the lights; Mars, the gall; and the Moon, the head. But science no longer sneers at the notion that electro-magnetic bombardments of the earth by the sun vitally affect human actions. Tens of thousands of evil germs succumb to sunlight exposure, so that periods of plague and pestilence are favored by a reduction in radiation and the simultaneous lowering of body resistance due to nervous relaxation.

We have developed a working knowledge of the atmosphere above us for 10 or 12 miles. It is clear that the warm air rises in the tropics, returning to the Arctic where



"The Greatest Stumbling Block in the Progress of Man Has Been the Natural Forces . . . Either Direct or Indirect Products of the Action of the Sun."



Scientists Are Looking Toward Solar Radiation for the Cause, Not Only of Tornadoes Like the Florida Disaster of Last Year, but Also of Various Human Upheavals.

it descends and starts once more on its journey to the equator. But as to the secrets of the upper air, not much do we know except that the air is thinner, oxygen and nitrogen have practically disappeared and hydrogen, helium and free electrons probably reign supreme. As we go up, the temperature drops, reaching 60 degrees below zero at an altitude of 10 miles. Studies of shooting stars and other phenomena have resulted in great differences of opinion concerning the "electric roof" of the atmosphere and the temperature and density of the upper air. In this virgin field of research lies the key to many problems such as the aurorae, magnetic storms and "skip distance" or silent areas in radio broadcasting.

Milliken and Bowen, wizards of the infinite, tell us of electric winds that whistle past the earth's atmosphere at the speed of light—186,000 miles a second. These strange winds are really masses of radiation, for according to the new conception, light is not merely wave lines in ether, but comes in lumps of assorted sizes which have both mass and inertia. These "winds of space" blow ceaselessly from those

sources of light and life which we call the sun and the stars. By virtue of their mass and speed they exert a pressure on the surfaces of all planets and whatever else they touch. Such cosmic rays are developed by the destruction of matter in far-off stars, some of them so distant that although light travels at such an incredible speed, the rays that reach the earth tonight started toward the earth hundreds of thousands of years ago.

If we reduce the heavens to a scale in which the earth is no larger than the tiniest germ visible under a microscope, then the sun would be only a dust speck three-hundredths of an inch away, and our entire solar system would be less than an inch across. On this scale, the nearest star would be 1,500 feet away and our private universe or star cloud would have a diameter of about 9,000 miles. Continuing our assumption on the same scale of measurements, the vastness of space is indicated by the statement that while the sun is only a fraction of an inch away, the most remote nebula, or island universe, so far disclosed is 300,000 miles distant.

Searching the heavens for the secrets of life is far from being a waste of time. The astronomer is just as likely to discover the clue to infinity as the physicist. On every hand are puzzling questions. Are there living organisms

on other planets? Have our own planets been thrown off from a central orb, or have they been picked up by the sun in its whirl through space, as the earth picks up meteorites? Is our solar system cooling off or heating up? Are the spots on the sun immense volcanoes thousands of miles in diameter and shooting great geysers of super-heated gases tens of thousands of miles into space, bombarding the earth with electrical bullets, or are they gigantic whirlwinds set up between the moving layers of gases within the sun?

Each scrap of new knowledge helps in our search for the master key of the universe. Evolution really begins with the formation of the atom. But for the origin of matter we may look to the stars as the source of the electrons and protons necessary to the construction of atoms. It is for such reasons, as well as its close proximity that the sun must become an object of ever-increasing interest to man. It is our power-plant—the source of all the energy that sustains life. From it we get the vital ultra-violet rays that build health, and from it come the variable forces that create destructive hurricanes and manufacture weather. Eventually a better knowledge of the sun and its changing spots will make long-distance weather forecasting a valuable and dependable science. Droughts, floods and abnormal temperature changes will be anticipated and losses of life and property avoided.

We are now coming to a period of sunspot maxima which combines with another cycle having to do with the relative position of the sun, moon and earth. Famines and weather calamities throughout the world in the past seem to have come in coincident cycles and appear to have been caused by variations in solar radiations. Since 1922 we have been getting less than normal heat from the sun and there has been an expansion of the cold water areas of the oceans producing abnormal climatic changes. It is for this reason that the present year has been heralded as a repetition of 1816 when the food supplies of the world were seriously damaged.

This makes it interesting to review the weather that prevailed in that so-called "Year Without a Summer." According to Pierce's "Weather Records" which extend from 1790 to 1847, and which covered primarily the region around Philadelphia, the weather of the last quarter of 1815 bore a close resemblance to the same months of 1926. January, February and March of 1816 were also quite similar to the first three months of the present year. There was one deep snow in the middle of January, but otherwise the weather was mild, foggy and wet, with an average temperature of

32. The mean temperature of February was 28, and that of March 36. The Delaware River was frozen over in February for only a few days. The first half of March was quite cold, but the last two weeks brought mild weather and heavy floods in the Ohio River.

Real disaster only commenced in April of 1816. The temperature of that month averaged 47, May 57 and June 64. April brought heavy frosts and snow squalls more appropriate for January. Ice formed on several nights and all buds were destroyed. According to the forecaster, "May's frowns were many and her smiles few." Northerly winds with frosty nights caused green things to wither. Corn was replanted two or three times and very little came to perfection. June brought several frosts and cold spells that killed practically every green herb. From 6 to 10 inches of snow fell in various parts of Vermont; 3 inches in the interior of New York; and several inches in New Hampshire and Maine.

As for 1927, there has been freakish weather in most parts of the world in recent months. Severe storms in the Mediterranean; gales across Great Britain; a record snow storm and destructive freeze in Portugal and Spain; the heaviest snow in the Sahara in four centuries, extending into Palestine; the greatest flood in the history of the Mississippi Valley; the lowest temperatures ever recorded in late April in the Yellowstone and western Montana. All of which, coupled with damage to fruits and destruction by hurricanes, lends credence to the thought that we may be in for a repetition of a year of adverse conditions in the northern half of the United States.

At least it is clear that mere man, with all of his boasted intelligence, is hardly more than a plaything in the hands of the mighty forces of nature. We average more than 90 tornadoes a year and no section is free from visitation. The common notion that the East is safe is fallacious. In 25 years, Pennsylvania has had 42 hurricanes, New York 33 and Massachusetts 10. Per unit area, Massachusetts has more tornadoes than Nebraska. Even hail does \$200,000,000 of damage annually in America.

Back of this whole problem is a mass of vapor 865,000 miles in diameter, with an average density 1.4 times that of water, and having a temperature running from several million degrees Centigrade at the center down to about 7,000 degrees on its glowing surface. This mass we call the sun and we can make it our loyal friend and servant if we will only put forth the effort necessary to get well acquainted.



A One-Story, Retail Store Which Adds Much to the Appearance of the Business Street and Serves as a Real Attraction for Trade Is This Automobile Sales Room Which in Style Is Suggestive of Italian Architecture.

Full Size Model Exhibited At Architectural Exposition

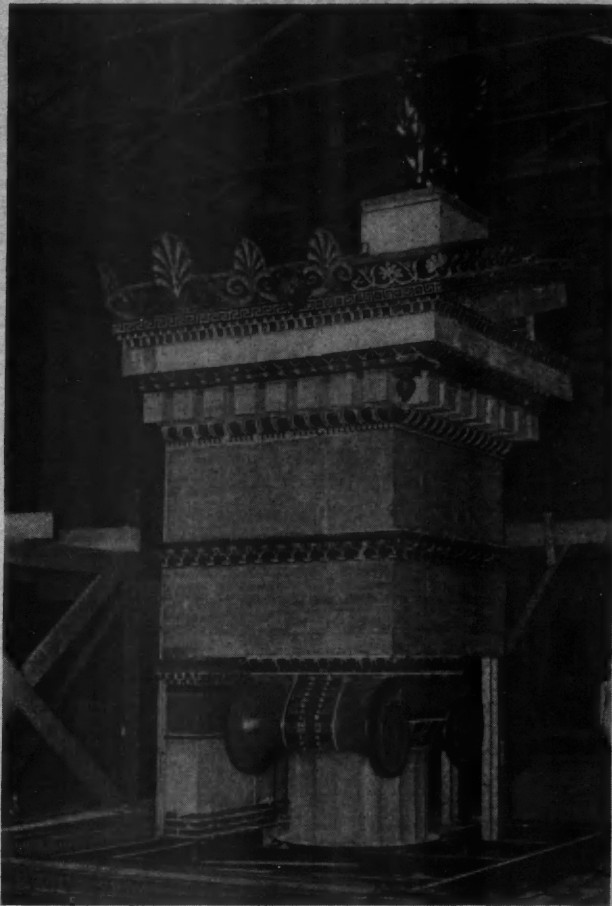
A FULL size model of a corner of the Philadelphia Museum of Art was prepared by the George A. Fuller Company, of New York, at the request of the Architectural League, through Borie, Trumbauer and Zantinger, architects who designed this outstanding structure, for the Architectural and Allied Arts Exposition, held in Grand Central Palace, in New York. This model, consisting of a column drum 6 feet 8 inches in diameter, cap, entablature and section of cornice, is over 30 feet high, weighs many tons, and is the largest exhibit of the kind ever prepared.

This model, the focal point of the Architectural League's exhibit, was created in order that visiting architects from all over the world might see how American architectural ability and engineering ingenuity has outdone the Greeks. The model rests on four 18-foot steel girders; it is supported by a specially constructed steel frame. A derrick was required to place the various units of which it is composed.

The museum building nearing completion in Philadelphia is one of the most beautiful in the world, a building of pure Greek architecture. It was because of this, and also because the Museum represents an engineering feat in fast, accurate stone cutting that prompted the League to request the Fuller Company, the builders, to build a section of one building within another.

"In this building, through the accuracy of modern machinery, we have been able to outdo the Greeks in the architectural refinements of stone cutting," says J. F. Manning, vice-president of the Fuller Company. "The corner stones of the Museum are cut to the arcs, both convex and concave, of the respective walls. To get a building to look straight it has to be out of line, either convex or concave. Grecian architects realized this, but they never carried it to the degree to which it has been carried in this building. To look perfectly straight to the eye a column must lean toward the center as well as toward the building. Considering the fact that there are 40 columns in the exterior of the building, the need for exacting accuracy is apparent. To my knowledge nothing of this kind has ever been done before.

"Each of the 40 columns is constructed of from 16 to 20 drums. The fluting on these drums amounts to over four miles. This fluting was cut in seven months in the Mankato and Kasota Minnesota marble. To avoid danger



This Full Size Model of a Corner of the Philadelphia Museum of Art, at the Architectural and Allied Arts Exposition, Was the Largest of Its Kind Ever Prepared.

of breakage in transit and to carry out at first hand the architects' wishes in the stone cutting, we set up a plant at the site to cut the stone so that handling and the danger of chipping was reduced to a minimum. It required 1,000 freight cars to transport the stone from the quarries to the site.

"In at least one other respect the Museum is typically Greek. It is a wall-bearing structure; no vertical steel has been used. The Greeks, of course, used no steel in their buildings. This is rather exceptional in a building of this size under present day construction methods. The building is one-half a mile around, the largest example of pure Greek architecture in the world."

One wing of this mammoth building was completed October 24, 1924, and just in time to save for the city of Philadelphia the George W. Elkins collection of fine paintings. The city had already owned the collection of paintings of the older William L. Elkins, and in the will of his son, George W. Elkins, it was ordered that these two great

collections of paintings should be hung together in a separate gallery of the new Museum, by the date mentioned. The wing of the building referred to now houses the two collections and is open to the public.

To the stranger first viewing the present form of the Philadelphia Museum of Art, it would appear that the entire building was completed. But, such is not the case. It is true that the main construction work is about completed, but much remains to be done before the entire Museum may be regarded as finished and properly equipped. Now comes a new problem for the city: Another gallery of the Museum must be completed in the very near future in order to save the famous John H. McFadden collection of paintings, by the terms of his will. This will call for another large loan through the action of the city council, but there is no question that this loan will be granted.

The original estimate of cost of the Philadelphia Museum of Art was put at \$8,000,000, but owing to increased costs of labor and material during the last six years, while the building was being erected, the costs have jumped to more than \$15,000,000, and it is thought several additional millions of dollars will be essential to complete the job.

The Museum building dominates the new Fairmount Parkway, the axis of which leads from the center of the main facade of the Museum to the city hall, located at

(Continued to page 103)

Use Short Length Lumber for Building Economy

By DUDLEY F. HOLTMAN,

Assistant Director National Committee on Wood Utilization

UTILIZATION of short-length lumber will enable the home builder to cut down costs without sacrificing anything in construction, it will increase the profits of both the mill-man and the retailer and solve the problem of reforestation without recourse to legislation. Hundreds of thousands of small homes and farm structures are being built in the United States every year, and wherever in their construction long lengths of lumber are used when short lengths would serve the purpose just as well, the result is waste.

The custom of demanding long-lengths originated in the days when the need for husbanding our forest products was less apparent than it is today. But those times have passed, and with them must go the extravagant habits unlimited supply created, for this wasteful practice is putting a drain on our forests that, unless stopped, will eventually tend to raise the price of long length lumber and, so, to increase construction costs to all builders.

This dissipation of capital, this unnecessary drain on the nation's forest resources, is a matter for serious regard. One of the things that the American public can do right now to its individual benefit, and the general good, is to buy short lengths of lumber.

In order that there may be progress in realizing maximum service from wood in the construction field, the National Committee on Wood Utilization, organized in the Department of Commerce, and composed of producers, distributors and consumers of wood and wood products,

has undertaken to call public attention to the economies to be derived from the more general use of lumber less than 8 feet long. Short-length lumber is not a primary product in the sawmill. It is the result of cutting longer lengths on account of the large knots or knot holes, pitch pockets, shake, splits, decay and so forth, and is developed at the sawmill in order to salvage and give value to what would otherwise be wasted.

Real economies are involved in a wider use of short-length lumber since it is the general practice of sawmills to quote short lengths from 15 to 60 per cent below the prices asked for standard long lengths of equal grade. At this point let me quote from a letter received from one prominent organization building standardized houses on the subject of use of short lengths:

"Referring to your recent letter, making inquiry concerning our use of short length lumber, would advise that we developed this idea some 20 years ago, when we originated our system of house construction, and it

has ever since been one of the reasons for the very low cost of our product and the substantial savings we have effected for home builders throughout these years. We initiated the axiom that 'the lumber that is wasted costs just as much as the lumber that is used,' and through our system of construction, and by the utilization of short lengths purchased from the surplus stock of mills, we have effected a saving in materials approximately 18 per cent, compared with the footage used in houses built through the usual methods.

"We have watched the Department of Commerce's development of the short-length idea for several years with much approval.

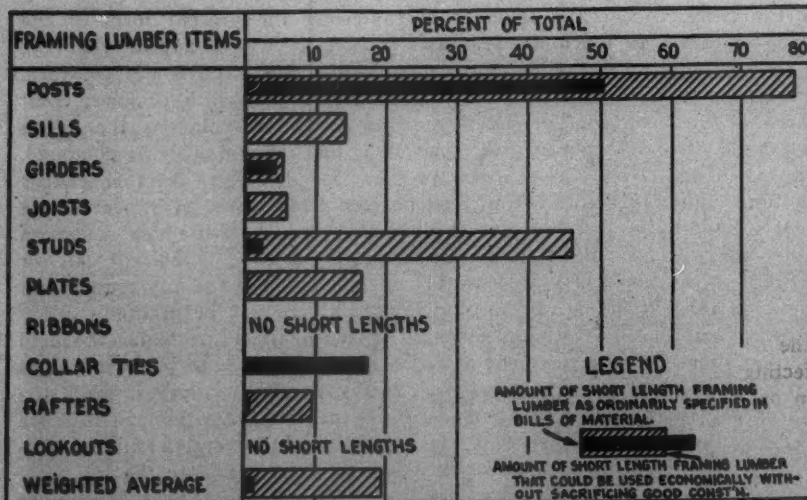
"The use of short lengths by us started primarily in the design of the house, in the establishment of sizes of rooms, location of doors and windows. We do not use short lengths as substitute for long lengths but we do purchase short lengths instead of long lengths for the specific uses where the design calls for short lengths and cannot be used long. Our study has led us to the fact that approximately 24 per cent of all lumber going into construction of small homes comes within the classification of short lengths."

The short lengths used in the usual house construction are far in excess of the proportion produced in the mill. Yet those who buy lumber today for use on the farm and in the city insist on long lengths and

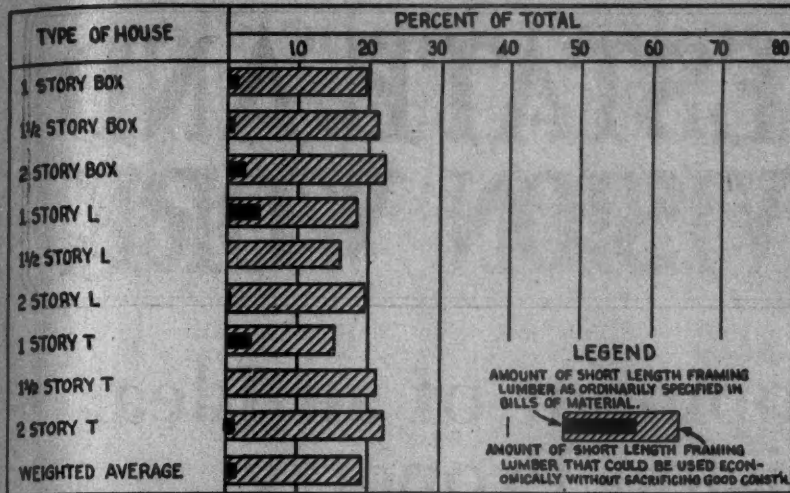
Economy vs. Waste

SHORT length lumber is that which is less than 8 feet long. Pieces from 5 to 7 feet long are often the finest, clearest wood in the log. Lengths less than 8 feet, however, are seldom specified in standard commercial practice. The result is that two-thirds of the standing tree is never utilized for lumber. By using short lengths the yearly output of lumber could be increased 20 per cent without cutting an additional tree or investing an additional dollar in mill equipment.

A discount of from 15 per cent to 35 per cent below the prices asked for standard lengths of equal grade is generally made by lumber mills on short length lumber. A comprehensive survey shows that approximately 20 per cent more short lengths could be used in the average small home with corresponding reduction in building costs.



Specified and Permissible Short-Length Framing Lumber for Urban Houses (All Types), by Items as Determined by the National Committee on Wood Utilization.



Specified and Permissible Short-Length Framing Lumber for Urban Houses (All Items), by Type, as Determined by the National Committee on Wood Utilization.

then proceed to pay a carpenter \$10 a day to cut these long lengths into the various short lengths usually required in construction. This practice, born 300 years ago when we had virgin forests at our very door, has become so much a part of the established customs in lumber consuming circles that it is almost automatic. No one questions the habit of ordering lengths of 12, 14 and 16 feet.

The National Committee on Wood Utilization has developed a report on "The Marketing of Short-Length Lumber" which can be purchased for 10 cents the single copy, from the Superintendent of Documents, Government Printing Office, Washington, D. C. This report tells what short-length lumber is, gives figures on the prices and potential production of short lengths and describes the consumer's side of short lengths and points out actual savings on urban and rural buildings which result from the purchase of short lengths. This publication also tells how much lumber in the various building items for various types and kinds of houses you can save by ordering short lengths. Garage furniture, such as bins, tire racks, oil drum racks and other articles that are to be found on the premises of many a man who has made them of odds and ends can also be made of lumber less than 8 feet long.

Economic necessity has established better wood utilization in all countries where tree growing has developed into a real business. It came as the virgin forest disappeared. Sooner or later it must come to the United States. If it comes now the American public will be directly benefitted for more complete utilization of our standing timber will tend to lower the cost of raw material. It will create additional sources of profit from material now not utilized and will lengthen the life of plant investment by prolonging the supply of raw material.

All of the projects relating to building and construction undertaken by the committee have construction economy as their aim. The end-matching of lumber, another project now under way, will tend to increase the percentage of short length lumber that can be used in the building field. Present methods of squaring the ends of boards make it necessary to break joints over a bearing, either joists, studs or rafters. By placing a tongue and groove at the end of boards joints can fall where they will without affecting the integrity of the building. The committee bulletin promoting the use of end-matched lumber, therefore, will tend to increase the use of short-length lumber and thus increase the economies to be derived from the use of lumber less than 8 feet long.

The grade marking of lumber is another project of the committee of far reaching significance. In the past it has been general practice to order only the best grades of

lumber because of the complexity of lumber grades and the inability of the buyers to judge grades intelligently. The establishment of grade marking in every commercial practice will make it possible for all lumber users to adapt lumber grades to their uses and use much more low grade lumber than is being used today, resulting in economies to all classes of lumber consumers.

The solution of the wood utilization problem rests largely with the lumber consumer. Improved wood utilization is essentially a public responsibility and in the effort that is being made to promote a better understanding and greater use of forest resources the National Committee on Wood Utilization asks the co-operation and support of the public.



Full Size Model

(Continued from page 101)

Broad and Market streets. It stands upon a mound called Fairmount Hill. The Schuylkill River makes a graceful bend just as it flows past the base of Fairmount Hill, thus the Museum will not only dominate the Parkway throughout its length but it will also command two charming stretches of the river, one to the proposed Schuylkill Embankment drives, the other to the northwest where the stream makes its way through a picturesque, tree-covered park.

In front of the Museum, at the foot of Fairmount Hill, has been planned a broad plaza, 900 feet long and 400 feet wide. This has been named the Fairmount Plaza and, as the Parkway extends from it, this roadway will be flanked on either side by other beautiful buildings of the art group. Sites have been allotted near the Art Museum for the new Pennsylvania Academy of the Fine Arts, the new Pennsylvania Museum and School of Industrial Art, and for several other art museums, including the Rodin Museum.

The plan of the building is in the form of a great "U," the inner part of the "U" forming a grand court of sculpture and gardens. In front of the main entrance to the building stands the famous equestrian monument of Washington, modeled by Professor Siemering, of Berlin, and unveiled in Fairmount Park by President McKinley in 1897. The Museum will be about 552 feet long and about 500 feet deep, the central mass projecting beyond the main structure and thus forming the "U." The grand court will be about 350 by 250 feet.

The main entrance is on the first floor which will be devoted to sculpture and decorative art and, in the outer corners of the first floor, will be large courts for the display of full size sculpture and architecture. The second floor will contain all the main picture galleries and a spacious gallery for tapestries. In the basement will be located the administrative offices, the offices of the Fairmount Park Commission and a restaurant for the convenience of visitors. At the sub-basement level will be a tunnel-gallery running entirely across the building which, by means of passenger elevators, will allow access to the upper floors.

The new Art Museum was really founded by Mrs. Anna H. Wilstach, who died in 1892, and who willed to the city of Philadelphia \$600,000 and her gallery of some 150 paintings as the nucleus of a great municipal art gallery. The Wilstach collection at the present time is housed in Memorial Hall, Fairmount Park, along with the art treasures of the Pennsylvania Museum. Both the Wilstach collection and the Pennsylvania Museum collection will be transferred to the new building upon its completion.

ROBERT F. SALADE.



REAL ESTATE AND SUBDIVISION WORK

The Development of an Ideal Subdivision Property

PIERCEFIELD, lying to the west of Syracuse, N. Y., in the exclusive residential section of Orchard Road, possesses valuable features which make it an almost ideal property for fine residential development. Orchard Road has long been known as the dividing line between the great estates of the late Frederick Rowland Hazard, one of the early presidents of the Solvay Process Company, and Edward L. Pierce, for many years president of the same company. Until recently no property in this section was available to outsiders.



Raymond E. Porter, President of the Porter Real Estate Company, Inc., and Treasurer of the Piercefield Development Company.

There came a time, however, when Mr. Pierce decided to move to New York City and his property was for sale. The Piercefield Development Company was formed for the purpose of purchasing and developing the property. Many of the prominent men in Syracuse were active in its organization and Raymond E. Porter, of the Porter Real Estate



Miss Irma Porter Is Vice-President of the Porter Real Estate Company, Inc., Which Is Handling the Piercefield Property.

Company, was named as treasurer and took charge of the development. Piercefield consists of 117 home sites, each having a width of from 60 to 166 feet. It is laid out with winding roads and drives after plans approved by the City Planning Commission. The principal thoroughfares are Piercefield Drive and Scarboro Drive, the latter leading, by way of West Genesee Street, into Syracuse, the center of the city being but a 10-minute drive from the subdivision.

The land itself had everything in its favor, at the start, for building purposes. All through

the tract there are many large and beautiful trees, elm and live oak, bordering the winding drives of the old estate which now form the basis of the street system. Portions of the old estate had been retained as groves which enhanced their value as home building lots. The lots range in price from \$1,000 to \$4,000. The terms are 20 per cent down and 2 per cent a month, with interest.

More than \$460,000 has already been spent on developing the subdivision. All streets are graded and surfaced either with bituminous macadam or crushed stone. Electric lights, gas and water mains have been installed throughout the property. The restrictions preclude the building of any house costing less than \$10,000 except in the far end of the subdivision where the minimum is placed at \$7,000. Though these amounts appear low when compared with those found in the suburbs of some of the largest cities, they, nevertheless, assure the best of residential development in this community.

"When our opening date was decided upon we got busy advertising in the daily newspapers," said Mr. Porter. "Each day we ran attractive ads using a great deal of white space to make the appeal more dig-



Shaded Drives Throughout the Old Pierce Estate Form the Basis of the Present Beautiful Street System of This Subdivision.



The Residence of Henry P. Harrison Is Typical of the Homes Which Are Being Built in This Most Beautiful and Unusual Subdivision. It was erected at a cost of \$25,000 by Emil F. Kotz, Syracuse, N. Y., builder.

nified and alluring. We dwelt upon the exclusiveness of the subdivision and attempted to put this one feature to the forefront.

"At the same time we sent out thousands of booklets which portrayed in picture form the beauty of the property and the neighboring residences. They also told of the many advantages derived from a residence in Piercefield."

These advertising booklets were prepared by Miss Irma R. Porter, daughter of Mr. Porter, and vice-president of the Porter Real Estate Company. Miss Porter is but 25 years old and is believed to be one of the youngest women in the country holding an important executive position in realty circles.

"After the property had been offered to the public for a few months," continued Mr. Porter, "we decided to erect a model house. Engaging Merton S. Granger, well-known Syracuse architect, we built, at a cost of \$27,000, a fine residence of stucco with varnished wood trim exterior."

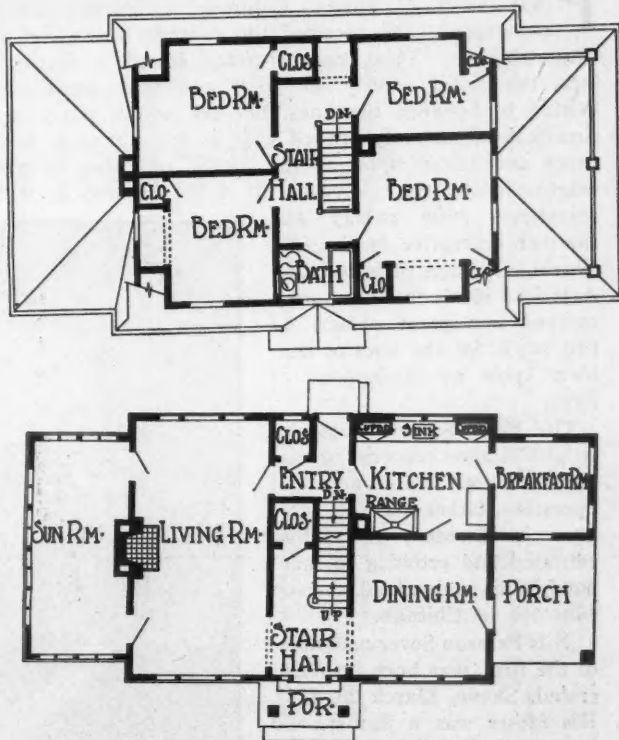
The living room of the model house was done in dark walnut, with an Adam floor and has a large fireplace at one end. At one side this room opens on to a large porch. The first floor also includes a dining room, breakfast nook, refrigerator room and reception hall. There are both front and back stairs. The back stairs lead directly to the maid's room and bath on the second floor. These quarters are separated by a small hallway from the rest of the floor.

The second floor also contains two tiled bathrooms, one opening from the hall, the other from the master bedroom, five bedrooms and a sleeping porch.

In the kitchen a ventilator keeps the air clean and sweet. The finest kind of electric fixtures are installed throughout the house. In some of the bedrooms, the fixtures may be moved around by utilizing the many floor and wall sockets. The house is heated by vapor steam. Everything is the last word in modernity. They erected a two car garage and had the wide lawn prepared by a landscape artist.

When the house was ready, invitations printed in Old English type were sent to all the prominent and prosperous people of Syracuse.

The Syracuse Journal Telegram co-operated in the model home idea. Every day for two weeks before the opening of



The Floor Plans of the Harrison Residence Cannot Even Suggest the Charm of the Interior Finished in Birch and Walnut and All Else in Harmony.

the model home, the Telegram ran a different advertisement about Piercefield and the home. On the opening day the newspaper put out a special edition which contained advertisements of each company that had contributed to the building of the house.

A Syracuse department store, E. W. Edwards & Son, furnished the house completely. During the exhibit, which lasted two weeks, the house was open from 2 o'clock in the afternoon until 10 o'clock at night. Nearly 11,000

people took advantage of inspection opportunity during these two weeks and the house was immediately sold to Mr. Ralph Stilwell, cashier of the Liberty Bank of Syracuse.

Other houses are rapidly being built among which, one built and sold by the Wilson & Green Lumber Company on Scarboro Drive, is a fine example of New England Colonial architecture. The main hallway extends through the house, the vestibule having a tiled floor with marble base. There is a brick fireplace in the large living room. Off the kitchen is a breakfast nook. Every detail has been worked out most carefully.

Many good features characterize the second floor. The spacious master bedroom contains a fireplace, a cedar-lined seat and two closets. The bathroom has a tiled floor. Provision is made for a sewing room or upstairs den. The house cost in the neighborhood of \$27,000.

All Piercefield loans are handled by the Piercefield Development Company.

"In my estimation," said Mr. Porter, "subdivision work is the best phase of a realtor's business. Developing a subdivision, watching it grow, helping to make it a miniature city, is absorbing and financially profitable. When a

single lot is sold in Piercefield it means a great deal accomplished."

Mr. Porter started in business 16 years ago in a small brokerage office in Syracuse. He had Judson W. Clarke as a partner. They had one employe, a stenographer. Today he is president of the Porter Real Estate Company, Inc., owning its own building, a four-story structure in the heart of the Syracuse business section.

The ground floor is given over to the offices of the company which are equipped in the most modern style. The three upper stories contain efficiency apartments. Each apartment is made up of a living room, dressing room, tiled bathroom, dining alcove. All apartments are equipped with disappearing beds, electric refrigeration and garbage incinerators.

"Because Piercefield is such a large subdivision and quite different from the general run of tracts put on sale by various realty companies, the sale of the lots is being handled by out-of-the-ordinary methods," said Mr. Porter. "Our firm is assisted in the sale of this huge tract by the Clarence L. Hills Realty Company. All told, 30 salesmen are actively engaged in the selling of Piercefield."

