

# AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 44.

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No. 4.

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# AROUND *the* FAMILY TABLE



## Babson's Forecast for 1928

Babson Park, Mass., Dec. 10.—During the past few weeks, Mr. Babson has been making a survey of the different sections of the country regarding the building situation as it exists at the present time. His conclusions are as follows:

"Facts show very clearly that building, in the general sense, is falling off. This is not in accordance with many published statistics, but the reason is that these building statistics include road building, bridge building, and the building of court houses, school houses, etc. Public building is increasing but private building is declining, and one generally has in mind private building when discussing building in general. Current figures show a falling off in connection with the building of factories, office structures, hotels and apartment houses. Furthermore, I believe that 1928 will show a falling off in the building of stores.

"The building of small houses, however, has held up especially well. Current figures indicate that 1927 will show more five to seven-room homes built than any previous year. Furthermore, the outlook is good for 1928 for this class of homes. Although the apartment house is still a favorite, the automobile is making it continually possible for more and more people to live in the country and suburbs. In most suburbs there is great demand today for small houses within walking distance of the railroad station or car line. I believe that more houses are being built today to sell at from \$8,000 to \$12,000 than ever before in the history of the country. Furthermore, 1928 will also make a good showing along these lines.

### Building Active

"Although building, at the present time, is either falling off or else stationary in many sections, I find that many of the southern and southwestern states are holding up well. Many of the cities in the states of Texas, Oklahoma, Arkansas, Tennessee and Georgia are holding their own in the building lines. It is further interesting to note that much of this new building is small houses.

"Among the several other states that have shown good reports for building are Arizona, Colorado, North Dakota, Wisconsin, Ohio, some sections of New York state, and New Jersey. Reports from Wilmington, Del., indicate that the number of building permits for this year will be greater than for any year since 1919. The city showing the greatest increase in building is Beaumont, Texas, while Tulsa, Okla.; Phoenix, Ariz.; Pueblo, Colo.; and Davenport, Iowa, show large gains. Other cities showing considerable gains are Hartford, Conn.; Buffalo and Syracuse, N. Y.; Allentown and Lancaster, Pa.; Augusta and Macon, Ga.; Cincinnati, O.; Nashville, Tenn.; Minneapolis, Minn.; Boise, Idaho, and Long Beach, Calif.

"I note with interest the large sums of money being expended at present for the building and maintenance of the highways of the country. Many sections are today putting in fine roads and in this way attracting business

through tourists, etc. Good roads are one of the best means of getting business. These improved highways draw new people who build homes and open new lines of business; in this way the investment is made good.

"The state of Texas is spending large sums on its roads and in reports from several cities in Texas I find this to be one of the largest expenditures of the year. Alabama is also spending a great deal as a bond issue of \$25,000,000 is reported for the building and maintenance of its roads. Wilkes-Barrie, Pa., reports more road building than for years. There is also considerable money being spent for roads in California, Nebraska, Wisconsin, Tennessee, Georgia, Florida, New Jersey, and Massachusetts. Every road newly constructed or improved is a stimulant to the building of individual residence houses. Good roads and the automobile have played a large part in the development of suburban property.

### Building, General Business

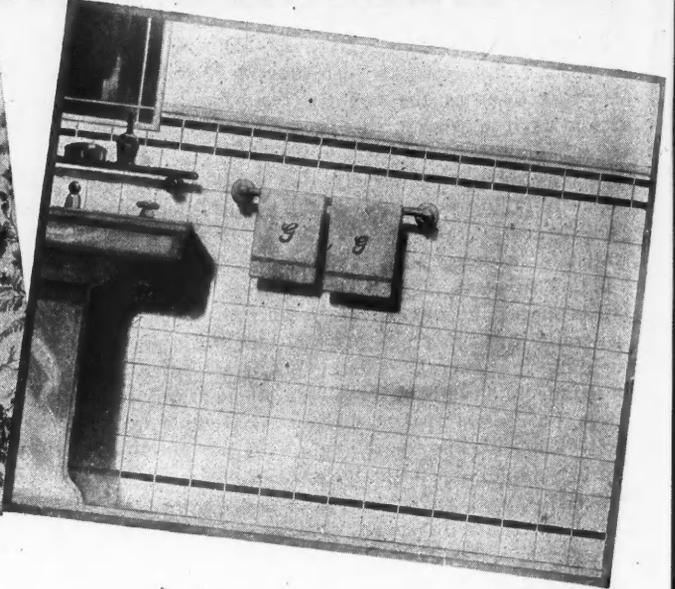
"Building is divided into three groups. (1) Speculative building, including building for investment. This depends very largely on the cost and ease of borrowing money. Although money rates are low at the present time, banks are showing more discrimination. (2) General residence building, with special reference to homes selling from \$20,000 upward. This character of building depends largely on the general prosperity of the country. That is, the profit which people are making. When people are prosperous they build a good home. When they are not they get along with their present home. (3) Small homes, used by wage workers. The building of these homes depends largely on the employment situation, although prohibition has been a great factor and still is a great factor today in causing many small homes to be built by wage workers.

"As the employment situation is very closely allied with general business, this means that building in 1928 will largely depend on general business conditions in 1928. If employment continues good as at present, a large number of small houses will continue to be built. At the present time the Babsonchart shows general business to be normal. I cannot close a discussion of the building situation without referring to the direct relationship between home ownership and good citizenship. The renter of a home ought to be a good citizen, but he often is a bolshevist at heart. When a man owns a home, however, he becomes a loyal citizen. As that great labor leader, William B. Wilson, so often said, 'No man was ever known to raise the flag of anarchy over his own hearthstone.' Therefore, we all should get behind home building and keep it prosperous, remembering that if the above is true, the real estate man, the contractor, the insurance agent, the house furnisher, and all who are directly or indirectly connected with home building are contributing a substantial part toward improving the citizenship of our country."



# SANITAS

MODERN  
WALL COVERING



## Helps To Sell Houses Quicker

Many builders have learned that it pays in increased profit to decorate with Sanitas instead of showing a house with bare plaster walls.

The prospective purchasers, particularly women, see added value at a glance when some of the rooms are decorated with Sanitas because they know this modern wall covering by name and reputation.

Sanitas is a permanent decoration. Made on cloth with a tensile strength of forty

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# AMERICAN BUILDER

Formerly AMERICAN CARPENTER AND BUILDER

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

## November Building Maintains High Rate

THE total volume of construction contracts awarded in the 37 states east of the Rocky Mountains during November amounted to \$466,393,400, according to the F. W. Dodge Corporation. These states are said to represent about 91 per cent of the total construction volume of the country. Last month's record was only four per cent under the November, 1926, record.

Analysis of the November building record showed the following important classes of work: \$214,962,700, or 46 per cent of all construction, for residential buildings [this includes the higher priced and excludes the medium and lower priced dwellings]; \$76,089,000, or 16 per cent, for public works and utilities; \$52,890,700, or 11 per cent, for industrial projects; and \$43,520,800, or 9 per cent, for commercial buildings.

During the past 11 months there was \$5,825,691,300 worth of new building and engineering work started in the 37 states east of the Rocky Mountains, as compared with \$5,843,518,900 for the corresponding period of last year, the decrease being less than one-half of one per cent.

New work contemplated during November in these states amounted to \$827,456,700, being an increase of 36 per cent over the amount reported in the preceding month and a gain of 31 per cent over the amount reported in November of last year.



## 1927 Increase in School Building Was in Small Schools

ACCORDING to the publication "Modern Schools" school bond sales for the first nine months of 1927 totaled \$235,157,281, while school contracts let during the same period, according to the reports of the F. W. Dodge Corporation, had a total value of \$291,623,200. Quoting the publication referred to, the statement proceeds:

"Without question the interesting fact must again be stressed that the year 1927, like the year 1926, will show a very definite increase in the number of projects as against the year 1925. We have completed many million-dollar metropolitan high schools in large and middle size towns, and some of these communities have definitely completed the large building projects for several years to come.

"The great stability of the school construction market has always been in the fact that the country requires a vast number of small schoolhouses. In the year 1926 3,813 school houses were erected in the United States. For the first three quarters of 1927 about 3,717 schoolhouses have been erected already. Without question the year 1927 will again exceed 1926 in the number of projects begun."

These are interesting figures and there is undoubtedly truth in the assertion regarding small schools. However, the term "small" in this connection is relative. Compared with the million-dollar schools, the ordinary school project would look considerably smaller. It should be remembered, however, that, besides the small grade schools in the coun-

try there are many large community high schools to be built in the small cities and villages and open country consolidated schools with values ranging from \$100,000 up.



## Winter Slump Is Passing

THE increasing practice of American industry in general, and the building industry in particular, to eliminate the "winter slump" is noted by Herbert Hoover, Secretary of Commerce, in his annual report as Secretary of Commerce, recently made public.

While a large number of agencies continue to abide by the exploded theory that construction in winter is both inadvisable and prohibitive, there is a definite trend toward utilization of the winter months for construction of every type, it is stated.

"The seasonal fluctuations in building and other construction operations," says Mr. Hoover, "have been decidedly less marked in the last three or four years than previously. Contractors, the owners of buildings and other groups connected with construction have put forth serious efforts to keep building activity more nearly even throughout the year and have had the active co-operation of this department in achieving tangible results.

"As a consequence, building trades workers have enjoyed more stable employment and at the same time the costs of construction to the public have undoubtedly been lower than would otherwise have been possible."

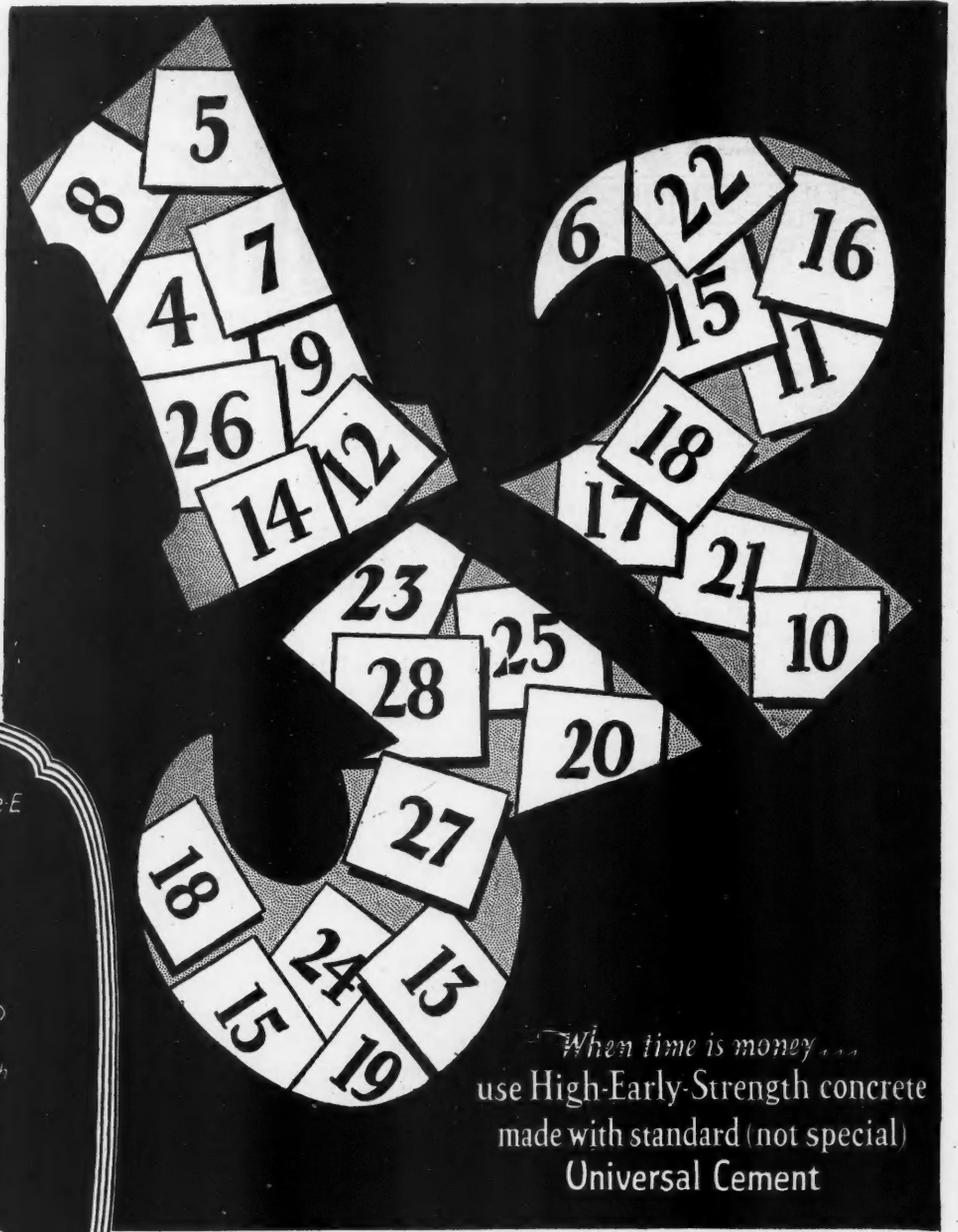


## What Dwellings Cost

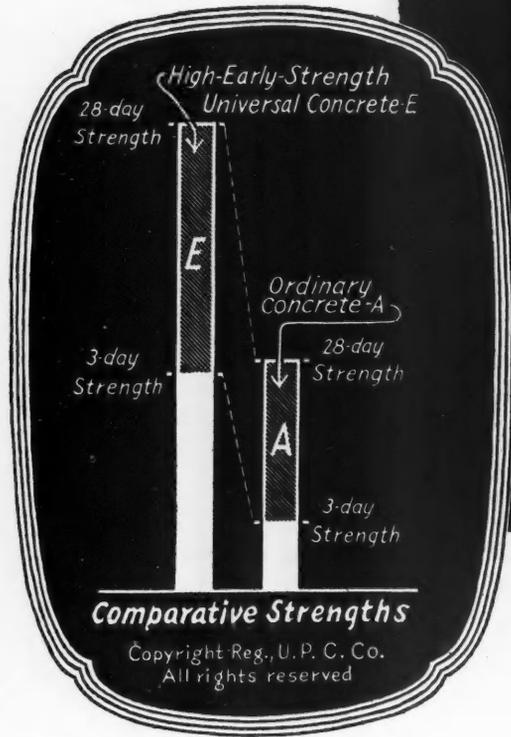
THE Bureau of Labor Statistics has presented, in its Monthly Labor Review, data concerning the cost of dwellings per family in the United States, as represented by 257 identical cities for the years 1921 to 1926, inclusive. Such data is also shown separately for the 14 cities of the United States which have a population of 500,000 or over.

The figures show that the average expenditure in erecting a one-family dwelling in these 257 cities was \$3,972 in 1921. By 1926, however, this average expenditure had risen 19 per cent to \$4,725. The average cost per family of apartment houses on the other hand was only 1.9 per cent higher in 1926 than in 1921. In 1921 the average cost, per family accommodated, of apartment houses was \$4,019. A peak of \$4,418 was reached in 1924. The 1926 cost was \$4,095 per family.

The costs shown in this article were compiled from estimated costs given by the prospective builder when filing his application for a permit to build. There is a great difference in the average costs in the different cities. These costs may be overestimated or underestimated—probably more often underestimated. They may be more underestimated in one city than in another city. Also, one city may erect houses of a generally higher quality than another city. The costs shown apply to the building only. The cost of the land is not included.



When time is money... use High-Early-Strength concrete made with standard (not special) Universal Cement



High-Early-Strength Universal Concrete not only has a 3-day strength equal to the 28-day strength of ordinary concrete but also has a 28-day strength that is twice the 28-day strength of ordinary concrete, making it permanently better and stronger concrete. For complete details send in the coupon below.

# Crowding 28 Days into 3 Days

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Concrete with a 3-day strength equal to the 28-day strength of ordinary concrete; concrete with a 28-day strength twice that of ordinary concrete; concrete that is permanently better and stronger than ordinary concrete—that is High-Early-Strength Universal Concrete.

By using it, you crowd 28 days into 3 days. And as this concrete has a higher ultimate strength in addition to a higher early strength, you secure a permanently better and stronger job. (See diagram.)

High-Early-Strength Universal Concrete is used on all types of jobs. It is made by using fully tested methods with the usual equipment, usual labor, usual materials, and usual Universal Cement. For full details, send in the accompanying coupon.

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Address .....

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**Concrete for Permanence**

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# EVERYBODY'S BUSINESS



## Health to Mold Business

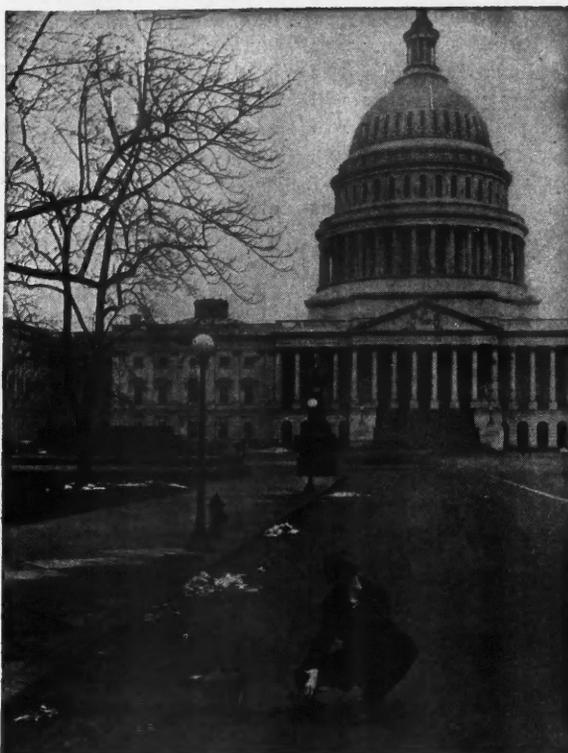
By FLOYD W. PARSONS

**M**ANY industries now pursue practices that are destructive to health. Eventually those who follow this road will find themselves at odds with public opinion and will be forced to reform their ways. No factor affecting the course of business exerts such power and is so hard to oppose as the common desire on the part of the average citizen to preserve his physical well-being.

A growing appreciation of the necessity for moistening as well as heating indoor air in the cold months may likely force us to go back to warm-air heating in our homes and working places. It is difficult to condition air properly at a reasonable cost in any other way. Likewise the illuminants of the next generation will be selected largely for hygienic reasons, and whether this is cold light produced by the electrically excited vapors of neon and nitrogen, or rays from a filament lamp in a special glass bulb which allows a desirable mixture of ultra-violet rays to pass through, the ultimate outcome will be a radical change in methods.

Man is an outdoor animal, entirely subject to the laws of nature, and is at present over-clothed and over-fed. He has given more attention to improving cows, hogs, hens, wheat and corn than his own species. With each passing year, the changing demands of life make it more difficult for us to move out into the sun and fresh air. Modern medicine and surgery alone are not sufficient to bring about our survival in this new and increasingly complex environment.

Since it is impossible for us to go to nature, science recognizes that nature must be brought to us. We work behind windows that shut us off from the health-promoting rays of the sun. Our engineers and chemists have undertaken to meet this situation and have now given us glass, which allows a large percentage of the ultra-violet rays of sunlight to pass through. I know people working behind windows of such glass and the benefits have already been demonstrated beyond doubt.



Measuring Street Noise in Washington.

Race betterment is only just now commencing in real earnest. In no other field of activity are the possibilities so great. Our eyes are open to the folly of piling up dollars without storing health at the same time so as to perpetuate the ability to enjoy recreation. Out of the million people who die in the United States every year, more than 800,000 succumb to diseases that are preventable. It is in this thought where lies the threat to the business man who does not comprehend the situation.

Not every health movement is merely a silly fad. In our excess of zeal to extend life, we naturally rush to extremes. Many a person should still be in possession of teeth, tonsils and appendix that need never have been removed. Twenty years ago Fletcherism was a fad, then calories, then raw food, then toxicosis. Each idea had merit, but it was foolish to accept any one as a complete answer to the diet question.

But terraced buildings in New York and other cities are not merely a fad. We will not turn our backs on the truth that sunshine in the streets below is absolutely essential. Armored corsets will not come back, and comfort and convenience will determine the future of bobbed hair and the length of women's skirts. If the makers of fashion decree the long skirt, it will be interesting to note the result of the conflict of opinion that will arise between our great and growing army of clear-headed business women and the ladies of leisure who may be alone in following the dictates of the arbiters of style.

There is now a far greater effort to stay well than ever before. More people are paying attention to danger signals. It is clear that nature nearly always tries to warn us in advance. Where there was one person submitting regularly to scientific urinalysis a few years ago, there are now a hundred, and this indicates the trend of the day. The purification plant of the human body is the kidneys, and every drop of blood goes through this filter once every seven minutes, leaving poisonous material in the extracted fluid which is discharged later in the form of

urine. In a near tomorrow, a regular 90-day urinalysis will be as compulsory on the part of every citizen as paying taxes. In short, more and more people will have a little professional chat with their doctors at regular intervals while they are still well.

No matter what may be our vocation, it is essential that we commence to think in terms of conditions 10 or 20 years from now. Cities like New York and Chicago are already worrying about measures to safeguard health in 1950. Chicago's sewage and sanitation program calls for an expenditure of \$120,000,000. More than 225 sewage treatment projects are under way in our country. Detroit's plans call for an outlay of \$101,000,000. And we are not going after this problem a day too soon. Present sewage-treatment plants serve only 15,000,000 persons, which leaves the wastes from hundreds of industries and from 50,000,000 more people to run away freely and serve as a menace to the health of the nation. That we are paying dearly right now for the pollution of our waters is shown by last year's figures tabulating 8,028 cases of typhoid and 11,000 cases of dysentery.

On every side we are commencing to feel the restricting influence of health measures on freedom of action. The job of supplying adequate sewage a few years hence will be such an enormous task that every gallon of water will be metered so as to reduce the per capita consumption. That this will save tens of millions of dollars is clearly evident from the fact that the individual in many cities now consumes 275 gallons of water per day—at least twice as much as is necessary.

Then there are the problems of light and noise. Having had to come indoors to earn our daily wage has placed a serious strain upon human eyes. Seventy per cent of our people have defective vision. Just as water consumption will be cut in half, the total wattage available per person for lighting will be doubled, convenience-outlets will be trebled and the filament lamp without a shade will be an oddity. Man is visual, and unlike many other animals, cannot depend on the sense of smell to guide him through life, and unfortunately, the misused eye does not protest in such forceful fashion as does the injured tooth.

Few investments in business bring such a high return as does an expenditure for good illumination. These facts stand out: We use our eyes 20 times as much for close reading as did our ancestors. Less than nine per cent of our plants have lighting arrangements that can be called excellent. Eye accidents in factories can be reduced 80 per cent by goggles in places where sight hazards exist. Free eye examinations for employes at regular intervals insure a large saving. Truly nothing is more foolish than to save light at the expense of eyes.

And as for noise, it is but a natural outcome of our present machine age. Devices are now available to use in measuring not only the amount of noise at any one point, but the intensity of the noise blanket that lies over an entire city. Busy corners in some of our large cities produce 50 units of noise which is enough to destroy half of our normal hearing. On top of a 30 to 40-story building

at this same corner, the noise intensity will measure only 10 or 15 units, and this means a loss of approximately 10 or 15 per cent of hearing. Generally speaking, 100 units of noise is so deafening that it precludes a person hearing any other sounds.

Noise not only affects health, but it causes a large loss to business through the distraction of attention. Riveting machines, sirens on fire engines, bells on ambulances and police patrols are all a source of expense to corporations. A noisy environment means the use of more energy in talking, while night noises cause a loss of sleep. Conversing on a railway train or in the subway requires an expenditure of more than 100 times as much energy as in a quiet room.

It is for such reasons that present types of riveting machines and other noise producers will be banned completely. Architects in designing buildings will no more think of neglecting to consider sound-absorbing measures and devices than they will provisions for adequate supplies of heat and water. Street and subway cars will have noiseless wheels and coupling connections, and in office and factory, every machine from typewriter to drill will operate in comparative silence. Interior surfaces will be covered with materials having sound-absorption qualities. In the silent workshop the covering material will have not only a high absorption coefficient, but will be so designed with indentations or folds that there will be more than a normal absorbing area. Such rooms will be "flat" or "dead," while in auditoriums, churches and theaters, the aim will be to preserve rather than eliminate resonance. Noise will be attacked both from the point of origin and the point of absorption. As a result office routine will be accelerated, human energy conserved, costly mistakes reduced and the human body released from its present use as a sound shock absorber.

The tendency toward the greater restriction of the individual will become more emphasized with each passing day. Business must conform to the demands of the new movement. Public health officers must be chosen because of their high qualifications, and must be paid salaries large enough to attract men of experience and reputation. Furthermore, the officials carrying on this vital work must have their tenure of office determined by the character of their efforts and not by politics. And this comes as close as anything to being everybody's business.



### Ohio Lumbermen Inaugurate Novel Exhibit Plan.

AN unusual and novel exhibit stunt will be a feature of the annual convention of the Ohio Association of Retail Lumber Dealers, to be held at Cincinnati, Ohio, January 25, 26 and 27, 1928. A bronze plaque will be awarded to the firm exhibiting at the convention whose exhibit is voted by the attending delegates as the most attractive and constructive. The vote will be made upon a written ballot and no ballot will be accepted until it bears the signature of every exhibitor at the convention. This assures that every voting delegate will actually visit every exhibit.



An Old-World Atmosphere in a Modern American Setting, the Sort of Thing That the Present Building Era Is Bringing to Us.

# Railroad Air-Rights Are Both Practical and Profitable

By JOSHUA D'ESPOSITO

*In an Address Presented Before the Western Society of Engineers, by the Chief Engineer for the New \$75,000,000 Union Station at Chicago*

**J**UST as the buyer of a city lot has the right to put a building up on his land, so the buyer of an air-right from a railroad has the right to put a building over the railroad company's tracks. The two buyers differ in that while the owner of the lot may have a basement or several of them under his building, the owner of an air-right may use his property only above the level required for the trains. In other words, the builder on an air-right must let the railroad run through his basement.

Millions of dollars worth of construction in a field now little developed is possible by the utilization of air-rights in large cities. From an engineering standpoint, almost any type of structure—commercial, industrial or residential—can be satisfactorily erected over the railroad tracks. One of the best and most expensive hotels in New York is built over the tracks. In the same city, the post office over the Pennsylvania Railroad, a large exposition building, several apartments and a number of modern clubs are other examples of buildings over railroad tracks. In the Chicago Union Station project there is a total of about 4,000,000 square feet available for this type of building, of which about one-fourth has already been used or proposed for use. In Pittsburgh, the Pennsylvania Railroad built a tunnel largely by the cut method, then filled in the cuts over the tracks and sold the property as unencumbered real estate.

There is a difference in value to the prospective builder between building on air-rights and building on unoccupied ground. In the past this difference in value, this disability, has been expressed as a ratio of, say  $\frac{1}{3}$  to  $\frac{1}{2}$  of the value of the similar but unencumbered land. Taking the  $\frac{1}{3}$  ratio, for example, the disability would be \$12 if the surrounding property were worth \$36 per square foot and it would be \$25 if the surrounding property were worth \$75 per square foot. In reality the disability is nearly constant. It is worth, say, \$10 per square foot in construction costs to be able to place a building on level, unencumbered ground. In addition, it costs, say, an extra \$10 per square foot to provide elsewhere than in the nominal basement for the mechanical facilities of a building such as heating plant, ventilation system, storage space and so on. Then it costs roughly another \$5 per square foot over the usual foundation cost to place the foundation so that it will not interfere with the tracks. In all, \$25 per square foot might be taken as representative of the disability in building over a railroad as compared with building a similar structure elsewhere. And this \$25 is a constant, not a variable; it is the same when surrounding property is worth \$36 per square foot as when it is worth \$75. From this it may also be seen that prop-

erty nearby must be worth more than \$25 per square foot to make building on air-rights economical.

From the viewpoint of the prospective buyer, the purchase of air-rights must offer some advantage or he, of course, will not buy. In some cases, other land may not be available, so that a buyer is able to build in a desired location only by using air-rights. Another advantage to buyers is

that all the space necessary for a large project may be purchased from one owner, the railroad. The buyer thus avoids the few obstreperous ones who hold out when land for the project must be bought from a number of owners, as is usually the case for large buildings occupying up to a block or more of space.

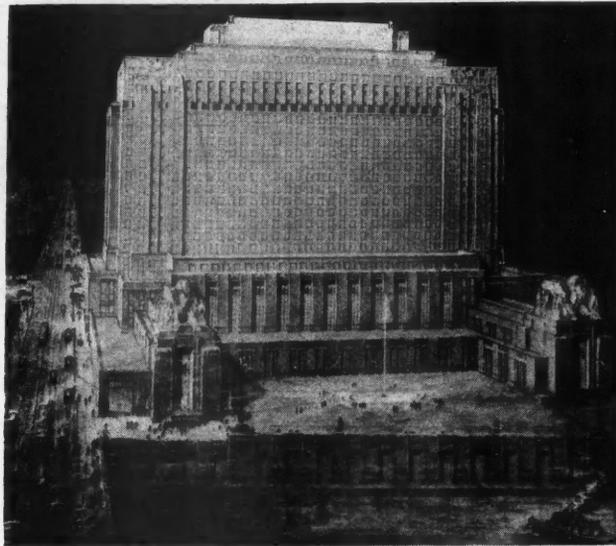
From the point of view of the railroad company and the public, the first consideration must be that of providing for future development. The property must in no way be handicapped for serving its primary need—namely, the manufacture and sale of transportation. Once air-rights are developed with expensive structures, widening the railroad right-of-way becomes almost impossible, or, in any event, very expensive.

After providing for its future requirements, however, the railroad not only adds to its income by the sale of air-rights but is benefited by having its right-of-way practically enclosed so that it is free from extreme temperature changes and heavy snowfalls.

That electrification, while desirable, is not essential, is shown in Boston, where air-rights are utilized over a steam road by providing ducts and ventilators to take care of smoke and gases and as will be shown here in Chicago in the case of the Daily News Building over the Union Station tracks.

Public officials might point out that such building will cause further centralization and hence require additional street facilities. These are easily provided for out of the wide right-of-way that the railroad generally owns. In fact, thoroughfares laid out over railroad property may be developed in a more systematic manner than they are now laid out on nearby property that already is built up. In Chicago, Canal Street, near the Union Station, was widened so that trains now pass under part of it. Park Avenue, New York, did not exist before air-rights over railroad property were utilized. And as such civic improvements are of general public benefit, the city ought to share in the cost for this part of the work instead of burdening the railroad with the entire cost.

The public at large will benefit from the use of air-rights for building purposes in that the relatively unattractive property that one now finds along railroad tracks would be



Architects' Perspective of the Proposed Chicago Daily News Building, the Site for Which Is Furnished by Air-rights. Holabird and Roche, Chicago, are the architects and Joshua D'Esposito, Chicago, is the engineer of the building.

(Continued to page 80)

# The "Winter-Built" Home

How More Than 40 Firms, in St. Paul, Minnesota, Joined Under the Leadership of Conrad Hamm, Building Contractor, to Demonstrate the Economy and Practicability of Winter Home Building



In Two Weeks of "Open House," 23,800 Persons Inspected the St. Paul Winter-Built Home and from 2,000 to 3,000 More Visited It During Construction in Spite of Unusually Severe Winter Weather.

"THE public requires a striking presentation of the facts (in regard to winter construction) in order to be moved to act," said Herbert Hoover, Secretary of Commerce, in advocating the spreading of building activity over the entire 12 months of each year.

It seems that at least one person took that statement at its face value. Conrad Hamm, St. Paul, Minn., building contractor, took the lead last year and, at the head of a committee with similar convictions, started out to demonstrate to the people of St. Paul that home building in winter was both economical and practical. On Sunday, December 5, 1926, the St. Paul newspapers carried the following announcement:

## "Winter-Built Demonstration Home Is Started in Highland Park"

"A permit has been issued and ground broken for a St. Paul winter-built demonstration home at 1700 Hillcrest Avenue, on the southwest corner of Underwood Avenue, in the Highland Park district.

"This home, designed and being built by Conrad Hamm, will be used as a model to demonstrate the advisability of building during winter and is being constructed in co-operation with 50 firms and individuals who are supplying the lot, all material and complete furnishings."

In spite of severe weather unusually early in the season, work went forward according to schedule and when completed the house was opened for inspection for a period of two weeks. A few quotations from some of Mr. Hamm's letters will serve to indicate the satisfactory progress of the undertaking. Early in January he wrote:

"The success of our undertaking is assured. It has the support of over 40 firms and we will spend about \$8,000 to \$10,000 to bring it before the people of St. Paul. We are convinced that the success of the house building business is dependent on the development of 12 months' work during the year and that our move will start the ball rolling." Later, on February 5:

"In this particular house we have not made unusual effort to effect saving in construction cost, but aimed to prove that every part of a home can be satisfactorily built in the dead of winter. We started excavation December 2 with about 20 inches of frost and had a temperature as low as 15 below before the foundation was in. Some of the framing also was done in extremely cold weather. Our footings and walls we protected with straw, which we are now commencing to remove and replace with dirt.

"As soon as the rough boards were on the roof we built a temporary enclosure around the north and east sides of the building to give us a chance to build our fireplaces and to stucco the exterior in freezing weather. During this time we heated the enclosure and house using coke in salamanders. The other two sides of the house will be stuccoed during milder days and will need no enclosure. We have experienced some difficulties on account of the unusual cold weather so early in the season, but on the whole the work has shown steady progress and efficiency.

"Ordinarily we do our winter home building by getting the foundations in and covered before heavy frosts and then pick the better days to go on with the construction. This proves practical, showing a saving in cost and hardly any lost time.

"The building of this house is a practical demonstration of winter home building and we expect to cash in the coming fall by interesting builders, business men and owners, through continuing forms of advertising and inducing them to put foundations in before frost and then continue the work throughout the winter.

"There is no question but that the building industry needs an awakening as to the important part home building is playing and that the success of the builders and every other line of business endeavor in a large measure depends on 12-month building program." A letter written February 16 says:

"You will notice (from the newspaper clippings enclosed with the letter) that we are getting fine support from our

local papers on the news end and it is proving a great help. The last few Sundays we have had from 150 to 250 persons go through the house, with the weather against us. We have reason to believe that the first nice Sunday will bring still larger numbers."

With the house finally completed and the two weeks of inspection passed, Mr. Hamm wrote:

"Every one of the people that took part is highly pleased. We passed through the house, by actual count, 23,800 people in two weeks, showing from 2 to 9 p. m., and in addition about 1,200 by special appointment in morning hours. This, together with approximately 2,000 or 3,000 during construction, really made it worth while. All visitors were taken through the house in groups, with a few minutes' talk in all the main rooms, giving an explanation why the Winter-Built Demonstration was undertaken and continuing with an explanation of the materials, workmanship, etc."

It is evident that there was behind this undertaking a deep conviction of the necessity of educating the public to winter building and a confidence in the results of the undertaking which went far to carry it to the great success which it proved to be. Let Mr. Hamm tell in his own words his convictions and also some of the practical experience which lead the backers of this demonstration to construct the Winter-Built Home. Mr. Hamm said:

"In analyzing the home building contractor's problems, with a view to improving the conditions in this industry, one of the first most important matters to consider is the question of his organization. What kind of an organization has this man or firm and what is being done to continually keep this organization intact and improve its efficiency so as to economically construct well-built homes?"

"Naturally, every contractor, in organizing his forces, casts about to find dependable men. This requires considerable time and often much expense. After the organization is completed, the next question that confronts him is how to protect this investment by furnishing steady employment, thereby eliminating labor turnover and reduced efficiency of his forces through continual reorganization.

"This immediately brings up the problem of winter build-



Even When the Temperature Dropped to 15 Degrees Below Zero, Work on the St. Paul Winter-Built Home Progressed Steadily, According to Schedule, Without Excessive Cost.

ing and 12 months' work for the building trades. It is an admitted fact that many contractors are not sold on the idea of winter building. This being the case, how can they expect to sell the home buying public and make them understand that just as good homes can be built in winter as in any other season of the year?

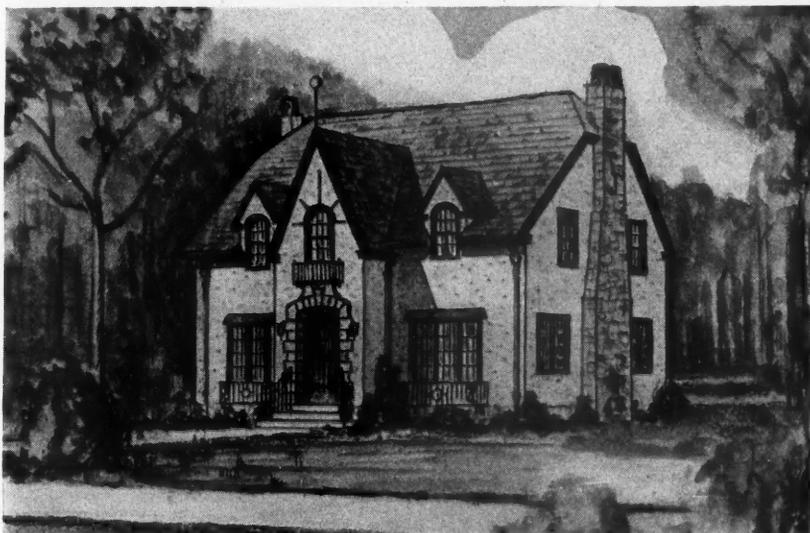
"Investigation in almost any northwestern city will bring out the fact that 80 per cent or more of the bankers, merchants, and dealers in various lines, when consulted by home building prospects, are firmly convinced that no one should start building in the winter. In other words, these business leaders of the community are the first to apply the brakes to one of our largest industries, which directly and indirectly furnishes the largest payroll in our country.

"A thorough check of those employed in the building industry will bring out the fact that 60 to 80 per cent of these employes are not home owners. A sad condition: 'Work on the other man's home, but don't own one yourself.' Again, investigation shows that 95 per cent of these craftsmen want to be home owners, but, due to winter unemployment, two, three, or four months out of every year, they are not able to accumulate enough surplus for the initial payment on the 'pay like rent' home.

"The present home building contractor can be readily compared to the one crop grain farmer of 40 years ago. Through the farmer's own study and by concentration of others interested in his welfare, that great blessing to the Northwest, the monthly cream check has developed. It is now up to the contractor, as well as every business man, directly and indirectly, connected with the construction industry, to develop the 12-month weekly payroll by winter building.

"I have personally convinced myself that all this is possible by unusual sales effort. In October and November, 1925, enough prospects were convinced of the practicability of winter construction and sufficient contracts closed for completion of homes by April to May, 1926, so that my entire force was kept going during these months. Actual construction proved that costs were lower and buildings entirely satisfactory. A check on carpenter labor on one six-room

(Continued to page 80)



The First Stage in the Development of the Winter-Built Home Was This Original Sketch by Conrad Hamm, Designer and Builder and Leader in the Movement for Winter Home Building.



The Los Angeles, California, Terminal of the Western Air Express, Inc., Showing the Type of Permanent Hangar Building Which the Newest of Industries, Aviation, Has Brought Into the Field of the Building Industry.

## Aviation and the Builder

How Our Newest Industry is Aiding One of Our Oldest Industries by Creating New Construction and by Expediting the Work of the Contractor

By COLONEL L. H. BRITTIN

*General Manager, Northwest Airway, Inc.*

**A** NEW field has been created for the builder, a new service has been placed at his disposal for a new industry, aviation, has made its appearance and whatever industry may engage the attention of men, always the builder is needed.

The builder provides houses of worship for the preacher. He builds office structures for the doctor and lawyer. He constructs homes and apartments for the householder and hotels for the traveler. He builds for the educator and scientist, the manufacturer and merchant, the railroad magnate and steamship operator, the banker and broker, the farmer and fruit grower, even for the explorer, big game hunter and for football, golf, baseball and tennis enthusiast. Now he is building hangars and flying fields for the aviator.

The latest government records show that there are 4,000 airplane landing fields in the United States and the number is increasing daily. Every one of these fields requires, in its construction, the services of the builder. Some have cost

only a few thousand dollars, but others have cost considerably more than a million. It is safe to say that the investment in airplane landing fields is rapidly approaching \$1,000,000,000 and will soon reach that figure.

Then, too, there are the airplane factories. Some of these are already immense establishments. Others are small but are rapidly growing, for within the past few months the demand for airplanes has kept every factory working to the limit of its capacity. Every one of these factories has needed the services of the builder and has added its quota of wealth to the building construction industry.

On the other hand, and perhaps of more importance, there is the service which aviation has rendered to the builders, particularly those concerns whose interests stretch to all parts of the country. There are firms in every large center of population which are really national in the scope of their operations. They go after the big jobs wherever they



The National Air Transport Field as Seen from the Air. Flying fields of this sort are coming into existence all over the country, the latest government records showing 4,000 landing fields and the number increasing daily. The investment in such fields is rapidly approaching the \$1,000,000,000 mark.

are to be had, they have important branches in other cities and they keep in constant contact with the leading dealers in building materials. Postal records show that they have used the air mail service to bid on these jobs, to keep in touch with their branch managers and to receive the last minute reports on building material costs.

It is safe to say that the establishing of the air mail service in the United States has permitted large contracting firms to bid more knowingly on jobs than was ever before possible. It is equally safe to say that the air mail service has saved thou-



When Col. Lindbergh Was Scheduled to Make Salem, N. C., on His Recent Tour a Hangar Had to Be Provided in a Hurry. Excellent service by a leading manufacturer of steel products made this building possible on time.



Proposed Air Port Site for the City of Chicago, to Be Located on Built Land Which Is a Part of the Great Lake Front Improvement Now Going Forward in That City.

sands of dollars for the contractors and builders of the country.

Many architectural plans and specifications have been speeded across the coun-



A Rear View of the National Air Transport Hangar at Chicago, One of the Many Buildings Which Have Come Into Existence with the Growth of the Newest Industry.

The air mail has, in other words, aided in taking much of the element of chance out of the contracting business. It has accomplished that by giving maximum service at maximum speed and at minimum cost.

Consider now that the planes are carrying air mail across the continent in approximately 30 hours, as against 90 hours required by fast mail trains. The speed attained by air-mail planes, of course, cannot be expected to equal that of the telegraph, but it is next to it and gives an added service of which the telegraph is incapable.

The air mail, for 10 cents, carries a letter weighing ½ ounce, which is the weight of the average business letter of two pages



National Air Transport Hangar at New Brunswick, N. J., Serving New York City. A plane has just arrived and is transferring its load to mail and express trucks.

with its envelope, to any part of the United States. In that letter the contractor, or builder, the material man or whoever may be interested can tell the whole story, give full details, and retain a copy for his files. The letter goes into the office of the addressee bearing the actual signature of the sender. Thus is afforded a protection that, at times, is of vital importance.

There is no curtailing of the message to save words. The whole proposal is offered over the personal signature of the agent or material house manager with whom the builder is dealing. That consideration, we are assured, has meant the saving of thousands of dollars for the building and engineering construction industry in this country.

No other transportation system in the history of the world has developed with equal speed and corresponding reliability as has the air mail service of the United States. Less than two years ago there was only one transcontinental line. Today the air mail planes are covering 16,000 miles every 24 hours and flying 3,500 miles at night. At the start the service was considered spectacular and just fairly reliable. Today it is recognized, because of performance given, as reliable and not at all spectacular.

Meeting the weather conditions of all times of the year, flying night and day over cities, rivers, mountains and deserts, the air mail planes have established a reliability record rivaling that of the best railroad systems of the country. The planes of one company were late only twice during 17 months and then they were only a few minutes late. No air mail company, operating under the most adverse conditions, has a reliability record, including every penalty, that may be imposed, of less than 87 percent.

The air mail pilot does not attempt the spectacular. He has a job to do and he does it. He leaves the landing field at a certain time and he delivers his mail pouches at the next landing field on schedule time. He does not loop the loop, or otherwise attempt to thrill those who may be below, but he gets there.

He attends to his job, just as does the successful builder. He builds towards progress in the world's newest transportation service, just as the members of the oldest known occupation, the builders, strive toward better and greater accomplishment.



## Railroad Air-Rights

(Continued from page 75)

greatly improved as well as increased in value. The buildings themselves which are put up over railroad tracks are generally very attractive. The group back of the New York Central depot in New York City is better balanced and has a better outlook than any other similar group of buildings in any city in the United States.

From this it is seen that in the use of air-rights the railroads benefit, the owners of adjacent property benefit and the public benefits because as the land becomes more valuable and is more developed its taxable value increases.

Where the value of adjacent land at least equals or would

equal or exceed, say, \$25 per square foot, millions of dollars worth of new construction, in a field now little developed, will be made possible by the utilization in large cities of air-rights over railroad property.



## The "Winter-Built" Home

(Continued from page 77)

bungalow, for example, started December 10 and completed February 1, showed an actual saving of \$27.20 over the identical bungalow, built by the same crew, from July 1 to September 1.

"In a nutshell, the contractor himself must be fully sold on the idea of winter building and be able to talk convincingly to his prospect. Then he must interest his local building exchange, the bankers, material dealers, and merchants or, in other words, the business leaders, and convince them that the peaks and valleys can be taken out of this building business. The co-operation and support of these men can be obtained by selling them on the single idea alone, if necessary, of a uniform payroll and correspondingly greater profits to everyone in the community."

"The St. Paul Builders' Exchange, in January, undertook a winter building campaign for 1926, employing the more common forms of advertising, such as newspaper space, signs, posters and booklets. The present campaign for the winter of 1926 and 1927 will be a practical demonstration of a Winter-Built home, work starting December 2 and completion about March 15. A two weeks' open house demonstration, sponsored by the material manufacturers and dealers, mechanics, merchants, and so on, will be backed up by an extensive publicity campaign handled by a committee selected from those interested."



## Industry Is More Productive

IN American industry 67 men produce as much today as 100 men produced in 1899, despite the shorter hours now prevailing. This fact has recently been revealed by a study of efficiency made by the National Conference Board.

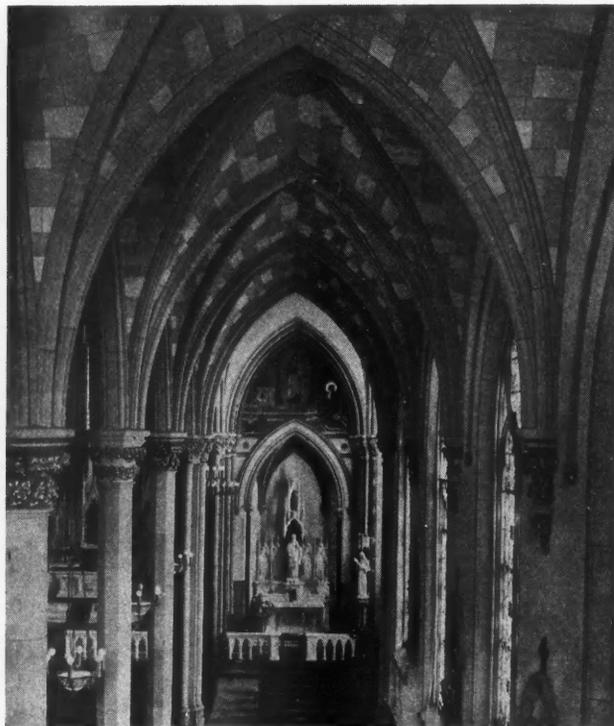
The purchasing power of the worker's dollar was found to be one-third greater than in 1914.

The biggest specialization in the modern machine era has occurred in the automobile industry which in 1925 required less than a third as many workers to produce a given number of cars as it did in the first war year.

The leather and lumber industries show the least effect in this regard, the man power essential to production not being materially lessened.



The American Institute of Steel Construction, 285 Madison Ave., New York City, has issued the following booklets: "Fireproofing Specification," "Annual Report of the Executive Director," and "Structural Steel and Reinforced Concrete in Engineering," the latter an address presented by Ralph Modjeski at the last convention.



Elsewhere in This Issue Will Be Found an Article on Plastic Paint Decoration. Here is an illustration of its use. A well-known plastic paint material was applied over old plaster and paint in the St. Thomas Aquinas Church, Brooklyn, N. Y., F. Burrell Hofman, architect.

# Attractive Architecture In This Apartment Building

BRAVERMAN and HAVERMAET, Architects

**T**HE "Edgecliffe" is a twenty-nine suite apartment of three, four, five and six-room suites, some with two baths. This building is located on Lake Avenue, Cleveland, in the beautiful and exclusive residential section of Lakewood and is particularly notable for its beauty of design.

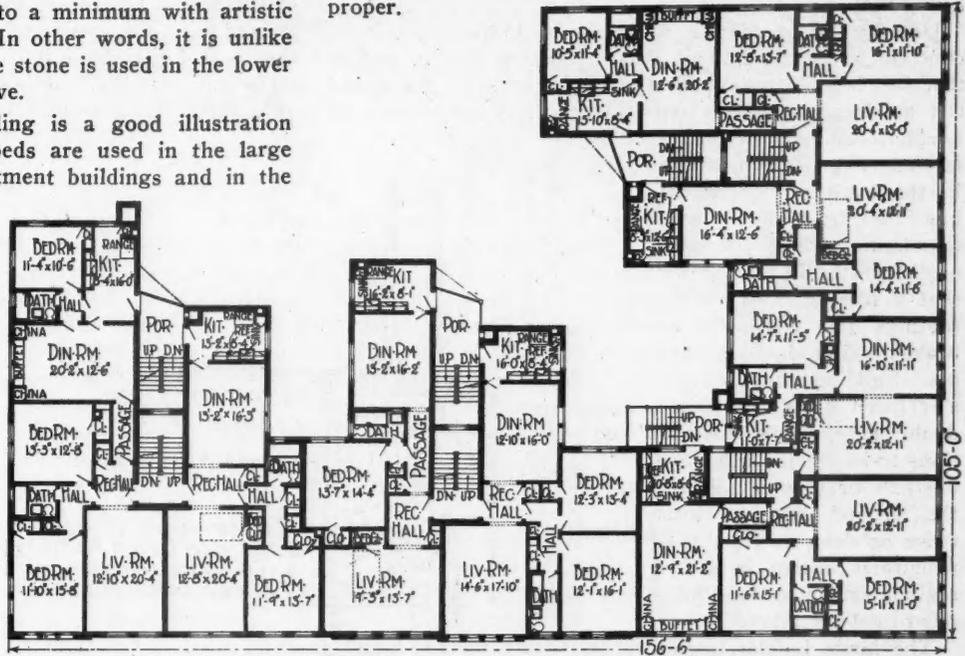
The use of stone is reduced to a minimum with artistic brick paneling predominating. In other words, it is unlike many apartment buildings where stone is used in the lower floors and plain brick walls above.

The equipment of this building is a good illustration of the fact that disappearing beds are used in the large as well as the small-suite apartment buildings and in the best residential sections.

The stairways reach two apartments on each floor or six families to a stairway, so that the halls and stairways have but little traffic. Service stairways and porches at the rear are partially enclosed and arranged to serve two families on each floor. However, these rear stairways are arranged so that they do not pass or overlook any windows. The usual annoyance of rear stairways and porches interfering with privacy is thus avoided.

A study of the typical floor plan shows how fully the land included in the site has been utilized in the planning of the building, while, at the same

time, the rear light courts afford generous light and air with but little reduction of the rentable area. Zoning laws in most cities limit the percentage of apartment house sites which can be built on and the architects have carefully utilized the most valuable part of the site for the building proper.



Typical Floor Plan of the "Edgecliffe" Shows Light and Air from Two Sides in All Apartments. The five-room suites have three bedrooms each, but where there is only one bedroom, the sleeping capacity is increased by a disappearing bed in the living room.



Cleveland Is Noted for Its Fine Residential Sections and the "Edgecliffe" Apartment Building, Illustrated Above, Is Worthy of Its Surroundings. Its lines and ornamentation are exceptionally good. The apartments are not crowded together and tenants have a choice of three, four and five-room suites, with added sleeping accommodation by means of disappearing beds. Urban Realty and Development Company, Builders.

# Shallow Beam Foundations for Small Buildings

Here is an Economical Type of Construction Which Has Proven Satisfactory in Use

**F**OUNDATION walls for small buildings of the dwelling-house class that have no basements can be built at much less cost than ordinarily is done, through the simple expedient of using a continuous beam of reinforced concrete in a manner similar to the use of a mud sill of heavy timber.

Usually the foundation walls for such buildings, if of concrete, are carried much deeper than necessary, and in that fact lies the reason for the excessive cost. Habit and city building regulations must take most of the blame. In northern climates we have for many generations been in the habit of "going below the frost line" with foundation walls of masonry or concrete, in the belief that if frost gets under the footings the wall will be heaved and gradually broken up. Building codes of our northern cities, to make doubly sure, require foundations to be started three and one-half or four feet below the ground line, at least twice as deep as frost ever penetrates except in a few regions subject to long periods of cold weather.

The home builder, seeing that the foundation wall must be built to so great a depth, concludes that he may as well go a few feet further and put in a basement. That is why in northern climates almost all dwelling houses have basements.

Nevertheless, architects and builders quite generally are agreed that basements under dwelling houses are not economical. Were it not for the supposed necessity of "going below the 'frost line'" with the foundation wall the basement would be omitted. That is why in southern sections of this country, and in the Southwest and on the Pacific Coast, almost all dwellings do not have basements.

Certain it is that a basement under a dwelling house is uneconomical in cost, besides being a frequent source of trouble with drainage. A basement involves not only the building of a deep foundation wall, but also the construction of a self-supporting first floor and the placing of an additional floor of concrete over the entire basement area.

If the basement is omitted the first floor may be of concrete supported directly on a compacted fill, the floor finish being either of specially treated concrete or some other material, such as wood nailed to sleepers imbedded in the concrete. Space for the furnace and fuel room and for the laundry may be provided in a wing, with a floor a foot or two below the ground line, at a cost much less than the cost of a basement.

A modification of the mud sill type of foundation wall is employed to a considerable extent in Shreveport, La., Houston, Tex., and other southern cities, and is exceptionally well suited to dwelling houses and other small buildings without basements, especially where the soil is soft and uncertain. It consists of a continuous reinforced

concrete beam footing 12 inches wide and 24 inches deep, reinforced at both top and bottom with a pair of steel bars not smaller than  $\frac{5}{8}$  inch in diameter. These bars prevent uneven settlement by compelling the entire footing to act as a continuous girder. It is customary to have the level of the top of this beam footing about 8 inches above the ground line. The ground fill is well compacted and a concrete floor is laid directly on it, thereby preventing the entrance of white ants into the building, a detail that is of considerable advantage wherever these troublesome insects are found.

Both in Shreveport and in Houston some sections of the city are built on soil of a soft silt formation, intermingled with pockets of sand. Foundation walls built in the ordinary way often settle unevenly because of these sand pockets or spots where the silt formation is exceptionally soft. This in turn causes unsightly plaster cracks in the superstructure walls and partitions. In such locations the continuous reinforced concrete beam footings bridge over the soft spots, and whatever settlement occurs is uniform under the entire building. Actual experience has demonstrated that settlement is uniform and that no plaster cracks occur.

This type of continuous beam footing should be equally effective in cold climates, for even if frost does penetrate below the bottom of the beam it will be heaved an equal amount all around, if, in fact, any heaving occurs. No trouble need be expected because the footing is only 12 inches wide. The actual load on the soil underneath the footing is not heavy in the case of a one-story or two-story building; and here again the continuous character of the beam footing will force even settlement if any settlement occurs.

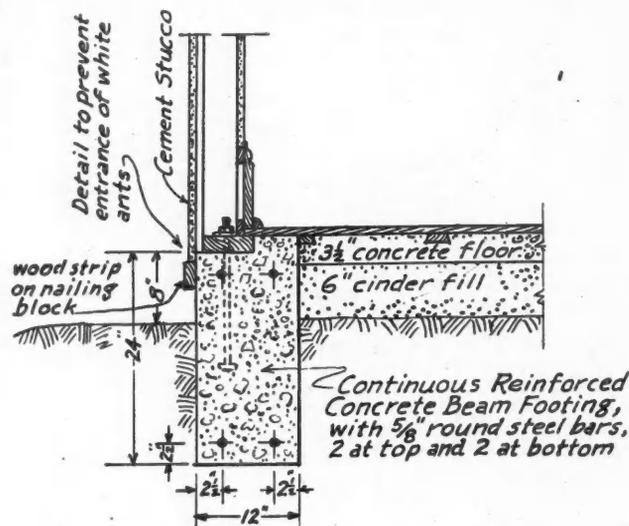
The continuous beam footing here described and illustrated is well worth utilizing in northern sections in areas not under the jurisdiction of restrictive building regulations. Actual proof of its practicability in cold climates may well lead to appropriate modifications in city building regulations, for if the continuous beam footing is satisfactory outside the limits of cities it will be equally satisfactory within those limits and its obvious economy should lead to its adoption.

NORMAN M. STINEMAN.



## Plan 1928 Road Show

**T**HE year 1928 marks the 25th anniversary of the American Road Builders' Association. The annual Convention and Road Show of this association will be held at Cleveland, Ohio, and will open on January 9, 1928, continuing through the following week. The show will include an extensive exhibition of all the machinery of road construction, maintenance and operation, and will be larger by 50 per cent than that held at Chicago in 1927, it is stated.



A Continuous, Reinforced Concrete Beam Footing Suitable for Houses and Other Small Buildings Without Basements.

# DEPARTMENT of PUBLIC and BUSINESS BUILDINGS

*Notable Progress in The Field  
of Larger Buildings Presented in  
Eight-Page Feature*

THE architects, McLaughlin & Burr, have designed for the Hyde Park School of Boston, Mass., a red brick building of Colonial design which will be an interesting addition to the many fine Boston high schools. See sketch in duotone on the page following. The building is planned to accommodate about 1,500 pupils, has 36 class rooms and an adequate number of special rooms such as laboratories, shops, drawing rooms, etc. The plans have been worked out so as to group together the various activities such as, household arts, science, commercial department, vocational training department, etc. Very complete quarters have been assigned to the vocational department with its machine shops, woodworking shops, drawing rooms and class rooms which will be used in conjunction with the Continuation School.

## **State Bank of Chicago, Chicago, Ill.**

Graham, Anderson, Probst & White, Architects

The conservatism and strength of a great financial institution inspired the design of the new State Bank of Chicago. See the sketch on the second page following. It is massive in outline and the surface treatment is one of dignified simplicity with all unnecessary ornamentation omitted. The base of the building is of a monumental character without pilasters or ornamental detail to a height of five stories. The main banking room entrance is in the center of the facade marked by a recessed portico which makes an impressive feature of the bank's principal entrance. This portico is composed of free standing Ionic columns 41 feet high, supporting an entablature above.

## **The Oliver Cromwell Apartment Building, New York City**

Emory Roth, Architect

The building illustrated in the third duotone plate page following this is to be a 30-story apartment hotel, with a total height of 375 feet.

The architecture of the building is of the Italian Renaissance style. It has a three-story granite base. There are stone and terra cotta trimmings with Spanish tile roof and bronze and ornamental iron trimming. The facade rises to a height of 15 stories without an offset,

thence, by a series of offsets, the design changes to a tower with a domelike structure at its apex.

On the front of the building, above the fifteenth floor, and on the rear above the seventh floor, the offsets furnish roof garden spaces to a great many apartments. The roof gardens are entered through large steel French casement doors from the apartments. The typical floor plan of the building is laid out in two or three-room apartments.

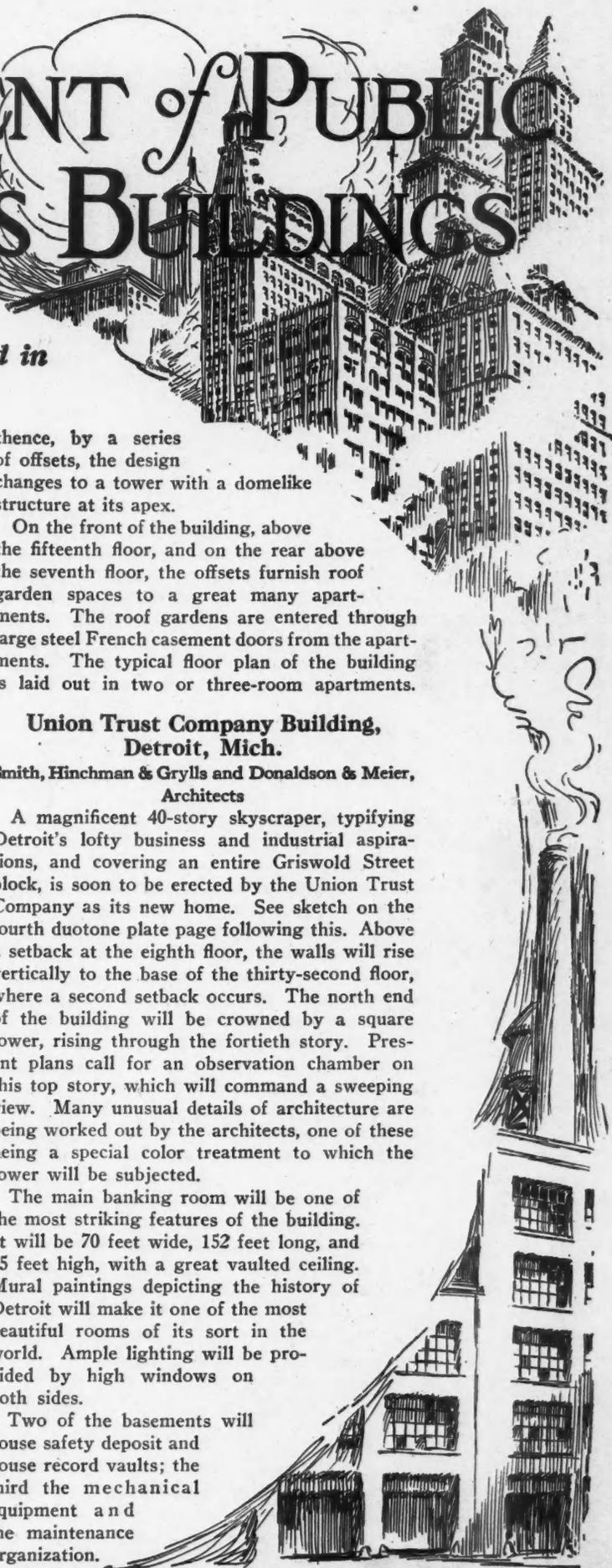
## **Union Trust Company Building, Detroit, Mich.**

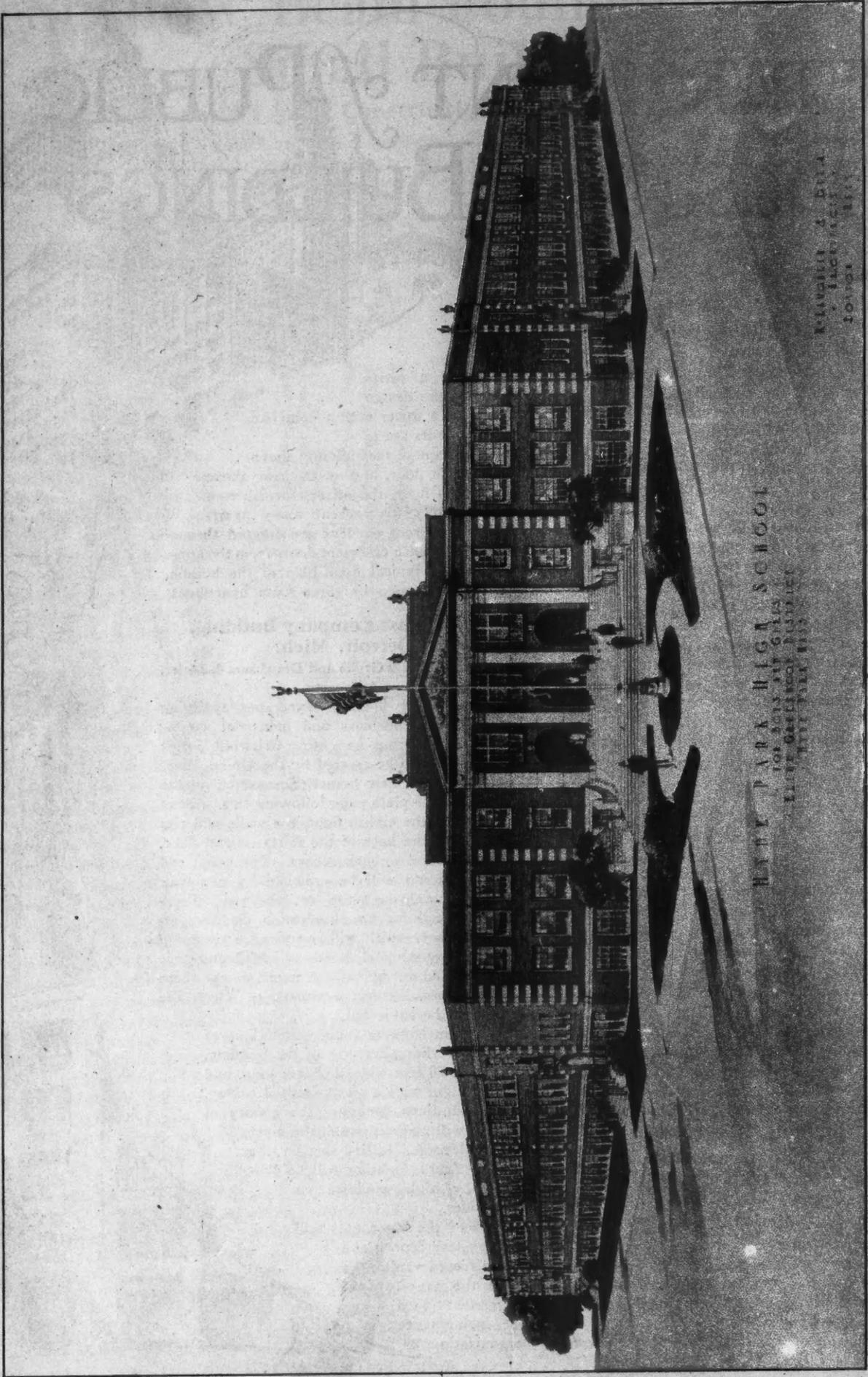
Smith, Hinchman & Grylls and Donaldson & Meier,  
Architects

A magnificent 40-story skyscraper, typifying Detroit's lofty business and industrial aspirations, and covering an entire Griswold Street block, is soon to be erected by the Union Trust Company as its new home. See sketch on the fourth duotone plate page following this. Above a setback at the eighth floor, the walls will rise vertically to the base of the thirty-second floor, where a second setback occurs. The north end of the building will be crowned by a square tower, rising through the fortieth story. Present plans call for an observation chamber on this top story, which will command a sweeping view. Many unusual details of architecture are being worked out by the architects, one of these being a special color treatment to which the tower will be subjected.

The main banking room will be one of the most striking features of the building. It will be 70 feet wide, 152 feet long, and 45 feet high, with a great vaulted ceiling. Mural paintings depicting the history of Detroit will make it one of the most beautiful rooms of its sort in the world. Ample lighting will be provided by high windows on both sides.

Two of the basements will house safety deposit and house record vaults; the third the mechanical equipment and the maintenance organization.





HYDE PARK HIGH SCHOOL  
100 ACRES 147 GALS  
ELITE GARDEN OF BOSTON  
HYDE PARK, MASS.

McLaughlin & Burr  
Architects  
Boston

HYDE PARK HIGH SCHOOL, Hyde Park, Mass.; McLaughlin & Burr, of Boston, Architects.



*The STATE BANK OF CHICAGO'S NEW HOME;*  
*Graham, Anderson, Probst & White, Architects.*

# Valhalla Memorial a Beautiful and Imposing Park Entrance

KENNETH McDONALD, Architect

**A**MONG the many beautiful and imposing memorials situated in Southern California, the Valhalla Memorial entrance to the cemetery park at Burbank stands out in imposing grandeur. It was erected in the latter half

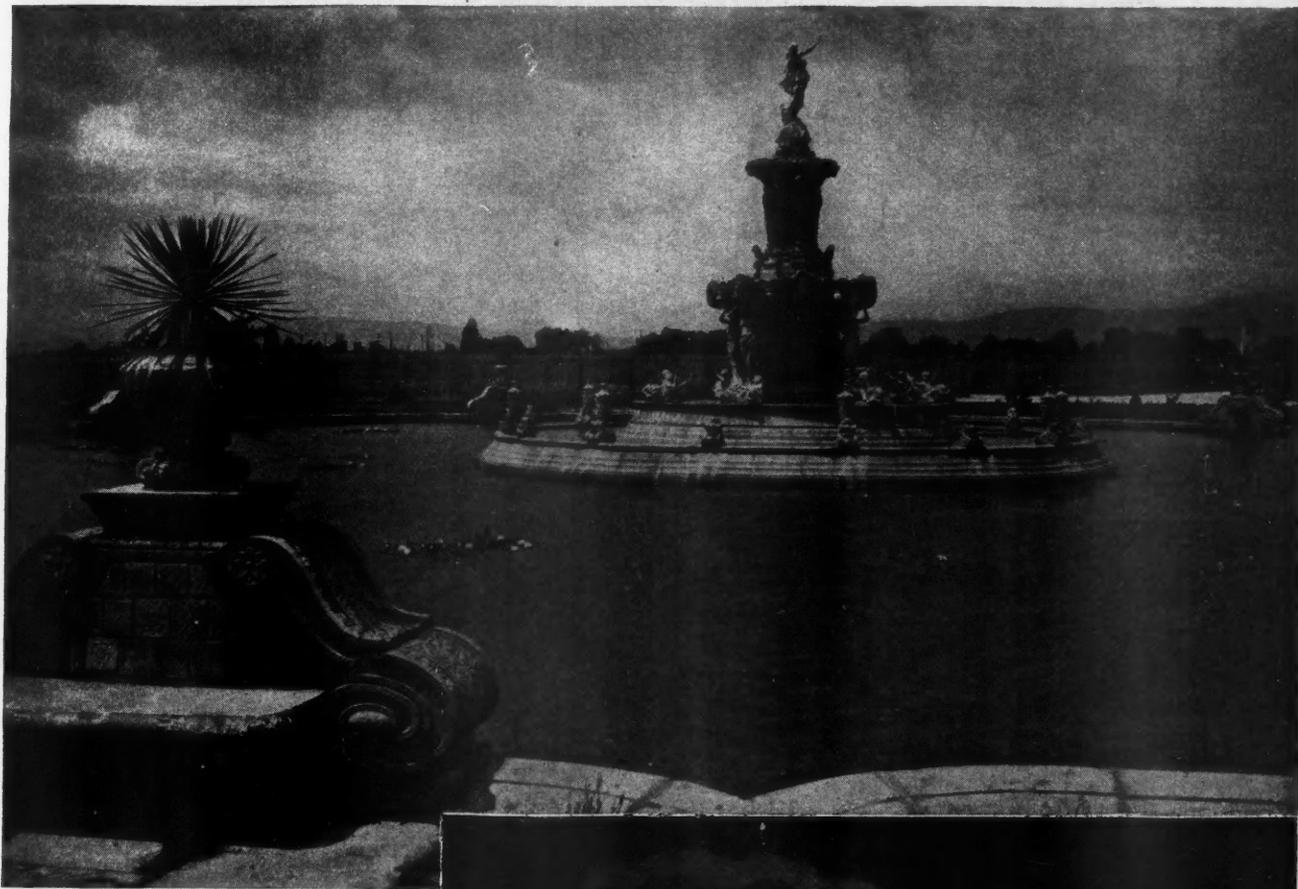
of 1924 at a cost of about \$140,000.

The structure was designed by Kenneth McDonald, architect of Los Angeles, and covers a ground area of 2,500 square feet. Due to the fertility of the soil, the growth



Forming the Entrance to the Cemetery Park at Burbank, Calif., the Valhalla Memorial Stands as One of the Most Imposing and Beautiful Pieces of Memorial Architecture to Be Seen in Southern California. It was designed by Kenneth McDonald, of Los Angeles.

## Valhalla Memorial



**At One Side of the Valhalla Memorial Entrance Is a Beautiful Electrically Lighted Fountain.**

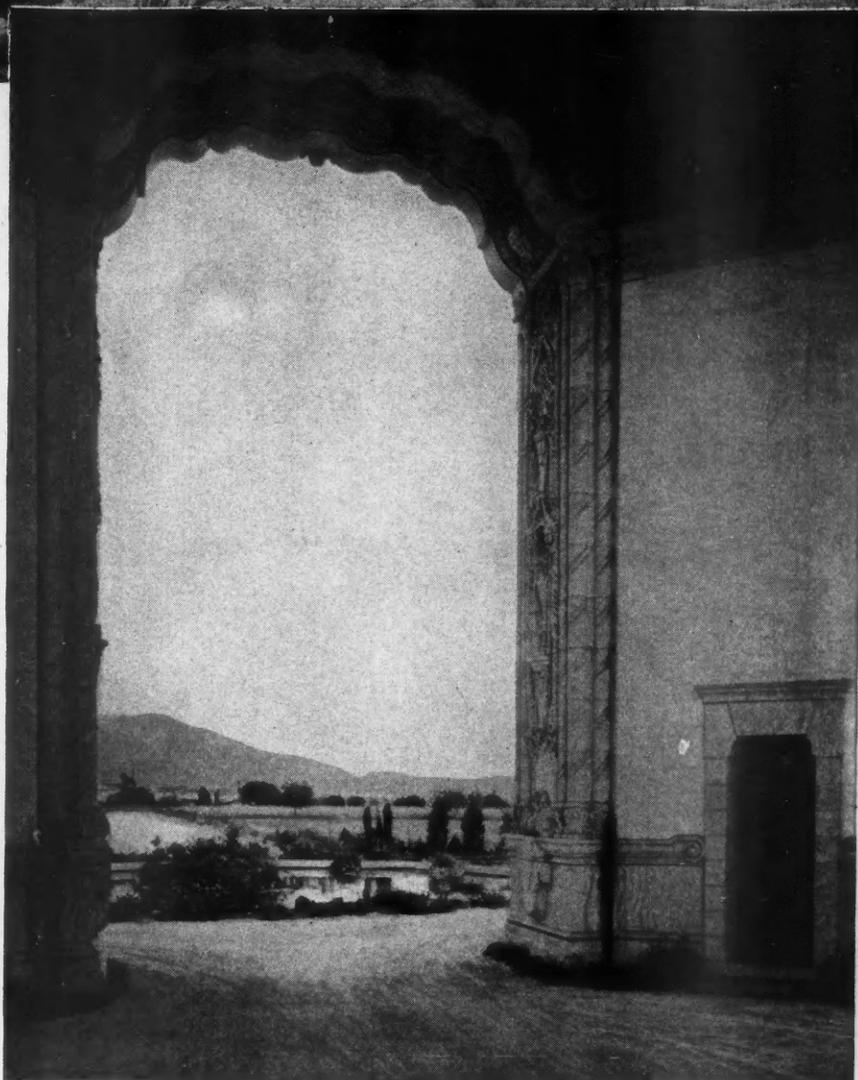
of the lawn, flowers and shrubs have added greatly to the beauty of the building.

On one side of the entrance is located a fountain with electrically lighted figures while on the opposite side there is a beautifully parked driveway which is used as an entrance to the cemetery proper. Incidentally the piping of the grounds of Valhalla is so complete and extensive that the promoters boast of the possession of the largest independent sprinkling system ever installed. There are more than thirty miles of pipes equipped with 7,000 hidden sprinkler heads.

The memorial building contains four rooms, a workshop, office quarters and rest rooms.

The central motif or arch is 50 feet in each direction and about 85 feet in height. Accentuating the size of this memorial archway there are ornamental flanking motifs, including benches of stone and plynths upon which are set ornamental urns which are kept filled with flowers. In the foreground there is a replica of a famous Spanish fountain.

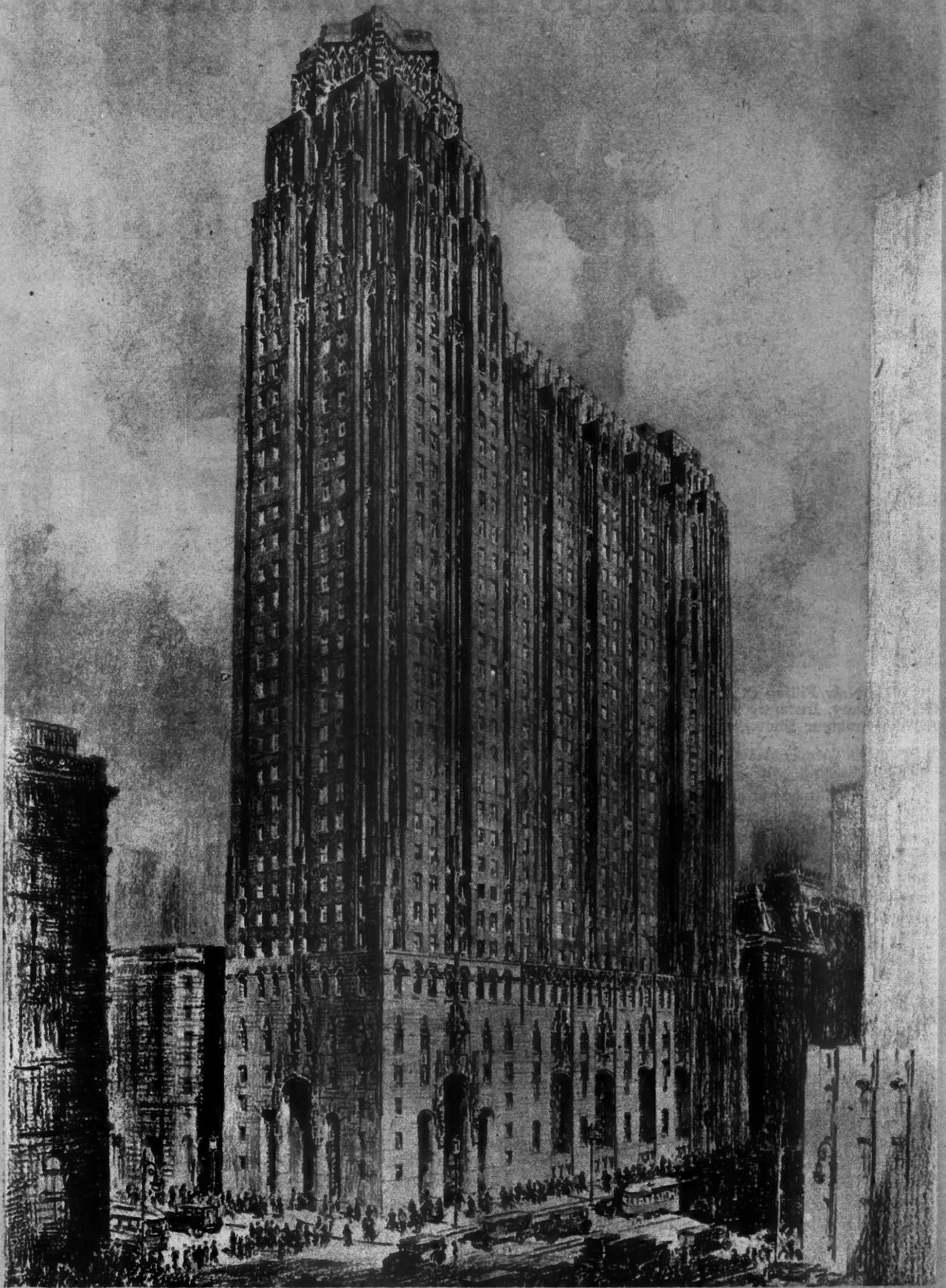
The approach to the memorial arch is 160 feet in width and about 100 feet in depth. The combined area of the Valhalla Memorial Park is 117 acres with the only entrance through this archway.



**Through One of the Arches of This Imposing Entrance May Be Glimpsed a Magnificently Framed Picture.**

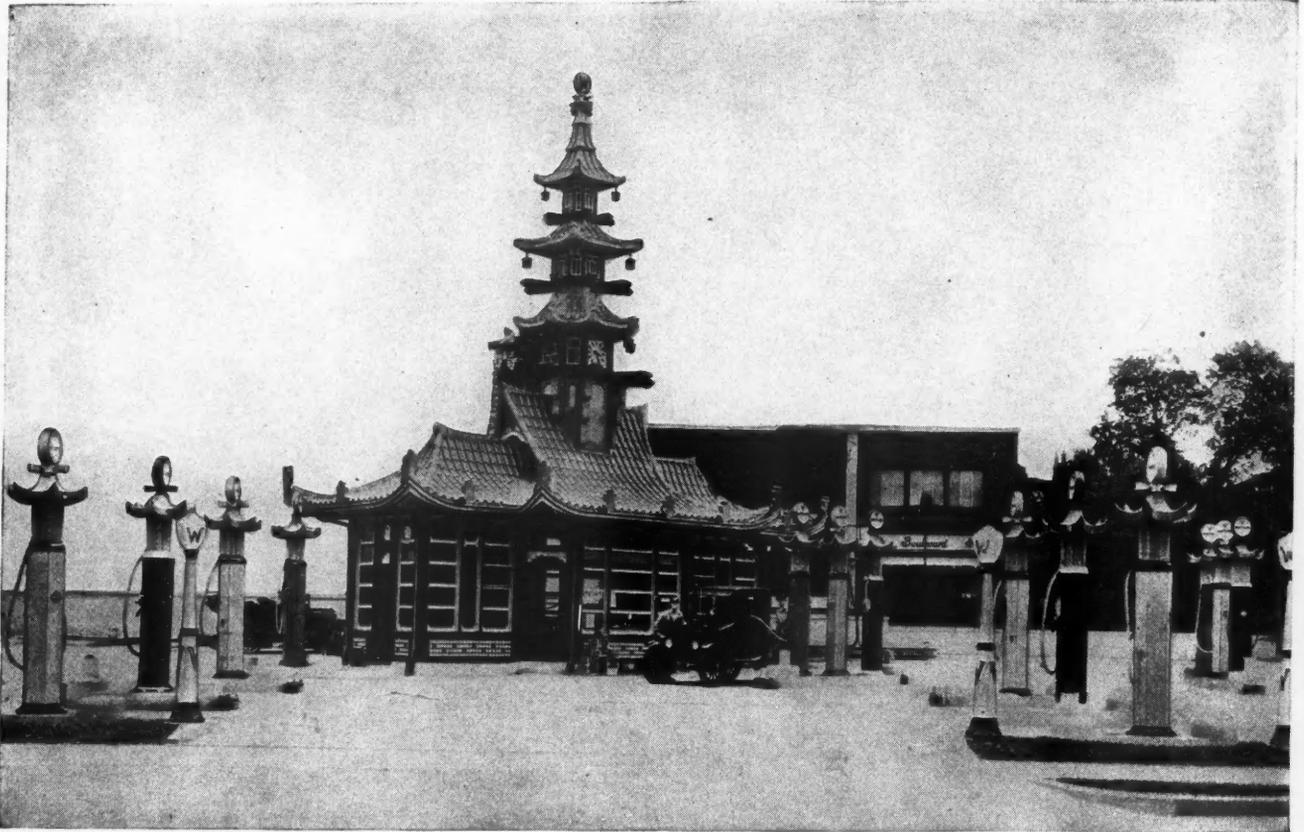


*The OLIVER CROMWELL APARTMENTS, West 72nd St. and Central Park West,  
New York City; Emery Roth, Architect.*



NEW 40-STORY HOME OF THE UNION TRUST CO., Detroit, Mich.;  
Smith, Hinchman & Grylls, and Donaldson & Meier, Associated Architects.

# This Filling Station Attracts the Business in Milwaukee



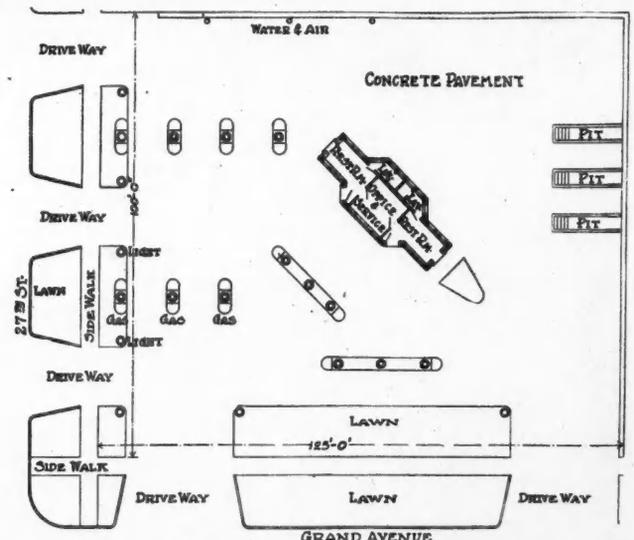
This New Filling Station, Recently Built on One of the Most Conspicuous Corners in Milwaukee, by the Wadhams Oil Company, Instantly Arrests the Attention, Because of Its Unusual and Attractive Style, and Becomes a Model for All the Amateur Photographers Among the Motorists Who Patronize Its Service.

WHAT is considered by many people Milwaukee's most beautiful gasoline service station was recently put into operation at the corner of Grand Avenue and Twenty-seventh Street by the Wadhams Oil Company. Because of its location and unique design the new station has attracted more than the usual amount of attention especially among tourists, many of whom stop to take pictures of the structure and at the same time patronize its service.

The new station, in keeping with the modern trend of distinctive gasoline station design, is of Oriental architecture, being modeled after a Japanese pagoda. This station is one of the largest and best equipped in the city has a frontage of 36 feet and is 15 feet deep. The building itself is approximately 15 feet high, while the tower rises to a height of 28 feet above the top of the building, making the total height of the station about 43 feet.

The building is of brick and glass construction. The foundation of the building is of brick, while the remaining portion from the top of the brick foundation to the roof is of glass. All the roofing and outersurfacing of the station's storied tower is of metal tile. The station is highly ornate, and the color scheme is carried out in red, yellow and black, the official colors of the company. At night the entire station and tower is illuminated from within.

There are five approaches from the street, three on Twenty-seventh Street and two on Grand Avenue. Eleven driveways are reserved for the purpose of taking gasoline, while five other driveways are given over exclusively to tire and water service. The station is equipped with 13



The Layout of This Service Station Is Remarkably Well Planned to Handle the Maximum Amount of Business in the Most Convenient Manner.

electric motor driven pumps. Three combination draining and greasing pits complete the equipment.

The office and service room of the station occupies the center portion of the station, while the end sections are given over to rest rooms for men and women. The complete equipment occupies a piece of property 100 by 125 feet.

W. T. N. B.

# REAL ESTATE *and* SUBDIVISION WORK



## “Manufacturing” Small Homes

Some of the Methods Used by a Successful Home Builder of Little Rock, Arkansas

**S**HALL the builder of homes confine his efforts to high-priced residences, completing a comparatively small number of them a year, or shall he turn out a goodly flock of houses that sell at low figures and make his income from the volume rather than from the higher individual profits on a smaller number?

Lloyd W. Judd, home builder of several years' experience, who is now building homes for working people on a wholesale plan, in Little Rock, Arkansas, says that the last named method is the one that he would pick for a winner any time. Mr. Judd has reason for his opinion, for he has been quite successful in building homes for working people on this wholesale plan.

Instead of merely building houses, scattered here and there over a city, Mr. Judd builds blocks of homes and builds them after a plan similar to that employed by the great modern manufacturing plants, in which every process in the making of a commodity is in the hands of a skilled expert who specializes in the particular thing that he is responsible for. Specialists for every detail of the building of a home are employed by Mr. Judd.



Lloyd W. Judd, Who Has Specialized in “Manufacturing” Small Homes for Working People.

Such a plan realizes certain results that are eminently worth while, Mr. Judd thinks. First, since each workman is skilled in his particular task and is employed only in that particular groove, he becomes highly proficient and can turn out more work per hour than if he were employed as a general utility man in his field. Second, the building constructed by such workmen is likely to be more thoroughly standardized than if put up by men who are not specialists in every detail that they handle.

The range of the building operations of this Little Rock builder can be visualized when it is recorded that his goal of production calls for one finished house ready for occupancy every three days, once the system gets into full swing in a district under development.

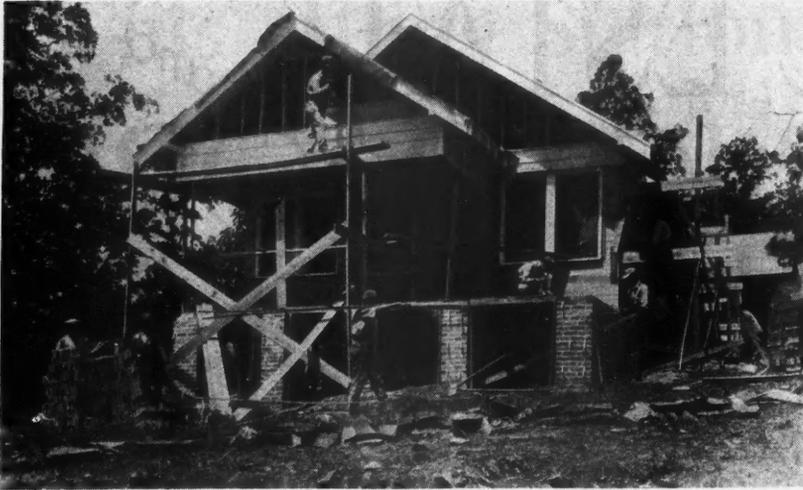
“We do not carry on any construction where we do not have at least a block of ground, because our system of building does not work out well except we have a large group of houses,” Mr. Judd said. “Since our men are specialists, valuable time would be lost in their running around over town, getting to jobs, if we did not bunch our houses in units, having houses in



A Small Home of the Type Which Mr. Judd Has Been so Successful in Building by “Manufacturing” Methods in Little Rock, Arkansas.



The Judd Organization Is a Permanent One and Includes Skilled Experts Who Specialize on Each Phase of the Work of Home Construction.



**Carpenters at Work on One of the Houses in a Judd Development. No time is lost in these developments in going from one house to another.**

different stages of completion at all times so that the workman can turn easily from one to another.

"It actually requires from six weeks to two months from the time we start on a house until it is ready to be moved into, but we keep a line of houses going so our men have work at all times. This plan makes it possible for us to give due time to each house, since no detail is rushed unduly to get the building finished in short order.

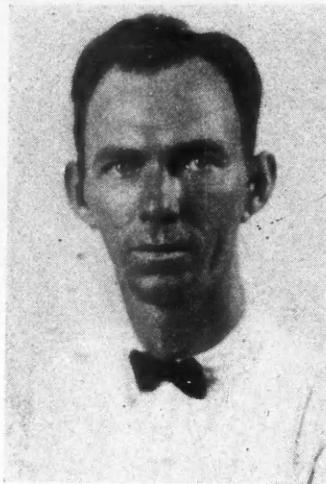
"Aside from the construction end of the plan, there are certain other advantages that result from building numbers of houses as a unit. Usually the land can be secured at a much more reasonable figure than if it is bought in small, detached pieces here and there. Also, the advertising expense is less when houses are in a unit. The newspaper advertising can be made to include the whole group easily, and the salesman's time is not lost in driving prospects from location to location.

"As to actual construction, we keep a crew of five bricklayers who do nothing but lay foundations. Then there are two flue men who lay fireplaces and flues.

"Following these men we have a crew of framers who do nothing but frame the houses. After them come the shinglers, lathers and electricians. The point I am making is that these men do nothing but their particular type of work, consequently they become very proficient. After the house is shingled, lathed and wired, the plaster crew moves in. As soon as the plaster is cured, the finish carpenters take charge. We have five men who do nothing but trim doors, windows and base. We have another man who does nothing but hang doors and set locks.

"It requires eight painters to keep up with our builders. These painters are divided between painters who do outside work only and finish painters. Along with these men all the time is a crew of plumbers, who keep the plumbing up with the construction of the houses. Then we have a man who sets built-in fixtures, such as kitchen cabinets, bookcases and mantels.

"After all this is done, come the floormen



**To W. P. Green, the Foreman Who "Leads" His Men, Mr. Judd Gives Much of the Credit for the Loyalty of His Organization.**

who are the last construction men in the house. We use oak flooring throughout. That requires three floor finishers and layers, who do nothing but this work to keep up with our program. We have three landscape men who terrace the yards, and we have one man who is a specialist in building lattice work, flower boxes and trellises. Even the flowers are put in the flower boxes before the houses are sold. We are following the modern idea of building the home complete so that everything is there that a person could want.

"In addition to the foregoing facts, we carry our own concrete construction men, so that every item of the work is handled and completed by our own organization; the only exception being that the plumbing is contracted outside.

"We employ from 40 to 60 mechanics. All of our work is done by day labor, and all material is bought in the largest quantities. In a single week we have unloaded as high as ten carloads of building material.

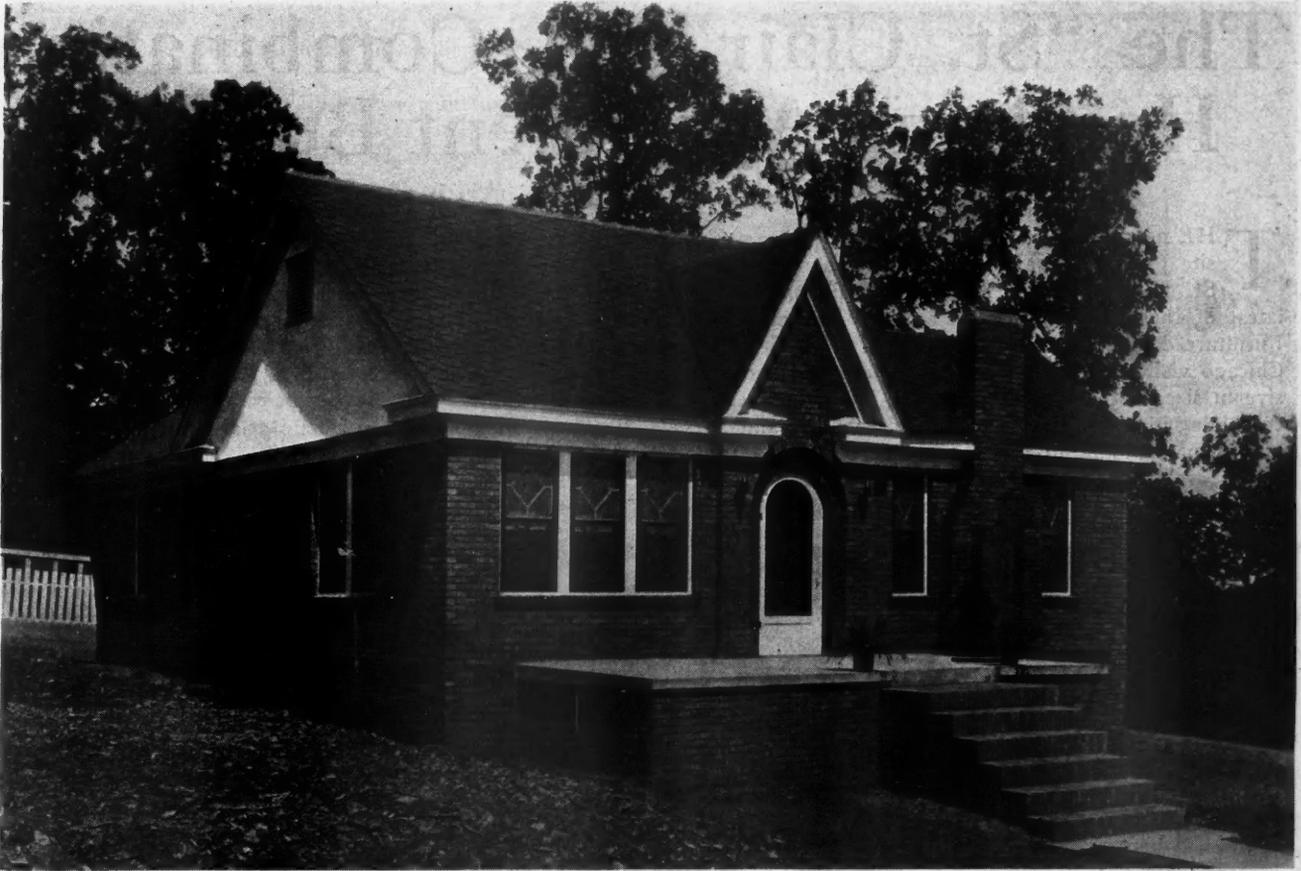
"It is our custom to put in all of our own improvements, such as sewers and streets, without forming any district.

"Ours is not a profit-sharing organization, but rather an organization of workers who have ideals in common and a wholesome respect for one another. The enterprise is entirely a private one, yet regardless of this fact, in talking to the men on the job, you would get the impression that every one of the men was a stockholder, so intensely interested are they in their work.

"The success of any organization depends upon the sincerity and loyalty of the workmen, and our people thoroughly understand this. I do not think you will find a more loyal bunch of workmen anywhere than our folks, and this is largely due to fair and just treatment and the competency of the foreman I have, Mr. W. P. Green, who



**Masons at Work on a Brick Veneer House. Five bricklayers, who do nothing but lay foundations, are kept busy all the time on Judd houses.**



A Large Number of Six and Seven-Room Brick Veneer Houses of This Type Are Now Being Built by Mr. Judd. This house, complete even to the window shades as seen in the photograph, was sold for \$5,880, a price made possible only by the low labor costs of the Judd System.

leads his men instead of driving them.

"They understand that every home is being built for someone as a home and that that person will spend a good part of his life paying for and improving it. Consequently, we work upon the theory of one workman doing justice to another, and thereby each workman is interested in making every phase the best he knows how.

"It might be of further interest to record that in all the time I have built I have never had any kind of labor trouble. My labor turnover is negligible. Most of the men who started in with me are still with me.

"Another system that we use that might be of interest is that when a man has worked at a job with us for two years in any craft, he is given a certificate as a master workman, in which is set out specifically the length of time he has been employed by us, his grading as to reliability, competency and production. This is of considerable help to him in the event he ever seeks employment elsewhere."

The homes Mr. Judd builds are unpretentious, ranging in price from \$1,900 to \$4,000, and the purchase price includes everything. In fact, the house is a liveable home when the key is turned in the front door, and it is pronounced finished. Floors are polished, built-ins are completed, the grounds are terraced and sodded to grass, porch boxes planted to flowers,

walks are laid, fences and lattice work built, windows screened, garage built, and all electric, sewer and water connections made.

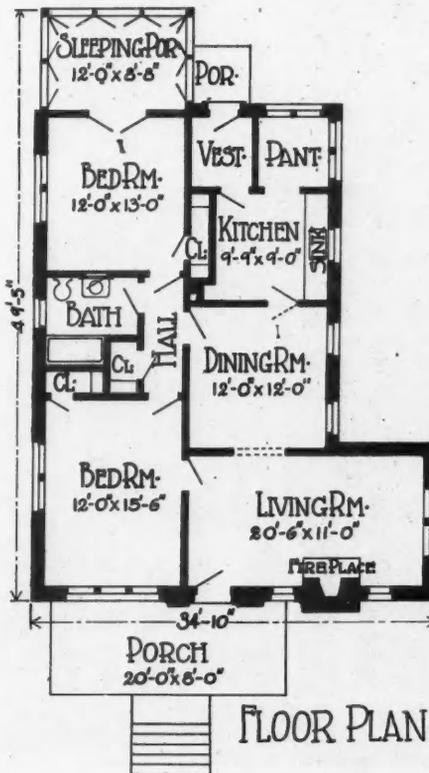
Although the houses are constructed in blocks, no two houses on the same street are exactly alike as to exterior features or in interior arrangement. Therefore, a street of Judd-built homes does not possess the sameness and monotony characteristic of many such districts.

"In order to keep all houses different," Mr. Judd says, "I am constantly looking for ideas of other people, and whenever I see a home that is attractive I reproduce that house along with the others we are building. All of the planning and designing is done by myself. I think this to be a considerable advantage, because I am able to keep in mind the general things to be accomplished."

Because of their attractiveness as well as their utility features, it is an easy matter for Mr. Judd to dispose of his houses, when a block is opened to buyers. Houses are put on the market as they are finished, and frequently buyers of the first few houses in a unit influence their neighbors and others to buy others of the houses as they are ready.

As a matter of fact, after Mr. Judd gets started in a locality over half of his houses are sold before a

(Continued to page 103)



This Floor Plan, of the House Shown Above, Is Typical for the Homes Built by the Judd Organization.

# The "St. Clair"—A Combination Hotel and Apartment Building

OMAN and LILIENTHAL, Architects

**T**HE near north side of Chicago has become a popular site for large apartment buildings and hotels. The St. Clair Hotel and Apartment Building, one of the latest of these projects, is but a short distance from the Furniture Mart and the Drake Hotel, so well known to Chicago visitors. It will be a handsome structure, impressive in size, and has the exceedingly interesting feature of combining the facilities of a first class hotel and a large apartment building in one. The floors devoted to hotel rooms are from the third to the sixth, inclusive, with the floors above devoted to three-room suites of apartments

with kitchenettes.

The general design of the building, as shown in our illustration, is treated in the modern style with Spanish influence, and will have a very attractive exterior of brick terra cotta. The structure will rise to a height of 20 stories above the ground level with a full story below for the basement.

The ground floor will contain a large lobby, main dining room, private dining rooms, coffee shop, kitchens, general offices and three stores; on the second floor there will be five shops, writing room, convention room and lounging alcoves. The finish of the main lobby, mezzanine and main dining room will be elaborately treated with wood panel wainscoting, marble and ornamental plaster, and will present the appearance of rooms typical of the highest class apartment hotels in the city.

The upper floors above the ground and mezzanine floors will be divided into two typical groups; the first seven floors (3rd to 9th, inclusive), will contain 189 hotel rooms, each with bath; the tenth to twentieth floors, inclusive, will have 154 kitchenette apartments of one to three rooms. The hotel rooms and housekeeping apartments have been planned to present the utmost in elegance and comfort. The equipment throughout will be of the highest quality obtainable.

The basement will contain storage space, trunk room, linen rooms, dressing rooms, toilets, boiler and pump rooms, commissary and other utilitarian rooms.

The building will be of fireproof construction with face brick and terra cotta on all sides.

The foundation will rest on 60-foot wood piles capped with reinforced concrete footings. The floors will be poured monolithic, cement finished and troweled ready to receive the carpet. The basement floor and all basement walls will be damp-proofed in the latest approved manner.

The trim and casework will be of hardwood of special design in accordance with the architect's details. Special cabinet work including kitchen cases, broom and pail closets, special built-in breakfast furniture, and wood wainscoting will be generously used throughout the building.

The walls of the principal rooms on main floors will be finished in either palm finish or sand finish plaster, relieved by the introduction of plaster arches, ornamental plaster brackets, etc. Ceilings throughout will be of metal lath and the plaster furred down with channels or steel pencil rods. Metal lath will be used at all corners



Architects' Perspective Drawing Showing How the St. Clair Hotel and Apartment Building Will Look on Completion. It will contain 189 hotel rooms and 154 suites of kitchenette apartments containing from one to three rooms each, as shown by typical floor plan on following page.

and intersections where materials of different character come together so as to avoid the possibility of the plaster cracking.

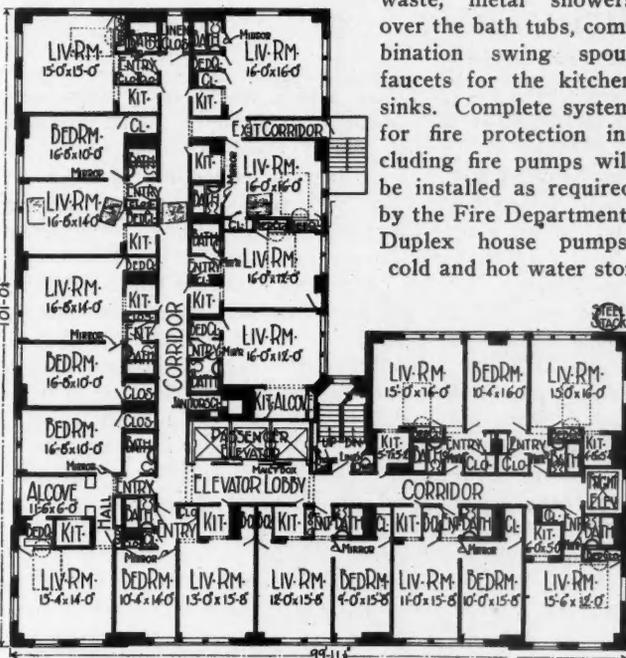
There will be ornamental iron doors, sills, grills, exterior lighting fixtures, balconies and elevator enclosures, elevator grilles on the main floor, steel stairways and bronze thresholds wherever necessary.

All wood trim throughout the building on all typical floors will be enameled. All walls and corridors of the typical floors will be similarly treated. Typical floor rooms will be covered with wall paper of high grade relieved by wood panel strips. Public space will receive special decorative treatment and will have the ceilings polychromed, glazed and starched.

There will be tile wainscoting and tile floors in all bathrooms of the typical floors. The public ground floor space will also be treated either in tile or marble.

The plumbing for this building will be of the highest grade with all bath tubs enameled inside and out, syphon jet-bowls, flush valves, semi-vitreous lavatories with pop-up waste, metal showers over the bath tubs, combination swing spout faucets for the kitchen sinks. Complete system for fire protection including fire pumps will be installed as required by the Fire Department.

Duplex house pumps, cold and hot water stor-

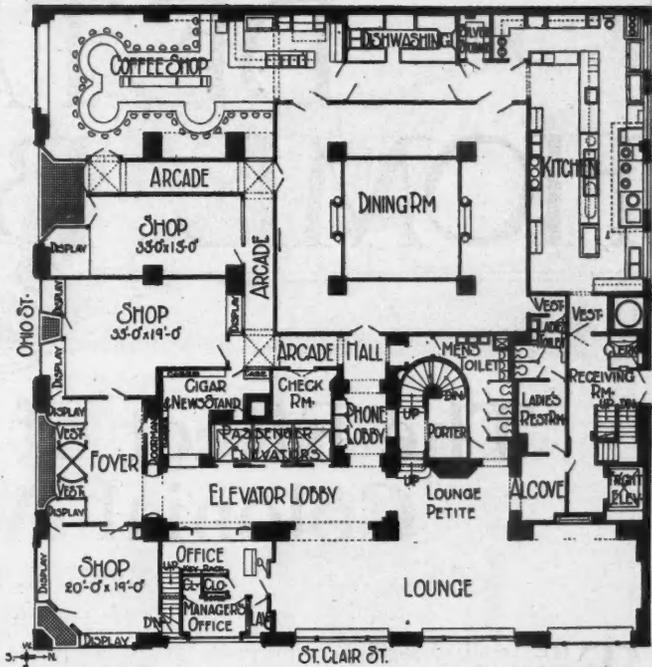


Typical Floor Plan Showing Arrangement of Apartment Suites. Most of these apartment suites have living room, bed room, dining-kitchenette, bed closet and bath. Disappearing beds are provided in most of the living rooms.

age tanks of approved kind will be used wherever necessary. Three high-speed elevators manually controlled will be used as passenger elevators and a special dual control heavy duty elevator will be installed to be used as a service elevator.

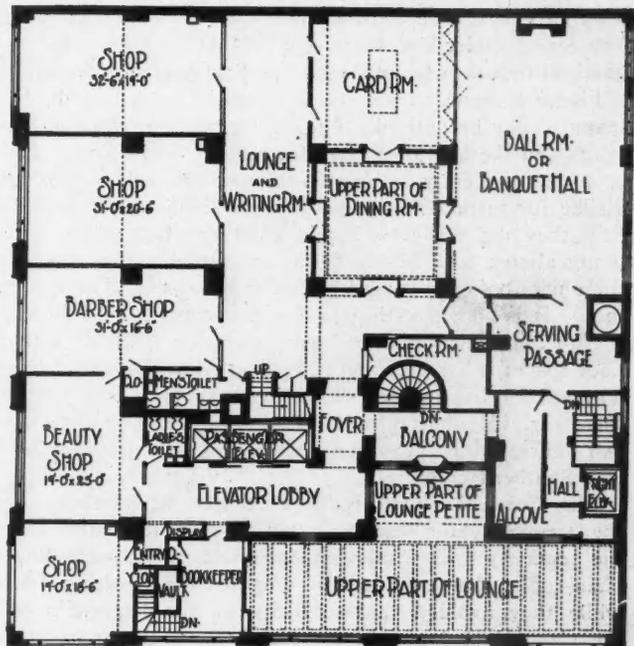
A low pressure or vapor heating system with steel riveted boilers prepared for oil burning equipment will be installed. The piping and valves and other fittings will be of a high character throughout. Complete ventilating plant to take care of all requirements for ventilating the inside bathrooms and kitchens will be located in a special pent house on the roof connected to sheet metal ducts serving all floors below.

Refrigeration and ice water will be furnished for all apartments. In addition to the above specifications there will be a complete weatherstripping for all windows. Plumbing and heating risers will be insulated with special covering. Refrigerators will be all white enamel. Floors in kitchens will be covered with inlaid linoleum. Each range will have thermostatic temperature control and will be white enamel. Solid bronze hardware and special hotel and apartment locks will be used throughout. Sufficient vacuum cleaning outlets will be installed. All window jambs will be plastered with cor-



The Ground Floor Plan, Illustrated Above, Shows a Convenient Arrangement of Lounge, Elevator Lobby, Dining Room, Kitchen, Coffee Shop and All Other Features of a Luxurious Hotel, Together with Three Commodious Shop Spaces.

nice beads. The roof will be of high grade composition guaranteed for 10 years. The oil burning system will be of the most approved and recent design. Metal medicine cases will be furnished for all bath rooms. Lighting fixtures of superior design and material will be installed throughout. Screens and shades will be furnished. Compo ornamental grilles will be used generously on the main floor. In-door beds set in special closets will be installed. All hotel rooms and apartments will be furnished with high class furniture selected by expert furniture men and decorators. Linen, silverware and miscellaneous equipment will be furnished for all housekeeping apartments. All floors will be carpeted throughout except in bathrooms and kitchens.



The Mezzanine Floor Plan Shows a Ball or Banquet Room, Lounge and Writing Room, Card Room, Barber Shop, Beauty Shop and Three Other Shops. There is a balcony and lobby overlooking the lounge below.

# DETAILS *f* HOME BUILDING



## The Effect of the Dutch On Colonial Architecture

By V. L. SHERMAN

*Lewis Institute of Technology*

THE trend of fashion in moderate priced homes in recent years has been toward plainness. There has sprung up a desire for blending walls, roof and chimneys. This tendency leading toward Colonial has taken of its phases but passed on to a more serious attempt at the Dutch Colonial. On its way, however, enough of character was picked up to make it less, or perhaps more, than Dutch Colonial. The progress is interesting.

The very rapid growth of residential districts near New York was, I believe, what started the fashion, which is a very wholesome one. In lower Connecticut, New Jersey, Long Island and some of the upper Hudson there have been built up sections of very attractive homes. A large share of these were of native origin, but less restricted in design than the earlier homes. How much may be traced to true Dutch Colonial ancestry?

The success of these designs, not particular designs but general form, brought them into prominence, and has helped to reduce the number of cut-and-dried Dutch Colonials, which are hardly Colonial and are certainly not Dutch, and are all precisely the same. None of these have a porch where it should be, that is, across the front of the house and under the main roof. Most of them used the gambrel roof as a trimming with a display of heavy cornice.

Figure 1 shows an old Dutch house in Long Island. Two features may be noticed. The roof spreading over the long porch and the lack of respect for second floor rooms. It is said that the early settlers in Manhattan had a thorough dislike for second floors and took to them only gradually. Still they did come to it and enlarged their space, later going almost to a Mansard but for the chimney-ends. In the older roofs the curved sweep at the eaves is very common. It is shown in Figure 1 and somewhat in Figure 5. Figure 2, a house in Greenbush, has more available second floor space; it has departed somewhat from the earlier ones. The sketch of the door-hood below shows how modest these early Manhattan builders were in adopting the classical figures which appeared on the homes of the Northern and Southern colonists.

The Colonial Dutch roofs were not all gambrel, and the stepped gable hardly lasted to the Revolution, but the tendency was firmly set for plain roofs, exceedingly plain roofs when compared to some of the Georgian. And while they avoided the simplicity of the log cabin and the elaborate balustrated roofs and classical porches they did build towards a typical Colonial.

Figure 5 calls for attention. It is not proposed that this house is Dutch Colonial, but it would be difficult to find

any characteristic design which would cover more completely all of the advantages of the Colonial house of Dutch or of French origin. Such a design gives just as accommodating floor area as either Fig. 6 or Fig. 7 with considerably less wall area. Porches with small walled units are accessible and interesting. The second floor or chamber floor of the Colonial home was quite truly under the roof. Heat for it during the cold months was sporadic and the roof warmed quickly in the sun, or was snow covered. A low roof has an advantage.

In the matter of porches it is easy to find considerable difference. But in the Colonial of Dutch style they are open, plain and usually part of the entrance. Fig. 6 shows one type which is quite small, practically an entrance and supported on either side by window nooks. This overhang of roof, and the floor projections in the nooks give protection to the house and an interesting outline.

The house is stucco to the lower eaves and wide siding above. But the smaller porch evidently is not enough for there is a large open one to the left. The porch or stoop in Fig. 3 is more of the old type. Here the porch roof is from the lower sweep although the depth is somewhat less than that in Fig. 1. The entrance is much more open with a divided "Dutch-door." From Fig. 3 it may be noticed how homely these low-roofed houses became. From this homeliness comes their neighborliness. This is the main point to remember about the simple Colonial type.

The type developed, not from the town type of Europe, but from a combination of the composite types in Manhattan and the country adjoining where neighborliness came from necessity and stayed as a pleasure, where streets were not blind rows of house-fronts and the gardens at the rear entirely walled in. When the colonists built in that locality they had too few brethren to build in close quarters and too little time and material for other than house walls. I doubt whether any other country ever enjoyed a porch, or knew what comforts it included.

In both this and the preceding article gambrel roofs have been avoided because it seems they have had their share of attention and inattention. A fine gambrel is a piece of good fortune for the owner, but the roofs which come from the Colonial house are not all gambrels. They are really nothing but American of the long pole rafters, and hard to find anywhere else. Figs. 5, 6 and 7 show these roofs, broken little by the dormers, and perfectly plain. They were the forerunners of the low pitched bungalow roofs which at the first, and now in recent years, show so much grace.



FIG. 1. AN OLD DUTCH HOUSE. LONG ISLAND, NEW YORK.



FIG. 2. AN OLD DUTCH HOME. GREENBUSH, NEW YORK.

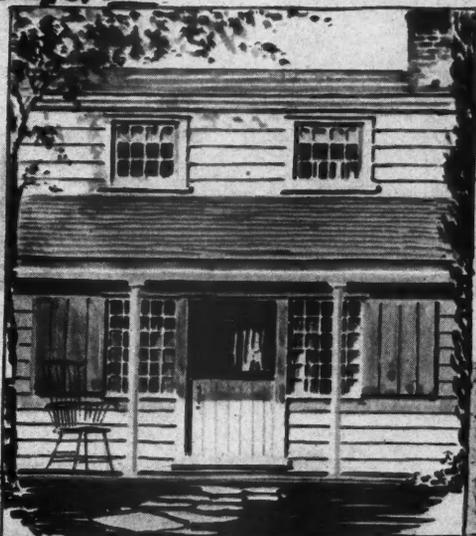


FIG. 4. MORE RECENT FORM WITH WINDOW-SHELTER.



DOOR HOOD FOR FIG. 2.



FIG. 3. AN INVITING DOORSTEP.



FIG. 5. WHOLESOME COMPOSITION - A FLAGG HOUSE.

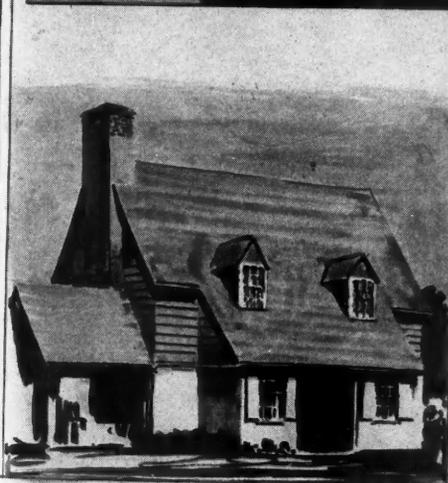


FIG. 6. THE LONG, LOW ROOF

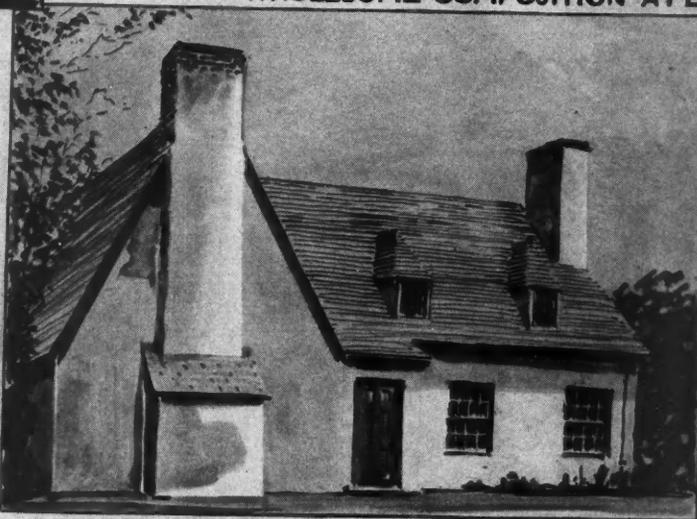


FIG. 7. TYPICAL ROOF AND DORMERS BUT TOO FEW WINDOWS.

*U. L. Sherman 11-28-28.*

# Brick Houses of Smart Design

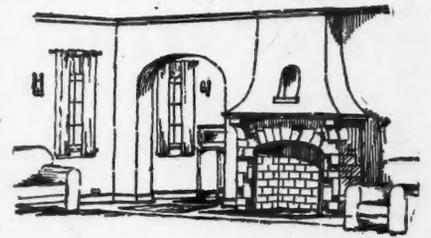
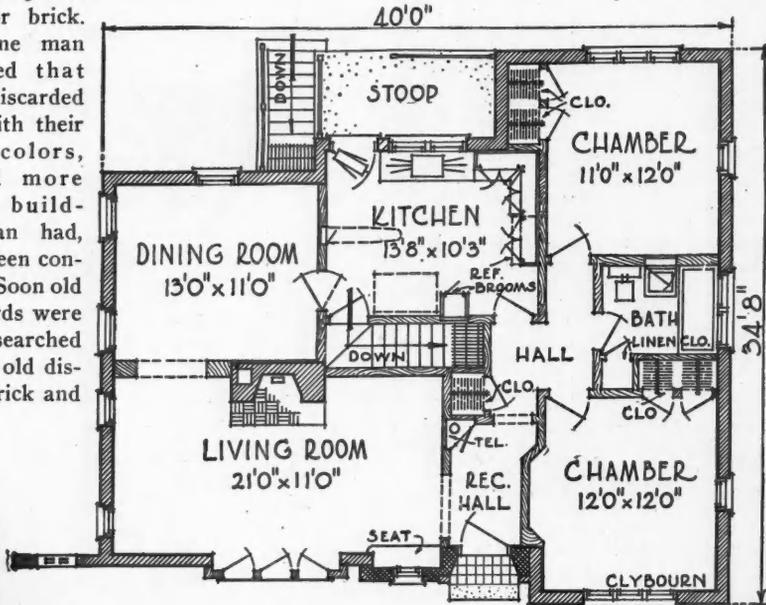
**T**O many people any reference to a brick house calls up but one possible picture, for in the past bricks were all very much alike and laid in very much the same way, but to those familiar with the more recent trend in brick work such a reference suggests almost infinite possibilities. While standardization has been whole-heartedly adopted by industry in general just the reverse has been true in the arts, in general, and house design in particular.

As an example of this, in years gone by thousands of brick were thrown away, wasted, because after firing their color varied to a greater or less degree from the standard and accepted color for brick. Then one man discovered that these discarded brick, with their varying colors, produced more beautiful buildings than had, before, been conceived. Soon old brick yards were being searched for their old discarded brick and

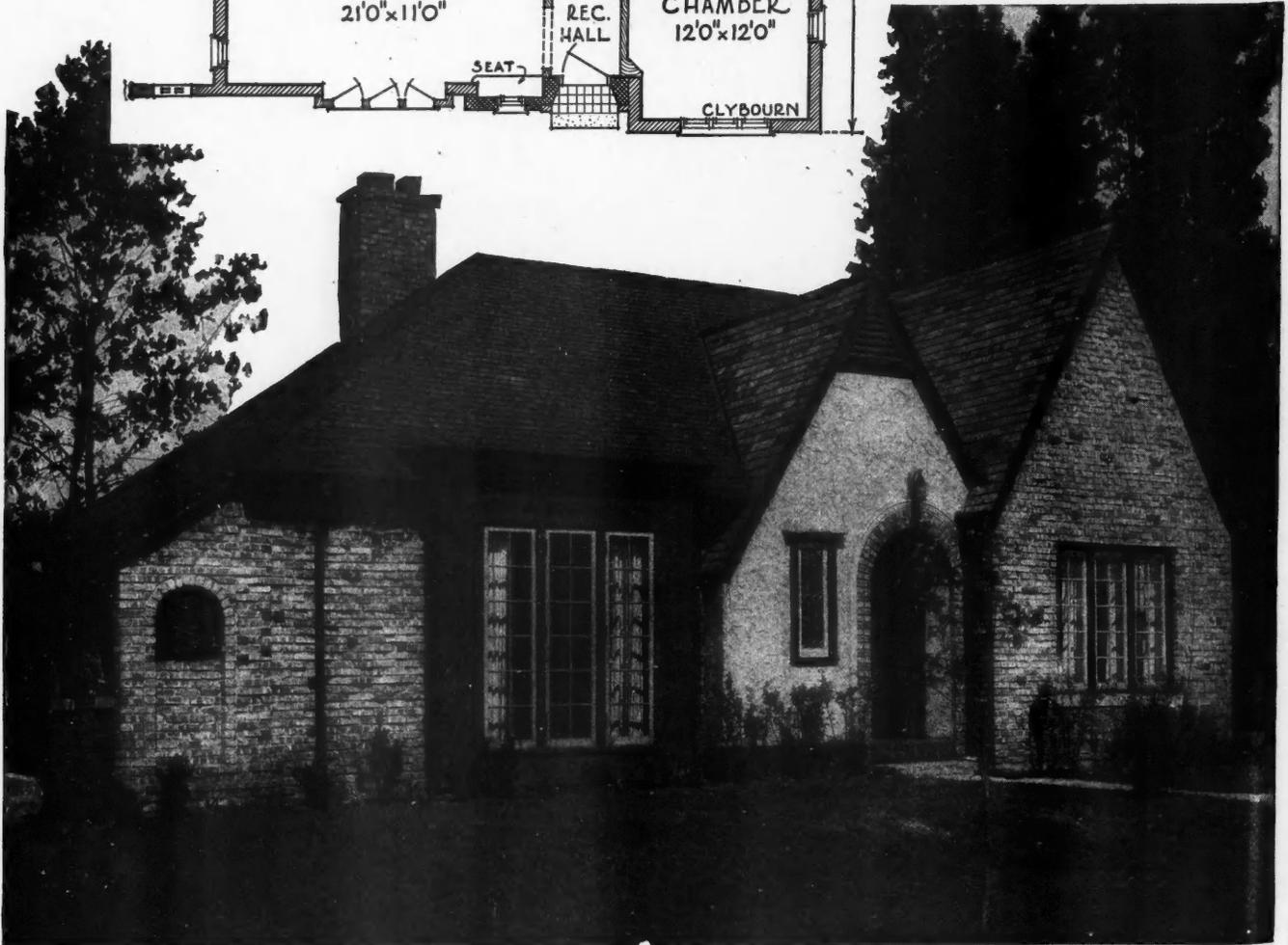
the production of such brick has now become a craft by itself. Brick of varying color command a price.

Again, common brick was formerly used only for purely utilitarian purposes and economy. Then someone discovered that common brick, when laid in a rough, irregular fashion, was attractive, also that common brick when old and weathered possessed inherent beauty and distinction. Now we see on every hand homes of "skintled brick" being built by those who can afford the best. Other costly homes are being built of common brick which is whitewashed or otherwise treated to hasten the aging process and attain this newly discovered beauty.

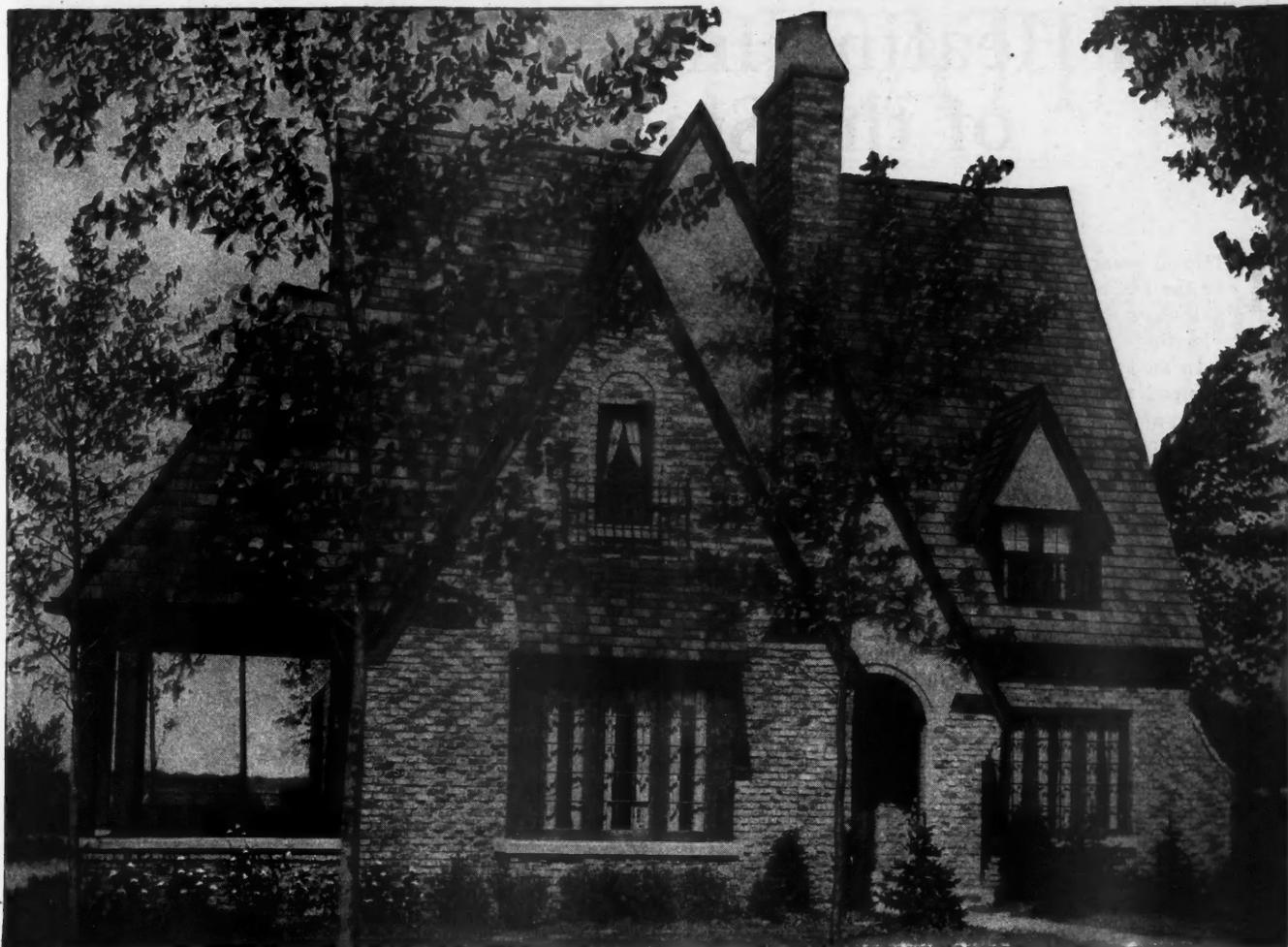
So also there has been a develop-



The Plan at the Left Shows a Thoroughly Modern Home While the Sketch Above Gives a Glimpse of the Living Room.



A Pleasing Combination of Face Brick, Slightly Skintled, and Stucco on Hollow Tile with a Wood Shingle Roof, an Effect Peculiarly Adapted to This Particular Design and Showing the Important Relation Between Design and Material.



Another Beautiful Home Illustrating the Careful Design of Face Brick Laid in Random Manner Which Is Characteristic of the Modern Conception of the Brick Home.

ment in the use of mortar colors and mortar joints. The selection of just the right mortar color to harmonize with the design and brick selection has become a matter of first importance. The decision between concave, convex, raked, weathered, rodded and a dozen other types of mortar joints receives serious consideration.

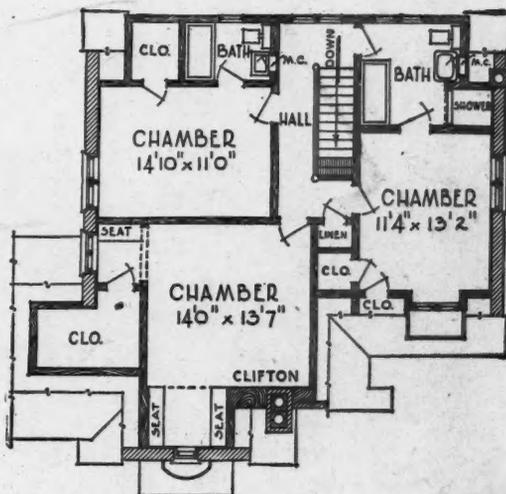
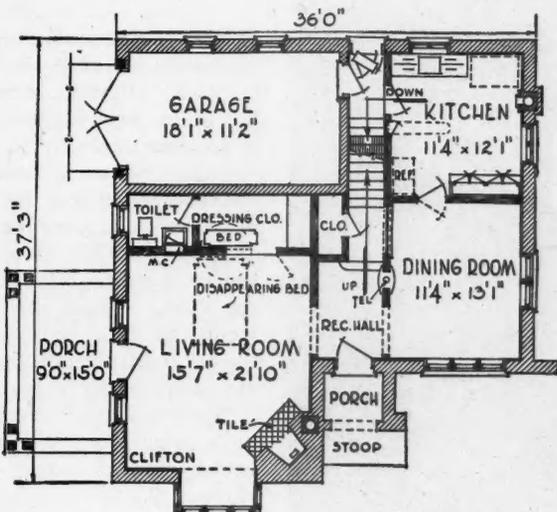
And so it is that the design of brick houses has come to be a separate type of design. No longer do we design a house and then decide whether we will build of brick, of wood, of stucco or what. It is now possible to obtain books of house designs, prepared by the makers of brick, who wish to see their product used to the best effect, and containing designs peculiarly adapted to interpretation in brick. They possess a merit which recommends them to the prospective home builder.

Such are the two houses illustrated with their plans on these pages. They are essentially

brick homes and will demonstrate to the prospective builder the value of seeking out suitable designs before selecting the plans for his future home.



The Artistic Lighting Equipment Association, 711 Graybar Building, New York City, has prepared a beautiful and interesting booklet on "Outdoor Lighting Equipment and Lanterns," with illustrations indicating the artistic possibilities and utility of exterior lighting.



These Plans Show That, While the House Illustrated at the Top of This Page Is Not a Large House, It Is a House in Which the Best Has Been Demanded, in Accord with the Spirit Which Has Called Forth More Artistic Brick Construction.

# Oil Heating Increases the Size of the Small House

By RUFUS RICHART,  
Assistant Director, Oil Heating Institute

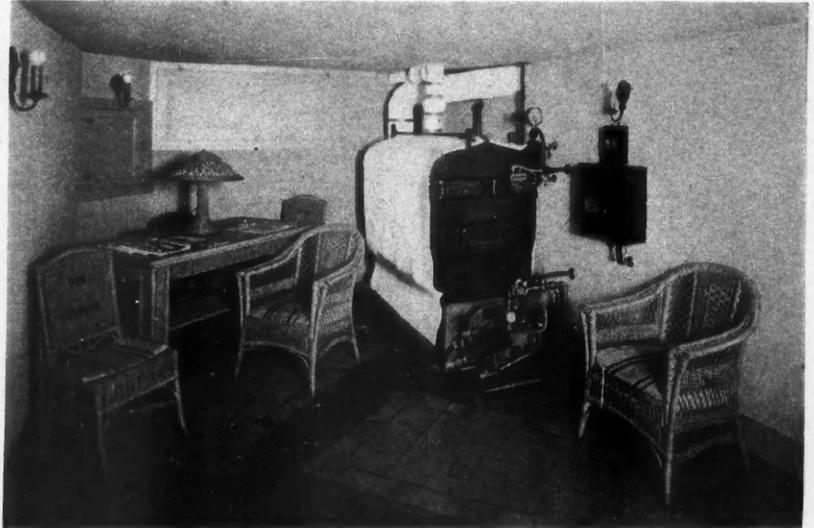
**T**HE oil burner industry has awakened to the realization that one of its best sales arguments is the effect of automatic heating in conserving household space. In an age of small compact dwellings equipped with every modern invention for comfort and convenience this fact looms large in the minds of home builders.

Oil heating expands the interior of a dwelling without enlarging its exterior. A housewife embarrassed for lack of space can move into a larger house just by getting an oil heater. When she and her heater arrive in a six-room house she will discover seven rooms.

Often it happens that a woman is charmed with one of the many small dwellings now erected to provide a small family, at reasonable cost, with all essential comforts of the modern home. But she hesitates. Most of the time it would be perfectly satisfactory, as she explains, but emergencies and special needs arrive in every family, and then the house would be too small. Many things might happen to demand more space for a time—especially sickness and visitors.

In the average furnace room where coal is burned, half the space must be given up to the coal bin. And even if space is available ashes and coal dust make it useless for anything but storage purposes. But a good oil heater has no effect upon the room it occupies, except to make it warmer and dryer and to improve the ventilation. The up-to-date oil heater rooms, therefore, now have white or daintily tinted walls; there are white curtains at the windows; pictures are displayed, and attractive furniture.

The heater is best placed in a small basement or modified basement, with one or two fair-sized windows so located and



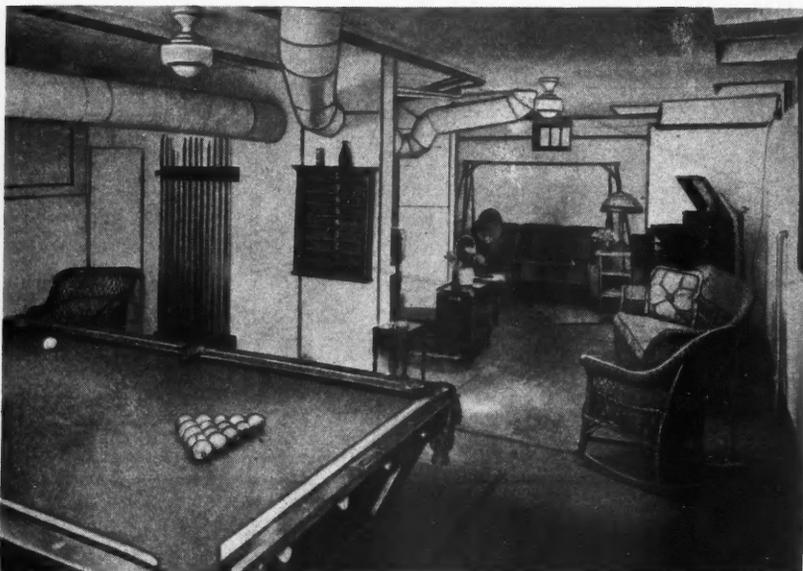
With an Oil Burner Installed, the Heater Room Can Always Be Kept Clean and May Be Made Attractive as Any Other Room in the House, so Fitting It to Serve Many Purposes.

so freed from obstruction outside as to admit direct sunshine part of the day. The room need not be a dark cellar. With good ventilation and ample heating assured, with sufficient daylight, adequate electric lighting, with no blackness, chill nor dampness, here is a "space" room ready either for emergency or daily use.

In case visitors or sickness come, those many readjustments in which women are expert will permit this extra room to relieve the pressure upstairs. It is as a segregated apartment protecting either the occupant or persons upstairs from interruption or annoyance that the heater room excels. A bedroom, if available, might not attain this object so well; and in cold weather the extra heating of a bedroom thus used, and its necessary ventilation, would require much heat not needed if the heater room were tried.

This new room is often a billiard room, a den for the man of the family, a children's playroom. Here "quiet" card parties may be noisily enjoyed. It may become a smoking room; a work room or shop for boys or amateur mechanics; a radio room, a gymnasium. To avoid domestic interruptions one may read here or study. No better place, except a romantic dungeon or a castle tower, could be imagined for the artistic son or daughter who is learning to whine the "uke," strum the banjo, scrape the violin, or climb up and down the vocal scale. Inartistic folk upstairs then call the automatic heater a real blessing.

Moreover, any housewife will recognize, on a rainy Monday, that the clean, warm, heater room is simply perfect for drying clothes. So the army of home buyers and home leasers are learning that when they need seven rooms to live in, either constantly or frequently, they can demand a six-room house with an automatic oil heater.



The New, "Extra," Room Is Often Used as a Billiard Room, but Serves Well as a Children's Play Room, a Smoking Room, Music Room, Shop for the Boys or an Emergency Bed Room.

# FURNACE HEATING



## Gas-Fueled Unit Heating an Adaptable System

Great Flexibility and Comfort Accompany the Use of Several Gas Units Instead of a Single or Central Plant

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

A HIGHLY successful method of warm-air heating is that employing two or more gas-fueled plants as units, each serving several rooms. Under this plan buildings may be warmed totally or in part without the necessity of maintaining comfortable temperature in rooms not requiring warmth. The heaters are installed in the basement as in a central system and are equipped with pipes to individual rooms. The success of oil burners during the past few years has been pronounced. Other principal substitutes for solid fuel are commercial and natural gas, and their success, too, grows apace as we rapidly adopt the labor saving methods and appliances of the present day.

The application of gas to house heating resolves itself into central plants and units similar to those shown in Fig. 1, which reveals a typical small and medium-sized unit arranged as a battery combination. These could have been placed in separate parts of the basement, had it been desired, with equal effectiveness. In Fig. 2 there is shown a floor plan wherein three separate units have been installed, each supplying heat to different parts of a residence.

Buildings of almost any size may be heated with gas-fueled units, for these are now being made in capacities from 3,000 to 400,000 B.t.u. per hour. Whereas the small unit referred to is single, large units customarily are arranged in batteries comprising a number of units placed side by side as in Fig. 1. The large battery plants afford sufficient heat to warm comfortably, and with a minimum of personal attention, theaters, churches, lodges, country clubs and similar places. The small units also are furnished as pipeless heaters and are asserted to equal coal burning plants in effectiveness and capacity.

It is not infrequently that gas-fueled warm-air heaters are equipped with diffusers, or pipe snouts, placed on top. These are most commonly installed in factories, garages and similar industrial structures where they perform every duty performed by steam and hot-water units of a similar design and purpose. In this application the heaters are placed on the floor it is desired to heat, in a central location, and the warm air is delivered through the funnels exactly as in steam and coal-fired units. There are many thousand of such plants daily

being installed by industry to solve the heating problems formerly handled by central systems of steam, hot-water and hot-blast.

Two especially good features of gas-fueled unit heaters are their high efficiency, often greater than 80 per cent, and saving in head room. As the heaters may be installed directly beneath the rooms to be heated, the piping runs are short and horizontal pipes practically unnecessary: Circulation of the warm-air supply thus is unobstructed, temperature loss from the piping is small and the response to control operations is almost immediate. Complaint rarely is offered that certain exceptionally exposed rooms are unheated on windy days or in cold weather.

The space occupied by gas heaters of the unit type is small in comparison with older varieties of plant, the heat leaders of which sometimes prevent use of the basement for many desired purposes. In fact, a unit providing from 3,000 to 10,000 B.t.u. per hour is only about 20 inches wide, 30 inches from back to front and 5 feet in height.

As in coal burning heaters, the use of mechanical

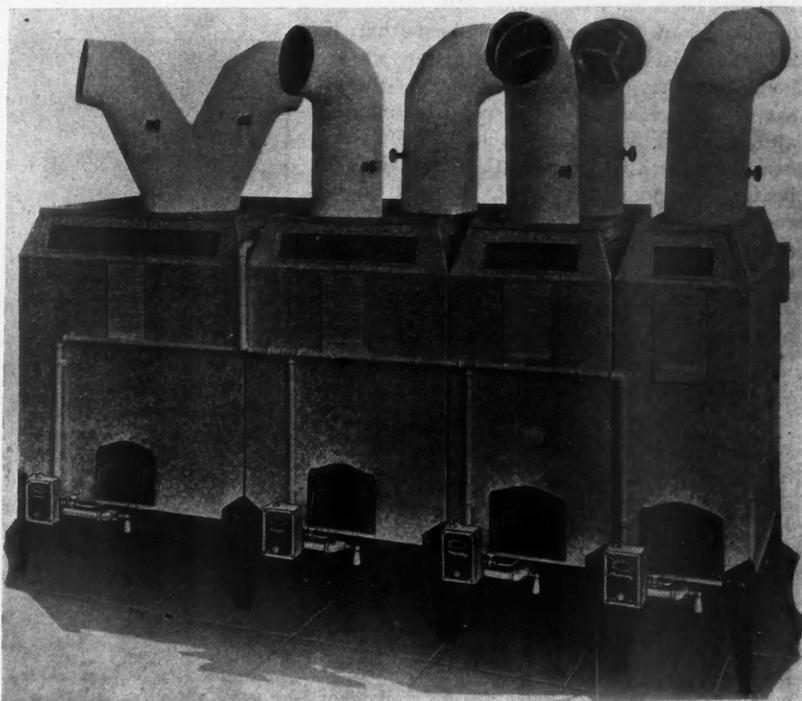


Fig. 1—A Typical Group of Small and Medium Sized Gas Burning Units, Arranged in a Battery Combination with Each Unit Heating a Separate Portion of the House.

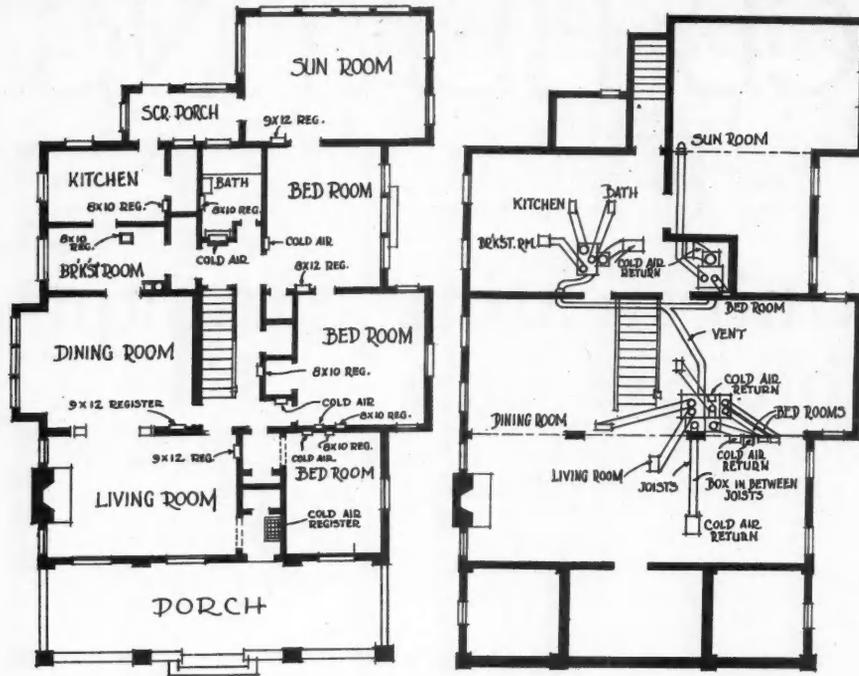


Fig. 2—Floor and Basement Plan Illustrating the Proper Method of Grouping Gas-Fueled Heating Units of the Type Discussed in This Article.

booster fans is advantageous in increasing the effectiveness of the plant as well as giving positiveness to the circulation. Take the small gas-fueled unit just referred to, for example. The 20-inch wide unit will deliver 10,000 B.t.u. with natural air supply, but when connected to a mechanical fan the same apparatus will provide about 12,500 B.t.u. If 10,000 B.t.u. only is desired the heater may be only 14-inch when the mechanical fan is used. Again, if a fan is applied to the bottom of the casing of a unit normally providing 64,000 B.t.u., the capacity of the same unit rises to 75,000 with its fan in operation.

### Control Features

It has been hinted by some well meaning but uninformed opponents of the gas-as-fuel heat that if leakage exists the members of an entire household may become asphyxiated. Other skeptics have said that excessive temperatures are likely to develop and the burners cause fire or that, should the flame in the heater become extinguished, the gas might continue to flow and explode. These fears actually are nothing but empty bogies and have no basis in fact.

Take the first point, that about leakage of the products of combustion or fuel into the warm-air division of the heater and its distribution to the rooms above. Most manufactures of gas-heaters weld the pieces of which the furnaces are made, thereby covering all seams and points at which possibility of leakage might exist. One manufacturer, to be sure, makes his combustion chamber of cast-iron, yet the halves of the castings are so tightly and securely drawn together that they are practically integral. There is a gasket between metal-to-metal sections as in the cylinder head of an automobile. Unlike coal burning furnaces there are no packed or puttied joints in gas heaters.

Excessive temperatures are prevented by the permanent insertion in the bonnet, or at

are placed in the individual rooms, exactly the same as in coal burning systems. If provided with a clock, this may be set at any desired hour and the fuel supply increased at the rising or diminished at the retiring hour. The thermostat, if set to maintain a definite daily temperature, will automatically regulate the fuel supply to insure the comfort condition desired. Sounds like the Lamp of Aladdin—but it is merely Yankee ingenuity of today.

One large manufacturer of gas-fueled furnaces has worked out an additional control little short of marvelous. This comprises wall panels placed at convenient points in any or all rooms. These have red flash light signals and push buttons. The flashing of the ruby colored signals indicates constantly the

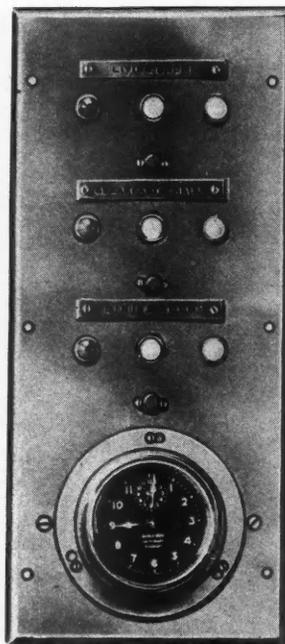


Fig. 3—A Push Button Control System for Gas Heating Units Which Is the Last Word in Labor-Saving Devices.

some similar point near the heater, of a thermostatic tube which has a sensitive end. When the warm-air supply exceeds some predetermined temperature, say 210 degrees Fahrenheit, the instrument diminishes the flow of fuel, thereby reducing the quantity of and temperature of the heat supply to normal.

There are a number of other controls incidental to gas-fueled furnaces the effectiveness and completeness of which is found in no other method of heating. The basic instrument involved is known as an electro-magnetic switch which regulates the port opening in the main gas supply cock. This apparatus is of a simple nature in spite of its technical sounding name. The gas valve is shut off by an automatic spring but is opened by the magnetic control.

There is, further, a thermostat already known to most readers. By means of this instrument the heat may be increased or diminished by increasing or decreasing the port opening in the supply valve, the motive power being furnished by the thermostats which

are placed in the individual rooms, exactly the same as in coal burning systems. If provided with a clock, this may be set at any desired hour and the fuel supply increased at the rising or diminished at the retiring hour. The thermostat, if set to maintain a definite daily temperature, will automatically regulate the fuel supply to insure the comfort condition desired. Sounds like the Lamp of Aladdin—but it is merely Yankee ingenuity of today.

One large manufacturer of gas-fueled furnaces has worked out an additional control little short of marvelous. This comprises wall panels placed at convenient points in any or all rooms. These have red flash light signals and push buttons. The flashing of the ruby colored signals indicates constantly the intensity of fire in the burners in the basement, whether this is high, low or medium. If the gas flow is low and the room temperature insufficient, the occupant may push the button, in any room, which thereby increases the amount of fuel flowing and immediately more heat issues from the nearby register. If one wishes to go out for an evening and only a low fire is desired during absence, the wall button may be pushed on departure and a low fire will be the order of the hour until the owner returns.

The push button indicator panel controls and room thermostats offer an excellent combination for all parts of the house. The thermostat is recommended for the living and dining rooms and the push button control for the bed rooms and bath. In this plan the rooms which are to be used the most secure the even heat demanded and the little used rooms receive heat only in proportion to their use. The idea works out much like similar controls in radio wherein any volume of tone desired may be enjoyed.

Still another control is that known as the safety pilot. The pilot is a tiny light which burns constantly to ignite the main fuel supply when the demand for heat comes and the main burner is inoperative at the time

for, as in oil burning, the burners are ignited only when there is a demand for heat as shown by the thermometers on the thermostats. The safety pilot closes the circuit between the thermostat and the gas valve while the pilot light burns but, should this become extinguished, the circuit is broken and the valve closed to prevent the flow of gas to the main burner.

For a person with a fair average or better than average income no other method of heating offers greater freedom from drudgery than is offered by gas at its best. If living comfort is considered gas is not what would be called an ultra expensive fuel, surely not when compared with electric heating. If building insulation be incorporated in the structure at the time of its erection or, in fact, at a later date, heating by gas can be brought within the cost of all other more common fuels. Any analysis of heating cost must include, besides fuel cost, value of space saved, elimination of janitor, freedom from ashes and their removal and similar factors sometimes lost sight of.

Central gas-fueled plants are excellent and may safely be placed on an equal footing with solid-fuel plants and oil burners. Unit heaters still are less commonly seen in the Atlantic States than in Pacific States where there are thousands of successful plants in operation today. Grouping the rooms so as to get those which will require heat at the same time demands serious consideration before the groups are made up and installed. Should regrouping be demanded, nevertheless, a heat leader generally may be taken from one unit and added to another without serious loss in effectiveness of the system as a whole. Experience serves to demonstrate that living rooms should be placed in one group and bed rooms in another. Certain other rooms like sewing rooms, sun parlors, dens, music rooms and similar places must be included in the proper group.

In estimating the group to have heat leaders attached to the same heater, the heat losses would be estimated the same as if a single unit were being figured for an entire building. That is, each room would have to be figured as to its size, exposure, use, etc., and the heater made large enough to take care of all rooms on the particular unit heater in question.

Assume, for example, that a residence would require two 8-inch, two 9-inch, two 10-inch and two 12-inch pipes to supply individual rooms and that the two 10-inch and two 12-inch pipes are for first floor rooms while the others are for second and third floor rooms. The area of the basement pipes for first floor rooms should be multiplied by 140 while for the second floor or third floor rooms should be multiplied by 180 to give the total B.t.u. requirements. According to the example then two 8-inch pipes equal 100 square inches, and two 9-inch pipes equal 128 square inches, or a total of 228 square inches. This multiplied by 180 gives a total of 41,040 B.t.u.

Two 10-inch pipes equal 156 square inches and two 12-inch pipes equals 226 square inches, or a total of 382 square inches. This multiplied by 140 equals 53,480 B.t.u. Thus the total of the first and second floor basement pipes equals 94,520 B.t.u. and would call for a heater of this capacity if a central plant. When units are desired each group is estimated on a similar basis and heaters selected to cover the group to which they are to be attached.

Gas as a house heating fuel has an advantage over solid fuels and oil in that it may be taken from the tap, so to speak, just like water. We need not store it nor pay interest on the investment, nor do we need high chimneys, for one just above the

ridge will answer. Temperature losses are low, we can secure practically any quality or temperature of warmth we desire at the hour we need it most. The saving in fuel by mechanical control will offset the cost of the apparatus. Practically everyone who is familiar with gas units is enthusiastic over the future prospects of this method of heating.



## "Manufacturing Homes"

(Continued from page 93)

brick is laid. In selling in this way, he guarantees to the buyer that when the house is completed it will be satisfactory and if the buyer is not entirely satisfied, he is not obligated to take the building. So far he has not had a single case in which the buyer failed to accept the home.

Newspaper advertising is resorted to when necessary, however. Usually one announcement is sufficient to muster in an army of buyers. Regular "open for inspection" events, usually on Sundays to better accommodate working people, are scheduled in the newspapers.

One 10-inch ad, three columns wide, in a recent issue of a Little Rock newspaper brought him over two hundred and fifty prospective buyers at a time of the year when real estate is considered dull in Little Rock.

In selling to working people, Mr. Judd endeavors not to sell too many houses to men engaged in any one occupation. This policy was decided upon so that in cases of labor troubles he would not be carrying too much paper that would be involved in the tie-up in the particular trade. Houses are sold either for cash or on very liberal terms.

Mr. Judd is a young man, heavily charged with the enthusiasm of youth. He is president of an insurance company in Little Rock at the present time, having previously been a teacher in Oklahoma high schools. During the World War, he was a commissioned officer, serving in the Siberian Expedition. After being mustered out of the service at Camp Pike at Little Rock, he liked the city so well that he remained there.

A. W. Roe.



## An Aboriginal Saw

A SURVIVAL of the Stone Age, when man killed his game with spears or arrows tipped with flakes of flint, skinned his trophies with jagged bits of rock and sewed his fur garments with fish bone needles is found in the Maori stone saw shown in the accompanying cut.

A photograph of this curious tool was sent to Henry Disston and Sons, Inc., Philadelphia, saw manufacturers, by a correspondent in New Zealand. It was made by some New Zealand native with blade and handle shaped from a single piece of stone.



It Is a Far Cry from This Primitive Saw of the Stone Age to the Modern Saw of Finest Steel and Powered with Electricity.

# Short Length Lumber Economy in House Construction

**I**N a recent detailed analysis of over 200 house plans the results showed that about 20 per cent of the lumber used in construction could have been bought in lengths of less than eight feet, entailing a saving of about 30 per cent in the purchase price. Because of lack of information about short length lumber, however, it was not done, only about 1½ per cent of short stock being utilized.

Since it has been estimated that almost 80,000,000 people of the United States live in wooden dwellings, and since there is perpetual reconstruction and remodeling of these, it may easily be seen that a large amount of money will be saved by builders through judicious short length lumber uses in the future.

In past years lumber was comparatively cheap and plentiful and short lengths were not regarded seriously as standard market products. But time has changed this state of affairs and short lumber stock will be a big factor in all future wooden building construction. Now, for the first time in history, the builder is really able to order his building material with an eye to elimination of waste and a consequent saving of money.

In Tacoma, Washington, a typical five-room bungalow has been constructed to show how this can be done. It is built of short length lumber throughout, four kinds: Douglas fir, West Coast hemlock, Sitka spruce and Western red cedar. Only actual lengths required were used.

These may be classified into fixed and random. The shortest fixed lengths were those required as studding above and below doors and windows. Random lengths included both framing and finish. The whole bill of lumber will give a clear idea of what is meant:

## Divisions in Lumber Bill for Demonstration House

Specified Lengths of—	Framing		Total	Per Cent
	ft.	ft.		
7' and less .....	848	407	1,255	8.42
8' and 9' .....	1,534	198	1,732	11.58
10' and over.....	2,889	260	3,149	21.08
<b>Total fixed lengths.....</b>	<b>5,271</b>	<b>865</b>	<b>6,136</b>	<b>41.08</b>
Random lengths of both framing and finish.....			8,800	58.92
<b>Total lumber bill .....</b>			<b>14,936</b>	<b>100.00</b>

Considering prices on lengths of less than 10 feet in finishing lumber, and less than 8 feet in framing lumber, an analysis of sales prices covering something over two billion feet of lumber last year shows an average difference of about one-third of the mill price on the above lengths compared to longer lengths. Since one-third of the lumber in the demonstration was of the lengths specified above and one-third of the mill price was saved in using them, the whole lumber bill for the house was reduced by more than 10 per cent.



The Demonstration House of Short Length Lumber, Built on the Roof of the Hotel Winthrop, Tacoma, Wash., for Display During the National Retail Lumber Dealers' Association Convention Last Summer.

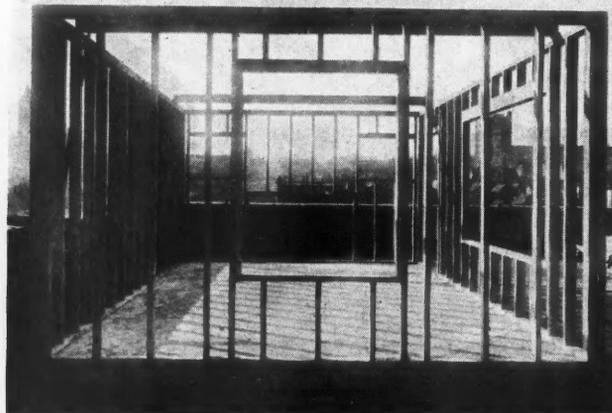
A 10 per cent reduction on the entire lumber bill of any house is a saving no home builder can afford to overlook. And it may be increased.

But this is not all. There is a saving in labor. Short length lumber is easier to handle, especially where working space is confined. On occasion short lengths may be used as they are, without fitting. A bundle of short length stuff at a workman's elbow is handier than a pile of long stuff that has to be swung around and requires space and horses for sawing. But the short lengths must be kept sorted and the workman instructed to use them, or he will be tempted by old habit to cut his short length from a long piece.

If defects were eliminated from long length lumber at the mill before it was shipped there would be a further development in short length stock. There is no reason why this should not be done. It is logical to assume that soon small dimension stock cut to exact size will appear on the market, to the great benefit of the builder. By this practice lumber users would not have to pay freight on material they cannot use.

In Europe buyers eagerly take advantage of discounts on short length lumber and this stock therefore finds a ready market. Retail lumber yards carry plenty of six-foot lengths. In this country there would no doubt be an equal demand for short lumber stocks if the building industry as a whole were informed of the benefits to be derived from their use.

There is another side to the short length lumber question. It is a well-known fact that billions of feet of good quality lumber in lengths of less than eight feet are wasted in the United States because users, as a rule, prefer to cut their short lengths from long pieces.



Studding of the Short Length Demonstration House in Place Showing the Opportunity for the Use of Short Two by Fours.

The time has arrived when all of the trees felled in the woods must be made into boards and joists. It is no longer enough that the best of it be taken, if the price of lumber is to be reasonable and our raw material used economically. This state of affairs has long ago been reached in many wood regions. It is now abreast of the Douglas fir belt and the country of Sitka spruce, Western red cedar and West Coast hemlock. Tall trees, when felled, sometimes break into short pieces, often the best of timber, which cannot any longer be left on the ground to rot. Other short length material is made in hauling, when a log is accidentally broken, or in the trees themselves when for one reason or another the whole trunk will not make first-class building material. Short lengths also come about in planing mills and dry kilns, and these it is important to market somewhere.

On this point the National Committee on Wood Utilization, U. S. Department of Commerce, under the chairmanship of Secretary Hoover (appointed by President Coolidge

for the express purpose of investigating and promoting the better utilization of forest products), has this to say:

"Thirty-eight billion feet of soft wood lumber were produced in the United States in 1925. This output could have been increased one-fifth without the felling of an additional tree if lumber lengths of less than 8 feet had been in wider demand."

To sum up: To the builder the use of short lengths in house construction saves money. It is also a patriotic duty, benefitting both himself and the country at large. He enables the sawmill man to use all of a tree felled in the woods instead of merely the most desirable part of it. If lumbermen could use all of a tree it would contribute toward making the growing and owning of forests profitable. By using short lengths where they will answer as well as longer ones the builder renders the building and lumbering industry more profitable all around and helps attain conservation of forest products in its highest sense.

## Modern Fire Station Design

**T**HE Department of Public Works of Oakland, Cal., has made a radical departure from the conventional design of public buildings in constructing a fire house along the lines of a bungalow.

The practice of designing fire houses to conform with the architecture of the neighborhood was started by Commissioner Frank Colbourn. The latest and the most pretentious fire house to be erected to date is the Montclair Station. It is unique in design and in construction. To the passerby it might appear to be the chateau of some wealthy artist, while as a matter of fact it contains all the latest features of a modern fire house.

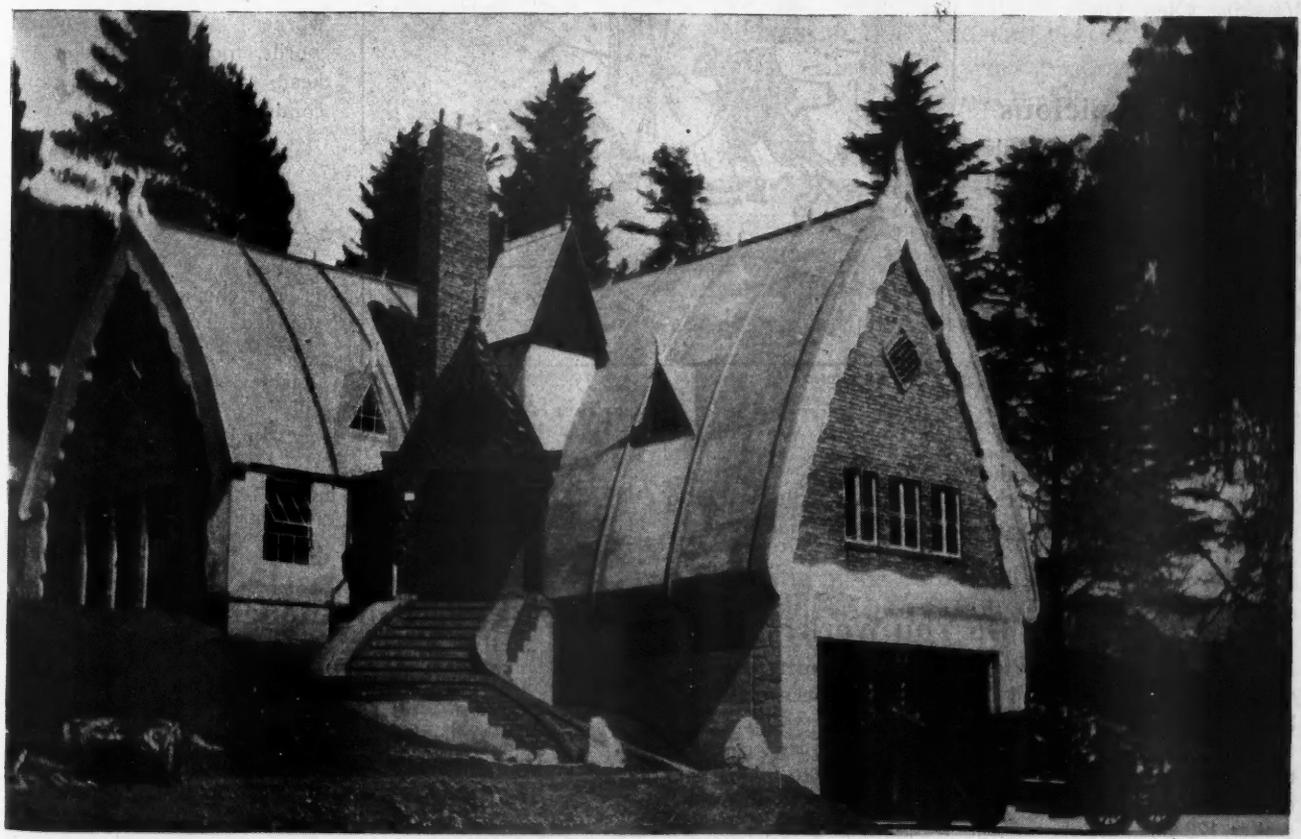
"The problem was to build an attractive fire house on a hillside, or terraced lot, in such a way as to improve the

surrounding property and still give the maximum of efficiency to the apparatus and comfort of the men," Commissioner Colbourn said.

"Dormitory and living quarters for a double company are placed in the building on the high end of the lot, approach being by a flight of steps following the contour of the land. The apparatus room is on a level with the street.

"Certain new types of building construction were applied. The frame is precast, reinforced, and the sides and roof are lined with patent wallboard cast with the slabs. The roof is of waterproof, plastic, asbestos cement, applied direct to the concrete."

The contract price of the building with extras was \$18,900. Grading, painting and paving brought the cost to \$22,826.



The Montclair Fire Station, in Oakland, Cal., Resembles Nothing so Much as a Novel and Artistic Hillside Residence, with Street Level Garage. It is one of the stations showing a radical departure from conventional design which Oakland has built under the leadership of Commissioner Frank Colbourn.

# CHIPS & QUIPS



## Hard to See

William E. Knox, the genial, witty president of the Bowery Savings Bank of New York, is a hard man to see. He is fond of telling a story which proves this:

When made president of the bank he was given much publicity and numerous photographs of him were reproduced in newspapers and magazines. All were not printed 100 per cent attractively.

One day when Mr. Knox was at one of the windows a depositor wandered in, walked up to Mr. Knox, produced one of the photographic reproductions, and asked:

"Is this your picture?"

Mr. Knox assured him that it was.

"And are you the president of this bank?"

Mr. Knox admitted that he was.

"Well, give me my money!" ordered the depositor.—*Forbes Magazine* (New York).



## Mighty Suspicious

A Georgia statesman tells the story of an aged negro who saw an extraordinary-looking instrument in the shop of an optician. He gazed in open-mouthed wonder, and, turning to the optician, inquired:

"What is it, boss?"

"That," replied the optician, "is an ophthalmometer."

"Sho," muttered the other, his eyes still fastened on the curious-looking thing on the counter, as he backed out, "sho, dat's what I was afraid it was!"—*Christian Register*.



## How Hard Do You Work?

An old-fashioned Hebrew employer remonstrated when one of his employes asked for a raise on the ground that he worked too hard.

"Why," protested the employer, "you have an easy time of it. You do not work at all. Look! There are 365 days of the year. Eight hours of every day you sleep. That makes 122 days. Take off the 122 days and you have 243 left. And eight hours of every day you have for yourself, to go to the theater or amuse yourself. That leaves

121 days. I give you an hour for lunch every day and that amounts to 15 days in a year, leaving 106 days. You do not work Sundays—52 more days off, leaving 54. You get Saturday afternoon off—26 days more, and only 28 left. You have two weeks' vacation every summer and you take off about a week for sickness. Only seven days a year left to work—and New Year's, Washington's Birthday, Decoration Day, July Fourth, Labor Day, Thanksgiving and Christmas are holidays. Besides that you take Yom Kippur off! I should give you a raise? You owe me money!"



## Few Words

"I am a man of few words," said the construction boss, "don't let me have to speak to you again. If I beckon with my finger, that means, 'Come.'"

"Suits me, boss," said the worker. "I'm a man of few words, too. If I shakes me head, that means, 'I ain't comin'.'"



## An Expert Witness

"You swear that this man is no chicken stealer," demanded the judge.

"Yessur," replied Rastus Rashley. "Da's what Ah said, suh."

"What do you know about the facts in this case?"

"Ah isn' s'posed to know nuffin' 'bout de facts in de case, suh. Ah is an expert witness foh de defense."



## Fair Enough

Milligan—If I be after lavin' security equal to what I take away, will yez trust me till nixt week?

Sands (the grocer)—Certainly.

Milligan—Well, thin, sell me two av thim hams and kape wan av thim till I come agin.—*Tit-Bits*.



*Slowly science prolongs life and thus enables you to buy a few more things on the installment plan.*—ROBERT QUILLEN.

## MANY VACATIONISTS ARE RETURNING TO THE BLACK HILLS

Copyright 1927—New York Herald Tribune



I DO NOT CHOOSE TO SHOVEL COAL IN 1928.

[Reprinted by permission of the New York Herald-Tribune.]

Some Joker Made a Typewritten Addition to This Cartoon and We Could not Resist the Temptation to Let It Stand.

# COLORKEED HOMES

## FOR STYLE AND VALUE

TRADE MARK  
Registered in U. S. Patent Office.

### Team Work

*"It's team work that wins. Team work will start the New Year right, and team work all through the year among Builders, Dealers, Manufacturers and Architects will assure a full measure of prosperity in the Building Field."*

—William A. Radford

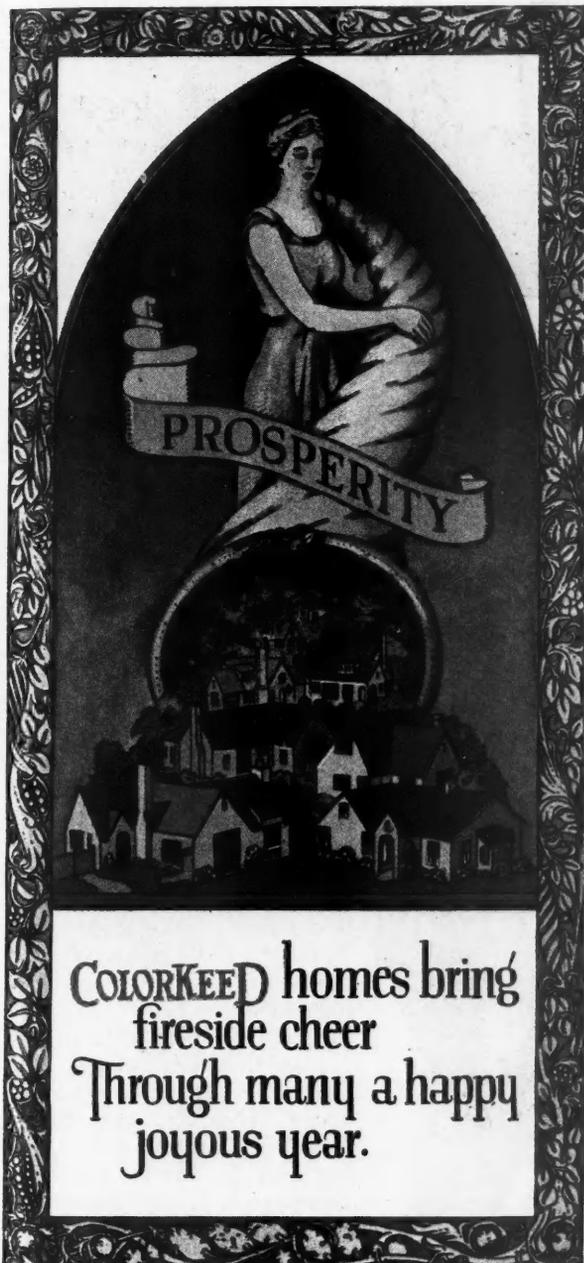
WE like to think of all the different factors that make up the building industry as pulling together for more and better building. The architect has his work of designing and consulting. The builder has his work of selling the prospect and constructing the building. The building supply dealers carry in stock and furnish to the job the materials as needed. The banker furnishes the working capital. And the skilled craftsmen furnish the necessary labor. Back of all of these are the manufacturers who are serving the building industry.

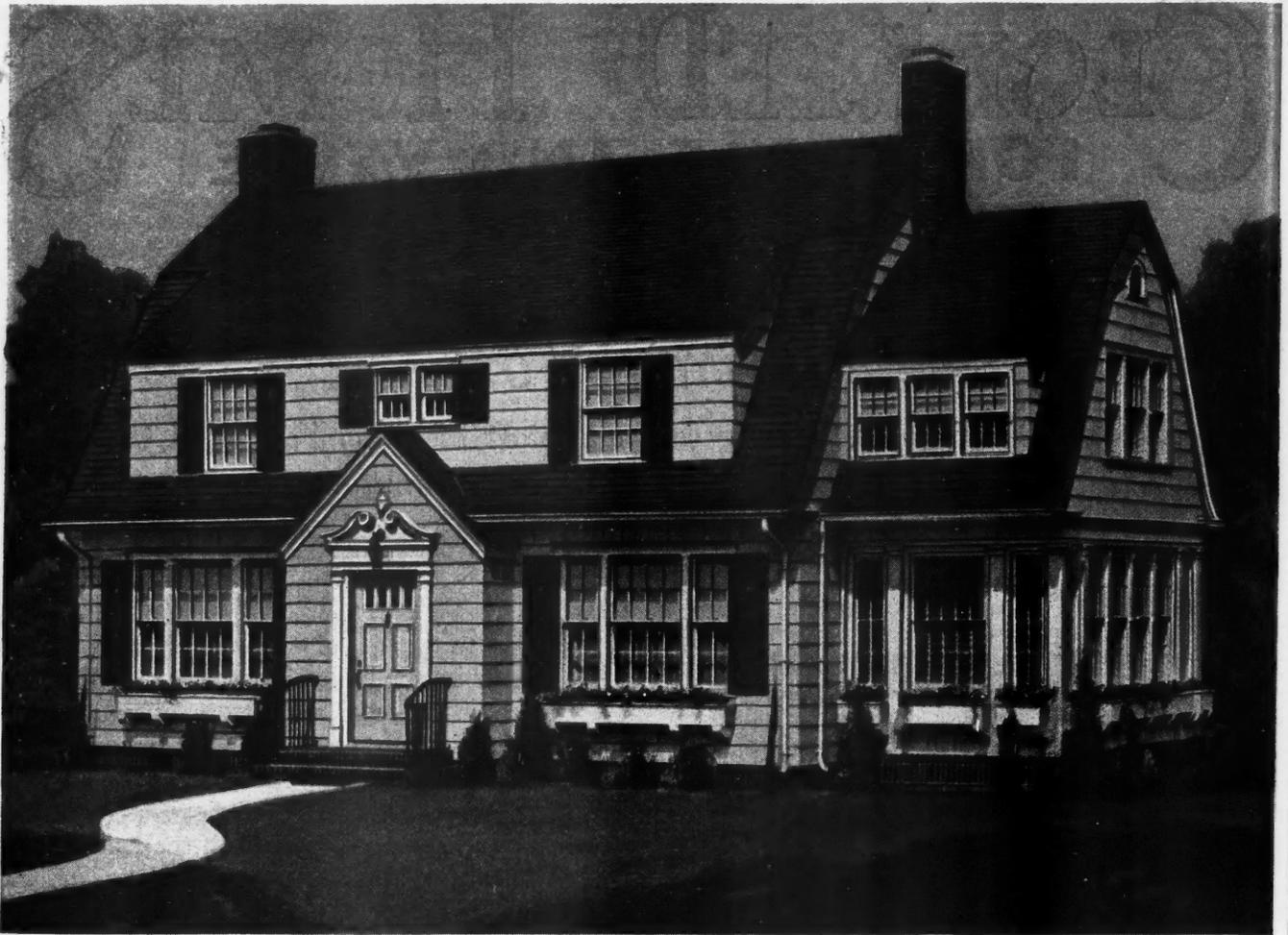
All of these factors are benefited when homes and other buildings are planned and erected. In general, there is a fine attitude of harmony, mutual respect and good will between all of these building industry men.

Here at the beginning of a new year we suggest even more team work. To the builders we would say, "Go to your lumber and building material dealer and talk over with him what you can do in 1928 in the cause of more and better building in your community." The dealer's office is the natural hub or headquarters for all building information and we suggest to all of our readers that they make use of this center of information and talk over with the dealer any contemplated improvement or building contract.

In some communities the builders and dealers have gotten together in what amounts to an informal club for encouraging home building. A little teamwork and the proper spirit of give and take will accomplish wonders.

1928 looms up ahead like one of the biggest and best years yet in the building business. The lumber and building material dealer is at the service of the contractors and their clients, and we know that close co-operation will benefit all.





## The OAKLEY

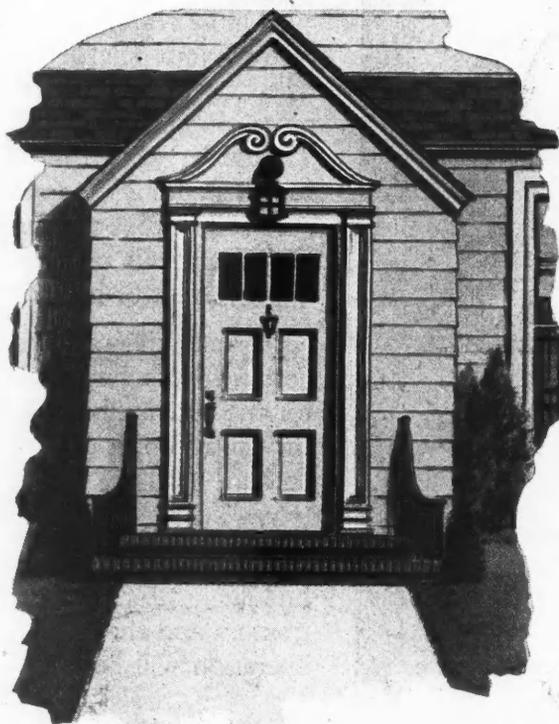
Regulation Dutch Colonial Design with Two-Story Sun Parlor and Sleeping  
Porch Addition—ColorKeeD Floor Plans on Page Opposite

**T**HE entrance vestibule in Colonial style projecting beyond the wall lines of this home provides an effective architectural feature from without and inside gives a storm enclosure of ample size which prevents a direct draught into the house when the front door is opened. It is a common mistake to let vestibules come too small; they are cramped and inconvenient. This one is of generous size, even providing a wardrobe for outside wraps.

The room arrangement, as indicated in the ColorKeeD plans, leaves nothing to be desired. The central stairhall in Colonial style is graceful, dignified and hospitable. Opening either way through broad cased openings we find the immense living room with its appendage, the sun parlor; while on the left is the square dining room. Directly back of this is the well lighted kitchen with its convenient

pullman nook for breakfasts and light lunches. Straight back through the hall is the downstairs lavatory, a room of extra generous size. The stairway to the basement is also located in this back hall.

The basement is deserving of special study. Home builders are just beginning to realize that one third of the floor area in a two-story house is in the basement and that by exercising thought and care and investing just a little more money a really important use can be made of this third of the floor space. The idea is to reduce furnace dust to a minimum by utilizing gas or oil heat or by burning clean coal in a clean way. Notice in this plan that solid partitions separate the fuel room from the rest of the basement, and that the heating plant and associated equipment is all grouped in one corner out of the way. A well lighted corner is as-



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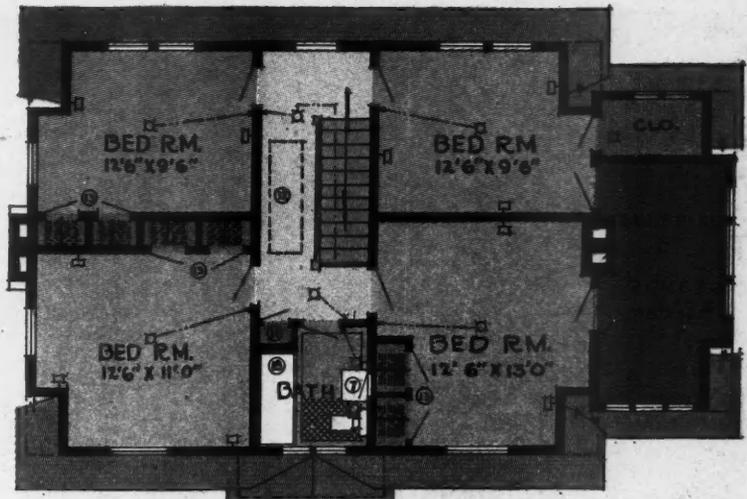


# Floor Plans of "The OAKLEY"

signed to the laundry and then one whole half of the basement space is partitioned off for a recreation room.

A concrete floor does nicely for all of the basement, and then for this recreation room linoleum can be cemented down over the concrete to give a satisfactory floor for dancing and general living room use.

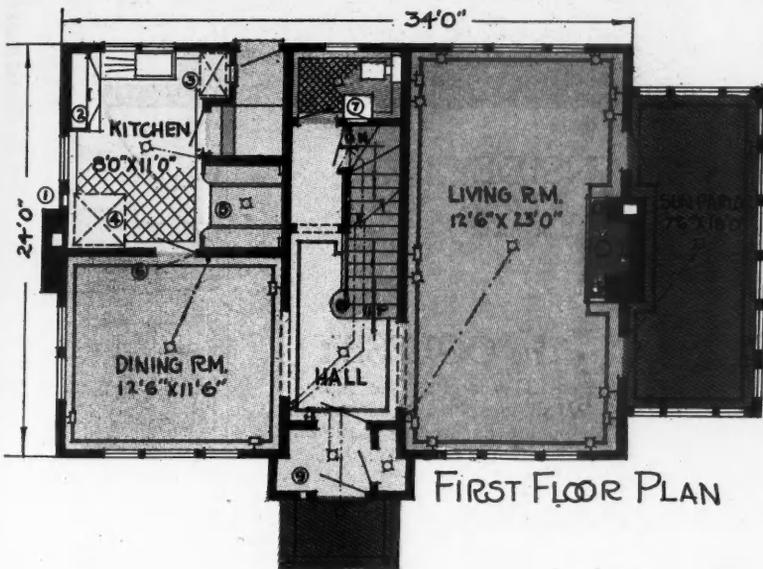
Notice that all through this house we are recommending items of built-in equipment which add to the salability and desirability of the modern home. These small numbered circles are explained in the Key to Equipment which follows. If you want to have your new homes thoroughly modern you will write for catalogs and get all in-



SECOND FLOOR PLAN

formation on every one of these items and provide for them in your plans.

The second floor of this design presents four bedrooms and bath and a big sleeping porch opening out of two of the bedrooms.



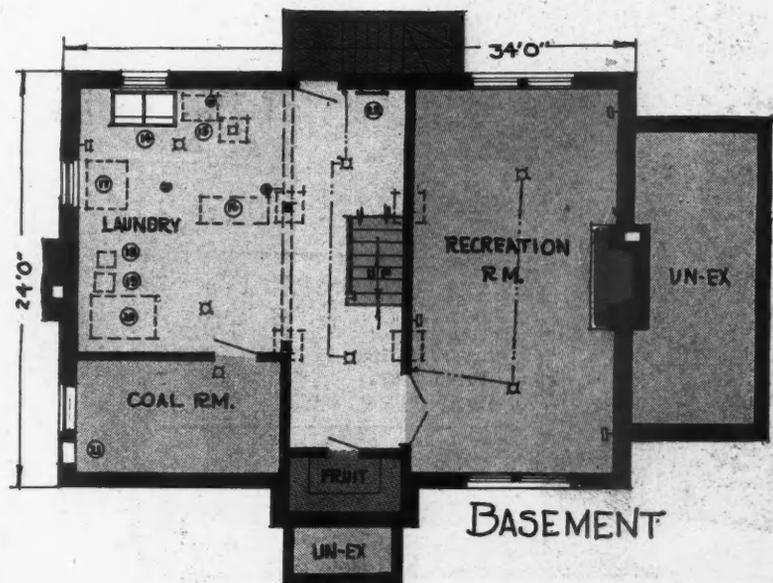
FIRST FLOOR PLAN

## Key to Equipment

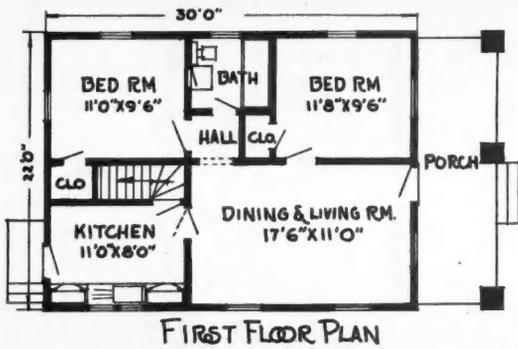
- |                           |                        |                             |
|---------------------------|------------------------|-----------------------------|
| ① Kitchen Ventilating Fan | ⑩ Tub Shower           | ⑲ Water Heater              |
| ② Kitchen Cabinet         | ⑪ Cedar Lined Closet   | ⑳ Furnace or Boiler         |
| ③ Built-in Refrigerator   | ⑫ Disappearing Stairs  | ㉑ Fuel Chute                |
| ④ Gas or Electric Range   | ⑬ Efficiency Wardrobes | ㉒ Electric Panel            |
| ⑤ Breakfast Nook          | ⑭ Laundry Trays        | Fireplace Throat and Damper |
| ⑥ Thermostat              | ⑮ Laundry Stove        | Weatherstrips               |
| ⑦ Medicine Case           | ⑯ Electric Ironer      | Storm Sash                  |
| ⑧ Built-in Mail Box       | ⑰ Washing Machine      | Screens                     |
| ⑨ Tub Shower              | ⑱ Water Softener       | Lighting Fixtures           |
| ⑩ Tub Shower              |                        | Convenience Outlets         |
| ⑪ Cedar Lined Closet      |                        | Water Supply System         |
| ⑫ Disappearing Stairs     |                        | Radiant Gas Heaters         |
| ⑬ Efficiency Wardrobes    |                        | Casement Windows            |
| ⑭ Laundry Trays           |                        | Dishwashing Sink            |
| ⑮ Laundry Stove           |                        | Automatic Cellar Drainer    |
| ⑯ Electric Ironer         |                        | Oil Burner                  |
| ⑰ Washing Machine         |                        |                             |
| ⑱ Water Softener          |                        |                             |

## COLORKEED HOME PLANS

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

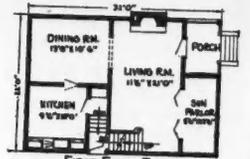


BASEMENT



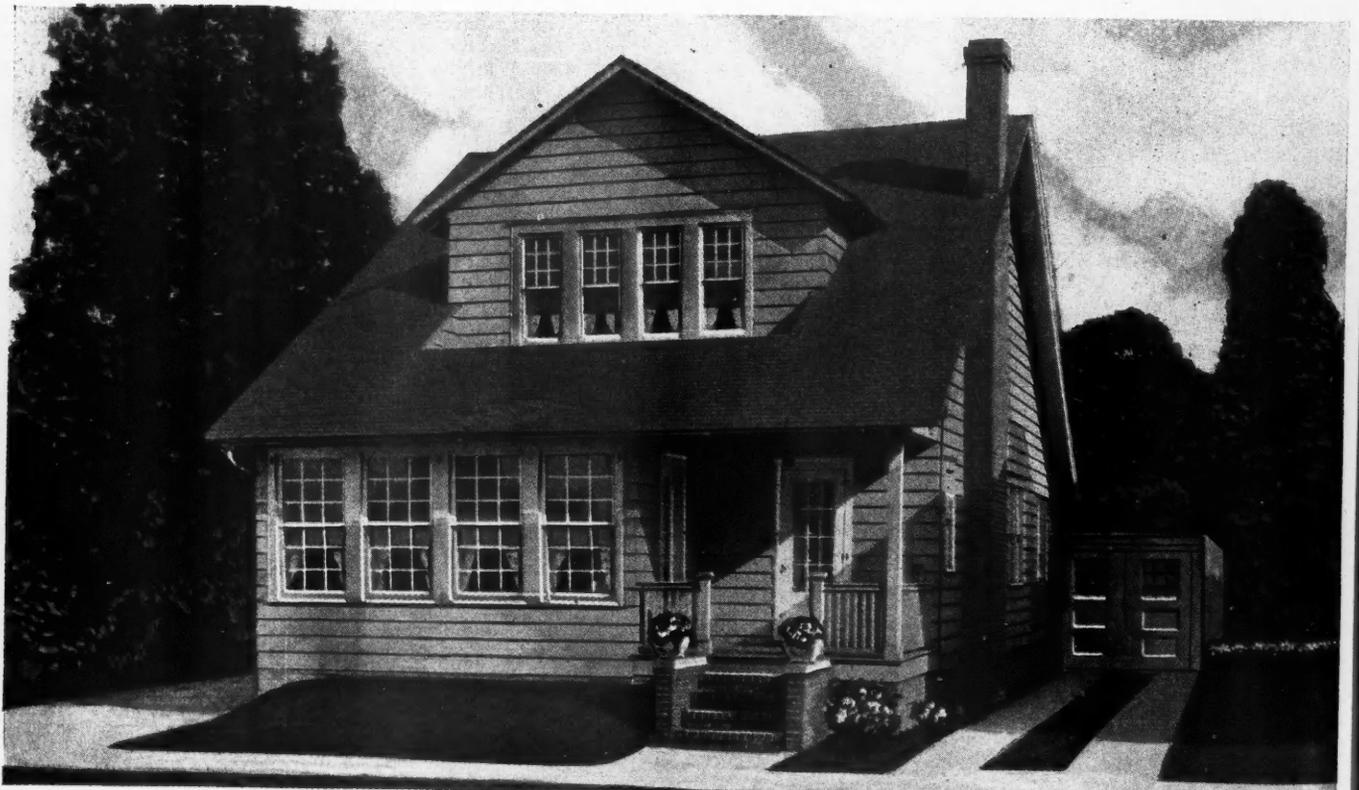
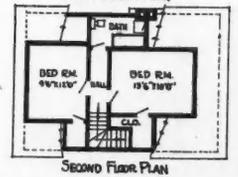
**The OCEANSIDE**

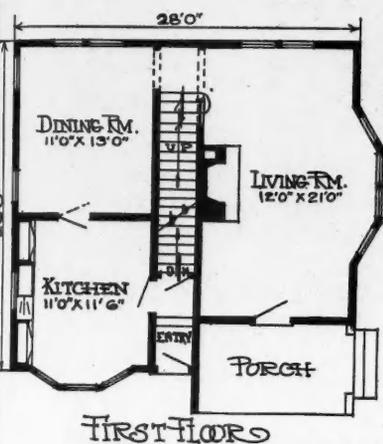
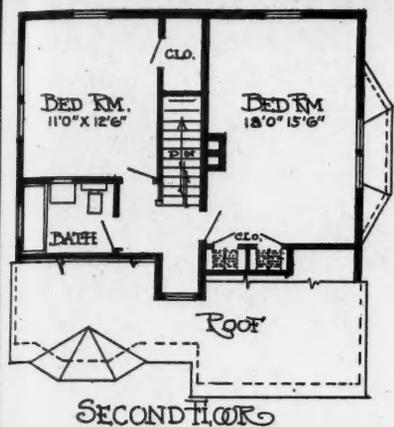
ABOVE and to the left is a dear little four-room cottage 22x30 feet.



**The OGLESBY**

BELOW and to the right is an inexpensive narrow lot home of five rooms, bath and sun parlor 22x32 feet.





## The OLIVIA

A COMPACT home of five rooms and bath 26x28 feet is illustrated below. The exterior is broken up attractively with gables cut down in the English manner to soften the roof lines and with bay windows both at front and side to add interest to the exterior and to make the living room and dining room more cheerful.

Study the floor plans and see how conveniently the rooms work out in this design. Here is a genuine home feeling.

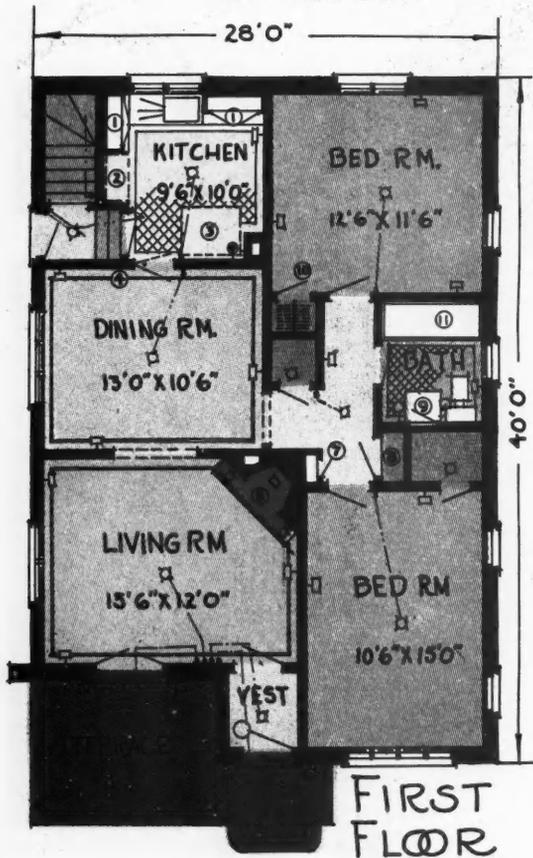
The color sketch above gives a suggestion for furnishing the dining room and shows the interesting possibilities of this room.





## The OZONA

A CLEVER little Spanish type bungalow of five rooms and bath and an enclosed front terrace.

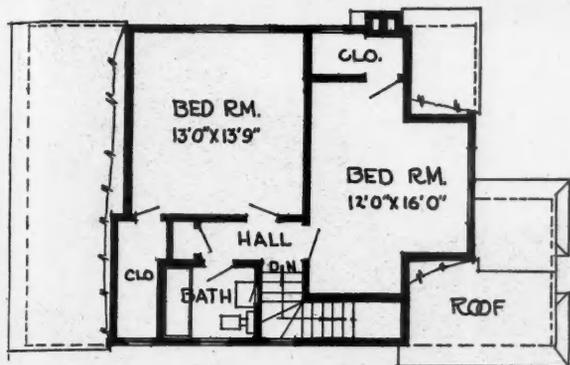


**COLORKEED**  
HOME PLANS  
TRADE MARK

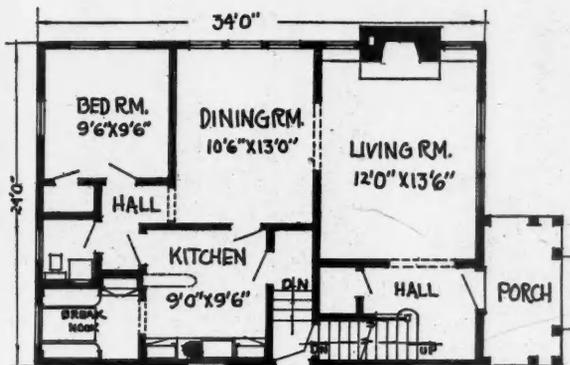
	Living Room		Closet
	Dining Room		Bed Room
	Kitchen		Bath and Lav.
	Pantry		Porch
	Halls		Roof

### Key to Equipment

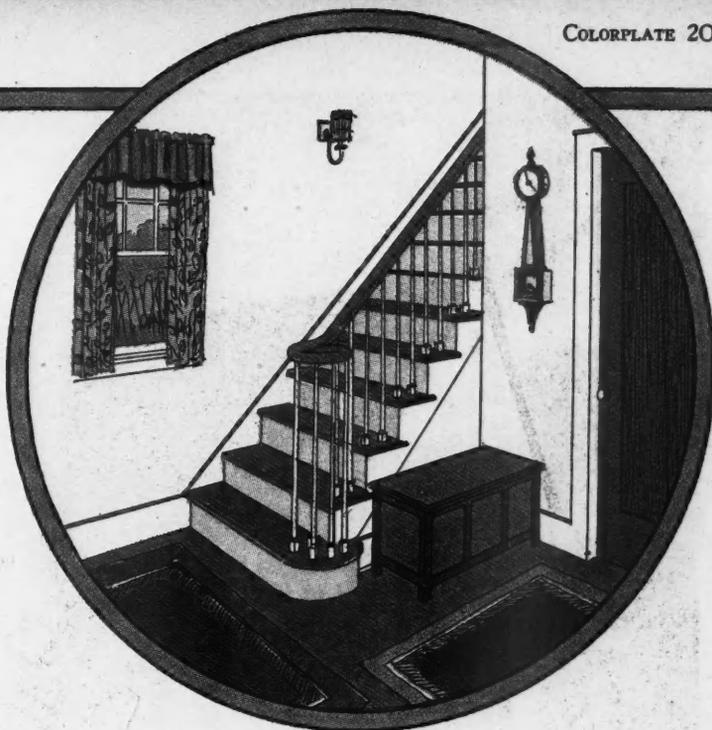
- |                               |                          |
|-------------------------------|--------------------------|
| ① Kitchen Cabinets            | Convenience Outlets      |
| ② Mechanical Refrigerator     | Electric Panel           |
| ③ Gas or Electric Range       | Washing Machine          |
| ④ Thermostat                  | Clothes Drier            |
| ⑤ Fireplace Throat and Damper | Coal Chute               |
| ⑥ Clothes Chute               | Heating Plant            |
| ⑦ Linen Closet                | Oil Burner               |
| ⑧ Medicine Case               | Water Supply System      |
| ⑨ Efficiency Wardrobe         | Hot Water Supply         |
| ⑩ Tub Shower                  | Water Softener           |
| Weatherstrips                 | Radiant Gas Heaters      |
| Storm Sash                    | Casement Windows         |
| Screens                       | Dishwashing Sink         |
| Lighting Fixtures             | Automatic Cellar Drainer |



SECOND FLOOR PLAN



FIRST FLOOR PLAN



## The ONTARIO

HERE is a modern expression of the popular Queen Anne cottage. The second story is all gables and these gables are shingled. Beveled siding is used for the first story finish. Inside we have six rooms and bath besides the reception hall, breakfast nook and a number of large closets. A glance at the floor plans will show how conveniently these rooms are arranged.

The color sketch above shows the effective stair hall design featuring a Colonial balustrade.

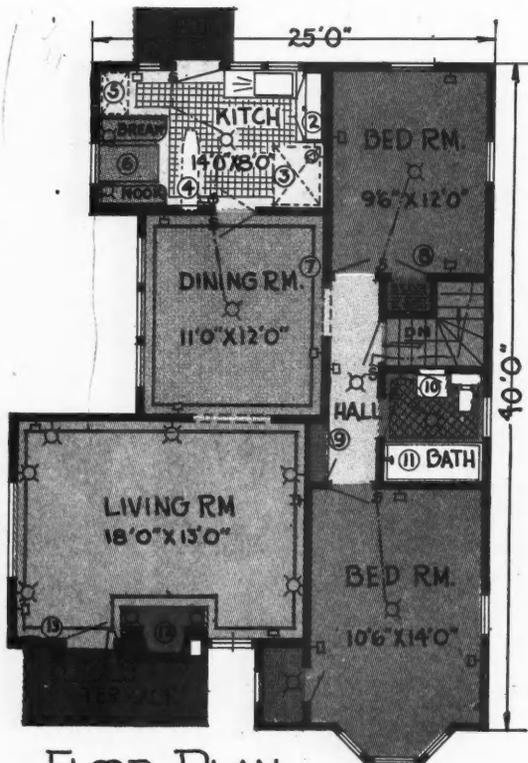




## The ORCHARD

A STUCCO cottage in the French style containing five rooms and bath. Study the ColorKeeD plans for details of arrangement.

**COLORKEED**  
HOME PLANS  
TRADE MARK



FLOOR PLAN

	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 Gas or Electric Range	Convenience Outlets
④ Built-in Ironing Board	Electric Panel
⑤ Mechanical Refrigerator	Washing Machine
⑥ Breakfast Nook	Clothes Drier
⑦ Thermostat	Coal Chute
⑧ Efficiency Wardrobe	Heating Plant
⑨ Linen Closet	Oil Burner
⑩ Medicine Case	Water Supply System
⑪ Tub Shower	Hot Water Supply
⑫ Fireplace Throat and Damper	Water Softener
⑬ Built-in Mail Box	Radiant Gas Heaters
Weatherstrips	Casement Windows
Storm Sash	Dishwashing Sink
	Automatic Cellar Drainer

# OUR FRONT COVER HOME



## *A Modern American Home Blending in Harmonious Effect Points of Beauty from Some of the Best Styles of Architecture*

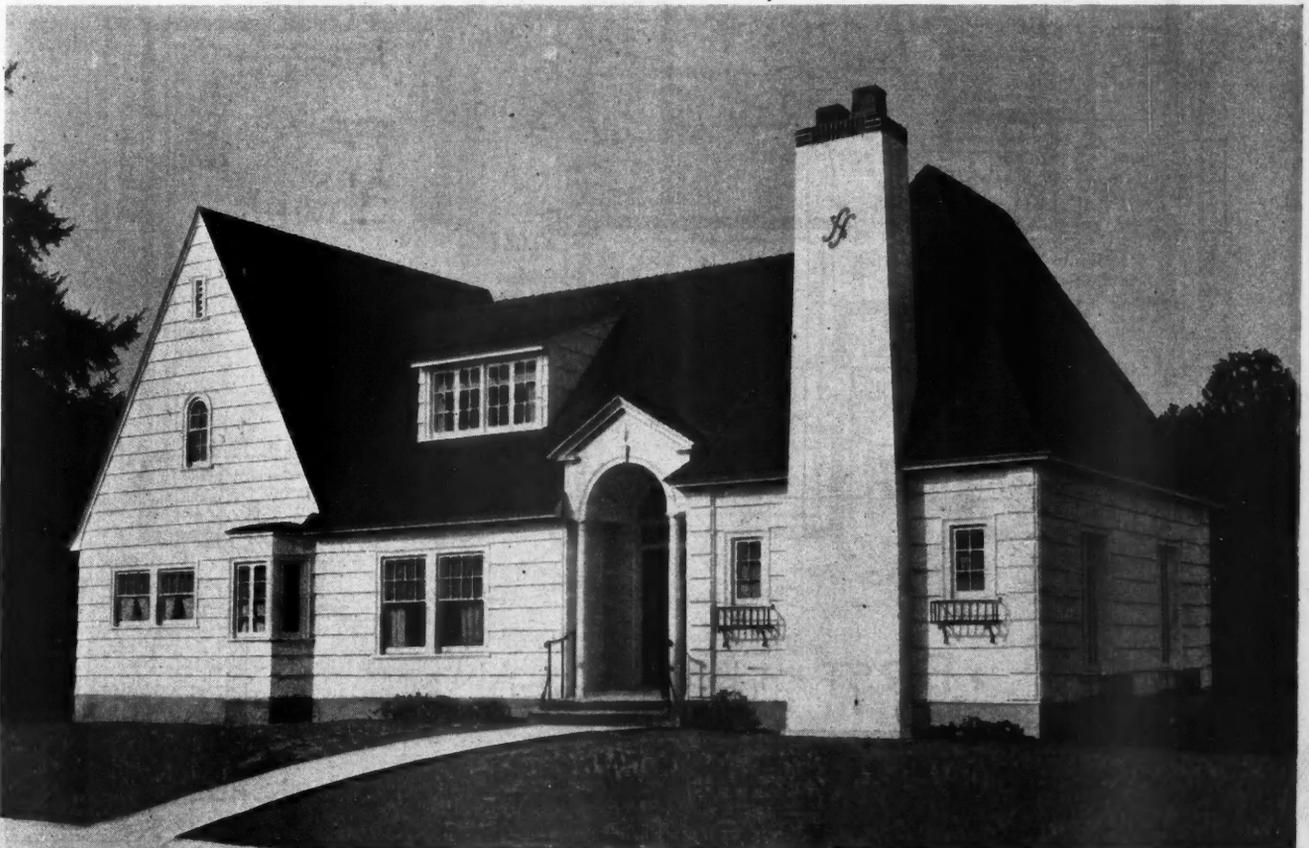
**T**HE high-pointed gable suggests an old English cottage, but the entrance is Colonial and the whole house is distinctly modern and American. The various elements of the design are blended in a harmonious whole, most pleasing to the eye. This Front Cover Home is the sort of a house in which you would expect to find living a typical American family, thrifty, happy and up-to-date. It is so designed as to afford rather flexible accommodations and so, though not large in foundation area, will provide comfortably for almost any family.

A notably low appearance has been achieved by the steeply sloping roof lines, giving an effect much like the well designed bungalow though, in fact, there is a second floor providing two bed rooms and bath. The side walls are attractively covered with wide shingles and the plain chimney, of white painted brick, is neatly topped by chimney pot and a cap of ornamental brick. The small window panes and iron grill work at windows and entrance lend a decorative touch to relieve an otherwise plain exterior.

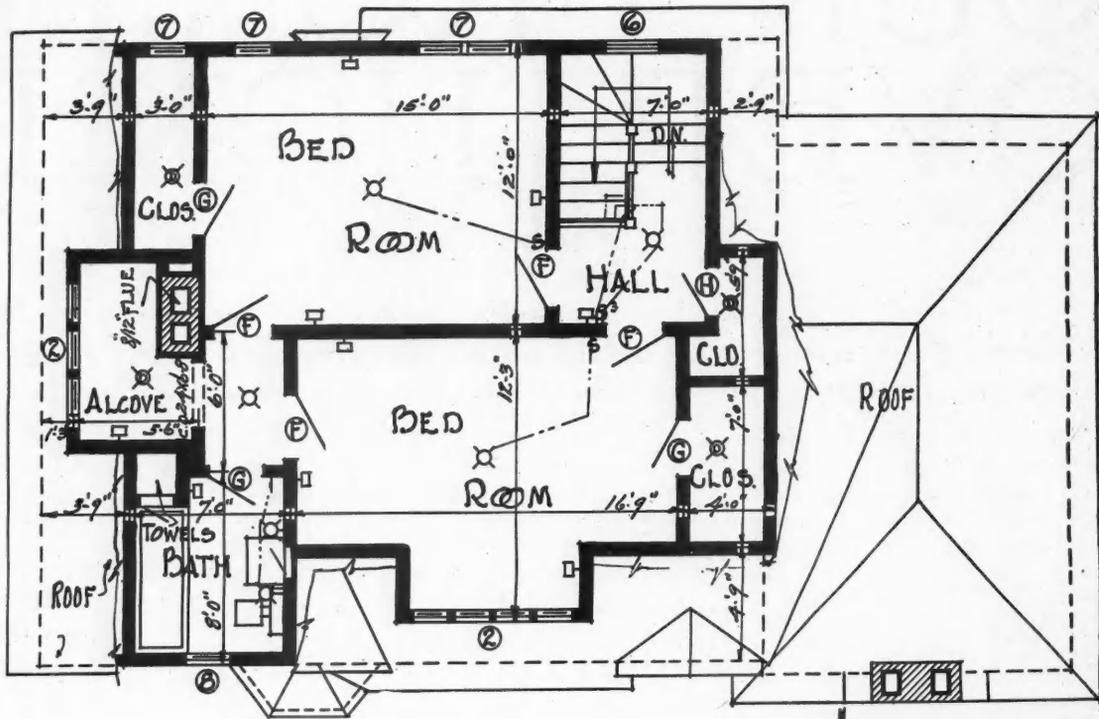
Within the entrance there is a reception hall at one side of which is a long living room with high arched ceiling and, at one end, a fireplace. At the opposite side of the hall is the dining room with breakfast nook and kitchen beyond. All these rooms have an outlook at the front and the kitchen is still further made cheerful and light by ample windows at two sides. To the rear of the dining room and reached from it through a small hallway, there is a bed room and adjoining bath.

Both second floor bed rooms are larger than those usually found in the modern small home, of ample size, in fact, to accommodate two persons. The bath room is reached from each of these bed rooms through a small hallway off which opens a large alcove. This alcove will be found useful for many purposes when just a bit more room is needed. The closets for the second floor bed rooms are both large and there is a linen closet in the hall.

All these features and many more may be seen in detail by referring to the plans on the pages which follow.



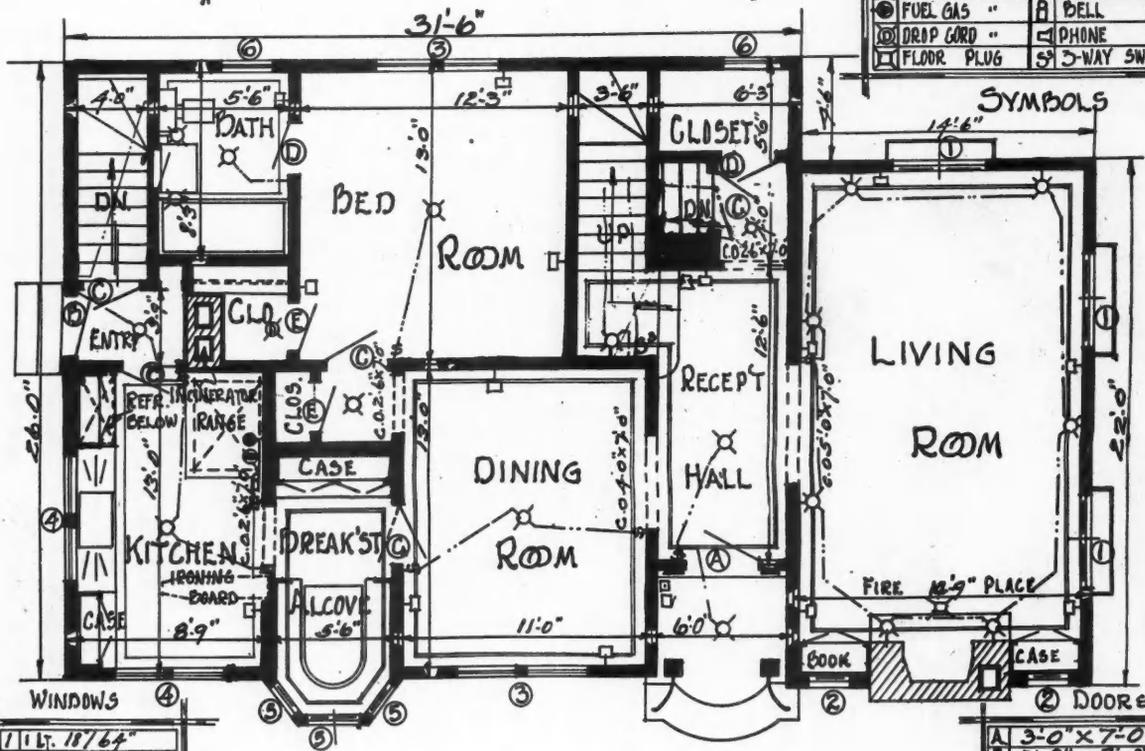
This Same Charming House May Be Seen in Full Colors on Page 1 While the Plans, Elevations and Details, Drawn to Scale, Will Be Found on the Four Pages Following This.



SECOND-FLOOR-PLAN

○ CEILING OUTLET	□ CONVENIENCE PLUG
○ BRACKET "	□ PUSH BUTTON
○ POWER "	□ BUZZER OUTLET
○ FUEL GAS "	□ BELL "
○ DROP CORD "	□ PHONE "
□ FLOOR PLUG	□ 5-WAY SWITCH

SYMBOLS



FIRST-FLOOR-PLAN

WINDOWS

1	LT.	18'64"
2	LT.	16'36"
3	LT.	26'26"
4	LT.	20'16"
5	LT.	12'40"
6	LT.	26'20"
7	LT.	16'48"
8	LT.	20'20 B.K.

DOORS

A	3'-0" x 7'-0"
B	2'-8" x 7'-0"
C	2'-6" x 7'-0"
D	2'-4" x 7'-0"
E	2'-0" x 7'-0"
F	2'-6" x 6'-8"
G	2'-4" x 6'-8"
H	2'-0" x 6'-8"

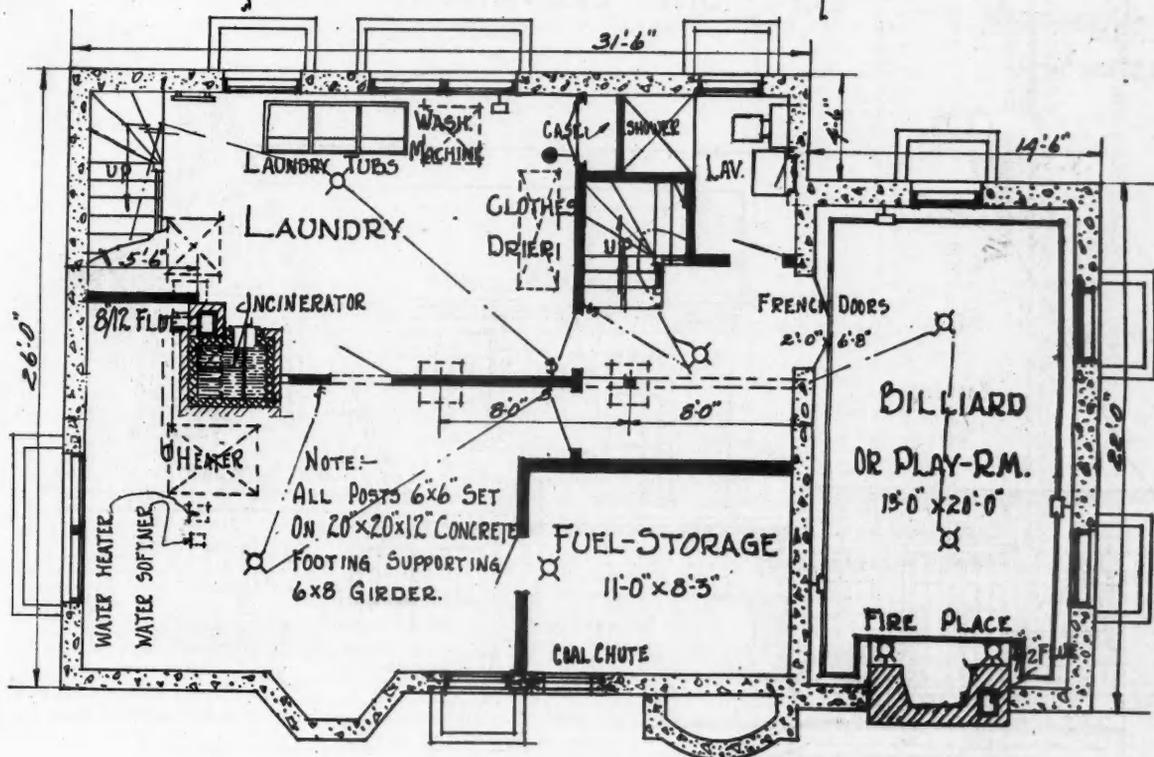
SCALE 1/8" = 1'-0"

SHEET-NO-1

The Floor Plans of Our Front Cover Home Show a Six-Room House but One So Designed That It Offers Far More in Convenience and Accommodation Than the Usual House of That Size.



FRONT - ELEVATION



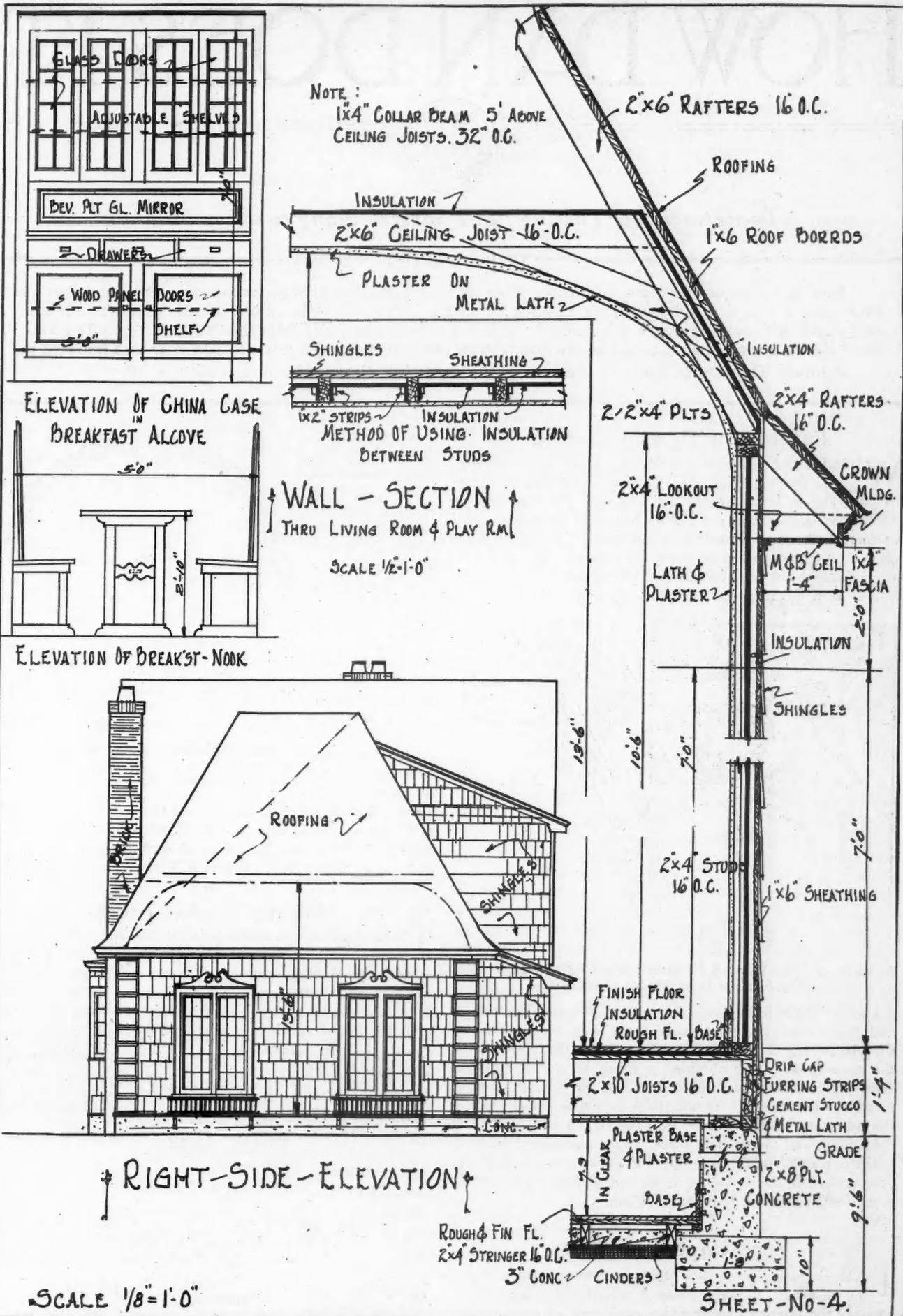
BASEMENT - PLAN

SCALE 1/8" = 1'-0"

SHEET-NO.-2.

Here We Have the Basement Plan and Front Elevation and Find That Basement Space Has Been Utilized to Provide an Extra Room. Further elevations and details are shown on the following pages.





Construction Details of the Arch Ceiled Living Room, a Wall Section and Elevations of the Breakfast Nook and Its Built-in China Case as Well as One More Side Elevation of Our Front Cover Home.

# HOW DAN DOES IT



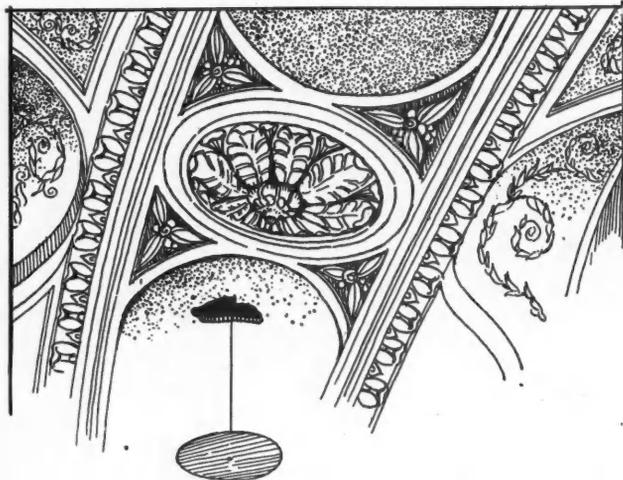
*A Department for Passing "Life Savers" along to other Builders*

**\$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.

### Patching a Theater Ceiling

WHILE supervising the remodeling of a theater recently I used the following idea to solve a difficult problem and it certainly proved to be a life saver. The day before the theater was to reopen a laborer who was removing some staging planks from above the main ceiling punched a hole about five inches square through the ceiling. The scaffold had already been removed and it looked as if the theater would have to reopen with that ugly hole in sight.



**A Piece of Tin, Painted to Match the Ceiling and Drawn Up Against It by Means of a Cord.**

I secured a ball of mason line, went up above the ceiling and after reaching through the hole and scraping away the rough edges, dropped the line down through it. In the meantime I had obtained a piece of tin, punched a small hole in the center of it and had the painter paint it to match the ceiling. It was then a simple matter to put the string through the hole, pull the tin up snugly against the ceiling and fasten it in place. This emergency patch is still there and I doubt very much if any of the patrons have ever noticed it, for it is not at all conspicuous.—THOMAS R. KELLY, 193 Helen St., New Haven, Conn.

### To Simplify Kerfing

I AM enclosing a sketch showing how I kerf a board for an arch. I take a piece of wood of the same thickness as the board to be kerfed and as long as the diameter of the arch. I saw a kerf in the center of this stick to a gauge line one-fourth of an inch from the edge. I then

tack one-half of the stick to the floor and bend the other half up till the kerf is closed snugly, as in Fig. 2. I then measure the distance from D to E. This is the distance apart at which the saw kerfs will have to be placed in the board to be kerfed. It is necessary to be sure to use the same gauge for all the kerfs and to make the stick the exact length of the diameter of the circle A-C, and to saw all kerfs to the gauge mark accurately. This method proves handy in placing grounds around a circle top window or door.—J. C. WERT, 1029 Line St., Sunbury, Pa.

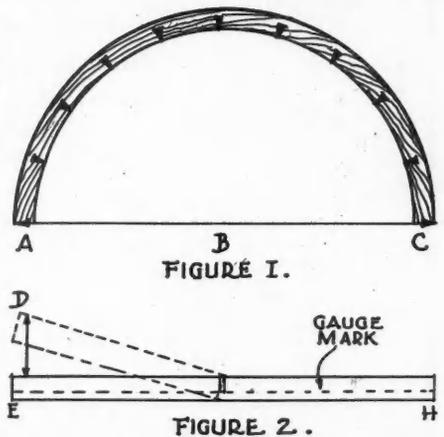
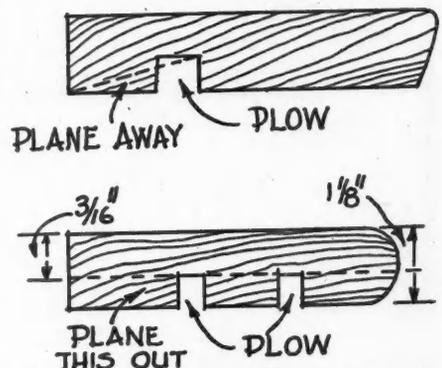


Fig. 1 Shows a Board Kerfed to Fit an Arch. Fig. 2—The Method of Finding the Distance Between Kerfs.

### Making Window Stools

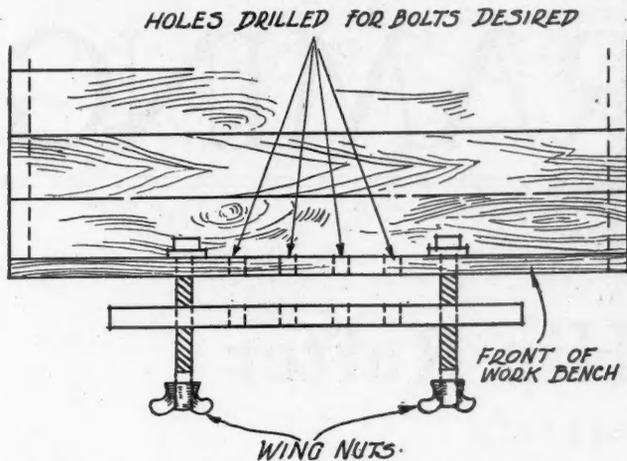
THE article on "Providing Stair Nosing" which Mr. J. Joseph Alpine contributed to the November issue reminds me that sometimes I cannot get window stools and have to make them. Here is the way I do it. I take a plow plane and plow a groove about half an inch wide and the proper depth in a board of the right size. I then take a jack plane and plane away the required portion to fit the bevel of the window sill, as shown in the upper sketch. I also make stair nosing in much the same way. The lower sketch shows how this is done.—HOMER JARED, Box 203, Cookeville, Tenn.



Here is a Practical Way to Obtain Stair Nosing and Window Stools When the Regular Material Is Not Available.

**A Special Vise for Special Work**

FOR some kinds of work the standard type of bench vise will not work satisfactorily and I have worked out a vise which is simple to construct and which is perfectly

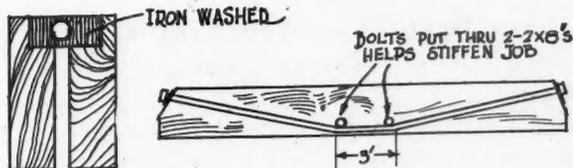
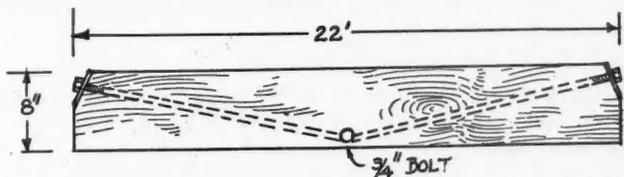


This Special Vise Added to a Work Bench Will Handle, to Best Advantage, Certain Work for Which the Regular Vise Is Not Adapted.

adapted to substitute for the regular vise on these jobs. From the sketch it will be seen that this consists of two bolts with wing nuts and a short length of board. Holes are bored in the side of the bench at suitable intervals and corresponding holes are bored in the separate board. The bolts are put through the side of the bench from the inside, using the holes giving the desired width for the work to be done, and, by screwing up the wing nuts, the board clamps the work securely.—J. E. H. MCKAY, 216 Leamy St., Springfield, Pa.

**Another Built-Up Beam**

A SHORT time ago I saw described, in the How Dan Does It Department, a way of trussing a porch architrave, or what is commonly called a box, by nailing small cleats, truss fashion, between two, two by sixes or two by eights, or other size planks as the job might require. The idea was to prevent sagging, especially where the rooms



A Steel Rod, Used as Shown Here, Makes a Beam Which Can Be Depended Upon Not to Sag.

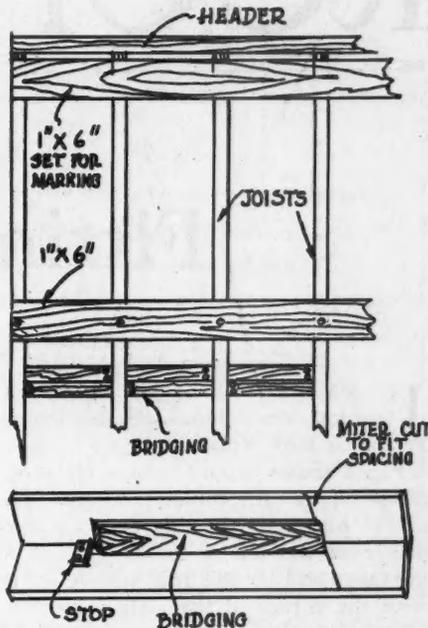
extended over the porch below. Here is another good way to overcome the sagging.

Get a long rod three-fourths or one inch diameter with threads at both ends and bend, either at the center or at two points, leaving three or four feet at the center straight, as shown in the drawing. Place this rod between the two planks, passing under a bolt at the lower edge of the planks, and with the ends passing through iron washers at the ends

of the planks. Tighten a nut onto each end of the rod and the truss beam is ready for use.—CHARLES J. LANZ, 828 Boquet St., McKee's Rocks, Pa.

**For Placing Joist Bridging**

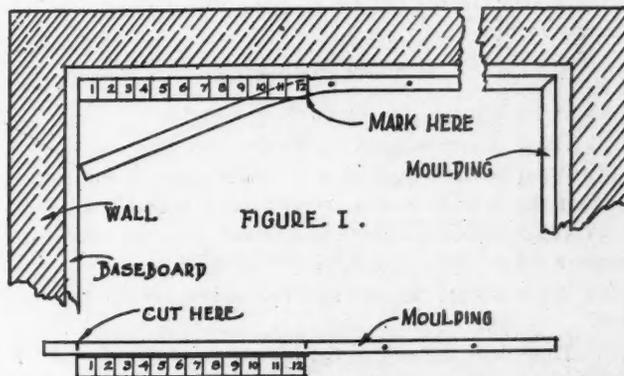
I AM an apprentice carpenter, employed by Mr. Harold Hay of this city, and he has taught me a way of putting in bridging which is better than any other I have seen. You take a one by six or any other board which is handy and place it at the ends of the joists where they butt up against the header. Mark the exact spacing of each joist and then take the board to the place where the bridging is to be put in. Nail the board to joists forcing the joists to the corresponding marks on the board wherever necessary. Cut the bridging to the correct length and when it is placed the joists will be straight with all the bows and twists taken out.—ERNEST MAUCK, R. R. 1., Box 10B, Racine, Wis.



Cutting the Bridging to Size and Placing in This Way Takes the Bows and Twists Out of Joists.

**To Cut Moulding to Fit**

A PRACTICAL way of getting the correct length of mouldings, in many cases, is shown in the accompanying sketches. Cut the moulding a little bit long. Put it in place at one end and spring the other end into place as nearly as it will go. Now lay a rule over the moulding should fit and mark the point where the end of the rule comes on the moulding, as shown in Fig. 1. Next take the moulding down and lay it out straight. Place the end of the rule at the mark on the moulding and mark the moulding at the other end of the rule, as in Fig. 2. Cut the moulding off at mark and you will have a perfect fit.—HARVEY PRUITT, 1415 S. Liberty St., Salem, Ore.



Moulding May Be Cut to Fit Perfectly, Simply with the Aid of a Rule Handled as Shown Here.

# INSTRUCTIONS in ROOF FRAMING



## Fitting the Hip Rafter

By JOHN T. NEUFELD

**I**N order to make a hip rafter fit perfectly there are several other things, besides finding the length, to be taken into consideration.

Fig. 1 shows a portion of a hip roof. Note the position of the hip and the common rafter. Fig. 2 shows the corner of the hip roof. In this case we have assumed that the center of the hip is the line along which measurements are taken and for this reason have set the center to coincide with the corner of the plate. We note that this sets the edges of the hip too far out and also brings them too high. Fig. 3 shows this even more definitely, as this is drawn in perspective. To bring this edge even with the top of the common rafters, the hip is sometimes backed as shown in Fig. 4, more often, however, the hip is just lowered so that the corners come even with the top of the common rafters.

The corners of the hip project  $\frac{13}{16}$  inch if placed as shown in Fig. 2. Therefore the line of backing starts  $\frac{13}{16}$  inch from the toe of the rafter as shown in Fig. 6. In this figure the square is placed with the rise per foot run taken on the tongue and 17 inches on the blade. The 17 inches represents the run of hip per foot run of common rafter.

If we do not wish to back the rafter then we may project a line perpendicular to the seat cut, from the  $\frac{13}{16}$ -inch point up to the edge of the rafter and then cut off the rafter along the line shown dotted in Fig. 7. The hip should then be placed as shown in Fig. 8.

The hip rafter would now seem to set lower than the common rafter. This would be true of the center, but not of the edges; these will be in line with the top of the common rafters.

### Review Problems

- (1) What is meant by the pitch of a roof?
- (2) What is meant by the "rise per foot run"?
- (3) What is the length of a common rafter if the length per foot run is 14.42 inches and the run is 6 feet?
- (4) What numbers on the square will give the cuts for a common rafter for a one-third pitch roof?
- (5) What is the "rise per foot run" for a one-fourth pitch roof?
- (6) How does the run of the hip rafter compare with the run of the common rafter?
- (7) If a building is 26 feet wide and the length per foot run of the hip is 18 inches, what is the length of the hip?

- (8) Give the rule for the side cut of the hip rafter.
- (9) What numbers on the square give the top and bottom cuts for a hip rafter having a rise per foot run of 9 inches?
- (10) What is meant by "backing a hip"?

### Answers

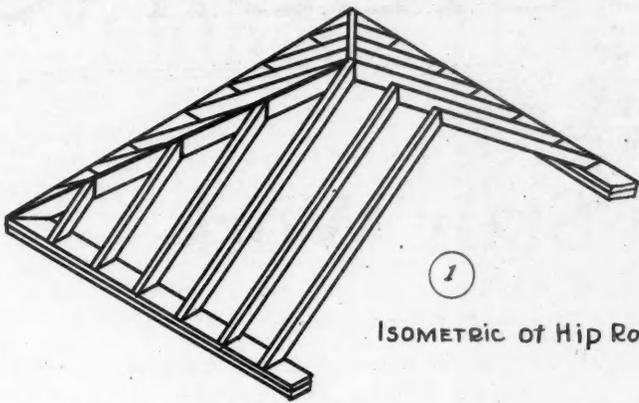
- (1) The "pitch of a roof" is the slant or slope of the roof and it is usually expressed as a ratio of the rise to the span, such as one-third, one-fourth, etc.
- (2) The "rise per foot run" is the distance that the rafter rises vertically in one foot of run.
- (3) The length is  $14.42 \times 6$  equals 86.52 inches or 7 feet  $2\frac{1}{2}$  inches.
- (4) The numbers 8 and 12.
- (5) The "rise per foot run" is 6 inches for a one-fourth pitch roof.
- (6) The run of the hip rafter is 16.97 inches for each foot run of common rafter.
- (7) The length of the hip is  $18 \times 13$  equals 234 inches or 19 feet 6 inches.
- (8) To lay out the side cut of the hip take the length of the hip and the run of the hip; or take the length per foot run and 17 inches.
- (9) The numbers 9 and 17.
- (10) By backing a hip we mean to bevel the top edges of the hip so that they come on the same plane with the common rafter.



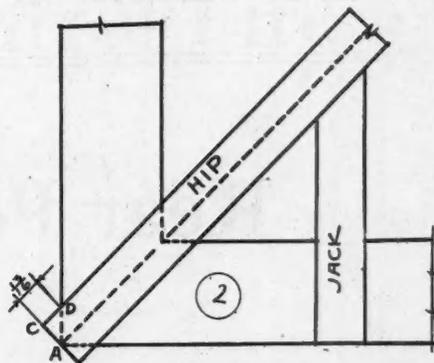
### Urge Better Construction in Building Replacement

**T**HE Massachusetts Association of Real Estate Boards, one of the state organizations associated with the National Association of Real Estate Boards, is taking the lead in an effort for better construction and design in replacement construction. This board has issued a warning that ill-advised or unsuitable building operations, to replace structures lost in the recent New England floods, would be a continuing detriment to the communities affected, for years to come. It is asking that all persons interested in real estate in the affected districts, including city and town officials and architects and builders, to keep in mind the desirability of erecting buildings which are not only of sound construction but also of architectural beauty and fitness.

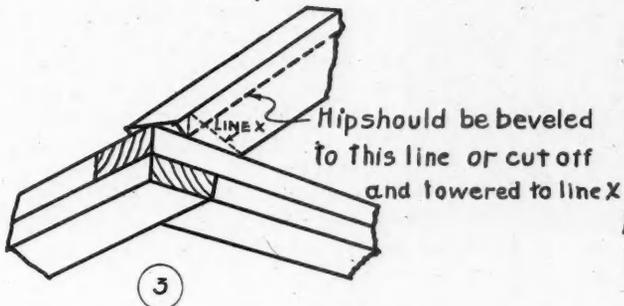
1/8 1/2



1  
ISOMETRIC of Hip Roof



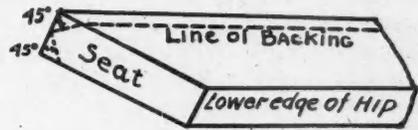
2  
Plan view of Hip if placed with center-line at corner of Plate  
Corner of Hip project over plate



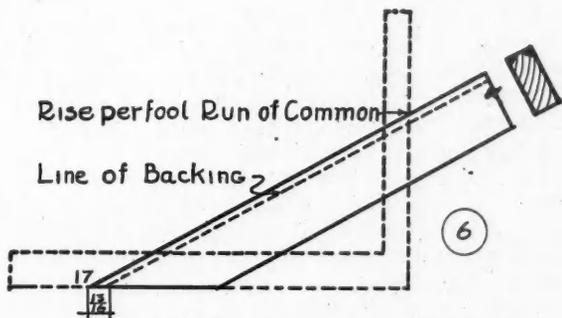
3  
Hip should be beveled to this line or cut off and tapered to line X



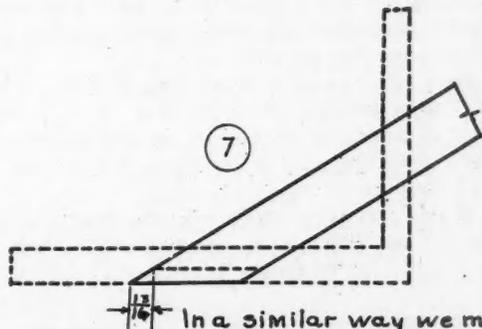
4  
Backed Hip in Section



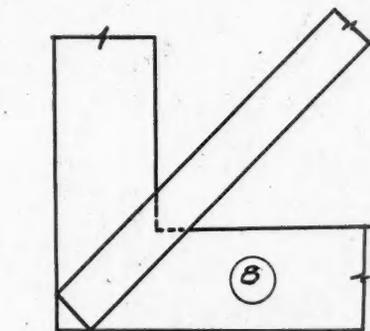
5  
Amount of Backing may be determined by laying off 45° angles on the seat of the rafter



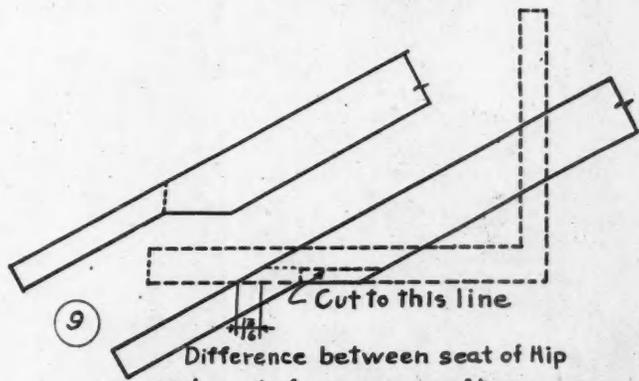
6  
Rise per foot Run of Common  
Line of Backing  
Using the square to determine the amount of backing



7  
In a similar way we may determine the distance the Seat should be dropped on an unbacked Hip



8  
Correct position of Hip



9  
Cut to this line  
Difference between seat of Hip and seat of common rafter.

To Make the Hip Rafter Fit Perfectly a Number of Things Must Be Given Careful Attention.

# STAIR BUILDING



## Rear Porch Stair Work

By C. V. OLSON

*Instructor in Carpentry Lane Technical High School, Chicago*

**T**HE rear porch of a home should be given as much attention as any other part of the building when planning a house. It should be more than just a means of access, for it is here the woman of the house likes to enjoy a few minutes of rest in the outdoors, a place where she can hang out a few clothes that need airing or drying, and yet have the privacy of her own rooms.

In the photographs shown you see the type of porches and rear stair work that is typical in and about Chicago and I present them that we may analyze the construction, which is clearly shown, and for your criticism. Fig. 1 shows the winder type of construction. In the construction of winders it is a difficult problem to make a joint in the stringer, having the bend as is necessary between the wind and the straight flight.

In this stair they have overcome this nicely by placing a four by four support between the first and second floor joist, thereby not only making the stringer rigid, but also providing a newel for the bend in the railing. They might have saved some lumber by supporting the stringer from the upper joist only which I think would have been sufficient. However, to support this joist is good practice and should be done wherever possible.

A feature seen here that is not common in construction is a two by four extending from the floor to a support above, in place of a four by four newel at the top of each porch landing. This may not be as neat, but it gives a very rigid rail support.

On the wall side you see a stringer having the bend up. This stringer is not difficult to construct, as it would require only a butt type of joint. When supported firmly

at the upper and lower ends it cannot give way and requires no additional support. It is for this reason that some carpenters like to build the winders just the reverse of that shown here because then the upper stringer can then be anchored to the wall and the lower stringer, placed on the outside, does not require any additional support.

When building a railing on porch work, it is good practice to make it amply high. A common height is 35 to 36 inches. As this is about waist high for the average woman, this gives better support and is high enough to prevent babies from climbing over. Another point is to place the bottom rail with the pitch in which allows the balusters to be placed against the rabbit edge, preventing the possibility of balusters being kicked out.

Fig. 2 shows a porch that is becoming very popular. This stair has many good features, it gives the same amount of space on rear porches. It permits the use of the platform and straight flights, having plenty of width and does not shade the first floor to a great extent.

Fig. 3 shows a poorly planned job and has many objectionable features. 1. No two flights of uniform rise. To climb this type of stair is usually tiresome. 2. Stairs are placed in front of doorway. This does not permit easy access to the house. What would happen here on moving day? 3. To reach the second floor it is necessary to zig-zag back and forth to pass directly across the rear entrance of the first floor, where for some reason a screen door might be open so that it would be impossible to pass. In this porch there was plenty of room for good planning and with a little forethought much inconvenience could have been avoided.

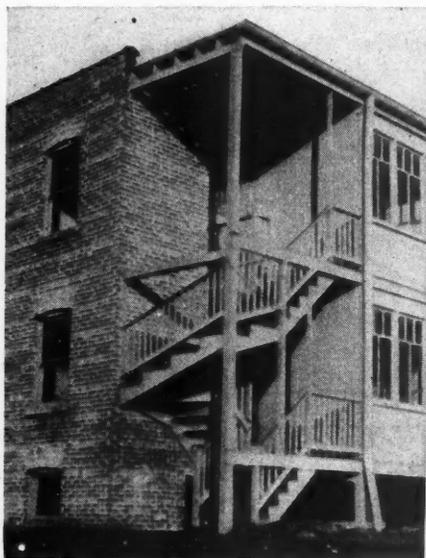


Fig. 1—The Winder Type of Construction with an Unusual Type of Support.

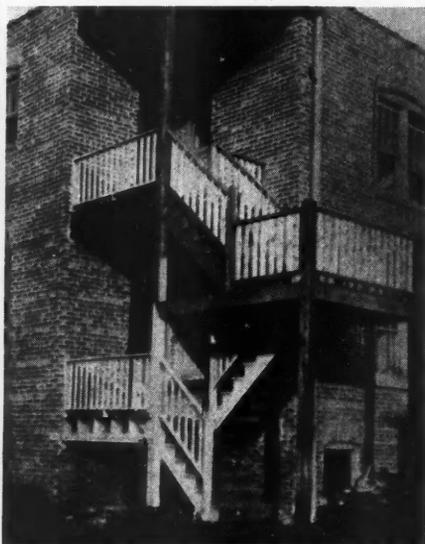


Fig. 2—A Type of Porch That Is Becoming Popular and Has Many Good Features.

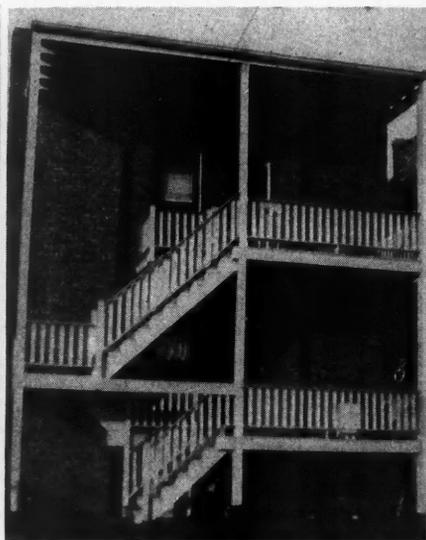


Fig. 3—A Very Poor Porch Which Could Have Been Made Satisfactory by Good Planning.

# Buildings Covered with Asbestos Shingles Help Control Fire

**I**N a recent conflagration at Ocean City, N. J., in which the fire loss was approximately \$3,000,000 and a tremendous number of buildings were destroyed, asbestos shingles played a conspicuous part in the stopping of the fire. The makers of these shingles have taken considerable pride in reporting the facts.

One group of Boardwalk stores, covered with asbestos shingles, stopped the progress of the flames to the south. Here there were three, one-story frame stores and three, three-story structures alongside them, all covered on the outside with asbestos shingles. These buildings acted as a barrier for the fire, preventing its further spread to the south and enabling the firemen to get control in this direction.

A frame bathing pavilion on the Boardwalk, the roof of which was covered with asbestos shingles, although standing in the midst of the awful fire, and although its wooden posts and ceiling were actually on fire several times, was saved because of the protecting roof.

Soon after the fire was discovered a large garage caught fire, with the explosion of the gasoline tanks in front, which added to the heat and destruction. A frame office building of this garage, however, was covered with asbestos shingles which not only acted as a protection to save the office itself but are also given the credit for saving six double-frame houses farther west on the same street. This protected office acted as a fire stop here to aid the firemen in saving these six buildings.

Another fine example of the fireproof and fire preventive



The Office of a Garage, Covered on the Sides with Asbestos Shingles, Acted as a Fire Stop When the Main Garage Burned, in the Recent Fire at Ocean City, N. J., and Also Prevented the Loss of the Six Double Frame Houses Beyond.

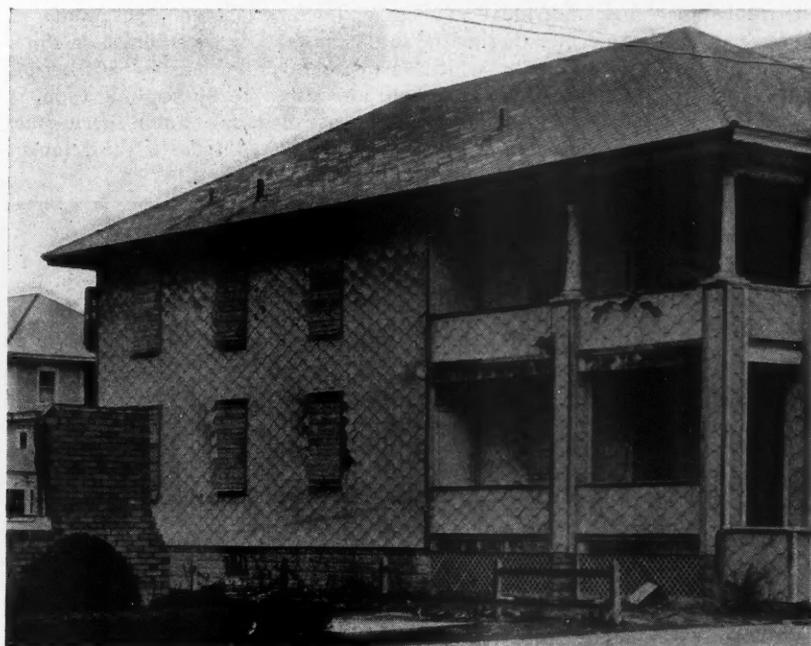
qualities of this type of shingle was to be seen in a residence which had previously been covered, both roof and side walls, with asbestos shingles as a measure of economy to eliminate further painting. The window frames, porch posts, cornice and other parts caught fire from exposure but the shingles saved the house and again acted as a fire wall and prevented the burning of two frame buildings beyond.

This house had been covered 15 years ago, the owner using the asbestos shingles with the idea of avoiding repainting. Paint at the seashore is quickly affected by the damp salt air and requires a new coat practically every year to be kept looking presentable. The asbestos shingles, however, are not affected by the damp salt air and the only portions of the houses which it had been necessary to paint were the exposed window frames, cornice and barge boards. When the fire occurred this owner was doubly rewarded for the use of asbestos shingles:

On the opposite side of the street another house covered with asbestos shingles, on roof and walls, acted as a fire wall and protected two frame houses and a frame hotel next to it. The shingles show the effect of the intense heat, as can be seen from one of the accompanying illustrations, which burned the window frames and other parts but the shingles otherwise protected the building.



"Douglas Fir Bridge Material" is the title of a new booklet published by the West Coast Lumber Trade Extension Bureau, Longview, Wash., covering the subject of large structural timbers with recommended grades and other data.



This House, Covered with Asbestos Shingles on Sides and Roof, Acted as a Fire Wall and Protected Two Frame Houses and a Frame Hotel Next to It. The shingles show the effect of the intense heat which burned the window frames, but they ably protected the building.

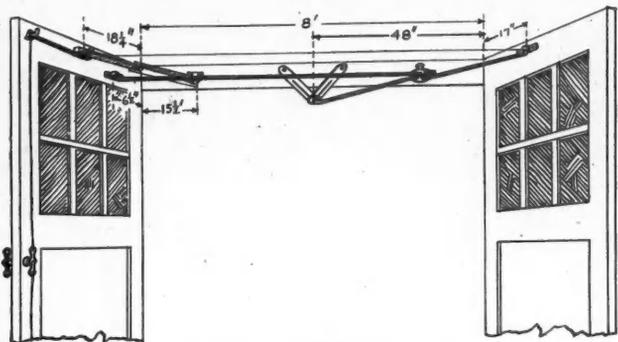
# WHAT'S NEW ?



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## For the Garage Doors

ANYONE who has struggled with garage doors on a windy day, opening them only to find them blown shut again as he climbed back into the car to drive into the garage, will appreciate the device shown in this diagram. It is a simple and inexpensive piece of equipment



Here Is a Simple and Reliable Piece of Garage Door Equipment Which Makes It Possible to Open Both Doors at Once and Have Them Stay Open.

which opens both doors at the same time and keeps them open till you are ready to close them.

This device is a simple and hence permanently reliable, combination of levers. The diagram shows the correct installation, with accurate dimensions, for an eight-foot opening. If the opening is wider than eight feet it is only necessary to place the "V" shaped casting slightly to the left of the center. If the opening is less than eight feet the "V" shaped casting is placed slightly to the right of the center.

In this way the same device will serve equally well for openings of varying width. The bother of chain bolts and foot bolts is done away with and the doors need never be propped open. The installation is quick and simple, only a hammer and screw driver being required to install the device and full directions being furnished.



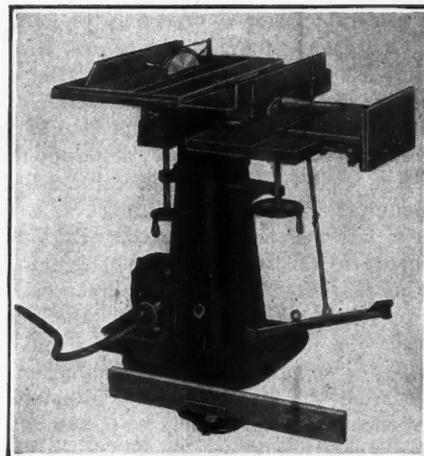
## Two New Woodworkers

CONTRACTORS and builders who make their own millwork will be particularly interested in the recent announcement that a company which formerly made only a combination woodworker is now offering two new machines, a saw table and a saw table and jointer, together with a new policy of taking in the simpler, lower-priced machines in trade on the combination woodworker at practically what was paid for them.

Each of the new machines is complete in itself, the saw table being capable of ripping, square and bevel; crosscutting, square, bevel and compound bevel; coping and dading, crosswise or lengthwise; rabbeting, moulding, with moulding head on saw arbor and many special operations. The table of this saw is larger than on other saws, it is

stated, and will therefore do much bigger and heavier work.

The saw and jointer will perform all the operations listed for the saw table and, in addition, glue joint surface on flat side; glue joint surface on edge, either square or bevel; bevel corners, lengthwise or on end; drum sander operations and others.



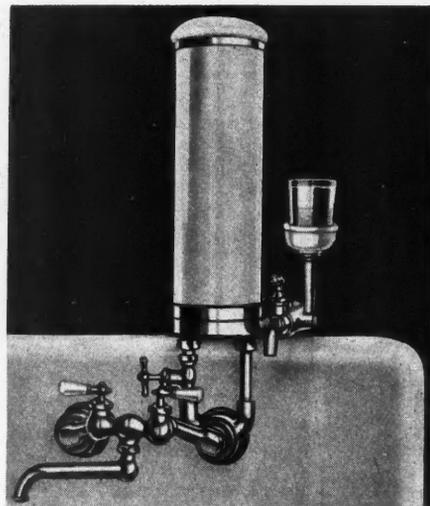
One of the New Woodworking Machines Particularly Adapted to the Builder Who Makes His Own Millwork.



## A Home Water Filter

THE purification of drinking water is a subject which has received much attention, and to good purpose, of recent years. Purification has been applied, with a great reduction of certain diseases, to city water supplies and many individual homes are applying its principles to their individual supplies. The filter shown here admits of stone filtration at the outlet faucet. It incorporates a thick porous stone which is frequently flushed, as a filtering medium and fresh hydrant water ready for filtration is constantly supplied. The pure drinking water, germ-free, tasteless and wholesome, is delivered from a third faucet with a good and continuous flow.

In construction outside casing is white, porcelain enameled, Armco metal, finished with nickel plated brass rings. All other metal parts are of brass, block tinned inside and nickel plated outside. The filter can be installed on any water outlet in the home, hotel, restaurant or other building and will give permanent, automatic service.



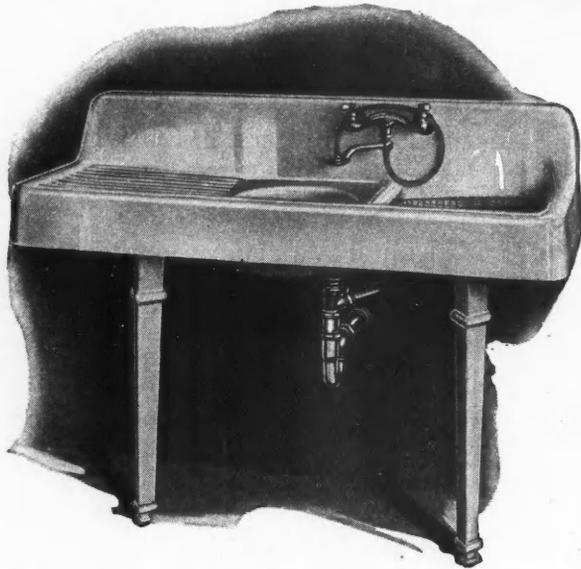
With This Filter Installed in the Home, Pure, Stone Filtered Water Is Constantly Available.



### Labor Saving Kitchen Sink

THE latest and most improved model of a well known kitchen sink is shown here. This sink was designed to lessen the task of dishwashing, preparing meals and doing light laundry work. It incorporates a commodious washing bowl which eliminates any need for a dishpan, and also a rectangular compartment equipped with a wire drain basket in which dishes and utensils may be racked and sterilized by spraying with hot water. This also eliminates the wiping of dishes and so cuts dishwashing time in half.

Vegetables may also be washed and prepared in the bowl, deposited in the other compartment for rinsing with the spray and the parings are easily scooped out of the bowl into the garbage receptacle. Again the bowl and rinsing compartment



Here is a Kitchen Sink of a New and Improved Design Which Reduces the Work of Preparing Meals and Washing Dishes.

may be used in the same way for washing out lingerie, stockings, children's underwear and other garments, in fact for innumerable washing tasks that are constantly required of the housewife.

This new model includes a drain board which may be had attached to either the right or left side of the sink, providing extra working space where such space is not otherwise provided. These sinks are made with the bowl at either right or left, with eight or 12-inch backs, or without backs for installation where tile walls are used and also with backs for corner installations. They are finished in smooth porcelain which can be instantly cleaned without scouring and the bowl and rinsing compartment are provided with separate drains leading to the waste outlet.

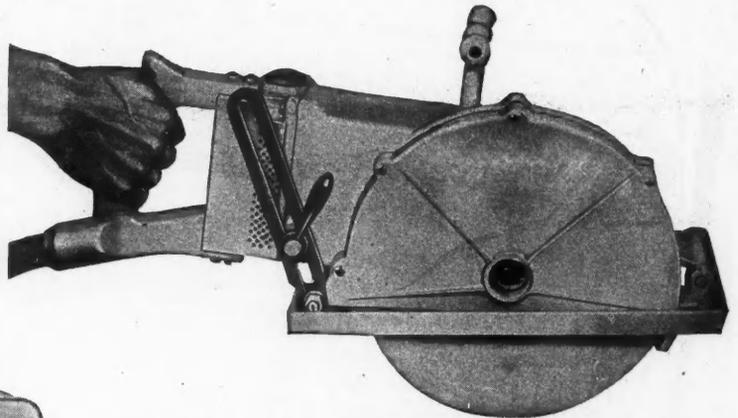
### A New Electric Hand Saw

A LEADING manufacturer of electrical products has just announced the addition of a new product to its line, a portable electric hand saw. A feature of this saw is that the operator is protected by what is described as a 99 per cent safety guard. This guard is of telescopic construction and swings back exposing the blade as the cut progresses. When the saw is removed from the cut the guard instantly and completely covers the spinning blade, insuring absolute protection for the operator.

This saw is equipped with a large shoe made of heat treated aluminum alloy, which entirely prevents the saw blade from weaving, and when used upright on progressive

cutting, completely eliminates rocking and tipping and holds the blade true to the line without wrist strain. The shoe can be adjusted quickly to make any depth cut from  $\frac{1}{8}$  inch to 4 inches. This makes the saw especially adaptable for cutting out flooring, panels, etc.

The powerful motor which drives this saw is of the



This New Electric Hand Saw Has Been Produced by a Leading Maker of Electric Products and Is Described as 99 Per Cent Safe.

universal type operating on 110-volt, alternating or direct current. It can also be supplied for 220-volt current. The drive is worm and gear. It is equipped with Timken roller bearings throughout, assuring a quiet and powerful driving of the saw blade, which runs at a speed of 2,400 r.p.m. at no load and 1,800 r.p.m. with normal full load. The cooling system, in addition to keeping the saw cool, blows away the sawdust so that the cutting line is always in clear view.

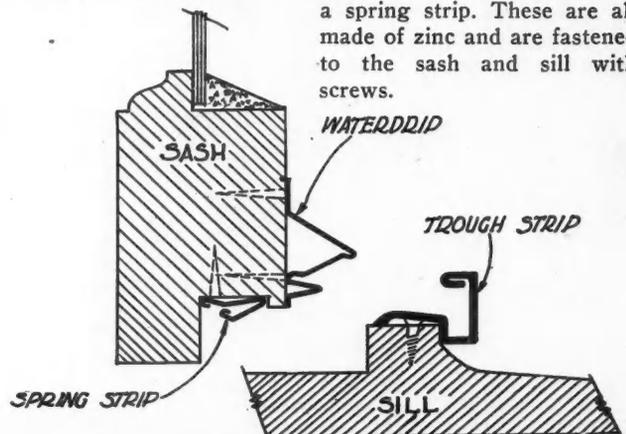
This saw also operates special blades for mitering, cutting fiber, plaster-board, bakelite, sheet lead, marble, hard rubber, brass and other materials. It will rip 2-inch oak lumber 420 square inches per minute and cross-cut 3-inch oak lumber 300 square inches per minute.



### Efficient Casement Weatherstrip

A MANUFACTURER who has long made all metal weatherstrip which has proved highly satisfactory under the test of years of actual use, has recently introduced a new development, a combination waterdrip and weatherstrip as shown in the illustration. This strip is used on inward opening casement windows and, it is stated, is not only the most effective combination of its kind, but will positively exclude rain, wind and water from coming through the window opening.

The combination consists of three parts, as seen in the accompanying illustration, a waterdrip, a trough strip and a spring strip. These are all made of zinc and are fastened to the sash and sill with screws.



These Metal Weatherstrips Are Now Provided with a Combination Waterdrip and Weatherstrip.

# SUPERIORITY

GUARANTEED  
by this trade mark



- 1 *White Pine for PERMANENCE*
- 2 *Styles and Sizes for BEAUTY*
- 3 *Weather-tight for HOME COMFORT*
- 4 *Available at dealers for CONVENIENCE*
- 5 *Standardized Quantity Production for ECONOMY*

## PERMANENCE

*Genuine White Pine* is used for all sills and casings of every Andersen Frame. These are the parts most exposed to the weather. This wonderful wood does not check or rot and will last a lifetime. No replacements are necessary. A moderate first cost insures *Permanence*.

## HOME COMFORT

Patented, noiseless, easy running pulleys, absolutely accurate construction, exclusive patented features to allow easy and economical use of wide blind stops, all help Andersen Frames to insure *Home Comfort*

## ECONOMY

Standardized and specialized manufacture, quantity buying, and big production make it possible to market Andersen Frames at a reasonable price. In value, labor and time saving Andersen Frames mean *Economy*.

**ANDERSEN LUMBER CO.**

BAYPORT, MINN.

## BEAUTY

Carefully proportioned, easily adapted to any designer's wishes, casings of genuine white pine take paint smoothly - these qualities of Andersen Frames insure building *Beauty*.

## CONVENIENCE

Andersen Frames, handled nationally by leading jobbers and lumber dealers only, are so distributed as to be available to builders everywhere for *Convenience*.

ASK THE ANDERSEN FRAME USER

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

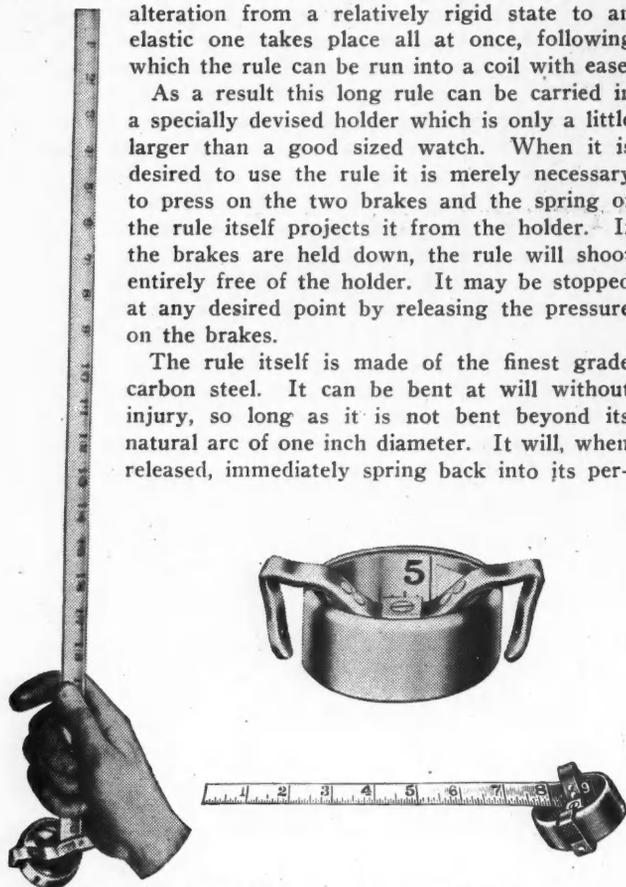
### Six Foot Metal Rule Is Both Rigid and Flexible

**T**HE rule illustrated here is a really remarkable tool, combining a number of desirable qualities which would normally be considered impossible of attainment in a single rule. It is a single piece of metal, six feet in length which possesses both stiffness and flexibility. Because of its unique structure it offers resistance to bending up to a certain amount of stress, after which it yields readily. This

alteration from a relatively rigid state to an elastic one takes place all at once, following which the rule can be run into a coil with ease.

As a result this long rule can be carried in a specially devised holder which is only a little larger than a good sized watch. When it is desired to use the rule it is merely necessary to press on the two brakes and the spring of the rule itself projects it from the holder. If the brakes are held down, the rule will shoot entirely free of the holder. It may be stopped at any desired point by releasing the pressure on the brakes.

The rule itself is made of the finest grade carbon steel. It can be bent at will without injury, so long as it is not bent beyond its natural arc of one inch diameter. It will, when released, immediately spring back into its per-



**Something Entirely New in the Way of a Rule. It is of steel stiff enough to be extended from one hand as shown, but so flexible under a certain stress that it can be coiled in the small, vest-pocket container shown above.**

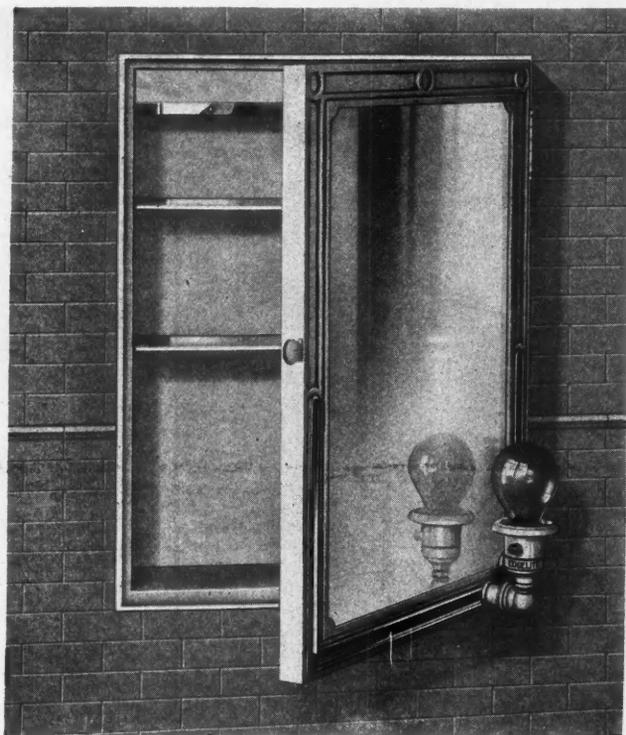
fectly straight shape. It is nickel plated except for the figures which are of certain colored metals, which are made integral with the body of the rule and afford the correct contrast in color. This, combined with the reflection of light gained by the concave surface on which the figures are placed, makes them decipherable in dimly lighted places.

The metal of the figures is non-corrosive, and if the rule is given proper care, with oiling where conditions are likely to cause corrosion, it will last indefinitely. The figures are also protected against wear by the same concave design which adds to their visibility. Since there are no joints to weaken or wear loose the length of the scale, which is unusually accurate for a six-foot rule, does not alter and time shows no appreciable loss of resiliency.



### A Perfectly Lighted Mirror

**A** SATISFACTORY light for shaving, makeup and other toilet uses has always been a problem. Now there has appeared a fixture which bids fair to solve this problem and take all the discomfort and inconvenience out of these necessary toilet activities. The new device is shown in the illustration. Quite simply it is an electric light, so designed that it may be pushed into any desired position along the edge of the mirror.



**Either as a Medicine Cabinet Door or as a Separate Mirror. This appliance gives the user mirror lighting from any angle.**

This new device was first brought out, installed, as shown, on the mirror of a bathroom cabinet. Now another model has been made available, installed on a separate mirror. The latter model has the same appearance as the cabinet with the door closed, but lacks the cabinet behind.

By a light touch the light may be moved either up or down, to the right or left, to the exact spot where it will be most useful and once placed it will stay in place without the use of any clip, catch or nut to adjust. All wiring is concealed and out of the way. The light socket is mounted on a movable arm that slides in a deep slot in the frame of the mirror.

Strong friction clamps hold it in position and it is so designed that it remains constantly in an upright position. The whole fixture is neat, trim, practical and economical, meeting the most exacting demands for fine installations. The frame is cast aluminum, Duco finished in any desired color combination. The groove in which the light slides is heavily nicked. The cabinet is all metal with glass shelves with the mirror set into the door.



### All Welded Steel Mortar Box

**T**HIS mortar-mixing box is made of number 14 gauge, blue annealed steel and flanged around a



**Of Heavy Sheet Steel, Welded Throughout, This Mortar Box Will Give Long Service.**

$\frac{1}{4}$ -inch angle iron to support the top. The corners are electrically welded and are absolutely water tight. The handles are

entirely out of the way when not in use. This box is carried in stock in three sizes: 3 feet wide by 6 feet long by 12 inches deep;  $3\frac{1}{2}$  feet wide by  $7\frac{1}{2}$  feet long by 12 inches deep and 4 feet wide by  $11\frac{1}{2}$  feet long by 12 inches deep.

# Substitute for Pine

We can keep on building the nation's homes of this proven building material as the Pine forests contain sufficient timber to supply the needs for centuries.

Timber, like any agricultural crop, should be cut when matured and utilized for the purpose for which it is best suited. Otherwise it deteriorates and is subject to various natural destructions.

Conservation of the mature timber crop is false economy.



Another view of a room in the Boston Chamber of Commerce. When a distinctive, homelike air was desired in this room the walls were panelled with Pine, resulting in a rich, attractive effect.

Leading lumber dealers throughout the nation can furnish you with Shevlin Pine. It is available in five varieties:

Shevlin Northern White Pine, Shevlin Pondosa Pine, Shevlin California White Pine, Shevlin Norway Pine and Shevlin California Sugar Pine.

### Learn More About Pine

If you wish to know more about Pine—something of its characteristics, physical properties, allowable stresses and uses—send for

the booklet, "Specify Shevlin Pine."

The coupon below is for your convenience. Just fill it in and mail it today for interesting information about Pine.

Shevlin, Carpenter & Clarke Company  
 903 First National Soo Line Bldg., Minneapolis, Minn.  
*Chicago Sales Office: 1866 Continental and Commercial Bank Bldg.*  
*Sold in New York by N. H. Morgan, Graybar Building*  
*San Francisco Sales Office: 1028 Monadnock Building*

### Shevlin Pine Carefully Selected

In the carefully selected Shevlin holdings of Pine timber, only the mature trees are cut. When it reaches the construction job, Shevlin Pine is carefully seasoned, smoothly milled and rigidly graded—ready to do its part in building real American homes.

The natural beauty of Shevlin Pine, especially in Pine panelling, adds to the intimate livable feeling of any room. Shevlin Pine takes any finish readily and retains the protective coat to give many years of attractive appearance.

### Shevlin Pine is Easy to Work

The carpenter likes to work with Shevlin Pine because it works with him. His tools cut into the fine texture readily, helping him to produce close-fitting joints and clean-cut profiles.

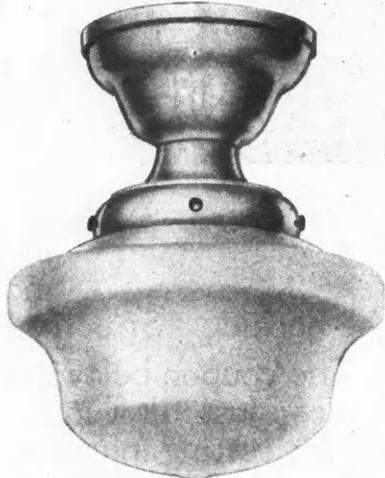
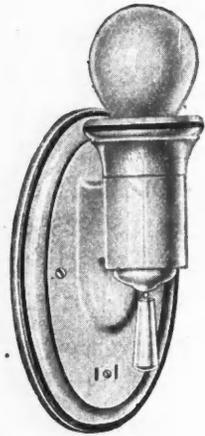
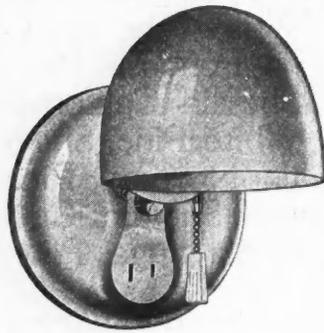
**SHEVLIN, CARPENTER & CLARKE COMPANY**  
 903 First National-Soo Line Bldg., Minneapolis, Minn.  
 Please send me the booklet, "Specify Shevlin Pine."

NAME.....  
 BUSINESS.....  
 ADDRESS.....  
 CITY.....



### Colored Porcelain Light Fixtures

**B**ATHROOM lighting fixtures in colors are the most recent development in the lighting field and are being presented by a company which was a leader in the development of all-porcelain fixtures. Some time ago this company added a porcelain shade holder to its fixtures, the threaded porcelain idea making possible the porcelain ring better known as the ball lamp adapter. The porcelain shade holder and ring were threaded to turn on the lamp shell, making a rigid unit of the cover and interior.



These easily cleaned, none-tarnishing fixtures rapidly became popular not only for bathrooms, but also for beauty parlors, barber shops, breakfast nooks, tea rooms, restaurants and hospitals, because of their beauty and durability. With the further development of lighting

Here Are Shown Three Types of Lighting Units Now Made Available in Colored Porcelain in Accord with the Present Vogue.

equipment it became apparent that the standard white was not essential to sanitation and that greater beauty could be obtained with the vogue for color in the bathroom.

Now this company has combined the idea of equipment and decoration adding an individual atmosphere and character to the bathroom. This has been accomplished by adding, to its wide line of white fixtures, harmonious colors and striped decorations. These colors have been developed with neutralization in mind and a part of the charm of these fixtures is the lack of machine-like decoration.

The following colors are now available: pompeian, a green glazed finish; chamois, a cream color matte glazed finish; black, a jet glazed finish; and ivory, a glazed finish. In addition brackets are supplied with a blue, green, pompadour red or black striping on a white glazed background. The colors are the same as those found in the latest style of china and the coloring matter used and method of firing is the most modern known to the fine china-making industry.



### Simple Convenient Furnace Control

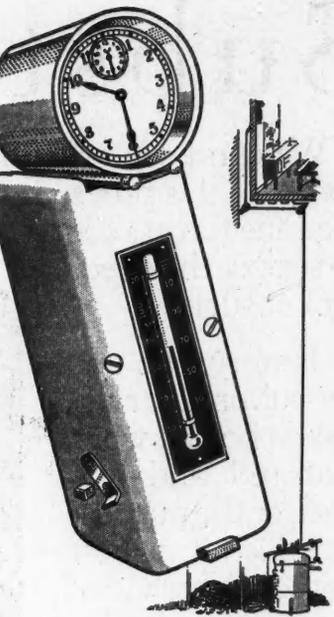
**H**ERE is a new and improved model of a well-known furnace regulator which is both simple and effective. To the older style of regulator a clock has been added which automatically opens the furnace draft at any desired time in the morning. Thus the house is warm by the time the owner is ready to rise, without the discomfort of

getting up in the cold and running to the basement to open the drafts.

This device is screwed to the wall in any of the first or second floor rooms, where most convenient, and is connected with the furnace by means of a conduit and wire running down through the wall. The wire is connected with an alarm key on the back of the clock and the clock is set like an ordinary alarm clock. When the alarm key is released in the morning the drafts are automatically released and open by their own weight. There is no motor or other complicated mechanism to get out of order.

This device also incorporates an accurate thermometer as in the older model, which makes it easy to keep track of the temperature and to regulate the furnace, by hand, from the device during the day.

Steam, hot water and warm air furnaces can all be equipped with this device with equally good results. The installation is a simple and inexpensive job and when the regulator is once installed it is one of those conveniences which add much to the value and salability of a house.



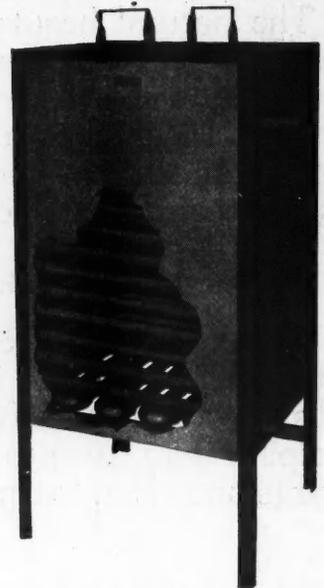
A Simple and Reliable Furnace Control Which Automatically Opens the Drafts in the Morning Without Attention.



### It Heats Water for Concrete

**T**HE illustration shows a piece of equipment which is one of the greatest aids to the contractor in winter construction of concrete. It is a simple and reliable heater which heats the feed water for the mixer and so provides a warm, well mixed concrete regardless of weather. By doing this it makes possible the pouring of concrete throughout the year, cutting down the costs to the contractor and owner and, by helping to eliminate seasonal idleness, put the building business on a firmer basis.

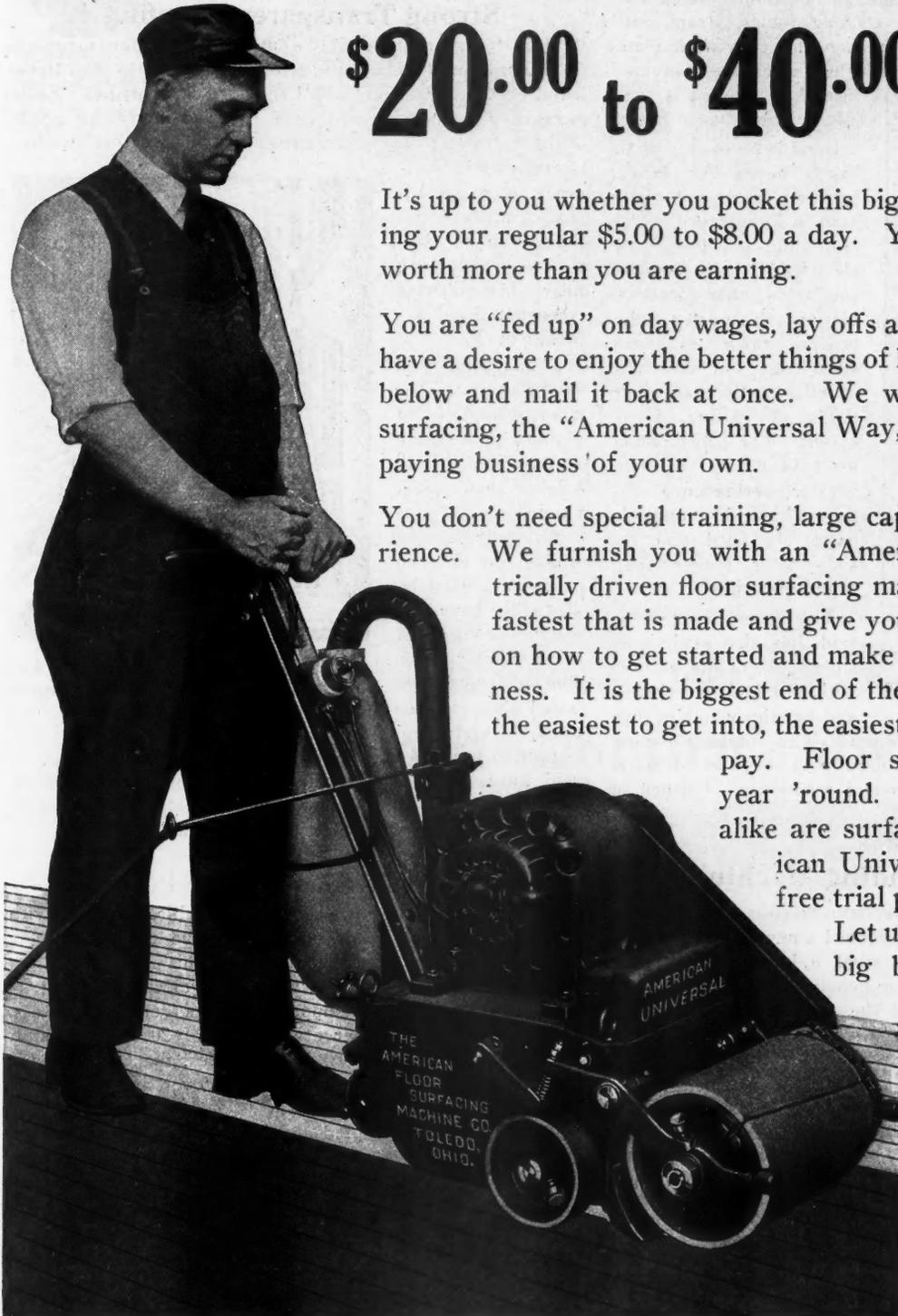
This heater is constructed to supply a steady stream of hot water for the mixer just as fast as the water can be forced through the 100-foot coil of one-inch pipe. It is self-draining and there is nothing to get out of order. It is simple to operate, as it is merely necessary to build a fire inside the coil and turn on the water. Its dimensions are 24 by 24 by 48 inches and it is made of 16 gauge blue annealed steel. The coil is of black iron pipe and the bracing is of 1½ by 1½ by 3/16-inch angles.



This Heater Furnishes a Steady Supply of Water for Concrete and Is Rugged and Reliable.

# Get What You are WORTH!

## \$20.00 to \$40.00 a Day!



It's up to you whether you pocket this big income or go on making your regular \$5.00 to \$8.00 a day. You know your time is worth more than you are earning.

You are "fed up" on day wages, lay offs and tough bosses. You have a desire to enjoy the better things of life. Fill in the coupon below and mail it back at once. We will tell you how floor surfacing, the "American Universal Way," will put you in a big paying business of your own.

You don't need special training, large capital or business experience. We furnish you with an "American Universal" electrically driven floor surfacing machine—the finest and fastest that is made and give you complete instruction on how to get started and make a success of this business. It is the biggest end of the building game today, the easiest to get into, the easiest work and the biggest

pay. Floor surfacing is good the year 'round. New and old floors alike are surfaced with the "American Universal." Our five day free trial plan will convince you.

Let us tell you all about this big business and the big profits that only the "American Universal" will earn for you.

**SIGN BELOW  
and  
MAIL  
AT ONCE**

**THE AMERICAN FLOOR SURFACING MACHINE CO.**

515 So. St. Clair St., Toledo, Ohio

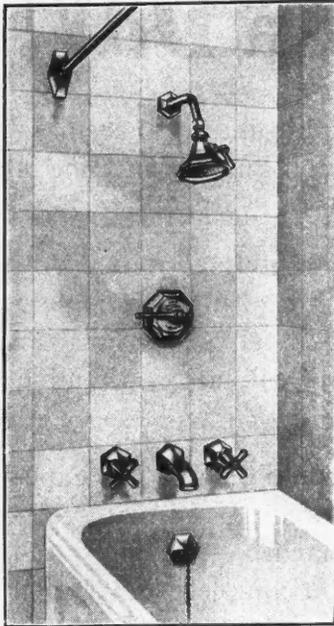
Without obligation, send complete information at once about the "American Universal" floor surfacing machine.

- I am a building contractor.
- I am interested in floor surfacing as a business.

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

### Chromium Plated Bath Fixtures

**C**HROMIUM plating is a new method of protecting brass plumbing fixtures from tarnish and at the same time enhancing their beauty. In addition, chromium plated fixtures are proof against acids, cooking fumes, steam, salt air and salt water. For this reason the chromium plate



Chromium Plated Fixtures Are Rapidly Gaining Favor.

which a leading manufacturer has adopted is rapidly winning wide favor. Good chromium plate has a mirror-like finish, between silver and platinum in appearance. The chromium is deposited electrically in a manner similar to other forms of plating; however, the process requires more knowledge and skill and is more costly than other kinds of plating, it is stated. The additional cost is offset by the greater permanence obtained, as chromium is extremely hard and resists wear longer than other materials.

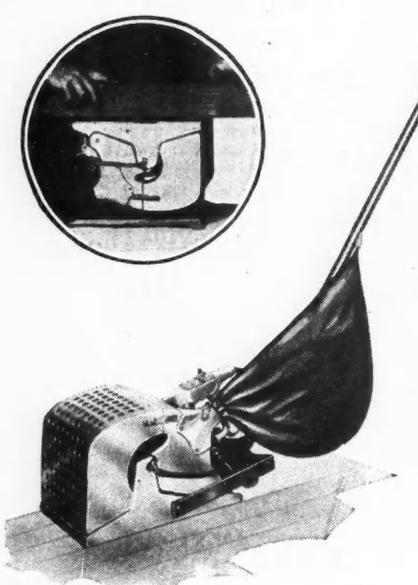
This new plate, it is said, has also made possible showers and fixtures with all metal escutcheons and handles which in turn

makes possible more artistic designs. This company is now announcing showers and fixtures with massive octagon shaped shower heads, handles and escutcheons finished in chromium plate.



### A Dustless Sanding Machine

**A** WELL-KNOWN manufacturer of convertible electric sanding machines has announced a new dustless model. The conventional dust bag is used, a large size for floor sanding and a smaller bag for bench sanding. Simplicity has always been a feature of the machines made by this



This Sanding Machine Can Be Used as a Bench Sander or Jointer, or Floor Sander.

company and it is attained through the use of a revolving field motor. The sanding drum is the only part which revolves and the new vacuum device has been developed without complicating the machine in any way. One end of the sanding drum has been redesigned to include a suction fan. Air is taken in through the motor which assists in cooling and, by means of a baffle plate cast integral with the aluminum

cover, all dust is discharged through a nozzle into the dust bag. This is a light weight machine which may be used as a bench sander or inverted in a special base as a jointer.



### Strong Transparent Roofing

**T**HE transparent roofing shown in the accompanying illustration is built of the strongest type of  $\frac{1}{2}$  inch thick wired glass, set in a reinforced concrete construction. Each piece of glass is protected from the ever-increasing crush of the concrete (all concrete exposed to the weather steadily increases in volume) by a galvanized cast iron shield, lined with an elastic crush absorbing filler. The concrete construction is  $3\frac{1}{2}$  inches thick.

This roofing will safely carry a distributed load of 200 pounds per square foot on a clear 8-foot span, and, therefore, is perfectly safe to be walked on or even as a roof-garden, let alone to have the snow shoveled off it in winter time. The construction, of wired glass,  $\frac{1}{2}$  inch thick, is highly resistant to fire and this roofing is not affected by smoke or acid fumes. Because of the construction it is absolutely weathertight, the filler being poured in hot, against the hot surfaces of both glass and metal, on heated tables.



A Roof of Heavy Glass and Reinforced Concrete Gives Great Strength.

✱

### Saw With Gas Engine Power

**T**HE illustration shows a new saw table, powered with a  $\frac{1}{2}$ -horsepower air cooled gasoline engine, making it possible for the contractor to start this machine at any place he desires without waiting for electric current to be provided. When equipped with this engine the saw will rip two-inch lumber at the rate of 20 feet a minute and will cut off three by six lumber in less than two seconds. It is stated that it will save its cost over and over again on small dwelling operations.

It is especially adapted to the work of the contractor building apartments and houses and is light enough to be readily portable. It can be pushed around on the job like a wheelbarrow and is sturdy enough to stand rough handling. It is said that even an inexperienced workman can operate this saw with greater accuracy than a skilled workman can obtain with hand tools. The general construction is all of steel. It will handle saws up to 10-inch diameter with a 10-inch saw projecting three inches through the table.



This Saw Can Be Pushed About on the Job Like a Wheelbarrow, Where Needed.

Front view

Back view

The patented "key," invisible on the completed roof, locks each Genasco Latite Shingle tightly to those underneath.

The turned-under corner holding the "key" makes a double-thick butt that adds distinction to a Genasco Latite roof.



## A roofing department that's always busy!



In January as well as in May—in winter as well as summer! Making money for you all year around! Roofing new buildings just being constructed. Re-roofing old buildings right over the worn-out shingles—the "Genasco way" that avoids ripping off the old shingles; that doesn't expose the interior of the building to the elements; that saves time, labor, dirt and money.

Genasco Latite Shingles make unusual roofs because they offer all the protection afforded by nature's own unequaled waterproofer—Trinidad Lake Asphalt Cement. The tough, long-fibred asphalt-saturated-through-and-through rag felt is coated on both sides with this superior waterproofer. The undercoating is the exclusive "Sealbac" feature which protects the body of the shingle from condensed moisture and tends to make the shingles adhere closer to each other.

Genasco is the only roofing which contains Trinidad

Lake Asphalt Cement—and Genasco Latite Shingles are not only weatherproof but fire-retardant. They make a roof that is both strong and durable; that is distinctive, and yet economical; that is beautiful in its four unfading colors—red, green, blue-black, and the new Mix-Tone.

Genasco Latite Shingles lead the way to more business and additional profits for you—and you will find it to your advantage to start a roofing department as an extra branch of your business.

We will gladly tell you all about Genasco Latite Shingles—how to lay them over old wood shingles, how to do the roofing business in your locality—full information is yours for the asking. Write us today—use the coupon right now!

### The Barber Asphalt Company

New York Philadelphia Chicago  
Pittsburgh St. Louis Kansas City San Francisco

# Genasco

Reg. U. S. Pat. Off.



# Latite Shingles



The Barber Asphalt Company, Philadelphia

Please send me full information regarding the products I have checked:

- Genasco Latite Shingles.....
- Genasco Roll Roofing.....
- Genasco Sealbac Shingles.....
- Genasco Building Papers.....

Name.....

Address.....

A

### Standardized Steel Trusses

ALL builders will realize the advantages of standardized steel truss construction which makes it possible for them to count on immediate deliveries from stock. Otherwise, they are often subjected to costly delays while special drawings and templates are being made before the shop work on the trusses can even start.

Steel bowstring trusses have now been standardized and can be shipped on a few hours' notice for buildings of any width from 35 feet up to 102 feet 6 inches in a single span or any width with multiple spans. There are 28 standard truss lengths between the dimensions named with a difference of 2 feet 6 inches between sizes. This difference can easily be taken up by the supporting pilasters for intervening sizes.

The standardized design of these bowstring trusses calls for a maximum height of truss which is one-tenth of the span. Thus, a truss 50 feet long would be 5 feet in height. As is well known to all engineers, the arched shape of these trusses provides the greatest procurable strength with the lightest weight of steel.

In the design of these trusses, the live load—mainly snow and wind pressure—as well as the dead load of the roof construction itself, have been carefully figured, along with an ample margin of safety. They are safe for any spans for which they are furnished. The top and bottom chords are composed of two structural steel angles. The web members are steel angles and are connected to the chords by means of gusset plates. Three-quarter machine driven rivets are used throughout. The trusses are shipped in two sections and bolts are furnished for field assembly. It is not necessary to do any riveting on the job when these trusses are used.



### Washing Painted Houses

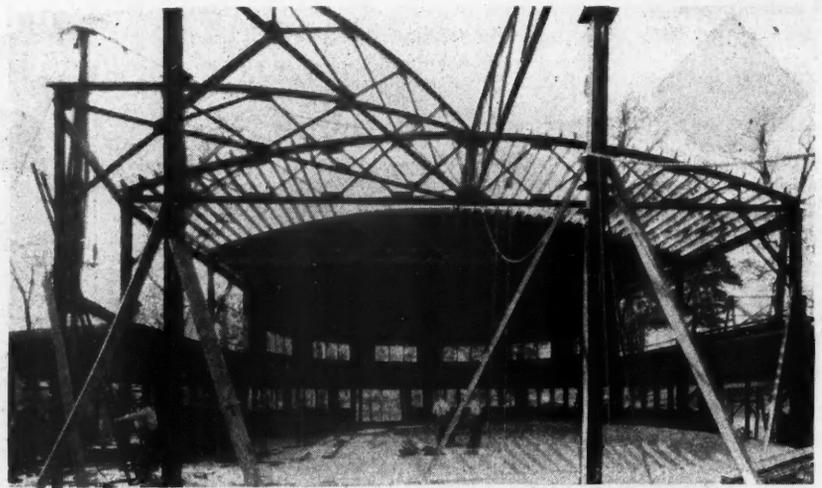
EVEN an attractive well painted house soon becomes sooty and soiled in the average city or suburban territory long before it should really be necessary to repaint. A thorough washing would restore it, but in the past the cost of washing has usually interfered with such measures. In addition to the fact that many dingy appearing houses do not need repainting but merely cleaning, a thorough washing is an excellent preparation for repainting those houses which



Here Is a Machine Which Makes It Possible to Wash a Painted House That Is Soiled and Sooty.

need a new coat and will often save one coat of paint.

Because of these facts experiments have been made to reduce the cost of washing houses by eliminating the lost motion of rinsing which consumes about 70 per cent of the time required for washing with sponges. A machine was finally perfected and has proven satisfactory in the course of two years of actual use.



Standard Steel Trusses Which Can Be Immediately Delivered from Stock Are Available for Widths Up to 102½ Feet.

This machine consists of a large mixing tank which is connected by a hose to the nearest faucet. A ball float maintains the water level in the tank at all times. A hopper on top of the tank holds the necessary cleaning compounds which will not harm either the paint, the hands or the lawn.

Underneath the tank is a motor which is connected to the nearest electric light socket and by means of a pulley drive keeps an agitator inside the tank rotating constantly and admits a definite quantity of cleaning compound from the hopper, maintaining a uniform solution at all times. The solution is forced by a high pressure pump driven by the motor at any desired pressure, through a hose and out of a fountain mop or other attachment.

The operator merely rubs back and forth lightly and all the dirt and grime is dissolved, leaving the surface clean. The same hose can be used for rinsing.

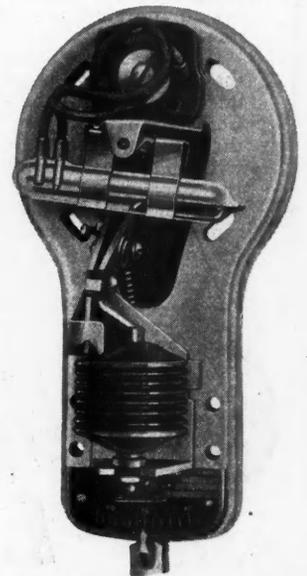


### Thermostat Carries Heavy Current

THE cut shows a new thermostat of the single circuit, single pole type, with the cover removed. It is intended for temperature control on oil burning equipment, refrigeration and general industrial work. It has no open contacts. It is adapted to 110 or 220 volt current, either alternating or direct, and is listed as standard by the Underwriters' Laboratories, Inc.

The manufacturers state that until the development of this instrument no practicable method had been found to obtain accurate and sensitive control in thermostats carrying more than a minimum amount of current at 110 or 220 volts. The heavy current would soon burn out the metal contact points causing oxidation and failure of the instrument.

Through the use of the "Mercoid" switch this thermostat is now available which will automatically make or break the circuit without the use of expensive relays, transformers or intermediate controls. It connects directly to the motor or other operating devices, throwing them directly across the line, carrying the full current, without injury to the contacts.



A New Thermostat Which Will Carry 110 or 220 Volt Current.

# FREE How to Read Blue Prints



## New Easy Practical Way That Has Doubled Pay in 2 or 3 Months!

Thousands of Men in the Building Trades Have Discovered an Altogether New Way to Double and Triple Their Incomes! Surprising, Yes,—But True! Almost Overnight They Have Stepped Into Interesting, Big-pay Jobs—Become Foremen and Superintendents—Or Are Making Big Money in Business for Themselves. The Same Wonderful Opportunity Is Now Offered You. Don't Send One Penny. Just Mail the Coupon for Full Set of Valuable Blue-Print Plans, Big Free Book, and Complete Details.

**YOU** men who work with your tools in the building trades make good money. But you don't get one penny more than you're entitled to. Every boss on the job—every foreman, every superintendent—is making plenty more than just your wage scale, to say nothing of the real money the contractor and the builder clean up. Why do these men get more money for their work than you do? Why do they clean up \$6,000 to \$15,000 a year or more? It's simply because they're trained in the "headwork" side of Building and Contracting work. They can read Blue Print Plans. They know how to lay out and run jobs.

his tools and never get a real chance to learn the things he must know, if he is ever to get into the big-pay class.

But it's all different the new Chicago Tech Builders' Course way—amazingly different! It's quick, easy, certain. Right at home, you get real Blue-Prints used on actual jobs to examine and keep for reference. In language you can understand, as plain as A-B-C, everything is told you and worked out for you. You are taken by experts right through every step of Plan Reading, Estimating, and Superintendence. You don't need even a grade school education to understand every word and absorb every fact.

**READ!**  
 "Since starting the Builders' Course I have been raised to Superintendent and my pay raised 100%."  
 F. F. Blair, Okla.  
 "I owe a lot of credit to your course. Am now listed as a Brick Contractor and made about \$3,800 clear money this summer."  
 E. F. Baker, Ohio.

### Make More Money

Woodside, in three months, rises from journeyman carpenter to foreman, then makes big money in contracting business for himself. In a few months McAvoy goes from bricklayer on the wall to foreman in charge at a big increase in pay. Marchand says, "Ten days after completing course my pay was raised 100%." Hundreds—yes, thousands of others say the same, Chicago Tech has helped them to bigger jobs or a business of their own.

**If You Live In or Near Chicago**  
 Visit our day or evening classes which over 1,000 Builders attend. You can get the same training by mail—same Plans, Lessons and instructors. Mail the coupon for details.

### BLUE PRINT PLANS FREE!

We want you to see for yourself how easily you can learn to read Blue Prints and do Estimating this new, quick way—how easily you can double and triple your income. Don't send one penny. Just mail the coupon. We will send you absolutely FREE a full set of practical, working Blue Prints, also the valuable book, "How to Read Blue Prints." Act at once.



Chicago Technical School for Builders, Dept. A-121, Chicago Tech. Bldg., 118 E. 26th St., Chicago, Ill.

Please send your Free Books and Blue Prints which I understand are mine to keep without obligation. It is understood no salesman will call on me.

Name .....

Address .....

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

Occupation .....

**Chicago Technical School for Builders**  
 Dept. A-121 118 East 26th Street CHICAGO, ILL.

### Structural Insulating Board

ARCHITECTS, builders and owners are finding in a new insulating board, manufactured from the roots of licorice by a company nationally known for its licorice products, much to recommend it as a sound structural material as well as an insulating medium, it is said. Years of experiment and study were devoted to the development of the board in the determination to produce a material that would not only afford effective non-conduction of heat but also become a structural element to be used with confidence in place of, not merely as an adjunct to, wooden sheathing and lathing.



**Insulating Board Which Will Not Deteriorate, Crack, Warp or Buckle and Is Not Affected by Rain or Vibration, Is Made from the Licorice Roots Shown in This Bale.**

Exhaustive tests, it is stated, have shown that this board will not deteriorate with time, nor crack, warp or buckle. It is not affected by wind strain, vibration or other conditions which must be considered in connection with direct application upon roof rafters and on interior or exterior side wall studs. That it forms an excellent base for gypsum plaster has been convincingly demonstrated by repeated tests in which 1,000 pounds direct pull to the square foot has failed to loosen its bond.

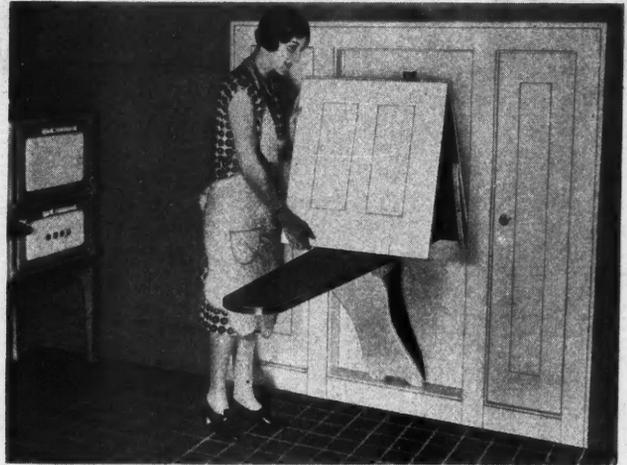
This board is also effectively used with flat slabs of concrete, hollow tile and roof decks of wood or steel. The properties which make it such an excellent barrier to heat also contribute to its efficiency as a sound deadener for floors and walls. The gray-brown color and attractive, ripple surface texture lend themselves to many distinctive interior effects without the use of plaster, the surface being left natural or else treated with paint, kalsomine or special surfacing materials. The board is made in standard dimensions of 7/16 inch thick, four feet wide and eight, nine, ten and 12 feet long. The weight is approximately 750 pounds to 1,000 square feet.



### Complete Breakfast Nooks

THE breakfast nook has become a standard feature of the modern home and a multitude of equipment, both separate and built-in, has been developed for it. Now comes a piece of equipment which can be obtained completely assembled and ready for built-in installation in nook, kitchen, living room or wherever desired. It combines beauty, compactness, ease of operation and general usefulness in a single sturdy unit.

This breakfast nook, which is manufactured by a company long specializing in cut and fitted trim, is made and assembled by the methods used on fine furniture and is shipped packed in strong cartons so that it is ready for



**Complete Breakfast Nooks, with or Without Ironing Boards Combined, Are Available Ready to Set Into the Ordinary Wall.**

instant installation and requires no resanding before paint or finish is applied. It is installed in the ordinary 4-inch wall so that the frame is flush with the wall and it is only necessary to nail the frame to the studding. It is complete with doors, hardware and everything except, of course, the trim and paint or varnish. It is made in white pine, yellow pine, cypress and hardwoods.

Two models are provided. The model illustrated combines an ironing board with table and benches. The table is 23 3/4 inches wide and 54 inches long, but may also be had 27 3/4 inches wide. The benches are 11 3/4 inches by 54 inches. This model may be furnished also without the ironing board.

The other model, for general use in any room, has no ironing board. The table measures 27 3/4 inches by 40 inches. The benches, 11 3/4 by 40 inches, will comfortably seat four persons. When closed these nooks are completely out of the way.

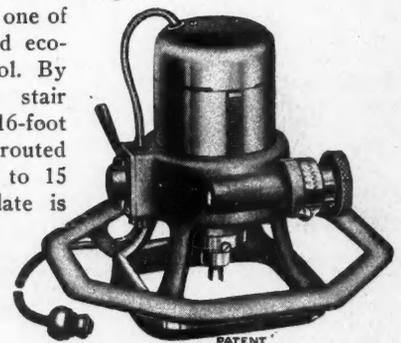


### New Portable Electric Router

THERE has recently been brought out a new, portable, electric router designed to perform many operations which were formerly done at a higher cost either by hand or on an expensive and cumbersome machine. This new machine requires no floor space and can be carried about the shop and plugged into the nearest lamp socket. It is equipped with a 3/4-horsepower motor and weighs approximately 30 pounds.

This tool is full ball bearing in construction and employs the principle of direct drive, all gearing being eliminated. Felt washers, protected by metal retaining rings, prevent the entrance of dirt and grit and the escape of any lubricant. Both motor housing and router skirt are designed to provide maximum strength and rigidity together with convenience and ease of handling.

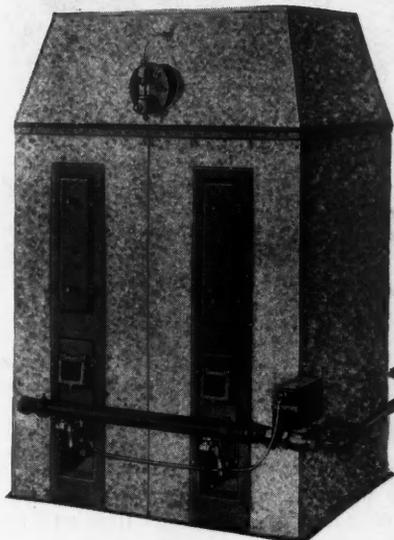
Stair routing is also one of the operations handled economically with this tool. By using an adjustable stair routing template, a 16-foot stair stringer can be routed complete in from 10 to 15 minutes. This template is designed to rout stair stringers for any size tread from 7/8 inch to 2 inches, in any size riser, from 3/4 inch to 1 5/8 inches, straight or taper cuts, right or left hand, any pitch.



**Easily Portable, This New Electric Router Replaces Cumbrous Machines and Expensive Hand Work.**

### Gas Fired Warm Air Heater

**I**N addition to the well-known advantages of gas heating, with which almost everyone is familiar, this new gas fired, warm air heater has a number of features which make it distinctive, it is stated. Its steady, uninterrupted heat, quietness, lack of dust and odor, ease of operation, automatic and safety features all combine to make a most attractive appeal to those who want and can afford the best in heating equipment. They insure equipment designed to give long years of efficient service with the least care in operation and greatest economy in fuel costs.



**This Gas Fired Heating Plant Makes Available to Those Who Prefer Warm Air Heating, the Many Advantages of Gas as Fuel.**

A heavy cast iron construction with thickly ribbed and interlocking sections insures maximum heating efficiency. There are no packed or puttied joints which, in time, crumble under the intense heat, thus impairing efficiency and speeding deterioration of the equipment. The heater is supplied with a double casing, reducing heat losses through the casing to a minimum, and is provided with black iron secondary shields between the sections.

The casings properly enclose the heater so as to provide ample air circulation around the heater and sufficient area for proper return connections. The two sections are formed by two halves which are accurately ground and drawn iron to iron, making a permanent and tight joint. The interior is readily accessible for cleaning. The heater operates without condensation and the heat storing qualities of the heavy cast sections assures uniform temperature. The sections are shipped assembled and the casing is shipped in units, ready to be slipped, lock-pointed, together. The erection of the heater is simple and easy. It is impossible to develop an explosion in this heater because it is equipped with every necessary safety device.

### All-Around Utility Machine

**N**EW convenience, compactness and all-around utility are said to have been built into this new machine which is the latest design in a well-known line. With it, independent drive of every unit from a built-in motor means greater safety and lower power bills. Only the unit in use needs to run and the different units are in the handiest working positions so the several men can work at the machine at one time without interfering.

The two horsepower electric motor is so located as to provide a long drive to the countershaft, assuring good belt grip. Well designed guards are provided that do not interfere with handy working. Ball bearings provide maximum quietness and smoothness of running and the design is up-to-the-minute in every detail. Like all machines made by this company, the frame construction is heavy angle steel, riveted and electric welded—it cannot shake loose under the roughest service.

The tables are one piece castings, accurately planed and finished and no detail of construction has been overlooked

in the attempt to make this the best woodworking machine possible. Equipment includes an 18-inch band saw; 9-inch jointer; 16-inch lathe; 10-inch circular saw; hollow chisel mortiser, and a spindle shaper.



### Electric Hammer Perfected

**T**HE illustration shows an electric hammer recently placed on

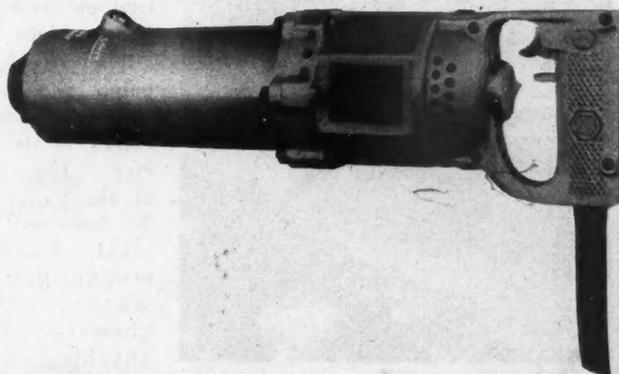
**The Latest Addition to a Well-Known Line, This All-Around Utility Machine Is Especially Compact and Convenient.**

the market and using exactly the same type of motor as used in the well-known drills made by this manufacturer, with the exception of a few minor refinements making it more applicable to this particular type of work. It is a universal motor operating on either direct or alternating current of 25 to 60 cycles and on voltages of 10 per cent above or below the voltage shown on the name plate.

Naturally the first question to arise in connection with this hammer is, "How can an electric motor stand up under the terrific shock consequent to the pounding of an electric hammer?" The motor on this hammer does not take any of the shock of the blow due to an ingenious centrifugal coupling mounted on the end of the armature shaft which acts as a shock absorber between the hammer mechanism and the motor.

The spline shaft carrying the reciprocating weights is driven by the motor through this centrifugal coupling, instead of direct, and all shocks which may be caused by the reciprocating mechanism are absorbed through a flexing of this centrifugal coupling instead of being communicated to the motor. This centrifugal coupling renders a very positive and complete cushioning effect which insures an unlimited life and service from an electric hammer.

The piston is supported by a heavy coil spring which absorbs the hammer blow when it is running idle. When the hammer is working this spring is rendered ineffective and does not absorb any of the blow. The hammer strikes 2,300 blows per minute. The working mechanism operates in a bath of oil and is therefore sealed against dust and grit.



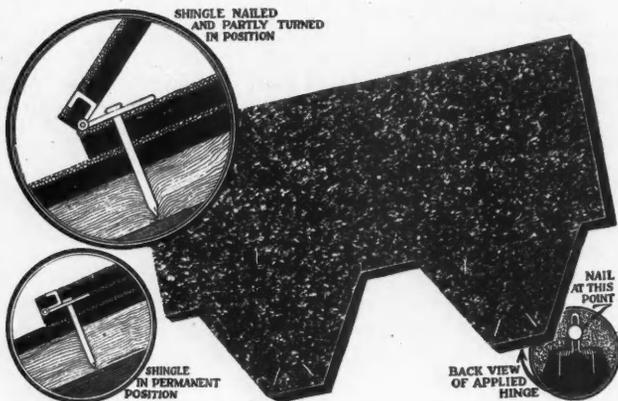
**In This New Electric Hammer the Motor Does Not Take Any of the Shock Due to a New and Ingenious Device.**

### This Shingle Is Storm Proof

A SHINGLE which is designed to be proof against storms has recently been announced by a well-known manufacturer of composition roofing and shingles. This asphalt shingle is of the hex type and measures 32 by 20 $\frac{1}{8}$  inches, with an exposure to the weather of 6 $\frac{3}{4}$  inches. It comes in various colors and blends.

The illustration shows the application which provides the storm proof feature. The butt end is held to the roof by a hinged lock of solid copper, preventing the possibility of curling or of wind getting under the shingle and blowing it off.

Only 68 of these shingles are required to cover 100 square feet of roof surface as compared with 100 units of ordinary strip shingles required for such an area. This



Here is a Composition Shingle of the Hex Type that is Designed to Resist the Most Severe Wind Storms.

saves handling and so saves time and also effects an economy on nails, only 204 nails being needed as compared with 500 nails for the standard strips. They provide a double thickness protection over the entire roof and triple coverage on more than 50 per cent.

### Efficient Portable Pump

A NEW, portable, centrifugal, pumping unit, weighing but 95 pounds, with a capacity of 7,500 gallons per hour, is now being marketed. This unit consists of a high efficiency centrifugal pump with bronze, open type, impeller, direct connected to a 1 $\frac{1}{2}$  H.P., single cylinder, air cooled motor, operating on gasoline or kerosene. The pump and engine are mounted on the same base which also acts as



This Centrifugal Pump Weighs But 95 Pounds, But Has a Capacity of 7,500 Gallons an Hour.

a fuel tank, holding one gallon, sufficient to operate the engine for four or five hours. The single shaft runs on oversize ball bearings.

The suction pump and discharge are two inches in diameter. The lift of the pump is 20 feet and it will handle muddy, gritty water, oils, chemicals or anything that will pass through the foot valve strainer. The en-

gine being air cooled, the outfit is independent of cooling water supply and can be used even in the lowest temperatures.

Portability is due not only to the low weight of 95 pounds but also the fact that the unit can be set anywhere without need for foundations, skids or blocking.

### A Labor Saving Shovel

THE manufacturers of the shovel pictured here state that they have spent 50 years learning to make one grade of shovel and they now claim that they have the perfect design for enabling fast work with the least effort.

This shovel is known as a breakdown scoop and is especially adapted to the digging of foundations. According to the claims it will lift a ton of dirt in less time and with less backache than any other shovel on the market.

R. G. THACKWELL.



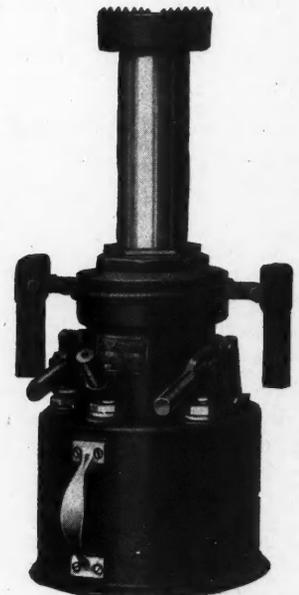
The Heavy Work of Digging Foundations Is Reduced by the Use of This Type of Shovel.

### Seventy-Five Ton Oil Jack

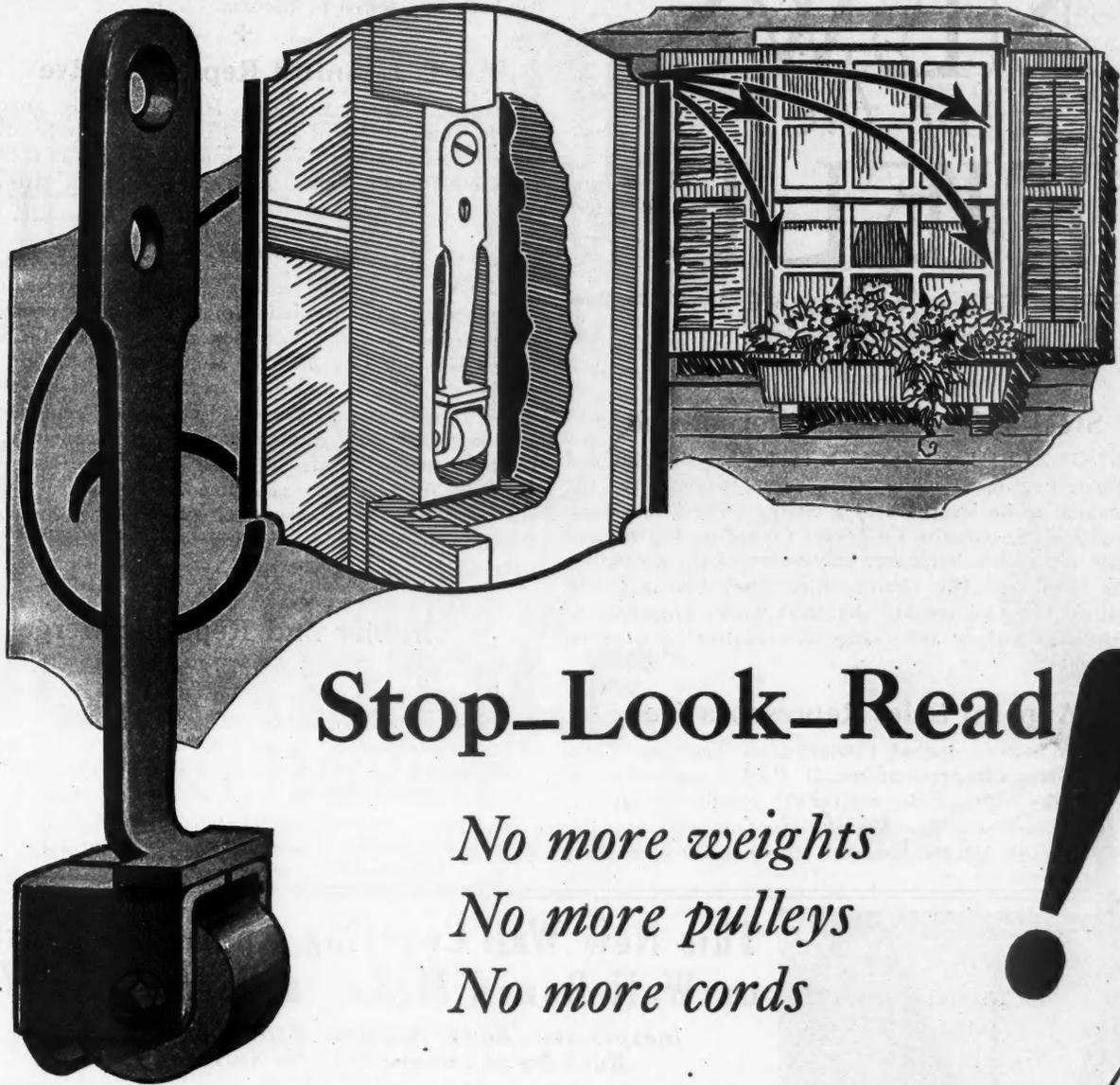
THE manufacturer of a well known line of jacks, wrenches, pumps and grinders, has recently added to the line a 75-ton, hydraulic, oil-power jack, weighing but 200 pounds, which they state is lighter than any other jack of similar capacity. It is equipped with special carrying handles to enable two men to carry it with little effort. Its collapsed height of only 18 inches is low enough to go under practically any job where such a jack is required and it has a 10-inch lift, giving a total height of 28 inches.

This jack is equipped with two pumps, a speed pump to quickly raise the plunger of the jack to the point of contact, and a power pump to raise the load. Capacity loads are quickly and easily raised.

The load can automatically be lowered, either fast or slow as desired, and under control at all times. It can be raised or lowered a fraction of an inch to any desired point. The release valve is entirely separate from the pump and prevents accidental lowering. All working parts—pumps and ball-checks—are built on the outside of the jack. An outstanding feature is said to be the check valve unit which contains both ball checks and is the heart of the jack. It is easily removed for cleaning by simply unscrewing the pump.



Though This New Oil Jack Is Rated at 75 Tons, It Weighs Only 200 Pounds.



# Stop-Look-Read

*No more weights*  
*No more pulleys*  
*No more cords*



## THE AUSTRAL SASH SUSTAINER

*Used in City Houses, Rural Houses, Bungalows, etc.*

**STRONG—COMPACT—EASILY OPERATED—CUTS ONE-THIRD OFF THE COST OF YOUR WINDOWS—COSTS ONLY HALF AS MUCH FOR APPLICATION—REQUIRES ONLY HALF THE LABOR—AUTOMATICALLY SUSTAINS THE SASH IN ANY POSITION.**

***Here's a Big Opportunity***  
*Over 10,000 builders are now using the Austral Sash Sustainer.*

**SEND FOR A SAMPLE PAIR** →

**Ask your mills for plank frames with sash mortised for AUSTRAL SASH SUSTAINERS and save time and money.**

### AUSTRAL WINDOW CO.

101 Park Avenue

New York

AUSTRAL WINDOW CO.  
 101 Park Avenue  
 New York

Gentlemen:

Please send me a sample pair of AUSTRAL SASH SUSTAINERS for which I am enclosing 50 cents (this covers actual production cost together with postage and handling).

Name.....

Concern.....

Address.....

# NEWS of the FIELD



## Steel Subsidiary Is Incorporated

ANNOUNCEMENT has been made that the National Enameling & Stamping Company, Granite City, Ill., has caused to be incorporated a wholly owned, subsidiary corporation, the Granite City Steel Company, to own and operate, and to which has been duly conveyed, the steel works of its business. The Granite City Steel Company will hereafter own and operate the steel works properties at Granite City without any change in executive or operating management.

## Appoint Sales Representative

THE Wheeler, Osgood Company, of Tacoma, Wash., announces the appointment of R. J. Cunningham as district sales manager to handle the company's sales in the southeastern states. Mr. Cunningham will make his headquarters in Atlanta, Ga., with offices at 310 Bona Allan

Building. Mr. Cunningham succeeds P. H. Holliday who has been transferred to Tacoma.

## T. L. Smith Representative

THE T. L. Smith Company, Milwaukee, Wis., announces the appointment of James H. Smith, formerly southern representative of the Novo Engine Company, as field sales representative to agents, with headquarters in Milwaukee.

## Sound Insulation Service

A NEW professional service, one that provides for the planning and installation of equipment to prevent the transmission of sound, has been announced by the United States Gypsum Co., 205 W. Monroe St., Chicago. This service employs a system of treatment of walls, ceilings, floors, columns, piping vents and mechanical equipment. It is, according to the announcement of the company, fitted to the individual needs of each job. On the basis of the plans of the structure, recommendations are made as to the character and amount of sound insulation needed. Installations are handled entirely by the company, preferably under separate contract.

## Grabler and Republic Merge

THE Grabler Manufacturing Company, Cleveland, Ohio, manufacturers of Square "G" products, and the Republic Brass Company, Cleveland, have merged their interests. The distribution of Square "G" products and Republic brass goods will be handled by a subsidiary of the Grabler and Republic companies under the name Grabler-Republic, Inc., and under the personal supervision of E. H. Blywise, who is well known throughout the plumbing industry.



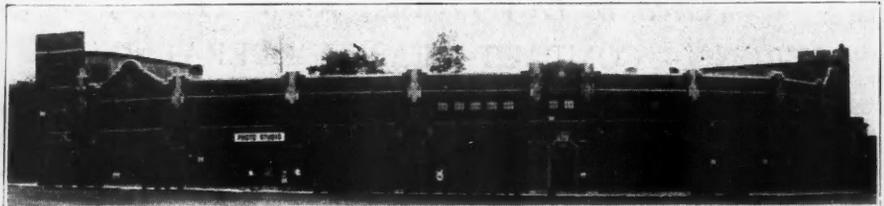
Italian Travertine

## This New Wall Covering Applied to Plaster or Wall Board Makes a Permanent Wall

*Inexpensive—Easily Applied—Washable—Decorative  
Built Up in Linseed Oil—No Surface Cracks*

Travrtile fabric—imitation Italian Travertine Marble—made in any color, satisfying every taste. Applied like wall paper.  
Non-repeating pattern of blocks removes the usual mechanical effect. Duplication of line on both sides of sheet saves labor and worry in application.

Travrtile on all walls assures permanency and beauty. Desirable for hotels, apartment houses, banks, public halls, stores, offices, etc.  
Contractors and Builders, investigate Travrtile.  
Send at once for samples and free literature. Also name of your wall paper supplier.



Nelson M. Ayres, Owner, West Englewood, N. J., 18 Stores with offices and corridors. Travrtile was used on all side walls, and Lincrusta-Walton pattern No. 290 for ceilings.

Mr. Ayres states, after the building has been occupied 10 months:

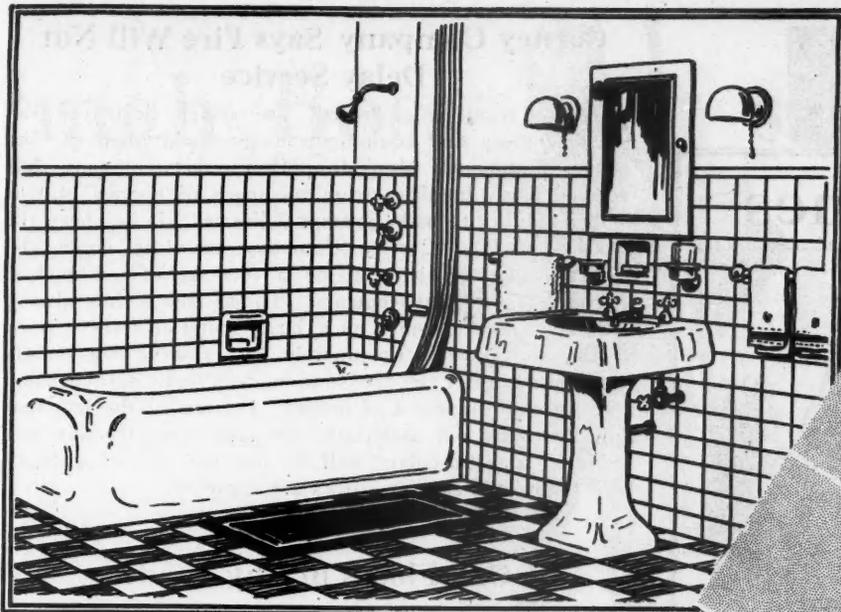
"It is the most decorative, most economical and satisfactory decoration I have ever seen. The tenants are well pleased and have had many favorable comments. Have specified Lincrusta-Walton on several business blocks and a 300-family apartment house about to be started."

Lincrusta-Walton was used in this building applied over sheet rock, in preference to metal ceilings—Travrtile applied on the side-walls over plaster—Produced a perfect insulation against heat and cold and also deadened sound. Lincrusta-Walton wall coverings are made in a great variety of patterns appropriate for private homes and public places.



Ceiling Pattern No. 290

**LINCRUSTA-WALTON COMPANY** Hackensack, New Jersey  
Division Tait Paper and Color Industries, Inc.



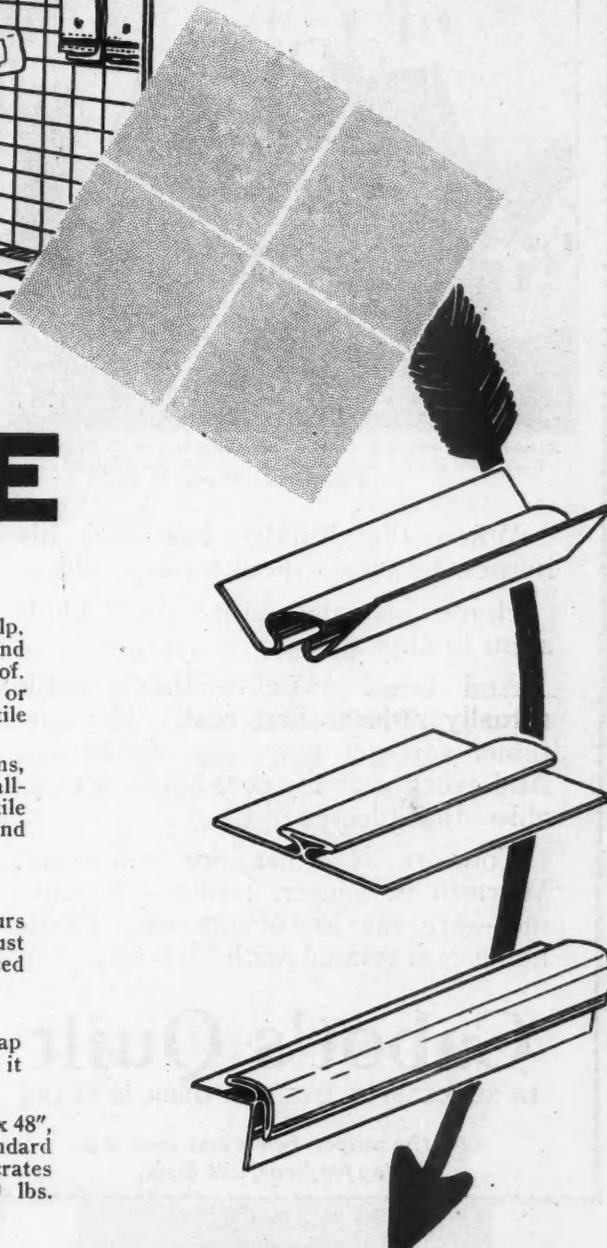
**BOARDTILE—**  
*A Building Material Par Excellence*

For interior furnishings of superior quality at low cost.

A tile substitute having no equal.

That is 100% efficient and 75% to 125% more economical to install than similar products.

It is light in weight, solid like stone, wears like iron, looks the best, wears the longest, and keeps its color permanently.



*The Advantages of*  
**BOARDTILE**  
*Cost You Less*

**B**OARDTILE is a non-porous, highly finished woodpulp, water-proof board, made under a patented process, and finished with a secret formula. Absolutely moisture-proof. Does not shrink, chip or craze when installed. Can be nailed or glued in place, just the same as any piece of lumber; Boardtile can be installed by any carpenter.

Boardtile makes an inexpensive wall finish for bathrooms, dining rooms, kitchens, etc. It is also used for vestibules, hallways, churches, chapels, barber shops, restaurants, etc. Boardtile has all the qualities of substantiability, attractiveness, richness and beauty of the more costly materials.

**TEST BOARDTILE**

Order a sample—put it in water—leave it there 48 to 60 hours or longer. Take it out and see if you do not find it to be just as dry underneath the surface as if it had never been placed in water.

**HAMMER BOARDTILE**

It does not chip off the surface. Wash it with alkali, soap or other compounds. The more you wash it, the brighter it becomes.

Boardtile is made in standard sizes, 12" x 48", 24" x 48", 36" x 48", 48" x 48", 48" x 60", 48" x 72", 48" x 96" and in the following standard colors: white, gray, blue, green and cream. Packed in regular crates of 20 sheets 4' x 8' comprising 640 sq. ft.; weighs crated, 420 lbs. Get a sample.

**Dealer Territory Open**

Exclusive sales rights to wholesale lumber merchants, and building material supply houses. Write for details of our Boardtile proposition today.

*Manufactured only by*

**Gibbs Boardtile Corporation**

344-50 North Ogden Avenue  
Chicago, Ill.

Gibbs Boardtile Corporation,  
344-50 North Ogden Avenue,  
Chicago, Illinois.

Gentlemen:—Send me sample and information on Boardtile. I am interested in your Dealer proposition. Give me details.

Name .....

Address .....

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



## Happy Homes



Residence at Tarrytown, N. Y. Insulated with Cabot's Double-ply Waterproof Quilt. King-Walsh & Co., New York City, N. Y. Architects and Builders.

When the Builder has sold his houses, he wants them to stay sold.

Homes insulated with Cabot's Quilt seem to stay sold.

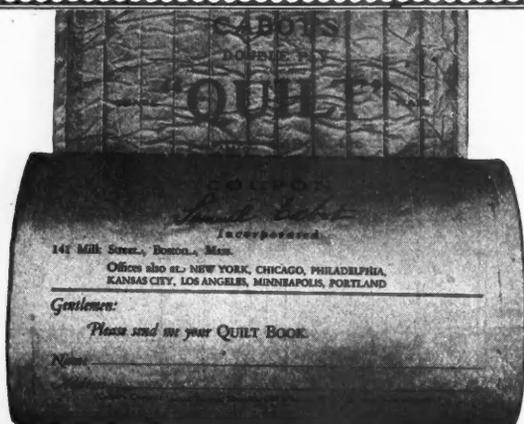
And how? Well—Cabot's Quilt **actually reduces first cost.** The customer can get more for his money. And every year his coal bill is reasonable—that pleases him!

Comfort is what we all want. Warmth in winter, coolness in summer—are the lot of the man whose home is insulated with

## Cabot's Quilt

IN SUCCESSFUL USE FOR OVER 30 YEARS

Clip the coupon below and send it in today for free Quilt Book.



## Carney Company Says Fire Will Not Delay Service

AS the result of a recent fire which destroyed the machinery and equipment of the main plant of The Carney Company, Mankato, Minn., this company has received many inquiries from the users of Carney cement as to its ability to make prompt deliveries. It has been the practice of The Carney Company to close down the Mankato plant each year for a few weeks for general overhauling and replacements. To do this it has always been necessary to build up a large material reserve prior to the shut-down. Fortunately this reserve was safely warehoused before the fire, so there need be no apprehension as to prompt shipment of orders. In view of the fact that the kilns were not materially damaged reconstruction will be rapid and the plant will be running at full capacity long before the reserve stocks are depleted.



## Oak Floors in Any Shade

A RECENT announcement by the Oak Flooring Bureau, 1234 Builders' Building, Chicago, calls attention to the fact that it is now possible, as the result of years of experiment, to have oak floors finished in any shade at no additional cost. Local paint dealers are in a position to advise the builder as to the method of obtaining colors desired and the winter months offer an excellent opportunity to have oak floors laid over old worn floors at a reduced cost because it is the slack season for carpenters and painters. When this work is done in one room at a time it causes very little inconvenience as the quarter round at the base board is all that needs to be removed. Due to quick drying varnishes now on the market the new oak floor may be ready for use a half hour after the finish coat has been applied.



## Tile and Mantel Men to Meet

THE Tile and Mantel Contractors' Association, 103 W. Eighth Street, Wilmington, Del., will hold its annual convention at the Vinoy Park Hotel, St. Petersburg, Fla., February 6 to 9, 1928. During the convention a large open meeting will be held on the St. Petersburg Million Dollar Pier.



## Maintain Paint Service

A PAINTING and finishing consultation and advisory service which is being used by architects and builders from many states, has been established by the paint, varnish and lead division of E. I. du Pont de Nemours & Co., of Wilmington, Del., at the exhibit maintained in the rooms of the Architects Service Corporation at 101 Park Avenue, New York City.

Besides the great number of panels finished in paint there are many others showing samples of finishing in Duco, varnish and practically every other finishing material. In each case, complete specifications are given and it is only necessary to take notes of these specifications in order to know exactly how to obtain any of the finishing effects shown.



## Parker-Kalon Moves Office

THE Parker-Kalon Corporation, formerly located at 352 West 13th St., New York City, has recently moved to 200 Varick St., New York City. This company's new telephone numbers are Walker 6080, 6081 and 6082.

“mah Boss

saved money  
on this  
job!”



WHEN the Fruin-Colnon Company put up the second section of the Cahokia Power Plant, St. Louis, they hired one negro mortar mixer. With a helper, he mixed, by hand, all the mortar for the job—and kept 42 masons going without a let-up.

The mortar box is not the only place where Carney Cement saves money. It's so plastic that it takes  $\frac{1}{3}$  more sand than others, and makes a mortar so smooth and easy to handle that even a poor mason can show a good day's work with it.

There's no waste motion in mixing Carney mortar—no cement soaking and no lime to be added.

If you've never used Carney Cement, give your cost sheets a treat—try it once.

**THE CARNEY COMPANY**

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

*Cement Makers*

*Since 1883*



*Specifications:*

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

**CARNEY CEMENT**  
*for Brick and Tile Mortar*

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

**Many Slogans Received**

AT the last report, close to 400,000 slogans had been received by the National Lumber Manufacturers Association in response to its nationwide contest for a slogan for the lumber industry and entries were still pouring in. Approximately 200,000 individuals had entered the contest which carries cash prizes amounting to \$15,000. It is estimated that a million or more persons for the first time read, in "The Story of Wood," and the contest advertisements, a favorable and comprehensive presentation of the story of the lumber industry.

**Quantity Surveyors Set Date**

THE third annual convention of the American Institute of Quantity Surveyors, whose headquarters are at 510 N. Dearborn St., Chicago, will be held on June 25, 26 and 27, 1928, at New York City.

**Slate Conference Date Set**

THE Sixth Annual Slate Industry Conferences of the National Slate Association are scheduled for January 17 and 18, 1928, at the Hotel Commodore, New York City. An inspection trip of outstanding uses of slate in the metropolitan area, planned by the Slate Roofing Contractors' group, will be a feature of the convention.

**Reinforcing Steel Meeting**

AT their last quarterly meeting, the directors of the Concrete Reinforcing Steel Institute, whose headquarters are at Chicago, selected Biloxi, Miss., as the place for holding the fourth annual meeting of the Institute. The

meeting will be held from March 19 to 21, 1928, inclusive, at the Edgewater Gulf Hotel, located on the Gulf Coast two hours' ride from New Orleans.

**Lighting Association to Meet**

THE annual meeting of the Artistic Lighting Equipment Association, which maintains headquarters at 711 Graybar Bldg., New York City, will be held January 25 to 28, 1928, inclusive, at the Winton Hotel, Cleveland, Ohio.

**Kalamazoo Stages Home Show**

IT has been announced that the Kalamazoo Real Estate Board, Kalamazoo, Mich., will hold its Fourth Annual Complete Home Show February 13 to 18, 1928, inclusive. This annual show has an average attendance of about 15,000 for the week.

**Century Electric Official Dies**

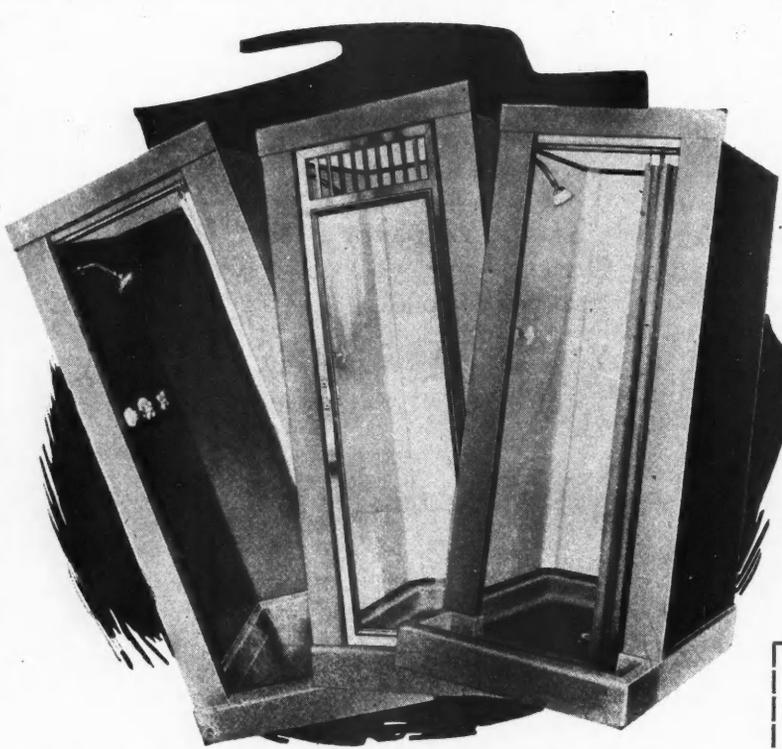
SENER M. Jones, first vice-president, manager of purchases and member of the executive committee of the Century Electric Company, of 1806 Pine St., St. Louis, Mo., died very suddenly on December 11, at the age of 47. He had been with the company since he first entered the organization in 1906.

**Lumber and Supply Men to Meet**

THE Virginia Retail Lumber & Building Supply Merchants Association will hold its annual convention at the Hotel Patrick Henry, at Roanoke, Va., January 13 and 14, 1928, according to an announcement received from Secretary M. H. Mitchell, of Roanoke.

FIAT

Shower Bath Compartments Are Truly the Modern Bath



The above illustration shows three Fiat Models—Left: The "Ensign", with regular receptor and shower curtain; Center, the "Admiral", with regular receptor and "Nautilus" Glass Door; Right, the "Admiral", with extended receptor and shower curtain. Each model is made in seven standard sizes. Thousands in use. Sold by leading plumbing supply jobbers. Installed complete by plumbing contractors.

**FIAT METAL MFG. CO., 1201 Roscoe St., Chicago, Ill.**

**FIAT METAL MANUFACTURING CO.**  
1201 Roscoe St., Chicago, Illinois

Please send me full information regarding Fiat Shower Bath Compartments.

Name.....

Street.....

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

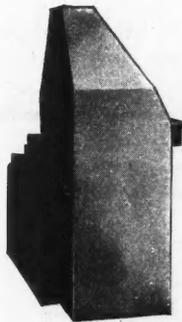
Please check—I am a Contractor , Plumber ,  
Architect , Dealer , Realtor , Home Owner



Striking advertisements, full column or full page in size, appear regularly in these magazines reaching nearly 1,300,000 prospective home builders. Thousands of inquiries received show that people want homes that are equipped with Heatilator Fireplaces.

# A successful fireplace . . .

## GUARANTEED!



Showing how brick is built around the Heatilator Unit, saving both time and cost of construction, and insuring success of the fireplace.

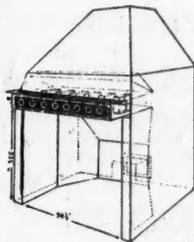
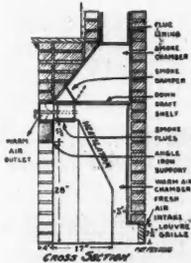


Diagram showing Unit ready to install. Made of 3/16" boiler-plate, with bronze grille. Complete up to chimney flue.



ONE of the first things home owners ask is whether there is a fireplace. Now they are learning to ask whether it is a Heatilator Fireplace. With Heatilators installed, question of satisfaction is removed. The Heatilator absolutely assures successful operation. That is why we back it with our extraordinary guarantee:

We guarantee complete satisfaction, good draft, no smoke, double heat from same fuel,—or money back with up to \$20 extra to cover bona fide cost of removal and return.

The Heatilator is a complete unit up to the chimney flue—a heavy boiler-plate form around which the brick are laid. Guesswork is eliminated. No experienced and honest mason can go wrong building around a Heatilator Unit.

In the Heatilator fresh air from outdoors comes through an intake into a double-wall chamber and is heated and sent into the room through a beautiful bronze grille register. Heat ordinarily wasted in the brick or chimney is thus utilized. Finest ventilation is provided, and the objectionable drafts created by ordinary fireplaces are overcome. Heatilators are so successful that they greatly improve the owner value and sales value of houses where installed.

Heatilators save a large part of their cost in labor and materials, and the rest in fuel. Any mason can install in a new or old fireplace in a few hours. Heatilators are sold through dealers or direct, at the same price—\$78 delivered (U.S.A.). If your dealer hasn't a Heatilator, simply mail coupon and we will ship prepaid. Further particulars on request.

HEATILATOR COMPANY,  
601 Glen Ave., Colvin Station, Syracuse, N. Y.

- Please send me full particulars without charge.
- Enclosed find \$78 for which send Heatilator subject to your guarantee of complete satisfaction with extra payment in case of return.

Name .....

Address .....

References: Dun, Bradstreet, any bank (highest credit rating).

HEATILATOR COMPANY  
SYRACUSE, NEW YORK

# Heatilator Fireplace Unit

**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 Major Equipment Company, 4603-19 Fullerton Ave., Chicago, offers its bulletin No. 10 cataloging its line of borderlights, footlights, covelights and striplights.

The Georgia Marble Company, Tate, Ga., has issued four new detail sheets for its file folder of examples of the architectural use of Georgia marble.

The American Chime Clock Company, 1643 Ruffner St., Philadelphia, Pa., has published its new Fiftieth Anniversary Catalog of plans for hall clocks, and smaller models and as a special offer is distributing with it a group of blue prints.

The Atlas Lumite Cement Co., 25 Broadway, New York City, is putting out a pamphlet telling how "Full Strength Concrete Is Secured 'Overnight' without Expensive Protective Methods with Lumite Cement."

The Frigidaire Corporation, Dayton, Ohio, offers the following booklets on its products: Frigidaire Water Coolers; Frigidaire—the Electric Refrigerator for Modern Homes; Facts Plus Evidence—Based on What Frigidaire Users Say; Frigidaire Electric Refrigeration for Household and Commercial Uses; Frigidaire Electric Refrigerating Systems—Information for Architects and Builders; and Model Kitchens as Submitted in the Frigidaire Competition.

The Indiana Limestone Company, Bedford, Ind., has brought out a booklet illustrating the application of limestone in fine residences as shown in the W. K. Vanderbilt home.

"Wings of Business" is the title of a booklet published by

the Lamson Company, Syracuse, N. Y., on the subject of mechanical communication by means of Lamson pneumatic tubes.

Pass & Seymour, Inc., Solvay Station, Syracuse, N. Y., offers a new catalog 28 covering its line of porcelain and electrical supplies for 1927-8.

The Phidias Studio, Bedford, Ind., offers a pamphlet on the stone fireplaces and garden furniture which it manufactures.

The New Jersey Zinc Company, 160 Front St., New York City, offers a pamphlet on its standing seam, Horse Head zinc roofing.

The Midwest Steel & Supply Company, Bradford, Pa., has brought out a pamphlet on the economy of time, money and trouble effected by its 1-4 concrete inserts.

The Concrete Reinforcing Steel Institute, Tribune Tower, Chicago, has published, in booklet form, the proceedings of its semi-annual meeting held at Detroit, Mich., Sept. 19-21, 1927.

The Empire Floor & Wall Tile Co., Inc., 507-11 W. 33rd St., New York City, offers a series of pamphlets, in colors and with drawings, illustrating the application of its tile.

Mesker Bros. Iron Co., 421 S. Sixth St., St. Louis, Mo., offers the following booklets and pamphlets: Steel Windows; Mesker Stairways; Mesker Curciform; Mesker Dalite Coal Window; Another Reason for Choosing Mesker Basement Windows; In Keeping with the Auto Age.

The Sarco Company, Inc., 183 Madison Ave., New York City, offers a catalog of its Sarco products, including industrial steam traps; temperature control; strainers; and heating systems, vapor, vacuum and low pressure.

The Georgia Marble Company, Tate, Ga., has published a handsomely illustrated booklet under the title "Examples of Bank Work in Georgia Marble."

**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.

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CHICAGO  
CINCINNATI  
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MILWAUKEE  
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JERSEY CITY

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CLEVELAND  
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Triangle Wire Mesh Reinforcing



Round and Square Deformed Bars

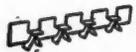


High Chair



Lower Slab Bar Spacer

Bar Chair



Lower Beam Bar Spacer



Joist Beam Spacer

Welded Solid Steel Sash



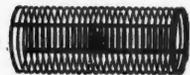
Portable Electric Hand Saw

Continuous Stirrups



Step Reinforcement

Spirals



Expanded Metal Reinforcement

Expanded Metal Lath



**RYERSON REINFORCING-SERVICE**

# An Advanced Idea

*.. and a Profitable idea for builders*

**H**ERE is a new kitchen unit which adds value out of all proportion to its cost, to homes and apartments. The famous Napanee Dinet [patented]. Domestic science tests have proved that this outstanding achievement in kitchen cabinet design lightens kitchen tasks immeasurably. Women everywhere have acclaimed it for the new note it strikes in kitchen organization.

The Dinet is a vanishing breakfast table. It performs. It slides in and out—cutlery drawers moving with it. It is out of sight, yet in a moment it adds tremendous extra table space so necessary in the preparation of a meal. It is priceless for its extra room at a time of preparation for big parties and dinners—providing, for instance, space for salads and desserts till time for serving.

In the larger model it seats four people comfortably. In other models it will seat three people. Condiments, dishes, silver, etc., are right at hand. When not in use, the Dinet is pushed back in place and does not take up a single inch of storage space, nor does it disarrange the other Napanee conveniences in any way. No other cabinet can give all the service of Napanee equipped with a Dinet.

The Napanee Dinet is only one unit in the extensive Napanee line which embraces sizes and styles of kitchen cabinets, butler cabinets, broom closets, dish cupboards, refrigerators, wall cup-



No other kitchen equipment has this feature

boards, bases and the like to fit any space and any arrangement of doors and windows.

Our Architectural Service Department will gladly work with you to help you attain the utmost of kitchen efficiency through the proper combination of Napanee units. Send the coupon for full information on this FREE service.

**COPPEBROS. & ZOOK, Nappanee, Indiana**  
 New York Office 415 Lexington Ave    Detroit Office General Motors Bldg  
 Chicago Office: 308 N Michigan Ave., Keehn Bldg.  
 Agents in All Principal Cities

## NAPANEE DUTCH KITCHENET

*Built Like Fine Furniture*

OUR GOLDEN ANNIVERSARY YEAR

COPPEBROS. & ZOOK, Nappanee, Indiana    ABI

Gentlemen: Please send me further information regarding styles, sizes and arrangements of Napanee Kitchen Equipment I am  Architect  Builder  Owner. (Please check square)

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

### 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 Banks Steel Post Co., 128 Wakeman Ave., Newark, N. J., has issued a small folder illustrating its clothes poles, flag poles, weather vanes and similar products.

The Murphy Door Bed Co., 22 W. Monroe St., Chicago, has published an attractive booklet, 35N9, illustrating the various types of Murphy In-a-dor beds with installation plans and specifications.

"Steel Roofing, Its Use and Application" is a new booklet, published by the Sheet Steel Trade Extension Committee, Oliver Bldg., Pittsburgh, Pa., which is designed to sell the idea of sheet steel roofing principally to the rural dweller.

The Kohler Company, Kohler, Wis., has issued a new pamphlet on its "Plumbing Fixtures in Color," illustrating the six colors which it now offers in its vitreous enamel fixtures.

The Charles M. Higgins Company, 271 Ninth St., Brooklyn, N. Y., has published under the title "Techniques" a very handsome booklet illustrating the use of its drawing inks with special reference to the eleven colored inks which it now offers the artist and draughtsman.

The Lincrusta-Walton Company, Hackensack, N. J., has published a handsome book, bound in hard covers and illustrating, in black and white and in colors, the textured wall coverings which it manufactures and containing, in a back cover pocket, a number of samples of this material.

"American Forests and Forest Products" is the title of Statistical Bulletin No. 21, of the U. S. Department of

Agriculture, prepared by the Forest Service and distributed by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., at the price of 45 cents a copy.

The Sanitary Company of America, Linfield, Pa., offers a complete catalog of cast iron specialties for jobbers and dealers of plumbing supplies indicated as Sections J-K-L.

Todhunter, Inc., 119 E. 57th St., New York City, has sent out a small folder illustrating some of the hand wrought hardware which this company manufactures.

The Employing Plasterers' Association of Chicago, 35 S. Dearborn St., has published a pamphlet containing the "Standard Rules of the Measurement of Plastering" adopted by this association.

"The Book of Lawn Furniture" is a new booklet published by The Long-Bell Lumber Company, Kansas City, Mo., illustrating a wide variety of wooden furniture, pergolas and wood ornaments for the lawn.

The Jewel Electric & Mfg. Co., 4505 Ravenswood Ave., Chicago, offers a catalog of portable electric fountains for the home.

The Ohio Hydrate and Supply Co., Woodville, Ohio, has just published a new booklet on "Finishing Lime" which is a well illustrated presentation of its product and contains complete plaster specifications:

The Rossman Corporation, 160 E. 56th St., New York City, offers a pamphlet illustrating in colors the five attractive pastel tints which it now offers in colored tile.

The Bates Valve Bag Corporation, 35 E. Wacker Drive, Chicago, has issued a folder illustrating the construction and merits of its five-ply, paper bag for cement and plaster.

Harvey Hubbell, Inc., Bridgeport, Conn., has issued six new catalog pages covering electric switches, switch plates, plugs, outlets and sockets.

Painting the modern, improved DeVilbiss way

## Insures BIGGER PROFITS for You

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

Use of the DeVilbiss Spray-painting System enables you (1) to do more work, without increasing labor costs; (2) to give your customers an improved and cleaner class of work, on a greatly speeded-up schedule; (3) to make the work easier for your men, while increasing the production of each; (4) to become recognized as the progressive, outstanding painting contractor in your community.

There is further assurance of bigger profits in using the DeVilbiss Spray-painting System. DeVilbiss equipment is correct and complete in every detail; is built of highest quality materials by skilled workmen; is simple and dependable in every operation; is warranted to give long and satisfactory service. Then there is available to you at all times the unequalled DeVilbiss engineering and service facilities, developed out of over 35 years' manufacturing experience.

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

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Indianapolis—San Francisco—Pittsburgh—Cleveland  
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Windsor, Ontario



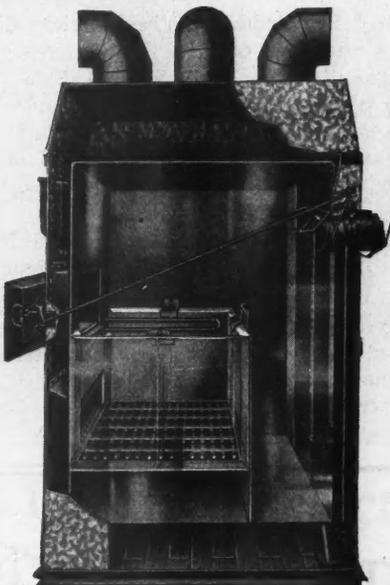
**DeVilbiss**  
**Spray-painting System**

# BUY FROM THE MAKER AND SAVE MONEY.

You can get a **HESS WELDED STEEL FURNACE** direct from the factory—with complete plans for installing, and have the fine satisfaction and economy we have given thousands of customers in every state in the Union.

*Nels Larsen, Richville, Minn.;* "The furnace we bought from you 14 years ago has always been satisfactory. We have never bought any repairs for it. It is a fuel saver."

*J. C. Curtis, Canton, N. C.;* "In my opinion there is no furnace but the Hess. Have used one for the past seven years. For economy and upkeep in fuel consumption I highly recommend the Hess."



*H. E. Lovejoy, Rocky Ford, Colo.;* We have a good standby in our old furnace put in 1909. Our boy visited us during the Winter and he has a fine modern home and a modern furnace and he remarked "Dad, I don't see how your furnace heats up this big house in half an hour after you strike a match to it. We get no such results from the one in our home."

*C. S. Risley, Mt. Dora, Florida, says;* Very satisfactory and economical, taking about one-third the wood my fireplace does.

*Mrs. Will H. Irwin, Galion, Ohio.;* "We are delighted with our Hess Pipeless Furnace. It has not cost us a single penny expense since we installed it in 1912."

*L. Dunlap, Pendleton, Ore.;* "Our furnace was installed about 1914 and I never paid 10 cents in repairs. We have had, I think, 21 furnaces from you and never a word of complaint from any. My son now has an order in for two for his own use, expecting them this coming week."

*Mrs. H. E. Chase, Milo, Maine.;* "The furnace has been perfectly satisfactory. No repairs. In constant use for 15 years. It is good shape for another ten years, as far as can be seen."

*Ezra White, Roseville, New Mexico.;* "No trouble, no expense for upkeep. Do not see that a better furnace could be made. Have used mine for 13 years."

Ask for our 48 page booklet which tells you how to get the same heating satisfaction these customers have had.

Send us a sketch of your house and let us tell you how to arrange the work, and what it will cost. No charge—no obligation.

**HESS WARMING & VENTILATING COMPANY**

1205 South Western Avenue, Chicago, Illinois

BRANCHES AT: DETROIT CINCINNATI MILWAUKEE ST. PAUL

**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.

"Heating and Ventilation," by Charles W. Brabbee, published by the McGraw-Hill Book Co., Inc., 370 Seventh Avenue, New York City, is "A Handbook for Architects and Engineers," translated and adapted to American practice from the seventh German edition of Rietschel-Brabbee's Heizungs und Luftungstechnik. Price, \$4.50.

"Reinforced Concrete" is the title of a new booklet published by the Concrete Reinforcing Steel Institute, Tribune Tower, Chicago. It is a handbook containing information of value to the architect and engineer and outlines methods in accord with the principles by the American Concrete Institute and the Committee on Engineering of the Concrete Reinforcing Steel Institute. Price \$1.00.

The Heyman Manufacturing Co., 16 Valley St., South Orange, N. J., offers a folder illustrating its new type of Easydraft heat regulator with clock combination.

The Husky Wrench Company, Milwaukee, Wis., has prepared and is distributing a copyrighted, simplified socket wrench table showing the application of socket wrenches for all bolts and nuts of the U. S., S. A. E. and new American Standards.

"Specifications for a Hospital," with notes and comments by Wilfred W. Beach, published by the Pencil Points Press, Inc., is a large handsomely gotten up book containing the specifications of the Chester County Hospital and Nurses' Home, at West Chester, Pa., York and Sawyer, architects, as an experiment in presenting a model for better specification writing. It is the first of a series of books

now being prepared, presenting actual specifications for various types of buildings produced in leading architectural offices.

The General Insulating & Mfg. Co., Alexandria, Ind., offers an interesting booklet on its Gimco Rock Wool Flexfelt, containing complete information on this all mineral insulating material.

"Beauty in Brick" is a handsome and practical booklet prepared by the Finzer Brothers Clay Company, Sugar-creek, Ohio, illustrating a large number of brick homes and garages showing the possibilities of brick both in new construction and for overcoating.

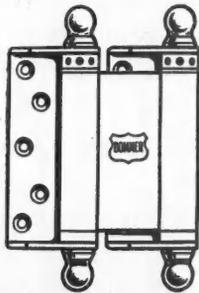
"Architectural Design in Concrete" by T. P. Bennett, Fellow of the Royal Institute of British Architects, published by the Oxford University Press, American Branch, New York City, is a large and handsome volume containing a treatise on this subject and about 100 beautiful plates illustrating concrete architecture at its best in various parts of the world. Price \$10.00.

The American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa., has published its triennial book of A. S. T. M. Standards, containing 340 standards adopted by the Society and issued in two volumes, Part 1 covering metals and Part 2 non-metals. These volumes may be obtained for \$7.50 each, bound in cloth; \$9.00 each, bound in half-leather, or \$17.00 for both volumes, bound in half-leather.

"Patents and How to Obtain Them" is the title of a small booklet issued by Watson E. Colman, registered patent lawyer, 724 Ninth St. N. W., Washington, D. C., for the aid of inventors.

The Progressive Mfg. Co., Torrington, Conn., offers a catalog of machine screws and specialties including its Forstner auger bits.

They  
are  
the best



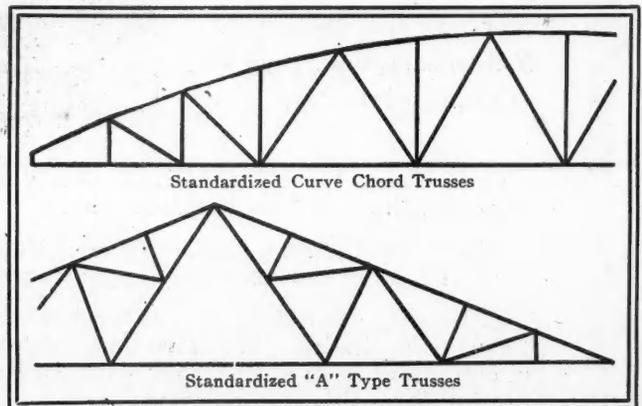
They  
are  
the best

**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

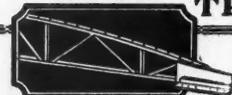


**Standardized Steel  
Roof Trusses**

Massillon Steel Roof Trusses are built from regular structural shapes in standard stock sizes for all roof truss spans. No metal is less than 1/4 inch thick. All shop connections are arc welded. The longer trusses are shipped in sections with turned bolts for assembly in the field. Massillon Bar Joist Purlins and Nailer Joist Purlins provide the most economical purlin construction. Send for designing data and safe loading tables.

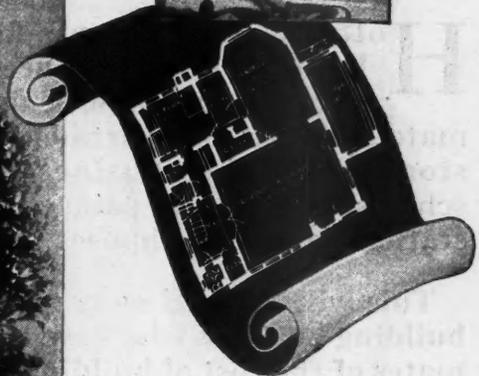
**The Macomber Steel Co.!**  
909 Belden Ave. . . . CANTON, OHIO

**MAS SILLON**  
ROOF TRUSSES





Write for "Homes of Lasting Charm", an interesting book of 120 practical small homes, actually built and lived in by satisfied owners. It includes floor plans and suggestions for beautifying garden and grounds.



**AT YOUR SERVICE**

These District Association Offices and Brick Manufacturers Everywhere

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- Chicago . . . . . 605 Builders Bldg.
- Cleveland-Ohio Association . . . . . 2124 Guarantee Title Building
- Denver . . . . . 1735 Stout St.
- Detroit . . . . . 400 U. S. Mortgage Trust Bldg.
- Hartford . . . . . 226 Pearl St.
- New York City . . . . . 1716 Grand Cent. Term'l
- Norfolk . . . . . 112 West Plume St.
- Philadelphia . . . . . 121 N. Broad St.
- Pittsburgh . . . . . 702 First National Bank Bldg.
- Raleigh, N. C. . . . . 508 Com. Bank Bldg.
- Salt Lake City . . . . . 301 Atlas Bldg.
- Seattle, Wash. . . . . 913 Arctic Bldg.

The Common Brick Manufacturers Association of America, 2131 Guarantee Title Bldg., Cleveland, Ohio

The Ideal Homes Council selected  
**COMMON BRICK**  
for their first ideal home in Chicago

A practical course of instruction in ideal home building is afforded the public of Chicago in this common brick house, erected in Lombard by the Ideal Homes Council, an organization of business men interested in better home construction. Only the best materials are used, with latest type of construction throughout. Chicago common brick, laid in solid walls, slightly skintled, distinguishes the interestingly designed exterior. As an evidence of what the Council is doing to elevate the tone of modern home building, this project is outstanding. One of the educational features is a radio program describing the building, broadcast over WCFL, during the months of October and November.

**A brick-built home is easy to sell**

- because common brick gives real brick construction at lowest cost. The house can be attractively, yet profitably priced.
- because the popularity of common brick is nation-wide.
- because brick construction has more talking points than any other kind —permanence, comfort, low maintenance, fire protection, high resale value.

Have you registered with the Common Brick Association as a builder who knows how economically and properly to construct a brick built house? If so, inquiries resulting from advertisements will be turned over to you for follow up.

**BRICK** forever  
PREFERRED BY ARCHITECTS

**Brick Books  
for your use**

- Homes of Lasting Charm 25c
  - Skintled Brickwork . . . 15c
  - Multiple Dwellings of Brick . . . . . 10c
  - Farm Homes of Brick . . . 5c
  - Brick, How to Build and Estimate . . . . . 25c
  - The Heart of the Home (Fireplaces) . . . . . 25c
- Check above books wanted, or send \$1.00 for all of these books

# HoltBid for Estimating Cost of Business Buildings

*Scope of this Modern Method of Estimating Building Costs enlarged to include Stores and other Business Buildings, Churches, Schools, etc.*

By JOSEPH D. EDDY

**H**oltBid Method of Estimating Building Costs has been enlarged so that it can now be used to estimate the cost of apartment buildings, stores and other business buildings, schools, churches, garage and service stations, as well as houses.

This will be good news to those in the building business who have to make estimates of the cost of buildings other than homes. The HoltBid Method of Estimating Building Costs has been used for a number of years by lumber dealers, contractors and others in the building business. All are enthusiastic over this method for the reason that it saves time and is accurate. The cost of most buildings can be secured in from 30 to 50 minutes by those who are familiar with and are using the HoltBid Method.

The addition of another volume to the HoltBid, making 18 volumes in all, gives to HoltBidders the added advantage of being able to get estimates on homes and also on many other types of buildings, such as apartment buildings, stores, garages, schools and churches.

When William A. Radford took over the HoltBid Method of Estimating Building Costs two years ago, he announced to the building industry that this new method would revolutionize estimating. Since that time thousands of members of the building industry have become HoltBidders and are using this method in their daily work. They found that HoltBid is easy to learn and simple to use. It is accurate, as there is no guesswork about costs when this method is used. It saves

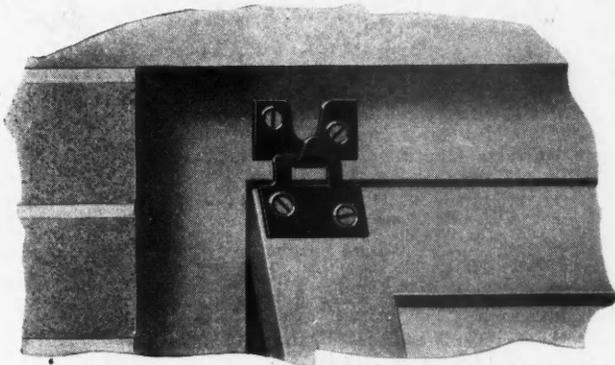
time, as there is no material list to draw off, and it prevents "shopping" because no material list has to be made.

Lumber dealers, contractors and others in the building business have found this method a most profitable one in estimating the costs of homes. Now, with this additional volume devoted to the finding of costs of other types of buildings, the HoltBid Method enables those who use it to quickly figure the costs of business and public buildings. By becoming a HoltBidder, any ambitious member of the building industry can enlarge his scope of work.

The addition of this volume on estimating the cost of business buildings, schools, churches, etc., makes HoltBid the outstanding method in use today. There is no other that can compare with it, for the reason that HoltBid eliminates guesswork. The estimate is based on the building that is to be erected, and not on average costs of similar buildings. This is the only method by which actual costs can be arrived at in so short a time.

The HoltBid Method of Estimating Building Costs is fully explained in a large four-page announcement on pages 153, 154, 155 and 156 of this issue of American Builder Magazine. Read this announcement carefully. See how easy it is to get HoltBid. The very small payment of \$1 brings HoltBid to you for examination. Turn now to page 156 and send the coupon with only \$1. If there is anything about HoltBid you do not understand, write to the HoltBid Service Co., 1827 Prairie Ave., Chicago, Ill.

# Be Sure that the Screens You Install Give Satisfaction



A home owner never is satisfied with his screen sash and doors, no matter how well they are made, unless the hardware on them makes changing and operation simple and easy.

In designing Frantz Screen Hardware for sash and doors every possible time and labor-saving convenience for the carpenter as well as the home owner was incorporated.

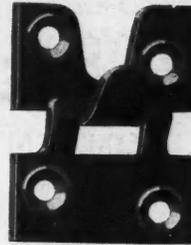
By using heavier gauge and higher quality steel in the manufacturing of screen hardware, additional years of satisfactory service are added to these Frantz products.

*Write Dept. A-2 for your copy of the wall hanger illustrating the entire line of Frantz Guaranteed Builders' Hardware. When it arrives, hang it in a conveniently-seen location to assist you in selecting and estimating your needs.*

**FRANTZ MANUFACTURING CO.**  
Sterling, Illinois



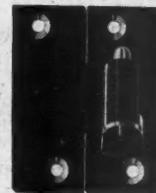
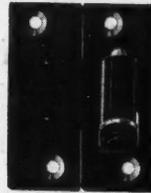
## FRANTZ Screen Hardware



**SCREEN HANGER No. 475**  
Easily detachable. Heavy gauge steel. Screws furnished.



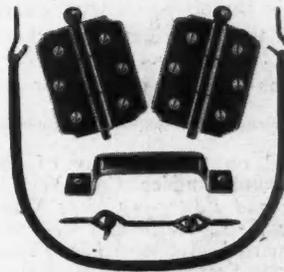
**SCREEN HANGER No. 375**  
Makes changing screens easy. Heavy gauge steel. Screws furnished.



**SCREEN SET No. 450**  
Hinges easily detachable for interchanging with storm windows. Handle automatically locks sash shut. An ideal arrangement. Screws furnished.



**SCREEN DOOR SET No. 80**  
Strong spring hinges eliminate necessity of door spring. Detachable for interchanging with storm door. Screws furnished.



**SCREEN DOOR SET No. 150**  
An attractive set. Hinges have ball tip loose pins. Detachable by removing pins. Screws furnished.

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER