

# AMERICAN BUILDER

## THE WORLD'S GREATEST BUILDING PAPER

Vol. 44.

CONTENTS FOR DECEMBER, 1927

No. 3.

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# AROUND *the* FAMILY TABLE



## Government Figures Show Largest Per Capita Building in Smaller Cities

**T**HE AMERICAN BUILDER Research Department has been making a careful study of the building requirements of the United States for a number of years. Included in this work was a nation-wide survey of the construction of its builder-subscribers during 1926 and 1927, which has revealed the fact that building statistics, as usually reported, are quite incomplete, resulting in totals far below the real mark. For instance, the cities from which building permits are reported above 25,000 in population, as compiled by the Department of Labor, contain only 36 per cent of the total population. The publishing of totals far below the real mark and including mainly the large cities spreads abroad the erroneous impression that the only worth-while building is in the larger cities.

As to the worth-while building being only in the larger cities and in the larger classes of buildings, the real facts show the situation to be just the reverse.

Single family dwellings head the list, both from the standpoint of volume (total floor area) and value (in dollars); and the rate of building per inhabitant is considerably larger in the small cities than it is in the large.

In the "Monthly Labor Review" for May, 1927, the Bureau of Statistics of the U. S. Department of Labor shows the following results from a study of building permits in 294 cities during 1926:

The highest rate of building per inhabitant in the United States was in a city of 28,700 people and the first five cities in per capita building are all below 46,000 in population. These five cities show the following amounts of money per inhabitant spent for building during 1926:

	Population	Amount Per Inhabitant
White Plains, N. Y.....	28,700	\$493.10
St. Petersburg, Fla.....	39,500	379.81
Asheville, N. C.....	32,000	290.57
Evanston, Ill. ....	45,100	350.90
Paducah, Ky. ....	26,100	352.05

It might be thought that New York City, with its enormous annual building program, would head the list. Instead of that, it ranks nineteenth. Here is how the big metropolitan cities rank in rate of building per inhabitant:

New York .....	19	Boston .....	116
Chicago .....	30	Los Angeles .....	15
Philadelphia .....	102	Pittsburgh .....	107
Detroit .....	27	Baltimore .....	152
Cleveland .....	124	Buffalo .....	163
St. Louis .....	157	Cincinnati .....	99

Of the leading 100 cities, only six are above the 500,000 mark; 26 are in the group of cities from 100,000 to 500,000 population; 32 are in the 50,000 to 100,000 group and 36 are cities having less than 50,000 population.

We have taken the per capita building figures reported by the Department of Labor and divided them into groups, so as to show the averages for each class of city.

It is a significant fact that the highest rate of building is in the smallest cities of all—those below 25,000 in population. There are 177 of these cities included in this latter group—all for which building permit totals are reported by S. W. Straus & Company. The population figures were taken from the 1920 census, with 10 per cent added, representing population growth to date.

All of this throws considerable light on the rate of building in the unreported cities and rural areas. Evidence accumulates, the farther our investigations proceed, that building activity is not confined to a few cities nor to the larger cities only, but is general throughout the United States. Seventy-four per cent of the population live in unreported cities and rural areas not represented in the building permit total, as compiled by the Department of Labor.

In order to arrive at the true building value, we can first set down the established total of building permits for 1926, as compiled by the Department of Labor. For the balance of the urban population, we can take the average rate of building in the smaller cities publishing building permits. Cutting this rate of building to one-sixth for the rural areas (we feel sure it is greater than this but desire to be conservative), we secure a figure to represent rural building. Totaling these amounts, checks our estimate of a seven billion dollar year, as follows:

294 Cities above 25,000 in population.....	\$3,625,325,946
2,500 Cities below 25,000 in population.....	2,478,106,116
12,905 Incorporated Rural Communities and other Rural Areas.....	938,734,146
	<hr/>
	\$7,042,166,208
Remodeling and Renewals.....	359,555,470
	<hr/>
	\$7,401,721,678



## STEEL WINDOWS ARE IN VOGUE

Modern families in search of a new home aren't wholly concerned with just a place to live. They're on the trail of something more ideal—a small house, perhaps, but one "as nice as the best in town."

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# AMERICAN BUILDER



Formerly AMERICAN CARPENTER AND BUILDER

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

## Record October Contract Volume

NEW construction started in 37 states last month reached a total of \$562,815,800, according to the F. W. Dodge Corporation. The above figure was the highest October contract total on record and was the fourth largest monthly total on record for this year. It was 8 per cent ahead of the September, 1927, figure and 9 per cent over the total for October of last year.

The most important items in the October building record were: \$243,562,200, or 43 per cent of all construction, for residential buildings; \$108,210,500, or 19 per cent, for public works and utilities; \$79,719,700, or 14 per cent, for commercial buildings; \$50,712,200, or 9 per cent, for industrial projects; and \$30,169,600, or 5 per cent, for educational buildings.

Last month's record brought the total volume of construction started since the first of this year up to \$5,359,297,900, being an increase of \$2,791,500 over the amount reported in the corresponding period of 1926.

New work contemplated in the 37 states during October amounted to \$607,986,900. This figure showed a drop of only 3 per cent from the amount reported in September of this year and a loss of 5 per cent from the amount reported in October of last year.



## Unit Value of Construction Shows Rising Grade of Work

"AN interesting phenomenon of the present building situation is the increase in the average value per unit of floor area of contract awards despite the steady decline of building costs," it is pointed out in the monthly survey published by the Guaranty Trust Company of New York. "The square foot value of floor area of building contract awards in 36 states in 1923, based on figures of the F. W. Dodge Corporation, averaged \$5.88, which compares with \$7.57 in the first nine months of 1927. During this same period the index of building costs of the Federal Reserve Bank of New York declined from the 1923 average of 194 to 188 in September, 1927. While these figures are approximations which are representative of the situation in general, they indicate the higher grade of present construction.

"The conclusion that follows this comparison, however, must be somewhat modified, since a substantial portion of the total dollar value of public work and public utility contract awards cannot be classified upon the basis of square foot area. This type of construction constitutes one of the three most important fields of the building industry and promises to be about 80 per cent greater this year than in 1923. But, even if public works and utilities are excluded entirely from the comparison, it remains true that the average value per square foot of floor area for other types of construction has increased steadily since 1923.

"It is also interesting to note that the average value per unit of area for residential and commercial buildings, the two most important types, has shown a similar increase.

It appears, therefore, that the rise in value is due primarily to the higher grade of building now being done rather than to the shift from one type of construction to another.



## Built-In Electric Refrigerators Increase House Values

IN some communities, builders have been literally forced to include the electric refrigerator, not as an extra in some of the "better" homes, but as built-in equipment, as essential as the bathtub, in all homes ranging from \$5,000 up. Dayton, Ohio, with the second largest percentage of home owners in the country, in proportion to population, and the acknowledged leader in the building and loan association field, is an outstanding example. Within the past year practically 70 per cent of homes built for sale by contractors and real estate firms have included electric refrigeration as a part of the original built-in equipment.

At the same time, the Miami Savings & Loan Company, one of the city's largest building and loan associations, adopted the policy of loaning up to \$500 more on a home with electric refrigeration as a built-in feature than on a home without it.

This is indication of the effect electric refrigeration will eventually have on building throughout the country. A review of the startling growth in retail sales totals in the electric refrigeration industry during the past few years reveals the fact that sales have been doubled during the three consecutive years. It is an indication of the hold this sort of refrigeration has already gained upon the housewives of the country.



## Architects Urge Completion of Washington Monument

ARCHITECTS of the Middle West may sponsor a movement to bring about the completion of the Washington Monument, in Washington, D. C., by 1932, when the 200th anniversary of the birth of George Washington will be celebrated. The proposal, formally made by Glenn Brown, of Washington, has been placed before the Chicago Chapter of the American Institute of Architects for adoption. Action was urged by Mr. Brown, former secretary of the Institute, in a statement dealing with the plans, soon to come before Congress, for the development of the Nation's Capital.

The monument is the central figure of a great landscape composition and a dignified end to many vistas. From many of these the lack of a base has been obscured by buildings but upon a nearer view one is impressed by the lack of a base and must feel that the monument has never been completed. The commission's plan calls for a marble terrace some 1,200 feet long and approximately 40 feet high on the west front with a noble flight of steps down to the level of the Lincoln Memorial lagoon. This treatment makes it a part of the great composition connecting the Washington and Lincoln Memorials.

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# EVERYBODY'S BUSINESS



## How Long Prosperity?

By FLOYD W. PARSONS

**T**HERE is no possible way for us to tear aside the curtain of uncertainty that hides the future. It is the essence of folly for one to speak with absolute confidence about the business of tomorrow. Although we are far better informed today concerning the trends in hundreds of fields of enterprise than we ever were in the past, this immense supply of vital statistics is not sufficient to insure us against the effects of unforeseen and unexpected happenings.

Years ago I formed the habit of carefully filing away the predictions of eminent leaders in industry who were bold enough to express their opinions. Subsequent events proved beyond doubt that we are living in an age of loose talk. There is something inherent in human nature that makes us want to engage in prophecies even in this day of kaleidoscopic change. We would not be so quick to gratify this desire to exhibit our wisdom if all expressions of opinion were hung up for the public to see and read later on when final judgment might be passed.

We have come again to an era when confidence is deep-rooted. Folks who were skeptical of prosperity a year or two ago have lost their timidity. We are told that conditions have changed completely and industrial depressions banished for all time. The disciples of sunshine explain to us that there can be no serious state of unemployment or important slackening of trade when money is so abundant, shelves so bare and labor efficiency so high.

When we examine the situation carefully it becomes apparent at once that our recent rise to higher planes of living and working has resulted chiefly from our having been supplied with better tools and more effective methods. On every side are devices doing the work once performed by human hands. When we buy a steak from the butcher, the scale used to do the weighing also tells the exact price of the article. So accurate are such devices today that we no longer have to waste time in calculating or counting. Even the tickets collected by conductors of trolley and subway systems are totaled by delicate weighing mechanisms. The manufacturer of paper employs a scale that will indi-

cate a deficiency of one sheet in a package that should contain a thousand letterheads.

On every side are automatic devices designed to eliminate human effort. A few years ago the telephone companies used laborers to dig the holes for the poles. Now the electric earth drill bores a pole hole in less than a minute, and a

swinging derrick raises the pole and drops it into the hole in a few seconds. Electric pumps have made possible the introduction of high pressure hydrants that permit water to be thrown to a height of 250 feet, thereby doing away with the more expensive fire engine. Electric compressors reduce the volume of a bale of cotton two-thirds making it possible to load more bales in a car. In many places lights are being turned on and later turned off by nothing more tangible than the break of dawn or the coming of dusk. In fact, some of the devices now in practical use are so delicate that the mere shadow of a passing cloud would produce an



Machines for Men.

effect sufficient to turn on the lights of an entire city.

Industrial hazards are being brought under control. Automatic signal systems on land and sea have materially reduced the loss of life and property. A panel of light in the cab of the railroad engineer now reproduces the warnings of the wayside block signals even when outside vision is shut off entirely by rain or fog. If the engineer fails to observe the warnings, the train is quickly brought to a stop. New types of magnetic brakes are cutting down the stopping distance of cars by as much as 35 per cent and this not only permits higher speeds, but means fewer front-end accidents.

Even the farmer is being provided with ways and means to save his crops from the blights of pests and the unruly forces of nature. Berry crops having a large percentage of damaged fruit had to be thrown away in years past because it was too expensive to try and separate the decayed berries from the sound ones by hand. Now in many places machines perform this work at small cost in a satisfactory manner. We think the prices of eggs are high. But this common food would be out of the reach of many people if

it were not for the mammoth hatcheries equipped with incubators. Even in making hay it is now possible to use mechanical means to cure the grass, so it is not so necessary any longer to, "Make hay while the sun shines."

Electric lights now get the hens up earlier on winter mornings and this results in more eggs and more revenue. Electric pumping and heating apparatus installed by dairymen supplies the cows with drinking water at a higher temperature in the cold months and this means that the animals drink more water and give more milk. Better methods of flooding the cranberry bogs, watering crops and spraying orchards have increased yields in hundreds of places. Refrigerating and storing processes enable us to preserve perishable foodstuffs for safe marketing months after the articles were first produced. New knowledge concerning the advantages of rapid freezing made it possible for the residents of Kansas and Colorado to eat fish that are quite as palatable as those served on tables in coast cities.

What were once waste products in thousands of American plants have now been converted into merchantable articles that are a source of profit instead of expense. For instance, that which was sawmill refuse is now steamed and cooked, then shot out in the form of pulp and finally pressed into boards for use in building and manufacturing. The utilization of by-products in many places has become a more lucrative business than the initial processes originally established with only a single purpose in view.

All of which indicates the why and wherefore of our present prosperity. The corporations that have reached the highest pinnacles of success have accomplished their aims by taking advantage of every art of science and invention. Recognizing that producing capacity has already outstripped consumption, wise managers have devoted practically all of their time recently to cost reduction. New machine and new methods have taken the place of those that were old.

Typical of this policy is the case of a large cement corporation. Two million dollars were spent for harbor improvements to reduce the charges incurred in receiving raw materials and shipping cement. The new ships that were purchased are self-unloading, and these dump their cargoes onto a belt conveyor almost a mile long. A change in trucks brought a ten per cent increase in trucking efficiency. New dust collectors at a single plant not only save \$25,000 worth of cement a year, but protect valuable machinery from damage by dust. A new installation of coal grinding machinery has brought a saving of 20,000 tons of fuel annually. And all of these things were done solely to cut costs, not to increase output.

Now when we inquire concerning the performance of our present era of good times, we must not only take into



Mural by Edward Buk Ulreich Symbolizing the Movement of Clean, Fresh Wind Recently Installed in the Entrance to the Offices of the Ilg Ventilating Co., Chicago.

consideration the revolutionary character of recent developments, but we must form a reasonably definite opinion with reference to the likelihood of there being a continuance of radical changes of no less importance. How far can we go with cost reduction? Can we accomplish as much in the next few years in eliminating accidents and cutting out industrial waste as we did in the decade that has past?

It is perfectly clear that the age of marvels is not at an end. The future will disclose types of apparatus that will perform astounding feats. Comparatively little things such as the introduction of roller-bearing trains and trolleys will still further reduce friction, conserve fuel, increase speed and cut down maintenance costs. Accomplishments in the field of chemistry will bring far-reaching results, one of them probably being the liquefaction of coal on a commercial scale. No one can predict the ultimate end of such developments. Coal oil at five or six cents a gallon would mean the complete overhauling of industries.

The utilization of the electrical energy of the atmosphere in the fertilization of crops will turn the farmer into a technician and transform cultivated acres into queer looking areas spiked with thousands of antenna poles and networks of wire. The fact is that our advance has been so fast that we are quite unable to see the ultimate end in a practical sense of such departures in practice as the electrolytic method in the manufacture of articles from rubber, and the substitution of the electric arc for the noisy riveter, which change will eliminate the necessity of punching thousands of holes and will make the steel skeleton of the future building a single welded unit.

But while the main trend of business and industry must continue upward, there are many reasons for believing that we will again be compelled to pass through short periods of readjustment that will allow us to catch our breath, take stock of our surroundings and straighten out the front of our advance. Prosperity is not uniform in its distribution. Many have not participated in the benefits of five years of high wages and record activity. A part of the public has commenced to show signs of discontent over the present tendency of capital and the power that goes with it to gravitate into the hands of great centralized groups, such as are represented by chain-store and other systems that make the going very hard for the small dealers.

Let us not be caught in the whirlpool of over-confidence. The business millennium has not yet been reached. Competition in nearly all lines of trade is becoming keener and more destructive each succeeding day. Two or three years ago the electrical industry was adding new customers to its lines at the rate of two million yearly. Now only a half million are added annually and it becomes necessary for the electrical companies to make up this loss by developing new loads like that of refrigeration, which will practically double the consumption of current in several million homes. The automobile industry is in the same fix so far as new customers are concerned and is now engaged in converting the American nation into a country of two-car households.

There is much that can be set down on the favorable side of our national business ledger at the present moment. Bank clearings, the consumption of power and general building all continue at a high rate. Labor disturbances are nil and workmen do less soldiering on the job than ever before. But not far off on many of the roads ahead are breaking points and saturation limits. No exercise of Yankee ingenuity will enable us to avoid a day of reckoning that will correct excesses, clean up the business structure and restore the body industrial to robust health. The present day is a time to pay off debts and proceed with caution. Wonderful days lie ahead, but thoughtless people who disregard the lessons of history will pass through anxious moments before such a time is realized.

# Lumber Yard Architecture That Sells Building Materials

**T**HERE is no reason in the world why lumber yards should be the eyesores which they so often are, and there are good reasons why they should be architecturally attractive. If a lumber dealer really believes an architect is a necessary member of a community, then he of all people ought to employ the most skillful ones he can find when he undertakes to build a structure for himself.

"There can be no better advertisement of building material than a properly designed and constructed building wholly suited to the purpose for which it is used. Why should the lumber retailer expect the architect or the contractor to do the talking for him, to promote, to prefer, and to sell his goods for him, unless he himself is willing to demonstrate them to the ultimate consumer?"

"In this respect the lumber trade has lagged woefully behind competitive and allied lines such as marble, brick, ornamental metals, plumbing, electric fixtures, wall board and roofing. A visit to any of their elaborate and alluring display rooms demonstrates how successfully the dealers are visualizing their products to customers to create demand."

These are the words of Julius Seidel, president of the Julius Seidel Lumber Company, of St. Louis, Mo., who



Julius Seidel, President of the Julius Seidel Lumber Company, Has Proved the Commercial Value of His Unusual Ideas.

has developed the selling of lumber as one of the fine arts.

Lumber, to Mr. Seidel, is what marble is to the sculptor. He sees it not merely as so many feet of merchandise to be disposed of at a profit, but as raw material to be treated with respect and used for worthy purposes. He has a real love for wood as a building material, and after nearly 50 years of working with it and studying it, his merchandising policy is to inspire others with its beauty and to make them appreciate its usefulness.

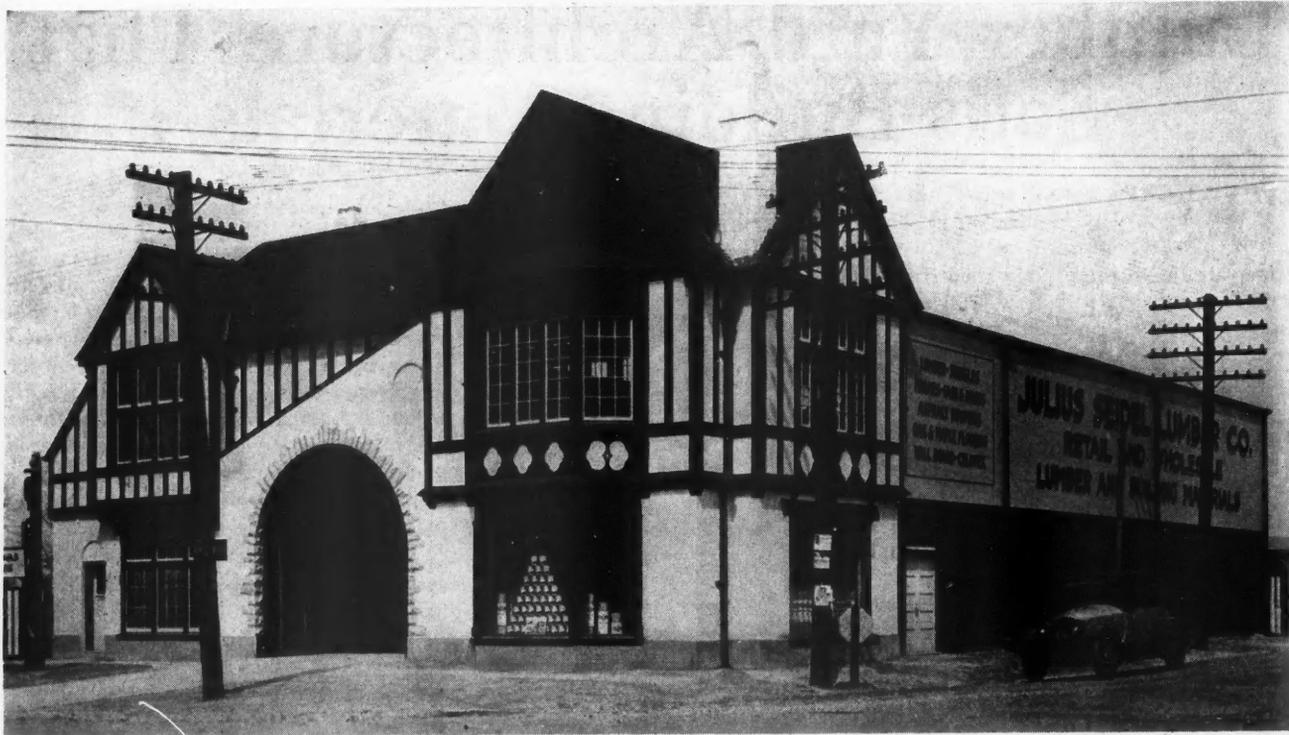
The desire to use lumber or any other article must be one of optical visualization and demonstration, Mr. Seidel declares. Crude, raw material in any line, lumber not excepted, does not make an irresistible appeal to the prospective buyer—the appeal lies in visualization of the finished product, and the retailer who stimulates his customer's imagination to materialize his visions has made the best

sales appeal possible.

Building lumber yards which are architecturally beautiful and inspiring and the most distinctive structures in their communities is Mr. Seidel's latest way of utilizing art to tell the public that his materials are worthy of their attention. In the past year he has opened two branch lumber yards within 20 miles of his main office in St. Louis



This, the Architect's Sketch of the Fenton Branch of the Julius Seidel Lumber Company, Shows How Julius Seidel Has Capitalized His Belief That "There Can Be No Better Advertisement of Building Material Than a Properly Designed and Constructed Building." This building is the work of Klipstein & Rathmann, Architects, of St. Louis.



The Small Branch of the Julius Seidel Lumber Company, at Ellisville, Is Another Example of Excellent Old English Architecture, Developed by Klipstein & Rathmann, Architects, to Meet the Practical Requirements of a Lumber Yard and Office.

and he has housed them in strikingly handsome buildings designed by eminent architects.

A branch office in Ellisville, on the Manchester road, 28 miles from St. Louis, was the first experiment in what a lumber yard ought to be. Klipstein and Rathmann, prominent St. Louis architects, were called upon to develop a design for a yard which would be a credit to the community, in line with Mr. Seidel's ideas. After laying out the plans in a strictly practical way for receiving and delivering supplies, the architects designed a headhouse with display windows and stores, in a style inspired by the old work in the smaller English communities of Shropshire and Herefordshire. The second story of the building contains very convenient quarters for the manager of the branch as well as store room for the lighter supplies.

The completion of the Ellisville building was met with so much applause and so many compliments and the success of the venture was so well evidenced from a commercial point of view that the owners immediately ordered the architects to prepare plans for a similar structure at Fenton, Mo., 16 miles southwest of St. Louis, on the Gravois road. This being a larger community and nearer the main office, the depot was planned on an even more pretentious scale than the first one at Ellisville. It was designed to provide a greater space for supplies and the headhouse was arranged to accommodate extra shops for other retail purposes.

Both branch yards are located on concrete roads connecting directly to St. Louis, and a great variety of material is carried in each depot as any amount of stock can be readily moved

in all kinds of weather. Of interest to the public and of importance to the owners is the fact that practically all of the materials used in these buildings are carried in stock by the Seidel Lumber Company, thereby making their building in a way the equivalent of a sample board with the added advantage that a prospective builder can see the material in actual use and the effect of the weather on it.

In speaking of an Egyptian display room, which was built at the main yard of this company, Mr. Seidel said: "Our aim was to build something so unique and out of the ordinary that it would be worthy of a visit by the trade and by laymen. Therefore we adopted Egyptian art. Instead of escorting our customers to private homes or public buildings to show them the application of our materials, we built a display room to show the finest kind of a finished job using our materials."

So in working out his display room Mr. Seidel first decided upon the motive and spent many interesting hours in library research on the Egyptian art. And then he called to his assistance the Volland Scenic Studios, Inc., nationally known decorators, to visualize his dream. The actual work of designing and execution was done by Carl Bonfig of the Volland staff.

The room is located adjacent to a row of offices at the lumber yard devoted to material specialties. It can be entered directly from the street or from the yard. The lower wall is made of gypsum board covered with a wall covering in imitation of travertine stone. The base of the frieze with its art design of Egyptian figures, life and symbols, the massive girders are of fiber board and this



The Seidel Lumber Sheds Show the Practical Layout Which Has Been Developed Just as Carefully as the Architectural Effects in the Seidel Yards.

material is also used for the floor mats.

A most elaborate system of indirect lighting has been installed with numerous changes of color possible. All of the ceiling fixtures were specially made for the room.

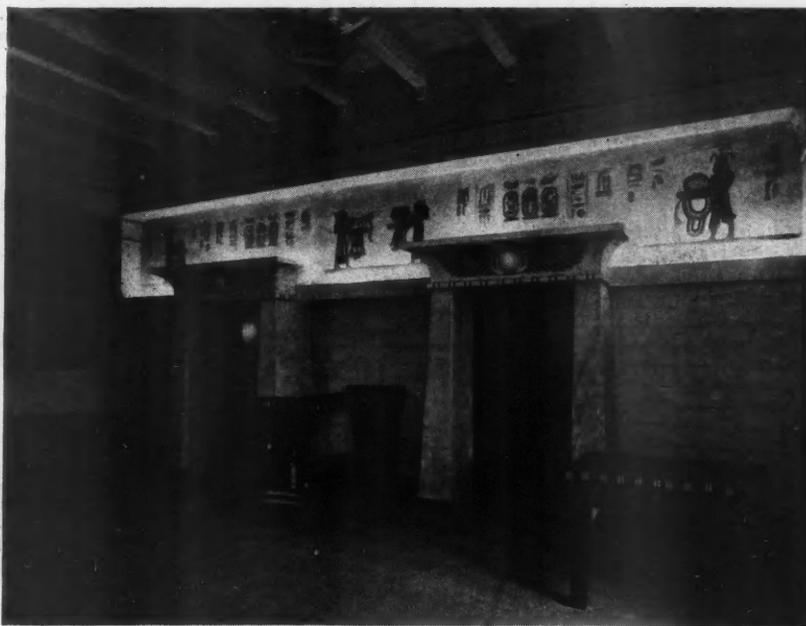
With such an unusual display auditorium it is well to note the varied purposes for which it is employed. In the first place, it is the salesroom for customers. In such distinctive surroundings, it is easy to create enthusiasm and receptiveness for buying. The psychology of creating atmosphere is effectively demonstrated.

It is used as a meeting place for the firm's employes. Mr. Seidel does not stop at instruction for his salesforce. He holds the belief that everyone connected with the organization from the office boy to the girl stenographers ought to know all there is to know about the products sold in the yard. Therefore, an hour or so is taken from the afternoon's work regularly, when all employes meet in the Egyptian room for an educational talk or moving pictures.

The room has been equipped with the latest type of motion picture equipment. All kinds of educational films relative to the growth of timber, manufacture, handling and installation of lumber is shown at these meetings for the employes.

As a further innovation, Mr. Seidel is carrying his educational work of the Egyptian room to the outside trades. Periodic meetings are held in the evening to which are invited all classes of construction men, contractors, plasterers and carpenters, as well as the architects, to demonstrate and illustrate the use of the many materials carried in the lumber yard. Films are shown, specialty manufacturers are invited to demonstrate their materials and practical experience is exchanged. Mr. Seidel bases this part of his work on the theory that it is the business of the lumber dealer to make available to the construction trades all possible data on the latest and most approved methods for the use of construction materials.

As is usually the case, a man who has developed an inter-



This Room, Completely Worked Out in Authentic Egyptian Style, Is a Practical Demonstration of the Building Materials Handled by the Seidel Lumber Company.

esting phase of business is an interesting personality. Mr. Seidel is no exception. He is a man of intense enthusiasm, and while he has a keen eye for the aesthetic side of the daily routine, he is at the same time an intensely practical business man.

He comes naturally by his love for wood and delights in the beauty of craftsmanship, and at the same time has the soundest training as a retail lumber man. His father was a cabinet maker, who learned his trade as a skilled woodworker in his own father's furniture factory in Saxony. When a young man he came to America and after several years, in 1858, settled in St. Louis, where he established himself in business.

Julius was born in 1866 and from the time he was 10 years old he spent his vacations working in his father's shop. He learned to do an apprentice's work under the old regime. At the same time, his father supplemented his practical work by enrolling him in an art school to secure a thorough foundation in the study of design.

In commendation of this early training, Mr. Seidel is emphatic in his belief that boys should be started in the crafts early and not after the completion of grammar school. "Work is not arduous or irksome to youth if it is taught it has a duty to perform," he declares. "The boy who is well taught when he is young enough to delight in physical activity develops a pride in his work which never comes from a smattering of knowledge without application. It is a parent's duty to teach his children industry and failure to do this when they are young cannot be overcome when they are grown." It may be remarked in passing that Seidel is putting into practice his theories in the training of his own boys.

Mr. Seidel's actual start in the lumber business was made when he was 15 years old. His father secured a job for young Julius with a friend of his, Theo Bloesse, manager of the Broadway yard of the Eau Claire Lumber Company. "Not what he could earn, but what he could learn," was

(Continued to page 83)



This Room Is Used as a Display and Salesroom and Also as a Conference Room Where Meetings of Employes and of the Local Building Interests Are Held.

# "Before and After Taking"

How an Old Village Hall Was Remodeled Into a Handsome Norman Firehouse



The Exterior of This Fire Station Reminds One of Old Norman Castles, With Their Towers, Steep Roofs, Dormers and Massive Buttresses, a Far Cry from the Old Fashioned Village Hall from Which It Was Made.

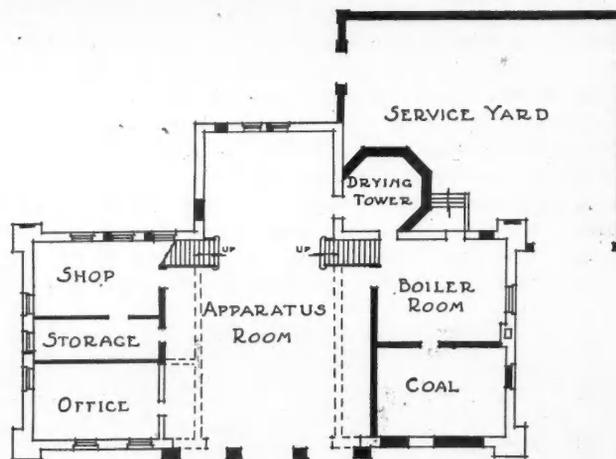
**"B**EFORE and After Taking" is a favorite form of advertising employed by some patent medicine companies, with pictures showing how their remedies rebuild the constitution and cure all ailments. Not only human beings but structures as well sometimes require rebuilding. But instead of medicines, they need architects' and builders' services.

To exemplify how one architect succeeded in rebuilding a structure we are showing herewith two pictures. These pictures actually illustrate the same building "before and after taking." The small one shows the old village hall in Winnetka, Illinois. Few words are necessary to describe it as similar buildings have been erected in many parts of our country during the past century. The village hall housed the fire department, the headquarters of the village officials and a large hall for community gatherings. When first built the citizens may have been proud of this hall with its sturdy walls and substantial interior construction. But gradually the tastes of the citizens changed.

The old quarters for the fire department were cramped and additional space became imperative. New community buildings conforming to modern requirements had been erected in the village and the hall was seldom used. Consequently, the authorities decided to remodel the structure and provide adequate space for the new fire department.

What better solution could have been secured than that attained by the architect, Mr. S. S. Beman, of Chicago. From an ugly old-fashioned building he has designed an artistic structure which is a pride to the community. Contractor John H. Davies, of Wilmette, Ill., has performed his share of the work by conscientious co-operation with the architect.

The floor plan shows all new work in solid black, all old work removed in dotted lines, and the unchanged old walls in outline only. Upon examination it will be noticed that the exterior walls are retained. Here and there an opening is bricked up or a new window set in. The walls of the



The Original Walls Are Shown in Outline, the Old Walls Removed in Dotted Lines, While All New Walls Are Shown in Black.

service yard, which are only six feet high and the walls of the octagonal drying tower are the only new ones. Three large openings were required for the fire apparatus, which necessitated a slight alteration at the front entrance.

Two feet above the second floor level the old walls were entirely wrecked and from here on the new work starts. Several courses of brick are corbelled out from the walls as a foundation for the new slate roof with its copper flashing. At proper intervals, windows are built in the second story walls. Their tops being higher than the roof plate dormers are built to remedy the situation and also to improve the design.

Elevated above the main structure the tower rises above the main walls of the building, and gives it character. The new arched openings on the first floor conform to the old ones and are in keeping with the style of architecture.

To hide the difference between the two, the old and the

new brick are stained a light color and to harmonize with this, the woodwork and ornamental iron work are painted white.

The interior changes consist in razing two walls and rebuilding them to house the fire apparatus. On one side of the apparatus room the space is divided into office, store room and shop, and on the opposite side is the boiler and fuel storage. The service yard occupies part of the lot and can be easily reached by steps from the boiler room. From this room and also from the apparatus room two doors open into the new drying tower where all hose is dried before being recoiled.

Two wide staircases lead to the second floor. Formerly it contained only one large hall, but now it is divided into the dormitory, kitchenette, squad room, toilet and shower room and chief's room, for the exclusive use of the fire department. Nothing has been overlooked in providing for the comfort of the firemen to enable them to perform their hazardous labor.

The exterior design of this fire station reminds one of old Norman castles with their towers, steep roofs, dormers and massive buttresses. On a clear moonlight night when the building is seen in outline only, one can almost imagine having been transplanted from a 20th century town back to medieval times, into old Normandy.

The octagonal tower silhouetted boldly against the sky, the roof broken up with dormers, and the low walls of the service yards, all have their specific purpose, even though a different one from old times; then the tower served as a lookout for spying the enemy, while below was the dungeon or jail and the court walls afforded protection from invaders, and made exercise outdoors possible.

—E. A. MARTINI.



Here is the Old, Abandoned, Winnetka Village Hall Which Was Remodeled Into the Artistic Fire Station Shown on the Opposite Page.

St. Louis territory. The main yard has spread from one acre to 11, and the two 2-horse teams and the one 1-horse team have been supplanted by switching tracks with 100-car capacity, and a fleet of automobile trucks.—EDNA WARREN.

### Higher Buildings with Lighter Concrete

**B**URNED shale or clay similar to the raw material used in brick manufacture produces a concrete much lighter than if sand and stone are used in the mixture. This fact was demonstrated on the Argyle Building in Kansas City when that structure was increased in height recently.

The Argyle Building was originally built to a height of four stories, but the columns and footings were built large enough to carry four additional stories. Those figures were based on the use of ordinary sand-and-stone concrete as fireproofing for the steel frame and for the reinforced concrete floors. Investigation of the possibilities of light-weight concrete disclosed that if the new material were used six stories could be added instead of four stories.

Concrete made of this aggregate weighs 95 to 100 pounds a cubic foot as compared with a weight of about 150 pounds a cubic foot for concrete made of sand and stone.

NORMAN M. STINEMAN.

### Lumber Yard Architecture

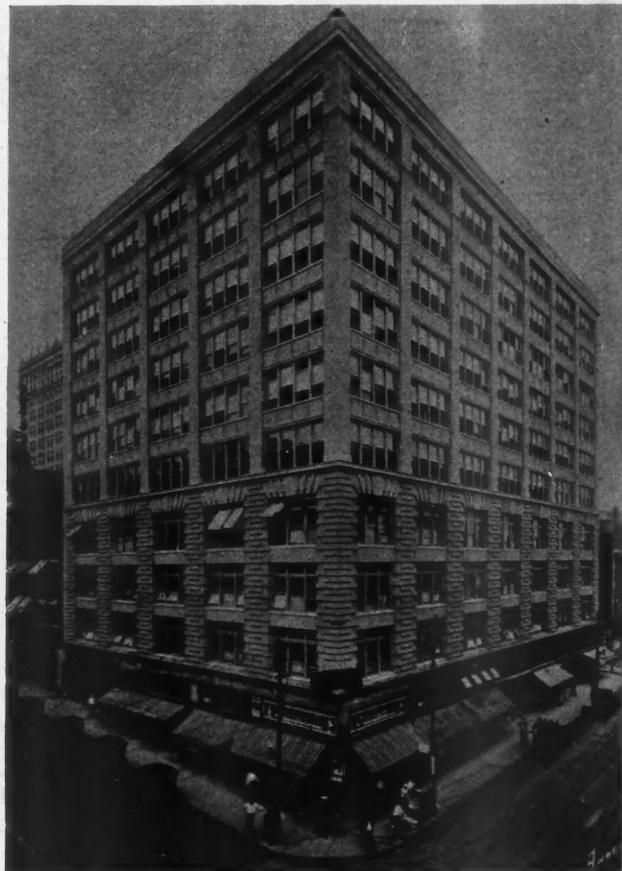
(Continued from page 81)

the arrangement under which he started to work.

Naturally, he did everything around the lumber yard that an active youngster could, and he must have worked to the satisfaction of his employer because at the age of 19 he was in full charge of the shipping department, and at 22 he was made a city salesman. In 1890 when Bloess withdrew from the firm, Mr. Seidel was elected to the board of directors, and a year or so afterwards he was made secretary of the board.

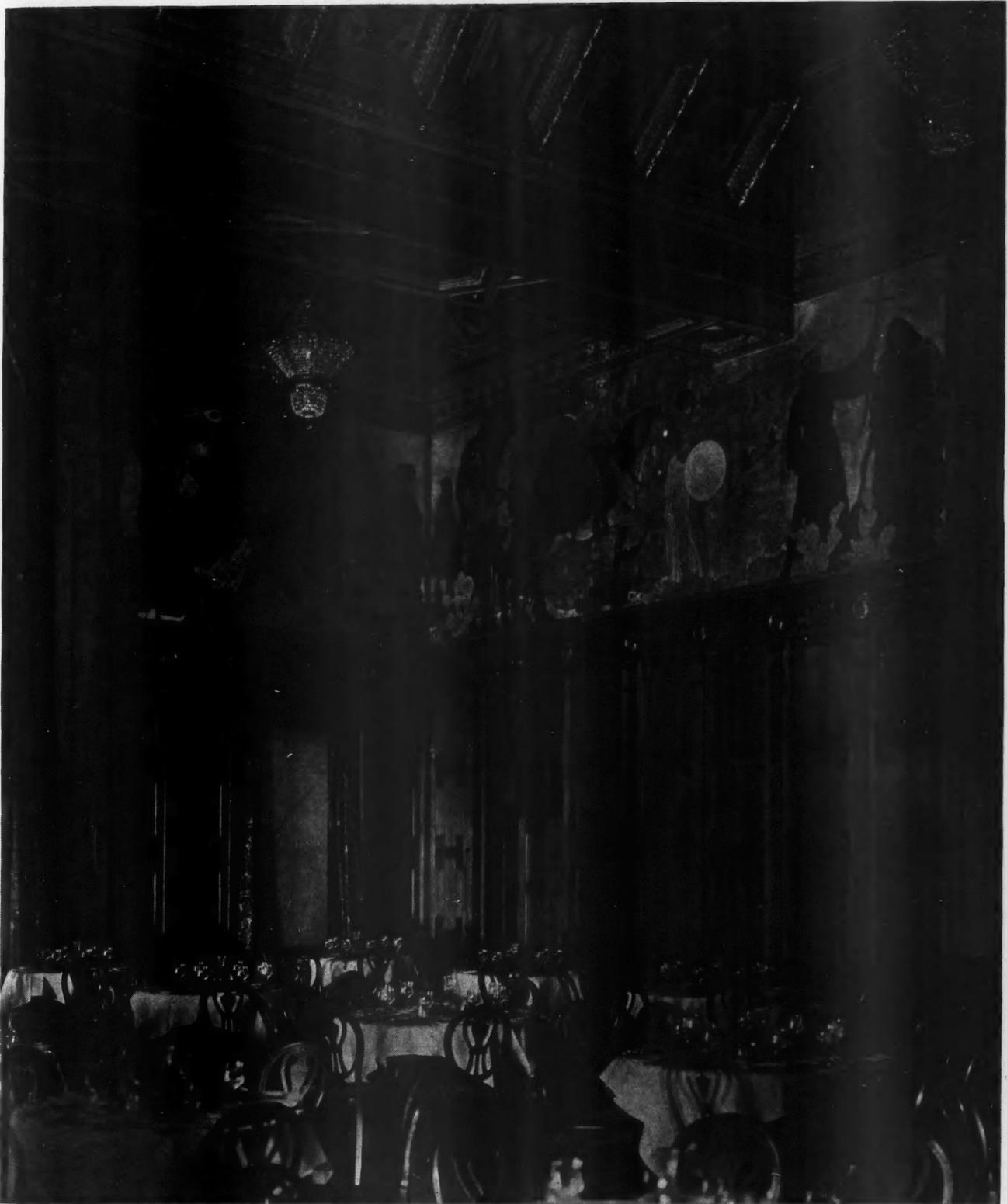
It is another theory of Mr. Seidel's, based on his own training, that his salesmen have varied experience in the yard. The salesman who thoroughly understands the stock and shipping end of the business is in a position to give his customers better service than he possibly could without it, he declares. He has the information necessary to offer intelligent advice to the customers and recommend other lengths and grades of material without injury and generally to the benefit of the buyer, he explained.

Mr. Seidel had been thrifty as well as industrious during his apprenticeship. During twenty-one years of employment, at a most modest wage at the beginning, he saved \$22,000 and he was now ready to go into business for himself. In 1903, he organized the present company which bears his name, and under his active management it has grown to be one of the outstanding retail lumber concerns of the



The Use of Light Weight, Burned Shale Aggregate Made Possible the Addition of Six Stories Where Only Four Had Been Planned for.





**The Room of the Dons, in the Mark Hopkins Hotel, Has Been Made Notable by Its Mural Paintings, by the Famous Artists Maynard Dixon and Frank Van Sloan, Depicting an Old Spanish Legend of California and the History of the State's Development.**

story tower. It cost \$5,000,000 to build. The architectural treatment is a combination of Baronial French and Spanish Renaissance.

The Mark Hopkins lobby stresses the newest note in hotel lobbies. It is comparatively small and compactly arranged, yet an illusion of spaciousness is achieved by the high beamed ceilings and the adjoining Peacock Court with its glass vaulted roof and mirrored walls. The registry desk is inconspicuously placed to the left of the main entrance, and there is ample room for all the business activities of the lobby, but none for a collection of miscel-

laneous loungers and idlers. No space is wasted on this part of the house that can be put to more profitable uses in the dining halls.

The several main dining rooms and grilles are all on the ground floor, and are grouped about and open directly onto the large daylight kitchens. The plan of having the kitchens on the ground floor, rather than in the basement speeds up service and gives better lighted and ventilated quarters for the help to work in. There are also several smaller dining and private banquet rooms on the mezzanine floor.

Thirteen floors of the building are devoted to regulation bedrooms and on each of the four corners of these thirteen floors there is an apartment suite. This consists of a living room, dining room, one bedroom, bath and small kitchenette. The kitchenette is fitted up with a four-burner electrical plate with a warming oven; built-in cabinet and sink.

The tenant of any one of these apartment suites has all the practical conveniences of a regulation kitchen apartment plus the perfected services and advantages of the hotel. If he desires a second bedroom, he can be accommodated easily, for in the entrance hall of an adjoining single bedroom there is a door, leading into the adjoining room of the suite. This arrangement enables the two units to be thrown together and the second bedroom may be entered directly from the hall. If only one sleeping room is desired, the single room is still free for the uses of the hotel.

The five top floors form the tower of the house. All of these floors are on long time leases. Three of the floors are signed up as a whole and two of them have been divided up into two or more smaller apartments.

It has hitherto been considered quite unorthodox to have anything but dark woodwork, doors and carpets in the halls of a large hotel. But here again the Mark Hopkins breaks away from precedent with a happy result.



Soft, Light Pastel Shades in Woodwork, Carpets, Walls and Hangings, Are a Stimulating and Restful Innovation in the Furnishings of the Mark Hopkins Hotel, San Francisco.

The woodwork and doors in the corridors are enameled a delicate green. The carpets are a soft, rich blue. It is impossible to find a dreary room in the house.



The Lobby of This New Hotel Conveys the Impression of a Parlor, with the Registry Desk Inconspicuously Placed to the Left of the Entrance and Facing the Elevators. It is ample in size but small as compared with the older style of hotel lobby.

# DEPARTMENT of PUBLIC and BUSINESS BUILDINGS

*Eight Pages of Interesting  
Developments in the Realm  
of Larger Buildings*

**S**T. LOUIS is to have a \$5,000,000 municipal auditorium building which is to face the projected Memorial Plaza at Fourteenth and Market streets. It will be a massive structure of classic design, as shown by the duotone sketch on the next page. It will contain a great arena and a large theater, besides numerous minor facilities.

Broad corridors and ramps of easy incline, instead of stairs, will lead from the entrances to the various levels.

The arena, in the southern part of the structure, will have a seating capacity of nearly 12,000 persons, and a floor space, when used for exhibitions, of 20,000 square feet.

In the northern portion will be the theater, seating 3,500, designed particularly for symphony concerts, grand opera and other entertainment. Between the theater and the arena will be a stage 56 feet wide and 140 feet long.

## **New Ziegfeld Theater, New York City**

Joseph Urban, Architect

The facade of this theater is a design of nouveau art, a modern adaptation of old classic lines and ideas. The fluted piers at the sides give the long lines of dignity and help convey the impression of strength, the large figures and the urns on the top, adding suggestions of the playhouse. The material of the facade is a special composition of concrete, light in color, a pleasing contrast to the buildings of dark brick and stone which are its neighbors. See duotone sketch on second page following.

A departure in this theater is the construction of the auditorium, which forms a true ellipse. It is built on the principle of the inside of an egg with one end cut off for the stage. The entire scheme of decoration is a mural painting, covering the walls and ceiling. The mural is a decorative treatment of the Moyen age, done in brilliant colors against a black background, edged with a yellow sienna base.

## **New Lakeside General Hospital, Cleveland, Ohio**

Coolidge, Shepley, Bulfinch & Abbott, Architects

The Lakeside Hospital is of the modern "teaching" type, for this institution is to be the clinical laboratory of Western Reserve Univer-

sity's School of Medicine. It will be eight stories high in its central portion and will have a capacity of 280 beds. The architect's perspective in duotone on page 92 gives a good idea of the style.

Wings are stepped back to admit maximum air and light and each floor will have sun porches. Ward beds are to be grouped in fours separated by glass screens to promote privacy and personal treatment of ward patients. Arrangement of beds will be such that no patient will have to face the light.

Three floors on the east end of the building will be devoted to the out-patient department. On the third floor will be installed a completely equipped physiotherapy department. Across the top floor from east to west will extend the operating suite, said to be second to none in the country.

The hospital will cost, it is estimated, \$3,300,000.

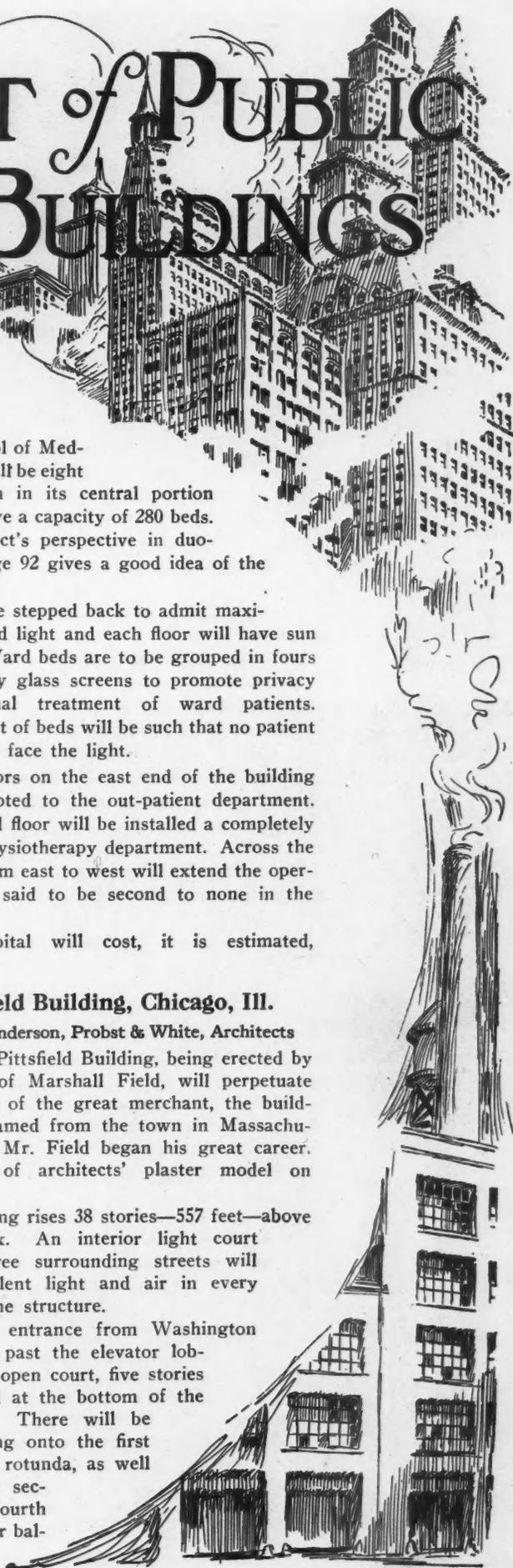
## **Pittsfield Building, Chicago, Ill.**

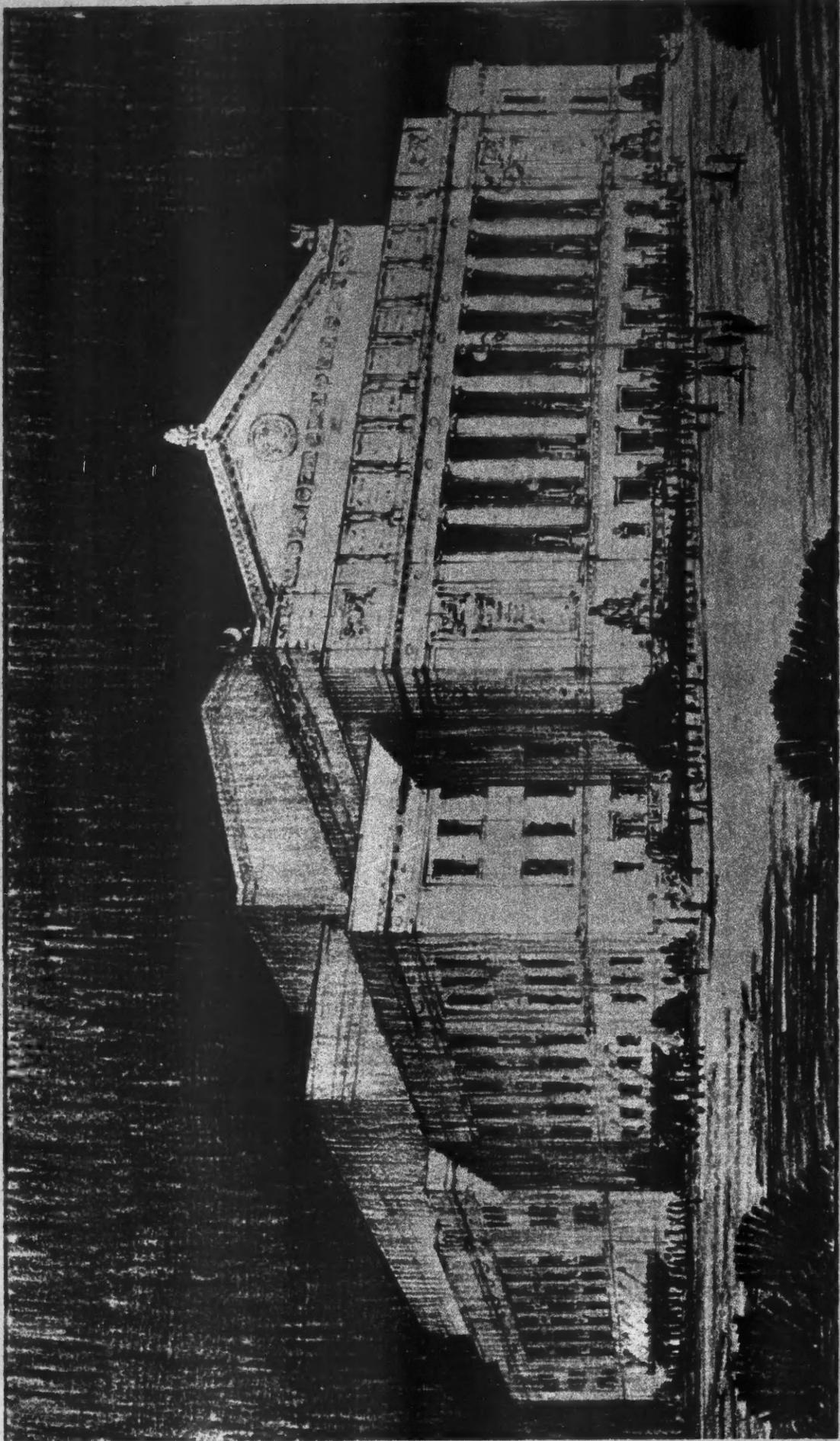
Graham, Anderson, Probst & White, Architects

The new Pittsfield Building, being erected by the Estate of Marshall Field, will perpetuate the memory of the great merchant, the building being named from the town in Massachusetts where Mr. Field began his great career. See photo of architects' plaster model on page 93.

The building rises 38 stories—557 feet—above the sidewalk. An interior light court and the three surrounding streets will assure excellent light and air in every portion of the structure.

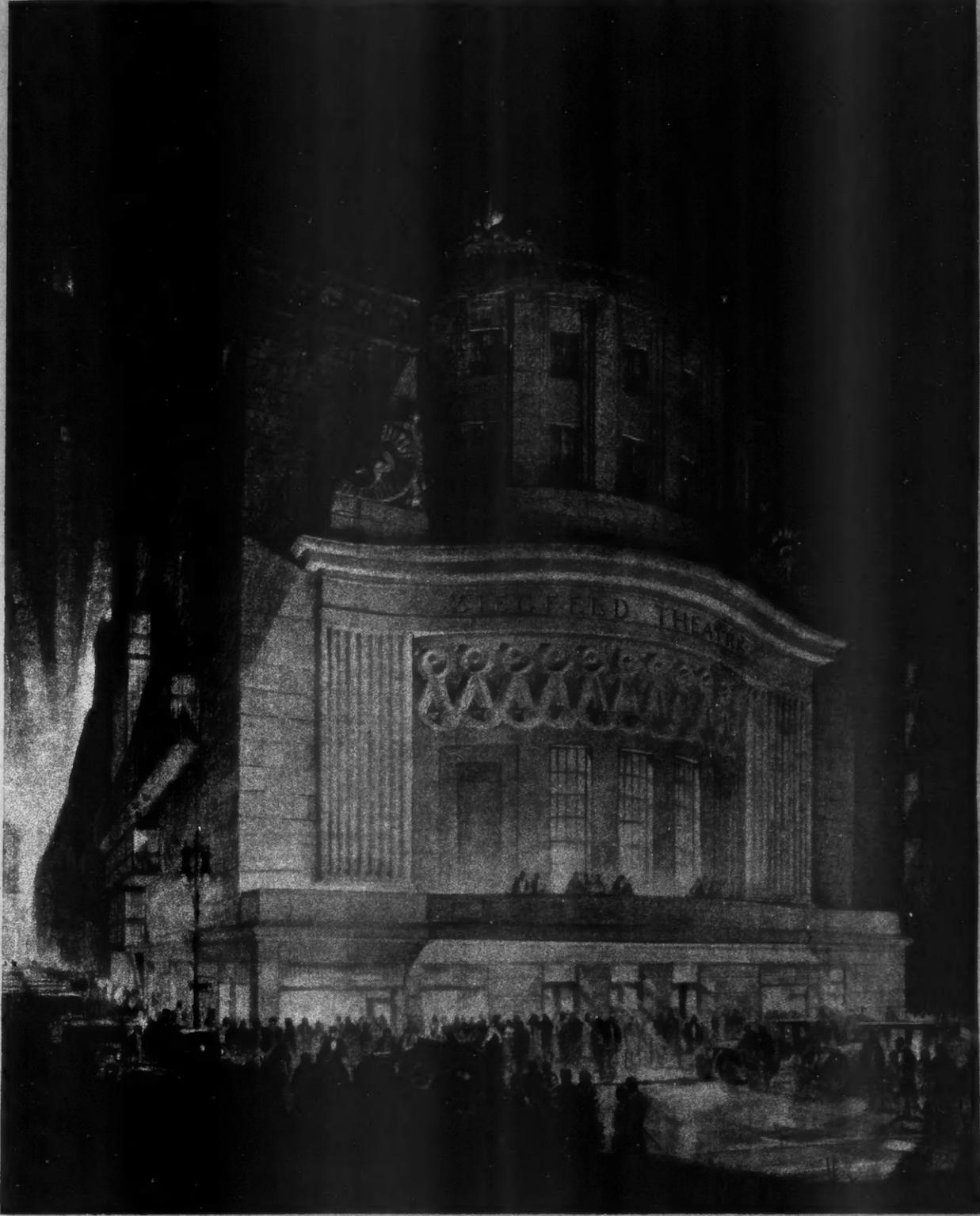
The main entrance from Washington Street leads past the elevator lobbies into an open court, five stories high, located at the bottom of the light court. There will be shops opening onto the first floor of this rotunda, as well as onto the second, third, fourth and fifth floor balconies.





MUNICIPAL AUDITORIUM, St. Louis, Mo.; The Memorial Plaza Commission, Architects.

# A New Departure in the Design of a Newspaper Building



*The New ZIEGFELD THEATRE, New York City; Joseph Urban, Architect.*

# A New Departure in the Design of a Newspaper Building

JAMES M. HAMILTON, Architect



At Fort Wayne, Indiana, the News-Sentinel Has Recently Erected a New Building Which Has Attracted Much Attention and Praise as a Fitting Newspaper Home of a Style Which Is a Satisfying Departure from the Usual Business Structure.

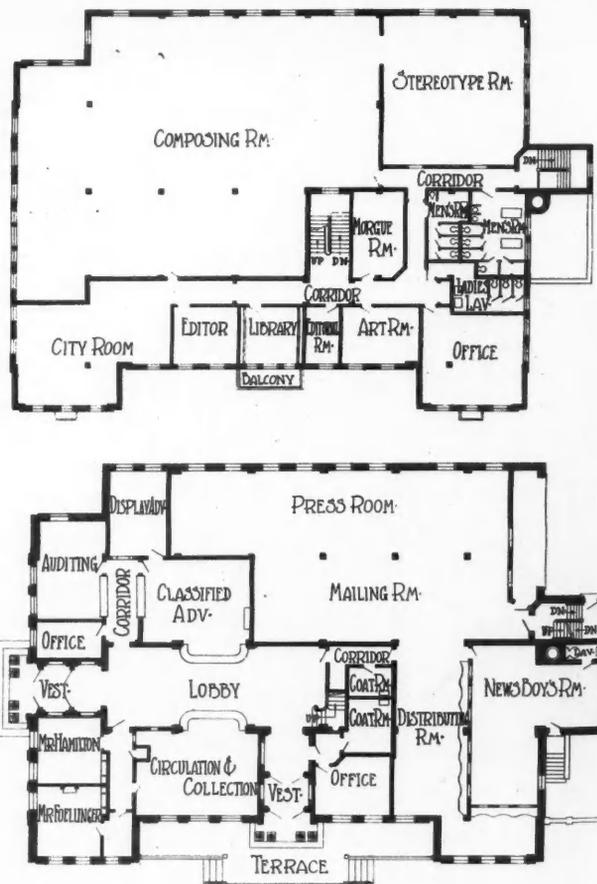
NEWSPAPER publishers from all parts of the country have visited and praised the new building erected for the News-Sentinel at Fort Wayne, Indiana. They praise particularly the departure from custom in erecting a mansion type of newspaper home instead of the conventional type of business building.

The new building is not only well-planned, convenient, efficient, and complete, but it is more. The chosen architecture, Colonial, is a fitting expression of the origin of country, city and newspaper in the days of "Mad Anthony" Wayne, after whom the city was named. The building has been fitted throughout in harmony with this idea, and discriminating taste has chosen materials and details of the design of materials on the basis of quality and appropriateness.

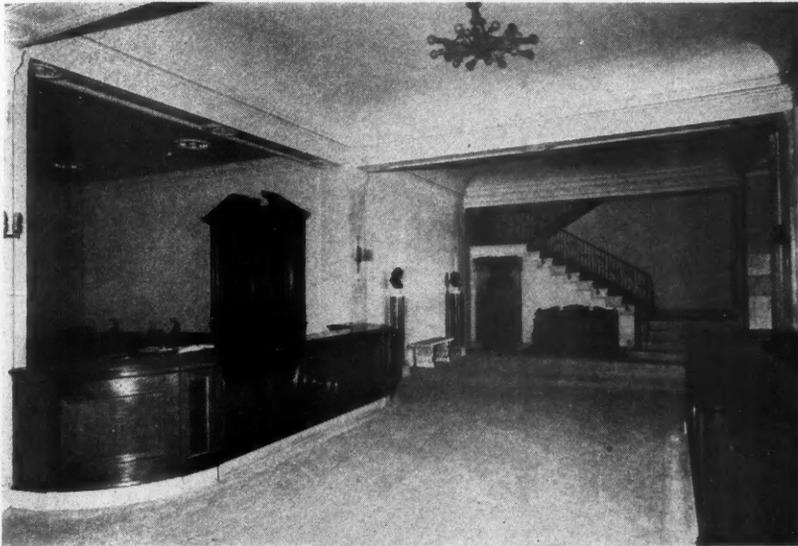
The architect, James M. Hamilton, of Cleveland, made his plans in close collaboration with the publisher, Oscar G. Foellinger; the general contractors, Buesching and Hagerman, and the Fort Wayne Builders' Supply Co., who furnished all materials.

Main entrance to the building is through a vestibule on the side walls of which are two maps, one the earliest made of Fort Wayne drawn in the style of that time, and the other one of the earliest made of the land discovered by Columbus, also in the style of the period. From the vestibule one steps into a large lobby, on each side of the center of which are counters, one for the circulation department and the other for the advertising department. Each is of carved walnut.

Behind the advertising counter is a large Colonial cabinet, also of walnut, and to the right of the circulation center is an attractively carved telephone booth. To the rear of the lobby is a door leading into the press room and a stairway with wrought iron railing leading upstairs to the library, morgue, and editorial, reportorial, composing and telegraph rooms. Beneath the stairway is a beau-



The Two-Story Building Is Entirely Devoted to the Production of the Newspaper and Is Planned for the Most Efficient Work.



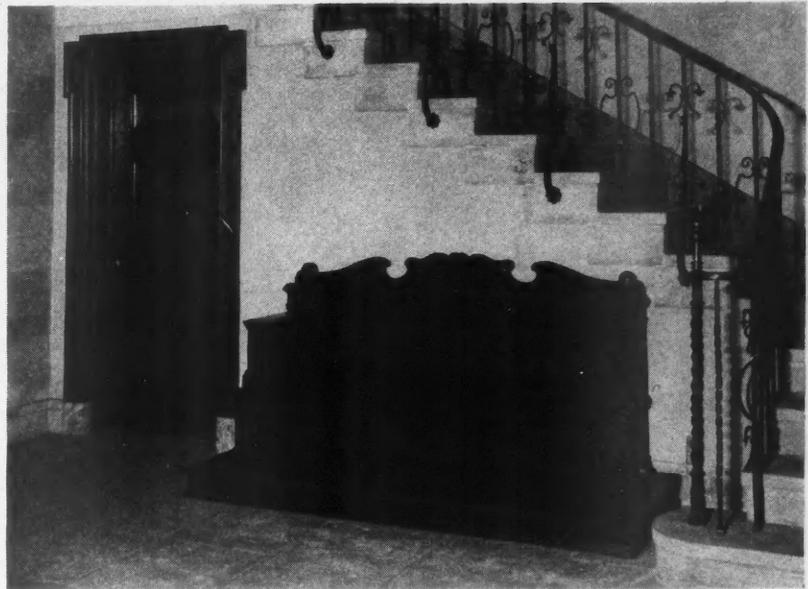
Counters at Either Side of the Main Lobby Are Devoted to the Uses of the Circulation and Advertising Departments.

tifully carved bench for the accommodation of waiting visitors.

Most noteworthy of all the rooms, perhaps, is the office of the publisher, Mr. Foellinger. It is located to the right of the main entrance and is completely paneled in waxed walnut, the natural finish being preserved. In the very center of the room Mr. Foellinger has an electrically fitted light enclosed in a globe on which are shown rude representations of the continent. A wrought-iron cock stands atop the globe and an arrow pierces it from top to bottom.

This arrow, indicative of early methods of sending messages, is found throughout the design within the building. It appears in decorations on the entrance doors, in a glass panel fronting the first landing on the main stairway and in the lighting designs on the first floor.

Wall lights used in Mr. Foellinger's



A Bench, of Carved Mahogany Like the Other Equipment, Is Placed Beneath the Stairs for the Convenience of Waiting Visitors.

### Oak Flooring Grade Names Changed

THE Oak Flooring Manufacturers' Association of the United States, whose headquarters are located at 228 N. La Salle St., Chicago, has announced that, beginning January 1, 1928, oak flooring grades will be named as follows: First grade quartered, old name—clear; first grade sap quartered, old name—sap clear; second grade quartered, old name—select; first grade plain, old name—clear; second grade plain, old name—select; third grade, old name—No. 1 common; fourth grade, old name—No. 2 common.

The current grading rules for each grade, as adopted March 4, 1927, remain unchanged. Oak flooring grading rules will be printed and distributed on request about January 1, 1928.



The Private Office of the Publisher, Oscar G. Foellinger, Is Noteworthy, Being Panelled in Natural Finished Walnut and Furnished Most Handsomely.

office represent Colonial oil lamps and a bright red and green bellows alongside the fireplace adds stirring color to an otherwise quiet design.

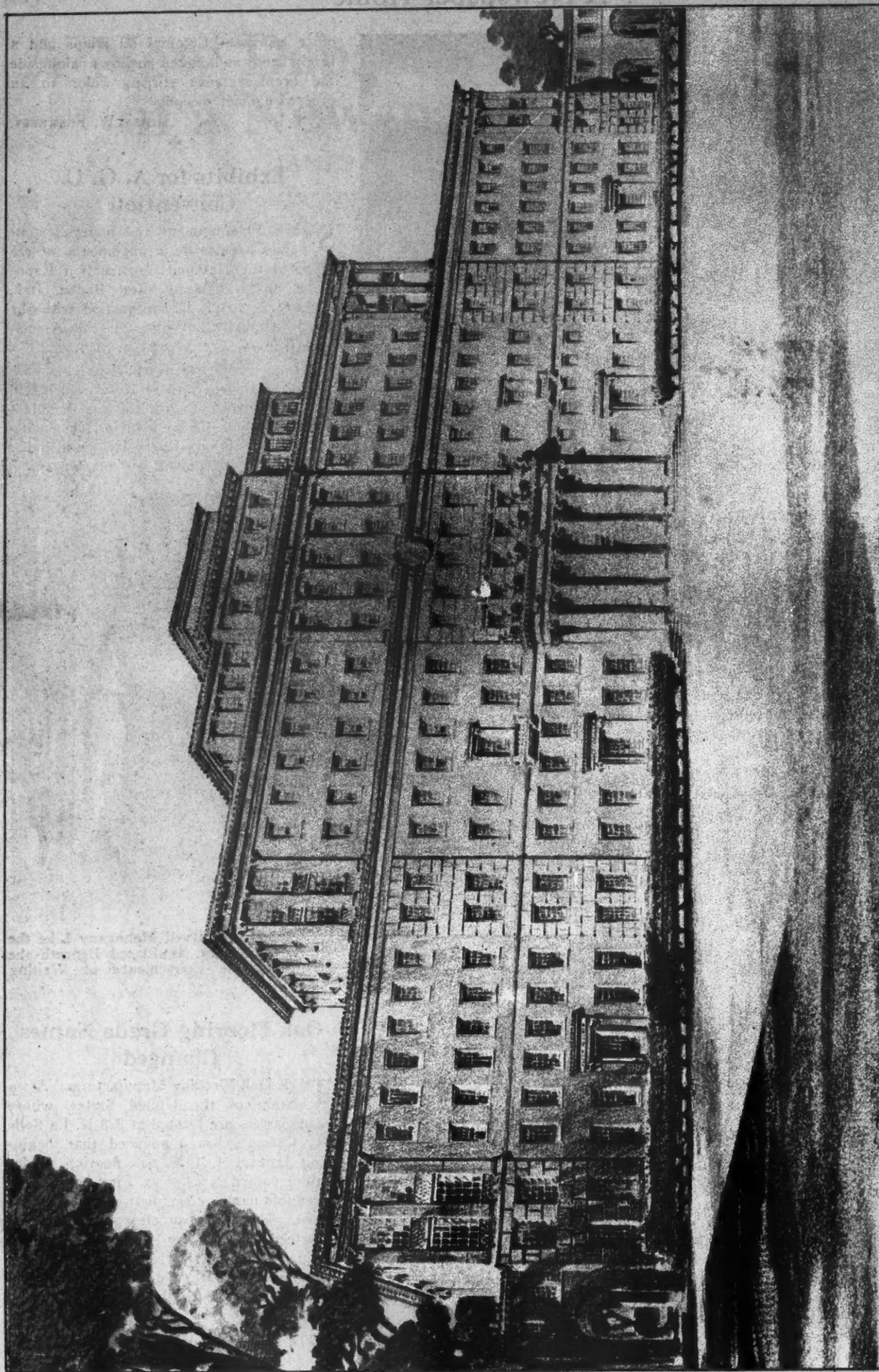
HARRY W. FLANNERY.



### Exhibits for A. G. C. Convention

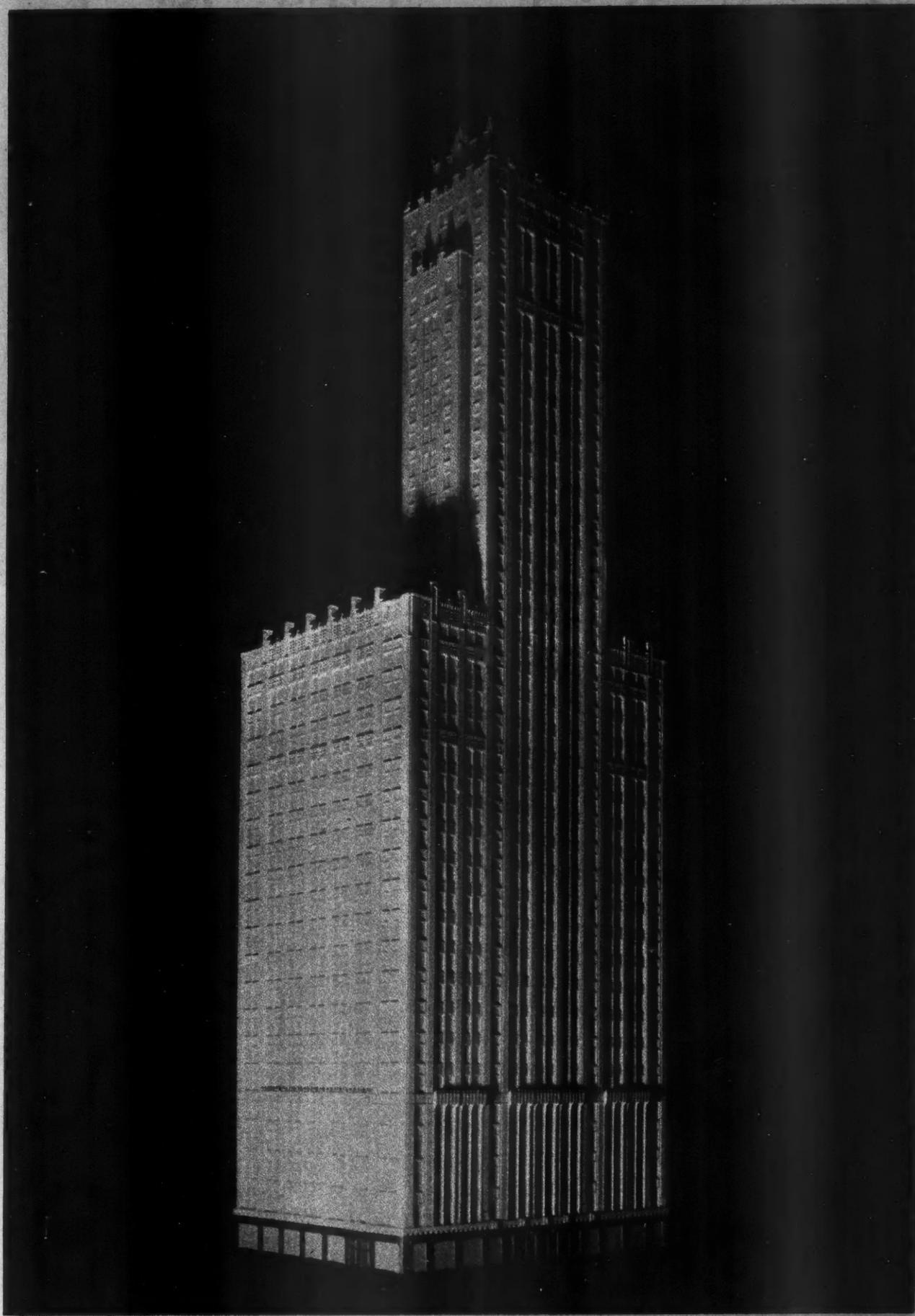
SOME 50 equipment and material companies have made arrangements for exhibits at the National Construction Exposition, to be held at West Baden, Ind., January 23 to 27, in conjunction with the Ninth Annual Convention of the Associated General Contractors of America.

Arrangements have been completed with the West Baden Springs Hotel which will house the exposition for the use of a half acre of outdoor display area for the placing and demonstration of very large and bulky construction equipment and machinery.



*The NEW LAKESIDE (General) HOSPITAL, Cleveland, Ohio; one unit of The Cleveland Medical Center; Coolidge, Shepley, Bulfinch & Abbott, of Boston, Architects.*

The NEW LAKESIDE (General) HOSPITAL, Cleveland, Ohio; one unit of The Cleveland Medical Center; Coolidge, Shepley, Bulfinch & Abbott, of Boston, Architects.



*The PITTSFIELD BUILDING, Chicago, being erected by the Marshall Field Estate at Wabash and Washington Sts.; Graham, Anderson, Probst & White, Architects.*

# Unique Brick and Tile Display Built Into These Show Rooms

**T**HIS new building of the Denver Sewer Pipe & Clay Company is a complete exhibit of their own products. This applies to the interior as well as the outer walls. Built into the show room walls are panels which display various kinds of brick and tile and have been found an effective sales help. The vaulted ceiling has its lines accentuated by brick arches, producing a pleasing decorative effect.

The building is faced with brick of the stiff mud variety, very hard and of a mixed red, brown and black color. All the specials over the windows, doors and in the arches and pilasters match the face brick. All the floors are cement over hollow clay building tile and the partitions are hollow clay building tile. The private offices are plastered, but all others are lined with brick. The walls of the stairway are faced with stretchers, a deep cherry-red, stiff, mud brick. The steps are paving brick. The floor in the entrance office is split paving brick, showing colors somewhat the same as those used in the exterior of the building.



View Showing Brick Panel Display in the Sales Room of the Denver Sewer Pipe and Clay Company. Various styles of brick and masonry are displayed in walls and ceilings.



Attractive Face Brick of a Mixed Red, Brown and Black Color Is Shown To Advantage in This Office Building of the Denver Sewer Pipe and Clay Company, Which Occupies a Triangular Site. Every room and stairway in this building displays in built-in form the company's products.

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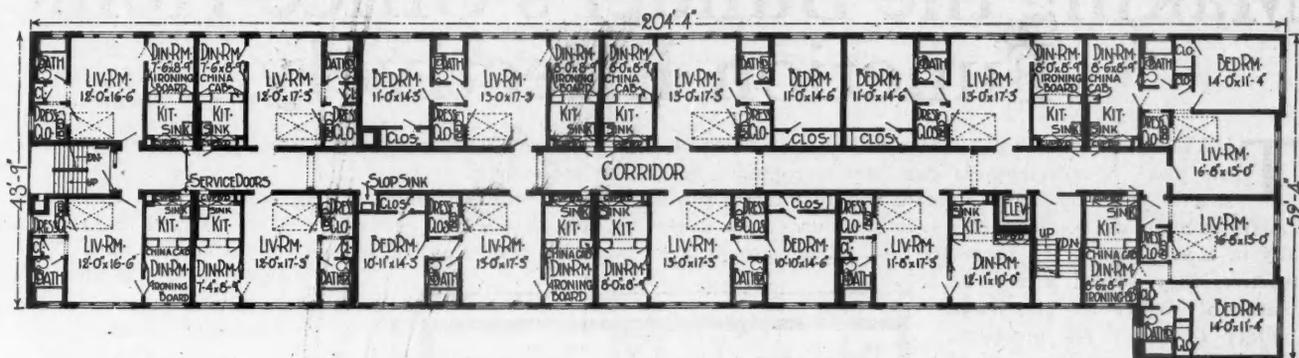
# Cleveland Apartment Building of Central Corridor Type

MAX WEIS, Architect

**T**HIS is a 44-suite apartment of the center corridor English basement type, and is situated in the heart of the Euclid-105th Street theater and shopping district. Entrance to the apartments is through a spacious and beautifully furnished lobby on the first floor, with double French doors leading therefrom to the elevator and main stairway.

rooms—living room, dining-kitchenette, bedroom and bath—in each suite, with added sleeping accommodations by means of disappearing beds in the living rooms. This space-saving feature adds the equivalent of 44 bedrooms to the building and increases the rental return correspondingly. The ground floor or English basement contains eight suites of apartments, with boiler, laundry and locker rooms at the rear.

Reference to the typical floor plan herewith shows three



The Kee-Mar Apartment Building Pictured Above Was Built and Is Owned by the Kee-Mar Realty Company, Cleveland. A typical floor plan is illustrated and shows two and three-room suites with living rooms of generous size, each equipped with disappearing beds and having dressing room and bathroom adjacent. Although only three stories and basement in height, it is equipped with an elevator—a feature which tenants appreciate.

# REAL ESTATE *and* SUBDIVISION WORK



## Making the Builder's Office-Home Function Effectively

**T**HAT it is the course of wisdom to locate an office on the place of development has been recognized for several years by home builders and real estate promoters in many cities. Formerly such structures were usually of a very temporary character and, while perhaps attractive, they served merely as places of shelter for the home builder to usher his prospects into in order to get them out of the weather. The fact that they can be made real agencies in the selling of homes or building sites seems to have been generally overlooked by many builders and developers.

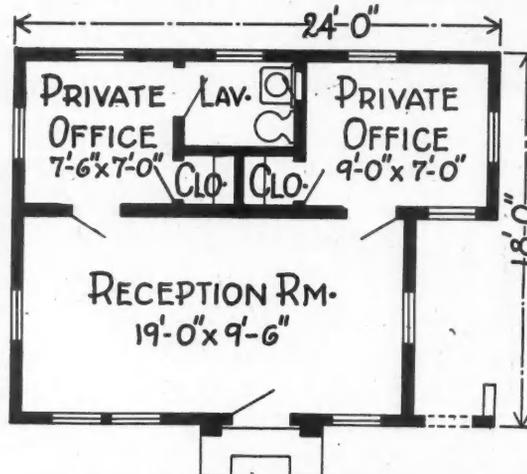
Recently, at least three home builders in San Antonio, Texas, have erected establishments that are more complete, more pretentious and more attractive than the usual bird-cage affair that one saw perched on city properties under development a few years ago.

What are some of the advan-

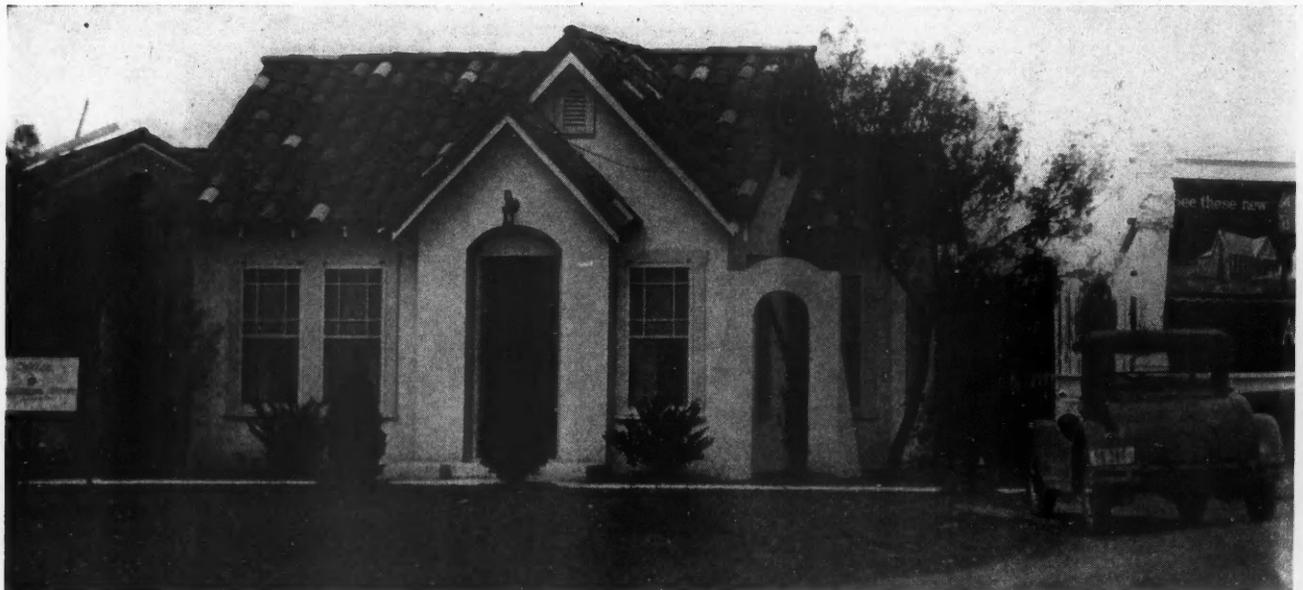
tages of such office-building homes located on properties that are selling?

First, there is a saving in rent and expense. In the case of each of the San Antonio builders referred to the office home houses the entire clerical and mechanical staff. There are usually several small rooms in these establishments, making it so that each member of the staff has more privacy and elbow room than would be possible if the home builder maintained his household in an expensive office building in the business district. Such buildings can be constructed with better ventilation and more direct sunlight than the usual office building quarters in the congested sections of cities afford.

If such buildings are planned with a weather eye open as to what use they may be put to when they can no longer serve the purposes for which they were originally intended, they may

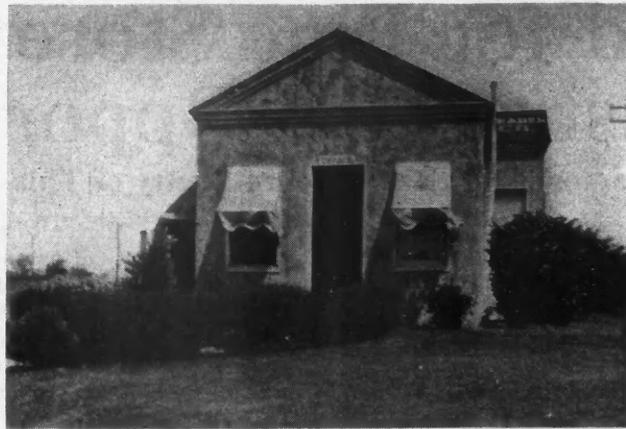


Inside There Is a Large Reception Room, with a Desk for the Stenographer, Two Private Offices and a Lavatory.



An Exceedingly Attractive Exterior and a Conveniently Arranged Interior Make the Office of the American Building Corporation, Located Right on the Ground of Its San Antonio Development, an Outstanding Example of a Well-Planned Builder's Office.

then be converted into real homes and sold to families for residences. This is what at least one of the San Antonio builders referred to intends to do with his office home after his development has been sold.



Though the Office of the Shearer Company, San Antonio, Is Plainer It Is Highly Effective Because of Its Beautifully Landscaped Setting.

shrubbery, and commanding the entrance to their respective properties, they are standing advertisements and the best kind of silent salesmen.

With interiors fitted out to harmonize with the outside setting, it is an easy matter for the executive to get down to brass tacks soon after the prospective buyer calls and talk homes and building lots. He is in the midst of his properties, they lie about him, and while he may use photographs and ground plans for driving home his arguments, he has only to lead his prospects

Utility is the second plank in our platform of building complete office homes on projects under development. That such buildings have certain utilitarian features can be easily seen without any great stretch of the imagination. First, since such a building houses the entire clerical and mechanical forces and also is headquarters for the executive himself, there is little lost motion in the articulation between the different departments and the executive himself.

outside to be in the midst of his wares.

It is much more convenient for the members of the staff to work in such close communion with the head of the establishment than for them to be perched in some office building in town while the executive himself is out showing his properties to prospects. Since he does not have to motor back and forth to town, he is also more accessible to prospects and thus he should be able to effect more sales by being right on the ground than if his time was divided between a downtown office and the properties under sale.

The attractiveness and convenient arrangement of the office-home of the American Building Corporation, located on the company's properties on Fredericksburg Road in San Antonio, would be hard to surpass. The exterior is finished in natural color stucco with variegated tile roof in such a way as to catch the eye of motorists in the steady stream of cars that flows over Fredericksburg Road.

Such a building has utilitarian uses for the prospects themselves. When only one address is advertised, they naturally come to the project under development without wasting time in going to a downtown office. Once at the office-home, it is an easy matter for the executive or some of the staff to show them over the properties, thus taking advantage of appealing to them while their ardour and interest are at the highest pitch. The writer has known cases in which prospects have been put to much inconvenience and been much vexed by not being able to run down a sales manager or executive when such could not be located readily on the grounds under development.

The interior is divided into a reception room and two private offices with comfort room for employees. The stenographer's desk and that of another member of the staff are placed in the reception room, which is also provided with chairs for visitors. Windsor furniture of fine grade is used throughout the building, which has been decorated so artistically as to appeal to the taste of the most fastidious lady. It is the view of Mr. Cadwallader, president of the American Building Corporation, that this office building home attracts many people to the properties of the company adjoining.

Third, such office-homes as those in San Antonio do actually make sales and, of course, this is an excellent reason for their existence. They are in the first place so attractive that they catch the eye of many people as they motor past. Set back on grassy plots, tastefully set with

It is the intention of Mr. Cadwallader to keep the grounds about the office building pleasingly landscaped summer and winter. A little farther up Fredericksburg Road from the office-home of the American Building Corporation is the property office of the Shearer Co. Flowers, shrubbery and grass have been used there in such a happy combination as to make a fine setting for an office-home that is not so attractive in itself. But since the landscaping is excellent many people must notice the properties that adjoin the office when they see the carefully landscaped grounds.

A. W. ROE.

## An Old New England Home Rejuvenated



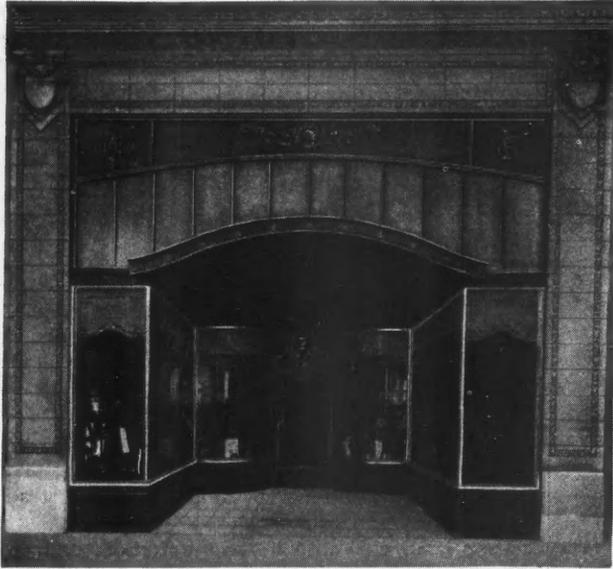
The Old Upham House, in Spite of Its Appearance, Was Originally Well Built and Still Sound as a Dollar, but Its Looks Were Against It Till Henry E. West, of Melrose, Massachusetts, Took the Job of Remodeling.



No One Would Recognize the Old Upham House, of Which an Earlier Picture Is Shown at the Left, in This Attractive, Modern Home, Which Merely Goes to Show What a Bit of Planning, Carpentry and Paint Can Do.

# Demand for Fine Store Fronts A Construction Opportunity

Contractors Can Easily Secure Plenty of This Work



The Features of This Store Front Are Its Free Use of Glass Transom Ornament and the Curved Ceiling Above the Entrance Way Which Extends Out Over the Sidewalk as a Marquis or Canopy. The main display windows face the entrance but at an angle which catches the eye of passersby on the sidewalk.

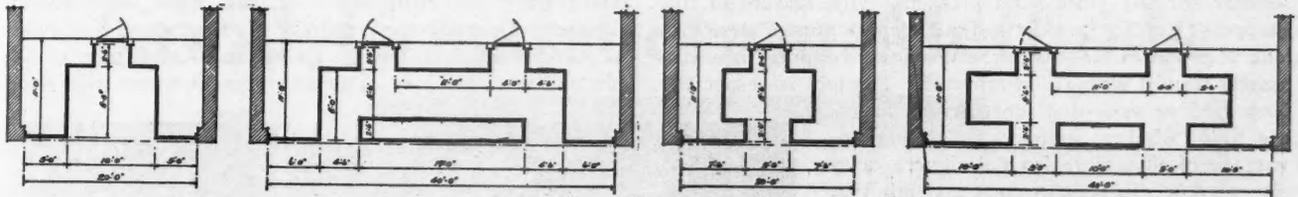
A WAVE of "modernizing" is sweeping the country and the popularity of fine new store fronts is forcing merchants everywhere to remodel or build new. Wide-awake builders and contractors who are proficient in store front work or who are willing to acquire proficiency can easily secure profitable contracts of this nature. Practically all retail merchants whose premises are not strictly modern are "prospects" either as owners or lessees. For if the store is under lease, the merchant is all the more ready to bring pressure to bear on the owner at the time of renewal.

This feature of modern retailing is based on an inherent trait in human nature. The first step in any sale is said to be attention. Surely there is nothing more potent to arrest the attention of a shopper than a fine looking store. Here the power of association comes in. It is unavoidable inference which associates good merchandise with attractive surroundings. A shopper wants fresh, new stock and he will not associate that type of merchandise with an old fashioned unattractive looking store front. It is quite noticeable, too, that merchants who are progressive enough for attractive displays of their wares. Looking at these to put in fine store fronts are far more apt to use them displays, the shopper is quite apt quickly to take the second and third steps in a sale—interest and desire. So, in many cases, the sale is more than half made before the customer enters the store.

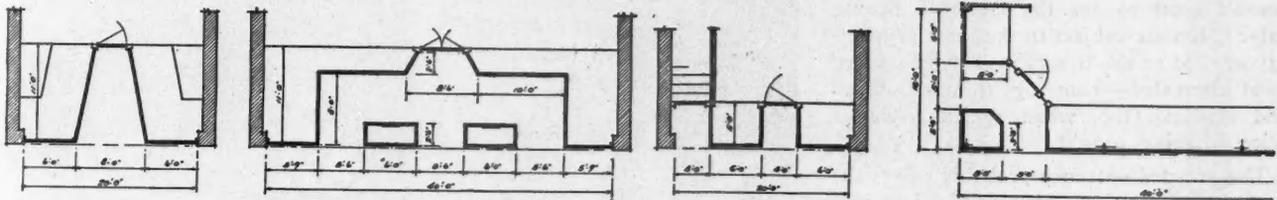


An Attractive Store Front and Entrance Is Here Shown with a Tempting Display of Hats and Gowns. Use is made of a small showcase to separate the two entrance doors and the arcade is widened at this point to allow free entrance and exit. The ceiling above the entrance is a textured stucco with heavy ornamental mouldings. The display windows are brilliantly lit by special flood lights, the bulbs and reflectors being concealed.

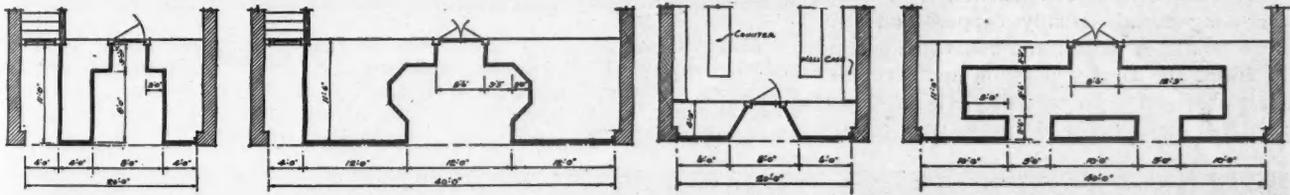
Builders Will Find These Little Store Front Sketches Have Considerable Suggestive Value When Shown to a Retailer. The dimensions in these designs will not, of course, fit all store sizes and locations, but these designs will suggest to owners some of the many fine effects which can be secured.



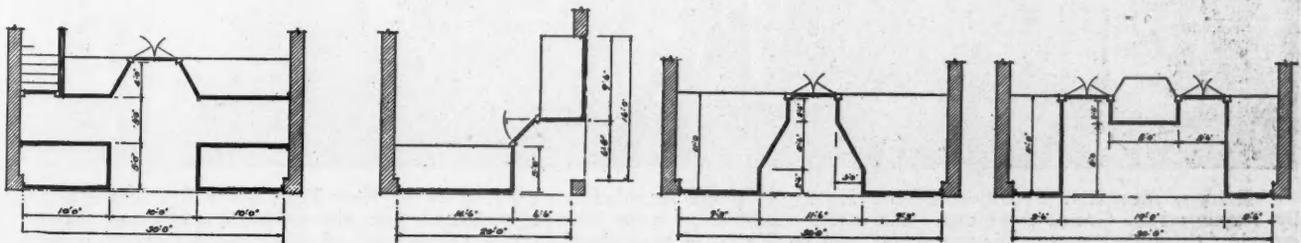
Within the Limits of This Article It Is Not Feasible to Show All the Possibilities in Store Front Design but the Plans on This Page Cover a Typical Range of the Store Front Designs Most Often Found Effective.



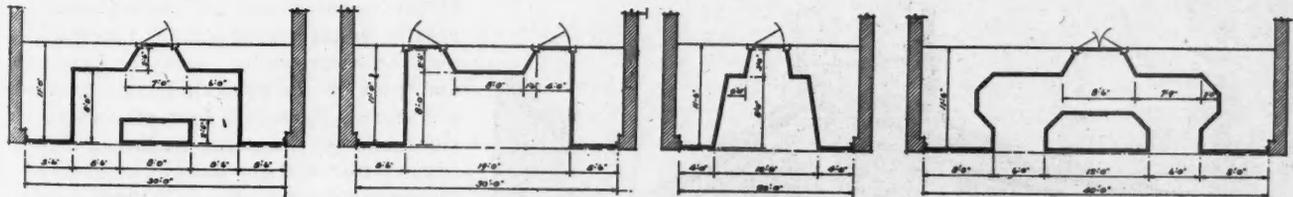
It Will Be Noticed That the Most Common Dimension for the Depth of the Shallower Store Fronts Is Eight Feet, but That Where More Display Space Is Desired the Depth Usually Runs from 11 to 14 Feet. For Larger Stores, However, a Store Front Depth of 20 Feet or More Is Sometimes an Advantage.



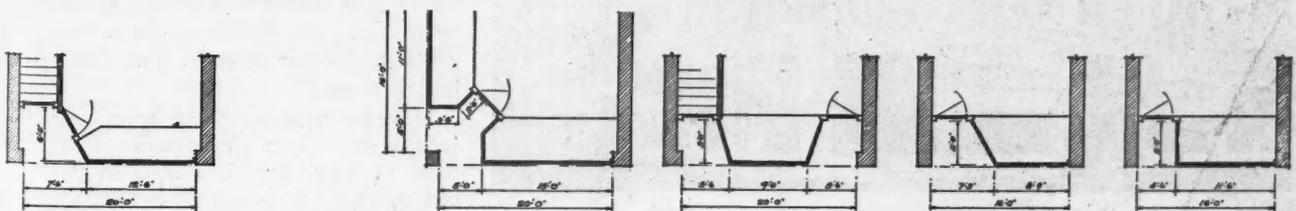
Where Island Show Cases Are Used, They Often Provide the Choicest Display Space of the Whole Store Front. They occupy the center of the stage, as it were. However, they are rarely advisable unless the store has a width of at least 40 feet.



The Store Front Problem Is Sometimes Complicated by the Necessity of Including a Second Floor Stairway Entrance. Generally speaking, the farther back the stairway can be placed, the better. One of the plans immediately above shows a stairway entrance back of the front show window.



An Attractive Modern Store Front Is Conceded to Be the Merchant's Most Effective Invitation and Display. Builders in every city of the country can secure more store front business by interesting merchants in designs such as those shown on this page.



The Width of Entrance Doorways Is a Factor Which Affects Store Front Design. All the single doorways shown in these store front plans have a width of 3 feet 6 inches and each of the double doors a width of 2 feet 6 inches.

The various store front manufacturers have made a careful study of buyers' psychology and their service departments are exceedingly helpful in providing the best possible solution for any store front problem. One feature of this shoppers' psychology is the fundamental human desire to look at any attractive display. "Window Shopping" is a misleading term if wrongly interpreted. The fact is—especially with the fair sex—that most actual buyers are first "window shoppers." Taking advantage of this, store front designers carry the window displays to such a depth that shoppers are led right to the door and find themselves inside almost as naturally as jellyfish swim with the tide. What woman doesn't want to see the latest in Spring hats? Men are subject to the same psychology applied to the things in which they are most interested—from toys to automobiles; and clothing, too, when special style or price is being sought.

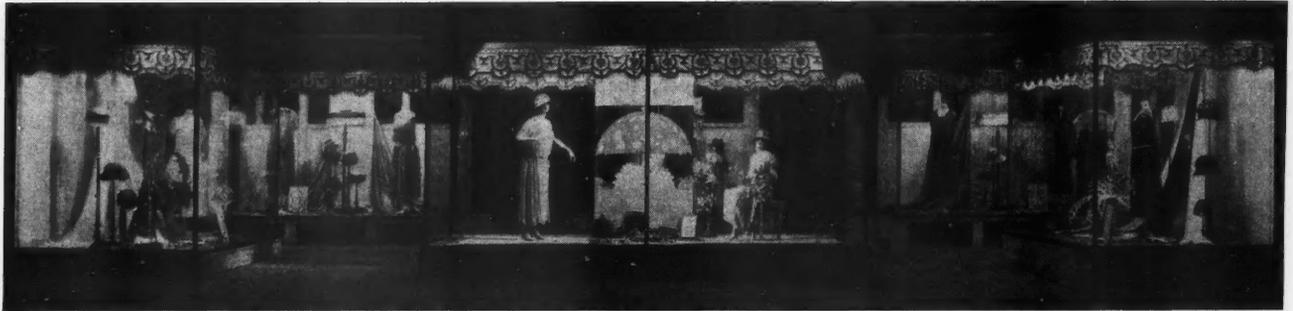
The arcaded entrance probably offers the greatest amount of window display possible, with island show cases as well as the windows which flank the entrance ways.

Most store front construction is of non-corroding metal—usually copper—and the main points of design and construction are to afford the largest possible unobstructed glass area and to so hold this glass in position that expansion and contraction due to

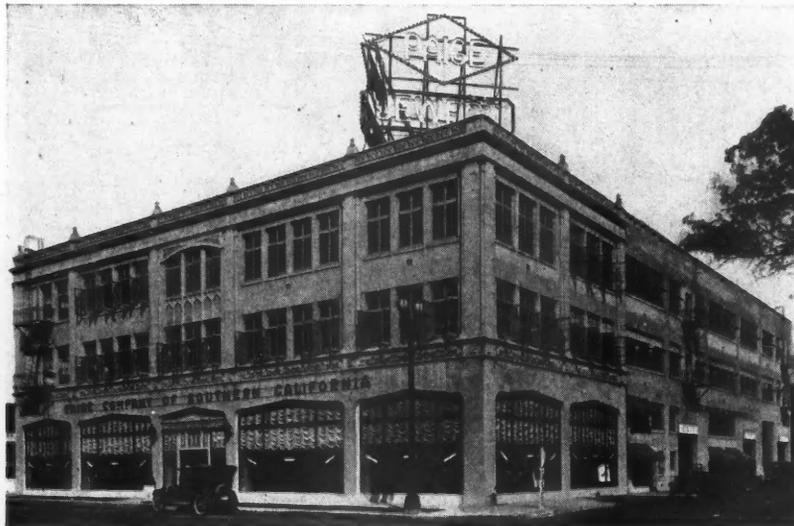
temperature changes will not crack the glass. Good clear plate glass is, of course, an essential. This is held in a resilient grip. Ventilation is provided to equalize the temperature on both sides of the glass and prevent clouding, steaming or frosting of the glass. Drainage is also provided in the design so as to take care of any condensation that may occur and prevent water from drop-



These Show Windows Are Those of the Fifth Street Store, at Fifth and Broadway, Los Angeles, California. Curlett & Beelman are the architects, and the Clinton Construction Company, contractors, on this fine store building. It will be noticed that the windows of this store front are absolutely clear vision, with large sheets of plate glass.



Helena, Montana, Provides a Fine Example of an Arcaded Store Front in the New York Store Building Designed by Raymond C. Grant, Architect. Here the island show case is brought forward to the sidewalk edge and shoppers entering through a commodious entrance on each side of the island face a second set of illuminated display windows half-way to the door. The total display is about equal in size to six of the island show case windows which face the front. There is also an island display window at the back of the one shown in the picture.



Automobile Sales and Service Buildings Make Free Use of Display Windows to Show Their Cars to Passersby. The building illustrated is that of the Paige Company of Southern California. The bulkhead of these windows is placed low enough to afford a clear vision of the cars.

ping upon the inside display. Transoms in prism or ornamental glass panels add greatly to the appearance of the windows and are often used to turn the light rays and provide daylight illumination within the store. Patterned floor tile with non-slip surfaces, decorative ceilings with attractive electric light fixtures, outside marble or terra cotta trim—all these features add to the attractiveness of the entrance and store front as a whole and provide the setting for a fine window display. Individuality of design is essential to the best result and care should be taken to select a design different from those used in neighboring stores.

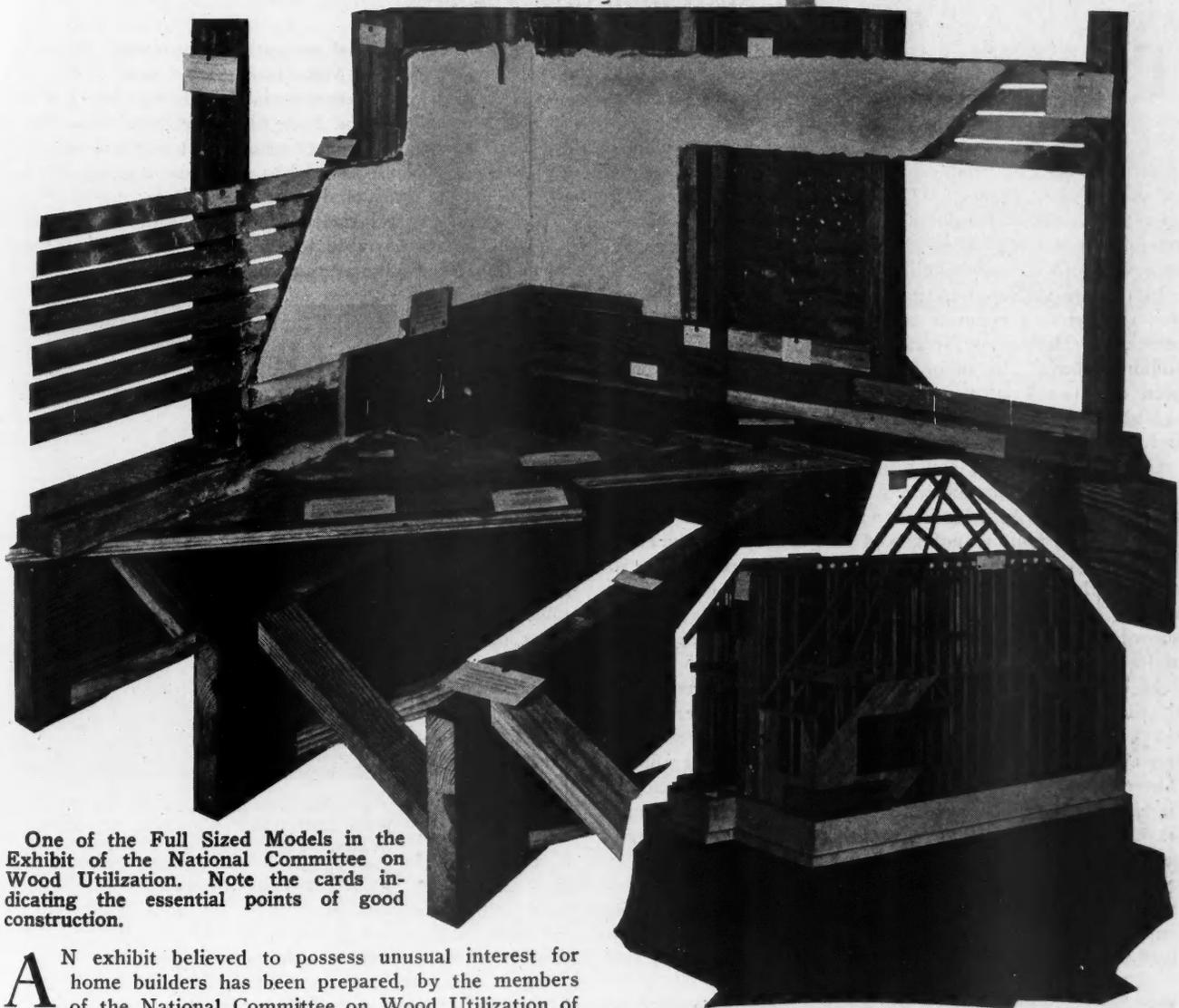
In order to suggest the many possibilities in store front arrangement, an assortment of floor plans is shown on the preceding page. Prospective owners may be able to select from these a type of entrance and store front which appeals to them and can be adapted to their particular needs.

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# This Building Exhibit Teaches Good Construction Methods



One of the Full Sized Models in the Exhibit of the National Committee on Wood Utilization. Note the cards indicating the essential points of good construction.

**A**N exhibit believed to possess unusual interest for home builders has been prepared, by the members of the National Committee on Wood Utilization of the Department of Commerce, for the Washington, D. C., real estate exhibit. This exhibit is devoted to construction processes rather than the finished building.

There are, the Committee points out, frequently obvious and glaring faults in construction which seem to be employed with one purpose in mind, namely: to reduce the cost but maintain a good outward surface appearance. These defects of construction which are usually either the result of ignorance or unskilled labor, and which are hidden after a building has been finished, are fundamental; for it is these defects that cause plaster cracks, floors that squeak and sag, and numerous other faults that come to light after the house has stood for a few years. Methods of guarding against such defects are adequately and interestingly shown in this exhibit.

The majority of small houses are built of either wood frame construction or of wood and masonry construction. Wood studs and floor joists are used in 90 per cent of the houses erected today. The full sized models showing recognized methods of framing the lumber parts of such houses teach lessons that will save home owners money and inconvenience if heeded and applied.

Study of the models shown in the exhibit will afford a means of judging the construction of a house as it is

A Small Model Emphasizing the Advantage of Diagonal Sheathing.

being built and if followed will assist in avoiding endless annoyance and the excessive maintenance costs that so frequently occur. No house can be thoroughly successful unless it combines the four basic elements—efficient plan, good design, good material and sound construction. A growing recognition of thorough craftsmanship and a greater demand for durable houses comes from an understanding of good construction. Through proper construction practices the lumber that goes into house building renders greatest service.

There are many types of house framing in use in various sections of the country, but for practical purposes they may be grouped into three classes, A, B and C. Approved methods of framing these three types, namely: balloon, western and braced frame construction, were shown by large isometric drawings in this exhibit.

Besides the construction features mentioned the economic importance of using end-matched and short-length lumber was also emphasized. Various methods of processing wood that goes into the typical small house likewise were illustrated. The whole purpose of this exhibit is to bring to the public's attention the things that should be known.

# Solve Building Problems with Concrete Masonry

By WYATT B. BRUMMITT

**T**HE remarkable increase in the demand for concrete masonry units during the last few years has been significant of three major achievements of the concrete products industry.

The first of these is that, by close supervision of manufacturing processes, producers are marketing units of standard and reliable quality. This emphasis on real merit has been largely instrumental in realizing the second achievement of the industry—public confidence in concrete masonry as a safe and lasting building material.

In the third place, builders in general have been shown that standardized concrete masonry units are produced in sufficient variation and special forms to meet any and all building needs. In other words, concrete masonry has been established as a definitely useful building material, capable of entering into competition on a par with older and more conventional materials.

Generally speaking, concrete masonry is today divided into two general classifications. The first of these is the concrete block 8 by 8 by 16 or 8 by 12 by 16 inches in size. This type of unit, manufactured in quantity by machines designed to produce a clean-cut, uniform product, is so made with cells or cores that about 40 per cent of its volume is taken up by air space. When a wall is built up according to approved practice, these air spaces are "dead" and afford effective temperature insulation.

In connection with these units, most manufacturers carry in stock a full line of specials designed to facilitate construction. Thus there are block with insets for joists, block to use about door and window jambs, and also corner block. These are all made to comply with the most exacting building codes which usually require that load bearing units have an average crushing strength of at least 700 pounds per square inch. This means that a standard 8 by 8 by 16 unit is required to sustain approximately 90,000 pounds—a load from 10 to 20 times the maximum burden ordinarily imposed on it in building construction. When laid in portland cement mortar, which is usually specified in first rate

work, walls of exceptional strength are produced. Cement mortar should be made with clean graded sand and clean water. Well slaked or commercially hydrated lime is usually added to make mortar more plastic or "fat." For ordinary work a mortar composed of one part portland cement, one part lime and not more than six parts of sand (measured by bulk) is considered satisfactory.

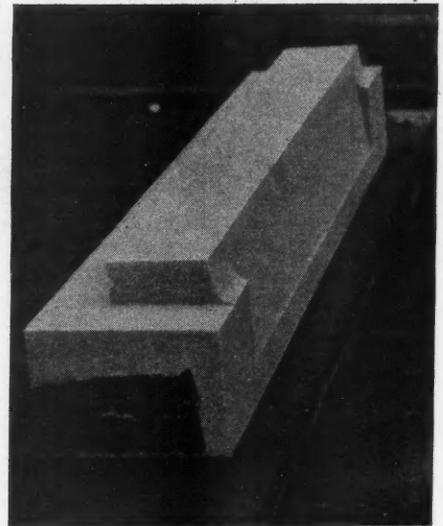
The second general class of masonry units is concrete tile. Tile are comparable to the block, except that they are smaller. Where the average block has a volume equal to some 13 common brick, the standard 5 by 8 by 12 tile replaces six brick. Standard tile, like the larger units, are manufactured with a full complement of special sizes and shapes to meet the problems of building details. A special tile, 4 by 5 by 12 inches, has been put on the market to answer the demand for a specialized partition unit.

Although the conventional block and tile are made with special faces, most users cover them with stucco to achieve surfaces which conform readily with various types of architecture. And in every instance, the sureness with which the units and the cement stucco bond together is a guarantee of satisfactory work.

Supplementing the masonry units already described are the several types of precast concrete lintels, sills, etc., which have all the characteristics of fine stone.

While it is feasible to cast lintels on the job, it is usually found more satisfactory to buy them precast, in proper sizes and lengths to conform with the masonry units used. For openings of more than 3 feet, lintels are reinforced by two or three ½-inch iron bars. In addition to conforming in size with the masonry units employed, precast lintels are supplied with surfaces which correspond exactly to the several types of masonry unit surfaces.

Precast concrete sills are available in the standard and special sizes, to conform, as is the case with lintels, to the type of masonry unit used. Although it is common practice to set the sills as the wall is built, it has been found advisable to insert "slip sills" after the wall has been built up, thus obvi-



**Precast Slip Sills Can Be Used Either with Monolithic Concrete or Masonry Walls. They are slipped in place after the concrete or mortar beneath has gained its full strength.**



**A Severely Simple Wall Treatment. Concrete masonry, on a monolithic foundation, is covered with smooth-textured stucco. The window sill is a precast unit. The window box and its supports are also of concrete.**

Portlan  
concr  
stucco

Solidar  
course

Grade

Cement  
plaster

The

ating the possibility of cracking the sills.

Concrete masonry construction in walls need not stop at the plate level, but can be carried up to the gable ends of a building. If the walls are constructed of faced units, special angled lengths are required at the ends of the gable courses. However, as most masonry houses are stuccoed, the angles at the end of the courses may be filled with monolithic concrete. Under no circumstances, even though covered by wide verge boards, should these angles be left unfilled.

The finished concrete masonry house can be relied upon implicitly for durability and firesafety. It is an efficient house, in the best sense of the word. But the wise builder must remember that no single building material can, alone and unassisted, achieve for him every quality he may wish his home to possess.

The development of up-to-date heating systems assumes a house which does not absorb or transmit heat or cold from or to the outside. There are several plans which achieve walls of high heat insulating qualities, but all of them combine two or more types of construction.

Heat insulation depends largely on the presence of dead air spaces. In concrete masonry walls, air space may run as high as 40 to 50 per cent, but the insulating effectiveness

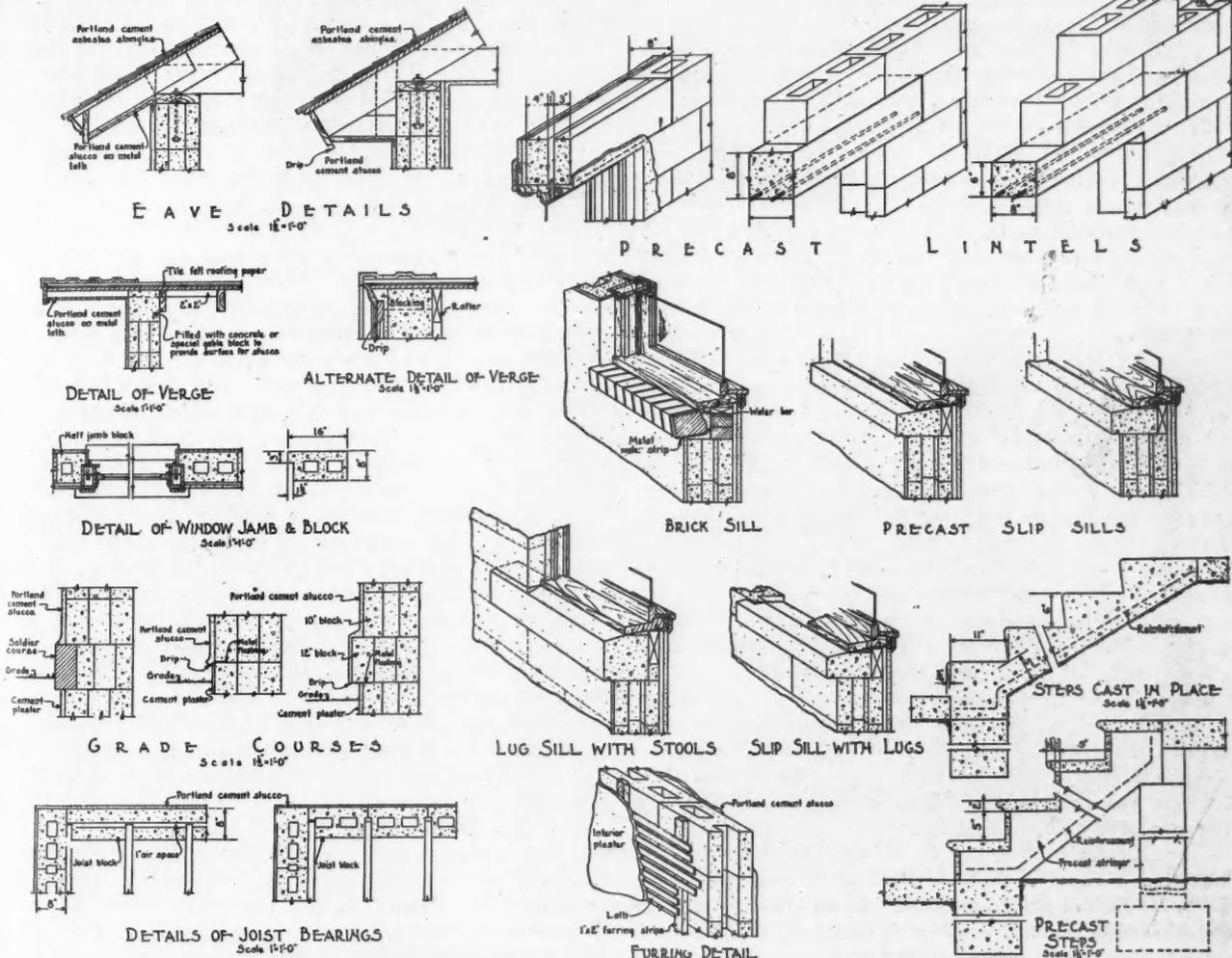


Concrete Tile Build Up Swiftly and Accurately Into All Types of Walls, Bearing or Otherwise. Both partition and main walls of the house under way here are being built of the small, strong and easily handled concrete tile.

of this air space depends on the degree to which this air is kept from moving.

The use of concrete masonry units which provide this kind of air space has resulted in houses which owners find easy to heat. Savings in fuel amounting to 20 per cent have been effected. As an extra precaution, it is wise to use prepared insulation, furred out from the inner wall. There are many types of insulating materials on the market,

(Continued to page 107)



The Above Working Details Are from a Drawing by the Portland Cement Association Which Has Prepared Many Other Helpful Details for Builders. Full details can be had on request.

# DETAILS *f* HOME BUILDING



## The Dutch Colonial Home

By V. L. SHERMAN,  
*Lewis Institute of Technology*

AS a particular design no more popular house exists than the Dutch Colonial. And yet there is apparently more room for improvement. The advantages of liberal design have not been taken. The first point to be made is that many houses have been built in Dutch Colonial style to effect economy, which is quite laudable, but also to affect size, which is not quite so laudable. An 18 by 24-foot house is not improved by trimmings, and Dutch Colonial, simple style, is not found in such a house now-a-days.

There are in general two distinct types, one the town home and the other suburban. In figures 1, 3, 4 and 6 are homes which can be left in the open without harm. The places in figures 1 and 4 would be taken possibly as country homes, parts of little estates. Figure 3 might be a quiet sort of spot for a retiring family. Figure 6 might furnish a home for some less retiring, and in figures 2 and 5 we suspect the owners like to live in town.

The point is this, figure 5 is too trim, or too exact, for a small country home and yet too dependent on natural surroundings to make a good town house. Colonial in wood is not meant to be rigid. Dutch Colonials are not meant to be rigid; but they are likely to congeal from lack of warmth. For precise design in this use brick or stone or tile, not wood, this as regards small houses especially.

The Dutch settlers had a peculiar influence on the early architecture of this country. Their confines on the lower Hudson and through Delaware were less prosperous than their neighbors until the holding corporation had to let go to the Duke of York. They had their troubles as commercial colonies. But Dutch pioneers were and always will be a great help in any community. They worked and were friendly. Of course they prospered.

The east is still full of traditions and signs of those early settlers. Their houses, outside and in, calculate to drive most women into ecstasies, and a great many architects likewise. But some of these greatest lovers of Dutch Colonial put the signs first and determine on the set design which is more numerous, as in figures 5 and 6 and, to mark it well to strangers, give it a stiffness that is neither Dutch nor Colonial.

Figure 2 is one in brick. This house has no gambrel roof. It has been labeled English as I have seen, but in my humble opinion it is first Colonial and then Dutch and a particularly good sample of what the Colonists did when they secured enough brick to build that much wall. The brick did not always hold out. If one has the courage to build this general form with separate dormers and stepped gables it is surely worth trying.

In figure 1 there is the square stone house wall and inner stone chimney. The wall comes breast high in the

second floor and provides sound anchorage for a frame roof. This sided gable end, so common in Colonial homes, is not used much these days. Where plainness is desired it gives just about the right cut to the wall under the gable, strikes well across the window frames (somewhat like half-timbering), and seems to enlarge the dormers. The siding should be wide and colored to set off the lower wall. That is a rather subdued color. The shingles likewise should be not too bright and the blinds in dark green will do the rest. Figure 4 shows a similar design, built not quite so tall and possibly at a little more expense. These two houses are not houses for the town.

A totally different style is shown in figure 3. This example is shown in contrast with such as figure 5. The one in figure 3 makes use of space and lines as the owner desires. Even the little bay at the front is an addition seldom found these days. A small room with the addition of such a bay is nearly doubled in value.

The attractive part of the place to me is its accessibility. It is small but open to out of doors. One side of the bay is a door, a door opens to the south on the long wall and another entrance is near the gate. No doubt the place is small, but its openness gives more comfortable space than many larger houses. Compare this with figure 3 where with the front entrance, and back door, the only extra opening is out of the living room to the porch. For a small house figure 5 is not the equal of figure 3, although much nearer to the modern acceptance of Dutch Colonial.

There is one feature of this style which should always be considered. The chimney is never too large and often very much too small. I cannot imagine a tiled Dutch kitchen with a ventilator without a sizeable chimney. I say I cannot imagine it (although ventilators are really a necessity), unless a lonesome single flue projects above the roof.

There is a modern Dutch Colonial design that strikes me about right, although the type would not have sufficed in the early days. This house is formal, one storied, with a long dormer or a cut gambrel broad-side to the street. The living-room, extending the full breadth of the front, has two double French doors, with long shutters, also facing the street, but no front entrance. When such a plan is arranged for a place sufficiently distant from the road, and with lawn and gardens in front, it is particularly attractive.

The fact should be emphasized that Dutch Colonial is far from being a single type, and my suggestion is that any intending to build in that style can well afford a trip to the east; and like Diederick Knickerbocker in his Kaatskill Mountains, when happening upon a "genuine Dutch family, snugly shut up in its low-roofed farmhouse, under a spreading sycamore," look upon it "as a little clasped volume of black-letter," and to study it with the zeal of a book worm.

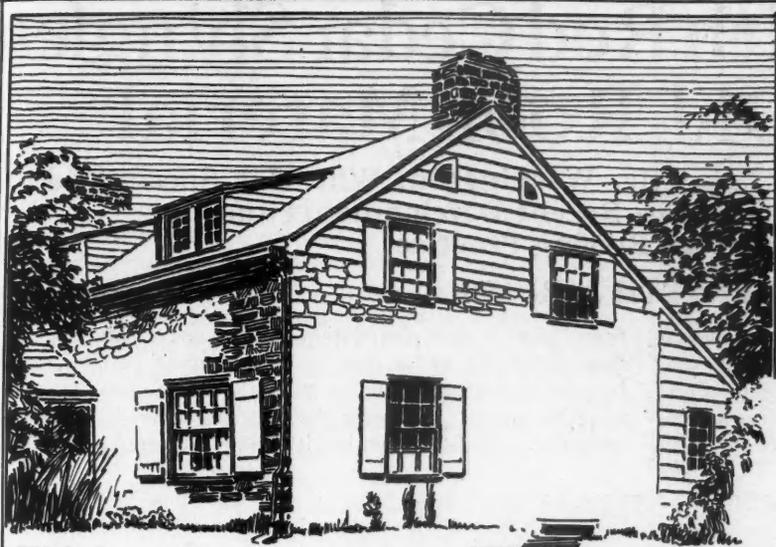


FIG. 1. THE SQUARE STONE HOUSE WITH A LOW ROOF.

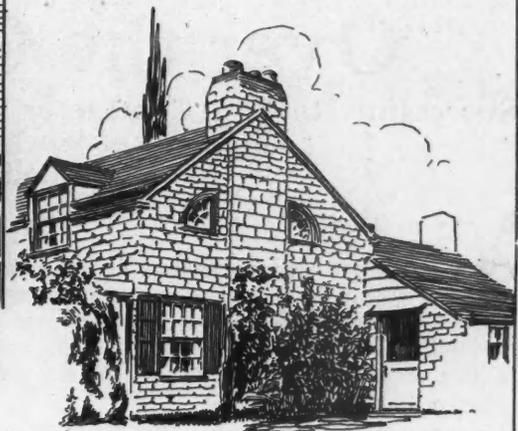


FIG. 4. SIMILAR TO THE HOUSE IN FIG. 1, YET HEAVIER.



FIG. 2. THERE MAY BE SOME QUESTION WHETHER THIS STYLE COMES FROM NORTH OR SOUTH OF HARLEM, BUT IT SURELY IS OF COMPACT CHARACTER.

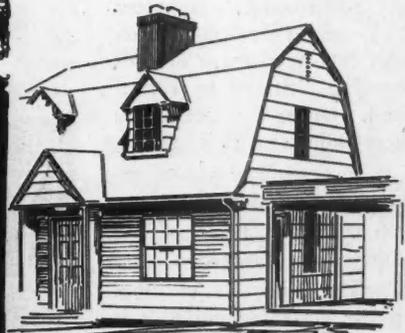


FIG. 5. PRECISION IN A SMALL HOME IS NOT ALWAYS AN ADVANTAGE.



FIG. 6 COMPARE WITH FIG. 5.



FIG. 3. A SQUAT DUTCH FRAME IN UNCONVENTIONAL LINES WHICH ARE GATHERED EASILY UNDER THE GAMBRELS-THERE IS A DIFFERENCE BETWEEN THE TRIM TOWN RESIDENCE AND THE SUBURBAN OUT-OF-DOOR TYPE.

*U. R. Sherman 11-4-22*

The Dutch Colonial Is Far from Being a Single Type and Is Worthy of Serious Study.

# Re-Roofing with Red Cedar Shingles Over the Old Roof Material

Successful Roofing Contractor of Seattle, Washington, Who Has Specialized on This Type of Work Explains Recent Developments and Methods in Re-Roofing Practice

By KENNETH J. BLACK

**T**HERE has been tremendous interest of late concerning recent developments in re-roofing methods, that is, the laying of red cedar shingles over old roofing material. So many inquiries about the matter have poured in that it seems advisable to explain the process fully.

Re-roofing with red cedar shingles over the old roof is by no means an experiment, since hundreds of roofs have already been re-shingled in this way. Also, the advantages are so plain that no advocacy should be needed. Dozens of voluntary testimonials emphasize the home-owners' satisfaction with this new phase of roof covering. Stated in a nutshell, the new process has these points in its favor:

1. It saves the cost of removing the old roof.
2. Dirt and litter of old shingles are avoided.
3. The labor of cleaning up the scattered shingles is saved.
4. It keeps the house protected from storms during shingling.
5. There is a big increase in the comfort of the house.
6. Fuel bills are reduced, with consequent saving of money.

Most of these advantages are so apparent that anybody can perceive them.

Added comfort in the house comes from the additional layer of shingles. Red cedar shingles are one of the best insulating mediums known and an extra covering of them on a house is like a warm overcoat. An air space is created between the two layers of shingles which helps the insulating materially.

One of my customers for whom I did a job of reshingling over his old roof told me later that for the first time in 12 years his upstairs rooms were really livable during very cold spells in winter. Also that on hot summer days the same rooms were much cooler than they had been before. He said he had saved quite a bit of money on his fuel bill and had not needed to let the water run in the upstairs pipes, as he had done before, to keep them from freezing.

One of the surprising things about the new re-roofing method is that it makes the house look more substantial and therefore adds to its value. The old shingles are not allowed to show anywhere and the new shingles give a thickness to the roof that lends it an air of durability backed by reality.

But it is not old shingled roofs alone that may be recovered in this way. Any kind of roofing material that is

firm makes a good foundation for red cedar shingles. All that may have to be done is to cut away possible overhang with a sharp knife, so that it will not show at eaves or gable edges. Whatever the material covered, it is guaranteed against decay because it is now protected against the weather.



In Order That Old Shingles Shall Not Show at the Gables, Cut a Bare Strip Along the Edges and Nail on a One by Two-Inch Batten Which Will Look Like Part of the Trim.

When shingling over an old roof the following things are to be taken care of: In order that the old shingles shall not show at gables, cut a bare strip along the edges and nail on a one by two-inch batten. This batten will look like part of the gable trim and will be on a level with the shingles. It is not necessary to proceed like this where there are eaves-troughs, because these will hide the old shingle-courses. In the roof-valleys nail a long batten, in order to bring the flashing on a level with the old shingles. Lay the new flashing on this. Remove the old flashing around all chimneys and dormers and tack on new material; then proceed as you would ordinarily. At the ridges remove the top course of the old shingles, turn them end for end and nail them on again with their butt ends up. This will level the way for the new shingle courses.

Endurance of red cedar shingle roofs depends on

these things; quality and thickness of shingle used, kind of nails employed, grade of workmanship and method of laying. Since all four factors dictate how long any roof shall last it is important to observe them all in relation to shingling required to last a stipulated time.

Shingles are made in three lengths: 16, 18 and 24 inches. Their thickness ranges from 6-2 (meaning that six shingle butts laid one on top of another will measure two inches in thickness) to shingles one inch thick each; 6-2 shingles, if used for roofs, should be expected to last up to 15 years; 5-2 shingles, five butts to two inches, have a probable life of 25 years; 4-2 shingles should last 50 years; shingles 9/16 of an inch in thickness should have a life of from 60 to 75 years, and shingles one inch thick should last 100 years.

The longer shingles (18-inch and 24-inch) are economical because of their greater covering range, less labor in laying and larger weather exposure. Quality, to a great extent, dictates weather exposure, but the 16-inch shingles are generally laid 4½ inches to 5 inches to the weather, the 18-inch are laid 5 inches to the weather and the 24-inch are laid 7½ inches to the weather.

There are edge and flat grain shingles. Edge grain shingles, cut with the natural grain of the wood, will not warp or curl to exposure and are therefore the kind mainly used for roofs. Flat grain shingles, not so dependable for roofs, give satisfaction for such purposes as wall covering. In roofs that are to last edge grain shingles are of course demanded.

Singles should be spaced at least  $\frac{3}{8}$  inch apart. Joint-breaks (side-lap) should be about  $1\frac{1}{2}$  inches and no break come directly over another on any three consecutive courses.

The long life of red cedar shingles is deserving of nails as lasting. Ordinary wire shingle nails have an average life of from 7 to 12 years only, and are therefore not suited to 50-year shingles. Hot-dipped galvanized or copper-bearing nails should be used. With shingles over a half inch thick at the butts it is profitable to use solid copper nails. With 100-year roofs, only solid copper nails should be employed.

The length of nail I use most is five penny. The regular shingle nail is three penny. Before starting nail driving, locate the sheathing under the old shingles, so that nail points may find a home. Also break joints with a good regard to the joints in the old shingle courses. Any length of shingle may be used and should be the best quality obtainable. The old shingles should be in fair condition, so as to yield a firm foundation for the new ones.

Flashings are important in roofs that are to last. Heavily coated tin flashings around chimneys are required. Ridge rolls and valleys should have either copper, or at least 20 gauge, heavily galvanized iron flashings.

Sheathing has an influence on roof endurance. Tight sheathing with red cedar shingles is good construction, but in general shingle roofs demand lighter rafters and under-structure than any other kind of roofing. Except in severe climate no roofing paper is needed. One by three or one by four-inch boards may be spaced:  $4\frac{1}{2}$  inches to 5-inch centers for 16-inch shingles;  $5\frac{1}{2}$ -inch centers for 18-inch shingles; and  $7\frac{1}{2}$ -inch centers for 24-inch shingles.



**Remove the Old Flashing Around All Chimneys and Dormers and Tack on New Material, Then Proceed as You Would Ordinarily.**

I find there are many uses around a house for red cedar shingles that are money-saving and practical besides their re-roofing advantages. Old stucco walls, cracked and discolored, may be covered with them and made to look fine. In fact, any wall, weather-beaten and dusty, may be renovated with shingles, which take stain wonderfully. The house will be much warmer and cozier and the saving effected is one that no builder can afford to overlook.



## Concrete Masonry

*(Continued from page 103)*

almost any one of which may well be used in conjunction with the masonry. The best of these are not affected by moisture, are incombustible and do not afford refuge for vermin. When insulators are furred out from the interior surface of a wall, it is important to provide for fire stops at floor and ceiling lines. Otherwise the space between insulator and wall might serve to act as a chimney or flue for fires originating in the lower floors.

Insulation in houses, however, is not pre-eminently a matter of wall construction. Warm air automatically seeks to escape by rising. There are many instances of shacks being thoroughly comfortable in the coldest weather because their roofs were covered with sheets of snow, although the walls were flimsy. It is plain, therefore, that the man who seeks to make great savings in heating costs will build his ceilings and roof to prevent the transmission of heat.

Cool in summer, warm in winter. These are matters of comfort which are increasingly demanded by civilized men. To a large degree, the man who makes intelligent use of his building materials can achieve summer and winter comfort, without high expense and with permanent satisfaction.



## Indianapolis Plans Home Show

**T**HE Indianapolis Home Builders' Association, which holds a large and well attended Home Show each year at the Indiana State Fair Ground, has decided to hold the 1928 show during April 7 to 14, inclusive. The Southern Pine Association will co-operate with the association in erecting, in the center of the show, a full-sized house built of lumber, largely southern pine, and incorporating the "Fifteen Points of Good Construction" fostered by the Southern Pine Association.

In addition, the Southern Pine End-Matched Bureau will co-operate with the result that a very large part of the lumber in the house will be end matched yellow pine. The end matched lumber will be used in storm sheathing, roof sheathing, sub-floors and floors and porch ceiling.



**In the Roof Valleys Nail Another Batten in Order to Bring the Flashing on a Level with the Old Shingles and Lay the New Flashing on Top of This.**

# INSTRUCTIONS in ROOF FRAMING



## Cutting the Hip Rafter

By JOHN T. NEUFELD

**T**HE problem of finding the length of hip rafters has been discussed in the last few lessons. Having found the length of a hip rafter, we must also learn how to cut the rafter, that is, what numbers to use on the square in order to obtain the different cuts. We know from looking at the different illustrations that the cut at the top or at the upper end of the hip rafter requires a side cut as well as a plumb cut. Then there is also the question of backing the hip which must be taken into consideration when cutting the hip rafter.

Figure 1 shows a hip roof having a span of 16 feet. This roof has a 9-inch rise per foot run of the common rafter. This gives a 9-inch rise for 17 inches of run of hip. We therefore use 9 inches on the tongue and 17 inches on the blade to obtain the bottom and top cuts of the hip rafter. The application of the square on the side of the hip is illustrated in Figure 2.

The rule usually given for obtaining the side cut at the upper end of the rafter is as follows: "Take the run of the hip on the tongue of the square and the length of the hip on the blade of the square and apply the square with these figures on the back of the rafter, marking along the body of the square." In order to explain this rule we have drawn a plan view of the hip roof, in Figure 3, and an isometric view in Figure 4.

If the roof was flat like a floor, then the hip rafter would require a 45-degree cut and the square as is shown indicates that the run of the hip, taken both on the tongue and on the blade of the square, could be used to lay out this 45-degree cut. If, however, the rafter, in place of being flat, takes on a pitch, then the side cut of the rafter changes. In Figure 4 we show the square with the tongue in the same position as in Figure 3, but with blade raised to coincide with the upper edge of the hip rafter.

Now the blade of the square will measure the length of the hip in place of the run, which is  $12 \frac{13}{16}$  feet in place of  $11 \frac{5}{16}$  feet. The tongue of the square in this position is at right angles to the run of the hip and the body of the square is along the length of the hip. The distance on the tongue is the same as the run of the hip. Therefore, the above rule mentions the run of the hip as taken on the tongue of the square.

Another way to apply this rule is to take 17 inches on one arm of the square and the length of the hip per foot of run of common, on the other arm of the square. This gives the same bevel. It, however, requires a square having an 18-inch tongue. Figure 5 shows the application of the square on the back of the hip rafter to mark for a side cut.

The length of the hip rafter as we usually figure it

is taken to the center point (A) as shown in Figure 6. In order to get the exact length of the hip, we must deduct  $1 \frac{7}{32}$  inches on the horizontal line as shown on the right hand side of Figure 6.

Before the hip rafter is complete, it must be backed, that is, the upper edges must be bevel or it must be lower at the seat in order to make the upper edges come even with the upper edges of the common rafter. This point will be discussed in our next lesson.

### Problems

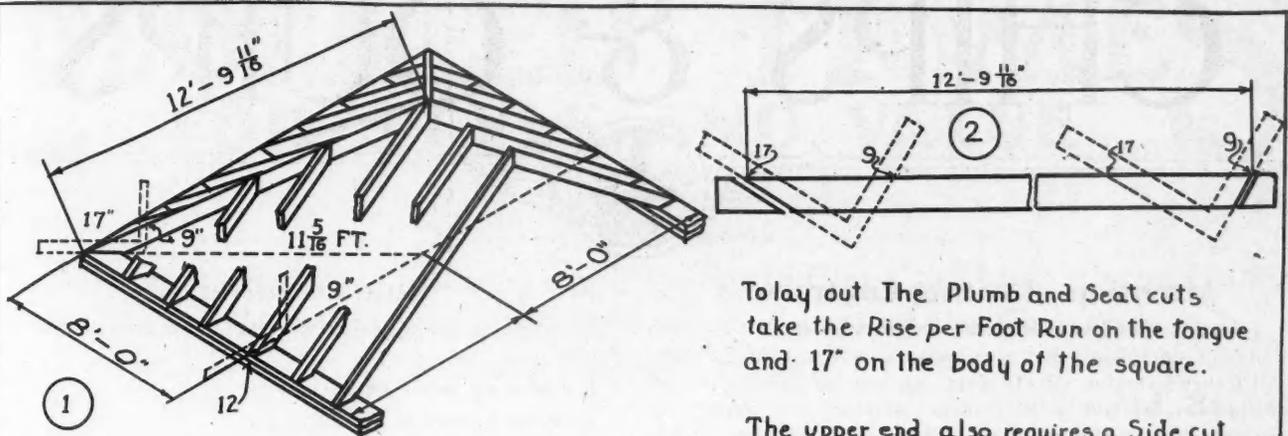
1. What is the length of a hip rafter with a 7-inch rise per foot run, for a roof 26 feet wide? Note: The length per foot run is 18.36 inches.
2. What numbers on the square will give the top and bottom cuts for the hip rafter of the above problem?
3. What numbers on the square will give the side cut for the above rafters?
4. The run of a hip rafter is 12 feet 6 inches, and the length of the hip rafter is 15 feet. What numbers on the square will give the side cut?
5. A roof is 19 feet wide. The rise per foot run is 10 inches. What is the length of the hip and what numbers taken on the square will give the top and bottom cut and what numbers will give the side cut. Note: The length per foot run for the hip rafter of this pitch is given in Figure 1.

### Answers

1. The length of the hip rafter is  $18.36 \times 13 = 238.68$  inches or 19 feet  $11 \frac{1}{16}$  inch.
2. The numbers 7 and 17 will give the top and bottom cuts for the hip rafter having a 7-inch rise per foot run of common rafter.
3. The length of hip per foot of run common is 18.36 inches; therefore according to the second rule given, the numbers 17 and 18.36, say  $18 \frac{1}{2}$  inches, taken on the square will give the side cut.
4. The numbers 15 and  $12 \frac{1}{2}$  taken on the square will give the side cut, marking along the arm of the square on which the 15 is taken.
5. The length per foot run of the hip rafter is 19.69 inches. The length would be the length per foot run times the run which in this case is  $9 \frac{1}{2}$  feet. Therefore the length would be  $19.69 \times 9 \frac{1}{2} = 187.05$  inches or 15 feet  $7 \frac{1}{16}$  inches.

The numbers 10 and 17 on the square may be used to obtain the top and bottom cuts.

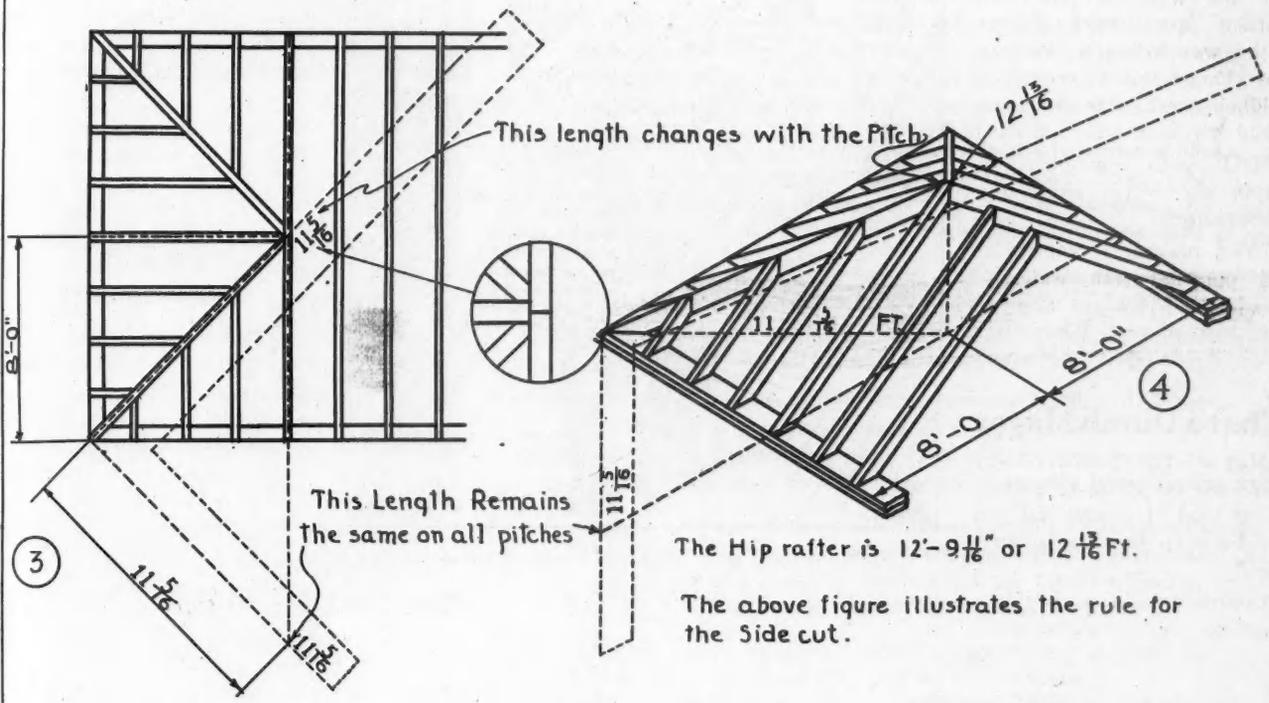
The numbers 17 and 19.69, say  $19 \frac{3}{4}$  inches, taken on the blade will give the side cut.



To lay out The Plumb and Seat cuts take the Rise per Foot Run on the tongue and 17" on the body of the square.

The upper end also requires a Side cut. This is described below.

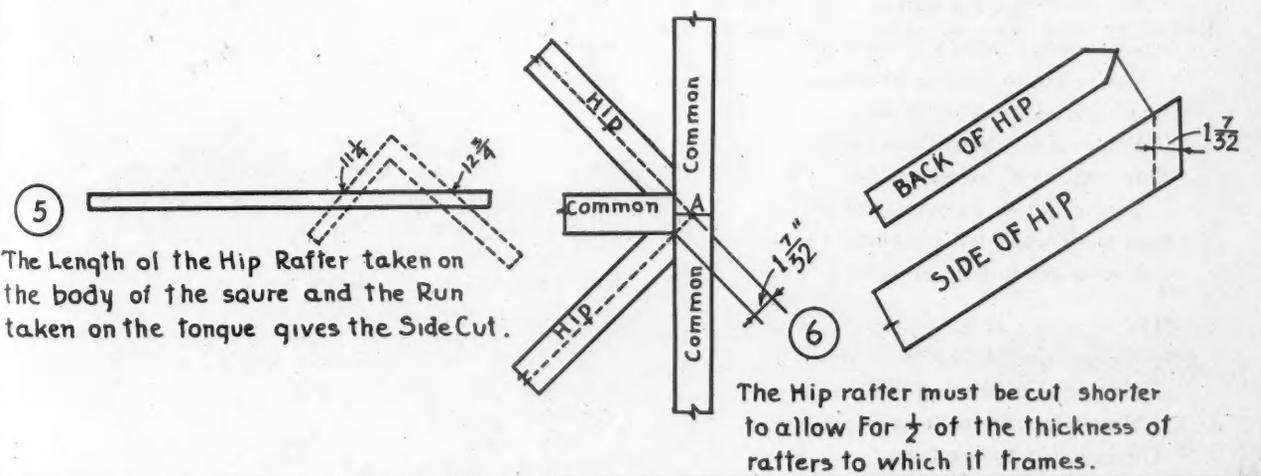
The Rise per Foot Run is 9". The Run is 8'-0".  
 The Total Rise is  $9 \times 8 = 72" = 6'-0"$   
 The Length of Hip per Foot Run of Roof -  $\sqrt{17^2 + 9^2} = 19.21"$   
 The Length of Hip is  $19.21 \times 8 = 153.68" = 12'-9 \frac{11}{16}"$



This length changes with the Pitch.

This Length Remains the same on all pitches

The Hip rafter is  $12'-9 \frac{11}{16}"$  or  $12 \frac{13}{16}$  Ft.  
 The above figure illustrates the rule for the Side cut.



The Length of the Hip Rafter taken on the body of the square and the Run taken on the tongue gives the Side Cut.

The Hip rafter must be cut shorter to allow for  $\frac{1}{2}$  of the thickness of rafters to which it frames.

Diagrams Explaining the Correct Method of Obtaining Cuts on Hip Rafters.

# CHIPS & QUIPS



## Attention—Heating Contractors

Johnny's grandma lived with the family, and it was her constant complaint that the house was too cold for her. All father's stoking efforts were fruitless, so Johnny turned to heaven for aid. "God bless Mamma and Papa," he prayed, "and make me a good boy—and, oh, dear Lord, make it hot for Grandma."—*Columns.*



## Learning City Ways

Louisa, the colored kitchen maid, was from the country, but she was energetic and learned fast. Part of her duties was to water the fern and change the water in the goldfish bowl. Her mistress asked her on the second day:

"Did you remember to empty the water under the refrigerator?"

"Yes, ma'am, I emptied it and put in fresh water."—*Charleston News and Courier.*



## What a Dumb Mayor

Mayor—The public library you built is falling to pieces! What kind of mortar did you use between the bricks, anyway?

Contractor—Why, I didn't use mortar! I used library paste, of course!—*Exchange.*



## Keep On

"An inch won't make you very tall,  
You've got to keep on growing;  
One little ad won't do at all,  
You've got to keep them going.  
One step won't take you far,  
You've got to keep on walkin';  
One word won't tell folks who you are,  
You've got to keep on talking.

"The constant drop of water  
Wears away the hardest stone;  
The constant gnawing—"Towser"  
Masticates the toughest bone;  
The constant cooing lover  
Carries off the blushing maid;  
And the constant advertiser  
Is the one who gets the trade."

## Rule for Drivers

An arm protruding from the car ahead means that the driver is—

1. Knocking ashes off a cigarette.
2. Going to turn to the left.
3. Telling a small boy to shut up, he won't buy any red pop.

4. Going to turn to the right.

5. Pointing out a scenic spot.

6. Going to back up.

7. Feeling for rain.

8. Telling his wife, hell, yes, he's sure the kitchen door is locked.

9. Saluting a passing motorist or going to stop.—*Life.*



## A Builder's Temptation

Parson—Why do you desire to join the church?

Rastus—Pahson, I'se got a job puttin' a roof on a chicken house and fencin's a watermelon patch,—an' I needs strengthenin'.



(Reprinted by permission of the Chicago "Tribune.")

## The Part He Played

The speaker was delivering a lecture on forestry. "I don't suppose," said he, "that a single person here has ever done anything to conserve our valuable timber."

There was silence for a second and then a meek little man at the end of the hall arose and observed:

"I once shot a woodpecker."



## Quite Right

Ole Oleson, track-walker, was supposed to be testifying after a bad head-on collision.

"You say," thundered the attorney, "at ten that night you were walking up toward Seven-mile Crossing and saw Number 8 coming down the track at 60 miles an hour?"

"Yah," said Ole.

"And when you looked behind you, you saw Number 5 coming up the track at 60 miles an hour?"

"Yah," said Ole.

"Well, what did you do then?"

"Aye got off the track."

"Well, but, then, what did you do?"

"Vell, aye say to mineself, 'Dis bane h—I of a way to run a railroad.'—*Illinois Central Magazine.*

Copyright, 1927, by William A. Radford, New York and Chicago.  
Pat. March 15, 1921, and Sept. 30, 1924.  
ColorKeed Plan Patented April 19, 1927.

# COLORKEED HOMES

## FOR STYLE AND VALUE

TRADE MARK  
Registered in U. S. Patent Office.

*"The Men of the Building Industry can 'Play Santa Claus' to Themselves and to the Entire Community by Talking Home Building all the Time and to Every Possible Prospect."*

—William A. Radford

CHRISTMAS is the time for home planning and for the fullest enjoyment of home life. At the request of several of our readers we are presenting again the special Christmas home poem which was written by a member of our editorial staff and first published in the American Builder, December 1924.

### Christmas at Home

O Builder, make a picture, make me a plan to picture  
A neat New England mansion or Spanish bungalow,—  
Cement or brick or lumber, with rooms in goodly number,  
And a green lawn like velvet, where tree shadows come and go.

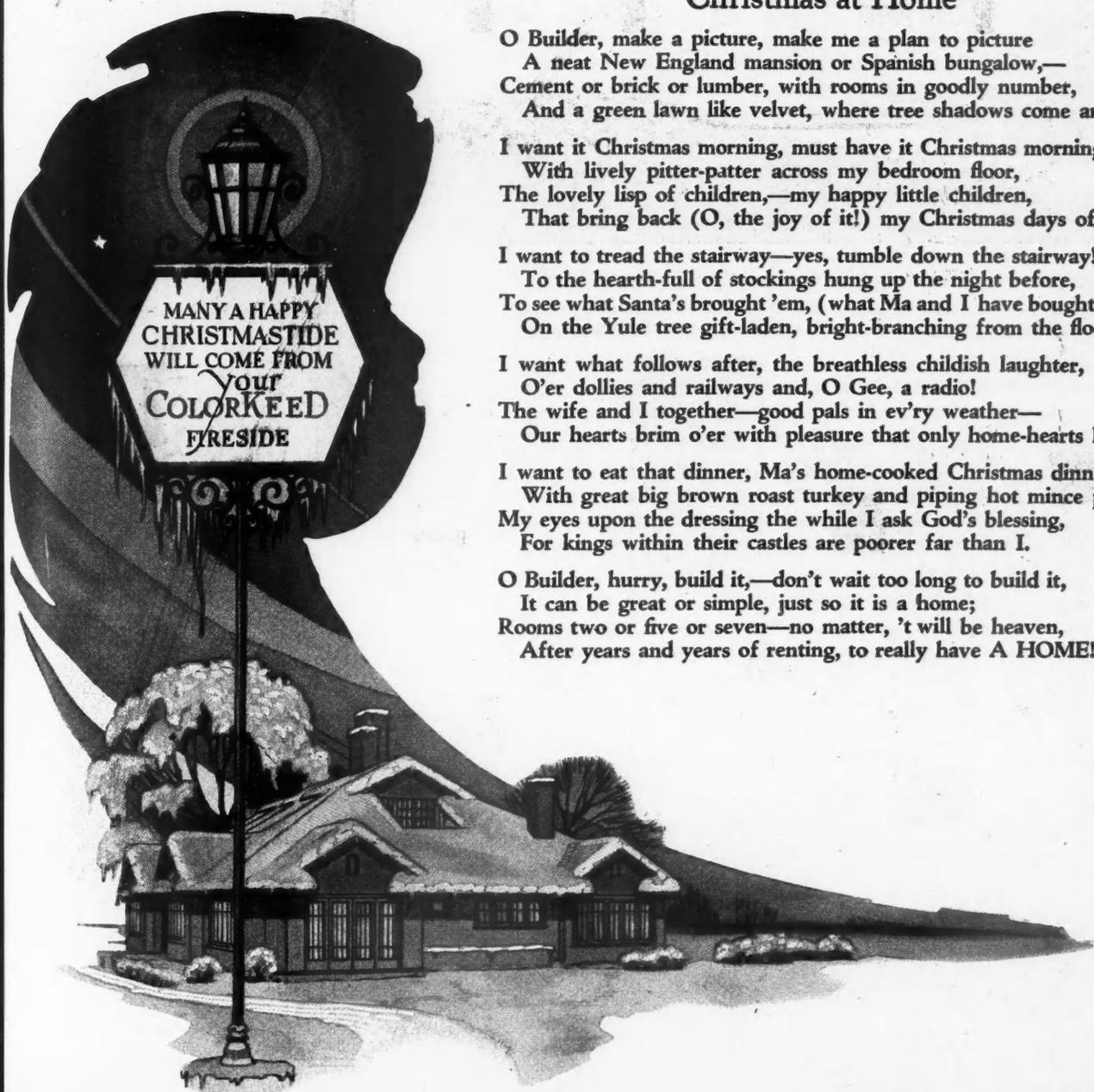
I want it Christmas morning, must have it Christmas morning,  
With lively pitter-patter across my bedroom floor,  
The lovely lisp of children,—my happy little children,  
That bring back (O, the joy of it!) my Christmas days of yore.

I want to tread the stairway—yes, tumble down the stairway!  
To the hearth-full of stockings hung up the night before,  
To see what Santa's brought 'em, (what Ma and I have bought 'em!)  
On the Yule tree gift-laden, bright-branching from the floor.

I want what follows after, the breathless childish laughter,  
O'er dollies and railways and, O Gee, a radio!  
The wife and I together—good pals in ev'ry weather—  
Our hearts brim o'er with pleasure that only home-hearts know.

I want to eat that dinner, Ma's home-cooked Christmas dinner,  
With great big brown roast turkey and piping hot mince pie;  
My eyes upon the dressing the while I ask God's blessing,  
For kings within their castles are poorer far than I.

O Builder, hurry, build it,—don't wait too long to build it,  
It can be great or simple, just so it is a home;  
Rooms two or five or seven—no matter, 't will be heaven,  
After years and years of renting, to really have A HOME!

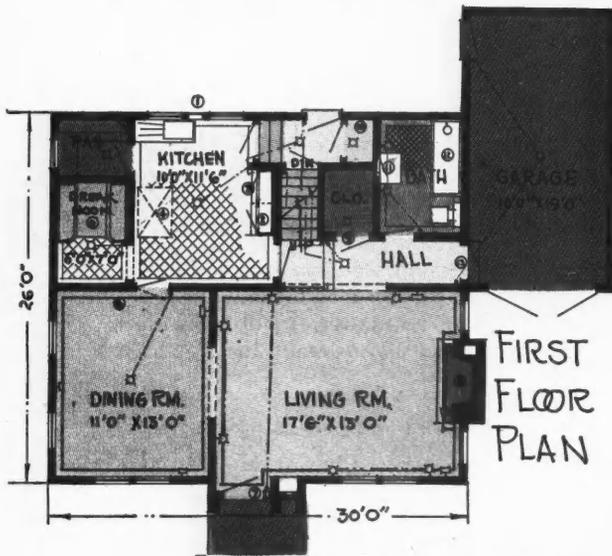




## The NANTICOKE

A MODIFIED Colonial home with attached garage. The flat roof dormers breaking the cornice line are a novel feature of this design. Six rooms and two baths are provided in 26x30 feet.

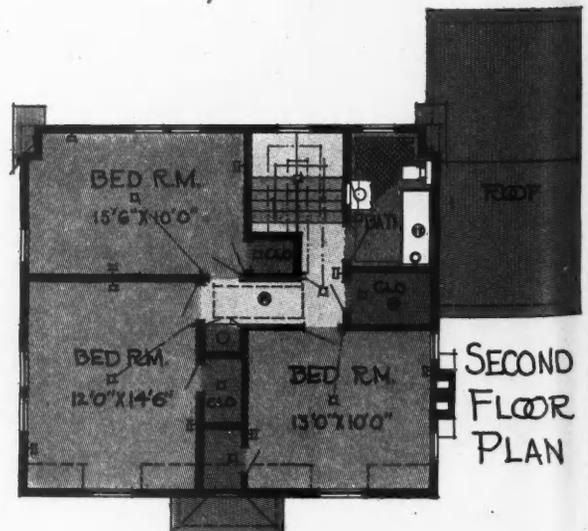
**COLORKEED**  
HOME PLANS  
TRADE MARK

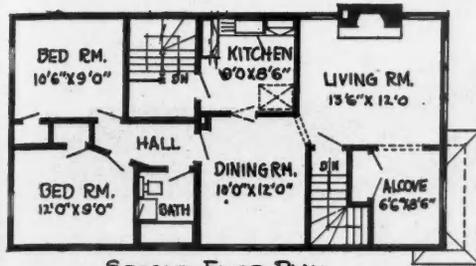


	Living Room		Closet
	Dining Room		Bed Room
	Kitchen		Bath and Lav.
	Pantry		Porch
	Halls		Roof

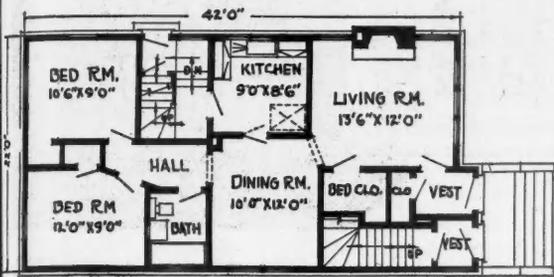
### Key to Equipment

- |                               |                       |                          |
|-------------------------------|-----------------------|--------------------------|
| ① Kitchen Ventilating Fan     | ⑪ Medicine Case       | Clothes Drier            |
| ② Kitchen Cabinet             | ⑫ Tub Shower          | Coal Chute               |
| ③ Refrigerator                | ⑬ Fireclad Door       | Heating Plant            |
| ④ Gas or Electric Range       | ⑭ Disappearing Stairs | Oil Burner               |
| ⑤ Breakfast Nook              | ⑮ Cedar Lined Closet  | Water Supply System      |
| ⑥ Thermostat                  | Weatherstrips         | Hot Water Supply         |
| ⑦ Built-in Mail Box           | Storm Sash            | Water Softener           |
| ⑧ Fireplace Throat and Damper | Screens               | Radiant Gas Heaters      |
| ⑨ Mirror Door                 | Lighting Fixtures     | Casement Windows         |
| ⑩ Broom Closet                | Convenience Outlets   | Dishwashing Sink         |
|                               | Electric Panel        | Automatic Cellar Drainer |
|                               | Washing Machine       |                          |





SECOND FLOOR PLAN



FIRST FLOOR PLAN



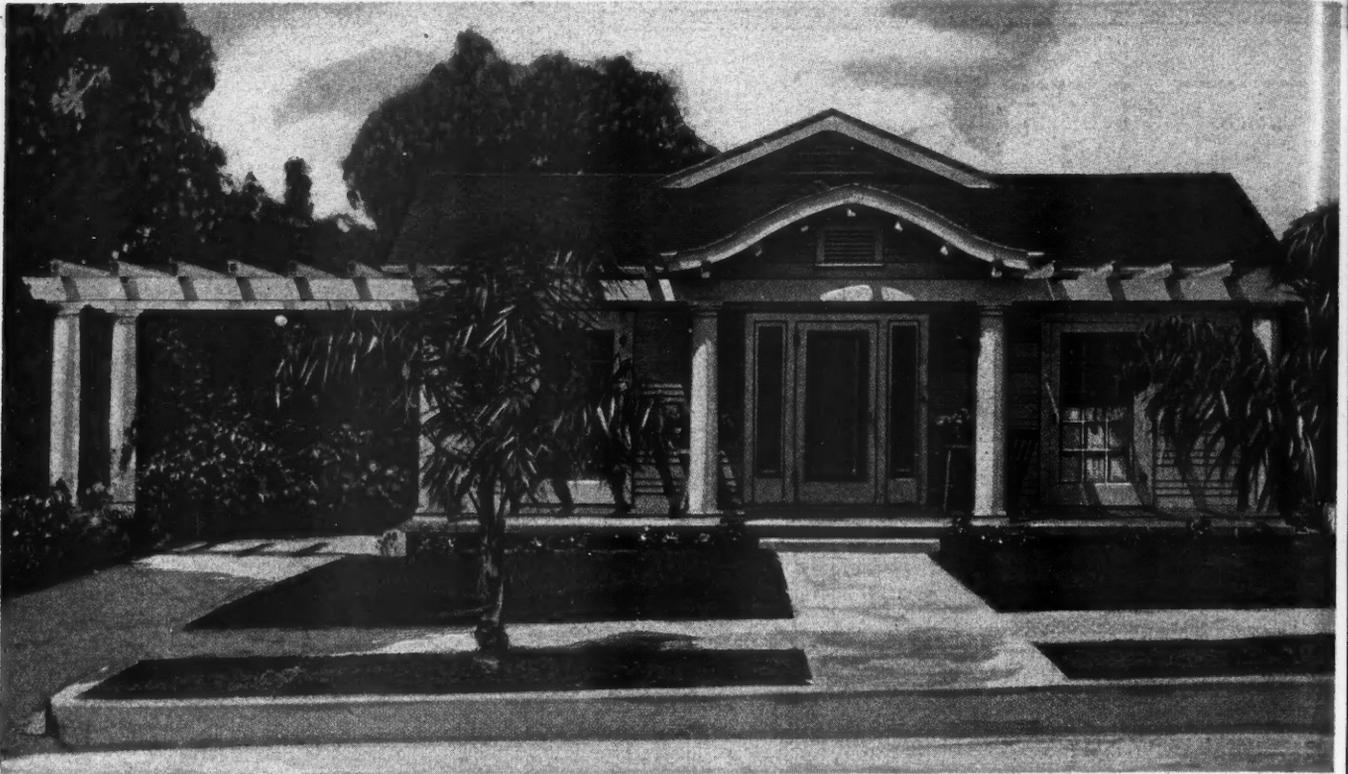
## The NAYLOR

A TWO-APARTMENT building of the private residence type is presented. The width is only 22 feet, depth 42 feet, making this a practical plan for the average narrow building lot. Five rooms and bath are contained on each floor, all rooms well lighted and conveniently arranged. The layout is similar upstairs and down except that the upper living room has an alcove addition over the first floor vestibules. Notice that the service stairs are contained within the lines of the building, avoiding the open rear stairs which are objectionable in many residential neighborhoods.

This building is designed with a high basement so that there is considerable space below for laundry, store rooms and heating plant. The exterior of the building is attractively designed, yet is so simple in its outlines that construction expense is low. A building of this style makes an excellent investment. It is a home which pays for and maintains itself through the income derived from the rentable apartment. Lampland Lumber Company, Architects.

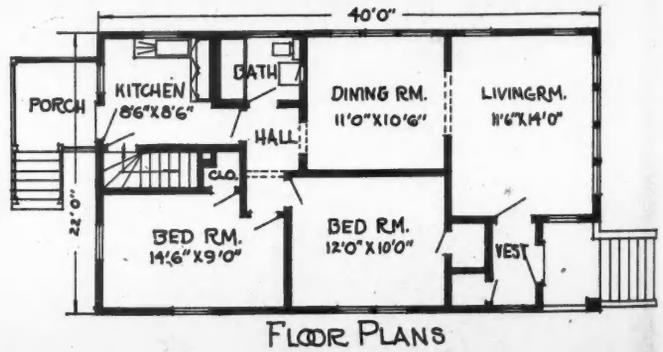


ND  
OR  
AN



**The NEVILLE**

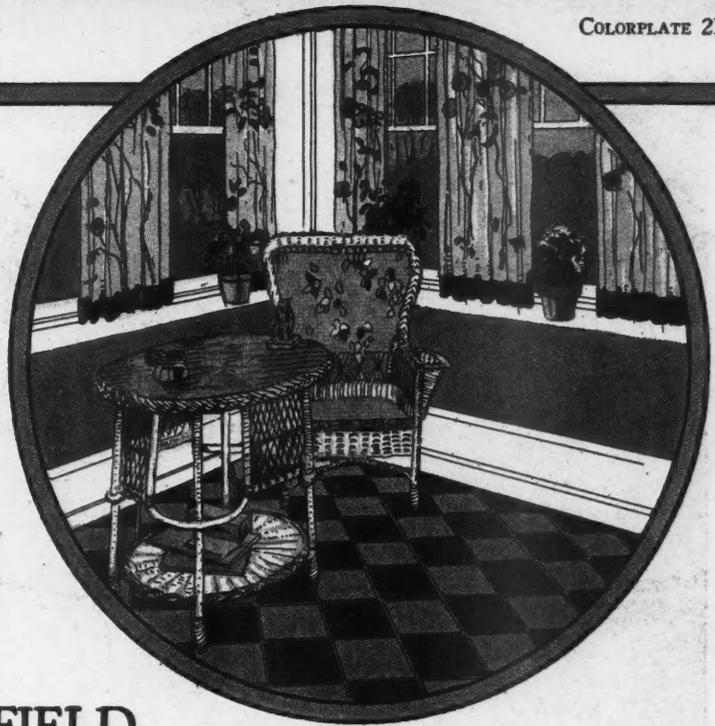
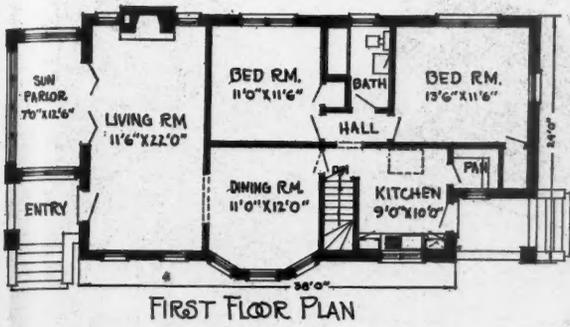
ABOVE and to the left we present a pretty four-room bungalow with pergola front.



**The NEWBURGH**

BELOW and to the right is offered a low cost stucco home 22 x 40 feet containing five rooms and bath.





Floor plan of "The Newfield" showing convenient arrangement and good lighting of the five rooms, sun parlor and bath.  
 Color sketch to right gives a glimpse of the cheerful sun parlor with appropriate drapes and furniture.

## The NEWFIELD

A BRICK bungalow of substantial construction and attractive lines is illustrated below. It is what the people want, in that the front of the house contains an extra large living room, 11½ feet wide by 22 feet long, with the sun parlor opening from the side through double accordion folding doors adding a delightful sunny space of 7x12½ feet. Then opening the other way through a cased opening the dining room, with its big bay window, adds still more to the impressiveness of the front or company side of this design. Two bedrooms of good size and bathroom are well separated from the front of the house, yet are conveniently reached through the dining room. The kitchen with its back porch occupies the fourth corner of the layout.

The stairs to the basement are convenient from both the front of the house and from the kitchen. It is getting to be the style to finish off the front of the basement as a game room, children's room or an office or den for the man of the house. The rear part of the basement should be partitioned off, giving a space for laundry, heating plant, etc.

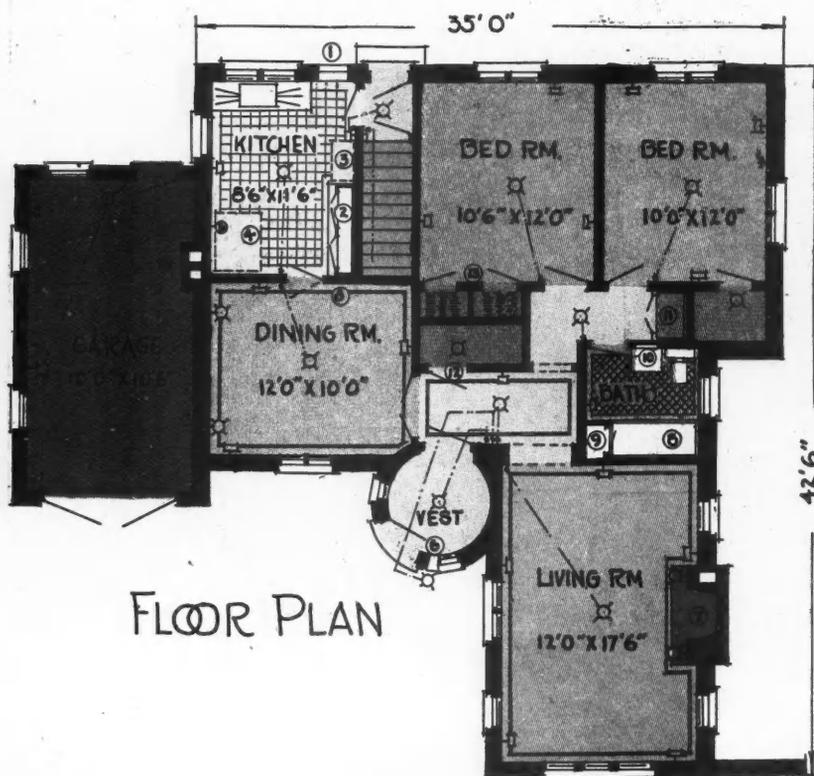
The exterior construction is of light color face brick, Indiana limestone trim and green tile roof.





## The NEWKIRK

A HOME design from old Normandy which is being taken up as the latest word for smart American homes by many architects and builders. This design presents five rooms and bath besides the round tower vestibule and the attached garage.



FLOOR PLAN

## COLORKEY HOME PLANS

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

### Key to Equipment

① Package Receiver	Screens
② Kitchen Cabinet	Lighting Fixtures
③ Refrigerator	Convenience Outlets
④ Gas or Electric Range	Electric Panel
⑤ Thermostat	Washing Machine
⑥ Built-in Mail Box	Clothes Drier
⑦ Fireplace Throat and Damper	Coal Chute
⑧ Tub Shower	Heating Plant
⑨ Towel Case	Oil Burner
⑩ Medicine Case	Water Supply System
⑪ Cedar Lined Closet	Hot Water Supply
⑫ Mirror Door	Water Softener
⑬ Efficiency Ward-rob	Radiant Gas Heaters
Weatherstrips	Casement Windows
Storm Sash	Dishwashing Sink
	Automatic Cellar Drainer



**M**ANY good ideas for interior woodwork and furnishings can be gleaned from these photographs, one of a compact kitchenette breakfast room, the other of an entrance hall.

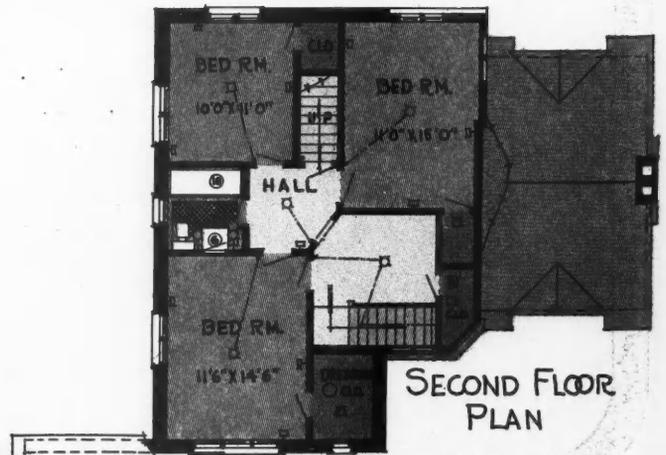
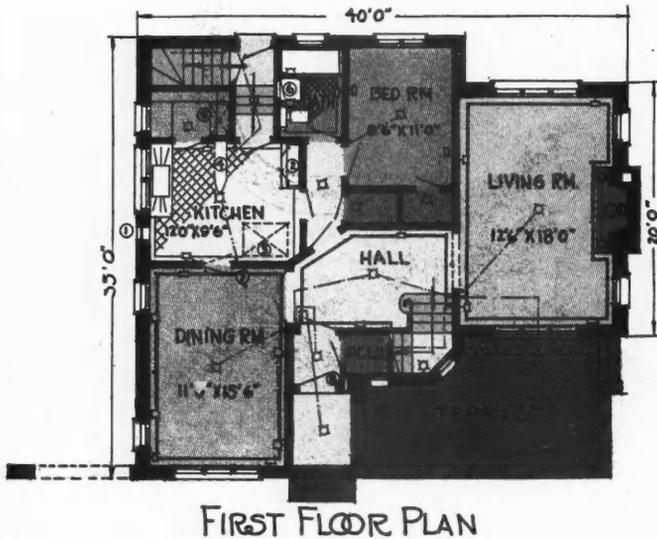


## The NEWTON

A HOUSE of stone is the ideal of many and at present day prices can be easily attained in many localities. Above is an English design containing seven rooms and two baths.

### COLORKEY HOME PLANS

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



### Key to Equipment

- |                           |   |
|---------------------------|---|
| ① Ventilating Fan         | ⑥ Fireplace Throat Heating Plant          |
| ② Kitchen Cabinet         | ⑦ and Damper Oil Burner                   |
| ③ Gas or Electric Range   | ⑧ Tub Shower Water Supply System          |
| ④ Built-in Ironing Board  | ⑨ Weatherstrips Hot Water Supply          |
| ⑤ Mechanical Refrigerator | ⑩ Storm Sash Screens Water Softener       |
| ⑥ Medicine Case           | ⑪ Lighting Fixtures Radiant Gas Heaters   |
| ⑦ Thermostat              | ⑫ Convenience Outlets Casement Windows    |
| ⑧ Built-in Mail Box       | ⑬ Washing Machine Dishwashing Sink        |
|                           | ⑭ Clothes Drier Automatic Cellar Drainer. |
|                           | ⑮ Coal Chute                              |

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# OUR FRONT COVER HOME



## *A Dutch Colonial Design Offering Seven Rooms, Sun Parlor and Nursery for the Family Requiring Ample Living Accommodations*

**T**HOUGH exceedingly small houses seem to be the order of the day and most certainly receive most of the attention of those who prepare plans, there still is a considerable demand for more commodious homes to provide real comfort for the larger families. Such a house is to be seen in the plans of Our Front Cover Home this month. Here is a Dutch Colonial which will strongly appeal to those who are not carried away by the vogue for tiny, apartment-like houses and require more rooms than the very small house affords.

In addition to the seven rooms, sun parlor and sleeping porch or nursery which are provided for in the plans shown on the pages following this, there is seen, in the photograph reproduced below, another feature which might be called old fashioned but which will give great satisfaction to many who miss the delightful, open porch of other days.

Simplicity is an outstanding characteristic of the exterior which, with its wide siding, small paned window sash, shutters and substantial brick chimney, presents a most

pleasing effect. The entrance opens from the porch into a central stair hall separating the living room and sun parlor side of the house from the dining room, kitchen and service side. At the rear of this hall are a useful closet and handy lavatory while the kitchen is well supplemented by a large pantry, enclosed porch and entry sheltering outside basement stair.

On the second floor we find four good sized bedrooms, each provided with closets of sufficient capacity to satisfy the most exacting housewife. The two rooms at the right each have one large closet while the two at the left are each supplied with two smaller closets equipped with the most efficient and up-to-date wardrobe closet fixtures. These fixtures increase the storage capacity of the closet to a very large extent.

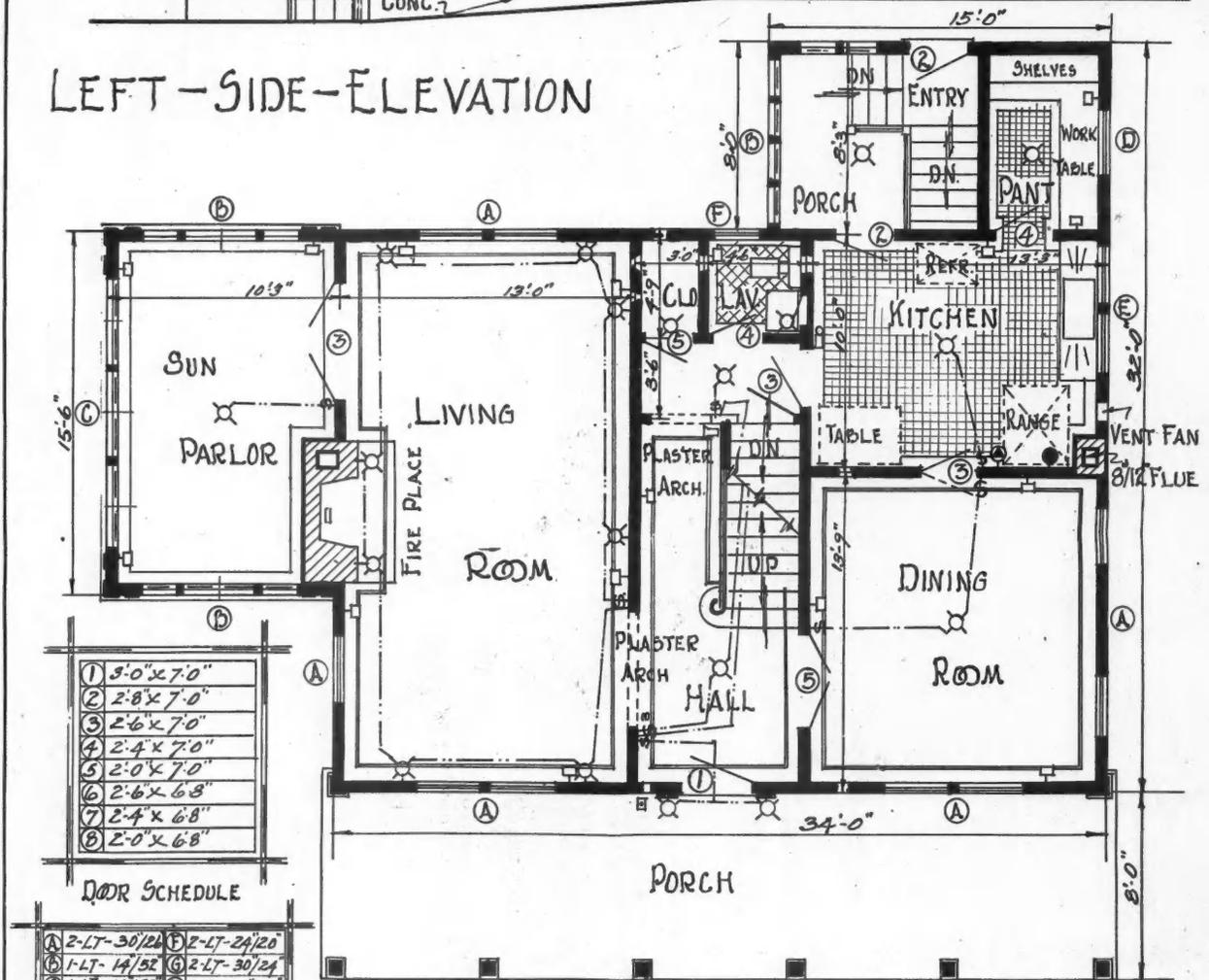
Off one of these latter bedrooms there opens an additional room, located over the first floor sun parlor. This room can well be used either as a nursery, or as a sleeping porch.



To Those Who Remember with Pleasure the Open Porch of Other Days This Dutch Colonial Design Will Be Welcomed as a Delightfully Home-Like and Commodious Dwelling for a Large Family.



LEFT-SIDE-ELEVATION



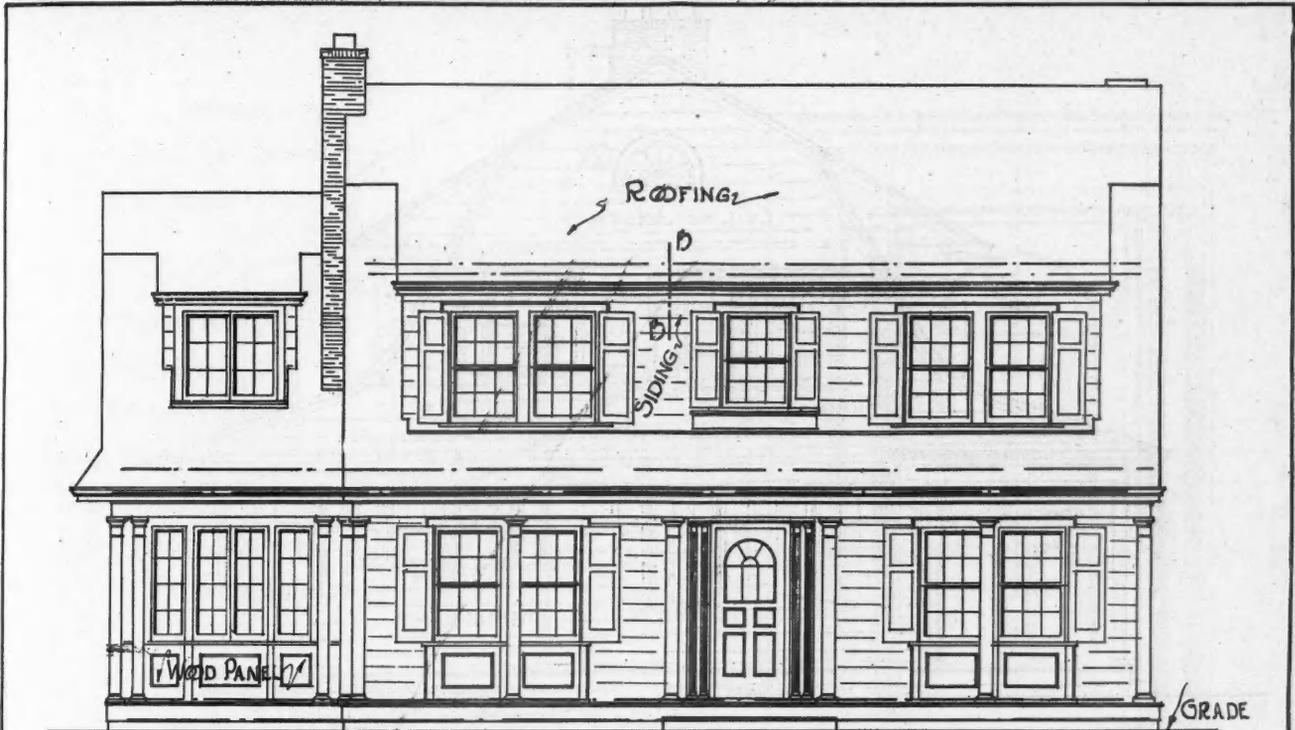
FIRST-FLOOR-PLAN

WINDOW SCHEDULE

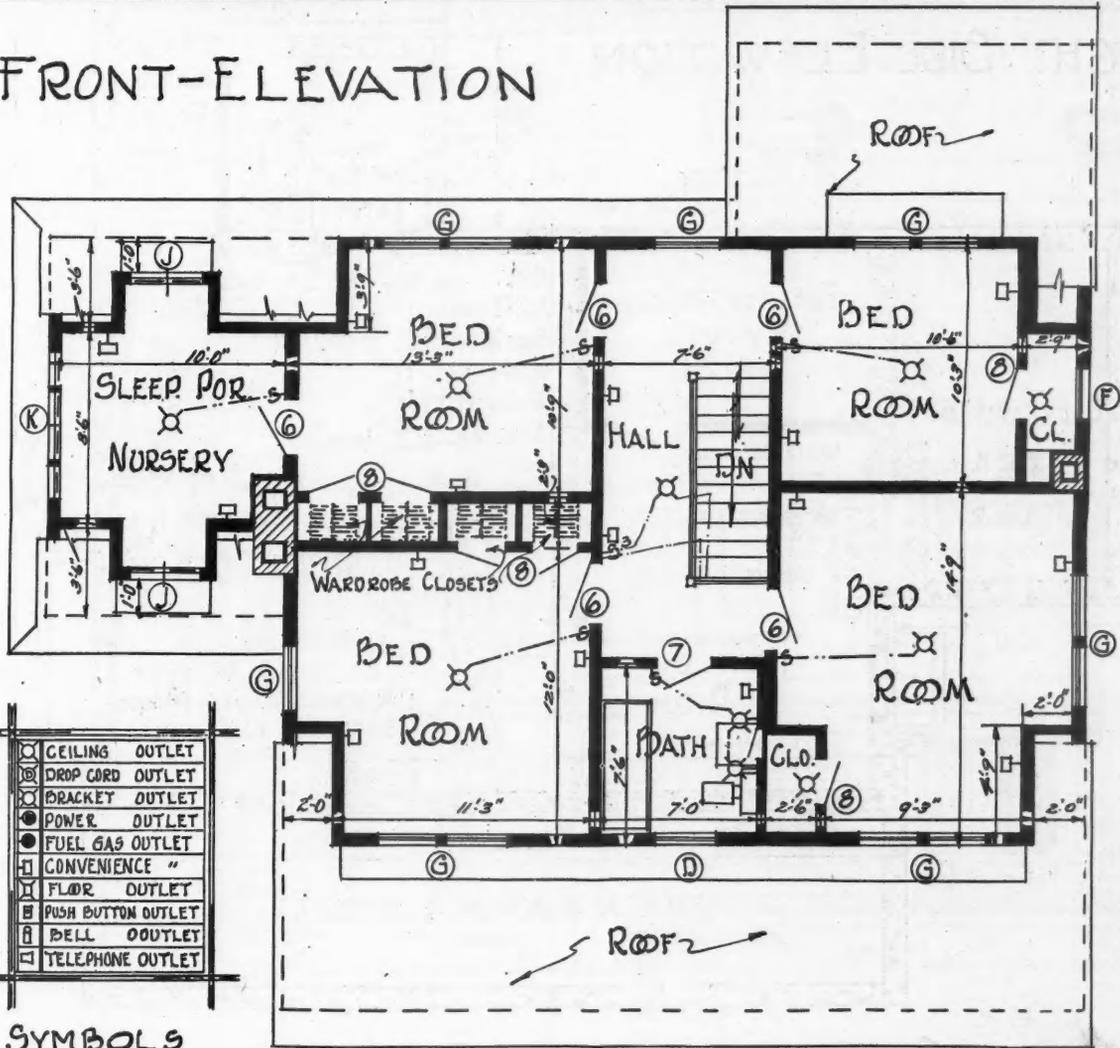
SCALE 1/8" = 1'-0"

SHEET NO.-1.

A Sun Parlor Is Provided for Our Front Cover Home in Addition to the Open Porch with Its Suggestion of Delightful Summer Evenings in the Comfortable Porch Chairs and Grateful Shade in the Heat of the Day.



## FRONT-ELEVATION

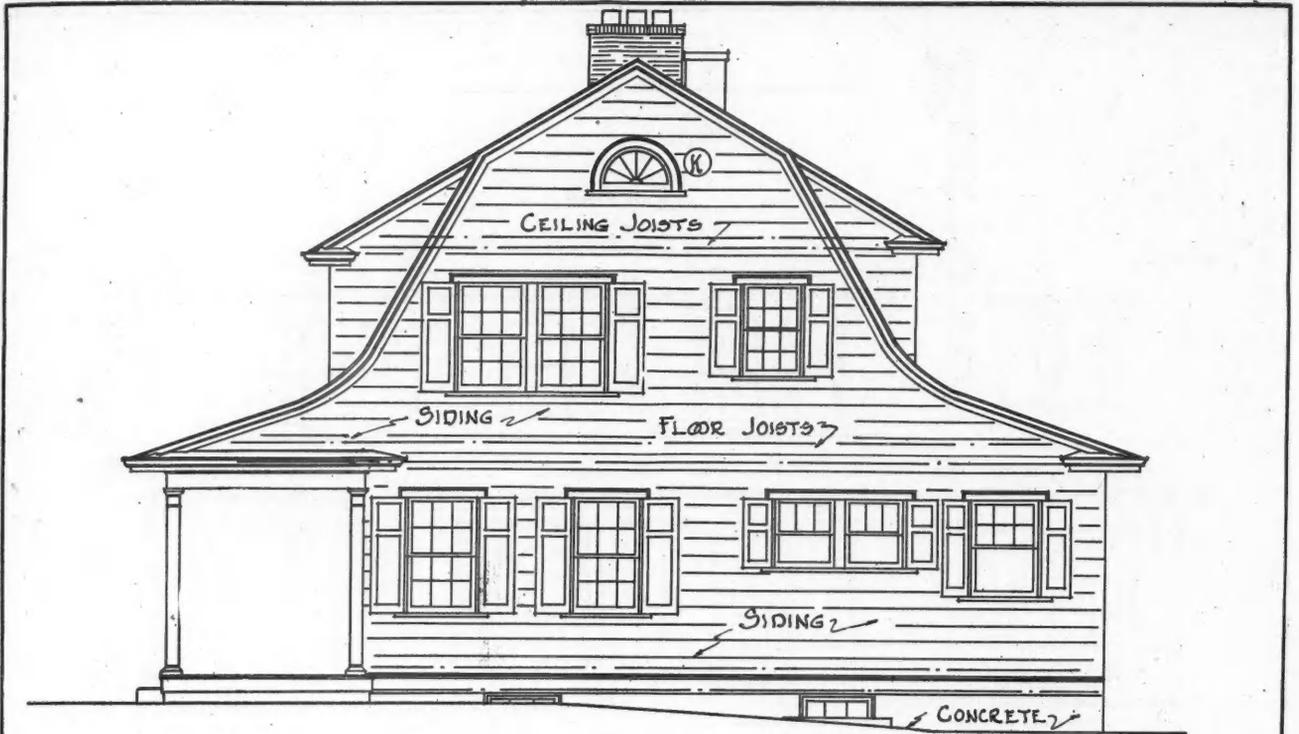


### SYMBOLS

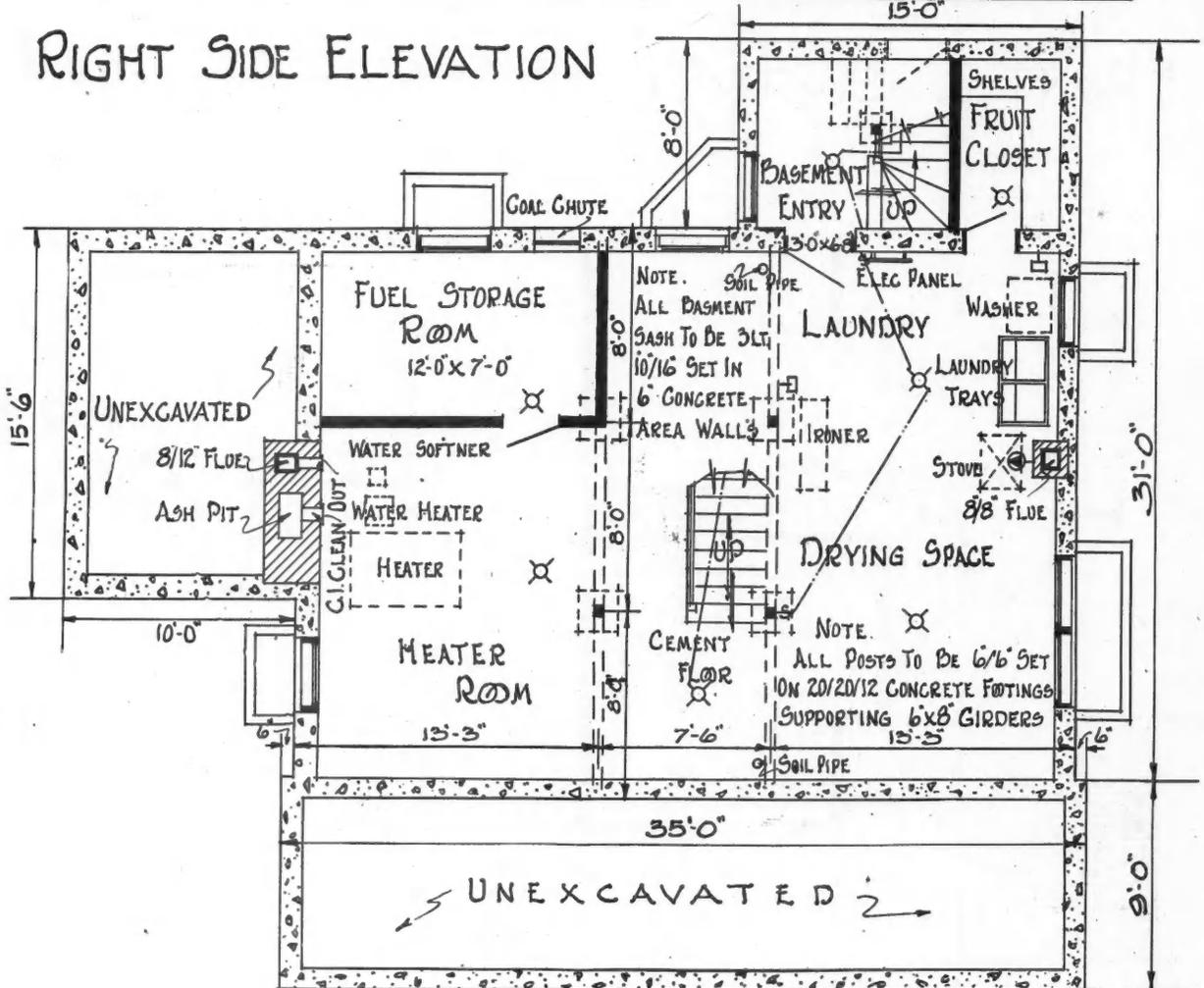
⊗	CEILING OUTLET
⊙	DROP CORD OUTLET
⊠	BRACKET OUTLET
⊚	POWER OUTLET
⊛	FUEL GAS OUTLET
⊜	CONVENIENCE "
⊝	FLOOR OUTLET
⊞	PUSH BUTTON OUTLET
⊟	BELL OUTLET
⊠	TELEPHONE OUTLET

## SCALE 1/8" = 1'-0" SECOND-FLOOR-PLAN SHEET NO. 2.

Four Bedrooms of Ample Size Are None Too Often Found in Modern Homes, but There Is Also an Additional Room, a Nursery or Sleeping Porch, Whichever Needs or the Owner's Fancy May Dictate. For further plans turn to the pages that follow.



RIGHT SIDE ELEVATION

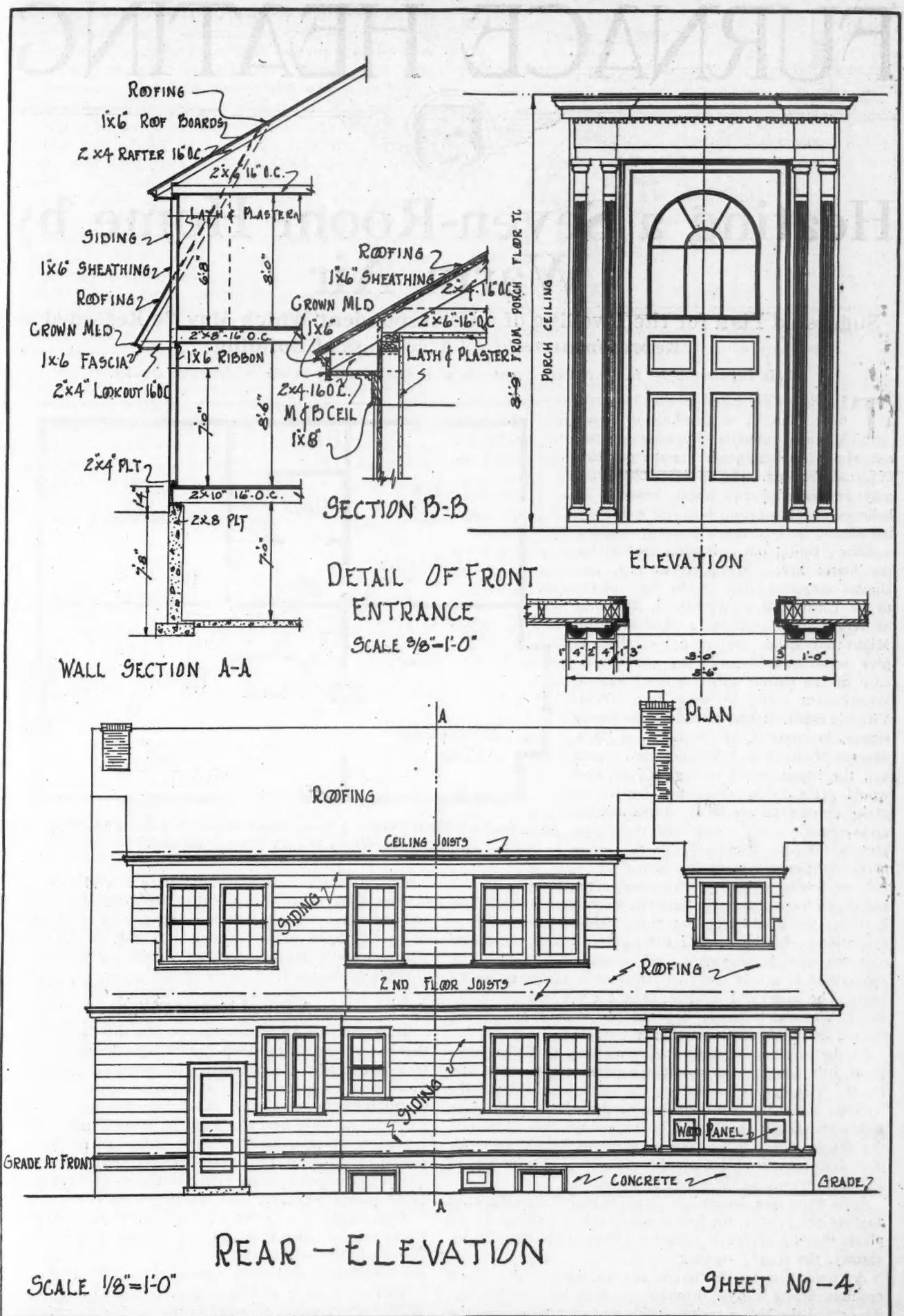


BASEMENT - PLAN

SCALE 1/8" = 1'-0"

SHEET NO. 3.

The Space Beneath the Sun Parlor of Our Front Cover Home Is Not Excavated but the Excavation Gives Plenty of Space for All the Usual Basement Requirements and This Space Is Portioned Off to Serve Most Satisfactorily These Various Needs.



SECTION B-B

DETAIL OF FRONT ENTRANCE SCALE 3/8"=1'-0"

WALL SECTION A-A

REAR - ELEVATION

SCALE 1/8"=1'-0"

SHEET NO-4.

In Addition to the Floor Plans the Preceding Pages Have Shown Various Elevations of Our Front Cover Home. Here is the last of these elevations, the rear, and also details showing the wall construction and the entrance.

# FURNACE HEATING



## Heating a Seven-Room Home by Warm Air

Suggested Plan for the Dwelling of a Correspondent Which May Be Regarded as Representative of a Large Class of Building

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

HERE is presented in Fig. 1 a first-floor plan of a dwelling in West Virginia, submitted by a correspondent who wished assistance on the problem of furnace heating. The residence concerned may be regarded as typical, hence it is believed an explanation of its proper heating should be instructive to many readers.

Before laying out a heating system for the house here shown, or, in fact, any similar structure, one of the first points to be considered is whether it can best be served by a piped or a pipeless plant. Might not either system be installed to give equal satisfaction? In the experience of the author either type of heating arrangement could be used here. West Virginia winter temperatures are not overly severe, in contrast, for instance, to Minnesota, Maine and other northern states and the house, while roomy, is not what would generally be considered large. Its major dimensions are 26 by 30 feet and the arrangement of the rooms and their sizes give a compact structure. These factors make the pipeless plant feasible.

In reviewing points which influence the location of the heater we learn that, unfortunately, we cannot always place it where we would like, but must yield to practical considerations. In the case of the pipeless heater the prime objective must be obtaining good circulation of heat to the rooms and return of the cool air after it has given up its heat. The suggested location, then, for the furnace in the West Virginia home is between the dining and living rooms, as indicated in the illustration, Fig. 1.

As the partition between the rooms only partially closes them little doubt exists but that good heat circulation will result. The den is located on the unexposed side of the building and if the hall doors are permitted to remain open sufficient warmth should find its way to this room. Should the den be found to be poorly heated an 8-inch warm air pipe may be extended from the radiator of the furnace to an inside corner of the room to assist.

Such pipes are known as "heat robbers" because they appropriate part of the heat from the hot surfaces of the plant, thereby diverting such heat from its normal outlet, namely, the supply register.

A connection to the warm air chamber of the heater requires fitting a pipe through the cold, or recirculating, division of the heater casing. This pipe may be rectangular or round, but its area at the furnace would best be equivalent

to a 10-inch diameter pipe. Here a workmanlike job in sheet metal is required, for the connection must be made absolutely tight by thorough seaming, locking and soldering. A typical "heat robber" is shown in Fig. 2. The heater should have a 24-inch diameter firepot, or at least one of 22-inch diameter.

### A Piped Heating Plant

Gradually we Americans are coming to the conclusion that the best is, in the long run, always the most satisfactory and usually the cheapest. In warm air heating it is found that a system which has separate pipes to individual rooms is likely to be more satisfactory because it provides a definite quota of heat to all rooms, hence is more positive, offers even temperature and is flexible in that the system permits good control to meet demands of the weather for heat. For these reasons many installers prefer to install piped plants whenever and wherever possible.

This should not be taken as an indication that pipeless heaters are ill-adapted to certain classes of building. To the contrary, for small, compact structures they work out excellently and are economical in operation.

There are many installers who, it is true, are skeptical of the effectiveness of pipeless plants due to unfortunate experiences encountered. As for this class of installer the

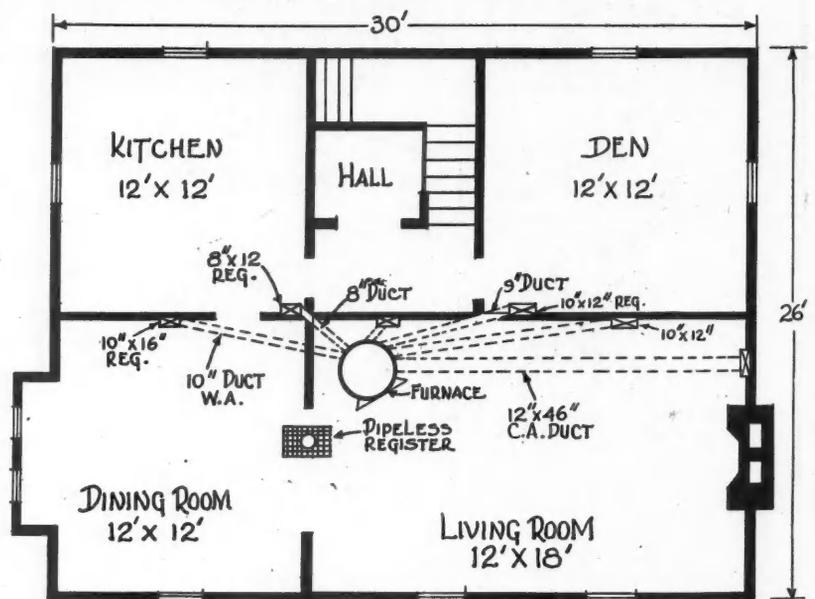


Fig. 1—First Floor Plan of a Seven Room House About the Heating System of Which Advice Was Requested.

Dia. of Room	Req. Pipe In.
8	
9	
10	
11	
12	
13	
14	
15	
16	

Fig. 3

assertion is here expressed that failures of pipeless heaters largely have been due to expecting too much of them, trying to impose more work on them than was intended by their designers and makers. We refer to trying to heat rambling structures, leaky, old farm houses and those having a large number of rooms. To offer the pipeless plant for these jobs is unfair to customers and heaters alike.

Heating one's home is surely as important as good plumbing and good lighting. Unless we give the heater a chance to perform the work expected of it we shall pay dearly when once the plant is set up. In selecting the location for the piped plant in the home shown in our plans factors which are important include position of the chimney flue. In Fig. 1 it is noted that the only flue available for the heater smoke pipe is that beside the fireplace flue. It is, naturally, advantageous to have the heater as near the chimney as possible, as draft there must be or no heater can do a perfect job.

It is rather well known now that furnaces should be placed near the center of the building so that the piping runs may be as short as possible and the loss of temperature, due to exposure, held at a minimum. These features would favor placing the heater beneath the inside corner of the living room or dining room, depending on plans for use of the basement. If the space beneath the dining room, for example, is to be used as a drying room, and a laundry beneath the kitchen this would suggest placing the heater beneath the living room. This, then, appears to be the logical place for it in the building under discussion.

The next step in designing the complete plant for this home involves finding the correct sizes of warm air pipes, their registers, wall stacks and upper floor registers. For it must be realized that if pipes are too small the flow of warm air within them is retarded, back pressure is built up and the heat is fed into the rooms in small volumes but at excessive temperatures due to the fact the heat remains in contact with the hot parts of the heater longer than is needed to raise the air to 175 degrees Fahrenheit. Ultra high heat supply may well be called "parched heat" because it is too dry and often too hot for comfort.

The most scientific method of estimating sizes of pipes is that involved in the Standard Code of the Warm Air Heating and Ventilating Association, copies of which may be obtained on request from Allen Williams, secretary, Columbus, Ohio. This takes into account the areas of the walls, windows, floors and ceilings, provides for the addition of exposure and leakage factors and a margin of safety.

Perhaps the best quick-estimating plan is that called the contents method wherein 1 square inch of warm air leader area is taken as being sufficient to warm certain cubical contents of rooms of different kinds. It is, for example, taken that 1 square inch of leader for first floor rooms is sufficient to warm 25 cubic feet of living room with one exposed side, also that the same size of leader area will heat 20 cubic feet of living room exposed on two sides;

Diam. of Round Pipe In.	Area of Pipe Sq. In.	Size Flat Riser Pipe In.	Size Side Wall Register In.	Size Round Floor Register In.	Size Rectangular Floor Register In.	Capacity in Sq. In. of Pipe Area		
						1st Floor Rooms	2nd Floor Rooms	3rd Floor Rooms
8	50	3 1/2 x 14	8 x 12	12	8 x 12	50	65	80
9	64	4 x 16	10 x 12	14	10 x 12	64	83	102
10	78	4 x 20	12 x 12	14	10 x 16	78	101	125
11	95	6 x 16	12 x 15	16	12 x 15	95	124	152
12	113	6 x 19	14 x 15	18	12 x 20	113	147	181
13	132	6 x 22	14 x 18	18	14 x 18	132	172	211
14	154	8 x 19	16 x 18	20	14 x 22	154	200	246
15	176	8 x 22	16 x 20	24	16 x 20	176	229	282
16	201	8 x 25	18 x 20	24	16 x 24	201	261	322

Fig. 3—Table of Ready Reference Data for Estimating the Proper Size of Furnace Pipes and Registers.

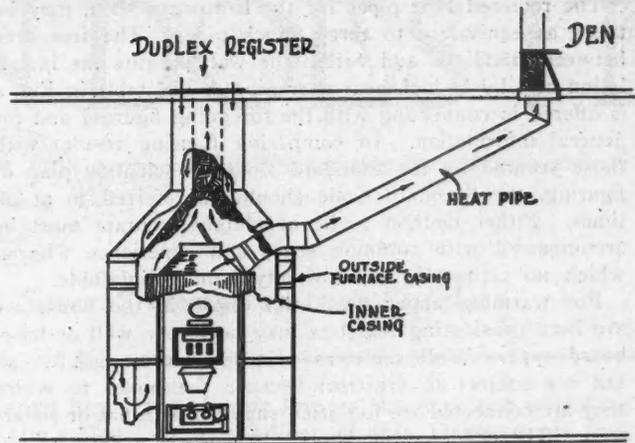


Fig. 2—Method of Connecting a "Heat Robber" to the Pipeless Furnace to Warm an Isolated Room.

or will warm 15 cubic feet of living room, with three sides exposed; sleeping rooms 25 cubic feet, and halls and bath-rooms 20 cubic feet.

Applying the foregoing rule to the residence here treated, the kitchen has an area of 12 by 12 feet and an 8-foot ceiling, thus having 1,152 cubic feet contents, with two sides exposed. If 1 square inch of warm air pipe is required for every 20 cubic feet, an 8 1/2-inch diameter pipe would be required. If we consider that when the kitchen is occupied there is likely to be a fire in the cooking range, the heat thereby secured may be compensated for the heat pipe made 8 inches. This is the smallest leader which should be used to heat any room.

The dining room is the same size as the kitchen and has the same exposure, yet it is likely to be intermittently heated and when occupied must be thoroughly warm. A 10-inch pipe is suggested.

### The Living Room a Different Problem

In choosing the proper pipe or pipes for the living room one needs consider the large wall and window exposure and the fireplace at the end. It is emphasized that fireplaces are unused much of the time and, unless tightly shut off by a damper when not in use, a vast quantity of heat finds its way up the fireplace. These factors make it sound judgment to place either one large warm air pipe and register near the inside partition in the floor or a baseboard register in the same location.

According to the foregoing suggested method of estimating it is noted that at least an 11-inch diameter warm air leader would be needed, which would call for a 12 by 15-inch floor register. Many installers would consider it better judgment to use a 12-inch pipe and a 12 by 20-inch register. This results in a large register and suggests at once the desirability of running two smaller pipes and having two smaller registers to replace the single large one. So, run two 9-inch pipes to the floor near the inside wall and use 10 by 12-inch floor or baseboard registers. The two pipes have a total area of 128 square inches, thereby permitting plenty of heat supply.

A 9-inch pipe will answer well enough for the den, the size of which is the same as the kitchen and dining room.

As sleeping rooms are largely unoccupied during the day and often for only a brief time in the evening and morning, that is, while changing into and out of sleeping garments, heat requirements for these rooms do not ordinarily receive the same attention as living and other downstairs rooms. In estimating heat for upstairs rooms, too, it should be recalled that warm air gains velocity as it rises, hence the volume and intensity of flow of heat passed through an upstairs register is greater than that passed through a first floor register of the same size.

The required heat pipes for the bedrooms, then, may be taken as equivalent to three 8-inch pipes. The free area between studdings and within the wall permits the installation of 4 by 14-inch heat riser pipes. The table in Fig. 3 is offered in connection with the foregoing figuring and for general information. In comparing figuring results with those secured by the Standard Code or scientific plan of figuring, the Standard Code should be referred to at all times. Either method to be absolutely accurate must be accompanied with common sense and experience without which no estimating plan of any kind is infallible.

For warming upper floors like those in the house we are here considering registers may be of the wall or baseboard type. Wall registers protrude almost not at all but are subject to criticism because the boxes to which they are connected are too often supplied with flat or square tops. These preferably should be curved or beveled, as otherwise the air supply hits the interposed flat metal surface and loses velocity the same as if it had passed through a 90-degree elbow.

There is some logic, too, in the stand that delivery of heat in a horizontal direction does not offer the best circulation unless accompanied by an outlet register, which in the average furnace heating system is not provided. As floor registers for upper floors are impracticable baseboard registers are preferred.

If single-walled sheet metal risers are to be installed they must be covered with asbestos paper, air cell asbestos

or some other good insulating material. Better practice suggests the use of double-walled pipe which has a small free air space between the walls. This is a better carrier of heat, is structurally stronger and less likely to be imperfectly installed, due to the several patented methods of locking seams and joining sections. This type needs no insulation.

Rating of furnaces by manufacturers used to be a rather hit-or-miss proposition. The new makers always made the stoutest claim and there was no accepted basis for comparing the merits and sizes of heaters. Contrary, now, it is common for manufacturers to rate their plants on the basis of the number of square inches of warm air leader pipe which they can keep full of heat.

Hence, in estimating the proper size of heater for the seven room house in West Virginia, about which our correspondent wrote us, we must total the areas of the heat supply pipes and select the furnace which will fill all pipes with heat. These are usually referred to in inches of diameter of the firepot.

The area of the kitchen warm air leader is 50 square inches, of the dining room 78, of the living room 128, of the den 78 and of the bedrooms 150, thus making a total of 484 square inches. Manufacturers may have a different size firepot for performing the given duty, but it will probably be found that not less than 22-inch diameter pot is required and better results may be secured from a heater having a pot 24 inches in diameter.

## Apartment House Garage

New Waldeman Apartments in Denver Have Underground Garage

**I**N these days when virtually every tenant of a high-class apartment house is the owner of one automobile, if not more, the apartment house owner who can offer his prospective tenants a garage for storage right at their door is in an enviable position.

And when he is able to offer that service at a cost less than that which the garage man several blocks away demands, his position is the stronger.

Such is the position of D. M. Waldeman, Denver apartment house builder and owner.

In his latest property, forty four- and five-room bungalow type apartments, he has a garage for storage right under the apartment house.

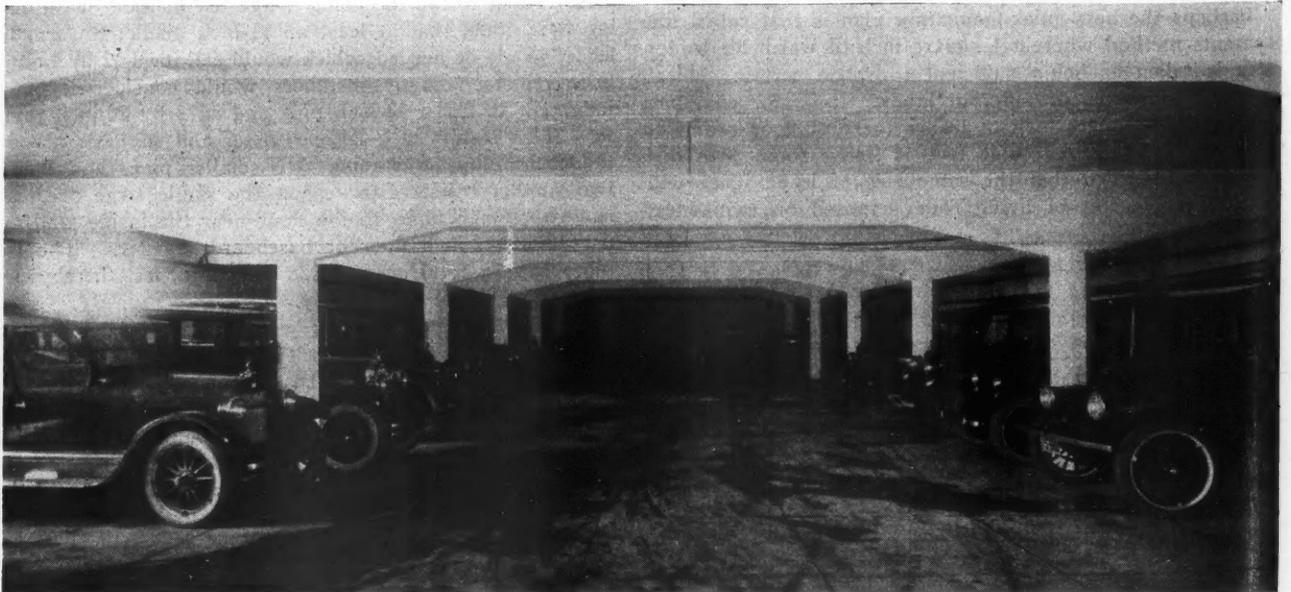
The garage is built underground, and is separate from the apartment house proper by a ceiling of 26-inch thick concrete, this rendering an absolutely fireproof protection.

Cars are stored for eight dollars per month for tenants, which is at least two dollars less than the standard price asked by regular garage men.

In addition to furnishing a very welcome service to his tenants, Mr. Waldeman is making a net return of over 15 per cent on his investment in building the garage.

"But even if I lost a hundred dollars per month, I should still regard this garage as an asset, when the class of tenants whom it attracts is considered."

JOHN T. BARRETT.



This Garage Was Built Under the New Waldeman Apartments, in Denver, for the Use of Tenants.

# HOW DAN DOES IT



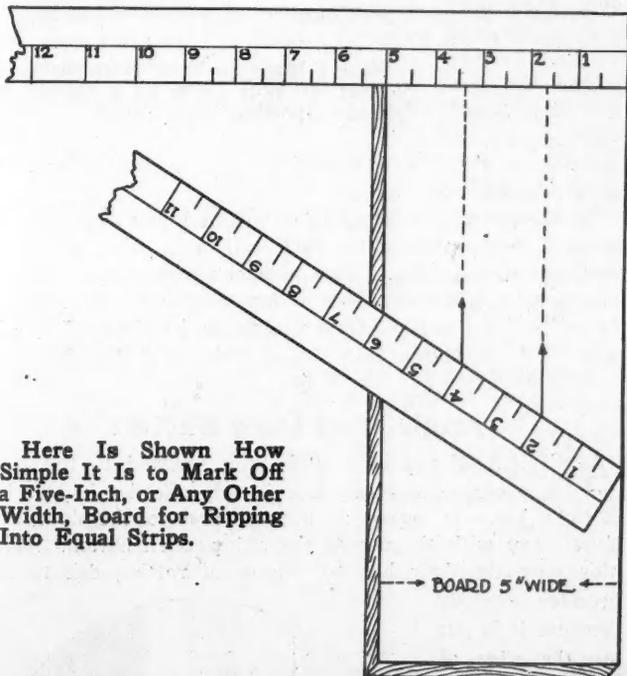
*A Department for Passing "Life Savers" along to other Builders*

**\$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 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.

## To Mark a Board for Ripping

THE accompanying sketch illustrates a simple means of dividing the width of any board into equal parts without the aid of special measuring tools or figuring. Here a five-inch board, that is to be ripped into three pieces of equal width, is shown. All that is necessary is to place a rule diagonally across the board so that the zero mark is at one edge and the six-inch mark at the other. You then mark the board at the two-inch and four-inch points on the rule.



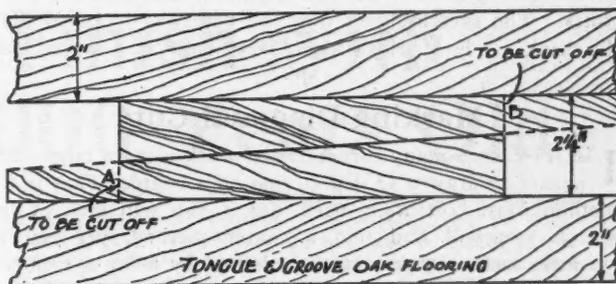
Here Is Shown How Simple It Is to Mark Off a Five-Inch, or Any Other Width, Board for Ripping Into Equal Strips.

This will work equally well with any width board or any number of divisions. It is only necessary to lay the rule diagonally and to have a length of rule across the board which is divisible by the number of pieces into which the board is to be cut.

B. K. GARDOU, 2071 Payne St., Louisville, Ky.

## A Floor Laying Idea

IN laying two-inch, tongue and groove flooring we often find that the last piece fails to fill the required space by a small fraction of an inch, too small to conveniently or economically use a ripped off portion of a new piece for filling.



A Piece of Flooring Ripped Diagonally May Be Wedged In to Fill That Last Space That Is Just Too Wide for One Strip.

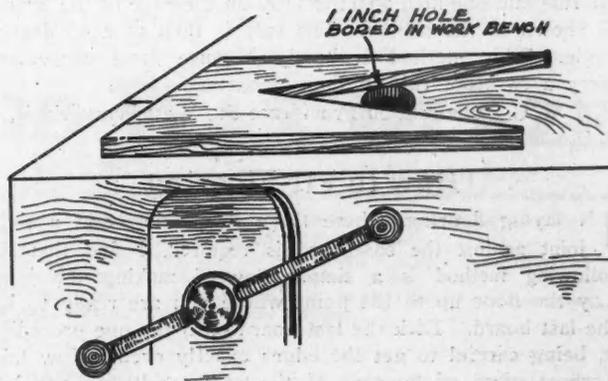
The space can be filled, however, and a satisfactory job made by using the following method. Take the two-inch piece to be laid in the last space and rip it diagonally. Put it in the space to be filled and drive at the end until it wedges as seen in the sketch and then cut off the ends at "A" and "B" as marked in the sketch.

R. W. CASTNER, Box 304, Dixon, Cal.

## Getting Rid of Shavings

HERE is an idea which is very simple but has proved to be a real time saver in use. I bore an inch hole through the top of the workbench near the small end of the bench stop. This prevents the collection of small shavings by allowing them to sift out instead of having to delay your work every little while to scratch them out.

WM. McELROY, Sublette, Kan.

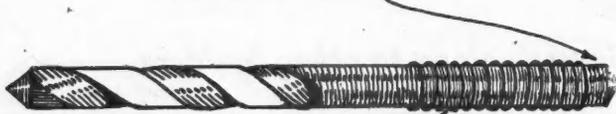


The Hole Bored at the Small End of the Bench Stop Will Help Do Away With That Bothersome Accumulation of Shavings.

**To Make Drill Fit the Chuck**

RECENTLY I had occasion to use a number 44 twist drill and found I could not hold it in the jaws of my 10-inch brace and that I had no other chuck on the job small enough to hold this drill. I therefore wrapped the drill shank with a few inches of bare copper wire (about number 18) and then inserted the wire wrapped shank in

DRILL SHANK



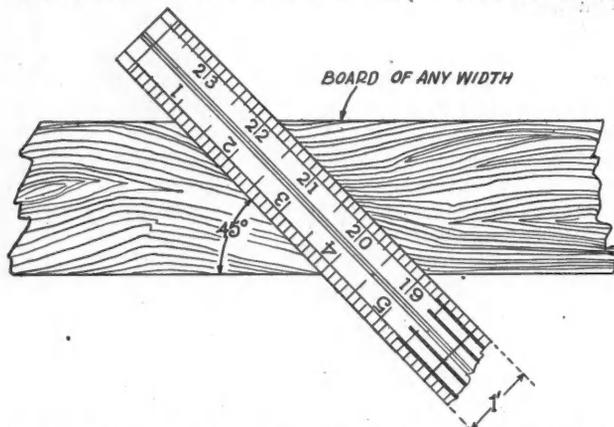
COPPER WIRE COILED AROUND SHANK

Copper Wire Wrapped Around a Drill Shank That Is Too Small to Fit the Chuck Will Solve the Problem.

the jaws of the brace. This held the drill as well as anyone could desire and saved valuable time which would have been required to leave the job and get a tool with a smaller chuck. The sketch shows how the wire was wrapped onto the shank. E. M. HOSKINSON, 3424 South St., Lincoln, Neb.

**Marking Diagonal Cuts**

I HAVE seen many carpenters at work using a large steel square to draw a 45 degree line on a board. That is the method most commonly used, but if you will look at the sketch you will find that a simple method, yet just as accurate as the square, can be adopted by using a common two-foot rule. Practically all two-foot rules, when folded, are exactly one inch wide. Place the rule diagonally across the board with two of the inch marks, on opposite sides of



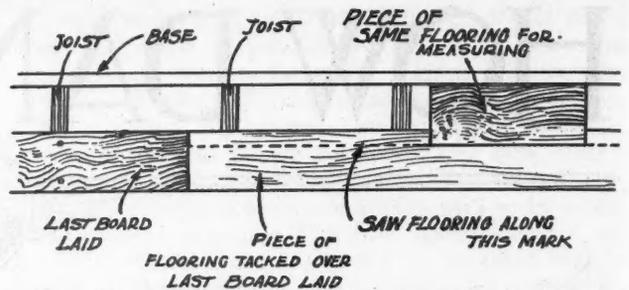
A Rule, Properly Handled, Is All That Is Required for Marking Off a 45 Degree Angle on Any Board.

the rule and one inch apart exactly on the edge of the board, as shown in the sketch. The rule is then at a 45 degree angle. This method is handy because most carpenters carry a two-foot rule in their pockets.

G. FOURNIER, 50 Providence St., West Warwick, R. I.

**How to Fit Flooring**

IN laying flooring, where there is no shoe and a tight joint against the baseboard is required, I find that the following method is a simple way of making the joint. Lay the floor up to the point where you are ready to lay the last board. Tack the last board onto the one preceding it, being careful to get the edges exactly even. Now take a short piece of flooring of the same width as the last board. This need be only two to four inches long. Lay this short piece on top of the last board with one edge snugly against the base and slide it along, marking the



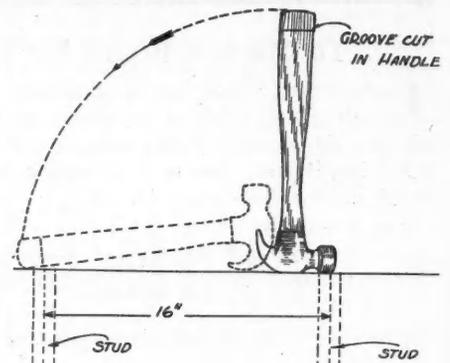
In This Way the Last Strip of Flooring May Be Marked To Be Ripped To a Snug Fit Against the Baseboard.

last board along its outer edge. Rip the last board along this line and you will have a perfect fit against the base.

ART WALTER, Lewis, Iowa.

**Spotting Wall Studs**

THE accompanying sketch shows how an ordinary, carpenter's nail hammer may be used conveniently to space off for setting nails in baseboards, hook strips, chair rails, etc., which have to be nailed to wall studs through plaster.



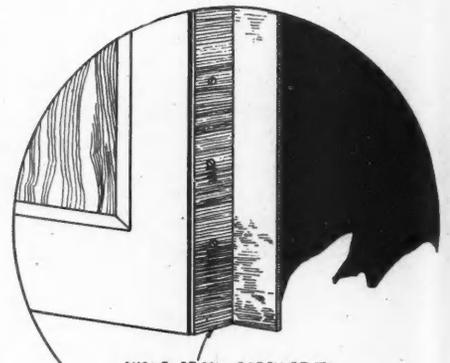
Place a Mark on Your Hammer Handle and It Will Serve as a Gauge for Quickly Spotting Wall Studs.

The location of the next nail will be indicated by a mark previously made on the handle near its end.

This method of spotting studs will be found accurate and quicker than sounding for each nail or opening a rule to measure the spacing. The reason for manipulating the hammer as above described is that the handle alone is not 16 inches long and sufficient length can be obtained in this way. L. M. HODGE, 1815 E. Glen Oaks Blvd., Glendale, Cal.

**Angle Iron Door Batten**

A PIECE of two-inch angle iron screwed to the edge of a garage or other door is very effective in securing a tight job. It serves as a protection to the door and does away with the use of the old wooden batten. With this strip the door has no chance of rotting due to the wooden batten because it is put on the edge of the door and not on the front surface. I have tried this on my own buildings and found it well worth while. It makes a hinged door practically air tight.



ANGLE IRON SCREWED TO EDGE OF DOOR. An Angle Iron Effectively Replaces a Wooden Batten on Garage and Other Similar Doors.

CECIL MEHRIG, Waterford, Wis.

ATL 16  
BOS 85  
CLE 16  
DAL 29  
DEN 18  
DES 14  
DET 31



### “Bearing Gifts to the Sun God”

This painting, representing a votive offering to the God Horus, was found on the wall of an Egyptian tomb dating back somewhere between 2500 and 3000 years. The colors were mixed in wax. In spite of centuries of conditions unfavorable to their preservation, the colors are as fresh and vivid today as though laid on yesterday.

## A New Wall Finish with a Reputation 3,000 Years Old

**T**HOUSANDS of years before oil colors were invented the ancient Egyptians produced mural paintings with colors carried in wax. Every specimen of these ancient encaustic paintings in existence today is remarkable for one feature—the colors are still as fresh and vivid as though laid on yesterday.

The ancient art of encaustic painting, lost to the world for 1500 years, is now revived and made commercially useful by the introduction of Johnson's Liquid Wax Glaze for the artistic treatment of walls in both public buildings and private offices and homes.

This new medium, with a 3,000 year old reputation for durable beauty, offers many advantages to architects, contractors and decorators.

1. Every color effect suitable to the finish of walls can be obtained, in any desired combination of color, shade, tint or tone.
2. Mottled, shaded and pastel effects, impossible to produce with any other finish, give the decorator an unlimited range of artistic treatments to draw upon.
3. Experiments in color schemes, where necessary, can be made on the wall and easily removed or changed until satisfactory. With no other medium is it possible to meet the wishes of a critical customer so easily and at such little cost.

4. Any effect, once obtained, retains its original appearance until removed. Colors mixed in Johnson's Liquid Wax Glaze do not fade in sunlight, nor are they affected by room temperatures or dampness.
5. If it ever becomes necessary to remove surface dirt from a wall finished with Johnson's Liquid Wax Glaze, it can be washed with soap and water.
6. Johnson's Liquid Wax Glaze is extremely economical, both in application and material cost. Each section of the wall can be finished in one operation. No resetting of ladders or scaffolding is necessary. Johnson's Liquid Wax Glaze has a covering capacity of 700 square feet per gallon.
7. It is extremely simple to apply. Only the simplest tools are needed. There is absolutely no danger of laps, streaks or brush marks. Any good decorator can handle this new finish perfectly with a little practice.
8. The finish can be removed entirely, at any time, by washing with Johnson's Natural Wax. The surface is left in ideal condition for refinishing. It is not necessary to use dropcloths, or tear up rooms.

You will recognize at once the outstanding importance of these advantages. You will want to use Johnson's Liquid Wax Glaze.

See the finished panels on display at any of our branch houses, or write for one quart sample FREE with complete specifications and instructions for use. When they arrive, make some experiments, see how easy it is, and be among the first to offer this new, popular, profitable wall finish in your community.

# JOHNSON'S LIQUID WAX GLAZE

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| <b>ATLANTA</b><br>16 West Peachtree Pl. | <b>KANSAS CITY</b><br>2433 McGee Trafficway | <b>OMAHA</b><br>1407 Harney St.             |
| <b>BOSTON</b><br>852 Summer St.         | <b>LOS ANGELES</b><br>1151 Santee St.       | <b>PHILADELPHIA</b><br>410-412 Commerce St. |
| <b>CLEVELAND</b><br>1645 Superior Ave.  | <b>LOUISVILLE</b><br>115 South 6th St.      | <b>PITTSBURGH</b><br>926 Duquesne Way       |
| <b>DALLAS</b><br>2900 Main St.          | <b>MILWAUKEE</b><br>936 Third St.           | <b>SAN FRANCISCO</b><br>1250 Folsom St.     |
| <b>DENVER</b><br>1846 Arapahoe St.      | <b>NEW ORLEANS</b><br>500-506 Magazine St.  | <b>ST. LOUIS</b><br>2116 Locust St.         |
| <b>DES MOINES</b><br>1435 W. 29th St.   | <b>NEW YORK</b><br>46-48 Lispenard St.      | <b>ST. PAUL</b><br>1930 St. Anthony Ave.    |
| <b>DETROIT</b><br>3155 Grand River Ave. |   | <b>SEATTLE</b><br>314 Bell St.              |

*Clip to your letter-head or business card*

S. C. JOHNSON & SON, Dept. A. B. 12, RACINE, WIS.  
“The Wax Finishing Authorities”

I am interested in the use of Johnson's Liquid Wax Glaze for decorating textured and sand finished walls.  
Please send me one quart sample FREE together with complete specifications and instructions for use.

Name.....  
Address.....  
City..... State.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

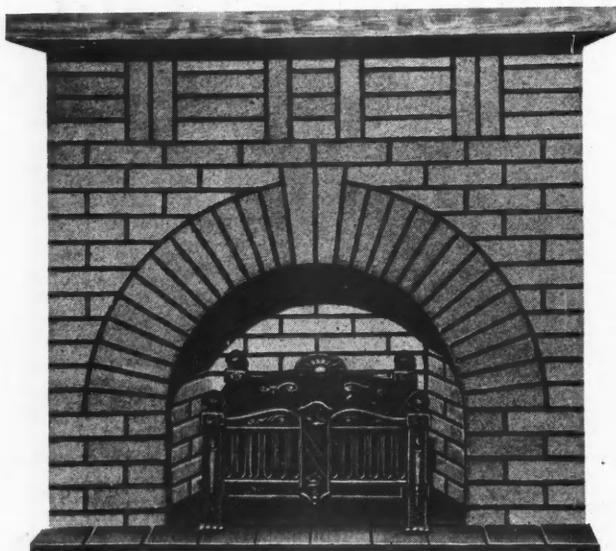
# WHAT'S NEW ?



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## A Business Opportunity in Pre-Cast Fireplaces

**A**N opportunity to establish a paying business is being offered to contractors and builders by a company which has long specialized on the manufacture and sale of pre-cast concrete fireplaces. These fireplaces are cast in the company's factory and shipped complete ready for installation in the new house without requiring elaborate and expensive masonry work. They are made in several models and styles to suit varying tastes and space requirements and



**Forms, Moulds, Formulas and Instructions for Making These Per-cast Fireplaces Can Now Be Obtained by the Contractor Who Wants to Start a Profitable Business.**

in smooth face and rock face finish, in reproduction of brick.

This company now offers contractors the opportunity to purchase the complete forms, molds, formulas and instruction for making these fireplaces so the contractor can establish a local business of his own in supplying pre-cast fireplaces to the local trade. No expensive, skilled labor is required for this work and, it is said, large profits are possible.



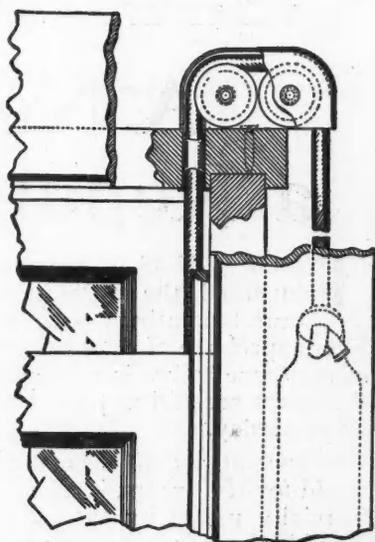
## Invisible Sash Pulleys

**I**NVISIBLE sash pulleys are one of the latest devices brought out to improve the appearance of the home and eliminate an inconvenience. These pulleys are solidly built of lead-coated terne plate and have two  $\frac{3}{4}$ -inch pulley wheels firmly mounted in the pressed steel sides and revolving on  $\frac{1}{4}$ -inch shafts. They are furnished complete with ferrules and are non-rusting and indestructible.

This type of sash pulley is mounted on top of the frame and is completely hidden from view by the finishing strips. It does away with all unsightly mechanism on the window

frame and has no openings to invite the infiltration of dirt and insects and no gaps or spaces to cause wind whistling or drafts. It is quiet and efficient in operation and permits free-swinging weights to lift the window directly from above, not from down on the side, and so does away with binding and hard lifting.

Installation on the window frame requires only two small holes which are easily drilled and four shingle nails to hold the pulley securely. The pulleys are easily threaded, no "lead needle" being needed. Expensive double width grooves or mortises on the windows are eliminated and recessing or seating on the frame done away with. The pulley accommodates all sizes of sash cord.

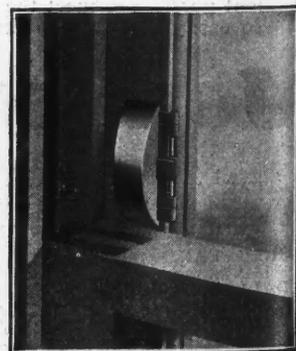


**In Addition to Being Invisible This Sash Pulley Is More Easily Installed and Gives Better Operation.**



## Simple Effective Window Lock

**T**HIS little device perfectly protects the home from entrance by way of windows while, at the same time, allowing complete ventilation. It is fastened by two screws to the upper sash and swings on a hinge so that it may be swung out of the way instantly, permitting the window to be opened fully. When closed, it is impossible to open the window any farther than the point of attachment. This permits opening the window enough for ventilation, but not far enough for anyone to enter. Trying to force the window farther only serves to lock it more securely and the wedge shape of the lock also eliminates window rattles. To allow opening the window the lock is simply swung out against the pane. The brass and lacquer finish of these locks insures long service and makes them, in appearance, correct hardware for the windows of the finest homes. They are inexpensive and easily installed.



**Windows Opened for Ventilation But Perfectly Protected Are Possible with This Lock.**

# No Dull Seasons

## For You if You Are a Floor Sur- facing Contractor

Floor surfacing has grown to be a big business. It is clean, healthy—always inside.

It is independent of weather conditions—there are no dull seasons.

No large capital is required. One man and one machine can easily average

### \$20 to \$40 a Day

And there is always plenty of work. Every new floor has to be surfaced. Thousands of old floors need resurfacing.

### American Universal FLOOR SURFACING MACHINE

electrically operated, does the work of six hand scrapers—does it better and faster.

No special training is necessary. Any man who is willing to work can build for himself a substantial, permanent, money-making business as an American Floor Surfacing Contractor. This is a real opportunity. Let us send you complete information. Mail the coupon today.

The American Floor Surfacing  
Machine Co.  
515 South St. Clair Street, Toledo, Ohio

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Please send me full information about the "American Universal" Floor Surfacing Machine.

- I am a building contractor.
- I am interested in becoming a floor surfacing contractor.

Name .....

Street .....

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



### Locks for Radiator Valves

THE device illustrated here was designed to meet the demand for a universal locking device that would prevent theft or unauthorized removal of radiator valves manufactured by this company when used in apartment houses, public buildings and similar places. It is a necessity with one type of valve in order to prevent removal of valves from radiators and causing intake of air into the system when it is operating under vacuum.

It is essential that such a device fit all types of radiators and at the same time require no extra labor for tapping. The installation of this lock is extremely simple. The threaded connection of the air valve is slipped into the opening in the lock and then the valve is inserted in the radiator in the usual manner. When the valve is in the proper position two set screws on the lock are tightened with a special key until they meet the radiator. It is essential that the heads of the screws be set below the face of the lock to prevent loosening with pliers or wrench.

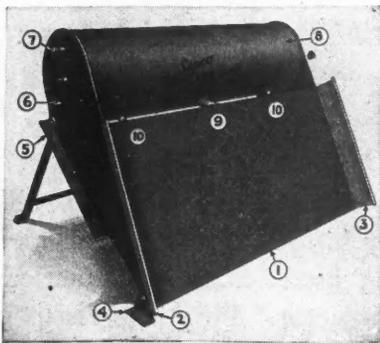


This Simple Little Locking Device Will Prevent Theft or Unauthorized Removal of Radiator Valves in Public Places.

### Sun Operates Water Heater

THE accompanying illustration shows something entirely new in the line of appliances for providing a hot water supply in the most economical manner. This appliance can be installed on the roof, in the garden, on a yacht or steamer, in any locality whether it be in the mountains or the valleys, on the farm or in the city, any place where it will catch the rays of the sun as it travels from east to west.

This appliance absorbs heat from the sun to furnish a continuous hot water supply at any temperature, day or night. On days of mellowed sunshine, or when the sun fails, a precision, electric heating unit, combined with a special thermostatic control, will start furnishing at least 50 gallons of hot water which can be stored in a thermos type tank.



When the Sun Shines This Appliance Furnishes Sunheated Hot Water; when the Sun Fails Electricity Does the Work.

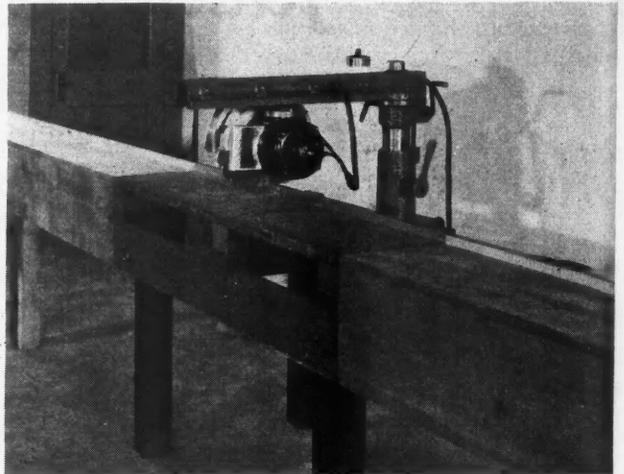
The manufacturers of this appliance have made many large heating installations and furnish the appliance under the condition that if it does not accomplish everything claimed for it the purchase price will be refunded without question. They manufacture a combination range and water heater with which this appliance can also be operated and furnish both technical and non-technical data to anyone interested in economical hot water supply.

### New Overhead Saw

A DIRECT drive, overhead, cut-off saw has recently been brought out for those who desire a machine for straight and angle cross cutting as well as straight and angle dadoing only. This new model is equipped with motors varying from  $\frac{1}{2}$  to 8 horsepower and the purchaser has the option of a metal standard, in connection with which he builds his own table, or of purchasing the machine mounted on a bench which

he, in turn, can mount on a movable, built-up truck for portable use or can add extended tables to for length cutting. The latter type of mounting is shown in the illustration which is reproduced below.

This machine is so constructed that one turn of the elevating crank raises or lowers the machine exactly  $\frac{1}{8}$  inch. This feature is very handy when used in dadoing to gain depths of cut desired without the need of rule or pencil. The machine is said to be ideal for dadoing jambs for shelving or show case stock as well as for rapid dadoing and gaining window and door jambs. Because the machine works entirely above the stock it is easy to set to mark and is therefore ideal for parallel angle dadoing, such as the gaining of louvre window jambs.

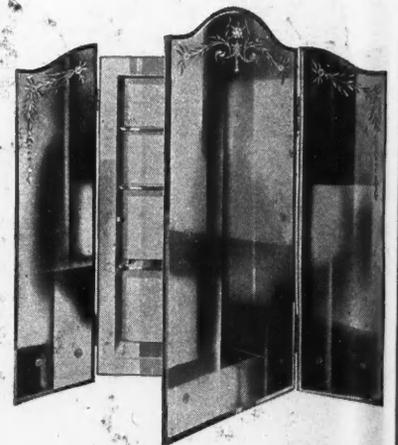


A New Overhead Cut-Off Saw Mounted with Extended Tables for Length Cutting, Which May Also Be Mounted on a Movable Built-Up Truck for Portable Use if So Desired.

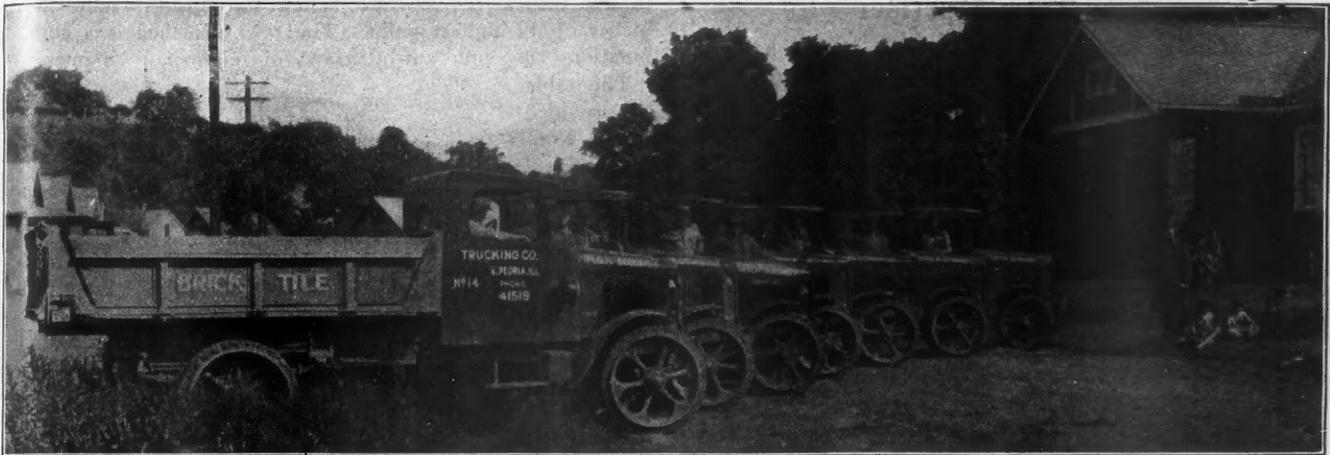
The machine latches promptly in either true or mitre position and thus is handy when used for cutting square or mitring window and door cases. It can be equipped with different length cranes to cut 16 inches, 24 inches or 32 inches wide, as may be desired.

### Artistic New Bath Room Case

A COMPANY which maintains a standard of manufacturing a quality bathroom cabinet to meet every conceivable requirement is now offering a new cabinet of especially rich design, as pictured here. It embodies all this company's features of rigid construction, careful workmanship and beauty of line. It is made in one mirror size only, 18 inches by 32 inches, with side wings 8 inches wide, behind which there are no cabinets. It requires a wall opening  $14\frac{1}{4}$  inches by  $25\frac{1}{2}$  inches and can be installed with the same ease as all this company's models. It comes in one standard mirror etching as shown here and has no mitre lines to obstruct clear, three-way vision.



A Bathroom Cabinet of New and Rich Design for Those Who Want the Best.



# Heavy-Duty Trucks and they live up to the name INTERNATIONAL

Your drivers will appreciate the way Internationals dig into their work. The way they pull out of excavations, up hills and through heavy going. It goes without saying they will like the exclusive International design of steering—the pitch of the steering wheel, as in an automobile.

For your part—you will appreciate the way the International qualities are demonstrated on the job and on the cost sheets. And your satisfaction will increase with mileage and years of hauling. Plenty of experience everywhere proves that they regularly deliver heavy-duty service at low cost.

International Heavy-Duty Trucks range from 2½ to 5 tons; chain or double-reduction drive; and they come with wheelbase and body best suited for the jobs they are to do.

Let us send you a folder on International low-cost hauling in your own line, and better still, look over the trucks themselves.

In addition to the Heavy-Duty Trucks, the International line includes the Special Delivery for loads up to ¾-ton; 4 and 6-cylinder Speed Trucks of 1¼, 1½ and 2-ton sizes; and McCormick-Deering Industrial Tractors.

## INTERNATIONAL HARVESTER COMPANY

606 So. Michigan Ave. of AMERICA Chicago, Illinois  
(Incorporated)

*Seven of the 22 Internationals in Mr. Schmidt's fleet. He has bought 7 new Internationals since the following letter was written:*

Gentlemen:

I have been operating a fleet of fifteen International Trucks. Some of them have been run for five years and I find the cost of upkeep and operation to be very low considering the time and amount of work which I do with them.

I will be glad to recommend your trucks to anyone as being economical of operation, sturdy and efficient in every way. We can especially recommend to others your ability and willingness to render service,\* which to my mind should be a determining factor in the selection of trucks.

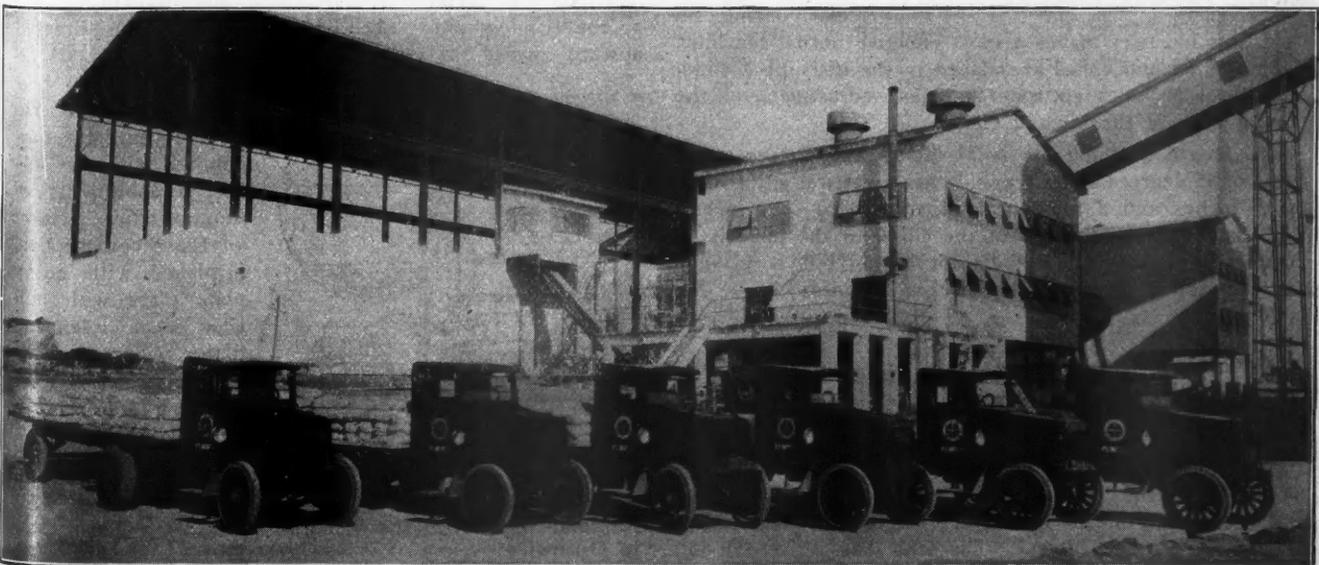
I am more than satisfied.

Very truly yours

SCHMIDT TRUCKING CO.  
East Peoria, Ill.

by Geo. H. Schmidt

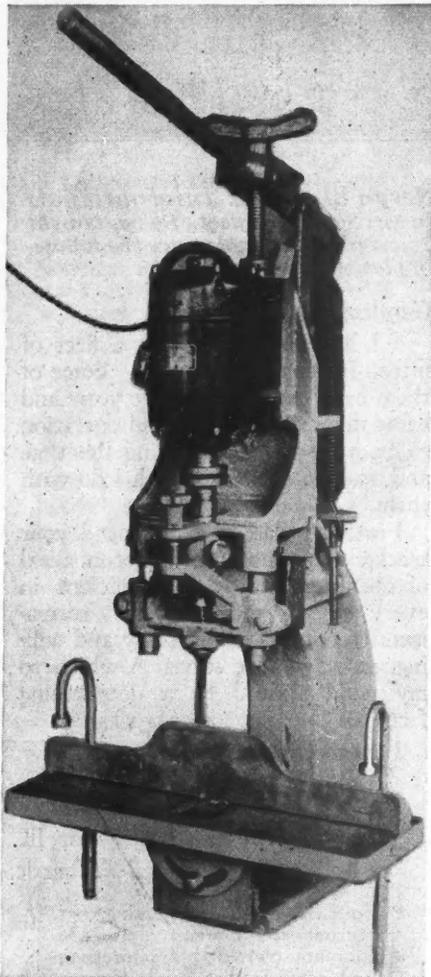
\* about this Service, remember that International Harvester has 136 Company-owned branches over the United States. Ready for you, wherever your trucks work. You can't beat the Service that is rendered to all International Trucks.



### New Type Mortiser

A HOLLOW chisel mortiser of a different type has been placed on the market and is illustrated here. This machine is 40 inches high and is so designed that it can be put on any work bench or can be mounted on a small wooden truck with casters and pushed around the shop. The main frame is cast in one piece and is very rigid.

Power is supplied by a  $\frac{1}{2}$  horsepower, universal, ball-bearing motor mounted on the spindle, which drives the spindle through a flexible coupling and can be run from an ordinary lamp socket. It turns at 3,450 R.P.M. under full load and is  $\frac{1}{2}$  H.P. type especially built and adapted for this machine. The thrust of the chisel is not borne by the motor spindle but is taken up by thrust bearings built into the machine. This assures continuous smooth operation with minimum wear.



Here Is a Mortiser Designed to Be Either Mounted on a Bench or on a Truck with Casters to Move About the Shop.

Each motor-driven mortiser is provided with flexible lead, plug and heavy feed-trough switch so that the machine is ready to operate by merely screwing the plug into a lamp socket.

This machine has a capacity of hollow chisels up to  $\frac{3}{4}$  inch in soft wood and  $\frac{5}{8}$  inch in hard woods. If the square chisel is removed and only the regular boring bit used, this mortiser makes a most effective boring machine. After the bit and chisel are placed in the machine a small handwheel provides accurate and easy adjustment of the cutting ends of the bit and chisel.

The length of the table is 24 inches and it tilts to an angle of 45 degrees either way. It has a vertical adjustment of 10 inches and a horizontal adjustment of four inches. The distance from the end of the chisel to the table is 13 inches, the hole in the spindle for boring bits is  $\frac{1}{2}$  inch and the vertical travel of the chisel is 4 inches.

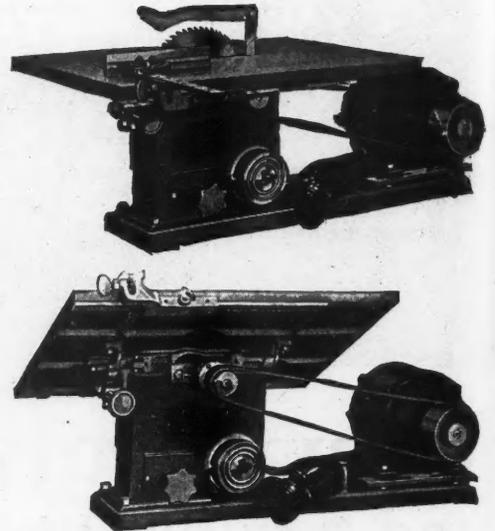


### New Precision Saw

THE illustration shows a new precision machine with a solid cast table, 18 by 24 inches, which tilts to any angle up to 45 degrees, and is operated by a convenient handwheel at the base of the pedestal. The saw is raised and lowered by means of another handwheel, also located at the side of the pedestal. The table has a rise and fall

of  $2\frac{1}{4}$  inches, the saw projecting through the table  $2\frac{1}{4}$  inches at its highest point. The saw furnished is a combination rip and cut-off saw of eight-inch diameter.

The table is provided with a combination rip and cut-off gauge. The fence may be set at zero for square work or at any angle desired for mitre work, the quadrant being provided with degree graduations. The ripping saw opens from the saw  $9\frac{1}{2}$  inches and a graduated bar indicates



This New Precision Saw Is Easily Tilted to Any Angle up to 45 Degrees by Means of a Handwheel on the Base.

the distance from the saw. When the cut-off gauge is drawn back to its extreme position the distance from the face of the fence to edge of the saw is seven inches.

An aluminum guard and steel splitter are furnished with each machine. The mandrel runs in ball bearings and takes saws with  $\frac{3}{4}$  inch holes. There is sufficient space between the collars to admit grooving or dado heads  $\frac{5}{8}$  inch thick. The machine is attached to a sub-base which also carries the electric motor of  $\frac{1}{2}$  H.P., 110-220 volt, 60 cycle, operating from a standard lamp socket. The motor is mounted on rails having considerable adjustment for belt length and provided with a screw adjustment for belt tension.



### Effective Automatic Ventilator

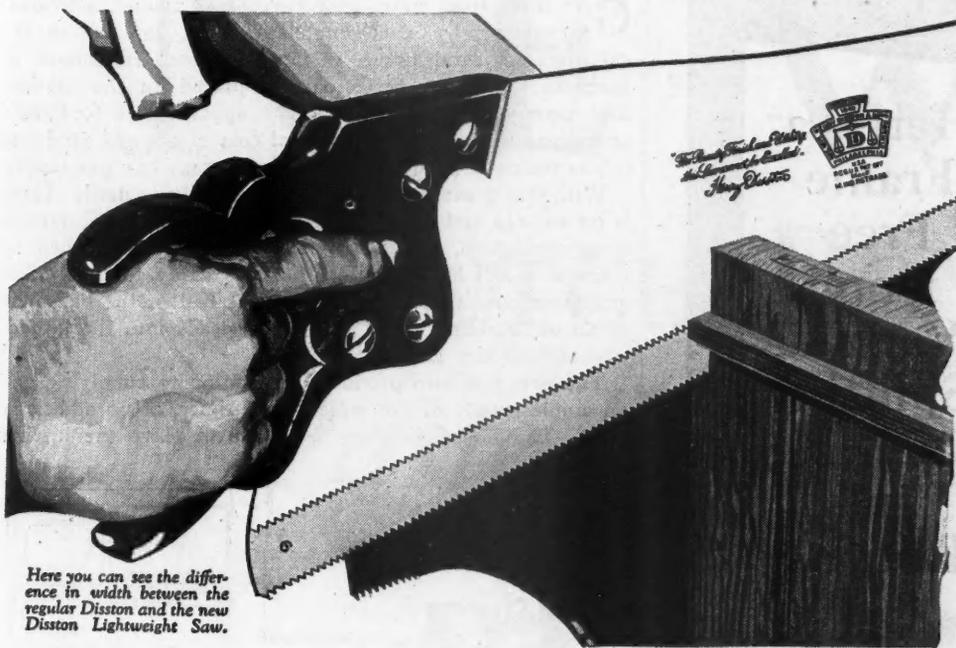
THIS ventilator is suitable for use in homes, offices, schools and other public buildings. With it installed rain, snow and sleet are effectively prevented from entering the room and you can have ample ventilation without sitting or sleeping in a draft or having your papers blown about by the wind.

This ventilator acts automatically, merely opening or closing the window causes it to function and you do not have to remove the ventilator to close the window. When the window is opened the ventilator gently slides downward into position, forming a water-tight and draft-proof seal at the window sill. The air currents are then directed upward toward the ceiling.

In addition to performing this real service the ventilator harmonizes with the correct appointments of room or office. It is of all brass construction, furnished with heavy plate glass with polished edge. Each ventilator requires but two  $1\frac{1}{2}$ -inch brass screws on each side of the window jamb. It is easily installed and the window casing does not have to be removed for installing.



This Ventilator May Be Installed in Any Window and Acts Automatically When the Window Is Opened.



Here you can see the difference in width between the regular Disston and the new Disston Lightweight Saw.

## Remember that "pet" saw of the old-time carpenter?

IT was a Disston, of course, and he bought it when he started to learn his trade. He swore there wasn't a saw on earth that could equal it for fast, easy cutting.

Filed hundreds of times, the blade had grown narrower and the weight lighter, so it ran easier and was kind to that good carpenter's arm.

Now, today, you can buy a saw designed purposely for modern sawing—the new Disston Lightweight.

It is narrower, like the old-timer's pet Disston.

It is lighter, saving your muscle on every stroke.

It has the hang, feel and balance that only Disston can give you.

If you are using only wide blades, try a Disston Lightweight—the lighter, easier-running saw.

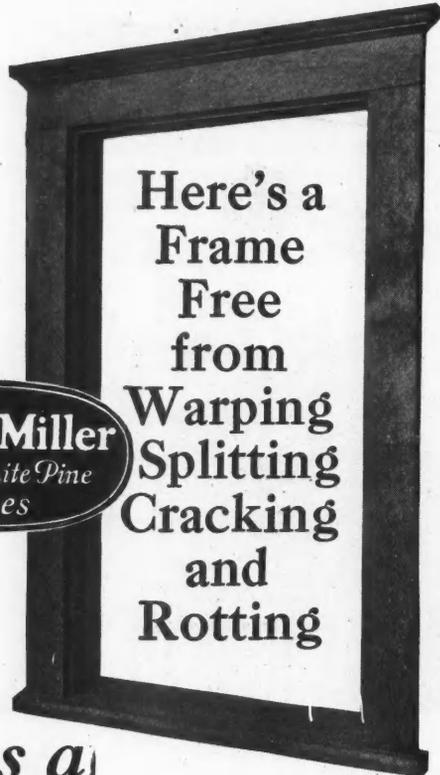
The Disston Lightweight gives you what you want: Disston steel, temper, taper, balance. You need one for the kind of work you do today.

Get the Disston Saw you have always used in a Lightweight Disston model: D-8, No. 12, D-20, D-23, No. 16, No. 7, etc. Your hardware merchant can supply them. If he does not have your favorite, write us, mentioning his name.

**HENRY DISSTON & SONS, Inc.**  
Makers of "The Saw Most Carpenters Use"  
Philadelphia, U. S. A.

# DISSTON

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



**Bradley-Miller**  
Michigan White Pine  
Frames

Here's a  
Frame  
Free  
from  
Warping  
Splitting  
Cracking  
and  
Rotting

*Here's a*  
**QUALITY FRAME!**

Made up in two bundles of seven units that can be nailed together in ten minutes, thereby saving time and labor over ordinary "made-on-the-job" frames. That's "frame" economy. Bradley-Miller frames are made of the finest wood possible to put in frames—Michigan White Pine. Don't confuse this wood with so-called White Pines or cheap White Pine. The quality is infinitely better. Your dealer can supply you with Bradley-Miller frames. If he hasn't them in stock he can get them quickly by wiring us.

Give your order for any size, any type of construction and your dealer will deliver Bradley-Miller frames immediately.



**You Get  
Immediate  
Delivery**

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

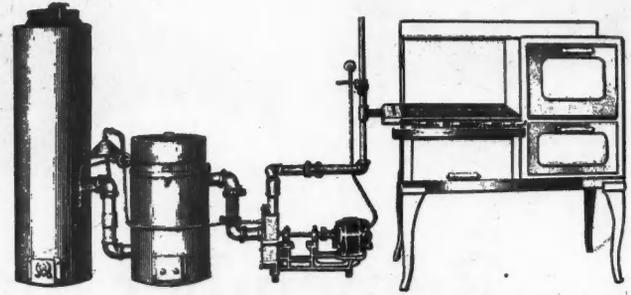
Name.....  
Address.....  
City..... State.....  
Does your dealer handle Bradley-Miller Frames?.....

**Economical Individual Gas Plant**

**G**AS made from water and charcoal, in a small individual generator, by a continuous process, for use in the suburban or rural home, restaurant, hotel, roadhouse or barbecue, has been perfected and placed on the market. The manufacturer states that the apparatus is fool-proof and automatic and that the actual cost of the gas produced is less than one-third the cost of the average city gas supply.

With this generator, gas is produced only as used. There is no storage and when the burners are off there is no gas being generated, but the instant the burner is turned on there is a full flow of clean, hot gas ready for use. The generator and its accessories are installed in the basement or an out-building and a single pipe leads into the kitchen just as with city gas.

The unit will also produce, in addition to supplying gas, an ample supply of hot water at all times, at no additional cost. The housewife does not have to leave the kitchen



**This Compact Plant Generates an Ample Supply of Gas for the Home at Very Low Cost, Using Only Water and Charcoal. The generator is placed in the basement or outbuilding.**

in order to operate this unit. She merely turns an electric switch at the stove and gas is ready for almost instant use.

The operation of this device is simple. A quantity of charcoal, sufficient to last for a week or more under ordinary circumstances, is fed into the hopper of the generator. This charcoal rests on the grate as in an ordinary hard coal stove and is supplied to the fire by gravity as it is consumed. Water is circulated around the fire until superheated steam results. This steam is drawn through the fire zone as fast as gas is consumed at the point of combustion. Thus the constituent gases of water, or steam as it now is, are separated, the oxygen going to support the combustion of the charcoal and the hydrogen, with the other gases resulting from the chemical changes which take place, forming the product burned at the gas stove.

The low cost of the gas produced is due to the small amount of charcoal used. The manufacturers state that coke, coal and several other hard fuels may be used as well as charcoal, and that some of the largest industries of the country are now using these generators, in the larger sizes, and are claiming large savings as the result.



**Wax Mixed Wall Colors**

**L**ONG before oil colors were invented the ancient Egyptians, Greeks and Romans produced mural paintings, the colors of which are still as fresh and vivid today as though laid on but yesterday. These colors were carried in wax which, it is said, accounts for their imperishable quality.

Recently a company which leads in the manufacture of wax finishes has revived the art of mixing colors with wax and has produced an interior finish that possesses many distinctive qualities. With this finish every color effect is made possible in any combination, shade or tone, mottled or pastel.

# NEW!

## DUTCH BOY

### Soft Paste WHITE-LEAD

*Eliminates "breaking up." Cuts mixing costs almost to zero.*

*Actually reduces to paint in a few minutes*



*Dutch Boy soft paste white lead is the same strictly pure white-lead that you always get under the Dutch Boy trademark—but, instead of being a fairly stout paste, it is a semi-paste. In other words, it contains enough additional linseed oil to eliminate the biggest part of the mixing job. Formula: Strictly pure white-lead, 85%; pure linseed oil, 15%—nothing else.*

**T**HIS announcement brings important news to every paint buyer. Now you can get strictly pure white-lead ready for almost instant use—pure lead-in-oil in a form that greatly speeds up paint-mixing.

This remarkable new product—Dutch Boy soft paste white-lead—is a semi-paste, containing 85% strictly pure white-lead, 15% pure linseed oil—*nothing else*. Just as it comes in the keg, it is ready for tinting and final thinning. No breaking up to do!

#### *Amazingly easy to use*

The user simply stirs up the soft paste quickly in the original package, pours the paste into a mixing bucket, and completes the paint by adding flattening oil, or linseed oil, turpentine and drier. That's all there is to it. The paint is ready for the brush.

A hundred pounds of Dutch Boy soft paste white-lead can actually be reduced to paint in six or seven minutes—a rate of a gallon of paint a minute.

Dutch Boy soft paste white-lead is adaptable for use on both exterior and interior surfaces. When linseed oil is added to it, a gloss paint is produced. Mixed with flattening oil, it gives that desirable type of washable, flat finish having a suggestion of a velvety sheen. In either case, of course, the paint can be tinted to exactly the color wanted.

#### *How sold*

This improved, time-saving form of Dutch Boy white-lead is sold by the pound, a hundred pounds bulking about 3½ gallons. Packed in air-tight, steel containers—100 lb. kegs, 50, 25 and 12½ lb. pails.

Our nearest branch will be pleased to give you further information about Dutch Boy soft paste white-lead and its labor-saving advantages.



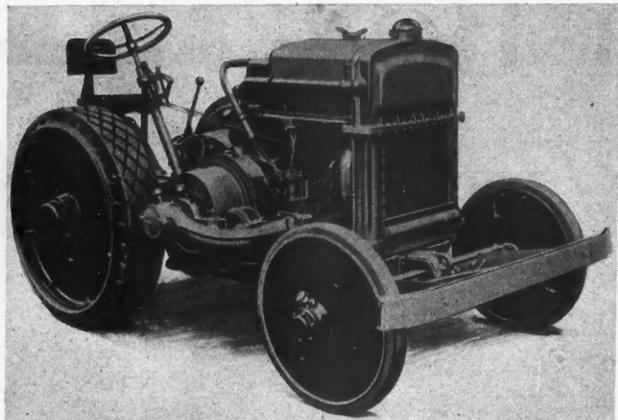
#### NATIONAL LEAD COMPANY

New York, 111 Broadway • Boston, 800 Albany St. • Buffalo, 116 Oak St. • Chicago, 900 West 18th St. • Cincinnati, 659 Freeman Ave. • Cleveland, 820 W. Superior Ave. • St. Louis, 722 Chestnut St. • San Francisco, 235 Montgomery St. • Pittsburgh, National Lead & Oil Co. of Pa., 316 Fourth Ave. • Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut St.

# DUTCH BOY Soft Paste WHITE-LEAD

### Improved Industrial Tractor

**A**N announcement has been made of a new industrial tractor intended for use in lumber yards, logging camps, road building and maintenance work, factories and shops, freight terminals, oil fields and parks. It has been built compact and low to facilitate work in close quarters and can be used in many places, through gates, and doorways, up ramps and on elevators, where a larger machine would be unable to go. It has great stability because of its low center of gravity and will operate on steep slopes



**An Industrial Tractor Designed for Easy Operation in Close Quarters in Construction Work.**

with entire satisfaction. It is designed so that it can turn completely in a radius of 10 feet.

This tractor is rated at 12 horsepower on the drawbar and 20 horsepower on the belt with plenty of surplus power for emergencies. It is equipped with a belt pulley and is as easily used on a belt job as on drawbar work. A quick acting, throttling governor regulates the engine speed to meet any variation in load.

Due to the fact that so much work is done on floors of buildings, platforms, decks, docks, ramps and pavements this tractor obtains traction by weight on rubber tired wheels. These have good traction on slippery or loose surfaces. The rear wheels, carrying two-thirds of the weight are cast hollow so they can be filled with 400 to 500 pounds of sand for additional traction if needed.

The design is simple so that adjustments are easily made and all controls are within easy reach of the operator who is seated on a comfortable, spring-mounted seat.

### Admits Ultra-Violet Rays



**This Treated Fabric Replaces Glass for Many Uses and Will Admit Ultra-Violet Rays.**

**A** STRONG fabric treated by a patented process to make it transparent, weather-proof and water-proof has been offered to the public as a substitute for glass for many uses. This material costs much less than glass and for many purposes is superior to glass. This superiority is based on the fact that this material will admit about 85 per cent of the ultra-violet rays of sunlight which are excluded by ordinary glass. These are the rays which are the essential element of sunlight in the health of both animals and plants and of human beings.

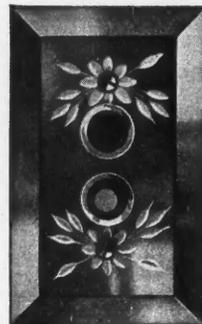
In addition to this quality the

fabric is a material which is easily and quickly applied, either in new work or repairing, as it is simply tacked on the window frame like cloth. It can be purchased in rolls of practically any length and the width is 36 inches.

Two of its outstanding uses are for hot frames and for brooders or scratch pens where its use enables the raising of earlier plants and healthier and more productive chickens. It is also recommended for enclosing porches in winter time, for which purpose it is merely tacked onto the screen frames, an inexpensive method of enclosure which practically adds one more room to the house. For enclosures in construction work it will be found to possess a wide variety of uses to the builder.

### Cut Glass Switch Plates

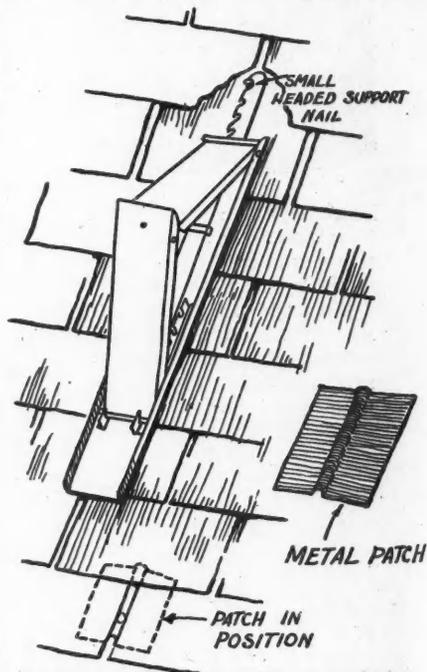
**C**UT glass switch plates have made their appearance and are playing a part in making the modern home more attractive. These plates are made in any number of gangs, push button, round toggle, receptacles and combinations and also to special drawings. In appearance they are suitable for use in the finest homes, hotels and apartments and are in keeping with the finest paintings and wall decorations. They are of the best quality plate glass, highly tempered to withstand the cutting and drilling used in their manufacture. All cuttings and decorations are made on the back of the plates and are, therefore, always protected. In addition to the mirror style of plate, gold, silver, ivory and white are also offered either plain, hand decorated or with floral cuttings.



**Switch Plates of Cut Glass Add to the Charm of the Home.**

### For Repairing Roofs

**T**HE manufacturer of a roof bracket, shown in the illustration, features the fact that these brackets are especially suitable for use in repairing and painting roofs and simplify the problem of preventing leaks after such work has been done. To use these brackets it is only necessary to drive a small headed, large support nail through the underlying slates or shingles, and attach the bracket thereto with the extending nail strip, as shown. To prevent after leaks, the nail head should be covered by inserting a convex piece of metal under the overlying roofing, as illustrated.



**Using This Roof Bracket, Repairs Can Be Made and Leaks Prevented as Shown.**



# FREE BLUE PRINTS

AND FREE BOOK "HOW TO READ BLUE PRINTS"

Show You The Way To

# 9 BIG PAY JOBS

- |   |  |
|---|--|
| <b>1</b> Building Superintendent—\$5,000 to \$12,000. | <b>6</b> Building Estimator—\$6,000 to \$10,000.                               |
| <b>2</b> Building Inspector—\$4,800 to \$8,000.       | <b>7</b> Real Estate Expert—\$5,500 to \$12,000.                               |
| <b>3</b> Appraiser—\$6,000 to \$10,000.               | <b>8</b> Construction Foreman—\$4,500 to \$8,500.                              |
| <b>4</b> Material Buyer—\$5,000 to \$7,500.           | <b>9</b> CONTRACTOR AND BUILDER IN A BUSINESS OF YOUR OWN—\$5,000 to \$12,000. |
| <b>5</b> Material Salesman—\$5,000 to \$12,000.       |  |

**FIND OUT HOW Easy it is to Make \$4,500 to \$12,000 a Year**

Learn to read Blue Prints this amazing new way. See how quickly and easily you can train to make \$4,500 to \$12,000 a year! My FREE Blue Prints and big FREE Book "How to Read Blue Prints" disclose all the so-called "mysteries" of Blue Print Reading—also give some startling facts about the nine best jobs in America—jobs open only to men who can read Blue Prints. Don't send one penny—just mail the coupon!

**N**O longer need you spend years trying to pick up the "mysteries" of Blue Print Plan Reading—for now a quick, sure practical method has been perfected that has made thousands of men Blue Print Experts in a surprisingly short time.

**THE SECRET OF BIG MONEY**

This is no ordinary "school course." It is practical from start to finish. It is based on many sets of real Blue Prints—plans that would cost thousands of dollars if purchased from the architects. Twenty famous experts in all lines of construction work talk over these Blue Prints with you in plain, simple language. Show you every detail. Explain every short cut. Tell you the "secrets" of quick, accurate estimating. Explain superintending. Give you for the first time many inside facts and money-making methods used by the "giants" of the Building Industry.

**IF YOU LIVE NEARBY**

Visit our big day or evening school attended by over 1,000 Builders. You can get the same training at home by mail—same plans, lessons and instructions. Your spare time is enough.

**NO EDUCATION NEEDED**

This is the kind of training that quickly puts men into \$4,500 to \$12,000 a year jobs—or into profitable contracting businesses of their own. Yet now you get it right at home in only 2 or 3 months. It requires no extensive education. If you can read and understand what is written here you can easily master it.

See what this training has done for others: Bartholomew, Calif., became a contractor at an increase of over 300% his first year; Blair, Okla., stepped up to Superintendent at 100% increase; Dickerson, R. I., increased his salary 700% in 12 months; Marchand, La., says: "My income has increased 200% and I now have more contracting work than I can do."

**AMAZING OPPORTUNITIES**

Over seven billion dollars will be spent this year in new construction! No wonder, then, such tremendous opportunities are open to you when you have this "head-work" training in Blue Prints.

If you want more money—real big money—then choose a "Blue Print" job in Building. Here is the one field where there are unlimited opportunities for advancement.

**MAIL COUPON TODAY**

So accept my FREE gift of a complete set of real working Blue Prints and my

fascinating Book "How to Read Blue Prints" that tells all the interesting and instructive facts about Blue Print Plans. Don't send one penny—pay no C. O. D.—it's all FREE. Just fill out and mail the coupon today—NOW!



**TWO BOOKS also FREE**

Chicago Technical School for Builders, Dept. R-120, Chicago Tech. Building, 118 East 26th Street, Chicago, Ill.

Please send me your free book "How to Read Blue Prints," and complete set of real Blue Prints. I understand these are mine to keep without obligation. It is also understood that no salesman will call on me.

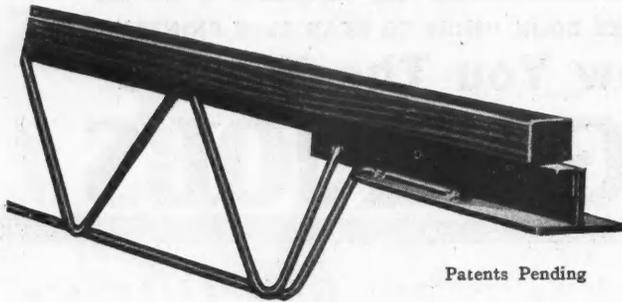
Name.....  
 Address.....  
 City..... State.....



Dept. R-120, 118 East 26th Street, Chicago, Ill.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

## Massillon Light Joists For Homes



Patents Pending

### The Advantages of Steel The Simplicity of Wood

**T**HESE Steel Joists are used in place of wood joists anywhere that wood joists are used. They are readily supported on any type of wall, beam or partition. Wood flooring or subflooring is nailed directly to the top member of the joist. Metal ceilings, metal lath and plaster, plaster-board, and other standard types of ceiling are readily attached to the bottom bars.

In addition stock joists are shipped for all floor spans. No cutting or fitting is required in the field. Bridging is required only for the longer spans when joists are rapidly bridged with bridging wire. Piping, plumbing, and conduits are run through the joists in any direction. Labor savings will be apparent to builders.

Floors built with Massillon Light Joists have a much higher degree of fire resistance than wood joist floors. They eliminate the shrinkage and warpage of wood joist floors and prevent plaster cracks. And the cost of a good strong steel joist floor (installed) runs remarkably close to that of wood joist construction.

Contractors who build homes to sell cannot afford to overlook the advantages of these joists for their next building. Send us your plans and ask us for a quotation.

#### Other Massillon Products

Roof Trusses—Bank Vault Reinforcing—  
Metal Lath—Steel Windows—Reinforcing  
Trusses and Steel Forms—Fabricated  
Structural Steel—Concrete Reinforcements

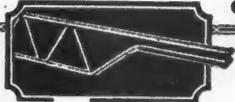
## THE MACOMBER STEEL CO.

Successors to The Massillon Steel Joist Co.

909 Belden Ave., N. E.

Canton, Ohio

Canadian Manufacturing and Sales Agents:  
Sarnia Bridge Co. Ltd., Sarnia, Ont.

**MASSILLON**  
● **BAR** PATENTS PENDING **JOISTS**  
Two Bars Top and Bottom  Solid Steel Welded Joints

# NEWS of the FIELD



### Wire Companies in Merger

**T**HE organization of a large electrical wire and cable company under the name of General Cable Corporation is forecast by the recent calling of stockholders' meetings to approve action taken by the boards of directors of various companies whose assets will be owned by the new company.

When the organization of the General Cable Corporation is completed it will own the assets and businesses now operated by the Dudlo Manufacturing Corporation, Rome Wire Company, Safety Cable Company and Standard Underground Cable Company and the sheet and rod and wire mills of the Baltimore Copper Smelting & Rolling Company.

### Regulator Companies

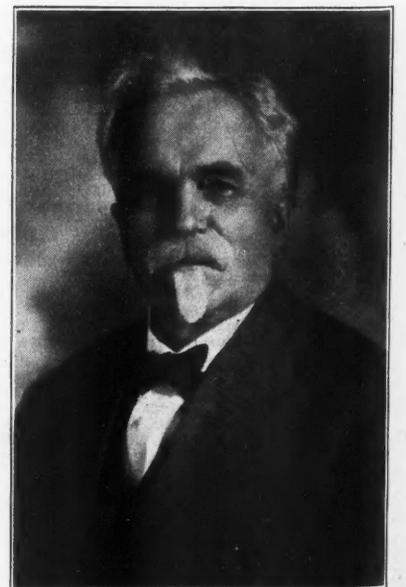
**T**HE consolidation of the Minneapolis Heat Regulator Company, Minneapolis, Minn., and the Honeywell Heating Specialties Company, Wabash, Ind., bringing together two of the most important firms in the heat regulating business, has recently been announced. The new company will be known as the Minneapolis-Honeywell Regulator Company.

### Banks Plant Expanded

**T**HE Banks Steel Post Company, 128 Wakeman Avenue, Newark, N. J., has recently announced the addition to its factory of a Parkerizing plant. This plant will handle a patented Parkerizing process which will make the removable steel clothes posts manufactured by this company absolutely waterproof, it is stated.

### F. D. Kees Passes Away

**O**N October 20, F. D. Kees, president of the F. D. Kees Manufacturing Company, Beatrice, Neb., passed away at his home in that city. Mr. Kees, who was 76 years old at the time of his death, was well known to the building industry as head of the firm which bears his name and which he organized in 1904.



F. D. Kees, Founder and Former President of the F. D. Kees Manufacturing Company.

**Be sure the house you buy is completely wired**

WHAT is the beauty of a large living room unless you can light it effectively? What's the joy of a white tiled bathroom, if you can't plug in an electric heater on a hilly morning? Why have "modern" kitchens, if you can't use modern appliances there with handy comfort? The wiring plans are a mighty important part of the house to look over before you buy!

Many builders are putting in G-E Wiring System complete—just as you would if you planned your home. It costs a little more to do this—because there's more to such a system—and because it has more but highest quality G-E materials throughout. But the progressive builder will spend those few extra dollars and you can get the wiring you want. Look for the G-E Wiring System sign.

The G-E Wiring System is a system of housewiring embodying adequate outlets, conveniently controlled and using G-E materials throughout.

Merchandise Department  
General Electric Company  
Bridgeport, Connecticut

**WIRING SYSTEM**  
—for lifetime service

**GENERAL ELECTRIC**

**The comforts of well planned wiring**

Light, cheerful rooms, switches to light your way upstairs or down; outlets for irons, cleaners and lamps where you want them, complete wiring for light and appliances—all these are yours when you specify G-E Wiring System.

and with a G-E Wiring System the first cost is the whole cost. You go over your plans with the contractor and see that they fit in with your ideas for your needs for comfort. There are outlets planned for every room—switches at every door. And materials from beginning to end are specified as and guaranteed by General Electric. Installed by a competent contractor, the G-E Wiring System lasts for a lifetime.

**WIRING SYSTEM**  
—for lifetime service

**GENERAL ELECTRIC**

# Hundreds of builders are turning this advertising into profits

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



Merchandise Department  
General Electric Company  
Bridgeport, Connecticut

Builders everywhere are finding that the completely wired house is the *house that sells*.

Whether you are putting up one house or a thousand you will find that General Electric advertising has created a demand for the G-E Wiring System which you can turn to profit. It gives you selling points in every room . . . sells the man on the basis of known quality . . . sells the woman by its completeness. Today real estate developments up to as many as a thousand houses are using the G-E Wiring System throughout, to attract buyers. And they have proved its success!

**WIRING SYSTEM**  
—for lifetime service

**GENERAL ELECTRIC**

### Steel Company to Reorganize

THE Wickwire Spencer Steel Company, Inc., 41 E. 42nd St., New York City, voluntarily went into receivership under date of October 22, 1927. Edward C. Bowers and Charles L. Feldman were appointed receivers. Mr. Bowers has been, for the past two years, president of the corporation and his appointment as active director of affairs under the receivership denotes confidence in his direction of the company's business and ability to carry to a successful termination the present readjustment proceedings.

It is expected to make the company one of the strongest financially in its line. All the plants will be operated as heretofore without shut-down. Any unfilled commitments on the books of the company will be successfully handled as will future business placed with the company. There will be no rearrangement of the selling organization in any respect and sales contracts which customers have had will be maintained as in the past.

The American Wire Fabrics Corporation, while it is a subsidiary of the Wickwire Spencer Steel Company, Inc., is not in the receivership and is in no way affected by these proceedings.

### Chain Belt Expands Again

THE mortar and plaster mixer business of the Atlas Engineering Company has been purchased by the Chain Belt Company, of Milwaukee, Wis. This is the second manufacturing business the Chain Belt Company has bought within a year, the Stearns Conveyor Company, manufacturer of belt conveyors, being taken over about 11 months ago. In buying the mixer business of the Atlas Engineering Company a complete line of mortar and plaster mixers will be added to the Rex line of concrete mixers.

### Lake Shipping Record Broken

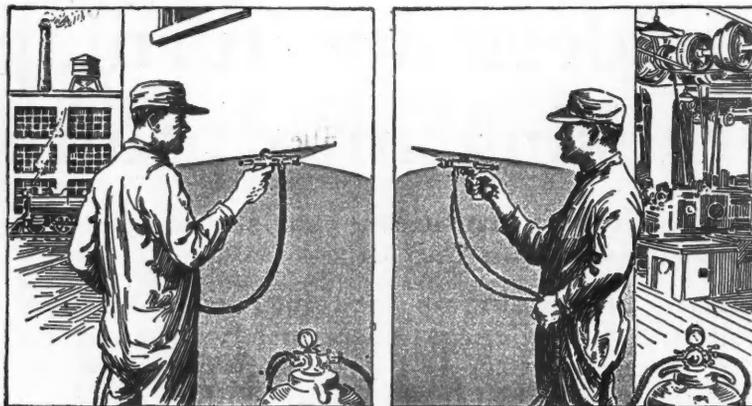
SETTING a new high mark in fresh water shipping annals, the "Carl D. Bradley," largest Great Lakes steamer afloat, eased into the new Buffington (Indiana) Harbor last month with 15,724 tons of limestone, said to be the largest load ever carried on fresh water. Her own automatic unloading machinery discharged the cargo in five hours, which is believed to break all records for speed in unloading. The limestone came from the Calcite, Mich., quarries, the largest in the world.

### Will Manufacture Sheetile

A BUSINESS association has been formed between H. A. Hamlin, of the Sheetile Corporation, formerly located at 3143 Bellevue Ave., Detroit, Mich., and Alton J. Hager and Norman B. Cove, of the Hager & Cove Lumber Co., Lansing, Mich., for the manufacture and distribution of Sheetile. The business will be operated under the name of the Hager Wall-Tile Corporation and the headquarters are being moved to Lansing, Mich., where the main office will hereafter be located. The Hager Wall-Tile Corporation will distribute Sheetile, which is already familiar to the building industry, through the lumber dealers throughout the country, just as the original company has been doing.

### Smith Appoints Distributor

A RECENT announcement states that the Stuart S. Smith Company, 19th and Indiana Sts., San Francisco, Cal., has been appointed by The T. L. Smith Company of Milwaukee, Wis., as distributor of its mixers and pavers for the northern California and western Nevada territories.



## Outside or In —

*You'll make more money painting the DeVilbiss way*

No matter what nor when you paint, painting with the DeVilbiss Spray-painting System speeds up your work 3 to 5 times. Hours of time are saved and more dollars of profit made.

Besides, improved work is done on every sprayed job and you have a more satisfied crew of painters.

Investigate this well established, greater profit DeVilbiss way of painting. Interesting facts will be gladly mailed. Address—

THE DEVILBISS CO. 238 Phillips Ave. TOLEDO, OHIO

New York  
Chicago  
Detroit  
Philadelphia  
Indianapolis  
San Francisco

**DeVilbiss**  
**Spray-painting System**

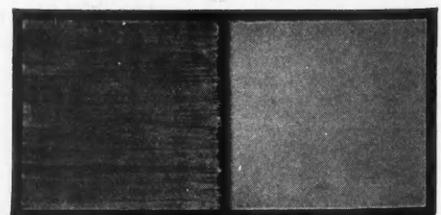
Pittsburgh  
Cleveland  
Cincinnati  
Milwaukee  
St. Louis  
Minneapolis  
Windsor, Ontario

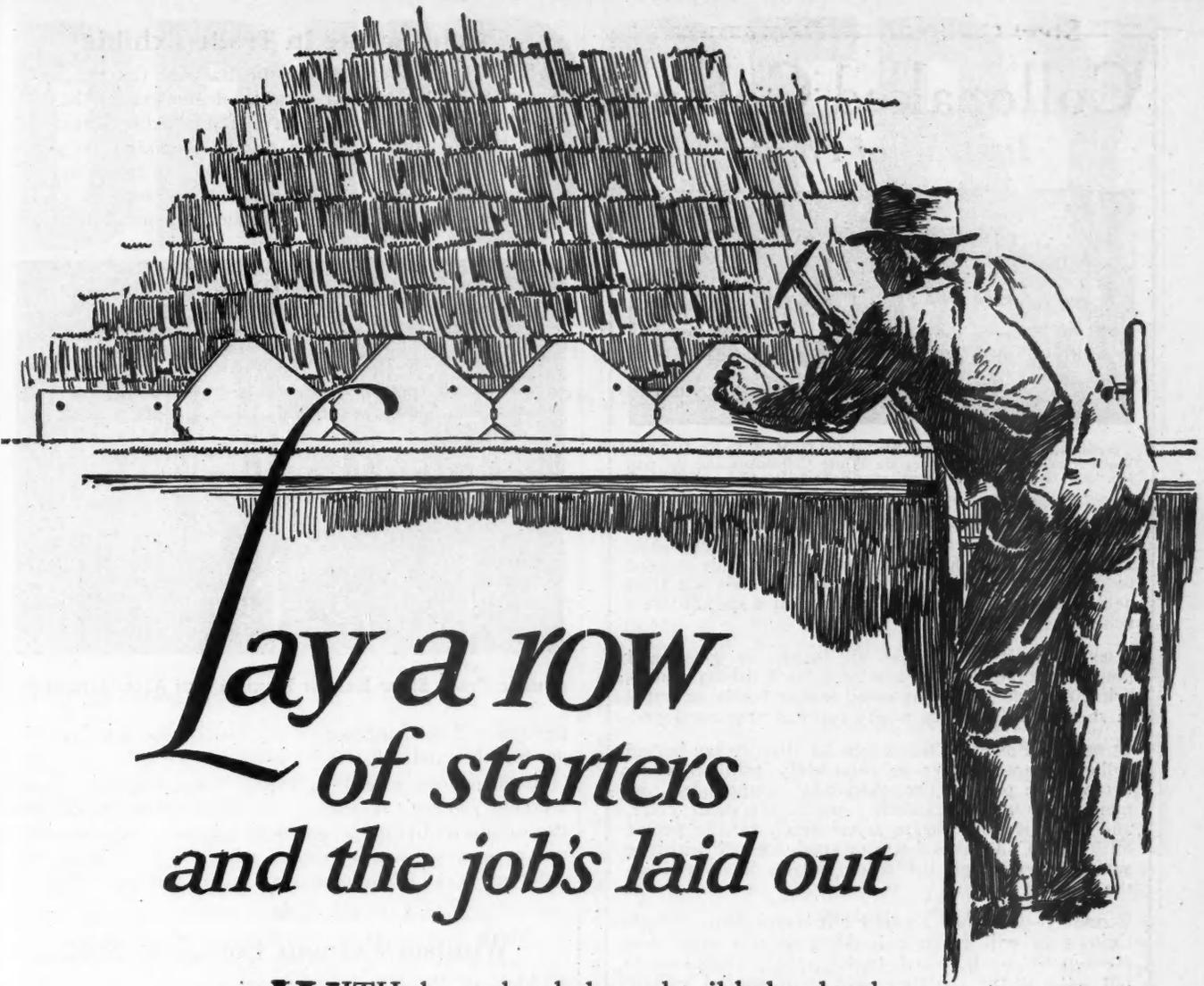
### Illustrating the Comparative Hiding Power of Brushed and Sprayed Coats of Paint

The hand brush puts on an uneven coating and the thin paint in the grooves wears away quickly. . . . The DeVilbiss Spray Gun applies a strong, even paint film that covers perfectly, that is durable and that wears down uniformly.

(Illustration shows same paint applied on identical surfaces —Photograph is unretouched and greatly reduced in size.)

One brushed coat :-: One sprayed coat





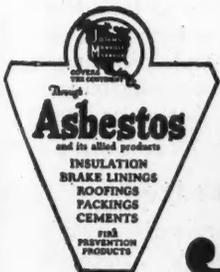
*Lay a row  
of starters  
and the job's laid out*

WITH the anchor holes and nail holes already accurately punched, each Johns-Manville Asbestos Shingle acts as a guide for the next one. Just follow the anchor holes and you can't go wrong. Any carpenter who tackles the job can do it right the first time.

In every community there is a tremendous field for re-roofing over the old shingles, as well as the field for new construction. A lot of this business can be secured with Johns-Manville Asbestos Shingles.

*Public opinion is swinging to firesafe roofs. Johns-Manville Asbestos Shingles are steadily climbing in popularity.*

JOHNS-MANVILLE CORP., 292 Madison Ave., at 41st St., New York  
Branches in all large cities For Canada: CANADIAN JOHNS-MANVILLE CO., LTD., TORONTO



# JOHNS-MANVILLE Asbestos Shingles

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# Collopaked Colors

## Instead of Paints



Residence of H. E. Bryan, Pres. of the C. M. & St. P. Railway. Walls finished with Old Virginia White Collopakes and the roof No. 302 Green Stain. Architect, Robert De Golyer, Chicago.

Cabot's Collopakes are colors in which the pigments have been reduced by the CABOT Collopaking Process to such fineness that the particles cannot be seen with an ordinary microscope. They are then held in permanent colloidal solution in a special liquid vehicle.

**Uses**—Cabot's Collopakes are made in gloss and non-gloss types. They are used for finishing stucco, brick, concrete, stone or wood, either inside or out—in short, for every use where paint is now employed.

**Covering Power**—Two coats of the heavy-bodied Collopakes will cover as completely as three coats of common paint. The colloiddally compounded pigments penetrate the surface with permanent color, and there is no separate layer which can be peeled off. The Collopakes become amalgamated with the surface they cover, the color sinking in as well as the vehicle.

**Economy**—On this account the equivalent Cabot's Collopakes will finish a building at less cost than good-grade ready-mixed paints. As Collopakes do not settle in the can they save an enormous amount of time and labor in stirring.

**Durability**—Cabot's Collopakes retain their color and the gloss Collopakes retain their gloss, indoors or outdoors, under conditions which would ruin ordinary paint.

**Particulars and Prices**—We will gladly send full particulars, color charts and prices of Cabot's Collopakes to any architect or builder asking for them on the coupon at the foot of this advertisement.

# Cabot's Collopakes

*Newer and Better than Ready Mixed Paints  
Made by the Maker of the Famous Cabot's Shingle Stains*

**COUPON**

*Samuel Cabot*  
Incorporated

141 Milk St., Boston, Mass. Offices also in New York, Chicago, Philadelphia, Kansas City, Los Angeles, Minneapolis, Portland. Please send me full information on COLLOPAKES.

Name.....

Address.....

### Architecture in Trade Exhibit

THE exhibits presented by the Bakelite Corporation at various trade shows this year are demonstrating the value of architectural co-operation in planning exhibits that will avoid the violation of color schemes, mixing of period designs and loss of proportion which too frequently are seen in these shows. This company has secured a pure Gothic effect with tasteful attention to decoration and



Artistic Trade Show Exhibit Planned with Architectural Aid.

lighting. The construction utilizes strong material well put together and will last for years.

An ingenious screen of panels displaying the various Bakelite products is adapted to variation at the different expositions and permits facility in handling. It is constructed in sections which can be adjusted to conform with different sizes of booths at the various shows.



### Windsor Cement Company Sold

SALE of the Windsor Cement Company of Hartford, Conn., has been announced by the Chicago headquarters of the United States Gypsum Company, which has operated the Windsor Cement Company since 1921. The purchaser is the City Coal Company of Hartford, and the business will be continued under its own name. The United States Gypsum Company acquired the Windsor Cement Company and several other eastern retail businesses through the purchase, in 1921, of J. B. King & Co. of Staten Island, N. Y.



### Plasterers Inspect Factory

ON the second day of the tenth annual convention of the Contracting Plasterers' International Association, held in Milwaukee, Wis., October 3 to 6, the delegates, with their wives and friends, made a visit to the plant of the Milwaukee Corrugating Company, where they were conducted through the entire establishment, including the fireproof material department where the manufacture of expanded metal lath and corner bead held particular interest.



### Paint Company Organized

THE Lantz Paint Company, Inc., recently organized, will open for business at 30 Harrison Ave., Springfield, Mass., about December first, with Fred D. Lantz as president and his son, Arthur H. Lantz, as treasurer. The company will occupy the entire building and will represent the Martin-Senour Company and the Martin Varnish Company of Chicago, carrying a full line of painters' supplies.

# DRUDGERY

**Of Estimating Building Costs is a thing of the past, now that the HoltBid Method enables anyone to get the cost of a Building in from 30 to 50 minutes**

**By JOSEPH D. EDDY**

**M**EMBERS of the building industry are abandoning the old-fashioned method of estimating building costs. The drudgery of working over long columns of figures and devoting one or two days to an estimate and then being doubtful about its accuracy are things of the past. They are adopting the HoltBid Method of estimating and find that it is easy to learn, easy to use, and that their estimates secured by this method are accurate and that they can arrive at the cost in from 30 to 50 minutes.

Users of the HoltBid Method are enthusiastic about it. O. J. Bambach, of Bambach Bros., Rogers, Ark., recently adopted the HoltBid Method. After using it he wrote:

**I want to take this opportunity of telling you that I am a HoltBidder and would not take the price of the whole set of instructions for the HoltBidder's Key alone. It is a master key for the estimator and has certainly taken the work out of estimating for me.**

Mr. Bambach is an up-to-date business man. He has found something that will save him time and hard work, which means a saving of money. He read about the HoltBid Method and investigated. His letter tells what it meant to him to be willing to adopt this modern method of securing estimates of building costs.

Out on the Pacific Coast, E. T. Robie, president of the Auburn Lumber Company, Auburn, Calif., uses HoltBid. Mr. Robie says:

**Where we have itemized a material bill after using HoltBid and compared the two, we have found HoltBid accurate. It saves a lot of time.**

And this from the Atlantic Coast: A. A. Pennock, treasurer of I. F. Pennock & Son, Inc., Littleton, N. H., writes:

**I am convinced that HoltBid is absolutely reliable. It is not hard to learn. In the beginning I was skeptical, as I could not see how it could fit different localities. Now I save hours of hard, tiresome work in estimating that has been my previous experience.**

F. O. Henkel, manager of the Alexander Lumber Co., Minier, Ill., is another progressive member of the building industry. Mr. Henkel, too, has adopted

the modern HoltBid Method of estimating, and here is what he says about it:

**We think the HoltBid is the most wonderful system in the world. I sold a job for \$3,700 at a good profit that I would not have sold had I not used the HoltBid Method.**

There are hundreds of other members of the building industry who have become HoltBidders recently. They are just as enthusiastic about HoltBid as the men whose letters are quoted above.

It was this enthusiasm over HoltBid among members of the building industry that determined William A. Radford, president and editor-in-chief of American Builder Magazine, to take over the HoltBid Service Company. Mr. Radford was certain then and is more certain now that the HoltBid is a greater help to the building industry than anything that was ever devised. It not only takes the drudgery out of estimating building costs but enables any one at all familiar with estimating to find the cost of most buildings in from thirty to fifty minutes. When this short time is compared to the hours and sometimes days that were required to secure an estimate by the old-fashioned method, it will readily be seen that HoltBid means an enormous saving in time and money as well as hard work.

When he became the president of the HoltBid Service Co., Mr. Radford determined that this method of estimating should be made available to every member of the building industry. He set a low price on the HoltBid method and then made the terms so easy that no one need hesitate to become a HoltBidder. The response was immediate. HoltBid was proven a success.

Such endorsements as these quoted should leave no doubts in the minds of those who are estimating building costs about the great value of the HoltBid Method. They owe it to themselves to become HoltBidders. Elsewhere in this issue of the American Builder Magazine will be found a four-page announcement that explains what the HoltBid Method of estimating is and how easily it may be secured.

The HoltBid Service Co. headquarters are located at 1901 Prairie Ave., Chicago, Ill. Here a staff of expert HoltBidders are ever ready to help every member of the building industry learn this new method of estimating. A letter to the HoltBid Service Co., 1901 Prairie Ave., will bring full particulars.



## An Ideal Xmas Gift

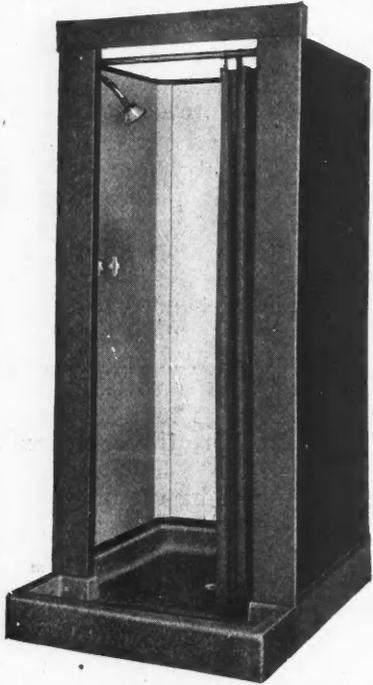
For You and the Family—Good for

365 Days *Every* Year

# FIAT SHOWER BATH COMPARTMENT

**Absolutely Leak Proof  
Requires Little Space  
Easily Installed  
Less Work for Housewife**

FIAT SHOWER BATH COMPARTMENTS can be set anywhere, in a closet, or even in a bedroom. THEY ARE A BIG FACTOR IN SELLING



OR RENTING HOMES. All water confined within compartment—no wetting of plaster or woodwork.

FIAT SHOWER BATH COMPARTMENTS make for more invigorating and quicker bathing. Let us assist you in making the home more modern, convenient and sanitary. Write today and we will tell you how.

**Mail Coupon Today!**

**Shipped knocked-down in flat crates.  
Easy to handle and assemble.  
Entire installation by plumber.**

*Easily Installed in Old Homes*

**FIAT METAL MANUFACTURING CO.  
1201 ROSCOE ST., CHICAGO, ILL.**

FIAT METAL MANUFACTURING CO.  
1201 Roscoe St., Chicago, Ill.

Please send me full information regarding Fiat Shower Bath Compartments.

Name.....

Street.....

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

Please check—I am a Contractor , Plumber , Architect , Dealer , Realtor , Home Owner .

## 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.

Herbert H. Davis Company, Inc., 4146 S. Western Ave., Chicago, has published a booklet, entitled "The National System of Hot Blast Heating," covering the operation and advantages of its heating system together with engineering data for designing and installation.

The Star Expansion Bolt Co., 147 Cedar St., New York City, has issued a new "Handy Price List No. 402" of its expansion shields and kindred products.

The Truscon Steel Company, Youngstown, Ohio, has published a booklet on "Truscon Steel Joists—Open Truss Type—for Economical and Fireproof Floor Construction."

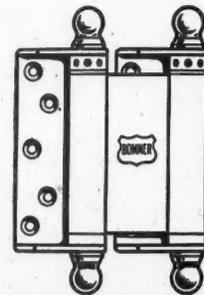
The Philip Carey Company, Lockland, Cincinnati, Ohio, has brought out a new Bulletin 101A under the title "Heat Insulation for Temperatures 500° F. to 1200° F." which is one of a series aimed at better understanding of heat losses and methods of reducing them.

The Lincrusta-Walton Company, Inc., Hackensack, N. J., is sending out, with its descriptive literature, samples of the various styles of wall covering which it manufactures.

Sargent & Company, 51 Water St., New Haven, Conn., has published a most handsome new catalog booklet under the title "Hardware for Utility and Ornamentation" which illustrates the artistic application of its hardware in every part of the home.

"The Vogue in Decorative Lighting" is the title of a new booklet published by the Lightolier Company, 569-575 Broadway, New York City, and is a handsomely illustrated presentation of the fixtures manufactured by this company.

**They  
are  
the best**



**They  
wear  
the best**

# Millions and Millions

of People are Pushing

## Bommer Spring Hinges

when opening doors

*Follow the line of least resistance  
Your Dealer handles them*

Copyright 1927 by Bommer Spring Hinge Co., Factory and Offices, Brooklyn, N. Y., U. S. A. Established 1876

**Books, Bulletins and Catalogs for You**

**T**HE 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 Sheet Steel Trade Extension Committee, Oliver Bldg., Pittsburgh, Pa., has published, under the title, "5,000 Sheet Steel Products and Who Make Them," a directory which is the first publication to contain a complete list of all the fabricators of products made from sheet steel and the names of these products. It is a large volume bound in stiff covers. Price, \$3.00.

"Cold Weather Construction—With Concrete Masonry" is a recent booklet published by the Portland Cement Association, 33 W. Grand Ave., Chicago, explaining the correct methods for this type of work.

The Scientific Heater Co., 2100-2124 Superior Viaduct, Cleveland, Ohio, offers its Catalog No. 29 covering its line of gas ranges, stoves, furnaces, heaters and dryers and a booklet, under the title "Scientific Clothes Dryers," covering this particular product.

"Health and Comfort with Warm Air" is a new booklet published by the National Warm Air Heating and Ventilating Association, handsomely illustrated in colors and containing much interesting and valuable information on the subject of warm air heating for the home.

The Durabilt Steel Locker Co., 471 Arnold Ave., Aurora, Ill., offers a folder for loose leaf binding on the various types of steel locker it produces for schools, clubs, homes, offices, factories and other installations.

Richardson & Boyton Co. is distributing a folder illustrating its new jacket boiler for steam, hot water and vapor systems and its new jacketed warm air heater which it has developed.

The Koehring Company, Milwaukee, Wis., has published a completely revised edition of its treatise, "Concrete—Its Manufacture and Use," with all the material brought up to date and entirely new tables on quantities of materials. It will be sent, upon request, to all interested persons such as contractors, foremen and superintendents, engineers and architects.

The New York Wire Cloth Co., 233 Broadway, New York City, offers a catalog booklet of surface tables and retail sales prices on its wire screen cloth.

The Edwards Mfg. Co., 401-417 Eggleston Ave., Cincinnati, Ohio, has published a booklet on the subject of "Edwards Copper-Bearing Steel," explaining its qualities and process of manufacture.

"How to Heat Your Home for Health and Comfort" is a new booklet published by the Holland Furnace Company, Holland, Mich., treating the problems of satisfactory and economical heating, including such subjects as insulation and humidity.

The Fireproofing & Drying Lumber Corp., 1457 Broadway, New York City, offers a pamphlet describing the fireproofed lumber which they market and also reproductions of letters testifying to the results produced by this process.

The Diamond Metal Weather Strip Company, Box 7, Station "H," Columbus, Ohio, offers a new pamphlet on the Parsons weatherproofing hardware which it manufactures for the exclusion of water, air, dirt, snow and outside noise.

The Maple Flooring Manufacturers' Association, 1777 McCormick Bldg., Chicago, has published, under the title "The New Color Enchantment in Hard Maple Floors," a new booklet, handsomely illustrated in colors, showing the effects that may be obtained with maple flooring.

**Unusual Service for the Contractor**

*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.

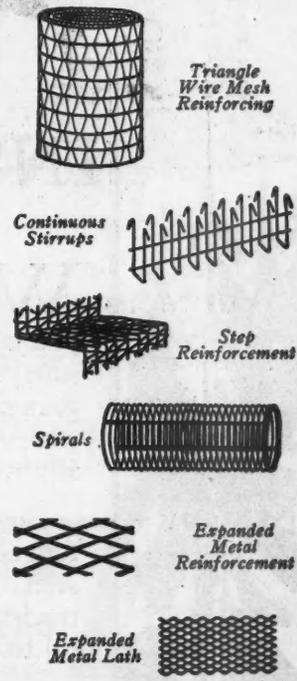
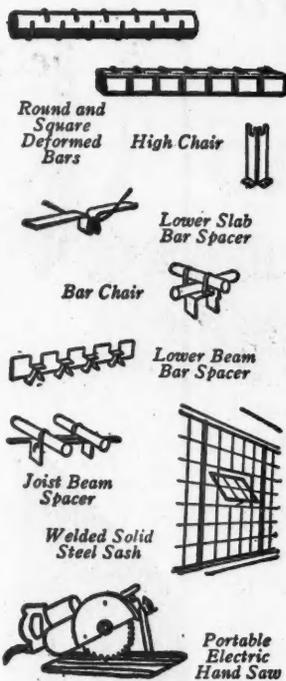
*Write for Complete Information.*

**JOSEPH T. RYERSON & SON INC.**

CHICAGO  
CINCINNATI  
BUFFALO

MILWAUKEE  
DETROIT  
JERSEY CITY

ST. LOUIS  
CLEVELAND  
BOSTON



**RYERSON REINFORCING-SERVICE**

# COMBINATION BATH

SEAT BATH, FOOT BATH, SHOWER  
BATH, CHILD'S BATH.

*Semi-Vitreous Porcelain and Enameled Iron Ware.  
Made to tile in corner or in a recess.*

HOTEL MIRA MAR  
6222 Woodlawn Avenue  
CHICAGO

February 1, 1927.

Wheeling Sanitary Mfg. Co.,  
Wheeling, West Virginia,  
Gentlemen:

Attention: Mr. F. W. Wheelock.

When you called in to see me recently, you requested that I reduce to writing the same views as expressed to you at that time, relative to the merits of your combination Bath, as gained through the experience I have had since taking charge of the Mira Mar Hotel.

I confess having entertained some misgiving at the outset as to how the average guest would like the Combination Bath. However, this uncertainty was soon dispelled, and I was fully reassured that we had made no mistake in equipping such rooms as we did with them. As a matter of fact the mistake we made was that we did not equip all the bathrooms with the Combination Bath and shower, instead of the regular baths that were used to a considerable extent.

As you know, in the addition we are now making to the Hotel all bathrooms will be fitted up with the Combination Bath. It goes without saying this would not be the case if we were not thoroughly satisfied that the Combination Bath is superior to any other type.

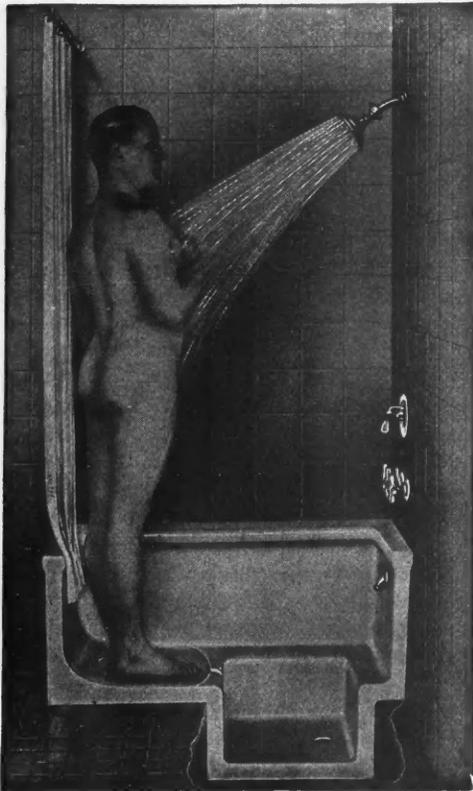
I believe this answers your question to the same extent it expresses my views and the general opinion of our guests.

I understand order has been placed with your Company for sixty Combination Baths, to be used in the extension now being erected.

Yours very truly,  
WM. T. LACKEY.

Ask any jobber or plumber for complete details, and write us for descriptive circular.

**Wheeling Sanitary Mfg. Co.**  
**Wheeling, W. Va.**



## Now— insulation plus strength CORNELL INSULATING BOARD

✦ PANELIZED TIMBER ✦

WHEN building homes don't sacrifice the rigidity of the house in order to insulate it. If the insulating material you buy is to be used as a sheathing for walls and roof, make sure you are buying the *strongest* insulating board made. First, get a sample of Cornell's *new* insulating board. Examination and comparison will quickly convince you that it is an exceptionally strong and rigid board—just as laboratory tests prove it.

Cornell Insulating Board is an all-wood product that is tougher, stiffer and harder than any insulating board you've seen. It will not crack or crumble. It is chemically sized to render it impervious to moisture and make it most economical to paint—when used as an interior finish.

Investigate carefully. Your dealer can supply you. But write us *now* for the sample and descriptive literature.

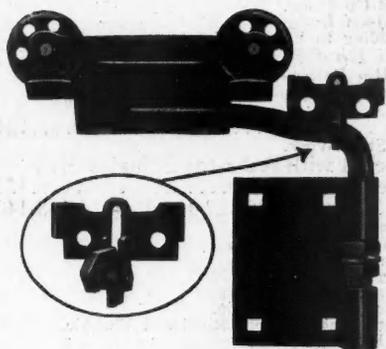
**CORNELL WOOD PRODUCTS COMPANY**

109 North State Street

Chicago



## The Reasons for the Popularity of No. 50 EZ Garage Fixtures



The catch in the circle above, a new Frantz feature, makes it impossible for the swivel bolt to engage improperly when doors are closed. The wheels of the No. 50 Hanger are of cast iron, and have steel roller bearings and axles. All other parts are of wrought steel. Note the adjustment feature on the swivel bolt which makes it possible to raise the doors clear of the floor.



Note the patented telescoping joint that greatly simplifies the erection of "Runwel" Track and eliminates the necessity of joint brackets.

The wheel tread of "Runwel" Track used with all No. 50 "E-Z" Sets is shaped to eliminate friction, and provides a wide, free running space for the hanger. "Runwel" is a one piece track that requires no brackets to fasten it to the building.

**B**Y providing every convenience to be desired without extra equipment or added cost to the user, Frantz No. 50 "E-Z" Garage Door Fixtures have won the praise of Carpenters and Builders who know from experience that a garage is only as satisfactory as the operation of its doors. These men point out the following outstanding reasons for the popularity of No. 50 "E-Z" Fixtures:

- 1 **Installation:** Very simple. The one piece track fastens flat over the opening (no blocking-out or brackets required). Hanger, hinges, foot and chain bolts, etc., require no experience or extra work to install.
- 2 **Operation:** Easy. Doors slide and fold clear of the opening and, if desired, can be swung around flat against the front of the building where room for so doing is provided.
- 3 **The Hardware:** Combines time and labor saving conveniences with the high quality materials and expert workmanship put into all Frantz Hardware.
- 4 **Packing:** The parts of each set—whether for 2, 3, 4, 5, or 6 doors—are snugly packed in strong cartons to assure perfect delivery. All necessary lag screws, bolts, screws and instructions for easy installation are included.

For doors of light construction No. 40 "E-Z" Garage Door Fixtures operate the same as the No. 50 set. And for large and heavy doors, the No. 60 "E-Z" Fixtures should be used. For complete details about these popular "E-Z" Fixtures, write Dept. A-1.

**FRANTZ MANUFACTURING CO.**  
Sterling, Illinois



**"No Hardware Is Genuine FRANTZ QUALITY Without the Red Label"**