White House Remodeling Awarded to N. P. Severin Company

PRESS dispatches recently carried the terse statement that the N. P. Severin Company, a Chicago firm of contractors, had received the contract to rebuild the White House. This press dispatch stated a significant fact, but failed utterly to point out that significance. Within it, between the lines, lies the whole romance of American opportunity opened wide to the European immigrant and seized upon as the means of rising to great heights in the New World, rid of the hindrances which sometimes stifle energy and smother enterprise in the Old World. Perhaps, it is befitting American ideals that an Americanized immigrant should do this work, for the laws of contract know no distinctions of birth.

The N. P. Severin Company is a Chicago concern of national repute. Its owners and operators, father and son, were born in Sweden, the father educated and growing to manhood in his native land, the son educated in Chicago.

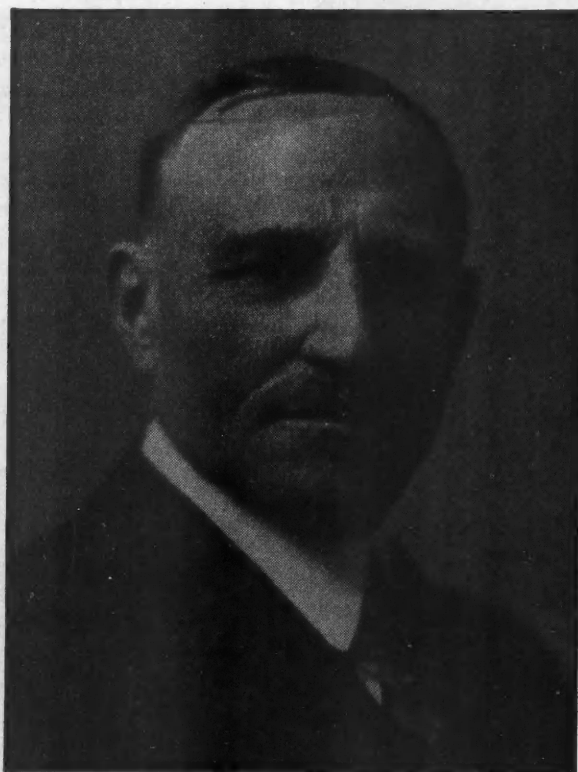
Nils Persson Severin, founder of the firm, was born in Westerstad, Skane, March 30, 1861. His father was a farmer, and it was in a Swedish farm house that young Nils passed his boyhood and youth. As he grew to manhood he left the farm, became a general contractor and pursued that calling in Skane until 1888, when he came to America. Severin followed the immigration tide of that day westward and settled in Chicago, where he commenced contracting the following year.

The company has engaged in the construction of buildings in various parts of the country, particularly in the Middle West. The company has before this held contracts for Government buildings, and it was partly through the reputation gained in that and other work done that the reconstruction work of the White House was assigned to the Severin firm. Naturally this piece of construction marks a high point in the history of the firm, and it has come to them because of stability and former achievement. They have also recently been awarded the construction of U. S. Veterans' Hospital Buildings at Tupper Lake, N. Y.

When the reconstruction work for the White House was advertised Alfred N. Severin said: "We want to do this work, let's go and get it." And they did get it. Like his father, Alfred Severin was born in Sweden, but he grew up in Chicago, in the atmosphere of the great Northwest of that day.

In 1919 he returned to Chicago, after serving in the Canadian Army throughout the war and resumed construction work with his father.

The firm specializes in high-grade construction work and is at present engaged in building over a widespread area of the United States. They have earned a high reputation for expeditious conduct of their contracts, the White House work is even now somewhat advanced beyond schedule allotted it.



Nils Persson Severin, Founder and Head of the N. P. Severin Company, of Chicago, Which Was Awarded the Contract for Remodeling the White House.

Sanctum

I know a house—a little house—
 Adown a quiet street,
 Where shady lawns inviting lie,
 And little children meet.

It's not an ornate, stylish house—
 In fact, it's very plain.
 It badly needs a coat of paint;
 Its roof scarce stops the rain.

But Oh, that house—that little house—
 It holds my heart and soul;
 It shelters everything I love,
 And of my life, the whole.

A mother's life is here enshrined—
 A babe's adoring love.
 A magnet of more potent charm
 Than wizard's magic ever wove.

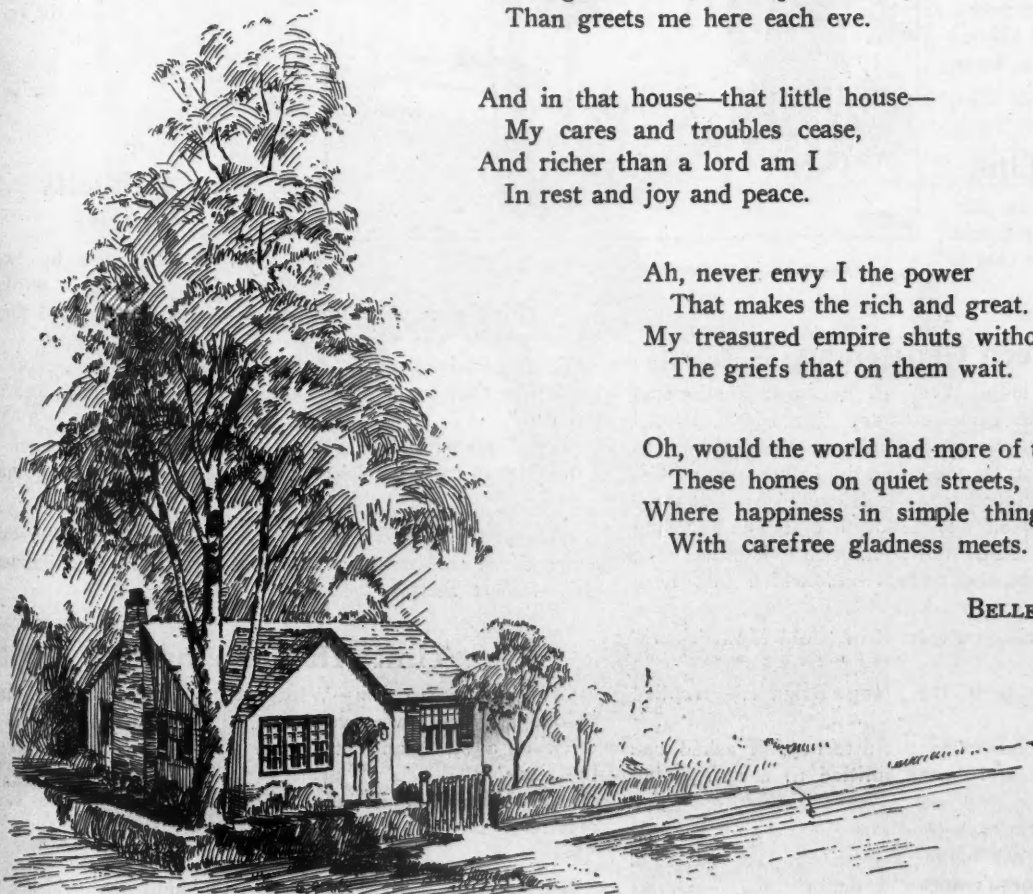
No palace harbors more content
 Than here each morn I leave.
 No kingdom holds more precious tryst
 Than greets me here each eve.

And in that house—that little house—
 My cares and troubles cease,
 And richer than a lord am I
 In rest and joy and peace.

Ah, never envy I the power
 That makes the rich and great.
 My treasured empire shuts without
 The griefs that on them wait.

Oh, would the world had more of them—
 These homes on quiet streets,
 Where happiness in simple things
 With carefree gladness meets.

BELLE S. MOONEY.





Quick Hardening

Tramp (to housewife)—Lady, would you be kind enough to give me the recipe for that plum cake you handed me this morning?

Astonished Housewife—For goodness sake, what do you want the recipe for?

Tramp—To settle a bet, lady. My partner says you use three cupfuls of cement to one of sugar, and I claim you use only two and a half.—*The Lumber Co-Operator.*



Financial Service

Landlord—I's going to raise your rent next month.

Tenant—Thanks old son. I was just wondering how I could do it.



Remedy Needed

"Brederin, we must do something to remedy the status quo," said a Negro preacher to his congregation.

"Brudder Jones, what am status quo?" asked a member.

"Dat, my brudder," replied the preacher, "am de Latin for de mess we'se in."



The Missing Link

Dicky—My dad is an Elk, a Lion, a Moose and an Eagle.

Micky—Wot does it cost to see him?—*Life.*



Between Gentlemen

Throughout the Middle West all livestock auctioneers are designated by the complimentary title of "Colonel." Their success as auctioneers depends on their ability to think straight and fast on their feet in front of a crowd. The quick wit so developed is well illustrated by a passage at words between "Col." McCracken and an opposing heckling lawyer in a suit to determine the identity of a famous purebred boar, the pedigree of which had been questioned.

"What regiment were you colonel of 'Col.' McCracken?" queried the attorney.

"I reckon you'd call it the 'Hog Brigade,'" replied the "Col."

"Come, come, now," heckled the attorney, "I asked you a legitimate question and I am entitled to a non-jesting reply."

"Well," replied McCracken, "You see it's like this: 'Colonel' in front of my name is just like 'Honorable' in front of yours—it doesn't mean a damn thing!"—*Dallas News.*

Comedy

"Really, Mrs. Shovelhead, your argument with your husband last night was most amusing."

"Wasn't it, though! And do you know, when he threw that axe at me I thought I'd split."



He Cheated Himself

A striking story is told of a rich man who wanted to help a poor carpenter and his family.

He hired the carpenter to build a house on a hillside and then went away on a long journey. The carpenter said to himself, "My boss is away and I can use shoddy materials and neglect the supporting work that doesn't show. The house will be weak but nobody will know it." So he built a ramshackle house.

When the rich man came back, the carpenter said, "Here is your house." "Thank you!" said the rich man, "here is the deed and the key. I'm giving it to you."

And the carpenter grieved that he had robbed himself of a good house.



No Publicity Wanted

A man attacked by two highwaymen put up a terrific fight. Finally he was overcome and searched. All they found on him was a dime. The bandits were amazed.

"Say," exclaimed one, "d'ya mean to tell us you put up a battle like that for a measly dime? Why, we almost had to kill you."

"Well," answered the victim, "the truth of the matter is I didn't want my financial condition exposed."—*B. T., Boston.*



Turn your mind on your business. That's the fire that makes the steam that turns the wheels that make your business GO.—*Robert Buxton.*



Times Have Changed

Gruff Father to Son—Why don't you get out and find a job? When I was your age I was working for \$3 a week in a store and at the end of five years I owned the store.

Son—You can't do that nowadays. They have cash registers.



No man has a right to be a cynic until the evidence is all in; say at the age of 115.—*Wood Construction.*



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 Pat. March 15, 1921, and Sept. 30, 1924.
 ColorKeed Plan Patented April 19, 1927.

COLORKEED HOME PLANS

TRADE MARK
 Registered in U. S. Patent Office.

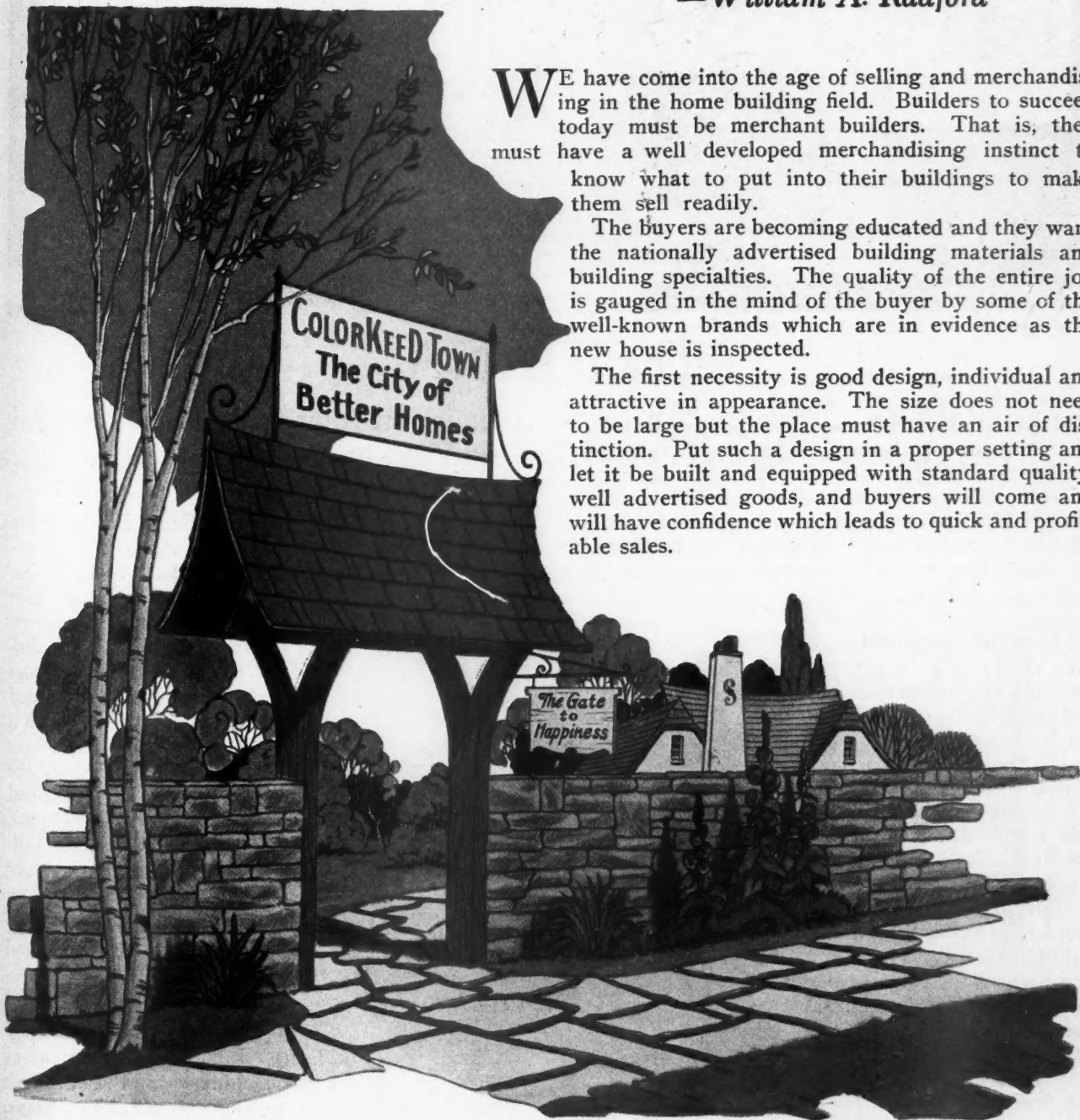
"The Most Salable Home Today is the Home That Features Well-Known, Nationally Advertised Building Materials and Equipment"

—William A. Radford

WE have come into the age of selling and merchandising in the home building field. Builders to succeed today must be merchant builders. That is, they must have a well developed merchandising instinct to know what to put into their buildings to make them sell readily.

The buyers are becoming educated and they want the nationally advertised building materials and building specialties. The quality of the entire job is gauged in the mind of the buyer by some of the well-known brands which are in evidence as the new house is inspected.

The first necessity is good design, individual and attractive in appearance. The size does not need to be large but the place must have an air of distinction. Put such a design in a proper setting and let it be built and equipped with standard quality, well advertised goods, and buyers will come and will have confidence which leads to quick and profitable sales.

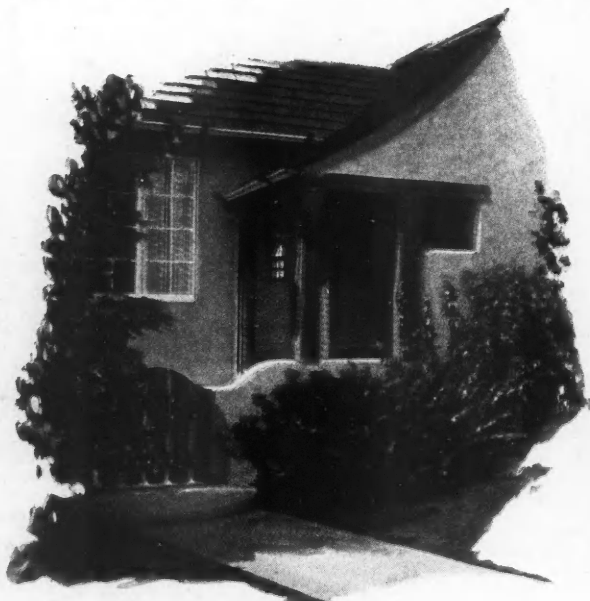




The IDANA

The graceful lines of this English cottage promise an interesting home arranged very cleverly as shown in the ColorKeed Plans on the opposite page.

SHINGLES of green and brown; brown stained rough-hewn timbers supporting the porch and above the window openings; and the sturdy hand-made gates in brown contrast vividly with the creamy grey of the stucco walls to give this home design both cheerfulness and a well-aged, permanent look. The house turns its broad face to the road from which view the long curve of the roof is most effective. The plan layout shows this design to be the regulation "upright and wing"; but enough cleverness has been added to give this little home real individuality. The slight curve where the ridge of the wing meets the main roof and the lengthened curve where the roof covers the entrance porch give an English feeling to this home.



Entrance Detail

Referring to the ColorKeed Home Plans we see that this interesting entrance leads into a reception and stair hall that becomes part of the living

room, the living room floor being down two steps below the level of the hall and dining room. The living room is a fine apartment lighted from three sides and with a big cheerful fireplace at the far end. To the right of the hall is the dining room and back of it the well equipped kitchen. A convenient bedroom with large lavatory completes the first floor.

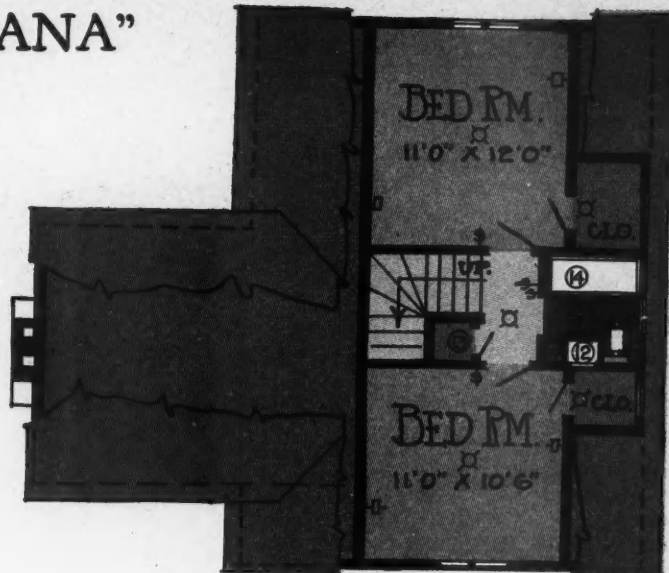
Upstairs we find two large bedrooms, a bathroom and three closets.

The basement plan of this house deserves close study for it contains the important machinery and equipment needed by the modern home.

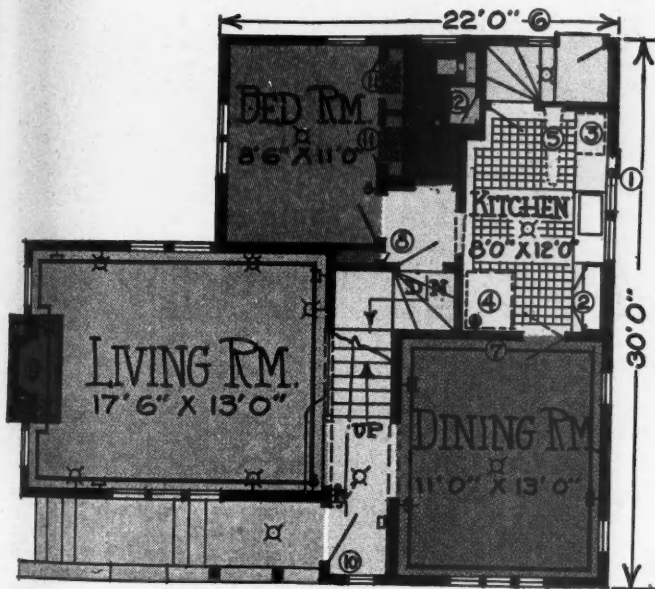
ColorKeed Floor Plans of "The IDANA"

Heating plant, laundry and space for cold storage are the important parts of any basement or cellar and this part of the design should be worked out very carefully. The basement plan illustrated here will serve as a guide when planning the basements to go with any of the other designs illustrated in this department.

The Key to Equipment explaining the small circled numbers on the plans will give you the proper recommended features to include in homes that are to be salable and permanently modern.



SECOND FLOOR



FIRST FLOOR

KEY TO ELECTRICAL SYMBOLS

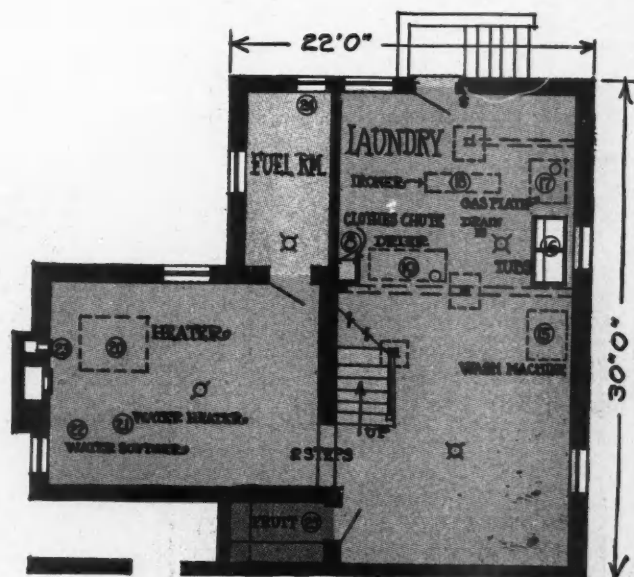
- CEILING OUTLET □ FLOOR RECEPTACLE
- ⊔ BRACKET OUTLET ● SPECIAL OUTLET
- ⊔ CONVENIENCE OUTLET ⚡ SWITCH

COLORKEED HOME PLANS

- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof
- Basement
- Fruit Cellar
- Fuel Room
- Stairs

Key to Equipment

- | | |
|-------------------------------|---------------------|
| ① Ventilating Fan | ⑩ Laundry Stove |
| ② Kitchen Cabinet | ⑪ Ironing Machine |
| ③ Electric Refrigerator | ⑫ Laundry Drier |
| ④ Range | ⑬ Heating Plant |
| ⑤ Built-in Ironing Board | ⑭ Water Heater |
| ⑥ Package Receiver | ⑮ Water Softener |
| ⑦ Thermostat | ⑯ Ash Drop Door |
| ⑧ Laundry Chute | ⑰ Fuel Chute |
| ⑨ Fireplace Throat and Damper | ⑱ Dish Washing Sink |
| ⑩ Built-in Mail Box | Weatherstrips |
| ⑪ Efficiency Wardrobes | Storm Sash |
| ⑫ Bathroom Cabinet | Screens |
| ⑬ Cedar Lined Closet | Lighting Fixtures |
| ⑭ Tub Shower | Convenience Outlets |
| ⑮ Washing Machine | Electric Panel |
| ⑯ Laundry Tubs | Radiant Gas Heaters |
| | Casement Windows |
| | Water Supply System |



BASEMENT



The IDAHOME

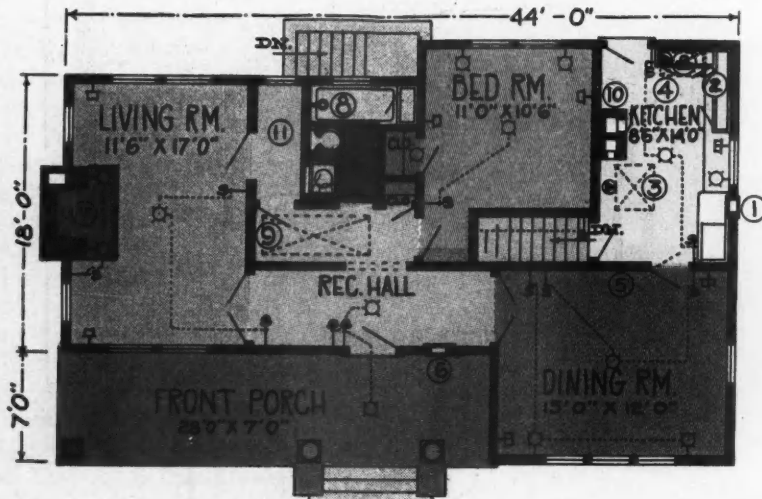
THE gently curving, softened roof lines, with stained shingles laid in thatched roof style, make this home design unusually attractive. It contains four well arranged rooms on the main floor with some very usable space up under the roof served by the cleverly arranged folding stairway.

COLORKEY HOME PLANS TRADE MARK

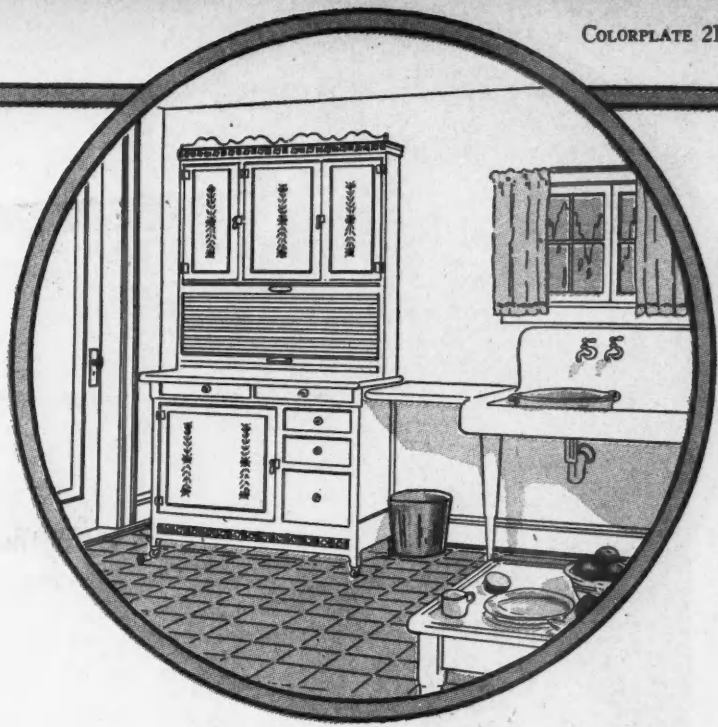
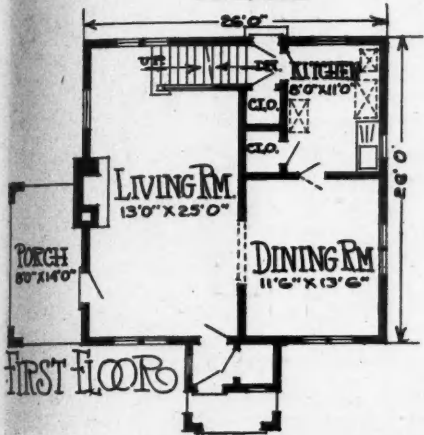
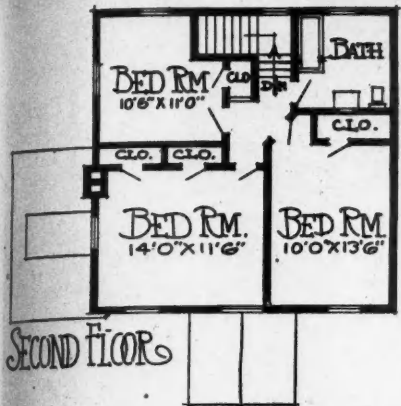
| | | | |
|--|-------------|--|---------------|
| | Living Room | | Closet |
| | Dining Room | | Bed Room |
| | Kitchen | | Bath and Lav. |
| | Pantry | | Porch |
| | Halls | | Roof |

Key to Equipment

- ① Ventilating Fan
 - ② Kitchen Cabinet
 - ③ Range
 - ④ Electric Refrigerator
 - ⑤ Thermostat
 - ⑥ Built-in Mail Box
 - ⑦ Fireplace Throat and Damper
 - ⑧ Tub Shower
 - ⑨ Disappearing Stairs
 - ⑩ Incinerator
 - ⑪ Bed Closet and Dressing Room
- Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dish Washing Sink



FIRST FLOOR PLAN

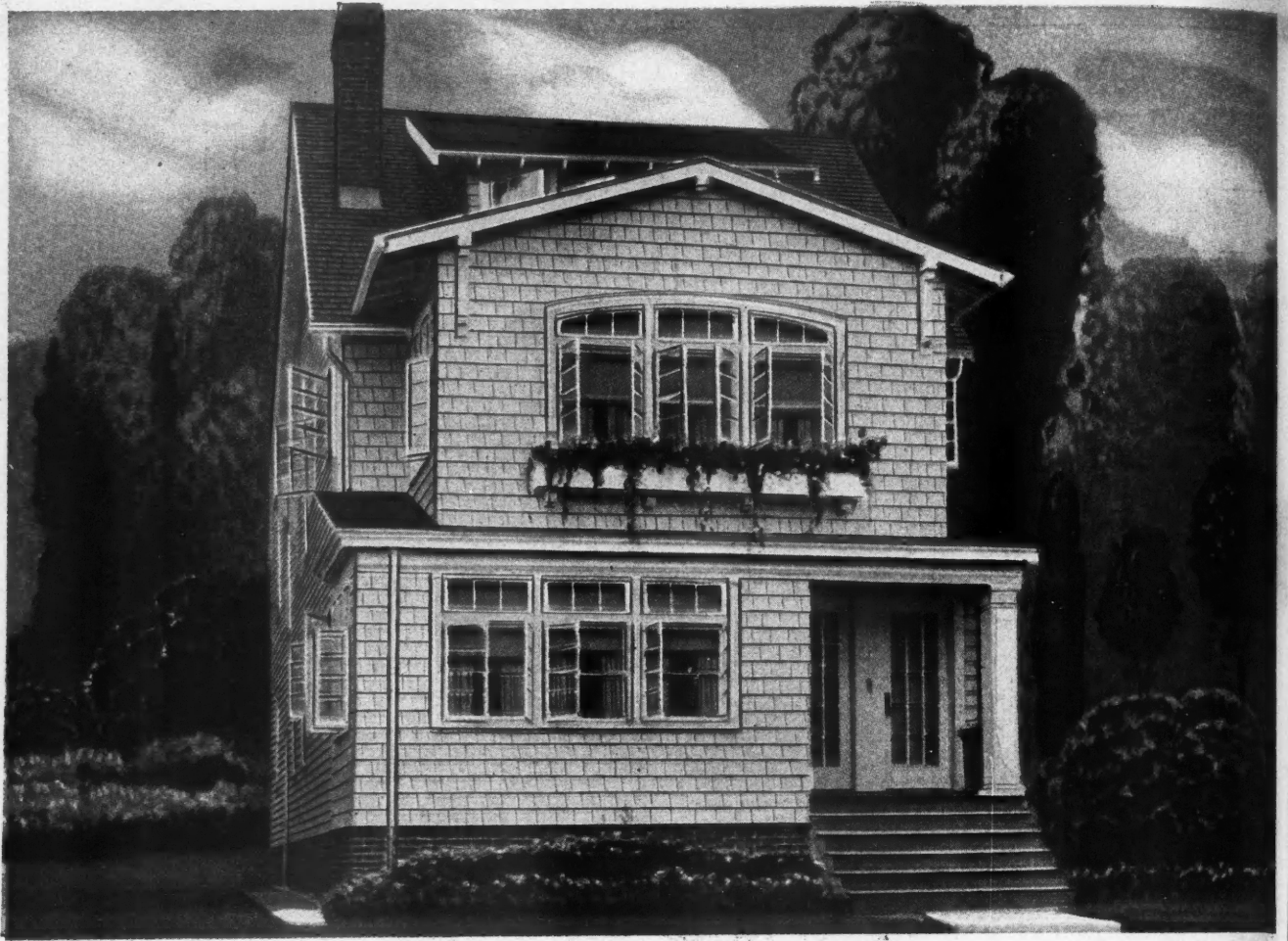


The IPSWITCH

A BEAUTIFUL shingled home of six rooms and bath 28 x 26 feet on the ground not counting the porches. The arrangement is economical with the stairs going up out of the end of the living room. By this means no space is taken for a stair hall.

The front vestibule with its convenient closet for outside wraps protects the living room from cold drafts. The living room is 13 x 25 feet and through the wide opening to the right the dining room opens, about 11 x 13 feet in size. Back of this through a double acting door is the kitchen.



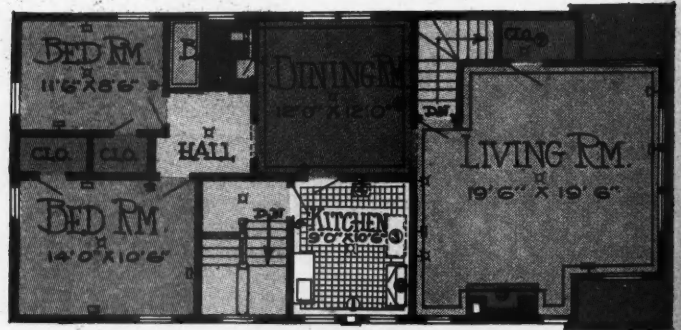


The ISLAND HEIGHTS

A DOUBLE house, duplex or two-flat home designed for a narrow lot. The building is 24 x 52 feet and contains a well arranged five-room apartment on both floors. There are separate entrances from the front porch; and back or service stairs are enclosed.

COLORKEED HOME PLANS

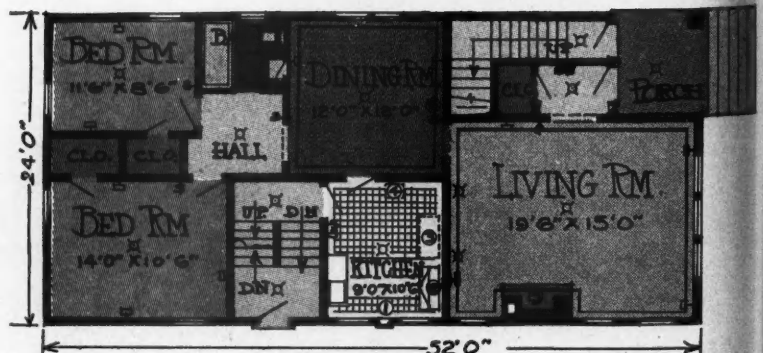
| | | | |
|--|-------------|--|---------------|
| | Living Room | | Closet |
| | Dining Room | | Bed Room |
| | Kitchen | | Bath and Lav. |
| | Pantry | | Porch |
| | Halls | | Roof |



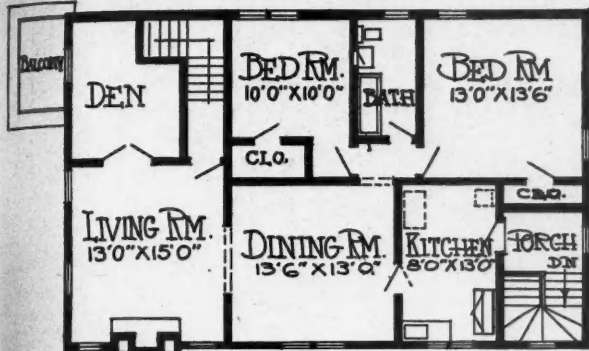
SECOND FLOOR

Key to Equipment

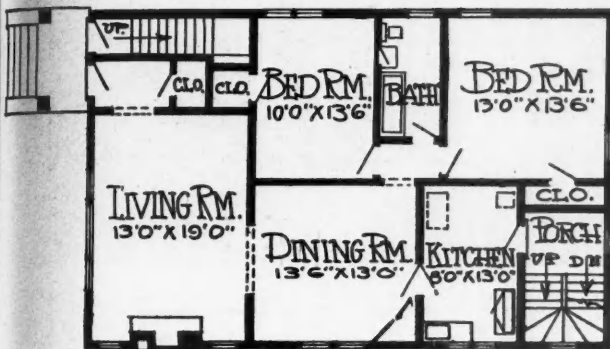
| | |
|-------------------------------|---------------------|
| ① Ventilating Fan | Convenience Outlets |
| ② Kitchen Cabinet | Electric Panel |
| ③ Range | Washing Machine |
| ④ Electric Refrigerator | Clothes Drier |
| ⑤ Fireplace Throat and Damper | Coal Chute |
| ⑥ Thermostat | Heating Plant |
| ⑦ Cedar Lined Closet | Water Supply System |
| Weatherstrips | Hot Water Supply |
| Storm Sash | Water Softener |
| Screens | Radiant Gas Heaters |
| Lighting Fixtures | Casement Windows |
| | Dish Washing Sink |



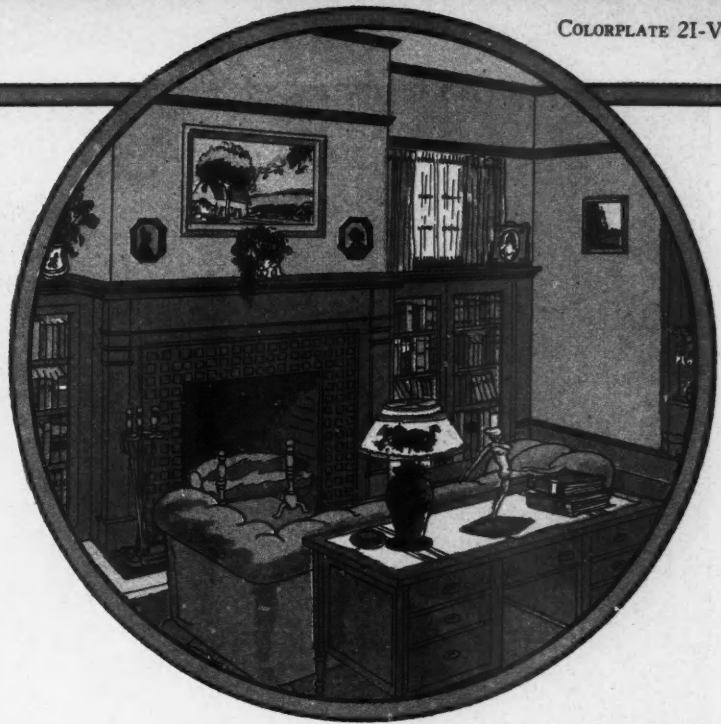
FIRST FLOOR



SECOND FLOOR



FIRST FLOOR

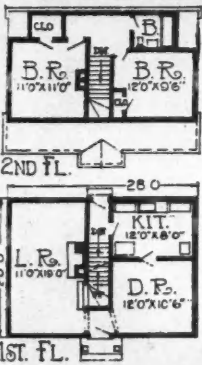


The IRONDALE

A WELL designed duplex or two-flat home containing five rooms and bath on each floor. The second floor living room has an additional den in connection, occupying the space which on the first floor is used for the entrances.

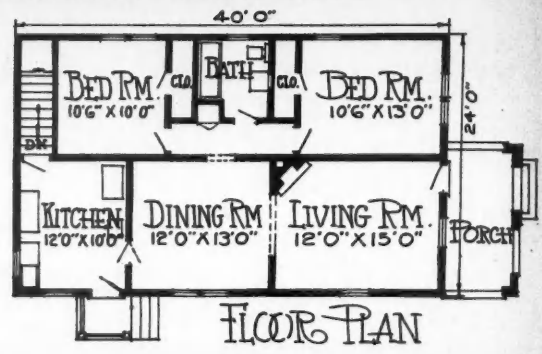
A building of this type is a popular investment, making a good home which pays for itself through the rent accruing to the owner. "Live in one flat and rent the other" is the formula which many home owners have found to lead to financial independence.

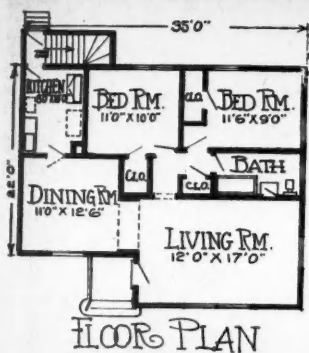




The IVYDALE
 Above and to the left is a little Colonial gem 20 x 28 feet containing five rooms and bath.

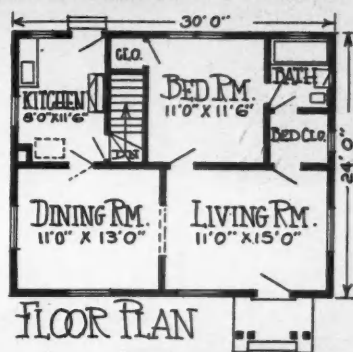
The IVYLAND
 Below and to the right is a Spanish Bungalow of five rooms and bath measuring 24 x 40 feet.





The IRVING

Above and to the left is a clever little Elizabethan cottage of five rooms and bath. Size 22 x 35 feet.



The IONIA

Below and to the right is a little Colonial gem 24 x 30 feet containing four rooms, bath and disappearing bed closet.



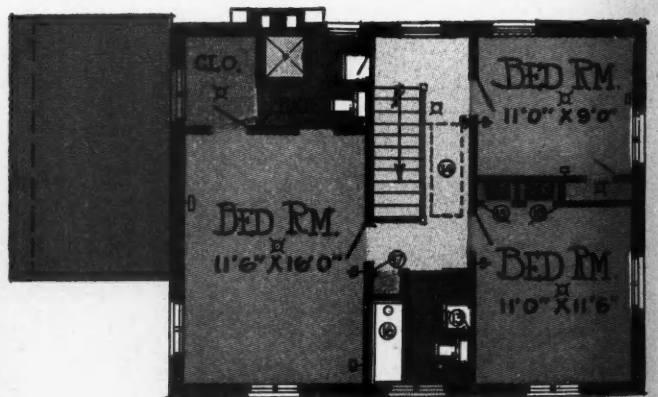
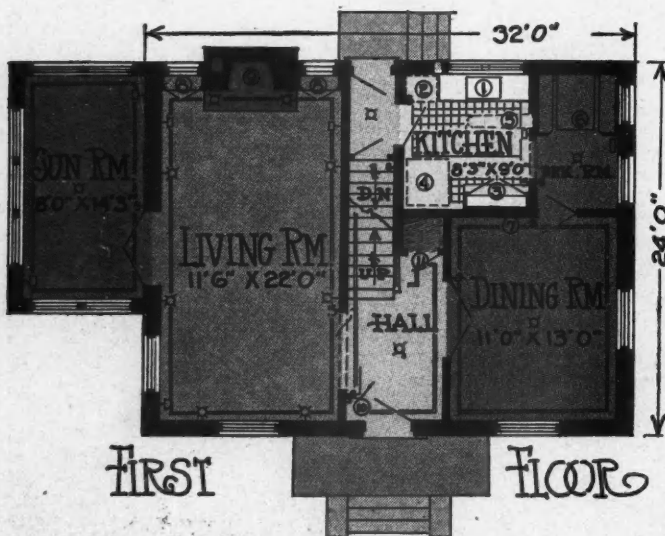


The ISABELLA

LOW cost and high quality meet in this home of common brick trimmed with face brick. The rugged shutters and the entrance door with hood are in the Colonial manner. Six rooms, two baths, breakfast room and sun room are provided.

COLORKEY HOME PLANS

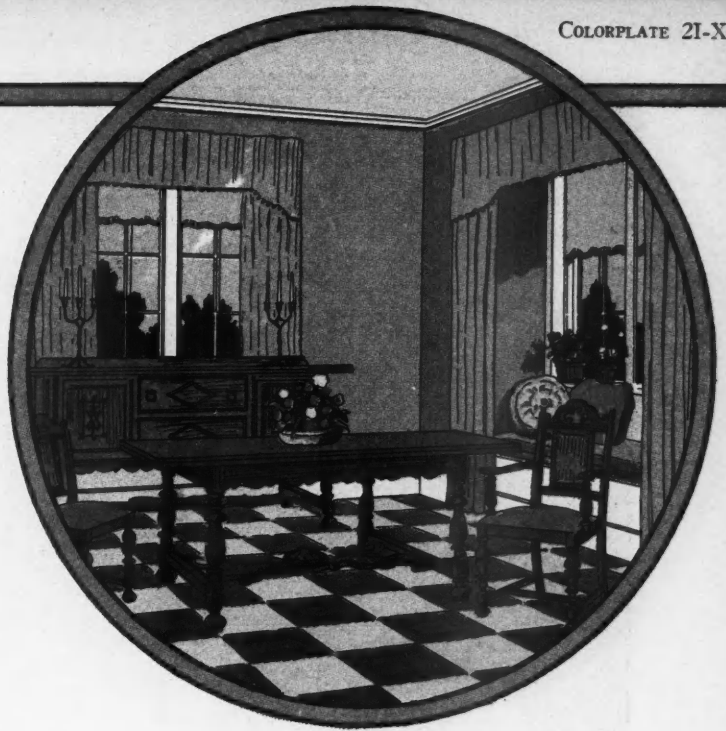
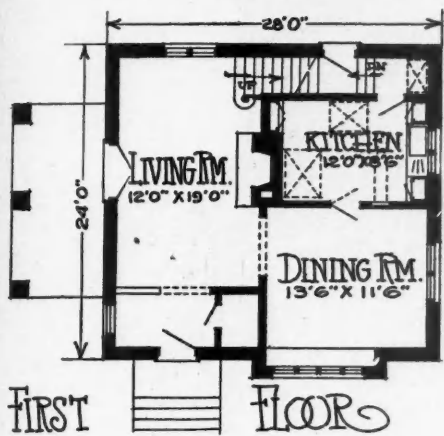
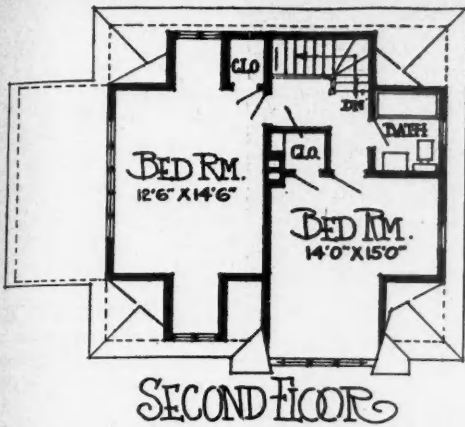
- | | | | |
|--|-------------|--|---------------|
| | Living Room | | Closet |
| | Dining Room | | Bed Room |
| | Kitchen | | Bath and Lav. |
| | Pantry | | Porch |
| | Halls | | Roof |



SECOND FLOOR

Key to Equipment

- | | | |
|-------------------------------------|--------------------------|---------------------|
| ① Dish Washing Sink | ⑩ Built-in Mail Box | Lighting Fixtures |
| ② Electric Refrigerator | ⑪ Cedar Lined Closet | Convenience Outlets |
| ③ Kitchen Cabinet | ⑫ Shower Bath | Electric Panel |
| ④ Range | ⑬ Bathroom Cabinet | Washing Machine |
| ⑤ Built-in Ironing Board | ⑭ Disappearing Stairs | Clothes Drier |
| ⑥ Breakfast Nook Table with Benches | ⑮ Efficiency Ward-robres | Coal Chute |
| ⑦ Thermostat | ⑯ Tub Shower | Heating Plant |
| ⑧ Bookcases | ⑰ Mirror Door | Water Supply System |
| ⑨ Fireplace Throat and Damper | ⑱ Weatherstrips | Hot Water Supply |
| | ⑲ Storm Sash | Water Softener |
| | ⑲ Screens | Radiant Gas Heaters |
| | | Casement Windows |



The IRELAND

A STURDY brick design ornamented with half timber paneling in the gables and relieved with stone work around the entrance door. This house measuring 24 x 28 feet presents three well arranged rooms on the main floor and two large bedrooms with bath upstairs. The color sketch above suggests appropriate furnishings for the dining room of this house.



ures
Outlets
l
chine

System
Supply
er
Heaters
ndows



A COLONIAL dining room with refectory tables and benches. The arched recess for the side board is admirable.



A GRACEFUL Colonial reception hall and stair in mahogany and white enamel.

THE fireplace properly dressed is an ornament even in warm weather when no fire is needed.

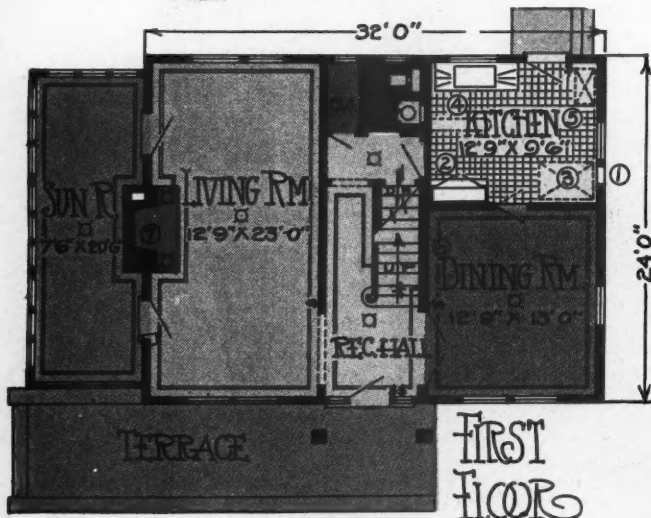


A corner of solid comfort in the home library.



The IOWA PARK

HERE is a delightful Colonial Home 24 x 32 feet, plus the big solarium across the front. The terrace leading to the entrance can well be flagstone-paved to form a delightful porch. The rooms are arranged in true Colonial style, right and left from the central hall.

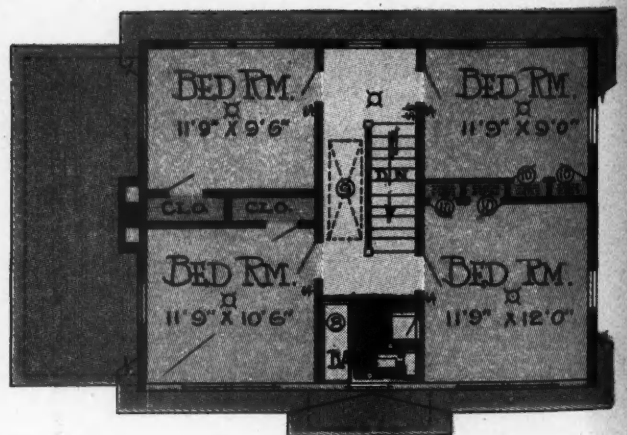


Key to Equipment

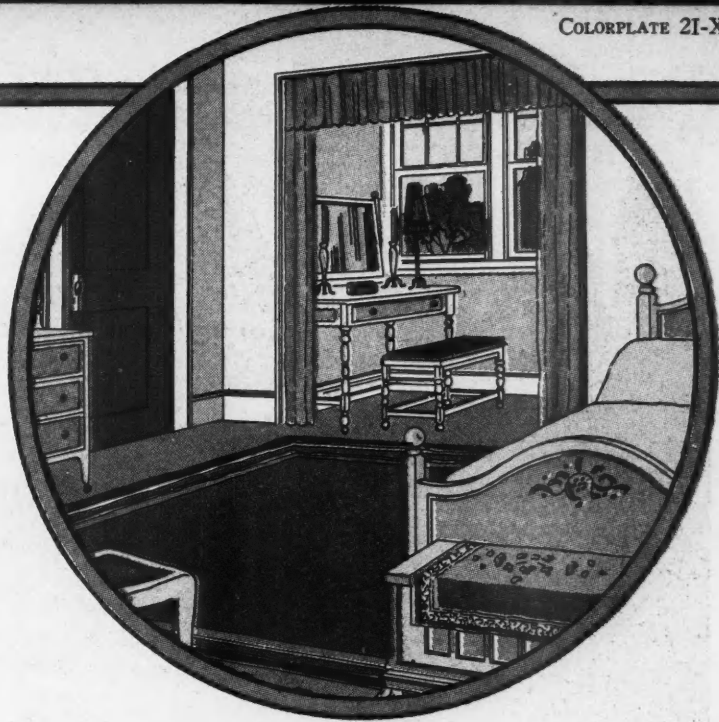
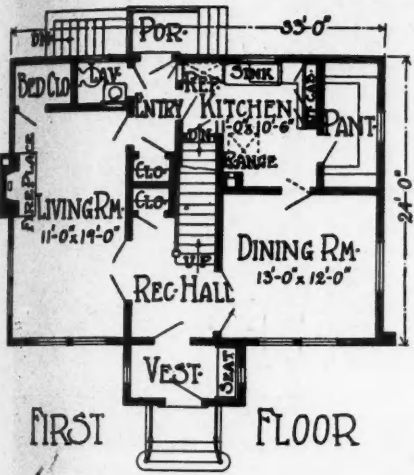
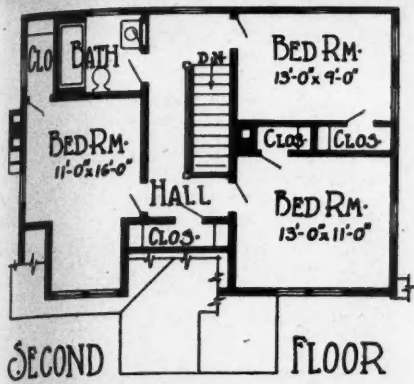
- | | | |
|-------------------------------|-----------------------|---------------------|
| ① Ventilating Fan | ⑨ Disappearing Stairs | Coal Chute |
| ② Kitchen Cases | ⑩ Efficiency Closets | Heating Plant |
| ③ Range | Weatherstrips | Water Supply System |
| ④ Ironing Board | Storm Sash | Hot Water Supply |
| ⑤ Electric Refrigerator | Screens | Water Softener |
| ⑥ Thermostat | Lighting Fixtures | Radiant Gas Heaters |
| ⑦ Fireplace Throat and Damper | Convenience Outlets | Casement Windows |
| ⑧ Tub Shower | Electric Panel | Dish Washing Sink |
| | Washing Machine | |
| | Clothes Drier | |

COLORKEY HOME PLANS

- | | |
|-------------|---------------|
| Living Room | Closet |
| Dining Room | Bed Room |
| Kitchen | Bath and Lav. |
| Pantry | Porch |
| Halls | Roof |



SECOND FLOOR



The ITHACA

A HOME of substantial size and showy design that has proved very popular in many localities. The entrance consisting of brick steps with wrought iron hand rails and with no roof or canopy above the door follows the present-day idea. A porch is thought to darken the rooms and it is better to get the light directly into the living rooms.

This house is well laid out with cross ventilating in every room. Three rooms, reception hall and lavatory are on the first floor and three rooms and bath upstairs. A big pantry is provided off the kitchen and there is a bed closet for an emergency spare bed off the living room.





The IRONTON

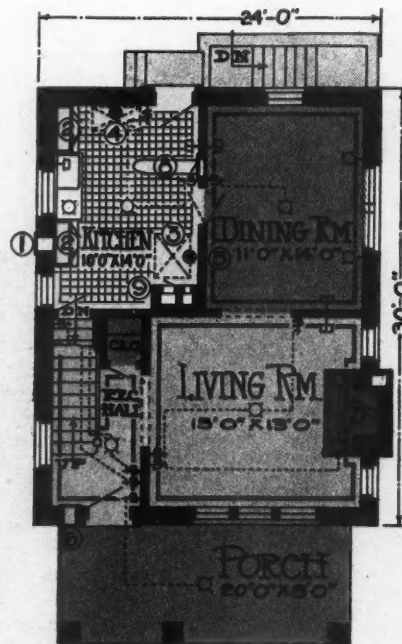
A WELL arranged city type house, narrow and compact to fit the typical small city lot. Three rooms are on the first floor each well lighted, and on the second floor there are three large bedrooms and bath, while on the third floor there is a large well lighted space reached by means of the disappearing, movable stairs operating from the ceiling of the second floor hall.

COLORKEY HOME PLANS

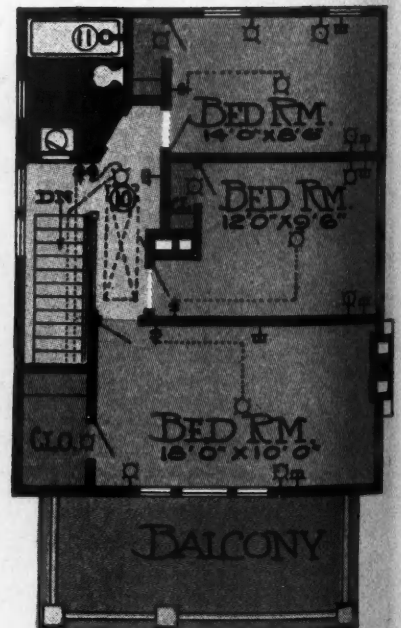
| | |
|--|---------------|
| | Living Room |
| | Dining Room |
| | Kitchen |
| | Pantry |
| | Halls |
| | Closet |
| | Bed Room |
| | Bath and Lav. |
| | Porch |
| | Roof |

Key to Equipment

| | |
|-------------------------------|---------------------|
| ① Ventilating Fan | Screens |
| ② Kitchen Cabinets | Lighting Fixtures |
| ③ Range | Convenience Outlets |
| ④ Refrigerator | Electric Panel |
| ⑤ Thermostat | Washing Machine |
| ⑥ Built-in Mail Box | Clothes Drier |
| ⑦ Fireplace Throat and Damper | Coal Chute |
| ⑧ Ironing Board | Heating Plant |
| ⑨ Incinerator | Water Supply System |
| ⑩ Disappearing Stairs | Hot Water Supply |
| ⑪ Tub Shower | Water Softener |
| Weatherstrips | Radiant Gas Heaters |
| Storm Sash | Casement Windows |
| | Dish Washing Sink |



FIRST FLOOR



SECOND FLOOR



The Single Story House May Be Made Altogether Charming When Skilled Design Is Combined with Good Materials and Workmanship

IT is safe to venture that even the most severe critic of the bungalow would be completely disarmed if he were given an opportunity to view the fascinating little house which occupies the place of honor on Our Front Cover this month. It is, in every way, a most delightful dwelling with just that air of withdrawn and modest dignity, tempered by a warm friendliness, which we all like to associate with the word "home."

The simple brick walls with their arched openings have none of the fadish or purely ornamental features of which one so quickly tires and, many years hence, they still will be as satisfactory as the day that they were built.

But perhaps most important of all in attaining real beauty in a single story dwelling, is the treatment of the roof lines. All too often the bungalow home looks like a box with a nearly flat, mushroom-like roof for a lid and it is this effect which is its most serious defect.

Here, however, we find nothing of the sort. In the photograph reproduced below, and further in the elevations shown on the pages following this, we see how fairly high

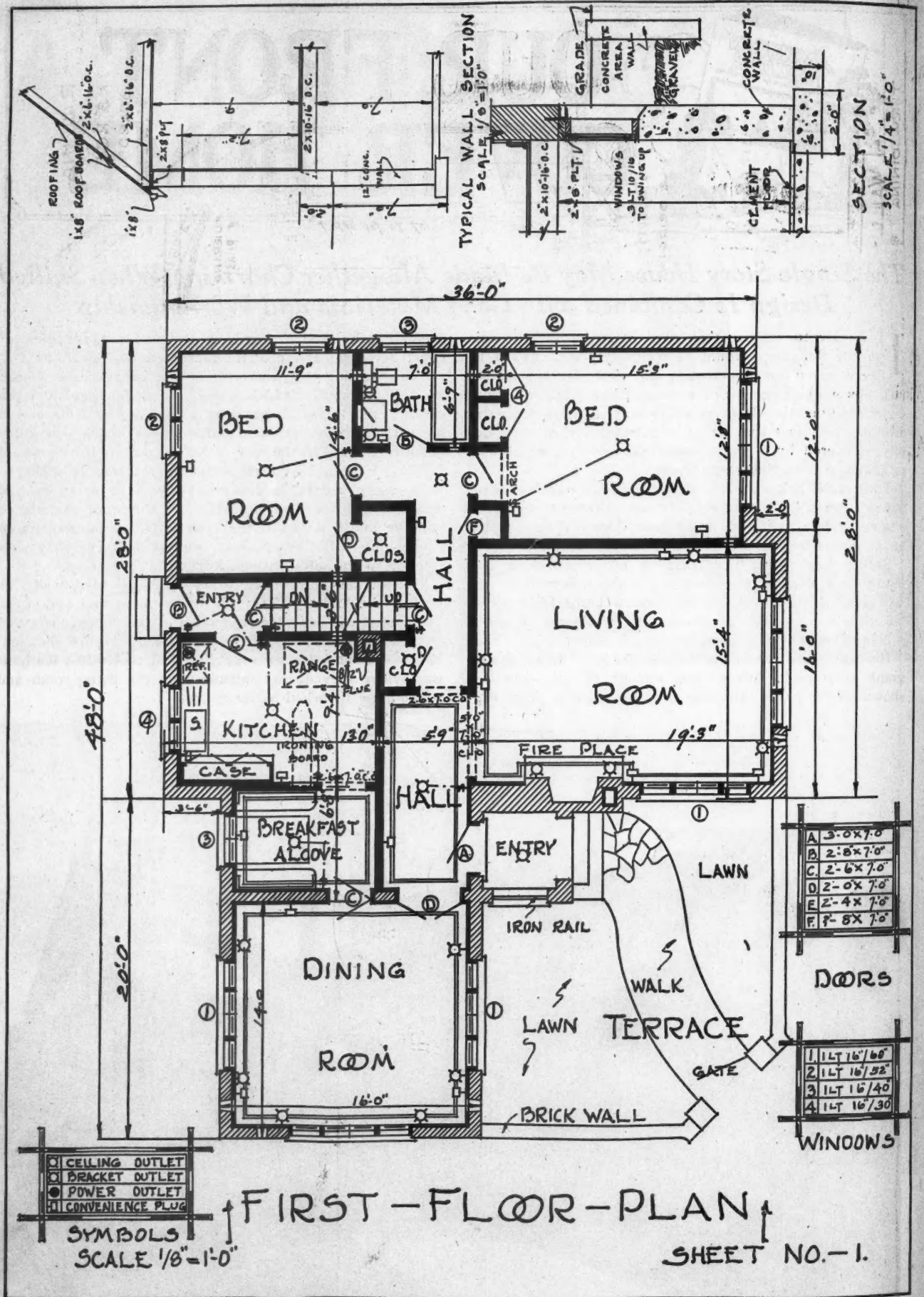
gables can be used to break up the roof expanse, give an effect of height and produce four pleasing elevations.

Again turning the pages to the floor plans of this house, we find an interior which is no less satisfactory than the exterior which has charmed us by its beauty. Here is a compact arrangement of essential rooms which leaves little to be desired in the way of home comfort for the small family. First of all there is an entry which is sheltered from the elements, a decidedly important point in bad weather. This entrance, instead of thrusting the visitor into the midst of the living room activities admits him to a reception hall. From this reception hall one may pass directly to the dining room, kitchen or bedrooms.

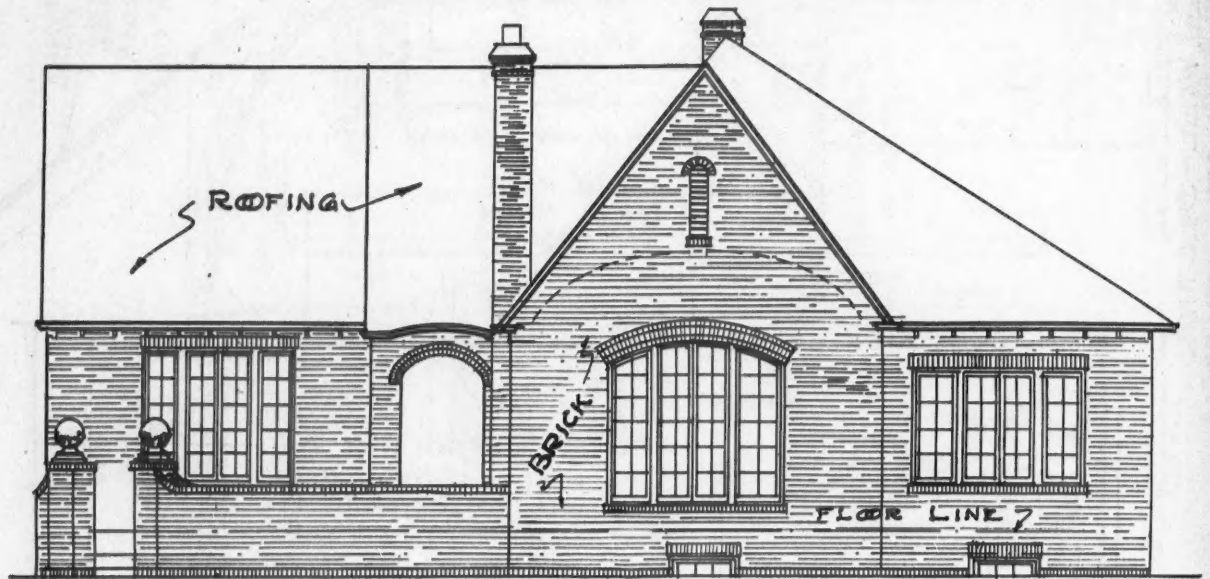
The kitchen is completely separated by solid walls, as well as the hallway, from the living room and bedrooms. There is also a desirable separation of the dining room and kitchen by the breakfast nook between. Again the bedrooms with bath between are placed at the end of the hallway where they do not intrude upon the living room and will not be disturbed by its noises.



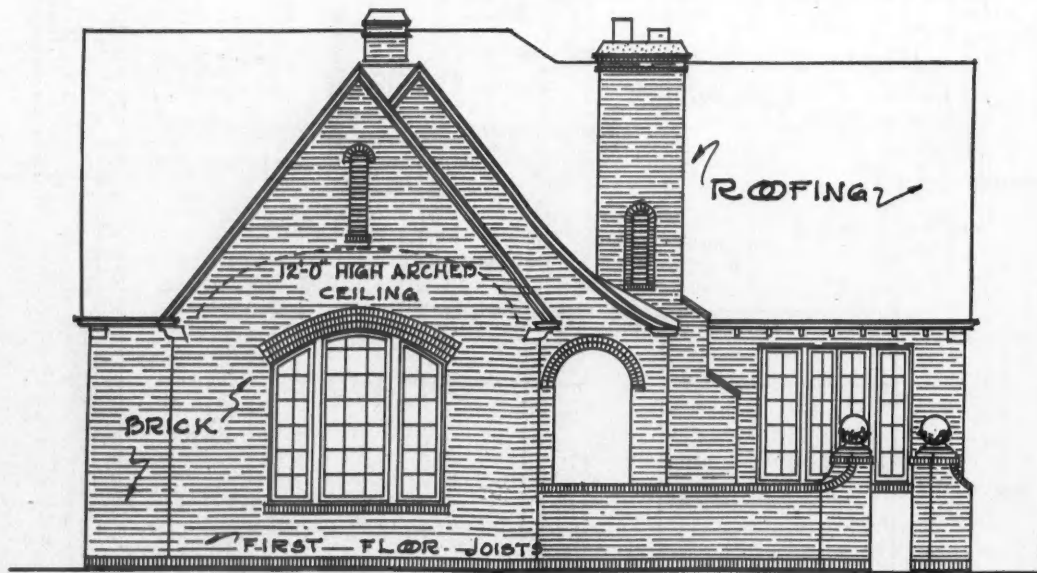
In Our Front Cover Home the Single Story Dwelling Is Seen at Its Best with Roof Lines that Are Well Broken in Each Elevation as Shown in the Plans on the Following Pages.



The Floor Plan of Our Front Cover Home Displays a Room Arrangement in Which Every Desirable Feature in Home Planning Has Been Achieved.



↑ RIGHT - SIDE - ELEVATION ↓



↑ FRONT - ELEVATION ↓

SCALE 1/8" = 1'-0"

SHEET NO - 3.

These Elevation Drawings of Our Front Cover Home Indicate, Even More Clearly than the Photograph, How the Roof Lines Have Been Handled to Obtain an Effective Design.



↑ REAR - ELEVATION ↑

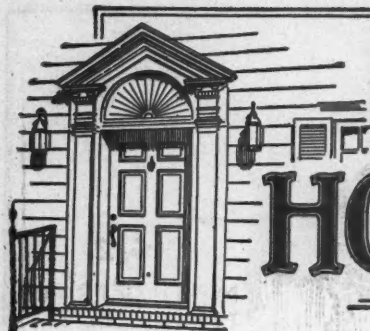


↑ LEFT - SIDE - ELEVATION ↑

SCALE 1/8" = 1'-0"

SHEET NO. - 4

Even the Rear Elevation Displays a Roof Expanse Which Is Broken in an Interesting and Attractive Manner Completely Rounding Out the Pleasing Exterior of Our Front Cover Home.



DETAILS OF HOME BUILDING

Norman Architecture

By V. L. SHERMAN,
Lewis Institute of Technology

AN easy way to place early Normandy in mind is to remember that Col. Lindbergh surveyed it from his plane between Land's End and Paris, nearly one thousand years after his forefathers entitled it. His effortless accession is a reminder of the possession and self-possession of his ancestors who were found to be at once fearless and agreeable.

The Northmen centered at Rouen, a little distance in from the Channel, along the Seine on the way to Paris. Before a great while the northern coast of France and the English south coast were under their control. Christianity led them on to the Crusades, and, returning, their religious building attracted the old builders of Lombardy in Northern Italy. The Normans took every advantage their conquests offered, suiting the knowledge of others to their purpose, and the building and architecture of Normandy took on a virile character that has lasted through all of the changes. So adaptive were they that one branch, journeying farther, took over Sicily and from their efforts there a totally different, but as characteristic a type of architecture, grew and endured.

Norman architecture, the first to succeed the Roman in England and France, and sometimes called Romanesque, was of such interest and force that unaltered specimens are not at all rare even now. Its development was as nearly natural as possible. But we will leave the study of the larger Norman for the congenial evenings before a winter fireside and tackle the subject of Norman homes.

Their worthy method of conquest was this, "If you can keep the thatch on the roof and the lands productive your title is good." That is fertility. We cannot better it today. Up Bristol Bay you come to the Severn and Gloucestershire, a county well known to the Romans and later to the Normans. Overlooking the valley is a plateau where stands a modern inn near the site of an old Roman fort. Fig. 4 shows the heavy plastered stone building with the Norman tower. From the tower the whole valley is open, southeast to northwest. But the tower is not entirely separate and joins with the rest in its roof, another characteristic. It stands at the corner commanding two full sides of the site. And it is Norman round, its chief characteristic.

These towers may be large and unbroken as in Fig. 4, or large and more or less broken in line as in Fig. 7, or more often small as in Fig. 2, but their situation is generally at the corner or at a junction of house and wing. In France there are often pairs, one at either end of the house front. Generally these are smaller.

Modern architects have developed a bay from the tower, using a half circle or ellipse in the plans, and bringing the conical roof away from the main roof. This, when placed along the front of the house, provides a beautifully lighted entrance or a bay for a lounge or dining room.

It is also placed at an inner angle with the wing making a special provision for an entrance and stair hall.

The Norman roof is of nearly every type, although usually a fairly steep gable. It is heavily timbered, and the older ones are not underdrawn, that is, ceiled. To their credit the modern architects are using this style again. In Fig. 1 is a porch roof, open under the outer gable, well fitted to a more enclosed porch. It may be noticed that the pitches of the porch roof and the larger roof are different, not at all unusual.

Fig. 2 is the predominant tiled hip roof of Northern France. In France the peaks are accented together with the ridges. Weather vanes or decorative spindles top them, and the ridges may be serrated. With the more direct succession of the French owners it is not hard to trace these marks. Fig. 3 is not an intentional Norman type but the house shown illustrates the influence. The roof is substantially overhung, protecting the upper house walls. The dormer conforms, being but a part of the roof as contrasted with any type of dormer which breaks the roof. There is a parallel in Fig. 5, and somewhat in Figs. 2 and 6. The Norman dormer is small and single. The gable dormer or cross roof, as in Fig. 4, is quite a different matter.

Roofs of the better buildings were of slate or tile, but were quite likely to be individual in design. Fig. 6, except for the shape of the dormers looks Dutch. Perhaps it is. Nevertheless it is Normandy. The house shows the heavy end wall and the elliptical dormer covers. Fig. 7 is a pretty old French place. Excepting the tower the architecture might be of a warmer climate. But notice the commanding tower, the patterned stone walls, and the lack of smoothness.

Walls were fairly plain but the earlier ones show rough stone masonry with wide joints. Heavier blocks often closed the gables, and the corners might be set with long and short work. This is a fairly tall stone alternating with one of the same proportions running lengthwise into the wall on either side. In later days the joints became finer. In brick, and timber and brick, patterns were used.

It is very noticeable in their masonry that smooth stucco surfaces might break off at levels into a lower portion of very rough masonry. Walls, too, were heavy and partitions likely to be the same owing to the growth of a house. Additions are common to nearly every one of them. To this day the English build the partition solid, masonry extending over footings that mark all partitions. The house is in no sense a shell. Probably the use of stucco in smaller homes is most characteristic. The very old inhabitants having been adept at wattle and daub for so long before.

The fact is that Norman architecture cannot be confined to certain bounds or even dates.

FIG. 1.

AN OPEN ROOF
OVER A WALLED
PORCH . ROMAN ARCHES.

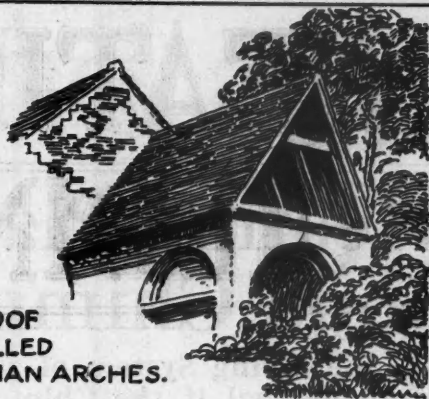


FIG. 2.

NORTH OF FRANCE
TYPICAL SMALL
TOWER, DORMER,
AND CHIMNEY.
WITHY HEDGE.

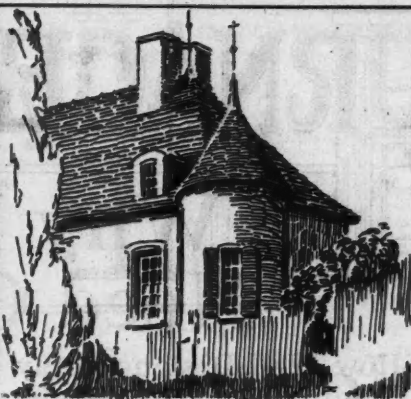


FIG. 3.
OVERHUNG.



FIG. 4
MODERN ENGLISH INN
NEAR GLOUCESTER.

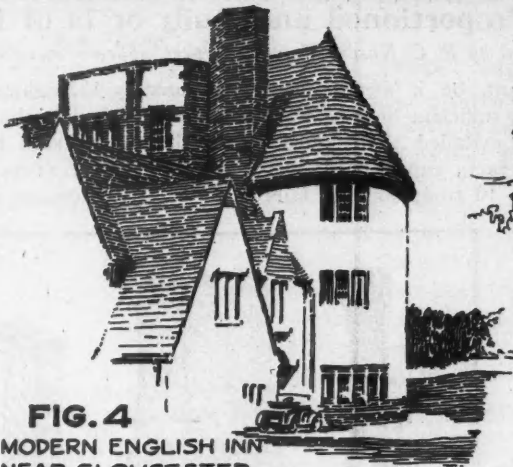


FIG. 5. STEEP TILED HIP AND FLAT EXTENSION.

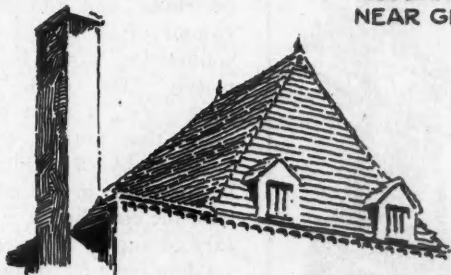


FIG. 6.

LOOKS FAMILIAR
NOTE THE DORMERS
AND THE STOUT WALL



FIG. 7.

A HEAVIER TOWER, AND
NEARLY SEPARATE, FOR
LARGE TOWER ROOMS.
PLAIN STUCCO AND STONE
PATTERN WALLS. FLARING
HIP ROOF.



FIG. 8. AN EASTERN OUTLINE,
GOTHIC ARCHED RECESS,
NORTHERN ROOFS, AND A
TRUE NORMAN WING.
NORTH OF FRANCE.



V. J. Sherman 6-4-27.



FURNACE HEATING

Why Heating Plants Need Good Chimneys

Regardless of How Well Designed May Be the Piping System of a Warm-Air Heating Plant It Will Be Rendered Ineffectual if the Chimney Is Poorly Proportioned and Built or Is of Inadequate Size

This Department by R. C. Nason, Heating Expert, appears every month in American Builder

BEFORE any heating plant, be it steam, hot-water or warm-air, can provide sufficient heat to warm the building in which it is installed there must be a properly built chimney. In fact, experienced installers know that about nine of every 10 complaints of failure of a plant to heat may be directly traced to poor flues as the seat of the difficulty. In some instances the flue area is too small, in others there are leaks in the brick work or lining and in still others the chimney is insufficiently high.

While height governs the intensity of the draft at the grate its free area controls the volume of air which will pass through it. With gas, as well as with water, volume is the result of the velocity of flow times the size of the opening through which the gas passes. It is seen, therefore, that one factor is about as important as the other and both should receive equal consideration by contractors at the time the building is erected. A brief examination of the theory of combustion as related to house heating will prove educational and demonstrate why a good strong draft is necessary.

Combustion, as used by heating engineers, signifies a rapid, chemical combination between oxygen and carbon, hydrogen and sulphur comprising the various fuels. The combination takes place usually at high temperatures with the evolution of light and heat. The substance combining with the oxygen is known as the combustible and if it is completely burned or oxydized the combustion is perfect, that is, no more oxygen can be taken up by the products of the reaction. Combustion is imperfect or incomplete when carbon burns to carbon monoxide instead of carbon dioxide since the former may be burned further to form carbon dioxide if the necessary oxygen is supplied. Hence, we observe that the formation of the gas, carbon dioxide, is the object sought.

Carbon dioxide is composed by weight of 12 parts of carbon and 32 parts of oxygen. To burn a pound of carbon requires $2\frac{2}{3}$ pounds of oxygen. If the oxygen is taken from the air, as is the case in heating, it should be recalled that the atmosphere contains only 23 per cent of oxygen and that there will be required 11.6 pounds or approxi-

mately 155 cubic feet of air to burn one pound of carbon. As carbon is the principle element in ordinary fuel it can be readily seen that it requires a considerable amount of air for the proper combustion of a pound of coal.

It is commonly taken that the amount of air needed to burn one pound of coal is from 10 to 12 pounds, or from 140 to 160 cubic feet of air. Basing figures on a combustion rate on the grate of $4\frac{1}{2}$ pounds of fuel per square foot of grate and assuming a 24-inch diameter firepot, the heater will burn $12\frac{1}{2}$ pounds of coal per hour and the theoretical volume of air necessary for its combustion would be approximately 2,000 cubic feet per hour. Yet, it must be understood that not all of the air supplied by the chimney can be brought in actual contact with the coal, hence, it is necessary to supply an excess of air totaling from 50 to 100 per cent over the air column theoretically calculated as necessary.

A common mistake is that of erecting chimneys too short and terminating them below the ridge with the idea of protecting them from the prevailing winds of winter, likewise to conceal them from view. It is the height of the chimney, previously stated, which devel-

ops or retards the velocity of upward flow, consequently flues would best be given plenty of height.

The author recalls a case in point which occurred in a newly developed residential district outside of Cleveland. A speculative builder had erected some dozen or more frame residences with sharply pitched roofs and finished the surfaces with beautiful, mottled slate. The new dwellings were most inviting to the eye and were quickly sold. The designer of the houses, nevertheless, in drawing specifications for the chimneys had recommended a height of 25 feet this being the height which would keep them below the ridge and in accord with the idea that high chimneys were unsightly and would detract from the salability of the buildings.

The owners moved in and everything went well enough until the first cold snap when no amount of stoking or coaxing would yield intense enough fire to permit warming. The chimneys were found to be the cause of failure and

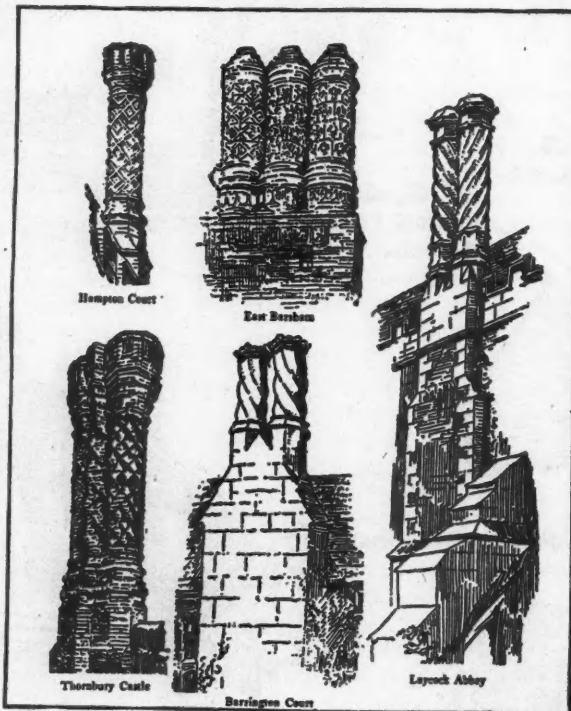


Fig. 1. Tudor Brick Chimneys, England, 16th Century.

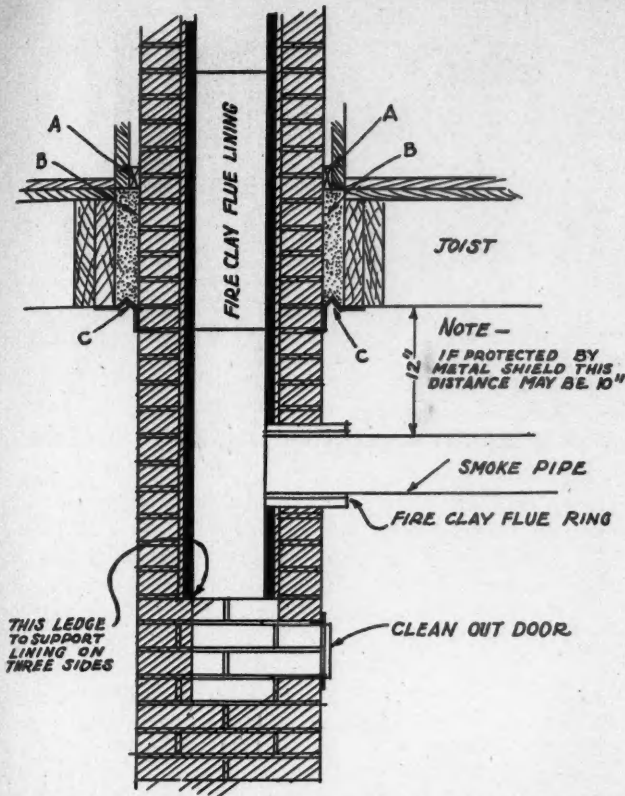


Fig. 2. Sectional View Illustrating Correct Method of Supporting Fire Clay Chimney Lining. "A" indicates pieces of asbestos board back of wood furring; "B," incombustible filling; "C," strip of sheet metal or metal lath.

the owners, many of whom had bought on the deferred plan, refused to make payments until the chimney trouble was corrected. The cost of doing this was considerable and represented a substantial loss to the builder.

The modern style of chimney, we are reminded, is not a thing of embellishment but, rather, one of utility. Back in feudal times under Norman and Tudor architectural influences, highly successful effort was made to ornament chimneys. How this idea was carried out then and may well be today may be noted from the accompanying illustrations showing a few designs which no one would criticize as being ugly. It is our modern desire for simplicity and economy in construction which has brought about the conversion to plain chimneys.

A chimney flue to be an effective draft producer should never be less than 30 feet high, measured 2 feet above the grate, and many engineers assert that 40 feet would be a more sensible minimum height. Skimping the area of flues is another error commonly encountered. Occasionally one is advised that flues may be eight by eight inches, but this size would be that for a six room house or smaller. The area is usually too small and eight by 12 inches would be a far better minimum size.

Friction Reduces Smoke Flow

It is now rather generally known that the mortar between bricks should be carefully scraped smooth because there is said to be a dead zone next to every frictional surface (that next to an ordinary brick wall is extravagantly large) which is ineffective as free area. The gases moving along such surfaces do not slide but roll and tumble, thus further restricting the free passage up the chimney. One prominent authority states that the neutral zone extends two or more inches from each brick surface towards the center of the chimney. From a practical standpoint, therefore, a nominal four by 12 inch chimney flue is less effective than a six by eight inch flue, if such could be constructed.

From considerations of economy most chimneys today are of brick and are unlined, yet flues of fire clay are much more satisfactory and efficient. The majority of building codes recognize this fact and permit chimneys to be built with walls 4 inches, and sometimes 8 inches, less in thickness for lined flues than for those unlined.

Provision should be made for a soot pocket with a cleanout door at the bottom of each flue. Sometimes the door is located near the basement floor and again, it is placed about one foot below the smoke pipe. How this idea is carried out in practice is shown in Fig. 2, which also shows a special ledge to support the flue lining and a sheet metal guard just below the joists for protection of wood work. Attention is directed to the fact that whereas the smoke pipe may be run within 10 inches of the joists if the metal shield is placed this distance would best be 24 inches when no guard is used.

Proper Support Important

Chimney support often receives too little attention with the result that settling opens fissures in the brick above, thereby offering leakage points which interfere with proper draft to a marked extent, in addition to offering a fire hazard. It is safe to make the footing 6 inches wider all around than the chimney and 8 to 12 inches deep and the footing started well below the frost line. Certain suggestions have been made by the National Board of Fire Underwriters in this connection which well may be summarized here.

"A chimney shall never rest upon or be carried by wooden floors, beams, or brackets, or hung from wooden rafters. In frame buildings chimneys shall always be built from the ground up, or rest on basement walls.

"Note.—Wooden construction is certain to shrink, and beams carrying heavy loads always deflect in time even though they may support the load without sign of distress when first applied. Settlement is sure to occur, and such

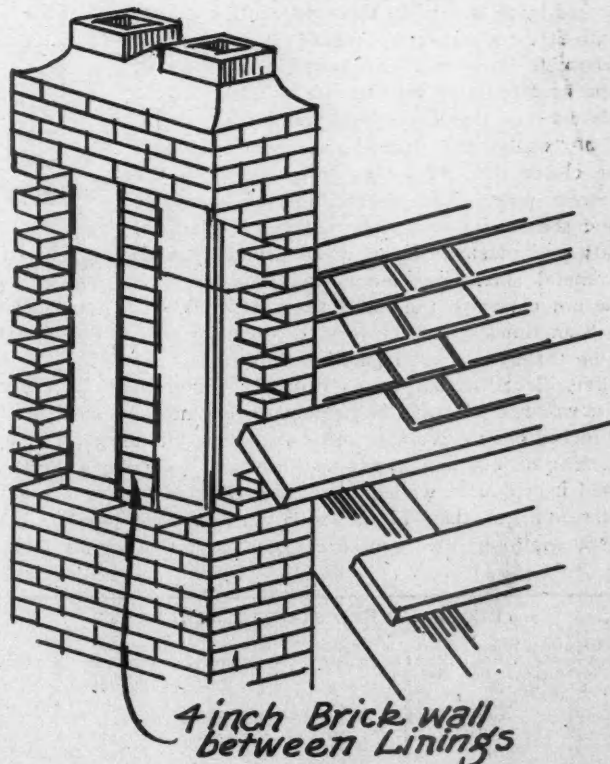


Fig. 3. Proper Method of Building Chimney with Two Flues, Both Lined with Flue Lining and Separated by a "Withe" or Division Wall.

movement not only injures the wall and ceilings of the house, but is very liable to crack the chimney and render it dangerous. Such chimneys are always several feet in height above the roof, thus offering considerable surface exposure, and owing to their unstable support they will sway in a heavy wind. This also tends to produce open joints at the roof line, which is a most hazardous place for sparks to issue as they come directly in contact with the woodwork.

"Do not support chimneys on iron brackets or stirrups attached to wooden construction, however carefully devised. This practice is not uncommon, but is hazardous for reasons explained above. Furthermore, a small fire around the base, from any cause may drop the chimney and form a draft for rapid spread of fire.

"Note.—It is well known that steel begins to lose its strength at about 500 degrees Fahr., and at 1,000 Fahr. approximately 50 to 70 per cent of its strength is gone. Such temperatures are produced in an ordinary fire, and if maintained even for a short time are almost sure to produce collapse of exposed steel structural members."

The annual fire loss in our nation due to defective chimneys is staggering. It amounts to many millions of dollars. In some instances origin of fires cannot be definitely assigned. Building contractors and heating installers can both do their part to prevent fires of this kind if they will heed suggestions concerning building chimneys and adjacent combustible structure. Placing two or more flues side by side in the same brick shell without space between them, for example, is taboo. Every flue intended for heating should be separated by a "withe," as this construction insures stability, reduces the chances of air leakage between flues and the possible passage of sparks from one flue to the others. Fig. 3 shows how this may be accomplished.

If walls are furred no wood should be closer than 12 inches to any part of the smoke pipe. The space between the pipe and the furring should be covered with metal lath and plaster. Even when protected with a metal shield it is suggested that the pipe be not closer to the wood than 9 inches.

Sometimes it is necessary to carry a smoke pipe through a wood partition but this is inadvisable if it can be prevented. When done, however, the woodwork should be protected from the pipe by at least 4 inches of brickwork or other incombustible material or by cutting an opening in the partition and inserting a galvanized iron double walled, ventilated thimble having a diameter not less than 12 inches larger than the pipe.

It would hardly seem necessary to state that all joists,

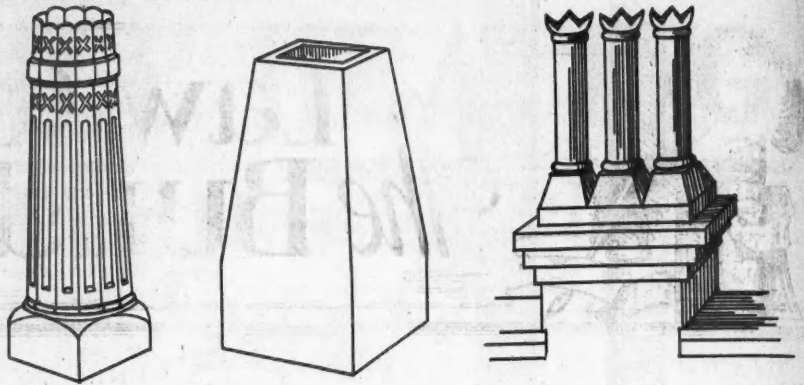


Fig. 5. Chimney Tops Which Are Attractive and Also Yield a Good Draft.

furring, lathing and other woodwork should be well insulated from the chimney construction, but this is one of the most frequent causes of fire. Precautions to be taken include a space of at least 2 inches to be left between the outside face of the chimney and all wooden beams or joists and this space should be well filled with an incombustible material such as loose cinders, loose mortar refuse or gypsum block. Solid material would best be avoided and the loose material should be supported by strips of sheet metal or metal lath set into the brickwork and nailed to the wooden beams as shown in Fig. 2, so as to form a buckled, flexible joint.

Many contractors make the mistake of joining wooden walls, partitions and other pieces of construction to chimneys. This results in pulling apart of such walls and often door jambs, too, as the expansion and contraction of the chimney takes place. When chimneys are heated they expand just enough to loosen attached construction and, reversely, when cool, or relatively so, during times when there is no fire in the heater, shrinking and pulling occurs.

Chimneys and Attic Fires

Occasionally fires of a mysterious origin break out in attics and these usually may be traced to leaks in the chimney. This fact proves a sound argument in favor of fire clay linings which are strongly recommended because their smooth surface eliminates a large amount of the friction of the moving columns of gases and the lining covers open joints and cracks often found in the average mortar joints in one brick wall.

Cracks may be observed by a feather of black soot and dust around such openings. In normal operation the draft within the chimney is sufficient to cause the surrounding air to pull inwards towards the chimney. When a heavy deposit of soot collects upon the inner surface of the chimney an extra hot fire may cause the soot to blaze. The gases in trying to escape from the chimney top not infrequently cause a back draft. The pressure within the chimney now is greater than that of the air without and the hot gases are forced out through the cracks to the attic, igniting any combustible material in their path.

Now and then one observes chimney tops the openings of which are at the sides rather than on top. An example of one of these is shown in Fig. 4. While this design has the advantage of keeping out rain, the abrupt turn which the smoke has to take before its delivery to the

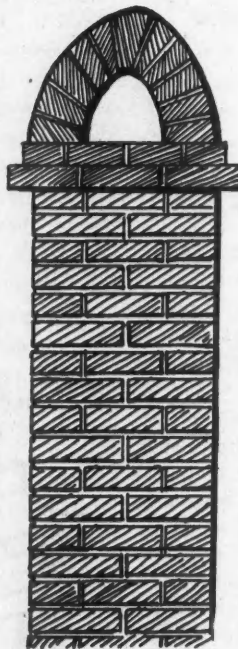


Fig. 4. A Commonly Seen Type of Chimney Top Which Is Not Recommended. Designs in Fig. 5 are preferable.

| RECOMMENDED SIZES OF CHIMNEY | | | | | | |
|------------------------------|--------------------------|--------------------------|------------------|-------|-------------------------------------|---------------------------|
| Diameter of Grates in Inches | Area of Grates in Inches | One-sixth Area in Inches | | | Rectangular or Elliptical in Inches | Height of Chimney in Feet |
| | | Round in Inches | Square in Inches | | | |
| 20 | 314 | 53 | 8 x 8 | 8x10 | 24 | |
| 22 | 380 | 63 | 9 x 9 | 9x10 | 27 | |
| 24 | 452 | 75 | 10 x 10 | 10x12 | 30 | |
| 26 | 531 | 88 | 10½ x 10½ | 10x14 | 33 | |
| 28 | 616 | 102 | 11½ x 11½ | 12x14 | 35 | |
| 30 | 707 | 118 | 12 x 12 | 12x16 | 36 | |
| 32 | 804 | 134 | 13 x 13 | 13x16 | 39 | |
| 34 | 908 | 151 | 14 x 14 | 14x16 | 42 | |

NOTE—Area of chimney not less than 1 to 6 of grate area in inches. Height of chimney not less than 3 feet for each 1 inch of least width.

(Continued to page 136)



How Sub-Contractor May Lose Right to Mechanic's Lien by Failure to Comply with Terms of Contract Between Contractor and Owner

FROM a sub-contractor's standpoint, the terms of the contract between the contractor and the owner may or may not be of importance. If, for example, the sub-contractor relies solely upon the contractor for payment the terms of the latter's contract may not be of particular interest. If, on the other hand, the sub-contractor is in addition relying upon his right to bind the owner for work done the terms of the contract between the contractor and the owner may become of the greatest importance to such sub-contractor.

This is true because, while the sub-contractor may not be bound by all the terms of the principal contract, yet, he may be bound by the terms of the principal contract for that part of the work which he undertakes to perform. If then he fails to comply with the terms of the principal contract, even though he does fulfill his contract with the contractor to the letter, he may be precluded from holding the owner liable for the work he has performed.

This is an important point of building law for sub-contractors, contractors and builders in general, and has been the subject of considerable litigation. The application of the rule stated above is illustrated in a number of cases, among them being the recent Kansas case of Eggleston vs. White et al., 214 Pax. 623.

Sub-Contract Let for Furnace

In this case, White, the contractor, entered into a contract whereby he undertook to erect a dwelling house, furnish all labor and material, for a consideration of \$4,560. This contract contained, among other things, the following stipulation relative to the kind of furnace that was to be installed.

"Furnace. Install 1, No. 351 Twentieth Century furnace, 24-inch fire pot, with warm air pipe leading to separate rooms of sufficient capacity to heat the same, using Rock Island register brush brass finish with a cold air supply of equal capacity of all of the warm air pipes. The same to be installed in a neat, workmanlike manner."

The plaintiff, Eggleston, without examining the contract with the owner, entered into an agreement with White, the contractor, whereby he agreed to install a No. 251 Twentieth Century furnace with a 22-inch fire pot. Eggleston, the sub-contractor, installed this furnace, and within the statutory period filed a mechanic's lien upon the property of the owner. The furnace proved unsatisfactory, the owner had it removed, and Eggleston repossessed it. Thereafter Eggleston brought the instant action to foreclose his mechanic's lien.

Upon the trial of the cause, Eggleston, the sub-contractor, was allowed to foreclose his lien for \$265, after allowing the market value of the furnace when it was returned. From this judgment the owner prosecuted an appeal to the Supreme Court of Kansas, where in declining to permit

the sub-contractor to recover from the owner, it was, among other things, said:

Sub-Contractor Denied Mechanic's Lien

"It would be inequitable to permit the contractor and a sub-contractor with whom he might deal to disregard the contract with the owner and install an inadequate heating system not satisfactory and not contemplated by the owner. If this principle were permitted to govern, a contractor might make contracts with various sub-contractors up to the full amount of the contract price for a structure lacking in many details from the one required by the specifications, and not in the contemplation of the parties.

"If a sub-contractor 'is not bound by all the terms of the contract,' he should be, and is, bound by those requirements of the contract which relate to and describe the particular materials which he undertakes to furnish. He may not have a lien for installing * * * a hot-air furnace with a 22-inch fire pot inadequate for heating the house, when the contract required a 24-inch fire pot. * * *

"The plaintiff (sub-contractor) may enforce his claim against the contractor, but, for the reasons stated, is not entitled to foreclose a lien against the defendant." (Owner.)

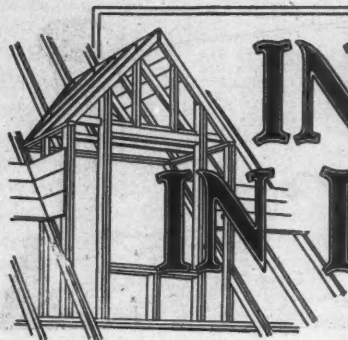
In conclusion, the Supreme Court of Kansas reversed the judgment rendered in the lower court in favor of the sub-contractor, and ordered judgment in favor of the owner. Holding, as outlined in the opinion, that the sub-contractor, performing work that did not comply with the terms of the contract between the contractor and owner, could not hold the latter liable for such work; that his recourse must be upon the contractor alone.

From the foregoing case it is obvious that, under certain circumstances, a knowledge of the terms of the contract between the contractor and the owner, may be of great importance to the sub-contractor. Certainly, in the light of this Kansas holding, the sub-contractor should know and contract with the terms of such contract in mind, in so far as the performance of his part of the work was concerned, that is if he proposed to rely upon the right to bind the owner for the work done. Viewed from this angle, the case reviewed becomes one well worth the having in mind by every sub-contractor, when entering into contracts in reliance upon holding the owner liable for work or materials furnished, in the event the contractor for any reason fails to make payment.

LESLIE CHILDS.



"Standards Yearbook 1927" has been prepared by the National Bureau of Standards of the Department of Commerce, and is being distributed at \$1 a copy by the Superintendent of Documents, Government Printing Office, Washington, D. C. It presents a picture of the work of standardization up to date and will be issued annually hereafter.



INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder—Editor

Stepping Off the Length of a Rafter with the Steel Square

By JOHN T. NEUFELD

DIFFERENT carpenters use different methods of obtaining the length of rafters. One method that is commonly used is the method of stepping off the length of the rafter with a steel square. We have illustrated this method in this lesson not because we think it is any better than any other method but because it is a method that is often used. By analyzing the different methods we learn how to apply each one and in what case to use each one.

To step off the length of a rafter the "rise per foot run" is taken on the tongue of the square and 12 inches on the body. The square is then held on the rafter with these two numbers on the measuring line. The square is first applied at the lower end of the rafter and a mark is made at the point where the 10 of the tongue falls on the measuring line. The square is moved forward so that the 12 on the blade falls on the point previously made. This is illustrated on the drawings shown herewith.

Some carpenters prefer to use the upper edge of the rafter in place of the measuring line. This is quite satisfactory providing care is taken that the length is measured from the correct point as illustrated in a previous lesson.

When a ridge board is used it is well to subtract one-half the thickness of the ridge board from the run of the rafter as is shown in Figs. 1 and 3. This avoids all errors. Extreme care must be taken in placing the square and making the marks as it is very easy to have the length of the rafter come out longer than it should because any error in laying out the rafter repeats itself with every application of the square. This method of measuring the rafter may be compared to laying out the length of a long building with the steel square. An error of a small fraction of an inch made at every application of the square will make a big error in the length of a building. When using this method it is well to check up the result by another method.

Review Questions

1. What is meant by the pitch of a roof and how is it expressed?
2. What is the pitch of the roof in Fig. 1?
3. What is the "rise per foot run" for a one-fourth pitch roof?
4. What numbers on the square should be used for stepping off the length of a rafter for a one-fourth pitch roof?
5. How many times must the square be applied if the span is 18 feet?

Answers

1. The pitch of a roof is the slant or slope of the roof. It is usually expressed as a ratio of the rise to the span. It may also be expressed by giving the rise in inches per foot of run.
2. The roof in Fig. 1 has a 11-inch rise per foot of run. This would be 11 inches for every 2 feet of span. The pitch expressed as a ratio of rise to span would therefore be 11/24.
3. The rise per foot run for the one-fourth pitch roof is 6 inches.
4. The numbers 6 and 12 should be used for stepping off the length of a rafter for a one-fourth pitch roof.
5. If the span is 18 feet the square must be applied nine times for stepping off the length of the rafter.



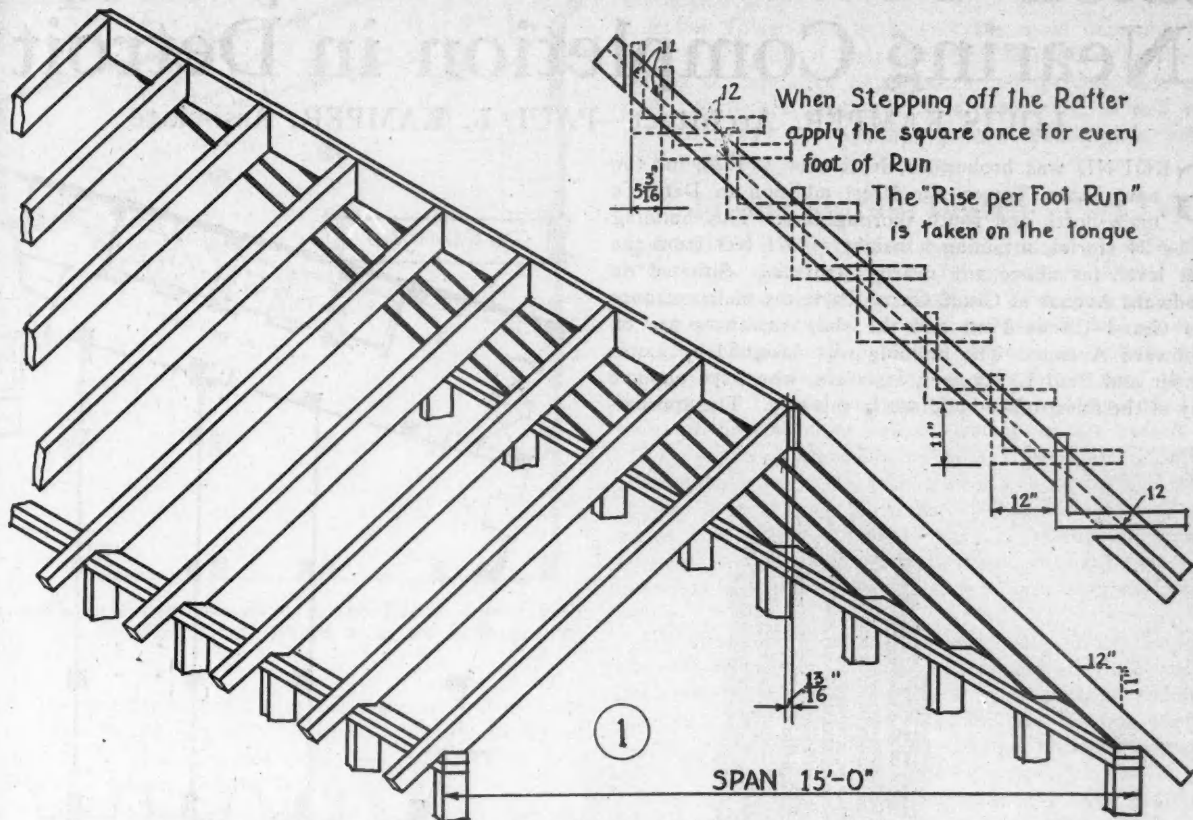
Chimney Construction

(Continued from page 134)

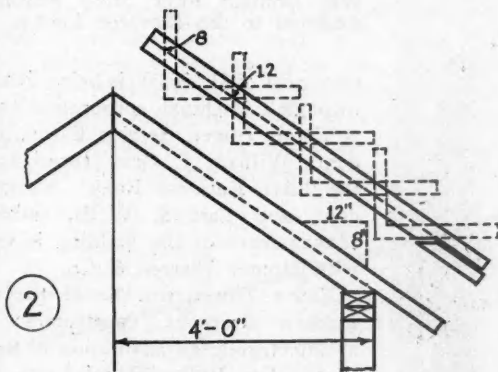
atmosphere offers added resistance to the flow of gas, often altogether too feeble without the added impediment. If it is desired to place a weatherproof top of any kind on the top of the flue one of the hooded, or cowl, design is preferable and would best be free to swing with the wind so that its opening will be to leeward.

Chimney tops have always had a practical as well as ornamental value, for by adding height to a chimney they increase its draft. Those made of fire clay are not affected by the heat and will not crack from changes in temperature. They are set so as to cover the flue lining in the chimney and one top is suggested for each flue. A rich mortar cement should be used in setting the top and should be graded away from the top to the outside of the chimney to provide a wash. Three excellent styles may be noted in Fig. 5.

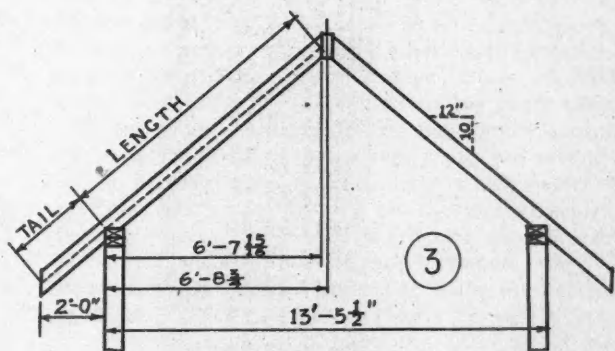
One of the unfortunate situations about deficient chimney construction is that the contractor who installed the warm air plant is most often blamed for failure of the plant to heat whereas it is unlikely that the blame can be placed on the shoulders of any single person. Too little is known generally about chimney construction and too little attention is paid to supplying one correctly proportioned for the work expected of it. There is no reason why it cannot be made to permit proper warming of the building.



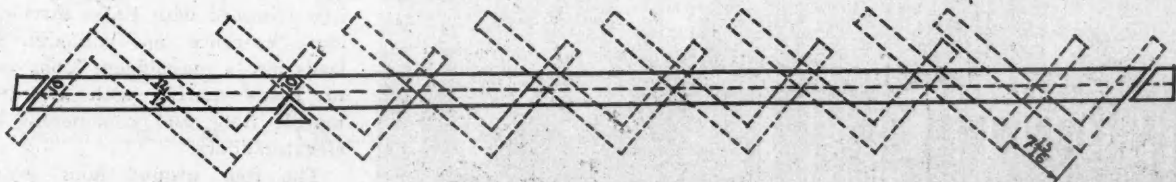
ANOTHER SOLUTION OF THE RAFTER PROBLEM. "STEPPING OFF THE LENGTH"



As the Run is 4 Feet, the square is applied 4 times



Solution of this problem is illustrated below



We first apply the Square twice for the 2 feet Run of the Tail.

The Rise per Foot Run is 10"

4

The Square is then applied once for every Foot of Run. In this problem the Run is 6'-7 1/2".

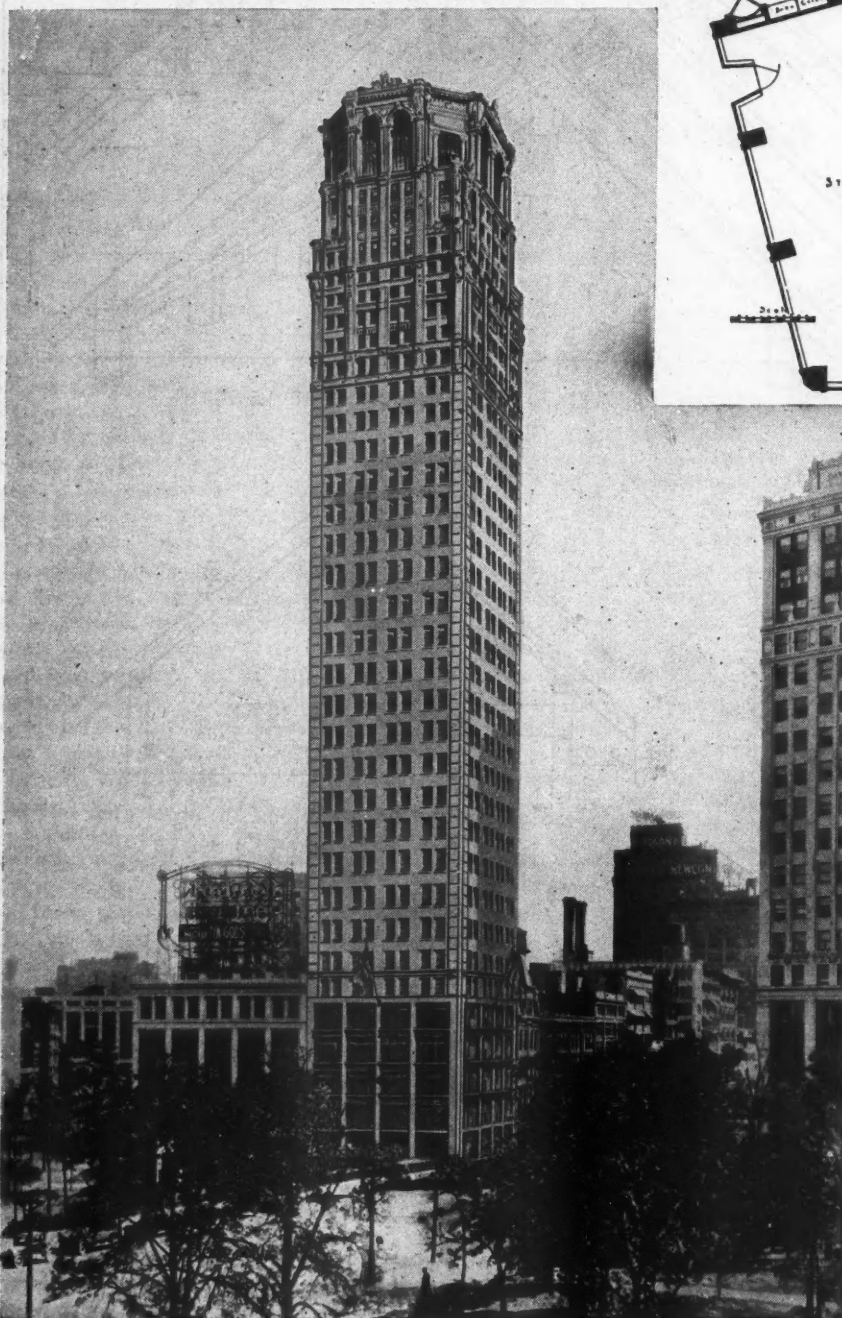
For the fractional part of a Foot of Run, the Square is moved forward 7 1/16"

One Commonly Used Method of Obtaining Rafter Lengths is to Step Them Off with the Steel Square. The application, as described on the opposite page, is fully illustrated in the sketches reproduced above.

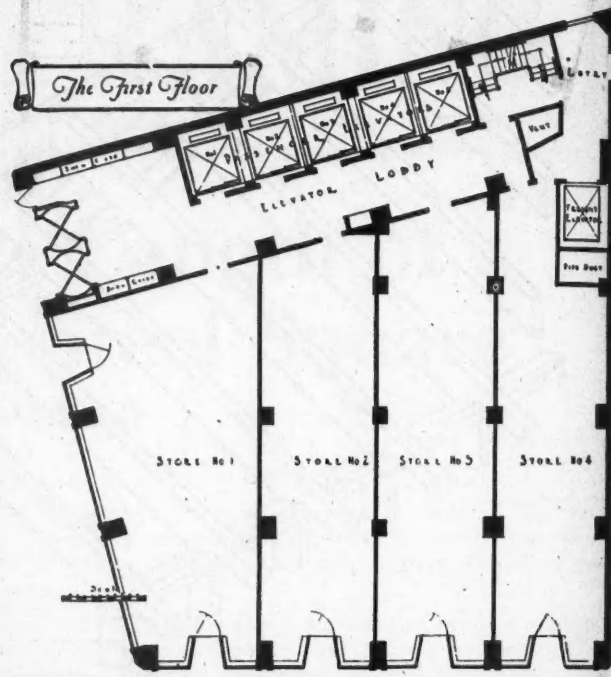
Eaton Tower a New Skyscraper Nearing Completion in Detroit

LOUIS KAMPER, Architect—PAUL L. KAMPER, Associate

GROUND was broken on September 1, 1926, for the new Eaton Tower, the latest addition to Detroit's main north and south thoroughfare. This building will be 34 stories, attaining a height of 371 feet from the street level, far above any nearby structure. Situated on Woodward Avenue at Grand Circus Park, the main entrance faces Grand Circus Park and the shop entrances are on Woodward Avenue. The building was designed by Louis Kamper and Paul L. Kamper, associate, who have planned many of the finest office buildings in this city. The approxi-



The New 34-Story Eaton Tower, in Detroit, Mich., on Which Construction Was Started Last Fall and Which Is Expected to Be Completed Within the Next Few Weeks, Rises High Above Its Neighboring Buildings.



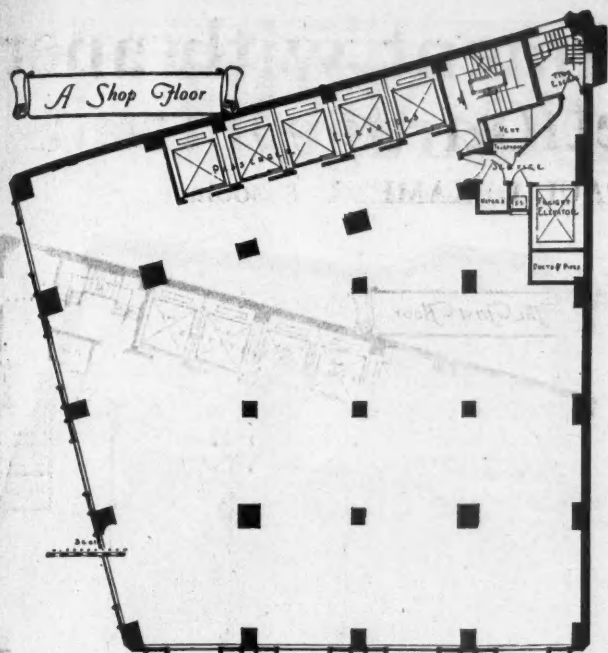
The First Floor of the Eaton Tower Will Contain Four Store Spaces in Addition to the Elevator Lobby.

mate cost of \$1,600,000 is being financed through a Michigan corporation known as Eaton Tower, Berrien Eaton, president; William J. Gray (president of the First National Bank), vice-president, and Carl S. Wells, secretary. Management of the building is vested with Homer Warren & Co.

Eaton Tower will be of the most modern fireproof construction and architecturally an adaptation of the art of the late Italian Renaissance. The exterior is to be Indiana limestone. The wide marquis, which shelters the main entrance, calls for massive wrought iron trimmed with Belge marble. The main entrance on Witherell Street leads into a magnificent lobby entirely of Belge marble with a travertine marble floor and ornamental bronze elevator doors.

The four ground floor stores on Woodward Avenue will have an abundance of natural light and open into the lobby in the rear. All elevator corridors above the first floor are to be finished in Botticino marble with floors of Tennessee marble. On the thirty-first and the thirty-third stories will be corner balconies, and beautiful loggias will add distinction to the two top floors.

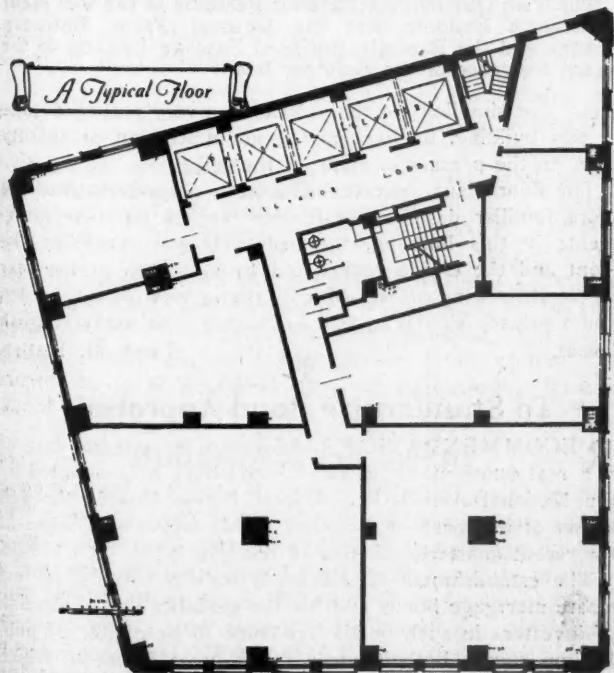
The building will be equipped with



Four Floors Above the First in the Eaton Tower Will Be Devoted to High Class Shops with an Arrangement Similar to This.

five of the latest passenger elevators, signal control type and the first in Detroit with position indicators inside of the cars. The elevators are only one indication of the complete convenience for the tenants and guests of Eaton Tower. The building will have 140,000 square feet of rental floor space. The first five floors will be designed for high grade stores and shops, and the four top floors will be arranged into studios for artists, architects and photographers. The rest of the space will be for professional and business men, and owing to the irregularity of the land space, there will be an unusual amount of sunlight.

Due to the foresight of the builders who vision the Detroit of years hence, the design of the basement is such that when the subway becomes a fact, that site being a



Above the Fifth Floor There Will Be Offices for Professional and Business Men with the Four Top Floors Arranged for Artists', Architects' and Photographers' Studios.

natural station, a tunnel will extend from the lower level to permit of access from the trains without climbing to the higher levels.

Eaton Tower will be one of the most imposing structures in the city of Detroit and is believed to be the forerunner of expensive improvement on the east side of the park. Structural steel work has progressed so well within schedule that the opening of the building is set for early summer.

Filling Station Design—Part IV

MOST of the recognized building materials lend themselves quite readily to filling station work. Brick makes a very acceptable material, as it may be had in a variety of shades and textures and may be laid up in very attractive bonds and patterns. Stucco on hollow tile or metal lath on wood framing is very often used to good advantage. The use of slate or tile for roofing adds to the looks of the station as well as reduces the fire hazard.

The common material for floors, for building without basements, is concrete with a cement topping and with a cement base around all walls. For buildings with basements the first floor should have a subfloor of common flooring with a finish floor of maple or hard pine. The basement floor should be of concrete with a cement topping finish.

The inside of all outside masonry walls should be furred with 1 inch by 2 inch furring strips and all walls, ceilings (including basement ceiling) and furring strips should be covered with metal lath, and plastered. This is the best method of finishing walls and ceilings, although a composition wall board may be used.

Where a basement is wanted it should have an outside stairway with concrete steps and area. The outside stairway is used for the most part for the conservation of space because in a small building an inside stairway would take up too much valuable space. The basement, which should be well ventilated, is generally used for the location of the heating plant, fuel room, storage space, oil tanks, air compressor and tank, and sometimes the men's toilet room.

In the smaller stations heating is generally accomplished by means of a stove, but where there are several rooms to be heated it is better to have a hot water heating system. There are systems on the market which allow for hot water heating with the heater on the same floor as the radiators, so that a basement is unnecessary. Where there is a basement it is better to place the heating plant in it, as it gives quicker and better results, is more economical, and does away with the handling of coal and ashes in the sales room.

Another thing that adds to the general neatness and attractiveness of the station is the landscaping of the grounds. The judicious use of shrubs, plants, flowers and grass gives to the well-designed station the needed background and embellishments to properly set it off.

The lighting arrangement of the grounds and building is something that needs very careful study, as there should be plenty of light so that every part of the grounds is properly illuminated. If there is a canopy over the drive or drives, the ceiling should have enough well-placed lights to make the drives practically as light as day, and arranged to eliminate all shadows. If there is a canopy over one drive only, then a light standard should be placed opposite the pump island on the edge of the outside drive. The greasing racks, drain pits, and air and water towers should have individual light standards giving plenty of well distributed light to work by. In the case of greasing racks and drain pits it is well to have an outlet well placed for connecting an extension cord. The grounds should be illuminated thoroughly—drives and curbs as well—so that there will be no trouble for the motorist when driving into the station.

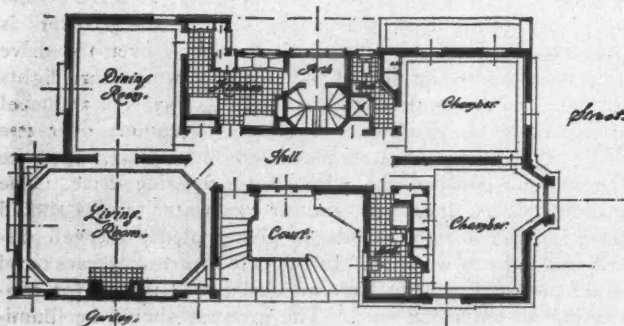
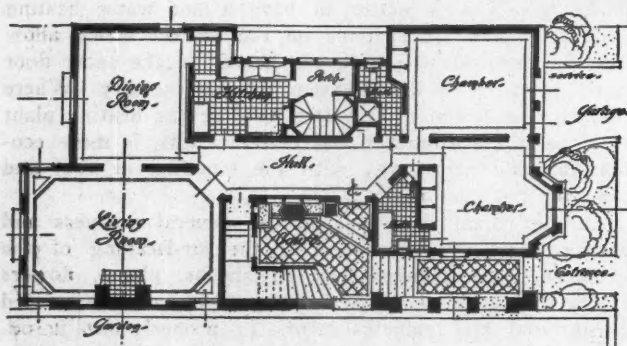
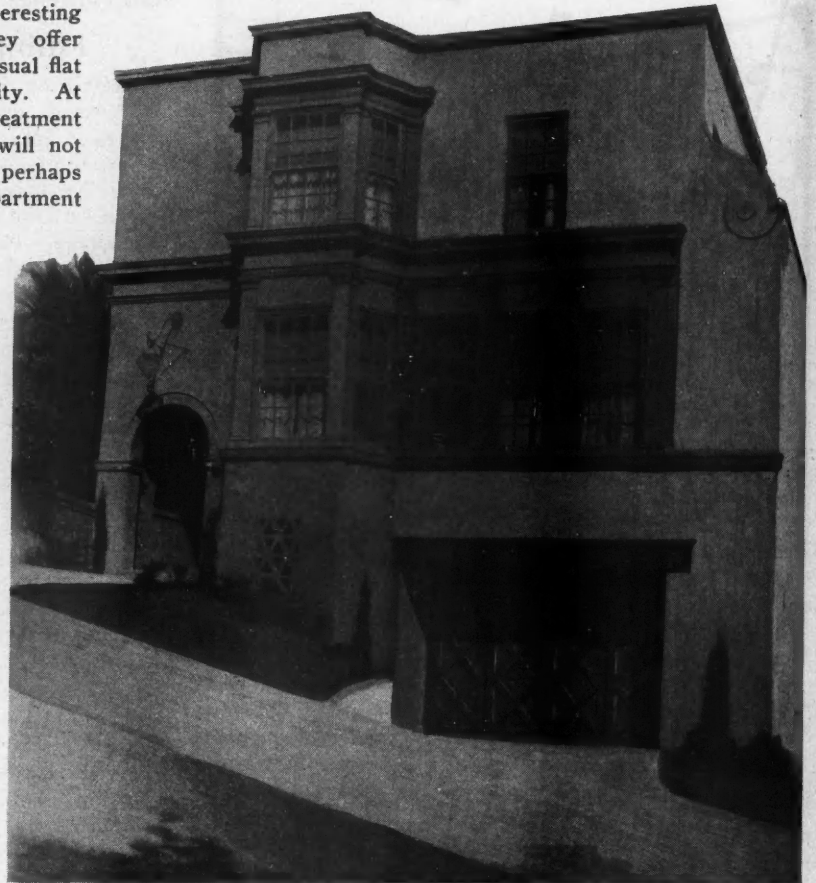
A Hillside Apartment with an Interesting Garage

WARREN C. PERRY, Architect

HILLSIDE locations are always interesting sites for the home builder, for they offer more varying possibilities than the usual flat lot and greater opportunity for individuality. At the same time they also require skillful treatment in planning; for the ordinary house plan will not fit them at all. The same thing is true, and perhaps to an even greater degree, where an apartment building is to be placed on a hillside lot. This situation has been handled in an interesting manner in the designing of the R. H. Ver Mehr Apartment, in Denver, Colo.

As the picture indicates, the quite steep slope of the ground was utilized to afford a built-in garage reached from the street level and this feature was kept in harmony with the building exterior by means of the treatment of the garage entrance and especially the doors. A garage built like this must, of course, be properly constructed to avoid the danger of fire and keep down the fire insurance rates. When the proper construction is used, however, there need be no danger from this source and the built-in garage is permissible.

Another interesting feature of this design is the entrance which is from a court placed at one side of the building and approached through a partially enclosed passage that lends an air of seclusion. Above the entrance to this passage is hung a handsome ornamental lamp. This is one of the very few ornamental features of the front eleva-



This Building Provides Two Well Arranged Apartments Which Vary from the Familiar Plan in Having the Living and Dining Rooms at the Rear, Overlooking the Garden.

The Two Outstanding Exterior Features of the Ver Mehr Apartment Building Are the Unusual Front Entrance Garage and the Partially Enclosed Passage Leading to the Court Entrance of the Building Itself.

The simplicity of the exterior is a very real advantage in this building, its lines giving an impression of solidity even on the precarious slope of the hill.

The floor plans indicate still another departure from the more familiar designs for, in the case of the two apartments in this building, the bedrooms are placed at the front and the dining rooms and living rooms at the rear where their windows afford a charming view of the garden and a privacy similar to that associated with many English homes.

THEO. M. FISHER.



To Standardize Bond Appraisals

RECOMMENDATIONS looking to the safeguarding of real estate mortgage bond issues have been adopted by the National Association of Real Estate Boards through action of its board of directors. This action was taken at the recent quarterly meeting of the board, held at Chicago.

The establishment of standards for the issuing of real estate mortgage bonds and for the guidance and protection of investors in such bonds has come to be matter of public importance, both in view of the great extent to which such bonds have come into general use in the last few years and in view of the useful function which the new financing method has come to fill in enabling the small investor to participate in large building developments.



HOW DAN DOES IT

A Department for Passing "Life Savers" along to other Builders

\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is the editor of this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder 1827 Prairie Avenue, Chicago, Ill.

Testing the Level

THE question sometimes arises as to whether or not the builder's level is accurate. This can be tested quite easily by the following method: Drive a nail "A" into the floor or ground, in any place that is about level.

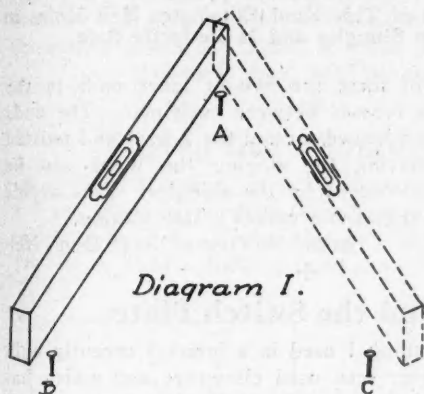


Diagram 1.

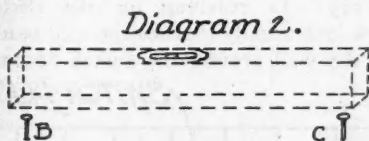


Diagram 2.

Here is a Simple and Accurate Method of Testing a Builder's Level by Means of Three Nails Driven into the Floor or the Ground.

place it upon "B." If the directions have been accurately followed the level will show level if it is accurate, for the two nails "B" and "C" are actually on the same level. If it is not accurate it will show just how much it is out of level

H. E. SALISBURY, Box 358, Independence, Kansas.



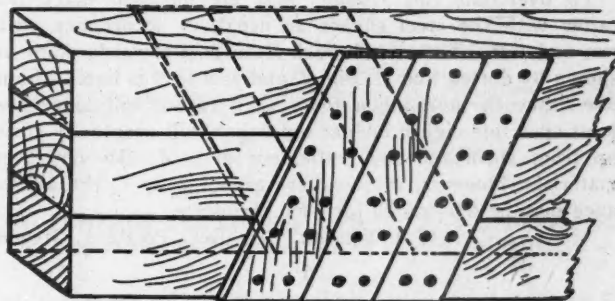
Built-Up Wood Beams

WHERE a section of wall is to be supported by the beam spanning a door opening or where doors are to be suspended from the span, requiring strength and rigidity, a built-up wood beam may be used with complete satisfaction. This built-up beam is formed of timbers joined with diagonal braces and spiked. The spikes are clinched if they are long ones. The bracing is illustrated in the sketch. This makes a laminated form of beam permitting the use of ordinary sizes and it is also possible to build a beam of greater depth than is possible to obtain in steel.

This beam is highly fire-resistant but where even greater fire resistance is required it may be sheathed with sheet

Drive the nail "B" a little less than the length of the level in distance from "A." Place the level that is to be tested on these two nails adjusting "B" until it shows level.

Now take the "B" end of the level and place it on a third nail "C." Adjust the "C" nail until the level shows level. Lastly take the "A" end of the level and



Built-Up Beams Constructed in This Manner Can Be Used to Good Effect Where Strength and Rigidity Are Required for Suspending Doors.

iron. In one installation of this sort, made over three years ago, the beam has not sagged even a fraction of an inch. This is an advantage in this garage door installation because sagging, which would cause binding of the doors, would be a most objectionable feature.

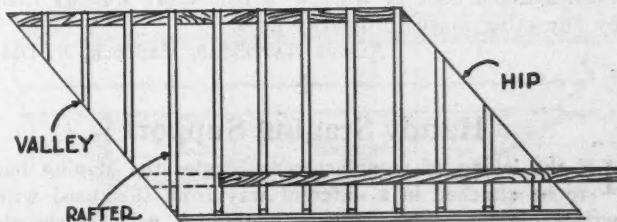
GEORGE A. LUERS, 130 E. Capitol St., Washington, D. C.



Economy in Sheathing

EVERY now and then we have an angle in a hip and valley roof that measures just 12, 14 or 16 feet, the same length as the sheathing. If each end of the board is sawed to fit the hip and valley it takes a 14-foot board to fit a 12-foot space. My idea is to make a 12-foot board reach, thus saving material. Lay the end of the board on any rafter and saw to fit the hip. Slide the cut end over to the valley and you have a perfect fit. Repeat with the other boards but start at different rafters to break the joints. This also saves you a lot of cutting and can even be used to advantage where the space is not exactly the length of the board.

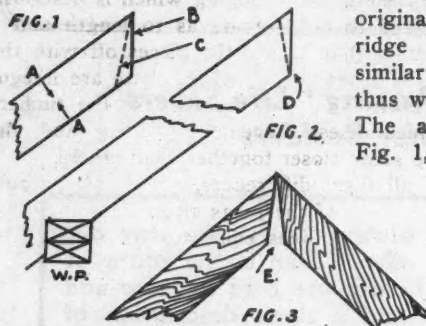
C. J. FRAZIER, Aimsworth, Nebr.



Economy Both of Lumber and of Labor Are Effected by Cutting Hip and Valley Sheathing in This Way as Only One Cut Is Required.

Shrinkage of Rafters

FRAMING material frequently comes to the job green and wet and is therefore subject to considerable shrinkage. Rafters as ordinarily cut and placed in the building while in this condition, upon becoming dried out later on,



will shrink from the original plumb cut at the ridge so as to appear similar to Fig. 3 (E), thus weakening the joint. The arrows, A, A, in Fig. 1, show the direction of this shrinkage towards center of rafter, B is the original plumb cut, and C illustrates shape of cut

Cutting Rafters so That Natural Shrinkage Will Not Cause a Gap at the Ridge.

after the wood has become seasoned in the building.

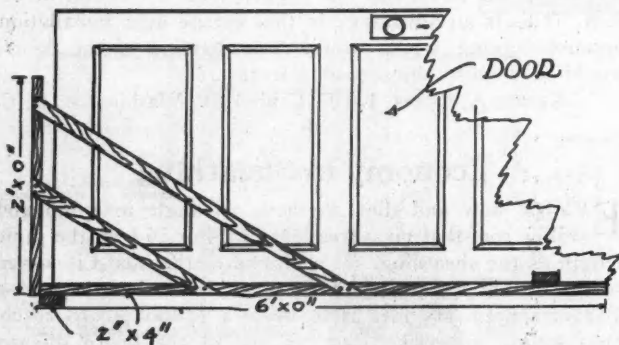
To overcome this trouble, first lay out the rafter with the steel square as usual, in accordance with run and rise. Then mark back from heel towards point as shown by dotted line D, Fig. 2, and saw to this line. About one-sixteenth inch taken from each rafter will leave the joint open one-eighth inch at top which will eventually close up from shrinkage and settlement of roof. In very wet materials, however, or if rafters are of 2 by 6, the allowance may be one-fourth inch for shrinkage.

E. J. WILSON, Gen. Del., Portland, Oregon.



For Trimming Doors

DOORS and windows are awkward things to handle when trimming and it is worth the trouble to prepare a device like the one in the sketch which can be made from scrap lumber. I use a 2 by 4 strip for the two bottom



Trimming Doors Will Be Found Much Less Awkward if You Will Knock Together Something of This Sort to Hold Them.

pieces and the upright and 1-inch stuff for the braces. The short cross piece keeps this holder from tipping while at work and the door or window is held more steadily than by any other means ordinarily used.

ALBERT NATTESTAD, Maddock, N. Dak.

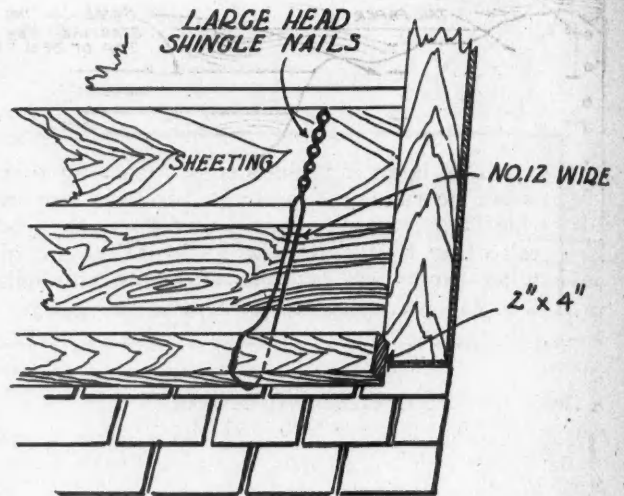


Handy Staging Support

IN the laying of manufactured shingles the staging has to be attached in a different way from that used with wood shingles. The common method of using a shingle to support the 2 by 4 and sawing it off when removing the staging cannot be used with the composition shingles.

A simple method of supporting the staging in this work is by means of two wires.

A large headed nail is driven part way into a sheathing board about 16 inches above the last shingles laid. A piece of No. 12 annealed wire is looped around the nails which are then driven home. Another nail is started an inch below this, the wires crossed between the two nails and drawn close to the last one which is then driven home also.



A Staging Support of This Kind Eliminates Nail Holes in Composition Shingles and Is Perfectly Safe.

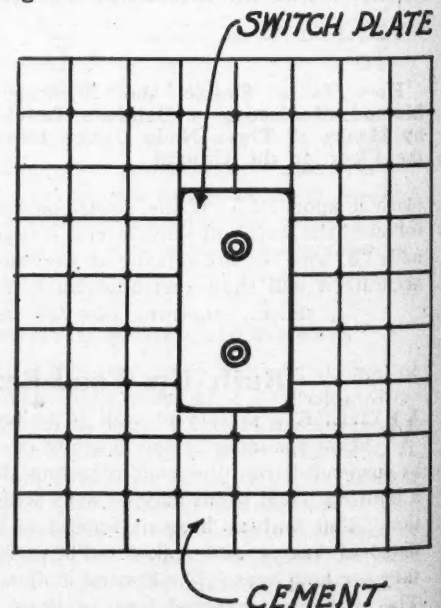
This is repeated till there are five or more nails in the row with the wires crossed between each pair. The ends of the wires are then looped around the 2 by 4 and twisted together. On removing the staging the wires can be clipped off and are covered by the shingles. This avoids nail holes in the shingles and makes a safe staging.

GEORGE McVICKER, North Bend, Neb.



Around the Switch Plate

THERE is one thing I used in a house I recently built that I have never seen used elsewhere and which has proved very satisfactory. In reaching for the electric light switch, in the dark, one usually touches the wall nearby first and before long the wall around the switch becomes soiled. This can be avoided by placing a square of Keenes cement around the switch plate. A very thin layer of the cement is used and when it is partially set it may be marked off into 1-inch squares to secure attractive appearance. When soiled the Keenes cement can be easily wiped off with a damp cloth and the wall is in no way damaged.

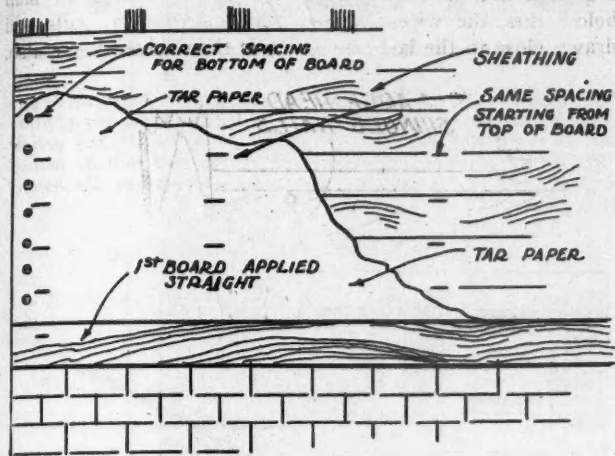


Soiled Wall Paper Around Light Switches Can Be Avoided by a Panel of Keenes Cement That Can Be Wiped Clean.

DOW SMART, Haydenville, O.

To Get Siding Straight

IN the January, 1927, issue, Oliver Pierce gave his method of applying siding. I think I can offer a method which is just as accurate and faster. I use a pair of dividers to get the correct spacing for siding. After applying the first



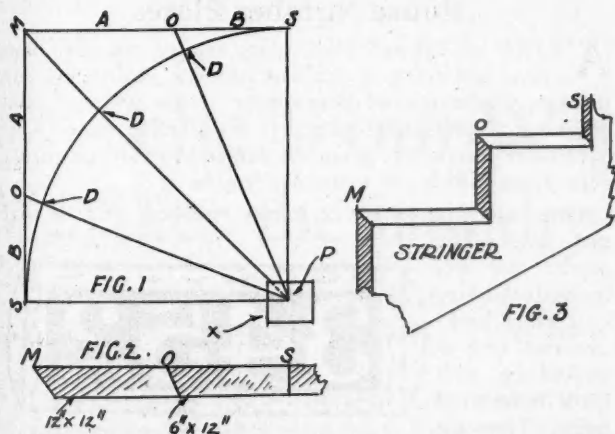
A Quick and Simple Method of Getting Siding Straight by Means of an Ordinary Pair of Dividers.

board straight, we use the dividers and mark on the building at intervals along our board, starting from the top of the first board. This gives the position of the top of each succeeding board and I find it much faster than scribing.

HAROLD P. HAY, 3223 Wright Ave., Racine, Wis.

Laying Out Winding Stairs

A SIMPLE method of laying out ordinary square winding stairs is shown in the drawing. Using P-S as a radius, draw S-S. Divide this line into four equal parts. Then with P as a starting point draw through each inter-



Winding Stairs Must Be Laid Out Properly or the Center Treads Will Be Too Narrow for Foot Room.

section D, D, D to M and to O, O. This gives treads of equal width at the center line for all winders, although it will be noticed that M-O is considerably greater than O-S. The winding post from which the risers radiate is marked X.

A common mistake made by inexperienced workmen is to take the center of each side of the square as a joining point for the risers. This results in the two center treads being almost too narrow to provide foot room while the others are too wide and out of proportion to the rest of the stairs.

The cut at M on stringer and riser will be 45 degrees, or 12 by 12 on the steel square. The cuts O, O, will be

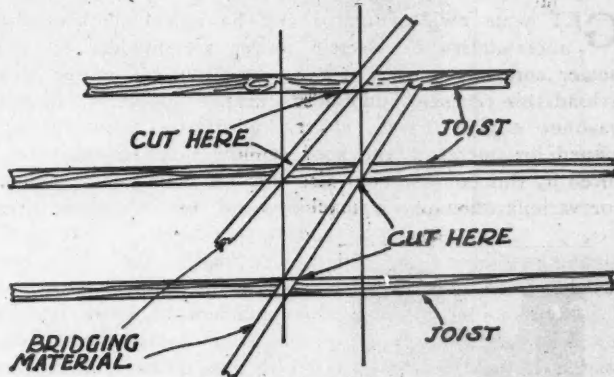
22 degrees, 30 minutes, or 6 by 12 on the square, as illustrated in Figs. 2 and 3.

E. J. WILSON, 52½ N. 2nd St., Portland, Ore.

To Cut Joist Bridging

THE method of cutting joist bridging which is described here I have found to be accurate as to length and a quicker way of cutting than laying the pieces off with the steel square. This is especially so where there are irregular spaces, as there always are, occasioned by the timbers being different thicknesses, inaccurate placing and the necessity of placing some closer together than others.

To take care of all these differences, strike two parallel lines across the top edges of the joists after placing. Make the distance between these lines equal to, or nearly equal



Joist Bridging Cut by This Method Gives a Perfect Fit Regardless of Irregularities in Spacing of Joists.

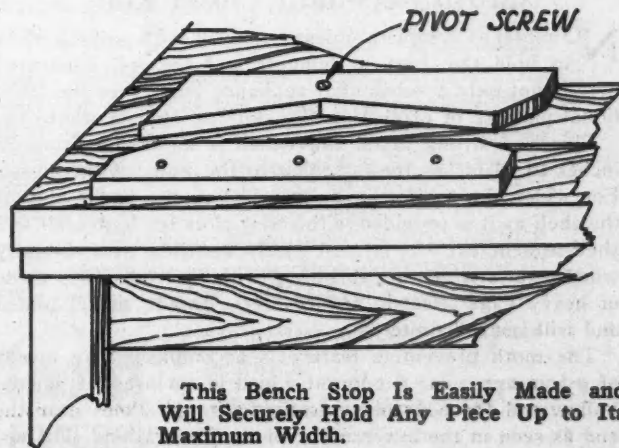
to, the depth of the joists. That is, if the joists are 12 inches deep, the lines should be 11¼ or 11½ inches apart. Now lay the bridging timber diagonally on the joists so that each side touches the lines, as shown in the drawing. Saw off against the sides of the joists in the space in which the piece is to be used. You will then have the exact length and bevel for that space regardless of its width.

L. M. HODGE, 1815 E. Glenoaks Blvd., Glendale, Cal.

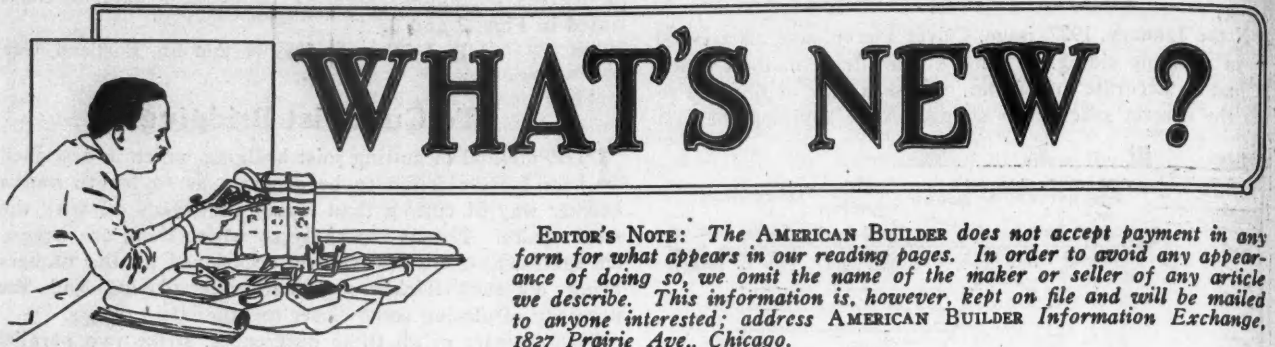
A Simple Bench Stop

I AM enclosing a sketch of a simple bench stop, made of hard wood, which I find very useful. This is merely two pieces of wood cut in the shape shown. These should be about 12 inches long. The one piece is nailed or screwed securely to the bench top. The other piece is fastened with a single screw, to pivot as shown. When board to be worked is pushed between the two pieces they wedge, holding it firmly.

C. G. SMITH, Loveland, Colo.



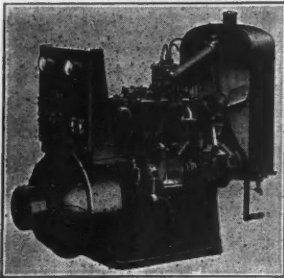
This Bench Stop Is Easily Made and Will Securely Hold Any Piece Up to Its Maximum Width.



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Portable Electric Generator

GET your own generator and be independent of the uncertainties of electric power as supplied by the power company to the new construction job, is the idea behind this recently announced outfit. This is a portable, gasoline engine driven, electric generator, primarily designed for operating the floor sanding machines manufactured by this company but also capable of furnishing power for various other power machines and light for work after dark.



This Portable Generator Will Furnish Power for the Floor Surfer and Other Power Machines and Light for Night Work.

Frequently the time lost waiting for power connections is sufficient to finish up the job or, in fact, several jobs. With this outfit that time is saved. It can be either permanently mounted on a light truck or mounted on a base with casters and run up onto the truck for transporting. The truck is simply pulled up close to the building, the lead wires are carried in, the generator started and you can go to work. This also makes it possible to work far out in the country where electric power is not available.

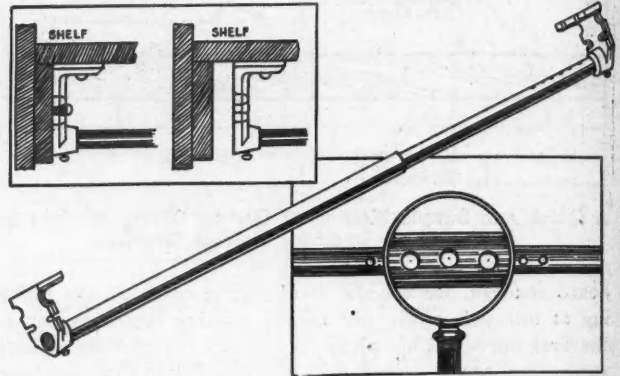
This generator is furnished in four sizes but the 2½ and 4 kilowatt sizes, for operating one and two surfacing machines, respectively, are the most popular ones. Aside from the size of the generator, radiator, and switch board and its slower speed, the smaller model is identical with the larger. The set is powered with a four cylinder, four cycle, automobile type engine, equipped with a Bosch high tension magneto ignition and efficient automobile type carburetor. It is directly connected to a compound wound, direct current, multi-pole generator.

Moth Repellant Closet Rod

NO closet is complete unless equipped with suitable rods to hold the garment hangers and the rod illustrated here is not only a substantial appliance but serves the additional purpose of protecting the clothing against moths.

This is a strong metal rod which is adjustable from 25 inches to 44 inches for fastening to the walls of the closet. For wider closets it may be attached to the under side of the shelf as it is provided with screw slots for both wall and shelf attachment. It is quite easily installed with ordinary wood screws which are furnished with the rod. It is made of heavy gage, electric welded steel, heavily nickel plated and will last indefinitely.

The moth preventive feature is accomplished by means of a fragrant cedar deodorant which is enclosed within the hollow rod the odor being emitted through holes near the end as seen in the lower insert of the illustration. The up-



A Neat, Strong Hanger Rod for the Closet Which Also Possesses Moth Repellant Qualities Obtained by Means of a Fragrant Cedar Deodorant Placed Inside the Rod.

per insert shows the two methods of installation. The rod has a capacity of 40 clothes hangers and can be depended upon never to sag.

House Number Plates

A LINE of chipped plate glass house numbers, name plates and signs, which was formerly distributed only through hardware and department stores, is now being offered at a substantial discount to the building trade. They have been designed to meet the demand for artistic permanent plates which are unusually legible.

These plates are made of highly polished, chipped edge, plate glass. The border and lettering is in silver on a black background and is backed up with black waterproof paint. They are framed in brass with holes for screws, ready for attaching.

The sharp edges of figures catch and reflect the light so that the house numbers can be distinguished for hours after sundown, it is said, if there is the slightest amount of light for reflection. The attractive design will harmonize well with houses of any type, construction or color, when used as house numbers and will last as long as the house itself.



House Numbers and Other Signs of Chipped Plate Glass Which Are Attractive and Legible Even in the Poorest Light.



["Aren't you finding this new laundry tray a big improvement? It was one of the reasons I decided on this house."]

The "Four-Way" Laundry Tray makes the laundry a real selling factor

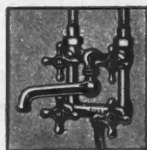
Among the first questions a woman asks about a house or apartment is, "What are the laundry facilities?"

The "Four-Way" Laundry Tray makes the laundry a definite selling asset. This tray can be placed anywhere, with light and air and room all around it. It does not have to stand against a wall. All four sides are accessible and usable. Its height can be adjusted when it is installed. Washing machine comes close up, so that the wringer swings over both tray compartments without moving the machine.

Swinging-spout faucet fills both compartments with water tempered just right. There's a separate connection for the hose that fills the washing ma-

chine. Once attached, it need never be detached.

This new "Four-Way" Laundry Tray is easy to work around and clean around. It stays spotlessly white because it is made of acid-resisting enamel, an exclusive "Standard" development.



One swinging-spout faucet tempers the water just right and fills both compartments.

This new tray is on display at "Standard" Showrooms in the principal cities. See it or write for illustrated booklet. The trademark "Standard" A-R identifying acid-resisting enamel is impressed in every "Four-Way" Laundry Tray.

Write for "Standard" catalogue which gives the prices and measurements of all "Standard" Plumbing Fixtures and simplifies writing of specifications.

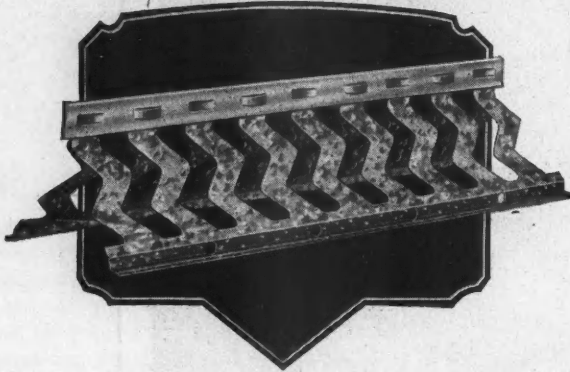
"Standard"
PLUMBING FIXTURES

Standard Sanitary Mfg. Co.
Pittsburgh

Copper Stucco Corner

STUCCO corners, solid and corrosion-proof, at a practical price, were the objective in the development of the corner bead and copper corner illustrated. The use of copper, while a logical method of preventing corrosion, has not been adopted in the past because of its relatively high cost but this new corner is being produced at a cost which makes it low enough for use on any stucco job, it is said.

The corner and corner bead is so designed that when the



Solid, Corrosion-Proof Corners of Copper Feature This Corner Bead.

stucco is set it locks through the metal with a firm grip in one solid piece. Air pockets are said to be impossible and the only part that could be exposed is the copper nose which can not rust or corrode. The bead is applied with the lathing over brick, concrete or tile corners. There are spaces clear through the bead through which the stucco locks. The perforations in the copper nose, not only bind the very tip of the stucco corner but also act as a gauge and guide for the trowel in applying the second coat.

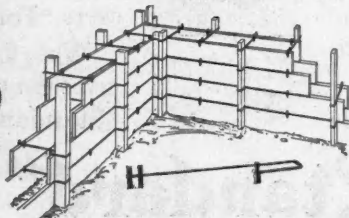
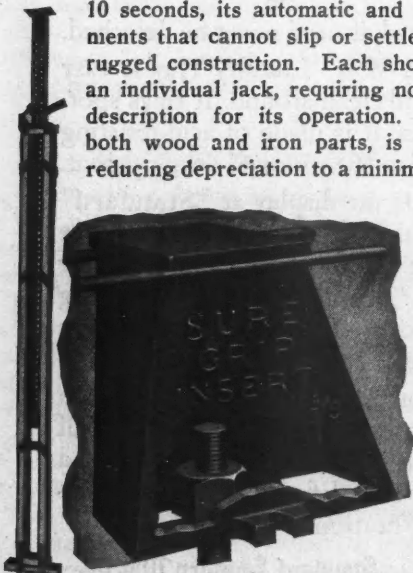
For curved windows and door openings this bead is especially suitable as it can be curved to a very small radius, in a smooth even curve. The lather merely snips the edges every 3 or 4 inches with an ordinary pair of tinner's shears and bends the bead across his knee or on a bench.



Builders Specialties

THREE additions have been made to a well-known line of builders specialties, a new type of adjustable shore, a concrete insert and a wall tie and spreader. The distinctive features of the first of these, the shore, are its speed of operation and adjusting, claimed to require but 10 seconds, its automatic and positive pin adjustments that cannot slip or settle under load and its rugged construction. Each shore is equipped with an individual jack, requiring no loose tools of any description for its operation. The entire shore, both wood and iron parts, is completely painted, reducing depreciation to a minimum. The standard

size has a range of adjustment from 8 feet to 14 feet and weights but 55 pounds, a one man load.



Three New Specialties from a Well-Known Manufacturer Are an Adjustable Shore, a Concrete Insert and a Wall Tie and Spreader.

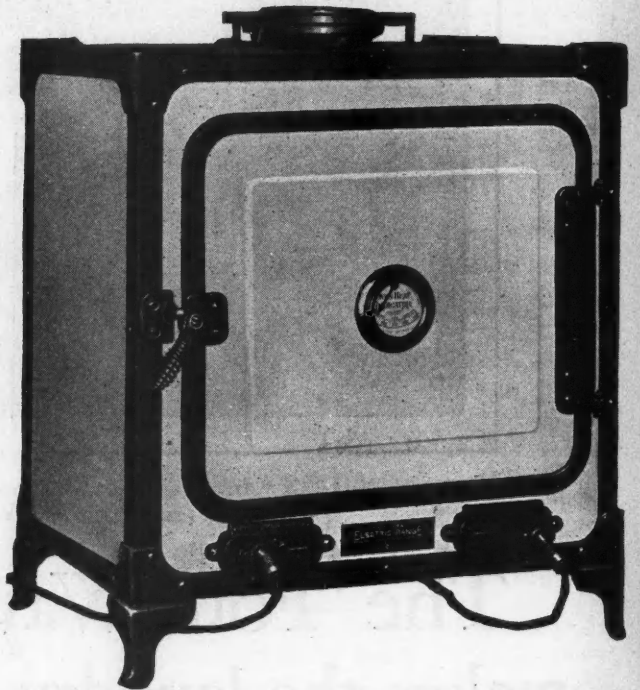
The concrete insert is made of certified malleable, designed to permit a horizontal as well as vertical adjustment. Its wedge construction takes advantage of the holding strength of concrete, both compression and direct shear, and will carry, with a large factor of safety the safe load of the bolt. It is made for $\frac{1}{2}$, $\frac{3}{8}$ or $\frac{3}{4}$ -inch bolts or for $\frac{1}{4}$, $\frac{3}{8}$ or $\frac{1}{2}$ -inch pipe.

The wall tie and spreader completely eliminates the use of wood spreaders, buying and forming of wire, twisting of wire, nailing of forms and one-half the studding required in the old method of wall construction. It is said that they effect a saving in wall centering costs and wrecking of about \$1.50 per lineal foot of wall erected.



A New Type of Electric Cooker

THIS electric range is the development of a new application of electric heat to cooking which marks an advanced step in the eliminating of drudgery from home cooking, and at the same time improves both the taste and



This Electric Range Employs a New Application of Electric Heat to Cooking in an Economical Way.

quality of the food cooked. This range has a capacity sufficient for cooking a complete course dinner for 10 people. It operates direct from any wall or appliance outlet without requiring any special power wiring.

The cost of operating is said to be remarkably low, only about as much current being used as would be required for two electric irons. The result is that the operation is practically as cheap as gas and in some districts even cheaper than gas or even gasoline. The range will roast, boil, fry, toast, brown, bake, broil or stew.

Using this range it is said that the food waste due to shrinkage is materially reduced but more than this the cooking is said to be not merely an improvement over other methods but an entirely new method. Ordinary boiling does much more than cook, it boils out a large portion of the food elements, in some cases as much as 75 per cent, which are thrown away. Using this range no water is used. The moisture of the foods themselves does the cooking, only a tablespoonful or so of water being added to keep them from sticking on the first contact with the heat. In this way the entire food value is preserved.



Announcing the Massillon Light Joists

THE Macomber Organization announces the Massillon Light Joist. This joist is made of wood and steel. It is used in place of wood joists anywhere that wood joists are used.

The floors are built in the same manner as wood joist floors. The joists are supported on any type of wall or partition. They frame equally well with wood and steel beams. The flooring is nailed directly into the top member of the joist.

The ceiling construction consists of plaster on metal lath wired to the bottom bars of the joists. Metal ceilings, plaster board and other standard ceilings are readily attached.

Massillon Light Joist Floors provide a high degree of fire resistance—greatly in excess of that afforded by wood joists.

The advantages of Massillon Light Joists as compared to wood joists are apparent. They result in

- Much greater fire resistance
- No Shrinkage
- Less Deflection
- Less Vibration
- More Dependable Strength
- Lower Piping Costs
- A Better and More Satisfactory Job.

Massillon Light Joists are standardized in the same manner as the standard Massillon Bar Joist. They result in a high grade floor built at a moderate cost. Detailed loading tables and designing data sent on request.

In buildings where wood joists are not permitted, send us your plans for complete information on Massillon Bar Joist Fireproof Floor Construction.

The Macomber Steel Company

Originators and World's Largest Manufacturers of Bar Joists

909 Belden Ave., N. E.

Canton, Ohio

Successors to the Massillon Steel Joist Company

M A S S I L L O N

STANDARDIZED STEEL BUILDING PRODUCTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Economical Electric Sander

THE combination polishing and sanding machine shown in the accompanying illustration is described by its manufacturer as the most serviceable as well as the most profitable machine he has ever offered to the trade, as it will pay for itself in less than three months of use and will last a lifetime. At the same time it is light to handle, takes up all the dust and is sold at a reasonable price with a money-back guarantee.

The machine may be purchased either as a sander or as a polisher or as a combination of the two and either with or without the vacuum attachment, giving the man just starting in business an opportunity to get together his equipment gradually, as the need develops.



A Light Sanding Machine Conspicuous for Its Serviceable Qualities and Its Ability to Earn Big Profits in Floor Sanding.

The equipment of the machine includes a $\frac{1}{4}$ horsepower electric motor; silent chain drive; ball bearings; 30 ampere, two-pole electric switch; 25 feet of cable and attachments. The handle is adjustable and easily detached from the machine. It is easy to operate and will sand off old varnished floors faster than six men can scrape by hand. The total weight of the machine with the vacuum attachment is 65 pounds, without the vacuum attachment 55 pounds, and equipped as a polisher 45 pounds.

Economical Window Sash Holder

THERE is a very considerable economy in the use of a new sash holder which does away with box frames, weights, cords and pulleys and requires merely a simple plank frame. This holder is of steel throughout except for the bearings, which are hardened brass. It consists of two center keys, which key the device in the sash frame; two pins carrying expansion springs, which furnish the compression that holds the sash in position; and an interlocking track running the full length of the jamb, which makes it trouble-proof.

It is stated that this holder can be installed in ten minutes in either new or old windows, without the use of either nails or screws, and that sash hung in this way will run up and down more easily in the window frame than sash hung with cords and weights. When it is used and the box frame is eliminated, weatherstrip is not needed and cold air and dust are completely excluded. Also, there is no rattling of the sash in the wind.

With this holder there is nothing to get out of order or require repair and the inconvenience of broken sash cords is eliminated. The cost of installation is estimated

by the manufacturer at nearly five dollars a window less than the cost of hanging the sash with weights and cords. The holder is self-adjusting to the required tension and can be used on all windows in houses, apartments, hotels and so forth.

One Eighth Inch Plate Glass

“AN old product manufactured in a new way,” is the statement used to describe the $\frac{1}{8}$ -inch plate glass, the process for manufacturing which has been developed during the past three years, by one of the leading manufacturers of plate glass. Though ground and polished plate glass its use has been restricted because manufacturing processes were not adapted to the economical production of a thickness averaging less than $\frac{1}{4}$ inch.

The new process is especially adapted to the production of $\frac{1}{8}$ -inch thickness, a weight that permits its use in sash designed for glazing with window glass. It makes available a dependable source of supply of $\frac{1}{8}$ -inch plate glass at reasonable prices, the new process and the production of enormous quantities having effected economies which make this plate available for every type of construction.

It is stated that this $\frac{1}{8}$ -inch plate possesses all the quality of the finest plate glass, without any excess weight. It is the same thickness as double strength window glass and can be glazed in $1\frac{1}{2}$ -inch sash which is specified for most residential work. The extra expense of heavier sash, frames and weights, necessary when $\frac{1}{4}$ -inch plate is used, is all eliminated. The only extra cost in using it is the cost for grinding and polishing the surfaces.

Hanger Appliances for Closets

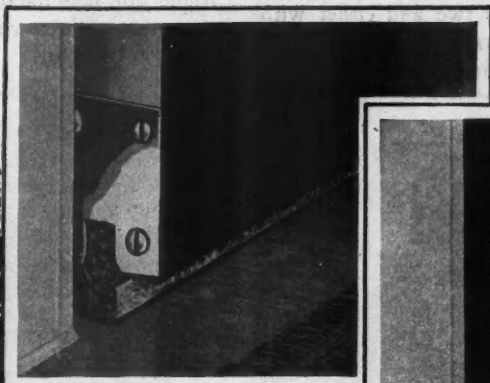
TWO simple and inexpensive appliances, which greatly increase the convenience and usefulness of closets are shown attached to the inside of a closet door. One of these is a rack which hangs from the top of the closet door without interfering with the door closing. No nails or screws are required as it merely hooks over the top of the door. It provides a shelf for hats, a bar for hanging skirts or trousers, two bars with a capacity for eight clothes hangers and six hooks for other articles. It is made of tempered aluminum and weighs but 18 ounces. It folds flat when not in use and should last indefinitely, it is said. The arms may be reversed to hang on walls or any desired place by means of screws through holes provided for the purpose.

The other appliance is of steel with an attractive enamel finish in bronze or black. It is easily attached to the lower part of the closet door as a rack for shoes and is also used in bathrooms as a towel rack. It also folds flat when not in use. It comes in two sizes, 20-inch for small doors and 24-inch for doors of the usual size.

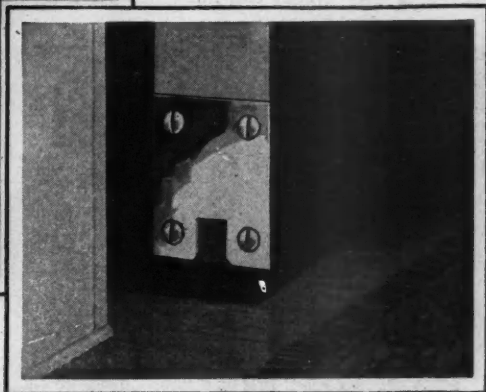


Two Simple Fixtures May Be Attached to the Door of the Closet to Greatly Increase Its Capacity and Neatness.

Essential ~ ~ ~ in Every Good Building



Felt is lowered an instant before door is entirely closed. Felt is raised an instant after door opens.

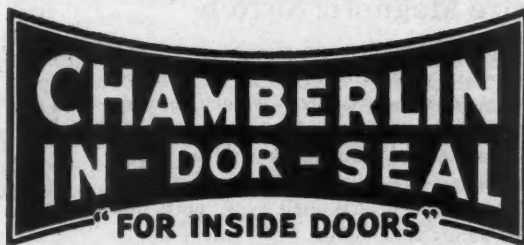


CHAMBERLIN IN-DOR-SEALS— A distinguishing built-in Feature for the Homes You Build

You build reputation for yourself when you make Chamberlin In-Dor-Seals one of the features of the residences which you erect. Extensive national advertising in the leading American magazines has taught the public the great benefits that this essential home equipment gives them. Therefore, people who want their homes to provide them with the highest degree of year around comfort take particular satisfaction in Chamberlin In-Dor-Seals.

The presence of this equipment in the homes that you build shows that you have carefully considered the welfare of its future occupants. An In-Dor-Seal installation is a detail which indicates that you have left nothing undone to put up the most livable, comfortable, up-to-date building possible. Put your buildings in the highest grade class of construction work by including Chamberlin In-Dor-Seals. Like all other Chamberlin equipment, Chamberlin In-Dor-Seals are installed for you by trained Chamberlin mechanics and guaranteed "for the life of your building".

Write for Chamberlin Literature



A STIFF, compact, but non-scratching, felt pad is automatically raised an instant after the door opens. When the door is closed and latched, the felt is lowered snugly to the floor and the crack beneath the door is sealed. Chamberlin In-Dor-Seals are silent in operation and are ingeniously hidden in the bottom of doors. They are adjustable and do not interfere with rugs, mats, runners or carpets.

Draughts, odors and dust cannot circulate throughout the building when doors are equipped with Chamberlin In-Dor-Seals but are effectively confined to those rooms or areas where they originate.

CHAMBERLIN METAL WEATHER STRIP COMPANY
West Lafayette Blvd., Detroit, Michigan Over 100 Sales and Service Branches Throughout the United States

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Simple Dishwashing Appliance

THIS simple appliance should prove welcome to those who do not care to spend the money necessary for a dishwashing machine but want to get away from the drudgery of the old-fashioned method of washing dishes. It consists of a hose which is slipped over the faucet and held in place by a thumb-screw. This hose is smaller than the faucet and the metal tube at its other end is still smaller, which creates a tendency toward back pressure and so delivers the water with great pressure, operating on the principle of the force pump.

A soap container is provided which is about one-fourth filled with pieces of ordinary kitchen or laundry soap. Soap chips and flakes are usually used up too rapidly.



A Simple and Inexpensive Dishwashing Appliance Which Takes the Disagreeable Features Out of This Work.

These are placed in the container by unscrewing the flat nozzle. The nozzle is replaced and the container attached to the metal tube on the end of the hose and dishwasher is ready for use. In use the thin, knife-blade stream of hot, soapy water is directed against the dishes at a sloping angle and literally cuts away the dirt and grease, rapidly and without splashing. When the dishes are clean the soap container is removed and they are rinsed with clear hot water direct from the tube, and allowed to dry.

For cleaning pots, pans and dishes on which egg or other stubborn dirt is stuck, one of the two brushes furnished is attached to the tube and it is then possible to scour the utensil with hot water. The tray for holding the dishes is also furnished with this appliance and it is equipped with a container at one end for holding silverware in an upright position.



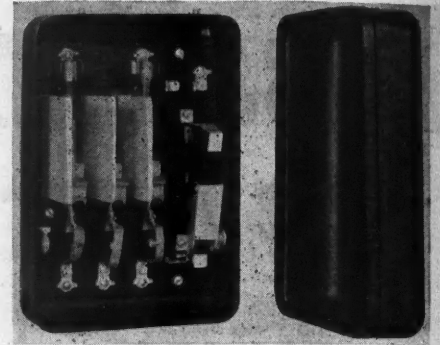
Inexpensive Magnetic Switch

TO meet the demand for a smaller and cheaper magnetic switch, with temperature overload relays, a leading manufacturer has designed a new switch which requires only a very small mounting space and has a particularly neat appearance both inside and outside as well as many desirable electrical features.

The enclosing case is of the drawn-shell type, both box and cover being of the same dimensions. The cover hooks over two pins at the top and is fastened by means of a screw at the bottom. During installation the base is removed from the case, making it easier to fasten the case to

its mounting, to install the conduit and pull in the leads.

Very large barriers are used, permitting the switch to interrupt extremely high currents. The electrical interlock is so designed that, by removing a wire from the back of the base, it is possible to use the switch on insulated circuits. Overload protection is provided by means of a Trumbull relay held in position on a panel by fuse clips. These relays can easily be changed to suit the size of motors involved. The relays are self-resetting and, therefore, the switch can be used with a three-wire circuit (push-button) control only.



Designed to Meet the Demand for a Small, Inexpensive, Magnetic Switch.

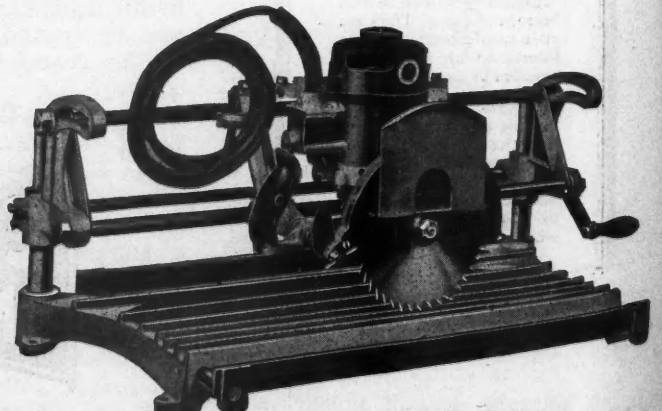


Speedy Versatile Woodworker

SPEED and versatility are the two qualities by which this new electric woodworking tool recommends itself to builders, for with its various attachments it will do ripping and cross-cutting, lock mortising, jointing, routing, jig sawing, drilling, grinding, boring, mitering, dadoing, planing, turning, tenoning, stair routing, matching and other jobs. It is assembled as various models and may be secured as a combination portable and stationary saw, a portable jointer and router, a portable mortiser and so on. When one machine is purchased the owner has the power unit for all others and need only fit the other attachments to it. To convert it to another type of machine he needs only secure the other attachment.

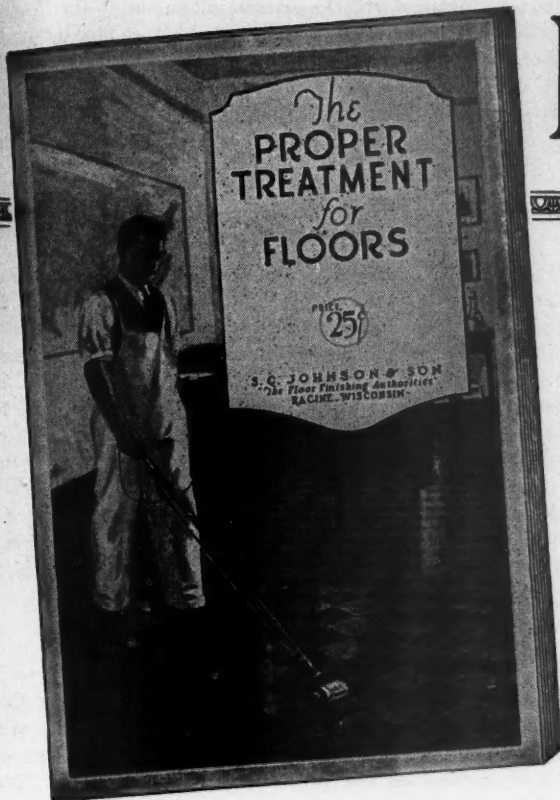
All the jobs for which it is suited may be done with the machine being either portable or stationary as most convenient. But a few seconds are required to detach the machine from the frame and transform it into an efficient and fast working portable power machine.

The heart of this machine is the power unit, a ½ horsepower motor (A. C. and D. C.), which is detachable. The attachments fasten to this power unit. It is constructed of the finest materials available and is powerful and rugged, being built for constant high pressure. At the same time the average weight, with the various portable attachments, is only 20 to 25 pounds. Exhaustive tests, it is stated, have proved its ability to stand up under the most severe performances. It can be attached to any electric light socket.



Here Is a Speedy and Versatile Woodworker Which May Be Used Either as a Portable or Stationary Machine.

FLOORS



Hard-wood, Soft-wood
Open-grain, Close-grain

Dance Floors

Linoleums Rubber Tile

Cork Carpet

Cork Tile Magnesite

Mastic Terrazzo

Cement

ALL FLOORS

HOW to finish them. Where and When and *Why* to use Filler, Varnish, Wax, Shellac, Oil, etc. Covering capacities, Proper methods of cleaning and refinishing. A gold-mine of practical information for Builder, Contractor or Architect.

JOHNSON'S INTERIOR FINISHES

Varnishes

Fillers

Waxes

Wood Dyes

Enamels

Undercoats

Wall Finishes

FREE This new Johnson Book is free to the building trade. USE THIS COUPON NOW.

Clip to your business card or letter-head, please.

S. C. JOHNSON & SON, Dept. A. B. 7, RACINE, WIS.
"The Floor Finishing Authorities"

- Please mail me immediately the new Johnson Floor Book—no charge—no obligation.
- We do our own finishing and are also interested in *Wholesale Price List on Johnson Finishes* and your **FREE** offer on the new Johnson Electric Floor Polisher.

Signed _____

(Address given on attached card or letter-head)

NEWS of the FIELD

Concrete Machinery Consolidation

A BUSINESS development of importance in the field of concrete products manufacture is the formation of the Consolidated Concrete Machinery Corporation, capitalized at a million dollars, to conduct the business formerly operated by the Anchor Concrete Machinery Company, Adrian, Mich.; Ideal Concrete Machinery Company, Cincinnati, Ohio; Thomas W. Noble & Co., Chicago; Universal Tamping Machinery Company, Peoria, Ill.; and the Adrian Casting Company, Adrian, Mich.

All models of machines made by these companies will be continued and each line will be expanded and improved to meet new needs of the industry. The concrete products manufacturer will have available, for the solution of his production problems, the services of five engineering departments combined into one service department, operated from Adrian, Mich.

The management of the new company is in the hands of the following officers: President and general manager,

Eugene F. Olsen, formerly general manager of the Anchor Concrete Machinery Co.; chairman of the board, J. W. Freiberg, formerly president of the Ideal Concrete Machinery Co.; vice-president, G. F. Alderdice, president of the Commercial Shearing and Stamping Co.; secretary-treasurer, S. S. Davenport, formerly treasurer of the Anchor Concrete Machinery Co.



Marsh-Capron Wants Dealers

THE MARSH-CAPRON COMPANY, 11 S. La Salle St., Chicago, states that it has some very desirable territory open to reputable dealers who are in a position to handle its line of mixers. These points include Omaha, Neb.; Louisville, Ky.; Cincinnati, Ohio; Memphis and Chattanooga, Tenn., and Scranton or Wilkesbarre, Pa. The following dealers have recently been appointed: National Machinery & Equipment Co., 91 Connecticut St., Seattle, Wash.; Marble, Cement & Coal Co., Muskegon, Mich.; S. M. Caldwell, Rockford, Ill.; A. W. Sikking & Co., Springfield, Ill.; R. S. Smilie, San Francisco, Cal. Repair parts will be carried by Ben Nieboer, Grand Rapids, Mich., and Bashford-McCord Corp., Rochester, N. Y.



Competition Jury Selected

ANNOUNCEMENT has been made by the West Coast Lumber Bureau, Seattle, Wash., of the personnel of the jury of award for its architectural competition. The jury selected consists of five prominent members of the American Institute of Architects, from representative sections of the country, as follows: Emery Stanford Hall, Chicago; Henry C. Hahn, and Louis C. Jaeger, New York City; W. R. B. Willcox, Eugene, Ore.; and David J. Myers, Seattle.




You Get
*Immediate
Delivery*
on
These
Quality
Frames

YOUR dealer can supply you with Bradley-Miller Michigan White Pine Frames, K. D. in bundles, in the pattern you like, for any size opening, for any type of construction on the same day you order them. That's frame service.

These Frames are made of the finest wood possible to put in frames—Michigan White Pine (*Pinus Strobus*). Don't confuse this wood with so-called White Pines or cheap white pine. The quality is infinitely better. They are free from warping, rotting, splitting, etc. Once in place, they are there to stay. That's frame quality.

And they come in two compact bundles. The Frames can be nailed up in seven to ten minutes, thereby saving time and labor over ordinary "made-on-the-job" frames. That's frame economy.

Ask your dealer for Bradley-Millers of Michigan White Pine.

SEND COUPON FOR OUR CATALOG

BRADLEY-MILLER & CO.
1200 Marquette St., Bay City, Mich.
Gentlemen: Please send me booklet describing Bradley-Miller Michigan White Pine Frames.

Name

Address

Dealer's Name

Address

Does your Dealer handle Bradley-Miller Frames?

BRADLEY, MILLER & CO.
BAY CITY, MICHIGAN

Anchor
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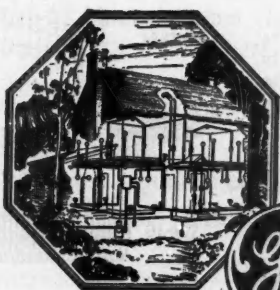
**It attracts customers - - -
and it sells them**

A G-E Wiring System
gives you selling points
in every room.

Merchandise Department
General Electric Company
Bridgeport, Connecticut

Prove it yourself! Install a G-E Wiring System
in one house of a row. Put the G-E Wiring
System sign outside. And people will go out
of their way to see *that* house!

Once inside, every room has points of interest
—provisions for convenience—arrangements
for comfort. The G-E Wiring System adds
the last touch in selling appeal.



WIRING SYSTEM
—for lifetime service

GENERAL ELECTRIC

A. I. A. to Build Headquarters

A RESOLUTION was adopted at the annual meeting of the American Institute authorizing its building committee to raise the money and go ahead with plans for a new headquarters building to be erected around the famous old Octagon House, in Washington, D. C. The Octagon House, which was used as an executive mansion by President Madison after the burning of the White House by the British in 1814, is now owned and used as headquarters by the Institute. However, it is too small and there is great need for a new building to house a library, offices and convention hall. The Octagon House itself will not be disturbed. The new building will be erected around it so as to serve as a background for it. The new building will cost about \$500,000. ❖

Ferguson Is O. K. Sales Manager

AN announcement from the O. K. Clutch and Machinery Co., Columbia, Pa., states that C. W. Ferguson, formerly advertising manager of the Speeder Machinery Corporation, of Cedar Rapids, Iowa, has been made sales manager of the O. K. Clutch and Machinery Co. ❖

The J. P. Eustis Mfg. Co., 12 Ames Street, Cambridge A, Boston, Mass., has published a Handbook N cataloging its complete line of silver soldered accessories for the bathroom and lavatory.

The Newman Manufacturing Co., 416-418 Elm Street, Cincinnati, Ohio, offers three publications covering its line of architectural and ornamental brass and bronze work; bulletins and directories with changeable letters, and bronze tablets.

"Wiring and Rewiring to Modernize the Home" is the title of an interesting booklet published by The Copper and Brass Research Association, 25 Broadway, New York City.

The Concrete Surface Corporation, 342 Madison Avenue, New York City, offers three pamphlets under the following titles: "Producing Texture and Color in Concrete"; "Bonding Surfaces on Concrete Produced by Bonding Con-Text," and "Surfacing Pavements and Sidewalks with Con-Text."

"The New Era in Concrete" is the title of an article by John J. Ahlers which appeared in The American Architect and has now been reprinted for distribution by the Portland Cement Association, 33 West Grand Avenue, Chicago.

"Plastint Colored Finish Plaster" is a new booklet published by the United States Gypsum Company, 300 West Adams Street, Chicago, containing complete information and color illustrations of this finish and directions for application.

The Sanitary Manufacturing Company, Pittsburgh, Pa., offers a most attractive booklet containing the story of its new sink designs in the new acid resisting enamel which the company recently announced.

The Gypsum Industries, 844 Rush Street, Chicago, has published in pamphlet form a "Brief on Gypsum Plaster," by H. J. Schweim, covering general data, acoustics and soundproofing.

The International Motor Company, 25 Broadway, New York City, has prepared an interesting pamphlet to show the advantages of chain drive as used in its Mack trucks.

"Manhattan, the Magical Island," by Ben Judah Lub-schetz, published by the Press of the American Institute of Architects, New York City, contains 108 pictures of Manhattan with a prelude and descriptive notes. Price, 15c; special autographed edition, 30c.

The Truscon Steel Company, Youngstown, Ohio, has issued two new bulletins, No. 737, "Truscon Plate Girder Joists," and No. 738, "Truscon Bar Joists."

The Weatherbest Stained Shingle Co., Inc., 125 Main Street, North Tonawanda, N. Y., has brought out eight additional color sheets illustrating the treatment of roofs and sidewalls with its shingles.

Unusual Service for the Contractor



Round and Square Deformed Bars

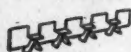


High Chair

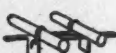


Lower Slab Bar Spacer

Bar Chair



Lower Beam Bar Spacer



Joist Beam Spacer



Welded Solid Steel Sash



Portable Electric Hand Saw

Ryerson combined service on all steel products saves time, money and trouble

The Special Contractors and Builders Division of Ryerson Steel-Service is without parallel in the building fields.

This department has its own warehouses and provides complete service on all reinforcing for concrete, Steel Joist, Metal Lath, Steel Sash, and all the various steel building products are also included.

In addition, structurals, bars, plates, sheets, rivets, bolts, wire, etc., are furnished from the general steel departments. Trench braces, jacks, electric drills, and hundreds of other tools needed on every job are supplied by the machinery and small tool departments.

Contractors use the Ryerson Warehouses as if they were their own. Reinforcing steel, lath, sash and other miscellaneous materials are kept under cover until they are ready to use each item. Delivery is according to their schedule.

Large fleets of trucks and private switch tracks help provide service unequalled by any other source of supply.

All types of jobs are figured and lump sum or pound price quotations prepared.

Write for Complete Information.

JOSEPH T. RYERSON & SON INC.

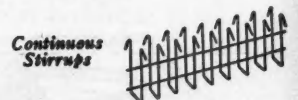
CHICAGO
CINCINNATI
BUFFALO

MILWAUKEE
DETROIT
NEW YORK

ST. LOUIS
CLEVELAND
BOSTON



Triangle Wire Mesh Reinforcing



Continuous Stirrups



Stop Reinforcement



Spirals

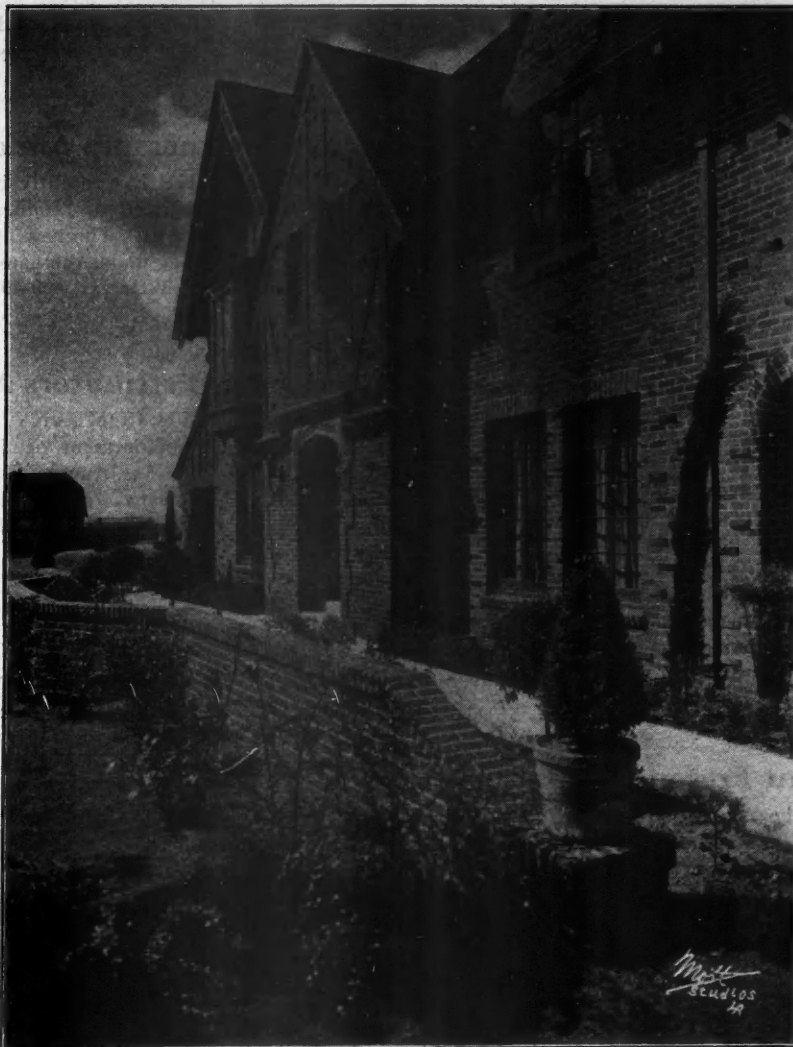


Expanded Metal Reinforcing



Expanded Metal Lath

RYERSON REINFORCING-SERVICE



COMMON BRICK
—a rectangle of Mother Earth, burned to flint-like hardness. The mellowness of its coloring, the interesting ways it can be laid, and its indestructibility, make brick one of the finest media through which architects can express their inspiration.

BRICK—your most flexible building material

CAPABLE of infinite variety in color, in method of laying, in styles of panel design. In warmth of color tones and delicate shadings, brick achieves a mellowness of character that satisfies the architect's desire for originality in wall treatment.

Often given a whitewash finish, which is allowed to wear away, leaving a surface of highly colored brick tinted here and there with white, a quaint and charming effect.

Unusual wall handling is possible at a

reasonable cost with brick,—numerous skintled formations, the "squeezed joint" treatment, or laid to form a Flemish bond. Architects today are doing more beautiful things with brick than ever before, securing architectural effects that mark the architect as an artist as well as a master in his profession.

There are no restrictions or limitations to what may be done with brick, to endure as a permanent example of the architect's versatility and technique.

At Your Service
These District Association Offices and Brick Manufacturers Everywhere

| | |
|------------------------------|--------------------------------|
| Boston, Mass. | 11 Beacon Street |
| Chicago | 605 Builder's Bldg. |
| Cleveland, Ohio, Association | 2125 Guarantee Title Building |
| Denver | 1735 Stout St. |
| Detroit | 400 U. S. Mortgage Trust Bldg. |
| Hartford, Conn. | 226 Pearl St. |
| New York City | 1710 Gr'd Cen. Term'l Bldg. |
| Norfolk, Va. | 112 West Plume Street |
| Philadelphia | 303 City Centre Bldg. |
| Pittsburgh | 702 First National Bank Bldg. |
| Portland, Ore. | 906 Lewis Building |
| Salt Lake City | 301 Atlas Bldg. |
| Seattle, Wash. | 913 Arctic Bldg. |

The Common Brick Manufacturers' Association of America
2131 Guarantee Title Building
CLEVELAND, OHIO

BRICK
Forever

Brick Books for Your Use

- "Skintled Brickwork" (15c)
- "Brick, How to Build and Estimate" New Edition (25c)
- "Hollow Walls of Brick"—FREE
- "Homes of Lasting Charm" (25c)

Check above, and send for any or all of these books.

Celotex Plant for Australia

OFFICIAL announcement has just been made that a plant for the manufacture of Celotex is to be erected at once in Queensland, Australia. Negotiations to this end have been going on for about two years between B. G. Dahlberg, president of the Celotex Company, of Chicago, and H. C. Armstrong, of Sidney, Australia, at the head of an important group of Australian capitalists. The final papers have been signed in Chicago for the formation of Celotex, Australia, Limited, which will have as its chairman of directors former Prime Minister Right Honorable W. M. Hughes.

The Australian government has been interested in the project of having a factory there and two years ago, at the invitation of the government, Tredway B. Munroe, vice-president of the Celotex Company, in charge of research, in company with Mr. Armstrong, spent several months in Queensland mapping out plans for the erection of a plant there. There is a particular need for this American product there, as Australia, while it has some of the finest hardwood in the world, is practically without softwood and is compelled to import more than 500,000,000 feet a year.

The sugar cane fields of Queensland produce about 500,000 tons of sugar a year and the bagasse, which is the raw material for the manufacture of Celotex, is used as a make-shift fuel in the furnaces of the sugar mills.



Publish Accident Prevention Manual

THE first edition of the Associated General Contractors Manual of Accident Prevention has recently been published and is being distributed to the presidents and secretaries of the various branches and chapters of the association. It is expected to furnish a high degree of service

in connection with the intensive accident prevention activities which are being undertaken by many units of the organization.



Partnership Announced

A PARTNERSHIP has recently been formed by C. L. Hutchisson, architect, of Mobile, with N. H. Holmes and C. L. Hutchisson, Jr. The new firm will practice architecture and engineering under the name Hutchisson, Holmes & Hutchisson, Architects, at 400-403 State Office Bldg., Mobile, Ala.



Smith Distributors Appointed

THE T. L. SMITH COMPANY, Milwaukee, Wis., has announced the appointment of the Bublitz Machinery Co., 2139 Washington St., Kansas City, Mo., as distributor for Smith pavers in Kansas and western Missouri, and the appointment of Payne G. West, 2937 East Grand Blvd., Detroit, Mich., as distributor for the eastern Michigan territory.



Blackburn Joins Inso Company

A RECENT announcement states that R. E. Blackburn, who for several years has been connected with the Insulite Company, has accepted the position of production manager for the Stewart Inso Board Co., of St. Joseph, Mo. This company's mill, for the manufacture of an insulating wall board, under the trade name "Inso Board," from wheat straw, is just being completed at St. Joseph. A large portion of the 100,000 square foot per day output of this mill has been contracted for in advance, it is announced.

MAKE YOUR OWN JUICE

with an

American Universal GENERATING PLANT

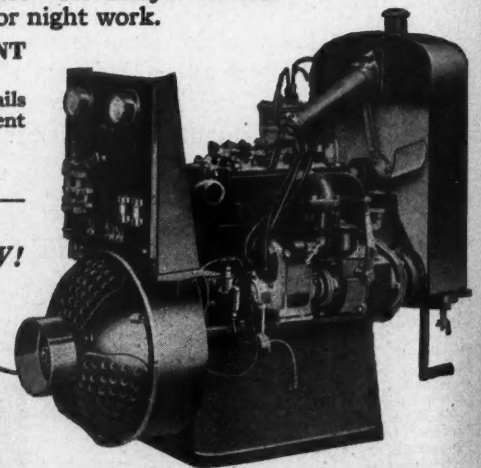
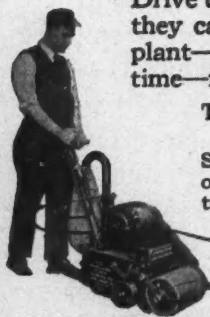
Cut out long waits for power connections—cut out waste time and motion

Drive up to the job—set your portable electric saws, planers, joiners, lathes and floor machines where they can be operated most efficiently—connect the wires to your American Universal Generating plant—give the crank a quarter turn and start work at once. No delays—no lost time—full capacity production all the time. Even light for night work.

**THE AMERICAN UNIVERSAL GENERATING PLANT
WILL INCREASE YOUR PROFITS 40%**

Set is made in two sizes—2½ K. W. and 4 K. W. Full details of this plant will be gladly sent without obligation. Convenient terms can be arranged for those who wish extended time.

**WRITE AT ONCE—
You Need This
Plant NOW!**



**The AMERICAN
Floor Surfacing Machine Co.**

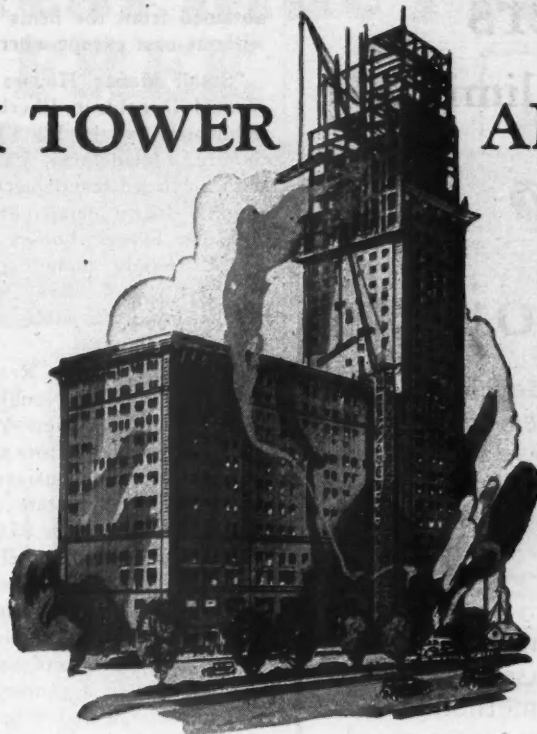
515 South St. Clair St., TOLEDO, OHIO

Manufacturers of Electrically Driven Machines for Surfacing Floors
of Wood, Marble, Terrazzo, Cement

Also MACHINES for WAXING, POLISHING, SCRUBBING and SCOURING

—again Carney Cement repeats!

on the BOOK TOWER ADDITION



WHEN the original Book Building went up, Carney Cement was used for all the mortar. When the giant Tower was added, Carney again was used exclusively.

In the first place, a finer exhibit of bonding couldn't be found than the one Carney mortar showed on the first job. Furthermore, the builder chopped a big slice off his mortar mixing and masonry costs as well.

He found one man could mix double the mortar with Carney because soaking is avoided and lime not needed—and that the masons laid decidedly more brick in a day due to the smoothness of the mortar and the fact that tamping and retempering were eliminated.

With cost savings like these, it's not hard to understand why builders who know about them stay with Carney Cement.

THE CARNEY COMPANY
DISTRICT SALES OFFICES: CLEVELAND, CHICAGO, DETROIT, ST. LOUIS, MINNEAPOLIS

Cement Makers



Specifications:

1 part Carney Cement to 3 or 4 parts sand depending upon quality of sand.

Since 1883

CARNEY CEMENT

for Brick and Tile Mortar

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Builders

Where water is limited—

San-Equip

SELF-DRAIN WATERLESS Toilets

for real estate developments,
country homes, camps, gas
stations, roadside inns,
tourists' camps, rural
schools, churches, mills,
parks.

It is now an obligation to protect home and family against the dangers of typhoid and other infectious diseases by providing a safe and up-to-date method of sewage disposal wherever the water supply is limited or difficult to secure.

Chemical Treatment of Sewage

The sewage is liquefied and sterilized by contact with a powerful solvent and deodorant—disposal is thus made safer and easier. The method is so perfected as to require only a simple arrangement for storage and for discharge after treatment.

San-Equip Self-Drain Waterless toilets do not require emptying or handling of sewage. There are no valves or other machinery to repair.

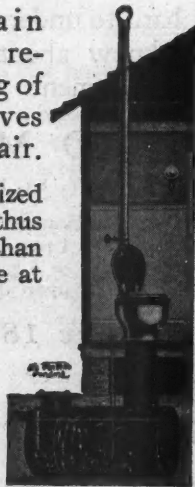
Only a small amount of sterilized liquid is discharged daily and is thus safer and easier to care for than would be a full tank of sewage at one time.

All Storage Tanks Are
Rust-Proof

Chemists' analysis of mineral enamel: "Not appreciably affected by organic acids or moisture."

Ask for further information.

CHEMICAL TOILET CORP.
911 E. Brighton Ave., Syracuse, N. Y.



Books, Bulletins and Catalogs for You

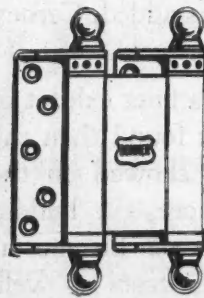
THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Small Manor Houses and Farmsteads in France," by Harold Donaldson Eberlein and Roger Wearne Ramsdell, published by J. B. Lippincott Company, Washington Square, Philadelphia, Pa., is a handsomely bound volume with a colored frontispiece and 254 illustrations from photographs, drawn details and perspective plot plans, of picturesque French houses of Normandy, Brittany, Picardy and Burgundy, including many architectural finds off the beaten track of travel, which are adaptable for American residences, in a style peculiarly suited to our climate. Price \$15.00.

"Fundamentals in Real Estate," by Blake Snyder and Ralph West Roby, published by Harper & Brothers, 49 East 33rd Street, New York City, is described as "A new statement of the factors underlying the successful operation of the real estate business" and offers a new approach to present-day real estate problems which should be practically helpful. Price \$3.00.

The Columbia Mantel Company, Inc., Louisville, Ky., has published a handsomely illustrated catalog of its line of wood mantelpieces and hand carved ornaments which is for dealers in mantels, tiles and fireplaces only and will also be sent to architects upon request. The notice of this catalog, No. 27, appearing in the May issue gave the incorrect impression that it was for general distribution.

"Cotswold Casements" is catalog No. 10 of the International Casement Company, Inc., Jamestown, N. Y., covering its Cotswold casements and leaded lights in standard sizes and designs.



Buy the Best
HARDWARE
For Hard-wear

For more than 50 years Bommer Spring Hinges have maintained their leadership and proven their superiority over all others.

They have kept pace with the times, because they have been kept up with the times whenever improvement was possible.

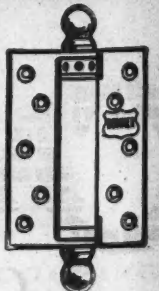
BOMMER SPRING HINGES ARE THE BEST

They are in universal demand—easiest to apply and the most satisfactory spring hinges made.

Your dealer handles them.

Send for New Catalog 50. It is a big help in ordering.

Bommer Spring Hinge Company
MANUFACTURERS
BROOKLYN, N. Y.



These Real Blue Prints and two Books Sent FREE



Just mail the coupon below! Send no money!

Every builder can get these real blue print plans and our book "How To Read Blue Prints" without sending us a penny. Just send the coupon. Lots of valuable and interesting information—all free. Yes, and we'll send along another book on building; it tells why "the big money goes to the man who knows" It explains the practical Chicago Tech. easy method of home-training for men in the building trades. Learn how to get the jobs that pay most money or how to get into your own business as a building contractor.

Plan Reading—Estimating—Superintending, etc.

Train at Home to **MAKE MORE MONEY** No Schooling Necessary

Learn how to read plans, lay out work and run jobs. Your spare time is enough. Wherever you may be—whatever your job—we can help you quickly to fill a higher place and have a bigger income. Age does not matter. Previous school training is not needed. This is a practical course for practical men, prepared by practical instructors who have been through every branch of the building game themselves. You owe it to yourself to find out how to make more money.

To Builders Living in or Near Chicago

Visit our Day or Evening School for builders and see with your own eyes the work we do. 1000 builders attend each year. You can get the same training at home. Same lessons—same blue prints—same practical instructors—same successful results.

Get the Facts Find out how little time it takes to make more money—much more money—in building. Write today. The coupon brings all Free.

Chicago Technical SCHOOL for BUILDERS

Dept. H-120, 118 East 26th St., Chicago, Ill.

Mail the Coupon—NOW

Chicago Technical SCHOOL for BUILDERS

Dept. H-120, 118 East 26th St., Chicago, Ill.

Please send me without obligation, Free and Postpaid, your two Books and Blue Prints for Builders. It is understood that no salesman will call on me.

(Please Write or Print Name Plainly)

Name

Address

City..... State.....

Age..... Occupation.....

"Removed Four Radiators"—Two More "Never Used"
This saving in heat, the Pastor says, is the result of INSULATING the roof and walls of his church with

Cabot's Insulating "Quilt"

"This building was covered all over with Cabot's Quilt, with the best results. The roof, which is an open one inside, showed no signs of frost. The same amount of radiation was put in the building as the heating engineers usually install. We have removed four radiators already. We have retained two which are never used. We attribute this saving to your Quilt."
 (Rev.) T. O'Sullivan

St. Thomas Aquinas



Insulated with Cabot's Quilt—St. Thomas Aquinas, Halifax, N. S.

CABOT'S QUILT SAVES COAL

Two tons of coal will do the work of three or more, because Quilt insulates the heat and prevents it from escaping. Figure out how much this will save you every Winter as long as the house stands. Quilt holds the heat like a fireless cooker.



Send for sample of Quilt. Free. It's a "comforter" that keeps the whole family warm.

SAMUEL CABOT, Inc.
 141 Milk St. Boston, Mass.
 101 Park Avenue, New York
 5900 Bloomingdale Ave., Chicago
 Kansas City Minneapolis
 Los Angeles Portland

Cabot's Creosote Stains, Waterproof Collophanes, Old Virginia White, Double-White, etc.

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Inventions and Patents—Their Development and Promotion," by Milton Wright, published by the McGraw-Hill Book Company, Inc., 370 Seventh Avenue, New York City, is a book of advice for inventors on how to make patents pay, how to secure a patent, how to market a patent and how to raise capital. Price \$2.50.

"Everybody's Electrical Handbook," by Edward J. Volk, the second edition of which has been published by The Norman W. Henley Publishing Company, 2 West 45th Street, New York City, is a small book of practical information with illustrations for wiring and repairing all sorts of home electrical equipment and appliances. Price \$1.00.

The Rock Island Register Company, 2435 5 Avenue, Rock Island, Ill., offers its catalog No. 9, covering its various types of registers, faces and furnace supplies.

Mears-Kane-Ofeldt, Inc., has called attention to the fact that in the listing of its catalog in the May issue the address should have been given as 1903 East Hagert Street, Philadelphia, Pa., instead of 19003 and that the distributor listed, the Monarch Sales & Engineering Company, is not their sole distributor but merely distributor for the Chicago territory. Other distributor and branch offices are located in various parts of the country.

The Frigidaire Corporation, Dept. R-107, Dayton, Ohio, offer three attractive and informative booklets and folders under the titles "Frigidaire Electric Refrigeration," "Dependable Delco-Light Products," and "Delco Light—Complete Electric Service."



Your Profits Increased
 painting the improved DeVilbiss way

Faster painting, more jobs done in present working time, less cleaning up—that's one way your profits are increased painting with the DeVilbiss Spray-painting System.

The greater satisfaction of your customers with the improved quality of painting, as well as with the short time jobs require, brings increased profits through widespread endorsement of your work and methods.

DeVilbiss equipment is practical, complete and reliable. Its operation and upkeep costs are negligible items. Your men will like to paint with it and you'll like the DeVilbiss service.

We'll gladly mail you further FACTS regarding DeVilbiss equipment and how painting with it will increase your profits. Address—

THE DEVILBISS CO. 238 Phillips Ave. TOLEDO, OHIO

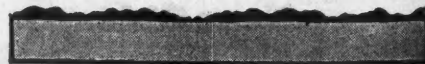
New York
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DeVilbiss
 Spray-painting System

Pittsburgh
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 St. Louis
 Minneapolis
 Windsor, Ontario

Comparing Quality of
 Brush-painting and
 DeVilbiss Spray-painting

[Showing enlarged cross sections of
 brushed and sprayed paint films]



The brushed surface shows ridges and thin streaks (brush marks). The paint film wears down unevenly and does not protect the surface any longer than those thin streaks last.



The uniform sprayed coat wears down evenly. This strong, unbroken film of paint is still saving the surface long after the thin brushed streaks of paint have disappeared.

Expanded I-Beam Truss-Joists

JOISTS of light steel expanded from standard I-beams are now procurable for spans up to 35 feet and are said to be exceptionally light, strong and economical.

These joists owe their strength not only to the steel itself but also to their truss shape and to the fact that there are no joints, each joist being composed of one integral piece of steel. They are made from 4, 5 and 6-inch structural I-beam sections, according to the span and load, and the finished joists are from 8 to 16 inches in depth, varying by inches. The method of manufacture reveals the reason for the lightness and strength of these truss-joists and is interesting.

Shearing or slitting is done in special machines, which slit the web throughout its length, leaving at regular intervals, unshered portions called intacts. No metal is lost. The beam is heated to a cherry heat before being expanded. It is then automatically charged into the expander, which grips both flanges of the beams throughout their entire length and pulls them away from each other. The slitted web section is thus stretched between the unshered intacts, creating, without waste, a perfect one-piece truss.

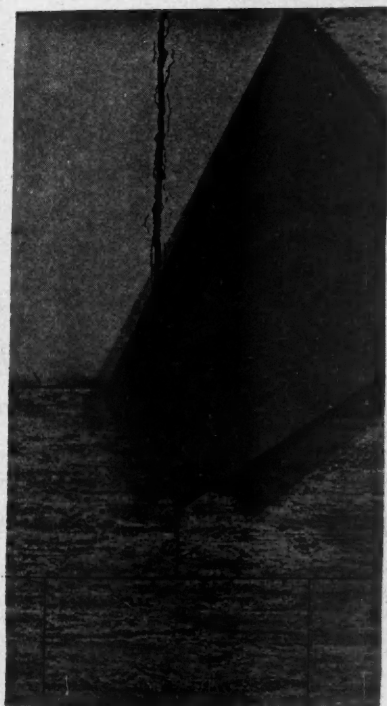
The expanded section is straightened in a special, con-



This Type of Truss-Joist, Made by Expanding Standard I-Beams, Is Exceptionally Strong, Light and Economical.

tinuous process machine. The fabrication of the bearing plates and compression rods to the beam is done by welding and the joists are painted while still hot. A slitted, heated, expanded, finished and painted joist is delivered ready for shipment in less than one minute per joist by this progressive process.

The result is a production method that allows them to be sold at a very reasonable price.



Italian Travertine

This New Wall Covering Applied to Plaster or Wall Board Makes a Permanent Wall

*Inexpensive—Easily Applied—Washable—Decorative
Built Up in Linseed Oil—No Surface Cracks*

Travrtile fabric imitating Italian Travertine Stone, made in any color or design satisfying every taste. Special designs made to order.

Non-repeating pattern of blocks removes the usual mechanical effect. Duplication of line on both sides of sheet saves labor and worry in application.

Travrtine-Wal-Ton-Tone on all walls assures permanency and beauty. Suitable for any room in the home, public halls, apartment houses, stores, corridors, etc. Contractors and Builders investigate Travrtile.

Send at once for sample and free literature.



Spanish Pound Stipple

Lincrusta-Walton Co.

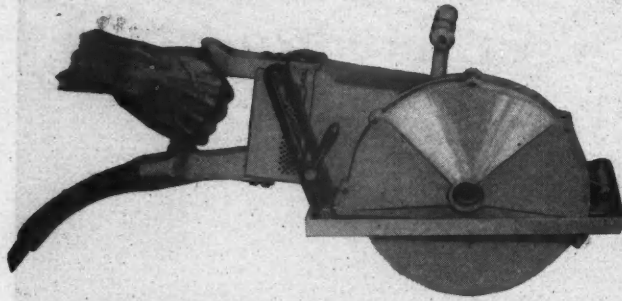
Division Tait Paper and Color Industries, Inc.

HACKENSACK

NEW JERSEY

Electric Saw Features Safety

THIS new, portable, electric, hand saw has recently been announced by a well-known manufacturer. Its big feature is said to be the safety guard with which it is equipped. This guard is of a telescopic construction and



This Electric Hand Saw Is Protected by a Safety Guard Which Absolutely Insures Against Accident.

swings back exposing the blades as the cut progresses. When the saw is removed from the cut the guard instantly and completely covers the spinning blade, insuring absolute protection for the operator.

The saw is equipped with a large shoe made of heat treated aluminum alloy which entirely prevents the blade from weaving. When used upright on progressive cutting, it completely eliminates rocking and tipping and holds the blade true to the line without twist strain. The shoe can be quickly adjusted to any depth cut from $\frac{1}{8}$ inch to 4 inches. This makes the saw especially adaptable to such work as cutting out flooring and panels.

The motor is a powerful, universal type, which operates either on 110-volt alternating or direct current. It can also be supplied for 220-volt current. The drive is an efficient worm and gear. It is fully equipped with Timken roller bearings throughout, assuring a quiet and powerful drive of the saw blade which runs at a speed of 2,400 r.p.m. with no load and at 1,800 r.p.m. normal full load. The cooling system, in addition to keeping the saw cool, blows away the sawdust, so that the cutting line is always in clear view.

This saw also operates special blades for mitring, cutting fiber, plaster board, Bakelite, sheet lead, marble, hard rubber, brass and other materials. It is said that it will rip 2-inch oak lumber 420 square inches per minute and cross cut 3-inch oak timber 300 square inches per minute.

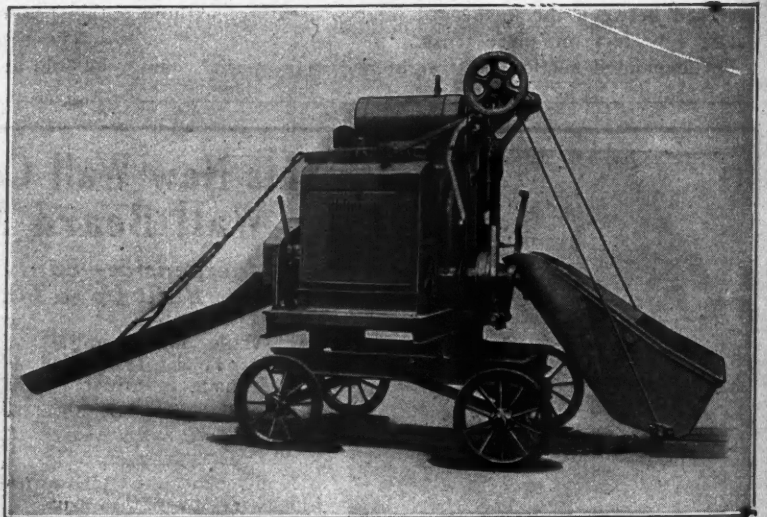
A Mixer for Slab Floor Work

A MIXER especially designed for small paving jobs, curb or curb and gutter work, large floors which may be laid in slabs or for sidewalk work, is one of the new developments. This machine is available in two sizes, one having a capacity of from 30 to 90 yards per eight-hour day and the other from 60 to 125 yards per day. The general design resembles a miniature paver, being equipped with a standard power loading skip and with a swing spout and distribution chute which can work through an arc of 180 degrees.

In addition the mixer is so mounted on a frame that in a few minutes' time it can be changed to an end discharge by swinging the mixer on the undercarriage. This enables it to be used on alley work and such jobs where end discharge is necessary and to be quickly converted to a side discharge machine for use on building jobs.

The discharging chute is supported by a swivel pivot and steel head from directly under the discharge chute so that it swings easily through a 180-degree arc. It is also supported with a chain and bridle and is supplied in either 8 or 12-foot lengths. On the 12-foot lengths the outer 4 feet are hinged to turn up. The slope is easily adjustable by changing the length of the chain.

This new machine has proven especially valuable in laying large floors such as garages, it is said, where it can be started at the end farthest from the street and the floor laid in a continuous slab, thus reducing the average haul of the material to half the distance to the curb.



Here Is a Mixer Which Has Proven Especially Valuable in Large Floors Such as Garages.



Economy Equipped Homes Sell Faster

PROPORTIONATE to the cost there is no selling or renting feature that can compare with it. Makes and keeps closets as orderly and attractive as a parlor or salon. Quickly appreciated by women.

The Economy System of Rods, Arms, Hangers, Shoe Racks, and Hat Racks, makes an ideal closet equipment. Shoes will not fall off "Esco" shoe racks when door is opened or closed.

Leading architects all over the country are specifying Economy System in hotels, apartments and homes.

Write today for quantity prices and complete description of the Economy System.

Economy System Corp.

Pioneer Manufacturers of Household Conveniences

26 East 40th St

New York, N. Y.

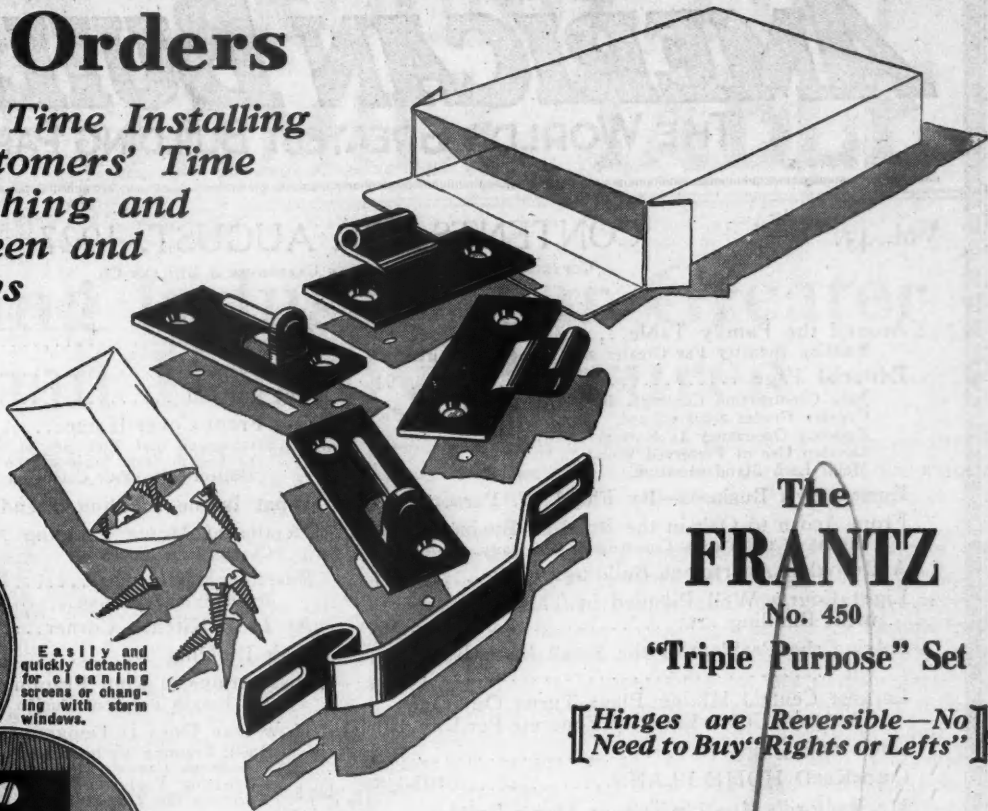
**KNOCK THE HANGERS ABOUT
THEY WILL NOT COME OFF**



No. 6 Esco Arm—No. 11 Hangers
Hangers can't fall off. Lift them out through the notches. Hangers cannot be used except on Economy arms and rods. Cuts out losses caused by guests taking hangers.

The Set That is Creating a "Flood" of Mail Orders

It Saves Your Time Installing and Your Customers' Time Opening, Latching and Changing Screen and Storm Windows



The FRANTZ

No. 450

"Triple Purpose" Set

[[Hinges are Reversible—No Need to Buy "Rights or Lefts"]]

Easily and quickly detached for cleaning screens or changing with storm windows.

Brass pin eliminates possibility of hinges rusting tight from exposure to the elements.

Handle automatically slides up and down over a pin to fasten screen or storm window shut. Makes opening and closing easy.

Works equally as well on half screens as on full length because hinges fasten at the side.

Cellar windows can be removed entirely or the hinges slid half off their pins to hold sash half open, by bracing against the casing.

Dealers that originally stocked "sample" orders of the Frantz No. 450 Set are sending in mail orders for gross lots. Carpenters, Contractors and Builders who have seen the set demonstrated are now equipping the screens and storm and cellar windows of the new homes they are building to assure additional convenience for their customers.

The No. 450 Set has many features that appeal to home owners and housewives. With its use the screens may be swung around against the side wall, leaving the opening entirely clear for cleaning windows, sills, etc.—a thing that cannot be done without removing the screen, when the screen is hung with ordinary sash hangers.

The Set for cellar windows (No. 451) only differs from the No. 450 in that a sash lock is furnished to fasten the window at the bottom instead of on the side as with the self-latching handle. The detachable feature of the hinges allows the sash to be entirely removed and in this way keeps the sash part way off their pins the sash is held halfway open by the casing, for ventilating purposes.

The No. 450 "Triple Purpose" Set is packed complete in a carton with all necessary screws, ready to put on screens, storm or cellar windows. Sets of half hinges and an extra self-latching handle for making screens and storm windows interchangeable also are furnished.

Ask Your Dealer to Show You This Unusual Set

FRANTZ MANUFACTURING CO., Sterling, Ill.

Dept. A-8



"No Hardware Is Genuine FRANTZ QUALITY Without the Red Label"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER