AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 42. No. 4.

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

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Formerly AMERICAN CARPENTER AND BUILDER

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

Building Increases as Winter Season Starts

FOR the first time in the history of the construction industry the advent of winter witnessed an increase in the volume of construction operations. So great was the activity during November that a new record for November was set, according to statistics compiled by the Associated General Contractors of America.

By registering a marked increase over the October figure, the volume of activities in November approached the high mid-summer levels. The most recent developments place 1926 well ahead of 1925, when all previous records for the volume of construction under way were broken. The first 11 months of the current year registered a volume almost 2 per cent greater than that recorded during the corresponding period of 1925.

An index based upon the 1913 average as 100 shows the November volume to have reached the 210 level, an increase of 10 points over October. In other terms, November showed an increase of 5 per cent over the volume of work under way in the preceding month.

In 1925 a decline of seven points was recorded for November. This was in accordance with the long prevalent tendency of construction operations to slow down with the opening of winter.

The unusual condition this year is attributed to the irresistible demand for construction which has been felt throughout the year and to the effects of earnest efforts to wipe out ineconomies resulting from short building seasons.

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Fire Control Is Economy

"THE Federal Government is not beginning to meet its share of forest fire control under the present cooperative program," said J. G. Peters, chief federal inspector under the Clarke-McNary law, at a recent meeting of the state foresters in Washington, D. C. At present it is allotting a little more than $600,000 a year whereas the states and private owners are spending in excess of $4,000,000 a year. To meet the government's share, the present federal appropriation needs to be raised to nearly $1,100,000. Even when it is raised to that amount, however, the total job of fire control will be only about half done. We estimate the cost of reasonably protecting all the state and private forest lands in this country at about $10,200,000. Under the Clarke-McNary law the states and private owners would have to pay about $7,700,000 and the Federal Government about $2,500,00."

At about the same time this statement was made, a group of prominent lumbermen called upon the President, at Washington, to suggest that "the government should bring its contribution under the Clarke-McNary law, for co-operation in safeguarding forests up to its promised proportion." They advocated that the government should round out its financial responsibility by increases aggregating $845,000, divided into four items. Two of these items, totaling $255,000 of the increase requested, they stated, would save money instead of being an actual increase since, being for fire prevention, they would reduce the deficiency appropriations which are required each year to pay for fire fighting.

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A Step in the Right Direction

IT has been announced that, even before its actual publication, the report of the survey of economies of short lengths in building lumber, made by the Construction Sub-Committee of the National Committee on Wood Utilization, has been responsible for one notable step toward the application of more economical practice. The Ohio Association of Retail Lumber Dealers has already started to refigure, for its considerable series of house plans, all the lumber bills to include all the short, odd length material that the plans will take. This is the first step in the campaign of education leading to the actual buying and use of short lengths.

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Higher Wages—Lower Prices

THE annual report of the Department of Commerce, a part of which was made public in December, contained Christmas cheer for homebuilders. This report shows that, while potential homebuilders have been increasing their earnings, the cost of building materials has decreased. Since 1920 wages have increased 39 points and general prices have decreased 76 points. Since 1923 general prices have decreased four points and wages have increased 17 points. In the latter period frame house materials, at retail, have declined from an index of 198 in 1923 and 206 in 1924 to 195 in 1926. In the same period building materials as a whole, at wholesale, have declined from 188 in 1923 and 182 in 1924 to 174 in 1926.

The Secretary of Commerce says of the simultaneous increase in wages and still greater decrease in prices of commodities during the past six years: "Thanks to the elimination of waste and other contributing factors we can as a nation show one of the most astonishing transformations in economic history."

✣

Financing Record Broken

REALTY financing in the United States has set another high record for 1926, according to the estimates of the Building Economic Research Bureau of the American Bond & Mortgage Company. This estimate places the volume of real estate mortgage bond flotations during the year at a total of approximately $900,000,000. This is a substantial gain over 1925 which was also a record breaking year.

"Build a Home First"

New Jersey Lumber Dealers Have Launched an Intensive Building Program With this Slogan that Unifies Efforts of all Building Interests

AT last a group of lumbermen, building supply men and others in the building materials industries have joined forces to work together for their general good. At the greatest gathering of representatives of all the building materials industries ever held in New Jersey, a movement was begun for all to get together within their own industries and to put forth a united front to combat all the hectic campaigns being waged for the consumer's dollar in competition with the building material business.

The New Jersey group has determined to engage in a permanent campaign for its share of the consumer's dollar. In a resounding speech, Edward Hamilton, president of the New Jersey Lumber Dealers' Association, sounded the keynote of the concerted drive and aroused intense enthusiasm when he announced its nucleus would be a business-building slogan which all could use, "Build a Home First."

The meeting had been widely heralded as the first special meeting of the association and its friends ever held, and considerable speculation existed as to the purpose of the meeting, since only the directors of the association knew the program.

The slogan, distinctively designed in orange and black, in a panel the shape of the outline of the birthplace of John Howard Payne, author of "Home, Sweet Home," reproduced on a canvas 6 feet high, was revealed to the meeting for the first time at the conclusion of Mr. Hamilton's address, and was greeted with great applause.

Describing it as the best slogan ever created, Mr. Hamilton predicted that "Build a Home First" would surpass in value as a business builder even the very highly successful slogans, "Save the Surface and You Save All" and "Say It with Flowers," which have earned millions of dollars for their respective industries.

Here was a meeting which should mark the beginning of a new era in the building business. Here, attracted by the urgency of the announcement, leaders in all the lines had come, not alone from New Jersey, but from Westchester and Long Island, New York, Philadelphia and Buffalo, and several from even greater distances. Here were lumbermen, material men, wholesalers, manufacturers of specialties. All had only praise for the idea of uniting in a constructive program for the advancement of the industry as a whole.

No longer will there be a dozen different exhortations to the public to use this man's material or that man's product, but a united command from all, "Build a Home First!"

The public will be made to think more of home building and the advantages of home owning, and will be shown why it should build homes before spending so much money for automobiles, radios, expensive furniture, clothing and vacations, and the thousand and one other things that lure the public dollar from building channels.

The association had ready for its members at the meeting, as a gift from their own organization, complete packages of supplies bearing the "Build a Home First" design in colors, such as metal signs for trucks, decalcomania transfers for windows and automobiles, miniature stickers for letters, etc. The members were also provided with several cuts of the "Build a Home First" design for use in their newspaper and other advertising.

Mr. Hamilton explained how the "Build a Home First" material was to be used, and the members agreed to start displaying it all over the state, simultaneously, the day after the meeting. Their trucks, windows, personal cars, letters, advertising matter, all will broadcast the message to the public.

THE SLOGAN AND DESIGN
INDORSED BY THE
NEW JERSEY LUMBERMEN'S ASSOCIATION
and recommended for use by all the building materials industries.

Here Is a Slogan Which Every Person and Organization, Whether Contractor, Dealer or Manufacturer, Can Get Back of in a Campaign to Secure for the Building Industry Its Share of the Consumer's Dollar.

From the standpoint of the retailer, harassed on all sides by competition for the dollars that should be spent with him, Mr. Hamilton pointed out that such a co-operative movement was absolutely essential. The ready cut people, the advertisers of so many luxuries, all had forced united action by the building lines in their own self defense, it was pointed out. As for the manufacturers and distributors of the various building lines, they could most profitably adopt this slogan without lessening the value of their own sales messages, as has been proved in the case of the manufacturers of paint and varnish products.

If all the manufacturers of the building lines were to get behind "Build a Home First" they would be aiding themselves and the retailers in the best way possible. With everybody playing ball for the good of the business as a whole, it was felt that the business of each could not help but derive great benefit.

Mr. Hamilton's address, in part:

"Since 1919 we have enjoyed one of the greatest building booms this country has even seen and it has continued until quite recently. Do you know why we have enjoyed this building boom? First, it has been because of the earning power of labor since that time, and second, because of the easy manner in which help could be secured to finance a home.

"What are the conditions today in the building industry? Does anyone doubt the fact that we have reached the peak?

What is the real situation in our lines? What is the problem and where are we going?

"Have you ever thought of what the manufacturers of electrical equipment, foods, household equipment, automobiles, radios, and many others are doing? They are crowding on steam to increase their volume by advertising and world-wide publicity.

"Now, there are only 100 cents in the consumer's dollar, and every manufacturer of every kind and nature is fighting for his slice, some more aggressively than others. No business will get more than it goes after. At this moment there are 70 different and separate, co-operative advertising campaigns out for their part of this dollar. Where are we going? Do you realize that these 70 different industries are out advertising co-operatively and selling ideas to enable them to get their part of this dollar?

"What have the building material men done in this respect? They have spent no money, have given no co-operation, but just sit idly by waiting to have the horse stolen from the stable. We have in our industry the most powerful appeal to the sentiment and security of the people that the world can ever know; from time immemorial the very heart and pulse of every civilization has centered in the home. When the founders of this mighty nation assembled to form the principles of its government, foremost among their thoughts was the building and preservation of the home.

"Americans are by nature and heritage a nation of home owners and home lovers. I often wonder whether we, who make and sell the commodities that enter into home construction, realize the importance of our roles in driving to ever brighter heights the vanguard of civilization. When we sell a man a bill of materials, do we ever stop to think what we are helping that man to create? It's a home!

"Since that is true, don't you realize what a powerful instrument we have to keep the thought channels of the public flowing toward our proposition? Don't you see how logical it is that we should drive into the somewhat jazzed-up public consciousness the fact that there can be no real happiness without the fundamental stability of the home?

"What a great thing it would be for the building material industries if all could be brought together in a great co-operative merchandising campaign, all working together for their general welfare. It seems to me that all the effort being made by the various individual lines today is devoted to influencing the persons who either have already built or decided to build, in other words, who have been sold the building idea.

"That is quite natural, but it has been borne in upon us that the big thing to be done is the selling of the home building idea to the great multitudes of people who are not thinking along these lines, but whose dollars are being lured into other channels.

"Would it not be great if our industries had a universal slogan that would sell the home building idea to all the people? We need a slogan like that and need it badly. There is not a man here but who has seen hundreds of times this slogan, "Save the Surface and You Save All." This is the appeal to pride and cleanliness, plus economy.

"Paint men declare this slogan has grown to be worth more than a million dollars a word. I should say that it is worth many times that to the public, not so much for what it creates, but for what it preserves.

"Let us consider another example of farsighted merchandising appeal for an industry's progress, sentiment this time—'Say it with Flowers.' Everyone knows how valuable this slogan must be to the florists of the country.

"Gentlemen, our slogan is here, too, all set and ready to go! It is 'Build a Home First!' This slogan is without question the best slogan that has ever been created, for two reasons:

"1. The entire sales idea of the industry is expressed in these four plain, simple, understandable Anglo-Saxon words.

"2. The building material business is a business supplying merchandise that is used in the dearest and sweetest place on earth—home, home, sweet home.

"Furthermore, our slogan is applicable only to our own business, and is adaptable only to the purpose for which it is intended.

"It should not be our feeling in the slightest degree, however, that we have been smart or cute in adopting this slogan, for we do not want it to be just a phrase that rolls off people's tongues and means nothing. We rather want it to be just what it is—a great big, sincere, honest, convincing thought that will be carried to the millions of peoples in our country, giving them advice they will remember and act upon when the occasion arises, and which will mean millions of dollars to the building material industry, the greatest business on the face of the earth!"

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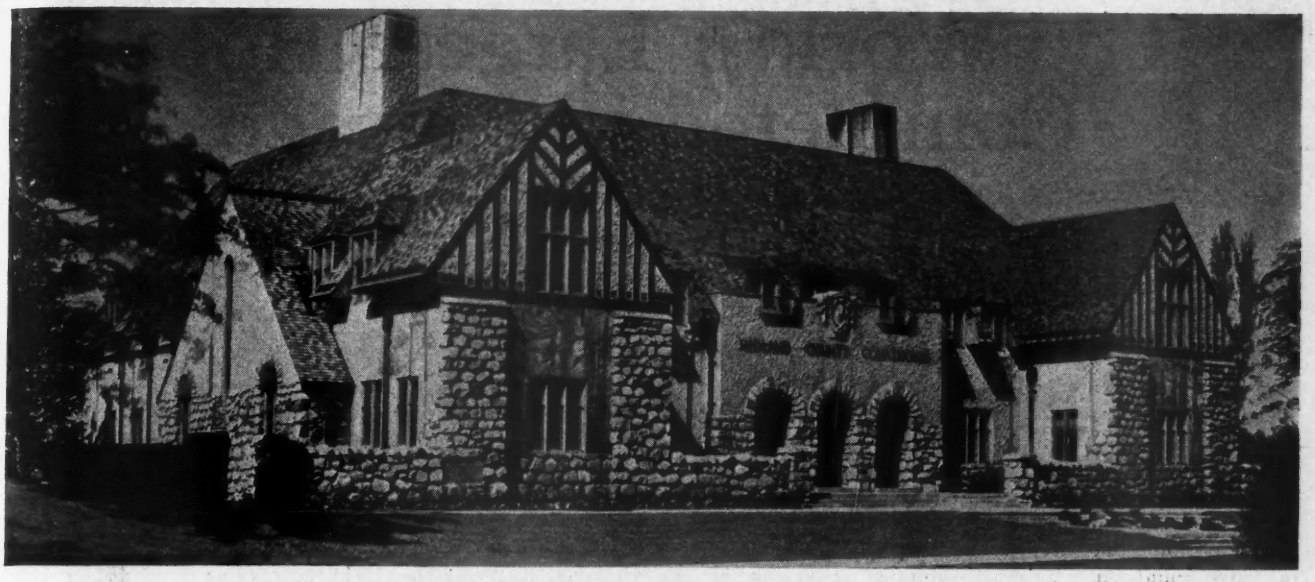
Elevated Sidewalks Built

THE "Sidewalks of New York," and other large cities throughout the country are due for a big increase if the latest European style of architecture is followed. This new departure was pointed out by Alfred C. Bossom, the noted architect, as one method of relieving the traffic congestion. Step back sidewalks around the entire structure, at various floor levels, have been provided in the new Chile Building, in Hamburg, Germany. If this type of construction were adopted generally it would not only relieve the congestion of our streets but would also furnish excellent locations of small stores, eating places and so forth along the sidewalks and a tremendous increase of valuable display window space.

The Chile Building, in Hamburg, Germany, Is Stepped Back Sufficiently at Each Floor Level to Provide a Sidewalk, Greatly Relieving the Traffic at the Street Level.



A Courthouse in Tudor Style Is Sufficiently Distinctive to Be Worthy of Note but the Native Origin of the Building Materials and the Unique Treatment of the Exterior Walls Add Greatly to the Interest.

A New Decorative Material Used In Midland County Courthouse

Plastic Mosaics, in Brilliant, Non-Fading Colors, Picture the Early History of the Region, on the Exterior Walls of the Building

BLOODGOOD TUTTLE, Architect

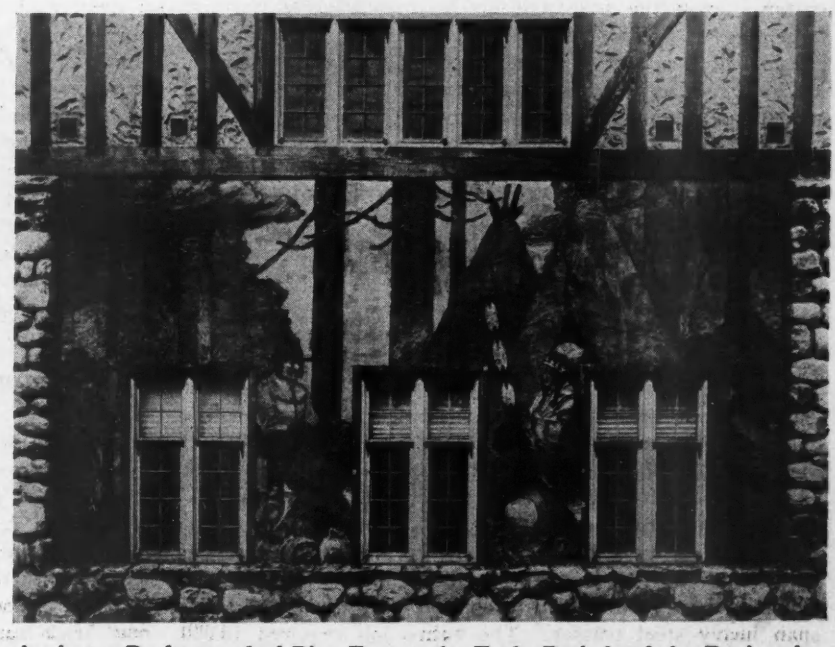
THE country courthouse at Midland, Michigan, is notable in a number of ways. First of all it is a most attractive building, as may readily be seen from the photograph reproduced at the top of this page. Its handsome Tudor achitecture is a pleasing and distinctive departure from the conventional type of public building, developed by Bloodgood Tuttle, architect, of Cleveland, Ohio. Then, too, the lower half is masonry of native boulders collected from the hundreds of farms of Midland County. Likewise the stucco of the upper portion is a product of native origin and it is in connection with this stucco that the most notable distinction is found.

These walls are decorated with colored mosaics which picture the early history of the region, starting with the days of the Indians, following the trail of the trapper and trader and finally showing the lumbering days with lumber jacks in brightly colored mackinaws, and all against a background of the green pines of Michigan, the vast natural resource on which the prosperity of the state was founded.

These mosaics are the work of Paul Honore, the Detroit artist. They are known as plastic mosaics and are done in a material which possesses all the brilliance and working ease of marble and oil and the weather resisting qualities of granite. It opens a vast field for exterior decoration besides possessing a unique beauty and utility for interior paneling and relief work.

The basic material is a chloride and magnesia cement into which pigments of finely ground, colored glass are worked. The artist applies this material with a small trowel, like a putty knife, anywhere from ⅛ inch to ¼ inch thick. The mixture sets in about four hours. When dry, both its appearance and texture are similar to the surface of a grindstone. It possesses a remarkable resistance to wear, breakage and fading of colors and gives full detail of color and line in any angle of light.

A panel of this mosaic, when dropped upon the floor, loses not a particle by chipping or sloughing, and bending or bulging the board fails to loosen it. The fact that it will never fade from exposure to sunlight or the other elements is due to the use of ground glass pigments. The color is enclosed within the glass and glass does not admit the ultra-violet rays of the sunlight which are responsible for bleaching.



Against a Background of Pine Forest, the Early Periods of the Region Are Pictured in Brilliant Color by an Artist Working in Plastic Mosaic.

The World's Largest Hotel Completed in Chicago

Has 3,000 Rooms and Baths, Grand Ball Room, Banquet Rooms, Exhibition and Convention Rooms Decorated in Louis XVI Style

IN this age of business and social activity, as well as improved transportation, there has been a constantly increasing demand for hotel accommodation in the large metropolitan centers. The record for size of hotel buildings has been repeatedly broken during the last few years. The latest and largest of these immense hotels—the Hotel Stevens, Chicago—is almost completed.

To proportion the mass of such a large building, provide light and air for 3,000 bedrooms and design a building of pleasing appearance, free from monotony, is no easy problem, but the architects—Holabird & Roche—seem to have found an admirable solution, as shown in our two-color reproduction of their perspective—plate No. 118.

The Highlands, Highland Park, Mich.

Louis J. Chesnow, Architect

One of the newest suburban co-operative apartments now ready for occupancy is The Highlands at Highland Park, Detroit, offering up-to-the-minute apartment homes at prices which would buy only ordinary houses in outlying districts. There are forty-eight of these apartment homes in "The Highlands," each one so located that it has windows facing on at least two sides of the building, to assure cross-ventilation. Ample fresh air, as well as sunlight, is further provided by the use of steel casement windows, opening outward and capable of being controlled in such a way as to deflect into the apartments, air current passing parallel to the walls of the building so that the tenants can get the benefit of breezes from any of three directions. Walls and floors have been lined with the latest type of sound deadening material, to give each apartment the complete privacy of an isolated home.

Built-in garbage burners, gas heated clothes driers, convenient kitchen cabinets, modern gas ranges, mechanical refrigerators and disappearing beds are some of the up-to-date equipment which has been built into this group of homes. More than that, the children have not been forgotten, for in the basement are two completely finished large, heated rooms expressly set aside as playrooms for use in bad weather. On fine days the central court, with its fountain, paved walks and artistic landscaping, constitutes an ideal outdoor playground.

The owning plan in itself is deserving of mention. The average cost of each of the forty-eight apartment homes is in the neighborhood of $8,300.00. Of this amount the tenant pays approximately 15 per cent down, while the remainder is divided into monthly "rent." This averages only slightly over $80.00 per month.

The Stevens Hotel, Chicago

Holabird and Roche, Architects

The world's largest hotel, with 3,000 bedrooms and baths, is now the Hotel Stevens, nearing completion, which will cost $26,000,000. The building cost $16,000,000 and the land $6,000,000. The furnishings alone will cost $2,000,000 and 100,000 yards of carpet will be purchased—probably the largest order for carpets ever placed.

In order to carry the weight of the structure above the ball room floor, eight giant steel columns were required weighing from 72 to 96 tons each, and carrying special long-span heavy steel trusses. The entire job required 18,000 tons of steel.

After careful study, the architects provided a plan with six wings and five light courts, three to the east and two to the south. The entire hotel is treated architecturally in a modified Louis XVI style.

The exterior is of Bedford stone with the courts and rear wall in a light gray brick. A central colonnade marks the large lounge on the second floor. The central section is topped above the 22nd floor by two stories, thus allowing special suites of rooms at the highest and most desirable level.

The hotel has many fine features including a grand banquet hall seating 1,450 people, as well as numerous smaller banquet rooms and private dining rooms. The grand ball room, magnificently decorated, has 15,000 square feet of floor space—said to be the largest hotel ball room in the world. The hotel has complete convention facilities, including an exhibition hall having an area of 35,000 square feet. There is a completely equipped hospital in the hotel with physicians and nurses in constant attendance.

The Salmon Tower Building New York City

York and Sawyer and Joseph Kleinberger, Architects

With the appropriate setting of Bryant Park and the Public Library, there will soon rise a giant structure in the modern architectural style made possible by the development of the New York Zoning Laws.

The total rentable floor area will be approximately 580,000 square feet.

The building is to be absolutely fireproof and constructed equal to the standard set by the highest type of office buildings. It will include the most modern methods and appliances consistent with this building's exclusive location and will represent an investment of $11,000,000. It will be erected by the 11 West 42nd Street, Inc., and managed by the Walter J. Salmon Organization.

The new structure will tower above all other buildings in the locality due to its great height of thirty stories or more above the street. The main shaft has been kept very simple, the ornamentation being applied on the lower stories where it would be visible and pleasing to the public eye. The lower portion of the building will rise to a height of twenty-five stories and the upper portion will rise five stories higher. The total height of the building from the street level to the top of the highest parapet will be about 365 feet. This mammoth tower of commerce will have a frontage on 42nd Street of 191 feet eight inches and one hundred and fifty feet on 43rd Street.

The building will be located in the heart of New York's greatest and most exclusive shopping center.

Hampton Hall Apartments, St. Louis, Mo.

George W. Barnett, Architect

Hampton Hall, the latest addition to the west end apartment houses in St. Louis, situated on the southeast corner of Newstead and McPherson Streets, one block from the fashionable Lindell Boulevard; 15 stories high—sixty five-room apartments; garage for 75 cars in basement; pleasing terrace with fountain and backed by pergola affords comfort and privacy; cost $1,000,000; architecture Romanesque, mat brick and stone; Architect, George W. Barnett, St. Louis, Missouri.

ART SUPPLEMENT *of* NOTABLE ARCHITECTURE

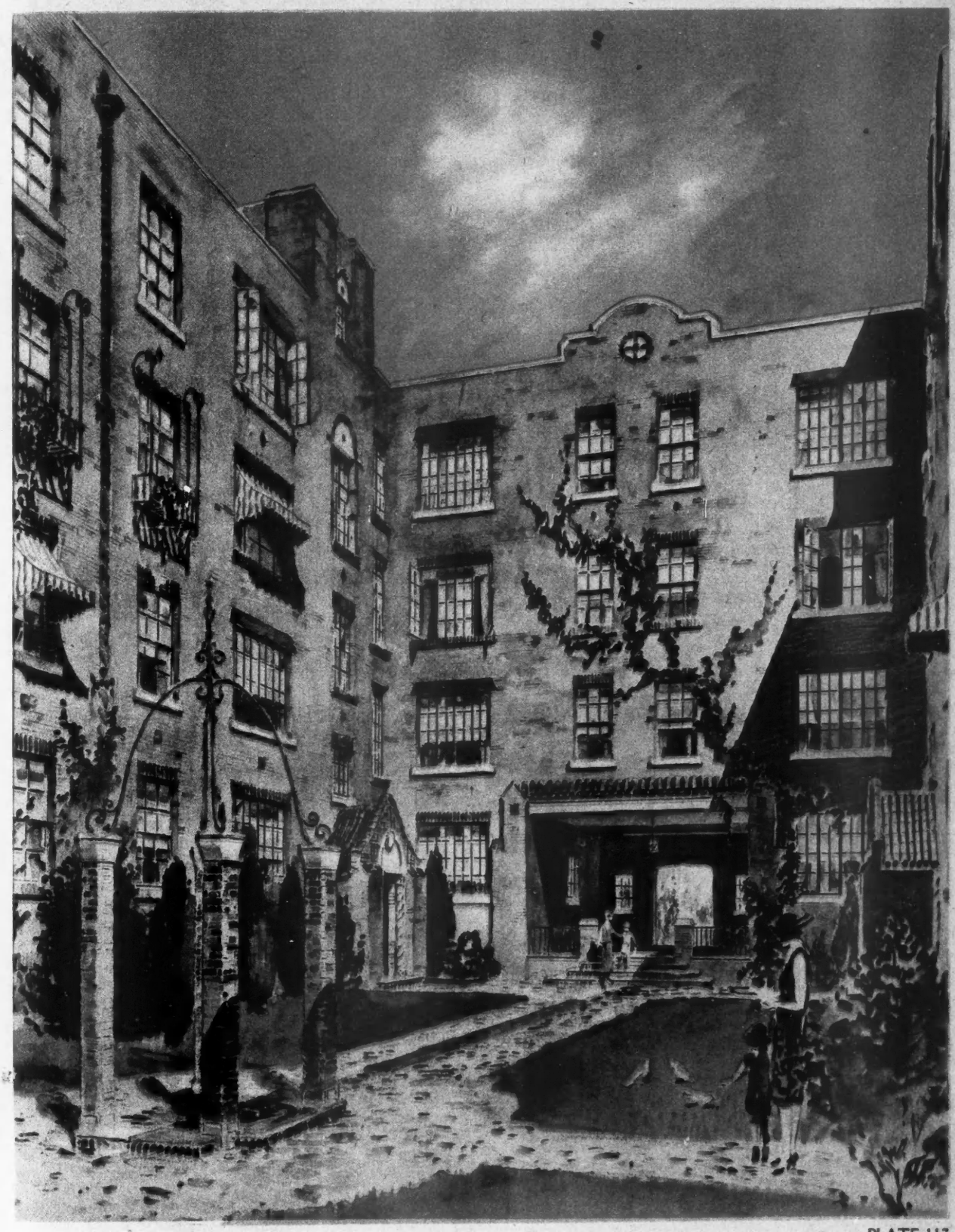


PLATE 117

The HIGHLANDS, Highland Park, Mich.; view of interior court;
Louis J. Chesnow, Architect.

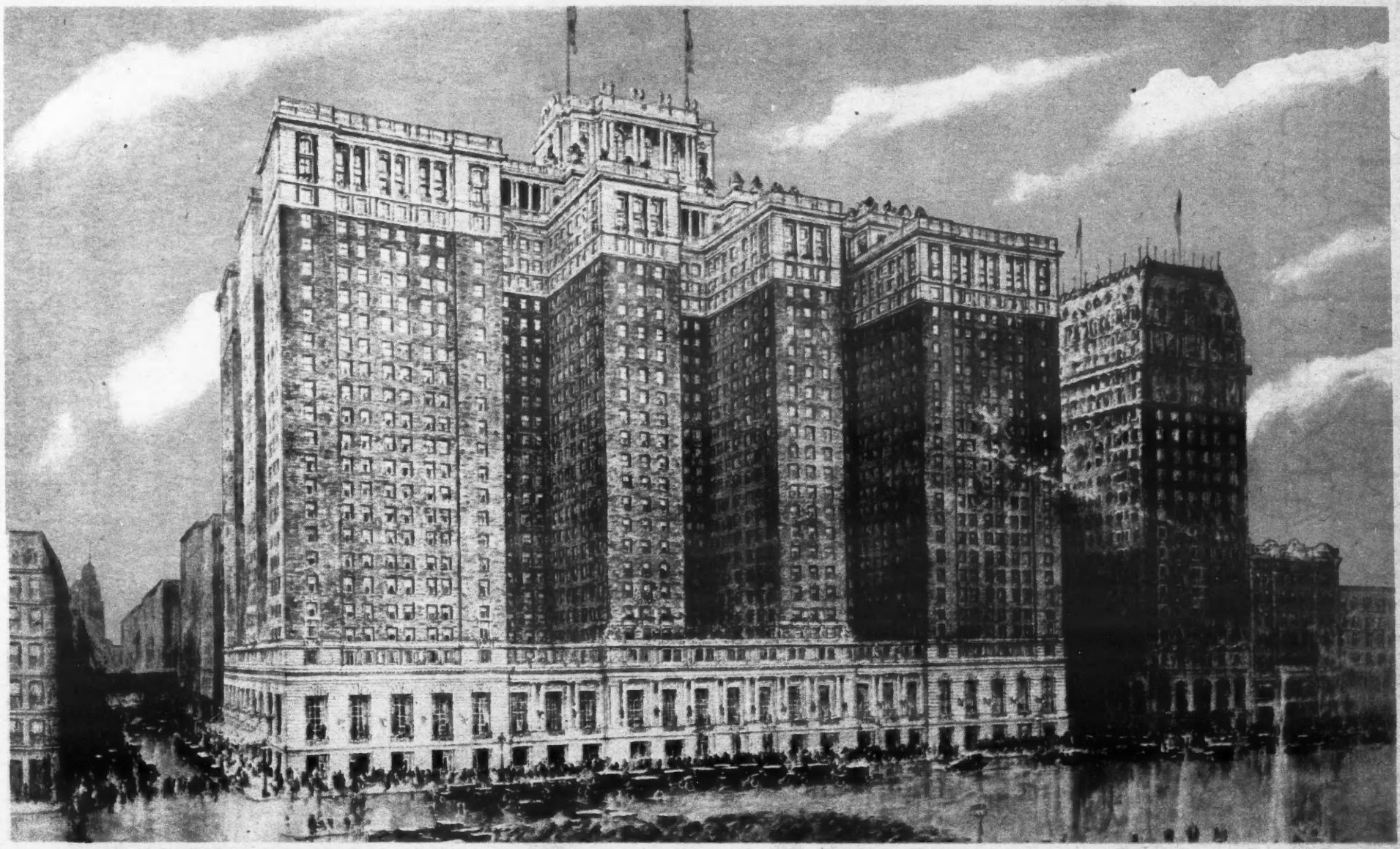


PLATE 118

The STEVENS HOTEL, Chicago; Holabird & Roche, of Chicago, Architects;
with its 3,000 rooms this is the world's largest hotel.

PLATE 119

The SALMON TOWER BUILDING, 11 West 42nd St., New York City;
York & Sawyer and Joseph Kleinberger, Architects.

PLATE 120

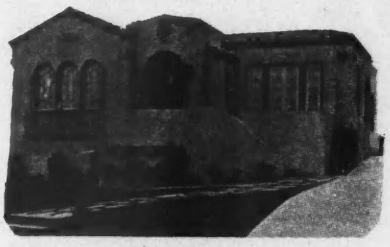
"HAMPTON HALL" APARTMENTS, St. Louis, Mo.; George W. Barnett, of St. Louis, Architect.

How the Hurricane-Proof Demonstration Houses Are Built

Details of the Southern Pine Association Demonstration Homes at New Orleans and Miami, an Educational Campaign in the Interest of Good Construction

By O. FOERSTER SCHULLY

STORMS are rare—but unavoidable. Whenever they do occur they are frequently devastating. No section of the country can assert that it is absolutely free of them. Hence, when a man is building a home, he is obligated to its future occupants, whether they be his own family or strangers to whom he will sell the house when it is completed, to exercise reasonable and sufficient precaution against its destruction by high winds.



The Hurricane-Proof House as It Will Appear When Completed, at New Orleans, by the Southern Pine Association.

Considering these facts, the Southern Pine Association is educating builders along the lines of proper construction so that a form of tornado insurance may be built into the frame of the house while it is being constructed. This association has taken steps to erect two model hurricane-proof homes, one in New Orleans and another in Miami, so that the public may understand what precautionary measures are necessary to insure safety to the structure in the face of a destructive gale.

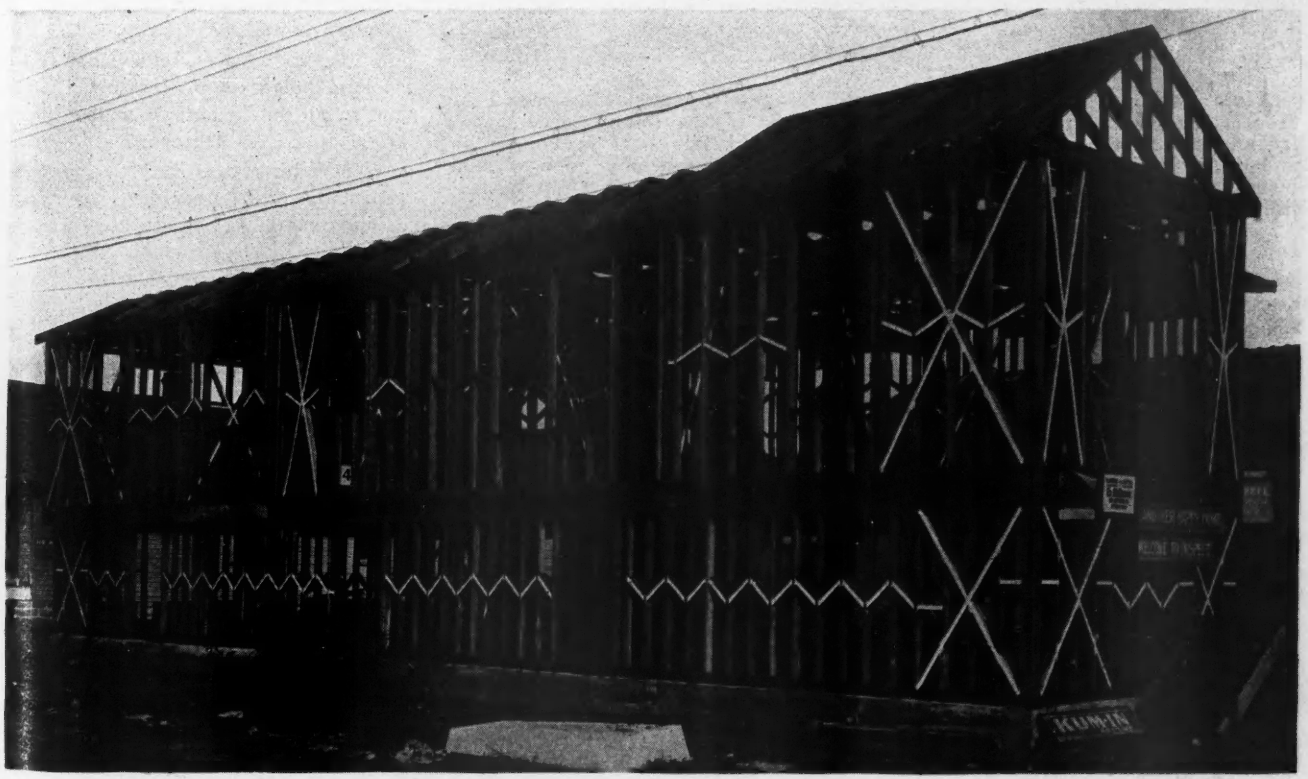
Incorporated in these homes are fifteen salient points of good construction, each plainly numbered and explained to all who visit the sites for a better understanding of hurricane-proofing. These fifteen details are designed to achieve rigidity in the structure by utilizing a combination of bracing and stiffening systems as perfected by Morgan D. E. Hite, architect for the Southern Pine Assacoiation.

Model constructors do not depend on sheer massiveness in order to give their buildings sufficient strength. Ancient carpentry, it is true, had to resort to hand-hewn and extra heavy timbers. But today the construction expert uses light weight materials which are easy to ship, which may be handled without great exertion and which are quickly assembled. However, despite this, it is not necessary for him to sacrifice strength and dependable rigidity in the finished structure—provided he understands the necessary principles which must be introduced into the framing.

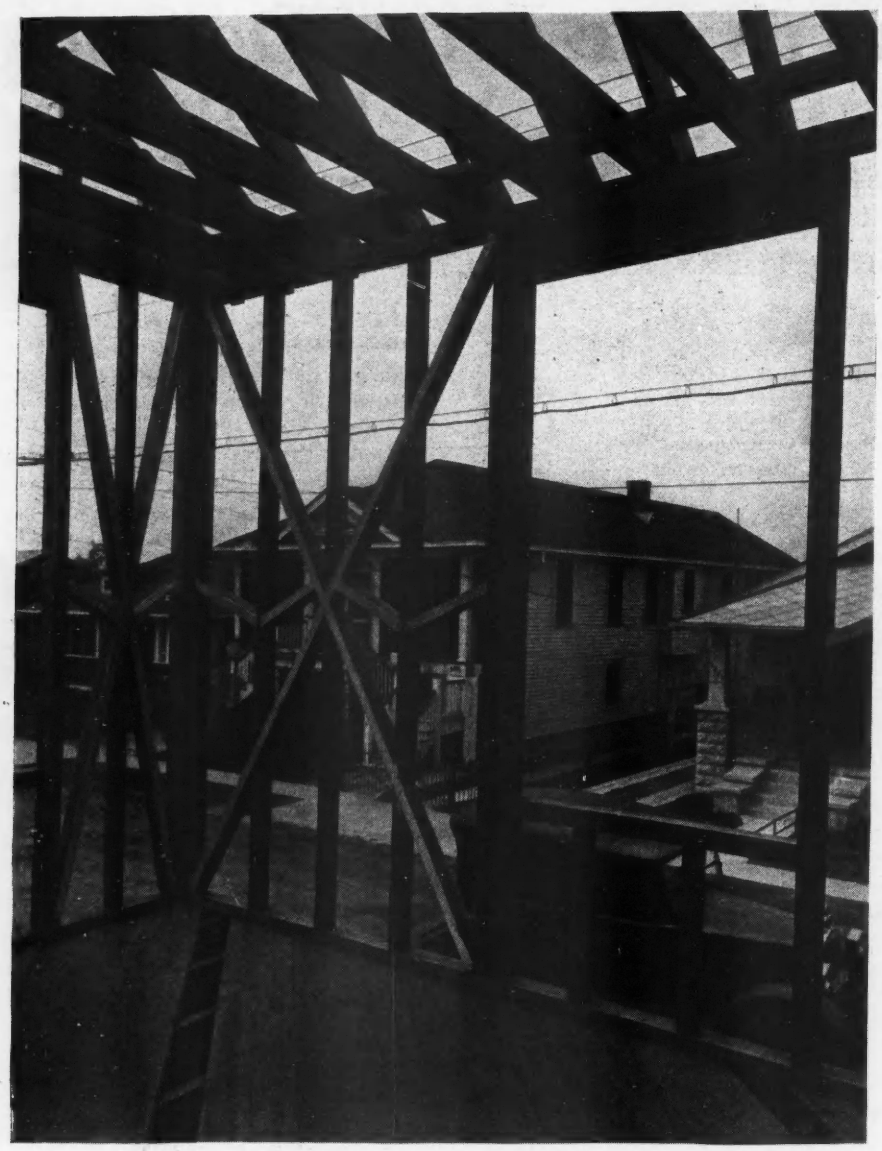
It is just these principles which the Southern Pine Association is demonstrating to the public in its two model homes. Reduced to their essentials the fifteen salient points achieve three outstanding qualities:

1. Economy in cost of materials and labor.
2. Rigidity of frame combined with the necessary flexibility to resist the effects of earthquakes, hurricanes, tornadoes, etc.
3. The requisite stiffness which keeps a building permanently straight, plumb and level, thus assuring its good appearance at all times. The result is a solid, substantial and compact building, easily kept up and always attractive.

The frame of the New Orleans model home is already



A General Exterior View of the Framework of the Hurricane-Proof House. The braces have been given one coat of paint to be seen plainly. The numbered signs on the frame correspond with the 15 points of good construction. There are two sets of these numbers scattered throughout the framework for the guidance of the public.



Note the Rafters Spiked to the Sides of Ceiling Joists in the Hurricane-Proof House. Also note the rafter heel plates on top of the ceiling joists, typical framing around the window, X-bracing in corners, herringbone bridging filling and open slots in the subfloor. The contractor carries proper public liability insurance during the demonstration period as protection against the possible injury of visitors.

completed and will be allowed to remain exposed for approximately two months so that the local public and visitors to the city may have sufficient opportunity to inspect it. In the first two weeks of the demonstration thousands of persons visited the site to examine the frame. Moreover, this exceptional record is still being maintained —offering, as it does, undeniable proof that the public is eager to learn good building principles.

Miami's model home is in the preliminary stages of construction. Others will probably follow in various parts of the country. As a matter of fact, Mr. Hite's services have been sought by a mid-western lumber association in order that the features of the New Orleans Southern Pine home may be duplicated in one of Michigan's leading cities. Thus, it is expected that the educational campaign will be far-reaching and that a high volume of good construction will result from the efforts expended by the Southern Pine Association.

The fifteen points of frame construction necessary to insure hurricane protection are listed below:

1. Solid sills—no built up sills—bolted down into the foundations, ¾-inch bolts, 8 to 110 feet apart. Proper joints.

2. Joists to rest on sills, well spiked down, not over 18-inch centers, cross bridged before sub-floor it put down.

3. Ends of joists tied at top with 2-inch material, running continuously. Sub-floor to be 1 by 6 square edge, shiplap, or tongue and grooved, laid 45 degrees diagonally, nailed with two nails to every bearing, every twelfth board omitted (for draining off rain water and for temporary wind vents) until roof is in place. Direction of sub-flooring reversed on alternate stories.

4. Bottom plates of studding to be 2 by 4 or 3 by 4, single plate, well spiked to bearings.

5. Cap plate of studding to be doubled, joints lapped and joints over bearings. Alternated where partitions join outside walls, to make tie-in.

6. Studding:

For basement-raised type of house: 12-inch centers for basement, 16-inch centers for main story. Install cross partitions in raised basements.

For two-story house: 12-inch centers for first story, 16-inch centers for second story.

For cottage or bungalow: 16-inch centers.

Studding 2 by 4 for ordinary size homes, 2 by 6 for large homes or buildings with rooms of unusual size.

7. Bracing: Put in X-braces in all spaces between openings and at corners and in angles—where space permits. Fill in with studding properly spaced, and all drawn tight. For all outside walls, and for inside partitions only where needed.

8. Herringbone-bridging half way on stud height in all inside partitions, and to fill out in outside walls. Set at angle 10 or 15 degrees.

9. Stiffening over outside openings, especially wide openings, with wide 2-inch material, studs or cripples notched to same.

10. Truss over all wide inside openings with 2 by 4 material.

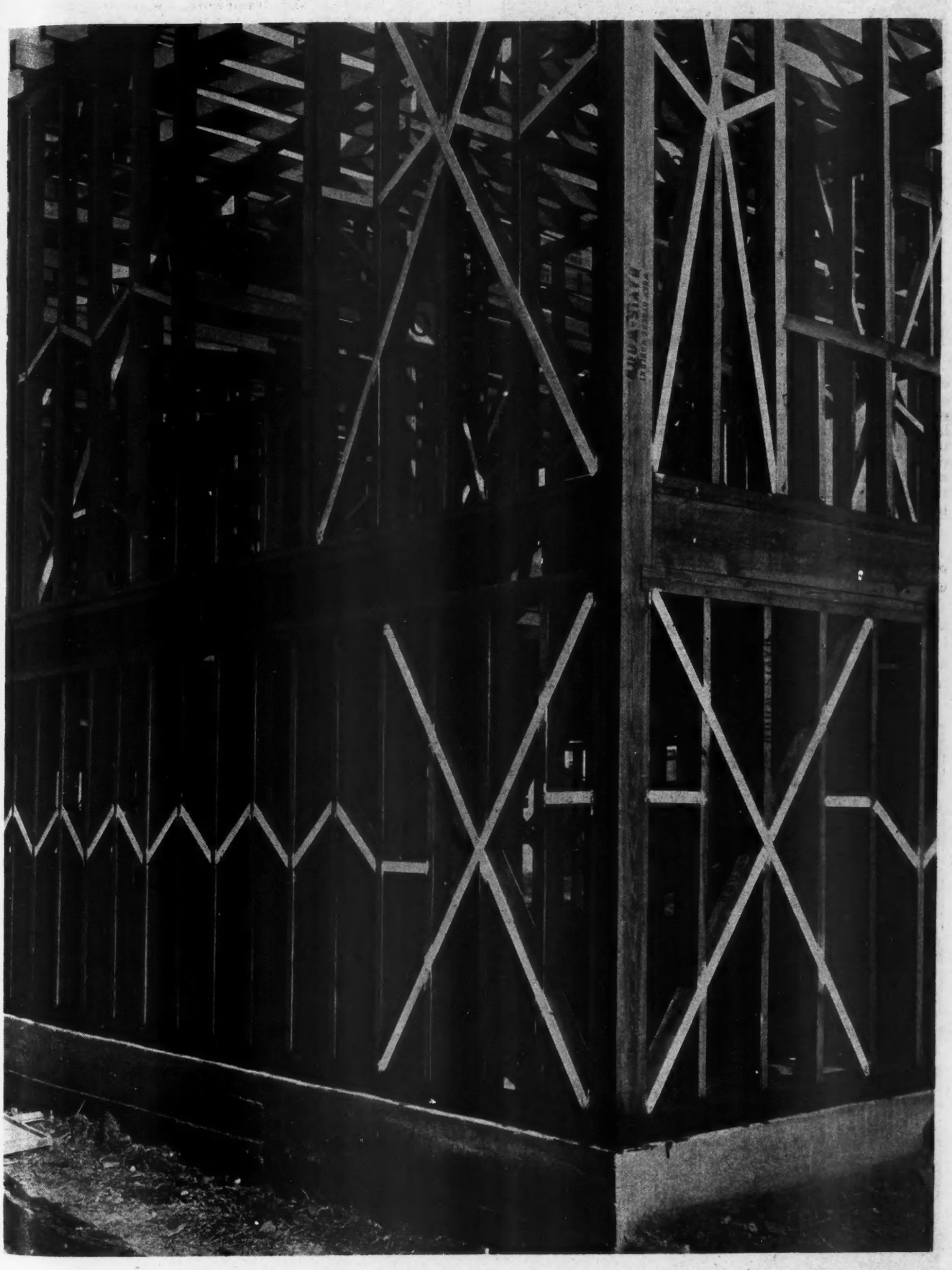
11. Stiffen doubled joists under heavy partitions with 2 by 4 or 2 by 6 spiked and bent onto sides of same. Leave opening between doubled joists where plumbing pipes and such work must come through, to avoid cutting and weakening these important parts of the house.

12. Inside partitions tied to outside walls and to other inner partitions by inserting ends into slot made of two studs spaced thickness of wall, blocked and spiked well.

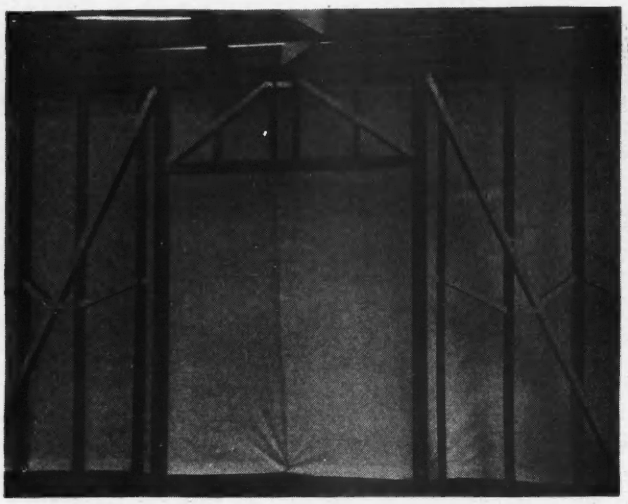
13. Roof rafters collar braced (after roof sheathing is on), every other rafter, placed just above center line of height of attic space. Run angle struts to nearest bearing partitions to support roof and keep roof line straight, and necessary angle roof wind braces tied to ceiling joists and rafters. Rafters not more than 18-inch or 20-inch centers.

14. Sub-floor, or finish flooring, to be laid in attics of two-story houses, put down after rafter heel plates are laid.

15. Continuous, vertical ties for two-story houses, running on angle from roof line to bottom sill, 1 by 6 stock notched into outside face of studding (not necessary if house is storm-sheathed).



A Detailed View of a Front Corner of the Hurricane-Proof House Showing the Corner Posts Running the Full Height of Both Stories. The alternative method of having short corner posts on each story the same length as the studding instead of the continuous length is also recommended. No special sizes or grades are required for this system of framing but the regular run of lumber available in lumber yards was used. The grades chosen were No. 1 Comm. T & G, one by six, for subflooring. Sills, if not creosoted, should be 85 per cent heart.



An Interior Partition of the Hurricane-Proof House, with a Wide Opening Framed for Double Doors. Such openings tend to weaken the resistance of partitions to stress and to crumple, buckle, etc., especially if the doors fail to hold. This house is made safe by being so designed that each room is a unit or cell that is air-holding, whose walls, partitions and ceiling will not collapse, buckle or careen to allow wind to tear its way through the rest of the house. This opening will not give way, its weakening tendency being offset by bracing.

Use all necessary nails and spikes of proper size. For permanently exposed work such as pergolas, arbors, etc., use galvanized nails.

The Southern Pine Association explains that storm sheathing is not necessary to withstand hurricanes but it is always advisable. On the other hand, it is quite necessary if the house is to be subjected to storms of cyclonic intensity. In all cases, whether or not storm sheathing is used, the studding and framework should be protected with heavy, asphalt-saturated felt, not lighter than 30 pounds per 100 square feet. This felt should be placed between the frame and the stucco, weather-boarding, shingle siding or brick veneer exterior finish.

As the expense of such protective measures is always an important detail in the builder's budget, it might be well to touch upon this angle before concluding. The New Orleans model home, when completed, would cost the builder approximately $10,000. It is a raised-basement, bungalow type of dwelling, with eight rooms and two baths on the main story. The basement will be utilized for service, garages, heating plant, laundry room and storage room. Yet, the materials for hurricane-proofing the house cost only $45; and the labor amounted to only $40. In other words, both labor and materials reached a total of less than 1 per cent of the entire expense of construction.

These small additional expenditures cannot be considered as an unredeemable loss. In addition to the protection they offer to occupants of the house they provide other compensations. A movement is on foot to induce insurance companies to recognize their importance in tornado insurance policies. The year of 1926 has been a disastrous one for many companies in the field of tornado insurance. As a result, the advisability of raising such rates has been seriously discussed with the possibility—nay, probability—of these raises becoming effective in the early part of 1927.

But it is expected that a hurricane-proof house, of the type being demonstrated by the Southern Pine Association in New Orleans, will be recognized as being superior to the average unprotected home. Once this is done, the insurance people cannot help but allow it preferred rates for tornado coverage. Hence, the slight additional cost during construction will accrue benefits for the builder that will more than amortize the original expense within a short time.

General Interior View. The thickly clustered studs usually indicate where a partition or wall joins another, forming a vertical slot into which the walls, or partitions, fit and are blocked and spiked into position. Tying of walls to partitions and partitions to one another, is one of the urgent requirements for safety under powerful hammering and twisting storm stress.

Permanent Stucco of Portland Cement on Metal Lath

By JOHN ROBERTS

Chief Plaster Inspector for the City of Minneapolis

METAL LATH and portland cement stucco has been common practice in Minneapolis for more than twenty years. During all of that time it has grown constantly in popularity. There have been very few failures. In fact, in the seven years I have been Plaster Inspector there have been only about three failures in thousands of jobs. Today ninety-five per cent of all the buildings being built in Minneapolis are of portland cement and metal lath exterior.

There is no question that metal lath and portland cement, properly applied, is permanent. There is no question that properly reinforced portland cement will withstand the movement of a reasonably good frame, steel or masonry building.

The four things necessary to a good job, one can see at once, are as follows: A reasonably good building, free from excessive movement of any kind, including shrinkage and settlement. Second, proper lath, properly applied. Third, sufficiently thick cement (that is, the stucco must be at the very least three-quarters of an inch thick). Fourth, proper ingredients (that is, clean sand, enough cement, but not much, etc.) All of these details properly attended, one may be sure of a permanent job of stucco.

Introducing an Outstanding Authority on Metal Lath and Portland Cement Stucco

Mr. John Roberts, Chief Plaster Inspector for the city of Minneapolis, has had very exceptional opportunities to study portland cement stucco on metal lath. Mr. Roberts learned the business of plastering as an apprentice and afterwards as a journeyman plasterer. He found time to attend the University of Minnesota, and is familiar with the chemistry and scientific reasons for reactions. He contracted plastering for several years prior to his entrance into the World War. Upon his return from the army seven years ago, he was appointed Plastering Inspector of the city of Minneapolis. Since that time he has examined many thousands of jobs of stucco on metal lath. The uniform success of this construction in Minneapolis is evidence enough of his efficiency as an Inspector and his knowledge of the proper materials and practices.

You know cracks in stucco are caused by three faults. Two of these are in the stucco itself (or lath), and the third is caused by outside influences. First, the stucco or cement itself may be at fault, through dirty or otherwise poor sand, or too rich a mix (map cracks) or too poor a mix, or dry outs, or other causes existing in the mixing, ingredients or application of the cement itself. Second, the lath may crack the stucco, if wood lath or other moving material is used. Or the lath may fail to reinforce the stucco against the slightest movement of the building, by presenting long unbroken joints over the studs, etc. All of these failures of lath and plaster can easily be avoided in the plastering itself and the lath. But the last cause of cracks, movement of the building, is beyond the plasterer's control. Of course, a metal lath reinforcing will both strengthen the building and distribute the strain to prevent any reasonable amount of movement from cracking the plaster. But if the movement is excessive it will crack any plaster, brick, stone or any other veneer.

Types of Lath

Metal lath, or other metal reinforcing, is the ideal plaster base. In Minneapolis the common practice is diamond mesh self-furring lath, 3.4 pounds 24 gauge painted or coated with other rust resistant material. Galvanized lath is the common practice. Of course, wide mesh lath, and wire are recommended, but seldom used in Minneapolis. If they are of sufficiently heavy metal, mesh wide enough to assure the proper imbedding of the back of metal, and rust resistant, they are all good.

General Rules for Applying Metal Lath

The methods commonly used for attaching the lath to the building might be divided into three general classes:

1. Attaching lath direct to the studs. If this is done in Minneapolis, we require that it be back-plastered, this back-plaster to be at least an inch thick.

2. Furring strips. Flat lath cannot be used over sheathing or other solid backing without furring strips. It must be furred out, or self-furring lath used to assure the burying of the lath. Furring strips may be crimped metal, wood lath or other wood strips, or metal pencil rods. The trouble with furring strips is that they cause thin streaks through the panel of cement, weakening it along the line of the strip.

3. Self-furring lath and self-furring nails. These, of course, presume a backing for the cement, sheathing or stiff boards of some kind.

Minneapols has used from the beginning, years ago, the self-furring lath, with uniform success. Although there is no law against furring strips, or back-plastered jobs, they are not commonly used, and I personally think that self-furring lath, or the self-furring nails are the best practices.

Details of Lathing

Lath must be lapped at all joints, at least two inches at ends, and at least one inch on sides of each sheet. Lath must not form joints at corners or angles, but must carry past such angle or corner at least twelve inches.

The type of nails used is important. In Minneapolis we require staples. Over sheathing, staples are one inch, 14 ga. galvanized or blue. Direct on studs staples are 1½ inch 13 ga. galvanized. Self-furring nails are also recommended where practicable. Common nails, half driven and then bent to hold the lath, are bad practice, first because there is no assurance of the depth to which they will be driven, and second, there is greater danger of careless breaking of the strands of the lath by hitting too hard.

In driving the staples, drive them in, do not bend them over. Do not drive the staple completely home. Leave it out one-eighth of an inch or so. This accomplishes three things: First, it allows for some movement in the building behind the stucco; second, it becomes buried in the cement, and acts as a permanent anchor; third, it avoids danger of breaking the lath strands.

Over sheathing the staples, or nails, must be driven at

SIX STEPS IN PRODUCING "CALIFORNIA FINISH"

1. The Finish Is Applied on Either Waterproofed or Unwaterproofed Second Coat.

2. It Is Laid on Heavily with Irregular Strokes of the Trowel.

3. The Final or Third Coat, Ready for Finishing to Produce that Popular California Finish.

4. The Finish Coat Is Worked Down as Shown Here with a Rough Cloth Such as Burlap.

5. The Last Step Is Floating but the Surface Is Not Made Entirely Smooth.

6. It Is Left with the Slightly Irregular Surface Familiarly Known as California Finish

least every twelve inches horizontally and six inches apart vertically. When nailing the lath direct to studding, the staples must be every four inches.

In Minneapolis the frame buildings are papered outside the sheathing. This paper is nailed on with small blue nails, and tin washers. A paper prevents the wood from sucking the moisture out of the stucco. It protects the wood also. Asphalt paper is safer, as some of the cheap tar papers contain corroding elements. If paper is used it is a better practice to nail it on as described rather than to use strips, and so weaken the panel of the stucco.

Whatever type of lath is used, and whatever system of nailing, the lath should be completely buried in the cement. Sufficient pressure, and sufficiantly wet mix in the scratch coat is necessary. This method, over any stiff backing such as sheathing, presses the cement flat against this backing, and causes a complete covering of the back of the lath. This not only gives greater strength to the stucco, but protects the back of the lath from exposure to moisture.

The Plaster Scratch Cost

Proportions for the scratch coat are one part of cement to two and one-third parts sand, by volume. Hair or fibre binder should be used, not too much, but sufficient to hold the mass together. Usually one bushel of hair will suffice for one hundred yards of stucco. Long winter cow hair is recommended. The hair must be soaked and beaten until entirely separated. It must be mixed thoroughly with the cement.

No lime is recommended in the scratch coat.

No waterproofing is recommended in scratch coat, except where the browning and finish are applied at the same time, such as travertine.

This first coat must be mixed wet enough to push through the lath readily, and completely imbed it.

The first coat must be thoroughly roughed while it is wet. A piece of metal lath will do to scratch it with, and metal combs can be had, made for that purpose. It must be scratched deep, in every direction. The mechanical bond of the second coat depends entirely on the proper roughing of the scratch.

This scratch coat must stand until it takes its initial set, not necessarily until it is dry, before the second coat is applied. This initial set takes twenty-six hours.

Second Coat or Browning

Proportions of mix, one part cement to one and three-quarter parts sand, by volume. No hair or other binder is necessary, and no roughing other than floating.

No lime should be used in the second coat, especially if colors are to be used in the finish coat, as the lime will stain or bleach the colors.

All leveling and truing must be done with this second coat. It must be level and true, but not smooth. Flat it, don't trowel it, to receive the finish coat.

The second coat must set until dry, until all internal stresses have developed, before the finish coat is applied. It takes about seven days for this set to take place.

The proper uses of waterproofing, and the reasons, are given further on. The proper waterproofing of the second coat is most important, and depends on the finishes to be

used. To avoid repetition, we give all of these rules in one place, under "Waterproofing."

Dampening

This second coat must be wet down every day. But be careful not to wet it until the initial set has taken place (26 hours).

Slobbers and flat spots in rough cast are always caused by one of two things. Either the second coat was too wet when the finish was applied, or the doubling up was done too soon after grading in.

For light colored sand floats and texture finishes, have second coat wet when finish is applied. If second coat is not too waterproof some of this moisture will be absorbed and gives off little by little as finish coat drys.

For dash coats, second coat may be dry when finish is applied.

Third Coat

Proportions: If second coat is waterproofed, one part cement to two and one-quarter parts sand by volume. If second coat is not waterproofed, one part cement to two and three-quarter parts sand by volume. (The reason for permitting a richer mix in case the second coat is waterproofed is this: Richer cement map cracks more easily. The danger of map cracks is increased by the suction of a non-waterproofed under coat, so the mix is made leaner).

Not over 10 per cent of lime helps the finish coat, especially when natural light colored cement is used.

Waterproofing

Before discussing the various finishes, which depend much on the proper use of waterproofing in the scratch and brown coats, we may as well dispose of the subject of waterproofing.

Stucco is applied in extremely thin coats, as cement goes. Matters of suction, wind drying, etc., which would in no way affect mass uses of cement, are deciding factors in stucco work.

Unwaterproofed scratch and brown coats suck the moisture out of the following coat. If the following coat is heavy, as when the heavy second coat is added over the scratch, this suction does not dry out or harm the new coat. On the contrary, it acts as a sort of reservoir, giving the moisture back into the new coat, by capillary action, as it is needed and as the set progresses.

But where the following coat is thin, as with flat coats, etc., then the suction of the coat beneath destroys the set, drys out the new coat, and ruins the job.

Waterproofing should never be added in sufficient quantities to prevent the proper cure of the cement. Too much waterproofing may even tend to prevent the waterproofed coat from absorbing sufficient moisture to set properly. Of course, this causes stucco of low tensile strength, subject to stress cracks.

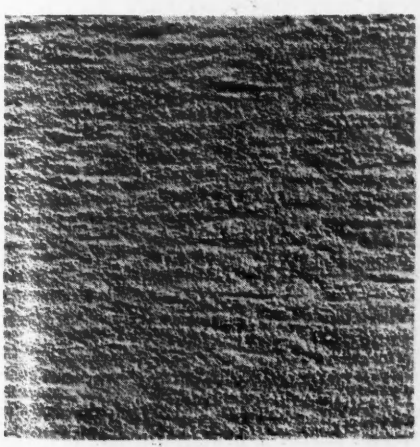
Wherever waterproofing is used in an under coat, a richer mix is permissible in the finish coat, for the danger of map cracks is lessened, because the drying out of the finish coat due to absorption by the brown coat does not take place. The finish coat stays in a plastic condition longer, stiffens more slowly, and thereby lessens the danger of the map cracks. This is the reason for heavily sanding stucco to be used over tile that has suction.

Finishes

Generally speaking, thin third coats such as floats, require a waterproofed second coat. The reason is that these floats

SIX STEPS IN PRODUCING "TRAVERTINE FINISH"

1. For Travertine Finish a Heavy Waterproof Is Used.
2. The Texture Is Secured in a Heavy Second Coat.
3. Only Two Coats Are Used for the Travertine Finish.



4. By the Use of a Whisk Broom This Texture Is Obtained.
5. The Surface Is Then Worked Over with a Float.
6. The Result Is the Well-Known Travertine Stucco Finish.

must be as thin as possible to work right, and to prevent map cracks. Too much suction compels too heavy a finish, and a limited amount of waterproofing remedies the trouble.

For sponge, stipple or other pulled surfaces, waterproof the second coat.

For float coats, or for thin laid on coats, waterproof the second coat.

For rough cast, oak leaf or other heavy laid on finishes, and for rough troweled or other heavy finishes, waterproofing may be or may not be used. Remember, the mix must be more heavily sanded if waterproofing is omitted.

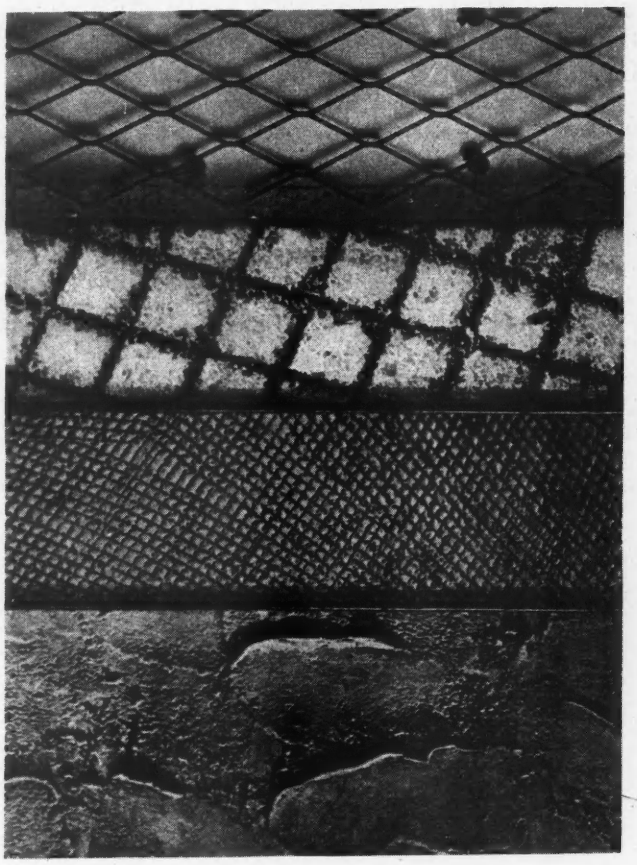
For rough coat, after finish has set for twenty-six hours, wet it several times with fine spray. It will discolor if wet sooner. Also it will discolor if brown coat is not thoroughly dry when finish is applied.

For rock exposed surfaces, waterproof the scratch coat. Lay on heavy scratch coat and very heavy second coat. Throw the stone into this second coat, and press it in.

Travatine and other similar finishes, over a heavy, waterproofed scratch coat put a heavy second coat, and get the texture in this second coat.

For heavy rough trowelled finishes, corded effects, apply the finish desired over either waterproofed or unwaterproofed second coat.

Oak leaf, and other most attractive effects are gotten as follows: These finishes may be applied direct over waterproofed second coat, or duotone effects may be gotten by floating one color over the second coat, and adding the texture in another color. One common method is to dash the color on, then with a trowel flatten out the dash into the texture desired, leaving the under coat partly exposed.



Here Is Illustrated the Four Steps in a Complete Stucco Job. At the top the metal lath applied to the wall and below the first, second and finish coats of stucco.

In this article all proportions are given by volume, rather than by weight. Sands vary in weight, and volumetric comparisons are safer.

Mix every batch thoroughly. Thorough mixing is every bit as important as proper ingredients.

Mix only enough at one time to do for about an hour's work.

Do not re-temper. Dry mortar, caused by suction or evaporation, may cause the mass to become stiff, when no set has occurred. In this case to moisten and work it over does no harm, for this is not re-tempering.

Sand is all important. You must have a clean, sharp coarse sand to get a good mortar. Three simple tests are given to enable you to determine the fitness of your sand. There is no excuse for spoiling good stucco with poor sand.

Clean Sand: To test sand for vegetable loam or other deleterious foreign substances, take a one pint bottle or jar. Fill this one-quarter full of sand. Then fill it two-thirds full of a 2 per cent solution of sodium or potassium hydroxide. Shake until liquid is thoroughly through the sand. Allow to stand over night. If the liquid is clear in the morning, the sand is clean. Any reddish color denotes impurities which will weaken the mortar.

Coarse Sand: All of the sand must pass through a screen four meshes to the inch. (This, of course, does not mean a quarter-inch mesh, as the wires take space, openings about 3/16 inch.) None of the sand should pass through a screen 8 meshes to the inch.

Sharp Sand: Sand should be sharp, not round like marbles. If you are not accustomed to judging this quality of sand by rubbing it in the hands, then use a magnifying glass.

Clean, coarse, sharp sand is so essential to good stucco that it is worth all the trouble you may take to get it.

Cement, to set, needs moisture, for at least twenty-eight days. Veneer walls, stucco, present such a large area to the sun and wind in proportion to the mass of the cement, that they will dry out unless carefully protected. The moment absence of moisture is complete, after the set has once started, the set stops, and cannot be started again. Keep the cement wet, each coat, but do not apply moisture until after twenty-six hours. Work inside on dry, hot, windy days, and do your exterior stucco when the weather is cool and damp. If compelled to work in the hot winds, very exceptional precaution must be taken to keep the cement wet. If it is so hot that a dry out occurs inside of the first twenty-six hours, before moisture can be applied, there is no chance for a good job.

All places where the stucco meets any other construction should be flashed, that is, porch roofs, sills, etc. Moisture pouring behind the stucco itself, but it soaks the wood, and is generally disastrous. Another wise and inexpensive precaution is to rabbet or strip all window sills and other returns, to act as a drip.

If stucco is carried clear to the ground, be very sure that the lath is completely imbedded, and the stucco very heavy.

Anti-freeze is never recommended.

In early spring and late fall, rough coating should be stopped by three o'clock in the afternoon, for if the moisture is not thoroughly absorbed or evaporated by sundown discoloration follows.

Various reasons are given for the long years of uniform success with metal lath and stucco in Minneapolis. Probably the one greatest factor is the materials used and the methods of application.

For instance, there is much sound merit in the method of attaching self-furring metal lath over a solid background. There is no light lath used, no flimsy nailing, because the building ordinance covers this, and a sufficient inspection department enforces the ordinance.

Wash sand, coarse and sharp, is practically the only sand used for stucco in Minneapolis. Proper materials, properly applied will produce the desired results.

Unique and Beautiful Paneling of Sand Blasted Douglas Fir

A Unique Method of Interior Decoration Was Used in the Hotel Emerson, Hoquiam, Washington, Where the Architect, Robert C. Reamer, of Seattle, Applied Sand Etched, Douglas Fir Paneling Developed Through the Experiments of R. E. Nyson, of Seattle.

LOVERS of beautiful interiors have often envied those fortunate enough to possess rich wood paneling in their homes. Paneling, old as the skill of the craftsman, has been based on carving. Carving, to be worthy of a choice place in a beautiful home, must be of excellent workmanship. Such exceptional skill is expensive to buy for not only artistic excellence but long time labor must go into carving an intricate piece of paneling. Fortunate is the man or the family who has such. It will live to be appreciated for many generations and the older it grows, the more it will be loved.

While the artists, great and small, of a dozen peoples and many hundreds of years have carved their best hardwoods into pictures telling the stories of their pride, nature has slowly laid row on row of straight, annual rings in the Douglas fir trees out along the Pacific slope. She grew the summerwood very hard and the spring wood very soft and the entire tree, straight and true.

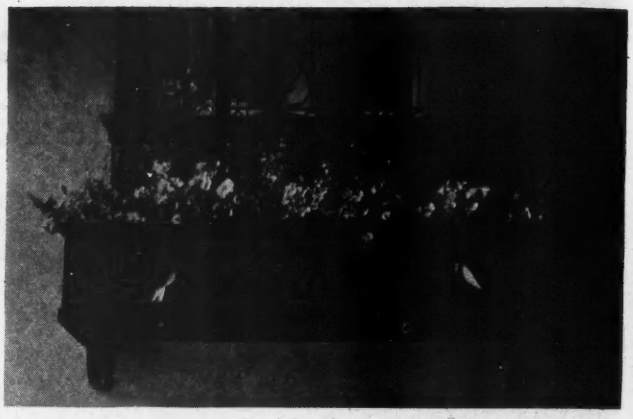
One day a mechanic accidentally turned a sand blast on an exposed side of a Douglas fir board and nature's secret leaped into sight. His accident gives us a simple recipe for beautiful paneling. Here it is:

Take a straight grained, clear piece of vertical grain Douglas fir. Glue on its face a stencil of heavy manila paper out of which has been cut the design wanted. Then apply rough sand, by sand blasting to depth and color desired, using from 20 to 30 pounds pressure. Coarse, sharp sand is best. When the sand blasting is finished, color may be applied to suit, following the methods best suited to new Douglas fir. Beautiful panels of a thousand variations, in design and in colors similar to the choicest tapestry, may be thus cut from Douglas fir finishing lumber.

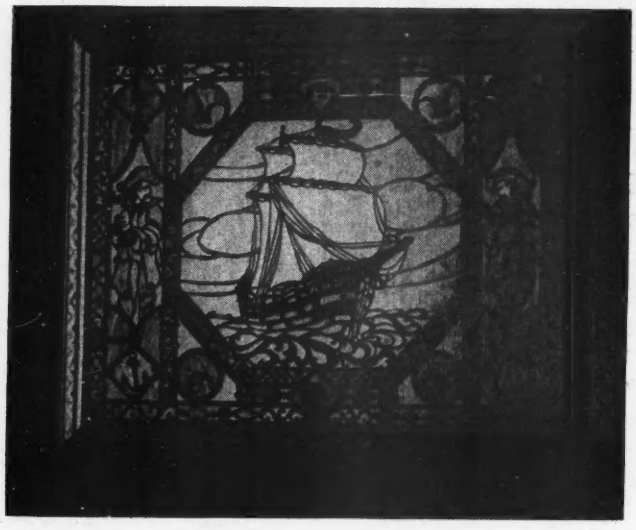
In the Stairway Panels, the Figure of the Early Pioneer Hunter of the Northwest Has Served as the Motif for the Sand Blasted Decoration.

According to those who have done the most experimenting, more beautiful results from sand blasting and stenciling are to be expected from straight grained Douglas fir than from any other known wood. The reasons for this are in the cell structure of the wood itself. They are, so far as is known, distinct peculiarities of Douglas fir. These reasons apply to slash grain finish as well as to vertical grain, but the slash grain and quarter-sawed Douglas fir make their own pictures and when they are sand blasted a stencil is not needed to produce an artistically pleasing effect.

Workmen in the sand blasting room of the Belknap Glass Company, Seattle, Washington, several years ago noticed that the rough boards along the wall were being etched away by the overflow of sand from the sand blaster when glass was being treated. This etching seemed to be regular



A Window Box in the Hotel Lobby Is Most Effectively Decorated with Brightly Hand Colored Birds, Etched from the Douglas Fir Paneling by the Sand Blast Method.



A Hand Colored Panel Showing an Early Sailing Vessel Is Especially Appropriate for This Hotel in the Gray's Harbor Section, Named for Captain Robert Gray, Discoverer of the Harbor and the Columbia River.

and to give definite perspective. Mr. R. E. Nyson, manager of the art glass department, studied the matter.

He learned that the sand blast ate away the soft part of the grain, leaving the harder section. He noticed that the regularity of the annual rings in Douglas fir left a raised and lowered grain effect that was always pleasing. He experimented with the straight grain of many woods, including mahogany, but could find no other that produced anything like the beauty of effect that he could get from Douglas fir.

"Douglas fir has more 'character' for this purpose than any other wood I know of," said Mr. Nyson.

When Robert C. Reamer, a prominent Seattle architect, was asked to designed the Hotel Emerson at Hoquiam, Washington, and to give that lumber center something different and of unusual beauty out of Douglas fir, he remembered that Mr. Nyson had done some experimenting with Douglas fir and the sand blast. He consulted Mr. Nyson and between them they worked out the method to follow in this undertaking. From the architectural point of view it was, at that time, a daring thing to attempt. Successful

This View of the Men's Grill in the Emerson Hotel, Hoquiam, Washington, Shows How Fir Doors, Door Casings, Ceiling Beams and Recessed Panels All Received the Sand Blast Treatment Which Results in Such Uniquely Beautiful Effects at a Remarkably Low Cost.

The Figure of the Hook Tender, Key Workmen in the Modern Douglas Fir Logging Woods, Is Used as a Decorative Motif.

The Band Sawyer, from a Modern Douglas Fir Manufacturing Plant, Is Also Used as a Decorative Figure in This Paneling.

in the adventure they produced an interior of beauty which wins the approval of all who see it.

Designs for the stencils used in the Hotel Emerson were made by Mr. Reamer's staff. Douglas fir to be sand blasted was taken to the Belknap Glass Company's plant at Seattle where the stencils were imposed and the sand blasting finished. From there they were shipped to Hoquiam and installed as needed. Mr. Reamer's scheme called for decorated panels and tapestry effects so that the straight grained, stenciled woodwork in this modern hotel, beautifully touched with occasional spots of bright, even coloring draws appreciation from all who have seen it ever since the opening day. The Hotel Emerson was built three years ago and age has only ripened the beauty of its extensive stenciled and sand blasted panels.

This Motif of the Logger, the Douglas Fir Tree and the Lumber Manufacturing of the Northwest, Predominates in the Paneling of the Hotel Emerson Lobby. The patterns are etched from Vertical Grain Douglas Fir and Hand Colored.

All woods cannot be sand blasted and so etched into pleasing perspectives. There must be a great difference in hardness between the spring and summer wood so that when the blasting process is applied, the softer part of the wood will be eaten away smoothly and the harder part left intact. When applied to Douglas fir this makes the perspective. It leaves the harder summerwood raised as if in relief and with the same smooth edges as though molded from clay into bronze.

The stencil, writing in power driven smooth sand, etches clearly and with the smoothness of a fine sandpapered job. A little color added to the lowered part of the grain deepens the perspective. Another color will bring out the raised portion. These may then be set with a lacquer and the mechanical paneling, following exactly the lines drawn by the artist, is finished.

All who have handled Douglas fir agree that of all woods known to them it is alone in the peculiarity which makes it take the sand blasting and stenciling so perfectly. This is entirely the result of the way in which nature grows the Douglas fir tree, tall, straight, and with a sharp division between spring and summer wood and a great difference in the structure of these two; one soft, the other hard.

Slash grain paneling without the use of stenciling is a new departure in working Douglas fir. In this case the process is very simple: select the panel and place it in front of the sand blast machine until the spring wood is well cut down; apply colors to suit. That is all. When the painting is done the panel is finished. Without color it looks like a piece of driftwood, aged, yet clean and new. Stained a gray and allowed to age a little or, if filled in with a darker background, it is a perfect reproduction of those rare, sand-scoured pieces of wood which are picked up once in a while along a sandy beach. Like these, this slash grained Douglas fir is a bas-relief, etched by sand. In one, Father Time and the lap of the tides did the work; in the other, a modern machine, driven a few minutes. The result in either case is much the same. With this slash grained Douglas fir, any combination of stains or colors may be used.

Sand blasting of Douglas fir is not at all expensive when compared with other means of interoir decoration. Moreover, any piece of Douglas fir finish may be treated by this process with an attractive result. This brings wood paneling within the reach of the humblest home builder where it was formerly available only for homes of wealth.

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Study Wood Using Industries

IN line with its trade promotion program, the Southern Pine Association has placed J. F. Carter, its field representative, in charge of the research work now being conducted in Kansas City, Missouri. Mr. Carter recently started his survey of the leading wood using industries in the larger pine consuming territories of the Middle West and has developed some interesting facts relative to uses to which this product is now being put by many manufacturers. So that the trade promotion report may prove of greatest benefit to the subscriber mills, the association is sparing no effort in gathering information from the most representative industries in this section.

Oak Hill Chapel Inspired by the Chapels of Old France

LEWIS J. SARVIS, Architect

The Essential Characteristics of the Quaint Chapels Which Are a Familiar Sight in Rural France Were Adopted by the Architect, Lewis J. Sarvis, in Designing the Oak Hill Cemetery Chapel, at Battle Creek, Mich.

STANDING in a secluded spot of Oak Hill Cemetery, Battle Creek, Mich., is a chapel, recently completed, which might be thought by the observer to have been placed there as an exact replica of one of the quaint little chapels that dot the landscape of rural France. It is not a replica, however; only the essential characteristics having been adopted from the French plan by Lewis J. Sarvis, the architect.

Within its walls are windows such as have never been placed in a public building in America. For the manufacture of these windows the artist, Francois Grenier, of Detroit, has used a system which for hundreds of years workers of glass have declared emphatically was impossible of execution.

And so the chapel stands today, unique in its design and architecture and having windows, beautifully designed, that may some day be known as the first of a great discovery to be used in the future to the exclusion of methods that have prevailed for centuries throughout the world.

When it was decided to build the chapel, two problems faced Mr. Sarvis: To avoid the setting, scale or general atmosphere of a church, and to so design the building, and, second, to actually fit the building to its surroundings and to make it seem a part of the entire plan of the grounds.

French Gothic architecture was used in the design, shown in the accompanying photograph, and for the general construction work seamed faced granite was procured from Weymouth, Mass. Limestone, it was believed, would be too much in accordance with the general plan of the cemetery; would furnish no contrast. Brick would have furnished a too violent contrast. The granite that was used is of the varying shades and colors, giving the general effect of a soft brown color. The trim of the windows and other detailed work is in Indiana limestone, while the roof is constructed of heavy graduated slate, vari-colored. All casing and sash are of steel.

The interior is finished in dark stained wood and rough plaster, with a timber beamed ceiling. Attention was particularly paid to avoiding elaborate ornamentation. The entire atmosphere of the chapel is transmitted through an expression in shape, stone and timber work and in a small amount of fine detail.

Above the entrance is an inscription, carved in stone, which, more than anything else could do, puts into words the entire sentiment expressed by the building and its windows: From Handel's great Messiah, "Comfort Ye, My People."

Within the main part of the building are two rest rooms, one for men and one for women; a recessed organ, a main vestibule and the main auditorium, designed to seat a hundred and fifty persons. In the chancel, just before the altar, has been placed a special lowering device for caskets. It is

similar in principle to the regular apparatus that is used at graves, save that the stand, upon which the casket is placed, has in itself the appearance of an altar.

In the basement is a large workroom, toilets for the workmen and a crypt of substantial size. In addition, of course, there is the portion of the lower part of the device for lowering the caskets. In its construction the chapel is at once modern with all the quaintness and peaceful expression of a chapel of old France.

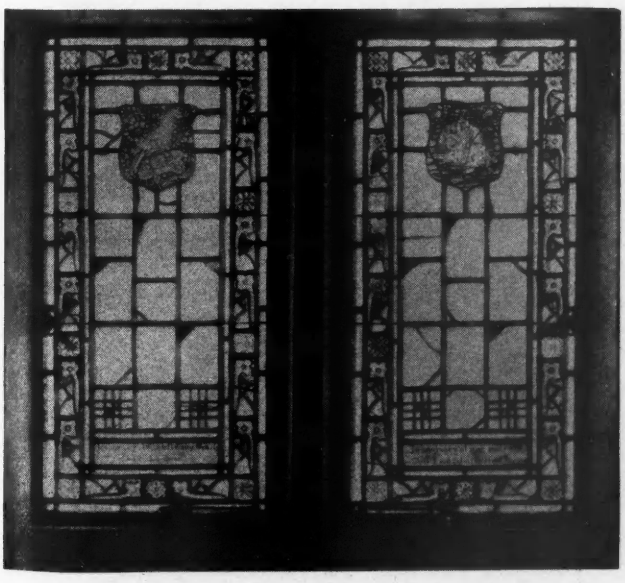
But more than the building itself was to be considered. The warmth and beauty of stained glass windows must be considered. Francois Grenier, a man born in France and whose family has been prominent in the world of architecture (it was M. Grenier's father who designed the new Paris Opera) had turned, several years before the time the chapel was built, to a study of glass windows and the methods of construction. For hundreds of years there had been little progress in the plan. Indeed some of the secrets of the art had been lost upon the world.

To M. Grenier it seemed that a fusing process could be worked out for the declicate shadings and color intonations. After a considerable amount of experimentation he evolved a system which he is now employing, the first example of the new art in a public building being the windows of the Oak Hill Chapel. So far as the process itself is concerned, it is a secret with M. Grenier.

At each end of the building is a large cathedral window, the Shepherd memorial window being shown in an accompanying photograph. On the sides are smaller memorial windows. Each window is of individual treatment and design, some parts of which, such as the figures and medallions cannot be duplicated in Europe or America because of their construction from the secret process of glass fired upon another piece of glass.

Quoting from a partial explanation of M. Grenier's process, he says:

"The difference between the finest and most expensive window in existence and the Shepherd Memorial window is that in one the composition is painted and fired on one thickness of glass and glazed in a single glazing lead, while in the Shepherd window the colors have been selected from the glass containing their natural colors and then all the motions have been taken up in order to get models on the figures. Then the two thicknesses of glass are glazed together in a double leading glass. The figures are in relief making them actually a carved panel in glass.



These Windows Possess a Delightful Softness Which May Mark the Beginning of an Entirely New Era in Window Manufacture.

The Beautiful Windows Seen in the Oak Hill Chapel Were Produced by the Artist Francois Grenier, of Detroit, by a Process Never Before Used.

"After being cemented the whole window is set up to the light on an easel and the required depth and distances are obtained by plating on another thickness of glass where necessary. In some places there are as many as four thicknesses, one plated over the other."

The delightful softness and spirit of quiet exaltation may be imagined from photographs of the window, but it would be impossible to imagine the magnificent warmth of color that the windows lend to the interior of the chapel. Blues and reds, blended on the rough plaster and timber work actually transform the interior into a veritable kaleidoscope of soft tones, and lend the final detail to a truly remarkable small building.

DAVID M. BRAMBLE.

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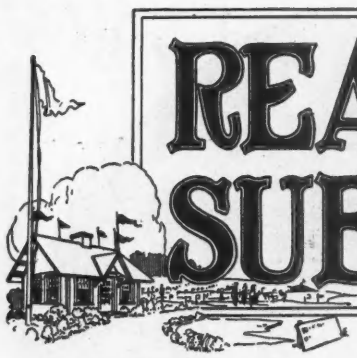
Seek Tax Revision

STEPS are being taken, by the Co-operative Apartment Section of the National Association of Real Estate Boards, to have the state and federal governments recognize the 100 per cent co-operatively owned apartment as an individual home. Such recognition would make it exempt from the federal income tax law and the franchise tax laws of the various state. This is expected to make home ownership available to many people who do not find it convenient to own a single family dwelling.

The saving in dollars and cents, in the enactment of such legislation, would not be great but the establishment of the status of the co-operatively owned apartment as a home would do much to increase the demand for this form of home ownership, it is thought. Owners of individual dwellings and leagues and associations not organized for profit are now exempt from the federal and state income taxes but co-operative apartments projects, organized to provide a permanent home for the tenant stockholders, and not for profit, must pay these taxes because they are classified as business corporations.

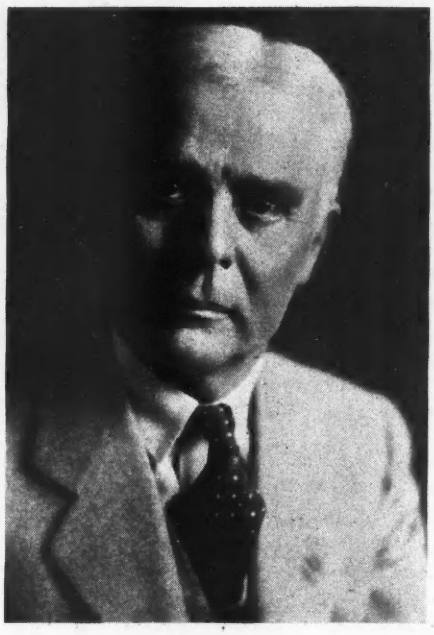


REAL ESTATE AND SUBDIVISION WORK

A Whole City of "Castles in Spain"

EVERY man and woman has a dream-home, "a castle in Spain." Always it has lovely surroundings as wide as its horizon, with curving hilltops and a glint of water somewhere. But one man, already nationally known, has a larger vision, a whole city of "castles in Spain." And, better still, he is making that dream come true. As mayor of Seattle, Washington, and as a lecturer and a writer of books upon Americanism, Ole Hanson is well known. Born in Wisconsin in 1874 of Swedish parents, he represents the sturdy stock that knows how to value America and is perfectly willing to work and fight for the new heritage.

He has loved the cities where he has lived, and because he loved them he deplored their slums and eyesores, the dilapidated buildings and monotonously ugly places that others condone or feel to be necessary evils. Always his own "castle in Spain" must be surrounded by castles like it, or better. He wanted them to look at as well as live in.



Ole Hanson, Ex-Mayor of Seattle, Who Is Materializing His Dream of a Model City in the Building of San Clemente, California.

So it has come about that this man in the maturer years of his life has determined to make one village, one whole city, where there shall be no slums, no eye-sores. Imagine yourself in an airplane beside the man with the camera who registered the view in black and white shown here. You are looking down at the first lines of a picture, a picture that is being drawn and painted in by this same Ole Hanson on a far-western plateau, 66 miles from Los Angeles, 66 miles from San Diego. The foreground is the velvety blue Pacific; the background the rolling, haze-covered foothills of the Coast Range.

The picture here is a blue print of "San Clemente," a town that shall be entirely of Spanish architecture, in keeping with its name, where every house on every curving street shall have its view of both sea and mountains.

Nine months after the first site was sold (December 9, 1925), every lot shown in the blue print had been taken; the white lines of the picture were turning into paved roadways, white walled, red roofed houses were going up here and there; even trees and shrubbery were finding their roots in the virgin soil. Yet the picture must be painted painstakingly, no erasures,

This Airplane View of San Clemente in the Making, Six Months After the Preliminary Work Was Begun, Shows the Beautiful Location Between the Blue of the Pacific and the Haze of the Coast Range Foothills as Well as the Plan of Winding Streets.

San Clemente Is Completely Zoned with the Business Buildings Correctly Placed, Back from the Ocean Front and Along the Highway Which Links Los Angeles and San Diego. Here may be seen the first buildings of the city, a portion of the business zone following the style which will be characteristic of all the buildings.

nothing to blot out eventually. It is not for a day, not for "a year and a day" but for coming generations, as well as ours, to enjoy.

First of all an adequate water supply must be secured, enough for 2,000 acres of homes and for all time. This has been done.

Then a zone set apart for necessary business houses was correctly placed back from the ocean front and along the state highway that marks the northern boundary of the the tract, that may be noted from the airplane as a triple white line. This highway is "El Camino Real," that links Los Angeles and San Diego, the road that started as a path worn by the sandaled feet of padres two centuries ago as they went forth on the King's business.

Even these business houses must conform in architectural lines, and, like the water works, administration building, grocery, hotel and oil station which are completed already, be white walled, red roofed, good to look upon as well as useful. One of the illustrations shows these buildings when barely completed ("barely" is the correct word), while another shows a bit of detail of the two-story structure when adorned with a Cocus Plumosa palm and, incidentally, Mr. Hanson and a few members of his family.

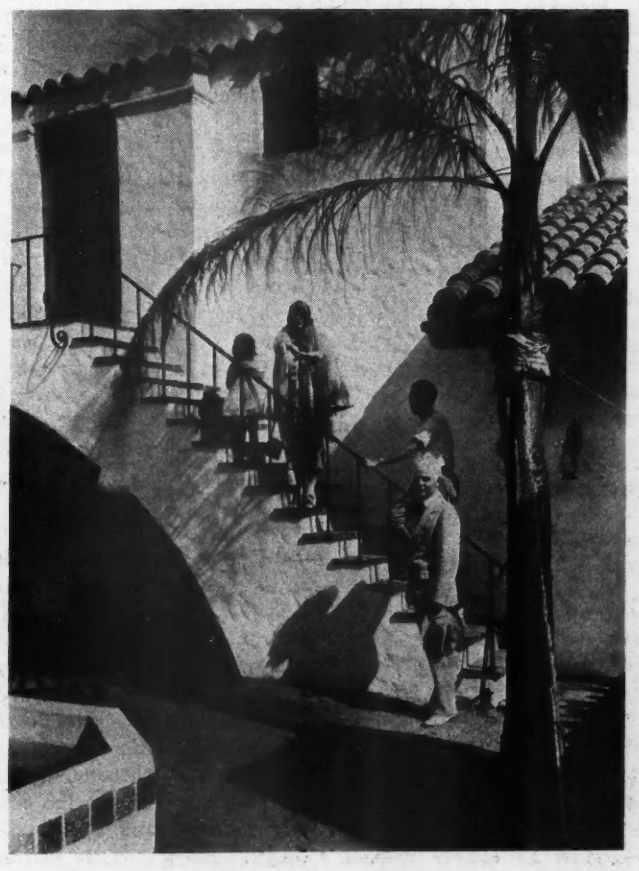
Few are the restrictions on San Clemente property, each absolutely necessary. All buildings must be of the Spanish type, and be passed upon by the Board of Architecture although no cost marks are to be submitted. One may build but four rooms, but the four must be, in exterior, like a bit of Spain transplanted. Within the homemakers need consult only their own tastes and requirements.

A large plaza with a 400-foot approach is reserved for a community playground and park; every street is being paved, tree lined and beautified in harmony, the red flowering eucalyptus being chosen for this. A magnificent club house, 172 feet long, on a cliff overlooking the sea shore, is nearing completion and in this and its privileges every property owner holds a life membership. As Mr. Hanson's gift to the children, a $25,000 school building is being constructed. He also plans for a Community Church, "one that God will not be ashamed of," as soon as the site may be made ready for its construction. In fact every possible need of the future community has been provided for in the planning and San Clemente, when completed will be a model for other communities throughout the country.

Best of all, a five-mile stretch of crescent beach—"just as God left it"—belongs to all San Clemente for all time, written into the deeds, to be preserved as a clean, sandy shore for bathing, with never a rotting pier, smelly fishing-boat, greasy sausage stand, or creaking merry-go-round. Close under the cliffs along this beach run the Santa Fe railway tracks, as dimly seen from our airplane, but passageways with artistic entrances are being made beneath these rails so that no lives may be endangered. And the Santa Fe directors, in love with the picture themselves, declare they will build, somewhere on the five-mile stretch, the finest little depot, white walled, red roofed, that was ever seen. All sidewalks are 10 feet wide and of red tile; all streets 60 to 80 feet wide. Weeds? Never! Not even on vacant lots. The civic leaders are pledged to this so it is a certainty.

With all these allurements who can wonder that home-lovers, hugging their long-cherished dreams, are hastening to San Clemente to help Ole Hanson paint his picture half a mile wide and five miles long.

LEE MCCRAE.



A Bit of Detail of One of the First Commercial Buildings in the Characteristic Spanish Style. This picture shows Mr. Hanson and three members of his family inspecting the new building.

Homes in COLORS

The Ladies Say They Want Bigger and Better Kitchens

By WILLIAM A. RADFORD

President and Editor-in-Chief of the American Builder

HERE is an idea—a suggestion—a demand which we will pass right along to the building field, with our own hearty endorsement:

Cleveland, Ohio, Nov. 10, 1926.

Editor AMERICAN BUILDER:

Attached you will find a clipping from the November 3rd issue of the *Cleveland News*.

As advertising and merchandising counsellors to several manufacturers of kitchen furnishings and labor-saving appliances we believe it our duty to support any propaganda that may help to get architects and builders of apartments and residences to pay more attention to the planning of the kitchen and to allot more space for this most important room of the home.

Our clients and ourselves feel that a large part of our national crime of breaking down and breaking up the modern home is due to an almost complete disregard of kitchen planning and building. Most apartment kitchens and many home kitchens that are being built today are entirely inadequate in size to include the essential and notable labor-saving appliances that are now on the market, and yet have room for the home manager to perform her kitchen tasks without bumping her knee, burning her elbow, or knocking a few cups and saucers from the shelf.

The modern kitchen is poorly ventilated, poorly lighted (both as to windows and lighting fixtures), poorly arranged insofar as step-saving is concerned, poorly located in its relation to other rooms, exits, etc., is usually cheaply furnished and decorated—in fact, it has everything and nothing to make the woman want to spend all the time she can "out" of it.

We believe that publications such as yours can well afford and should prepare and print an occasional editorial on this situation. The speculative builder might resent your interference with his money-making scheme but the real builder, the broad-minded architect, the manufacturer of kitchen furnishings and labor-saving appliances and every woman in the land would welcome the partial return to the cheer, hospitality and space convenience of the kitchens that were our mothers' and grandmothers'.

In our opinion Miss Edna K. Wooley's attached article is excellent and your publication will not be harmed financially or otherwise by picking up Miss Wooley's idea where she leaves off and carrying it on to those who are undoubtedly partly responsible for the present decline and fall of the American home.

Yours very truly,

THE RICHARDSON-BRIGGS CO.,

Benton G. L. Dodge, Vice-President.

The clipping referred to out of the *Cleveland News* follows:

"I've been looking all over the city for an apartment with a fairly good-sized kitchen," remarked an elderly woman. "But there doesn't seem to be such a thing any more.

"There isn't even elbow room in the kitchen I have now. Two people in it would be a crowd. A fat woman would have a time! Seems to me they're building all the kitchens now for skinny young married flappers and their husbands who expect to eat out all the time."

"I have a kitchen like that," sighed a younger woman. "My husband and I like to eat 'in,' too, but it seems you can't get a modern apartment with a regular kitchen in it any more. There isn't even a dining-room in our four-room suite, so you see they don't expect people to eat at home very often—just breakfast, maybe. We have a 'breakfast nook' which is really part of the kitchen, and just as stuffy as it can be.

"We manage to get along fairly well until we have company over night. My sister and her husband and little boy have just gone home after spending a week with us. I believe if they hadn't gone I would have been carried out of that apartment shrieking and hustled over to Newburg. The walls seemed to be actually closing in on me!

"The way we all got on each other's nerves was awful. There wasn't a bit of privacy for anybody, and we were continually colliding with each other or stepping on each other or something. My small nephew couldn't be cooped up in the apartment all day, and when we weren't watching he'd slip out onto the street. Then we lived in fear and trembling that he'd been run over by an automobile or a street car.

"I'll tell you frankly, that if my husband and I had to stay together in that apartment all day we'd quarrel—and we're pretty good friends at that."

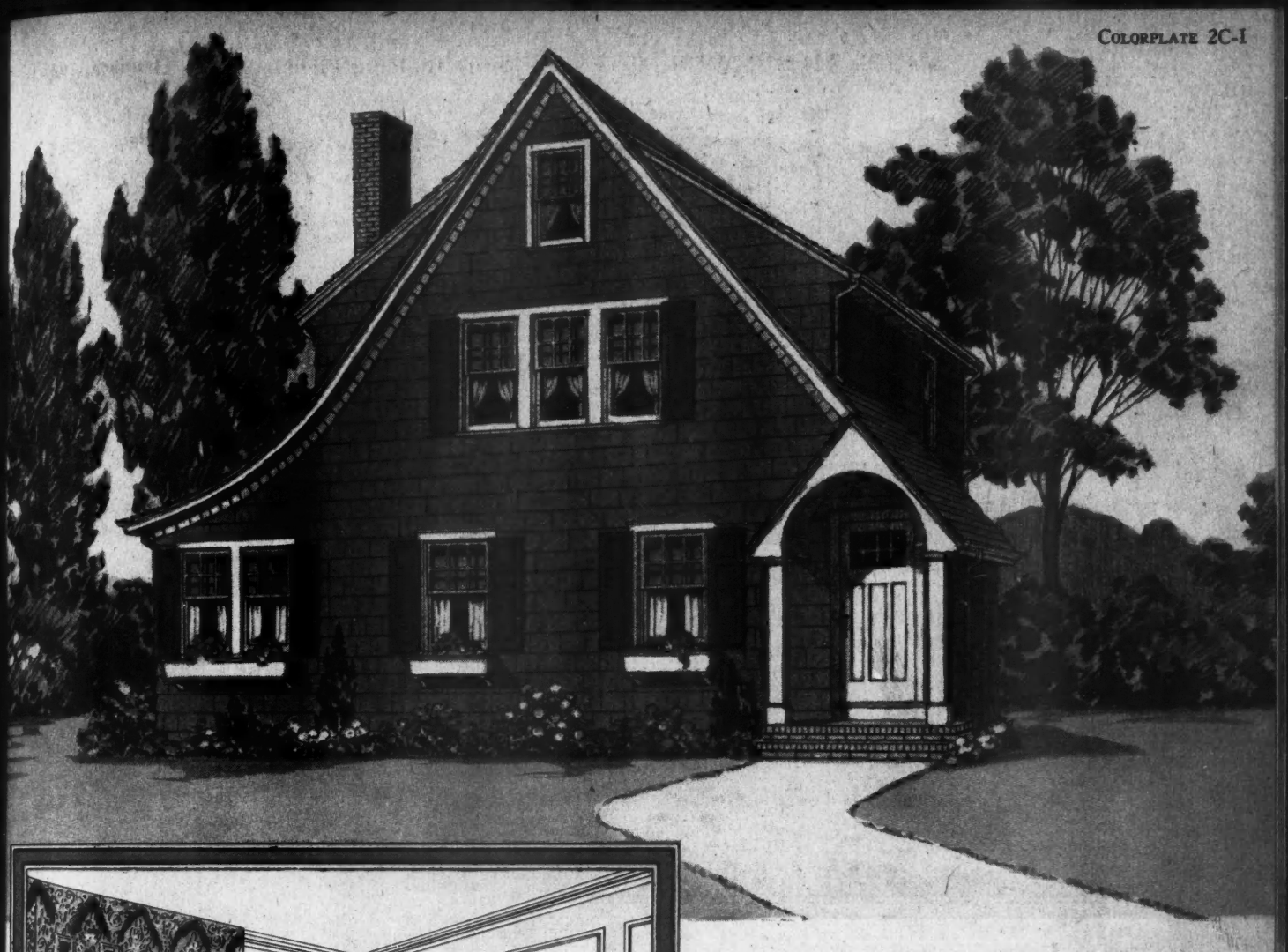
A comfortable kitchen, apparently, is not considered a necessity in the modern apartment. Builders and architects seem to think that the modern woman shuns a kitchen. Yet there are many, many modern women longing for a sunny, roomy, well-planned kitchen where one may have a few plants and a canary in the window, perhaps a comfortable rocker to sit in while waiting for "the pot to boil."

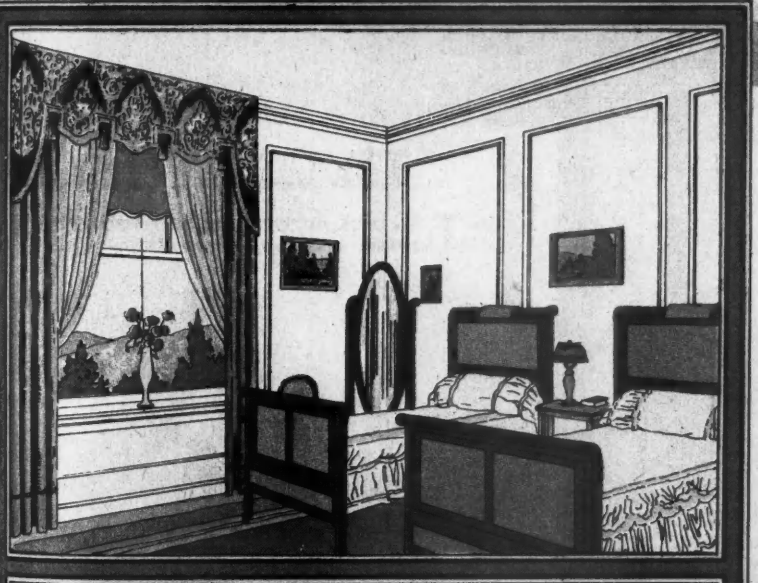
Why shouldn't the home workshop be as pleasant as any other room in the house? Why should it be a dark corner which one enters with reluctance and escapes from as soon as possible?

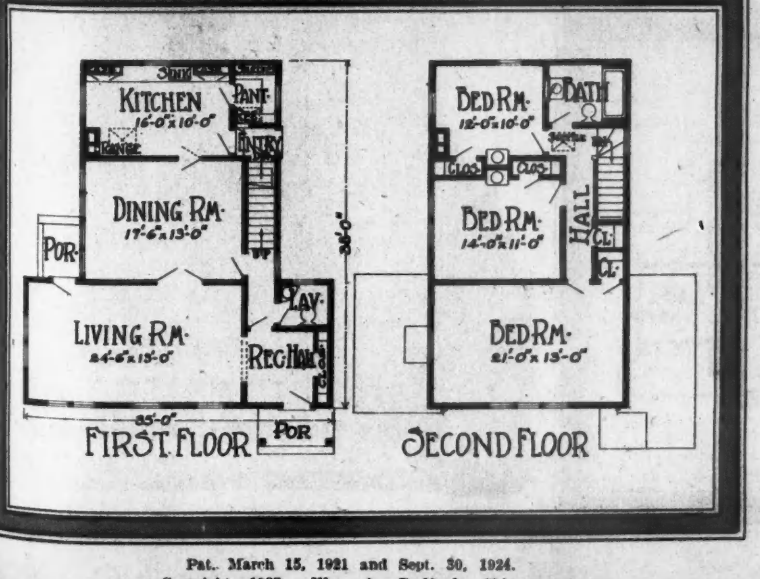
Really, I believe there would be more happy homes if there were more pleasant kitchens. The wife would have an interest in home-cooked meals and the husband would look forward to the end of his workday when he would enter a home of savory scents and find a busy, cheerful wife who wasn't bored to death by a day of do-nothingness.

Yes, and there'd be more natural complexions for our womenfolk if they were in the kitchen oftener.

But nobody can expect a woman to spend much time in the modern kitchenette, which isn't much more than a crack in the wall. Perhaps the only way nowadays to get a properly equipped and comfortable kitchen is to build a house for it. Even then, to get her kitchen as she wants it, the housewife will have to fight architect, contractor, carpenter, plumber, et al., who all have conventional ideas of what a kitchen should be and who will build it that way if they're not watched.

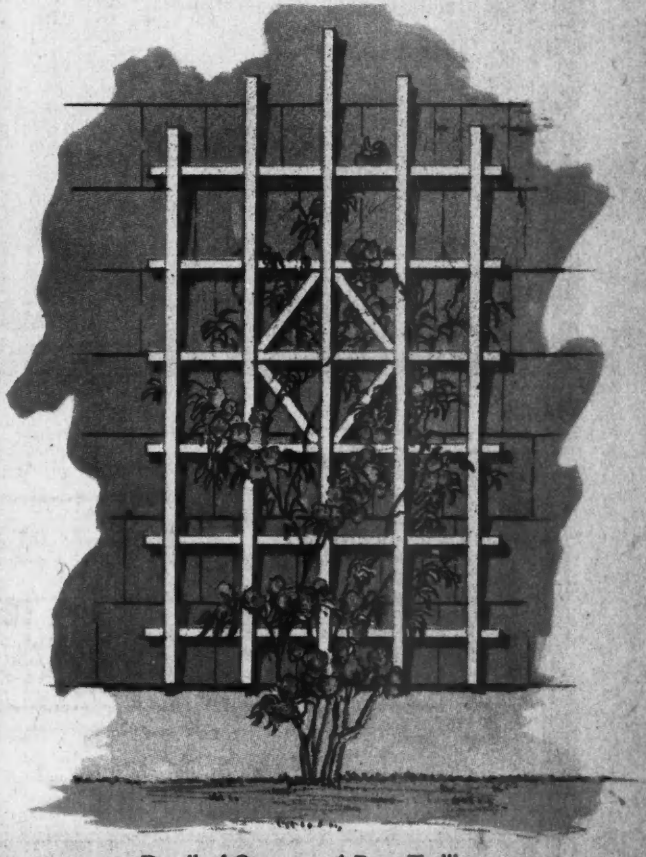




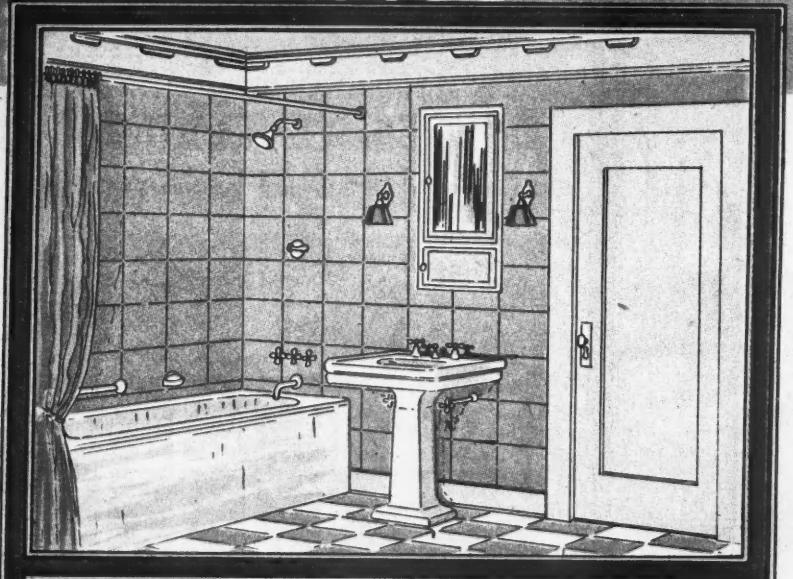


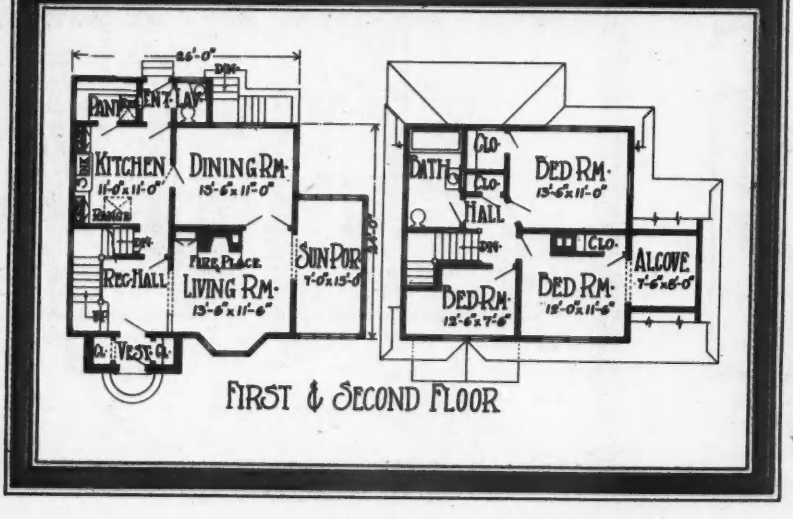
The CALHOUN

A graceful English shingled cottage of six rooms.



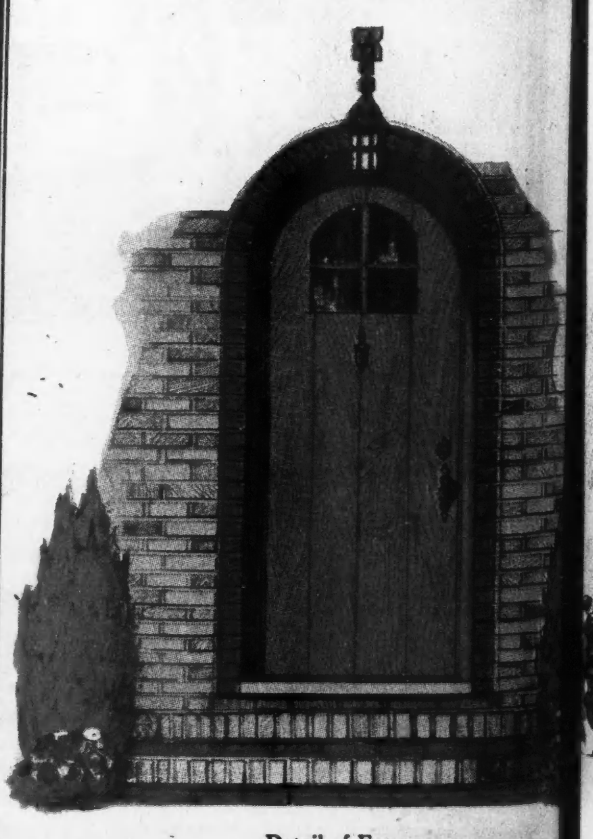
Detail of Ornamental Rose Trellis.



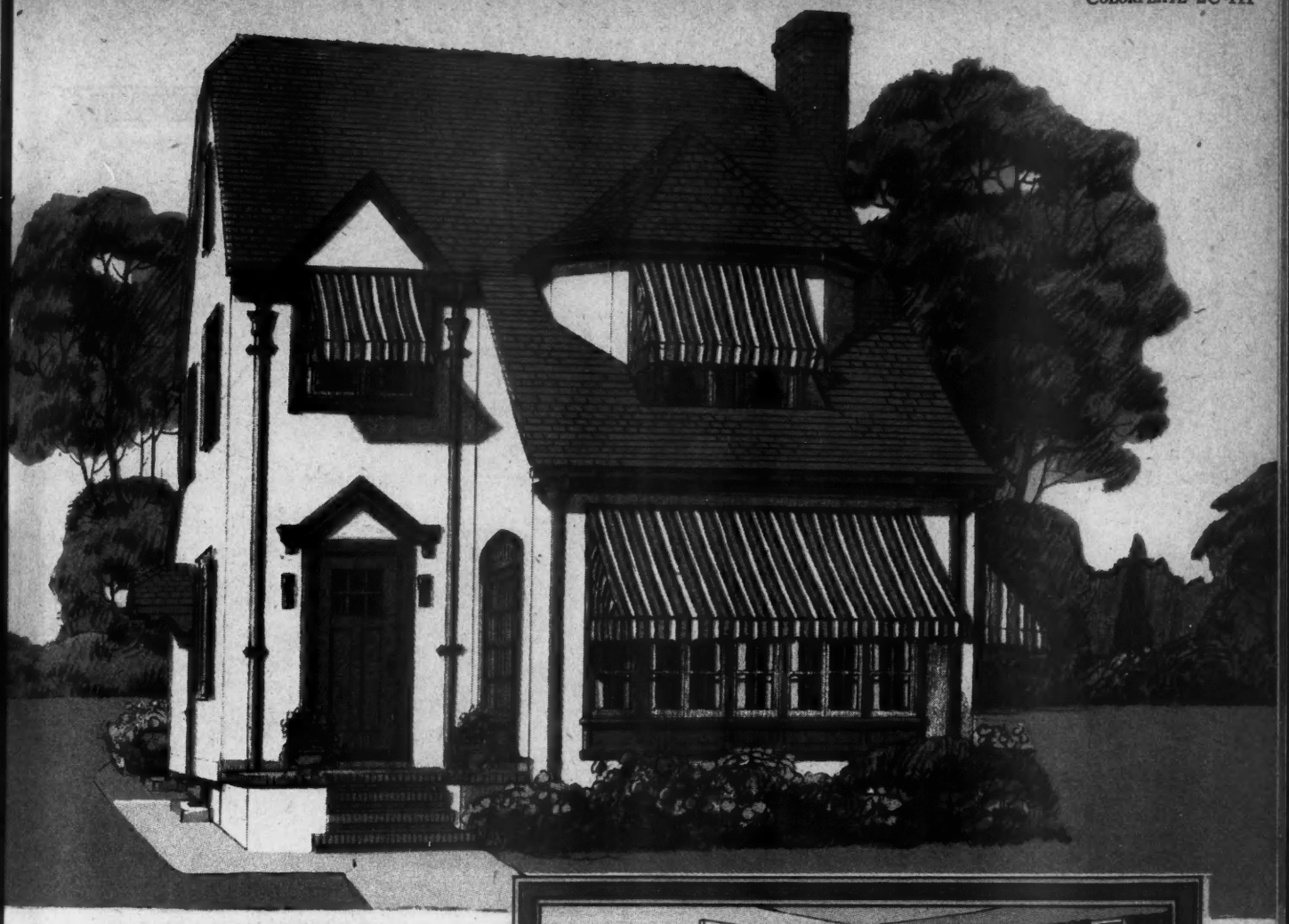


The CARTHAGE

THE brick entrance gives this seven room Engli cottage a substantial and distinctive look.



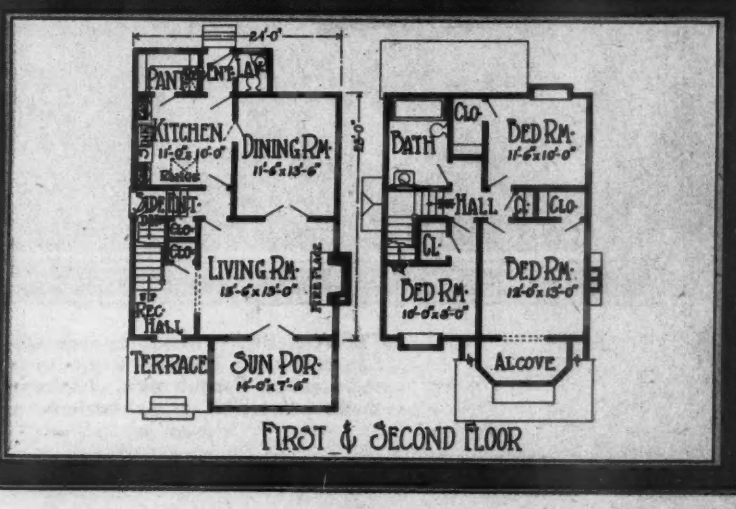
Detail of Entrance

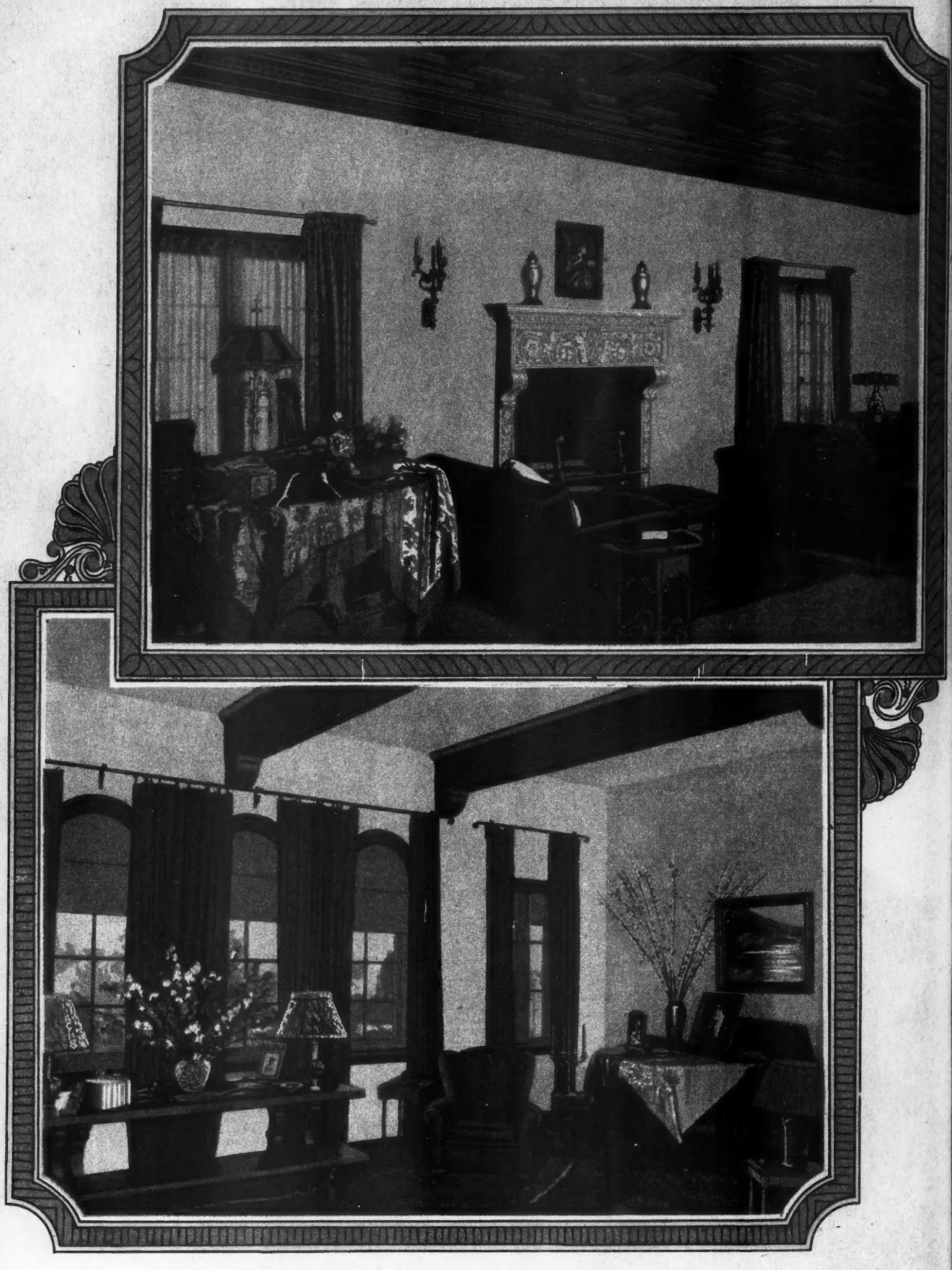


The CATSKILL

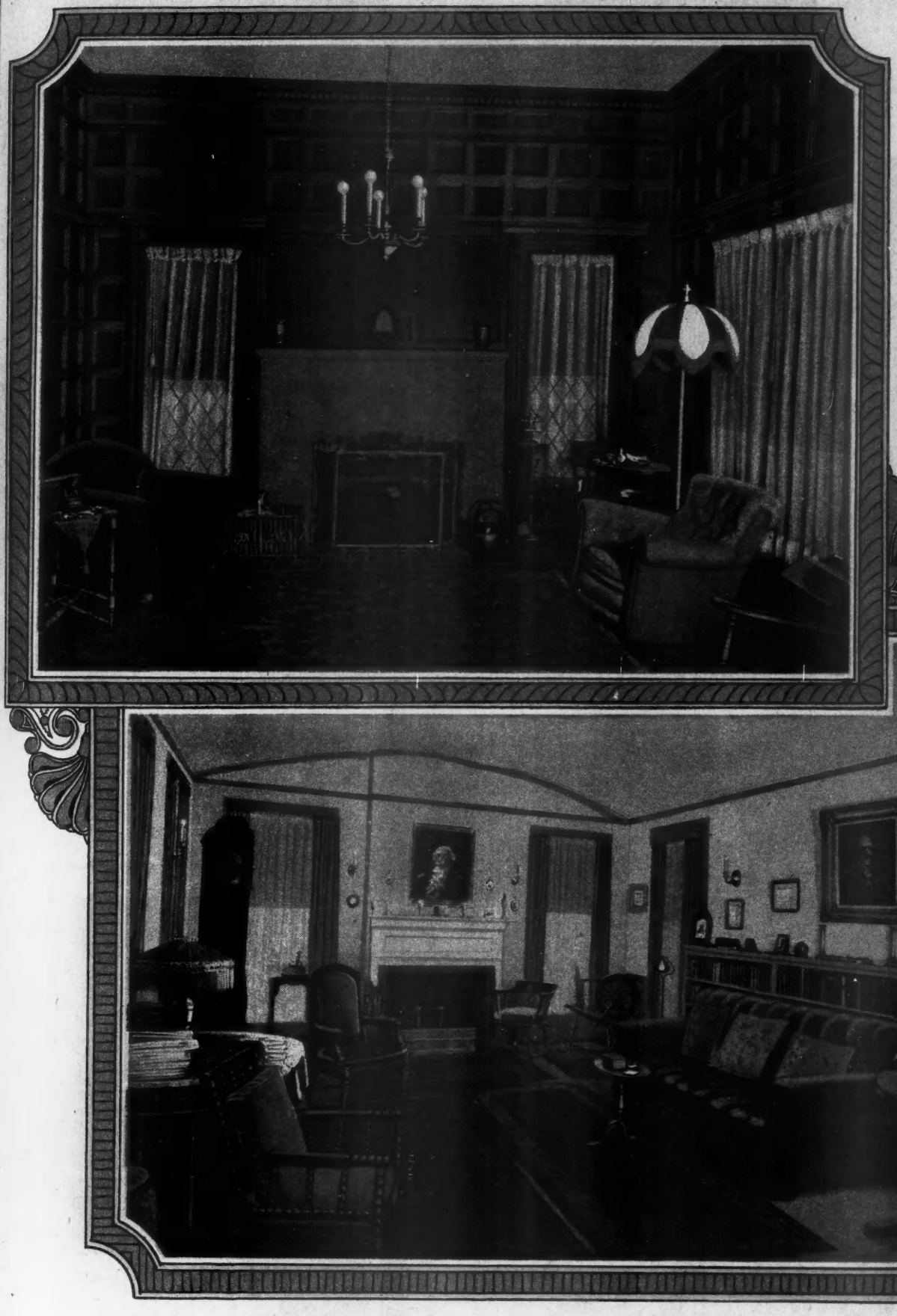
A SUCCESSFUL narrow lot design 24 x 38 feet containing six rooms and bath and front sun porch.

Detail of Front Entrance.

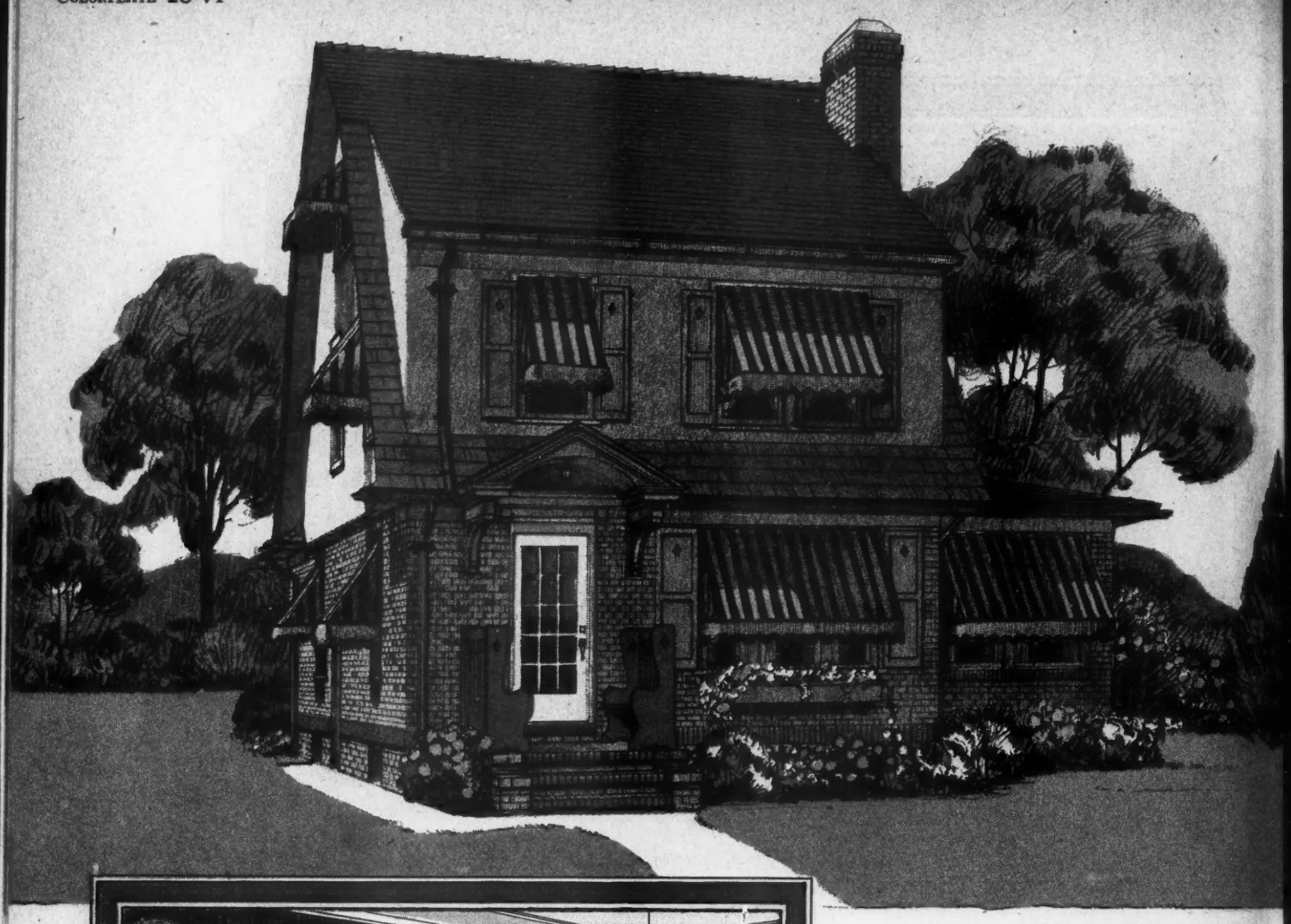


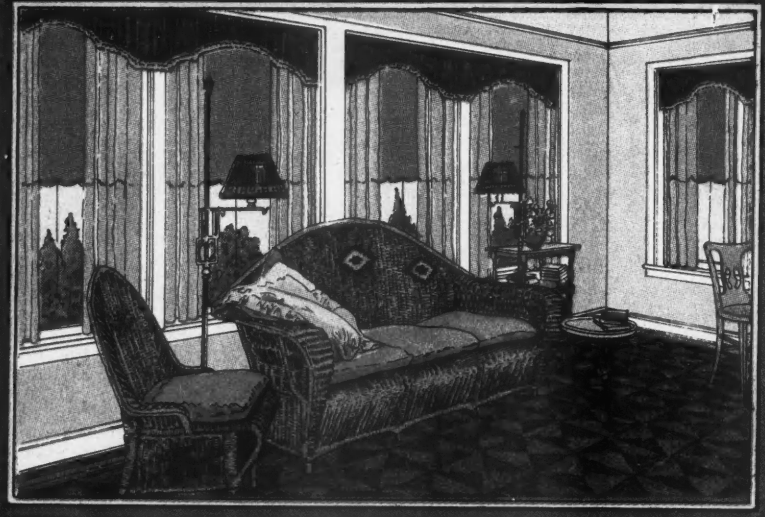


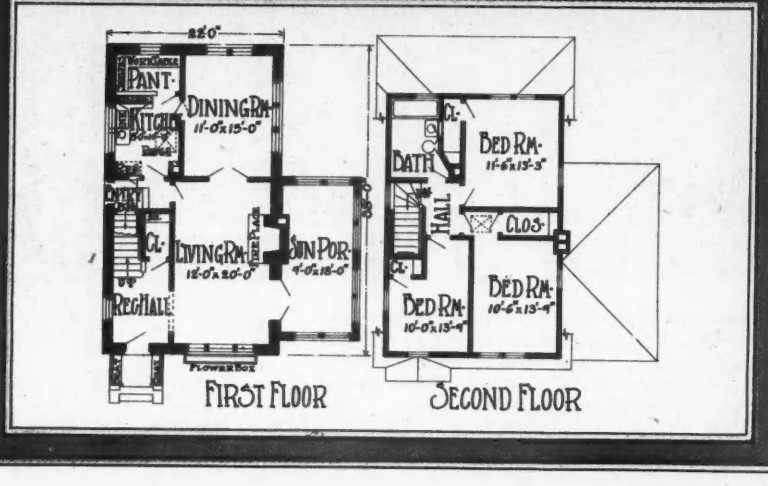
TWO rich living rooms, the upper with richly paneled ceiling, the lower with massive ceiling beams in the primitive Spanish style. Notice in particular the method of curtaining the windows.



THE fireplace is the center of interest in these two comfortable living rooms. The upper is paneled in early English style, the lower handled in simple Colonial style. The flat arched ceiling and open book shelves are features of this Colonial room.







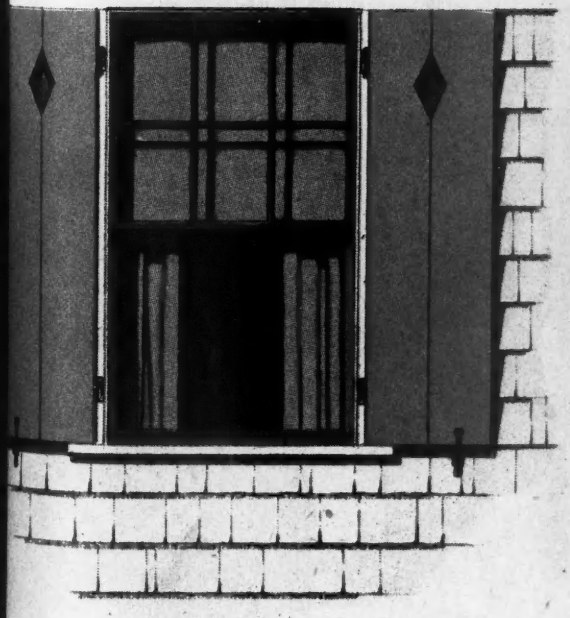
The CALDWELL

A TRIM little home in brick and stucco contai six rooms and bath, besides the big sun porch very excellent narrow lot design.

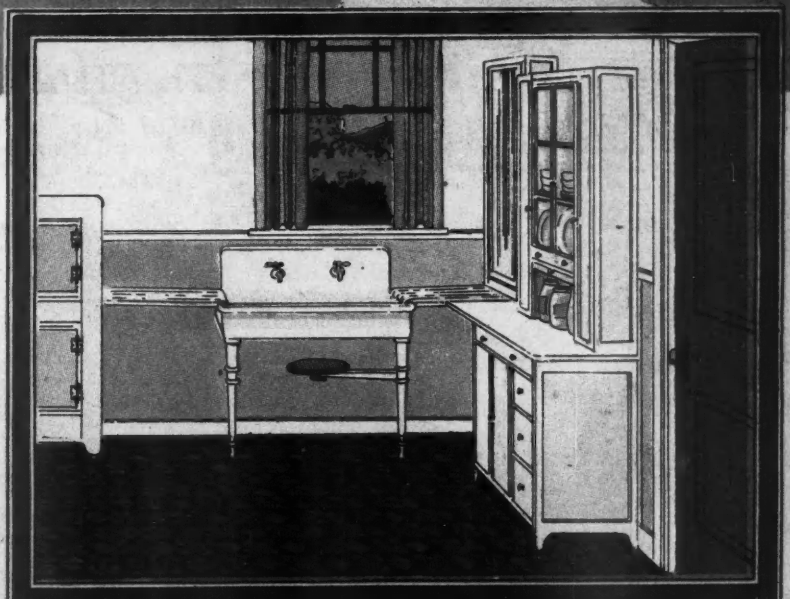
Detail of Quaint Entrance with Built-in Seats.

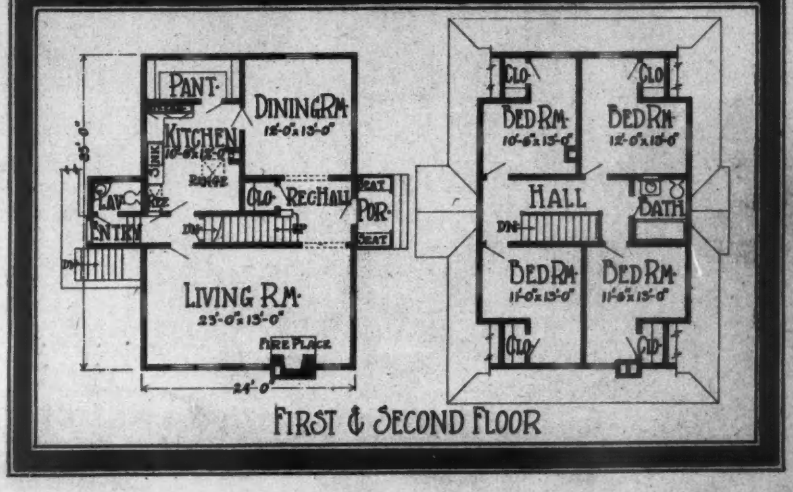
The CARROLLTON

AN excellent Colonial cottage containing seven rooms and bath. The shingled walls and the window shutters lend charm and individuality to this little home. Color sketch to right shows the cheerful step-saving kitchen.

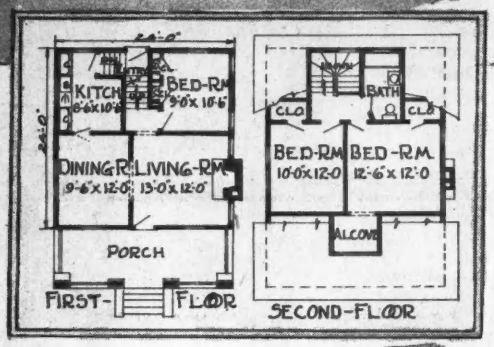


Detail of Windows with Hand Made Shutters.





FIRST & SECOND FLOOR

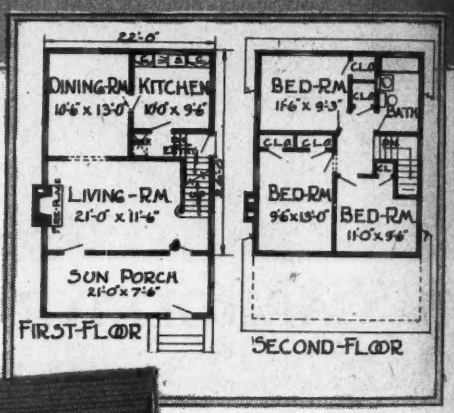


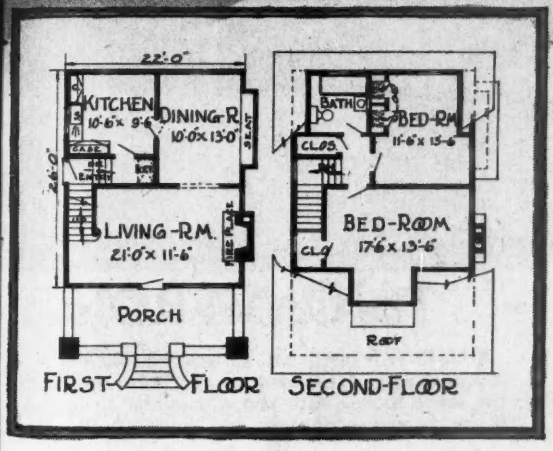
The CAYUGA

ABOVE and to the left is presented this six room home 24 x 24 feet.

The CHAPIN

BELOW and to the right is illustrated this narrow lot seven room house, size 22 x 26 feet.



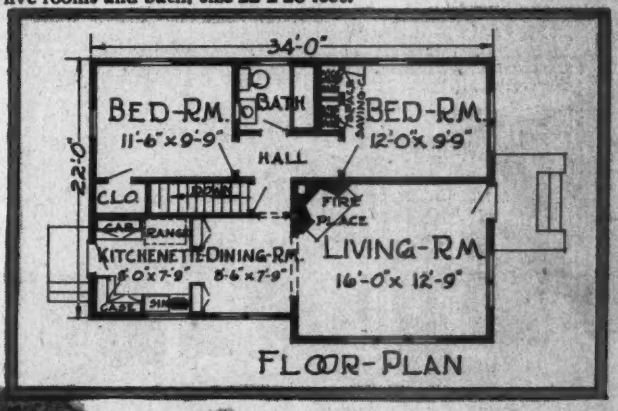


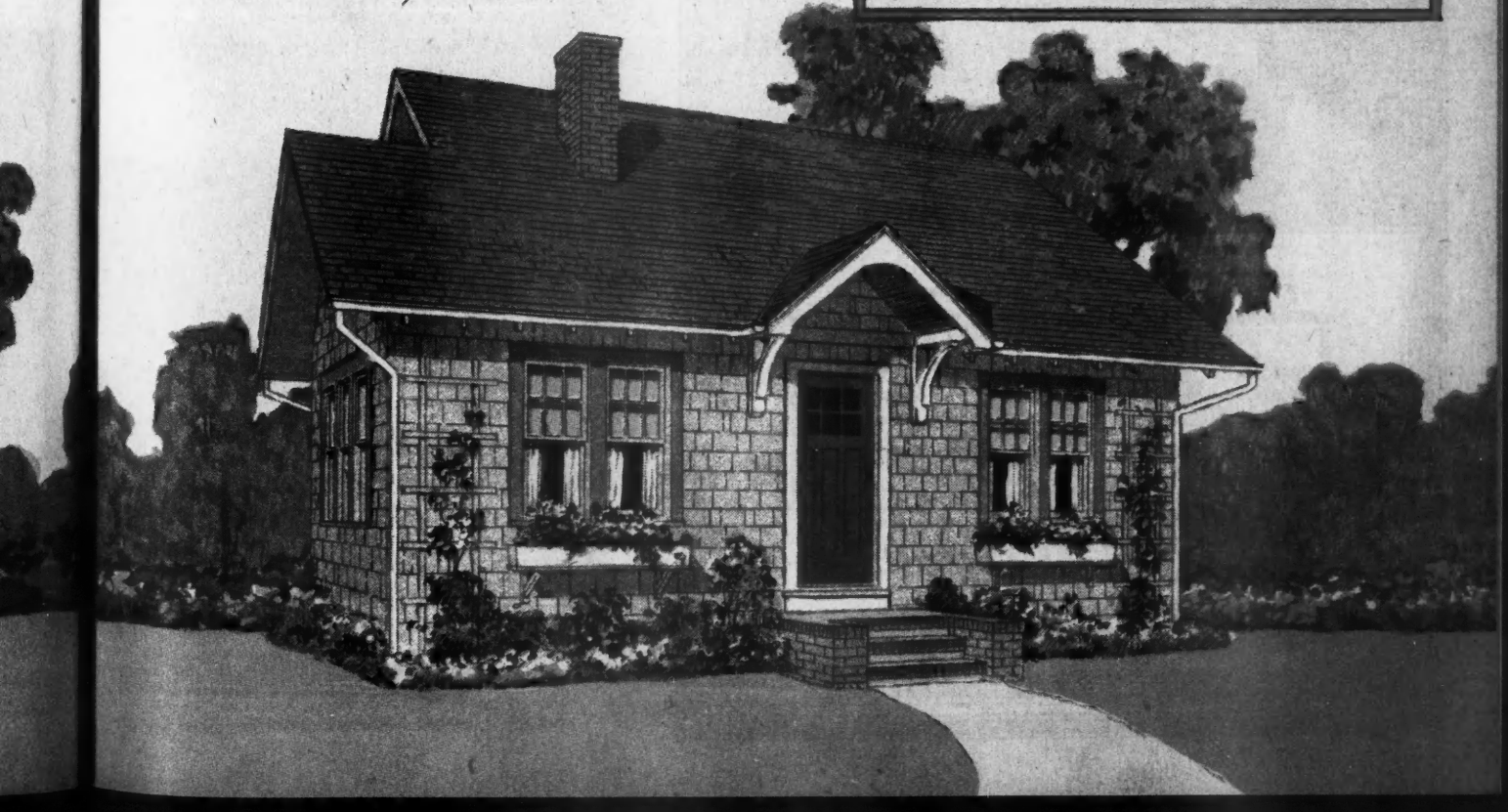
The CHILTON

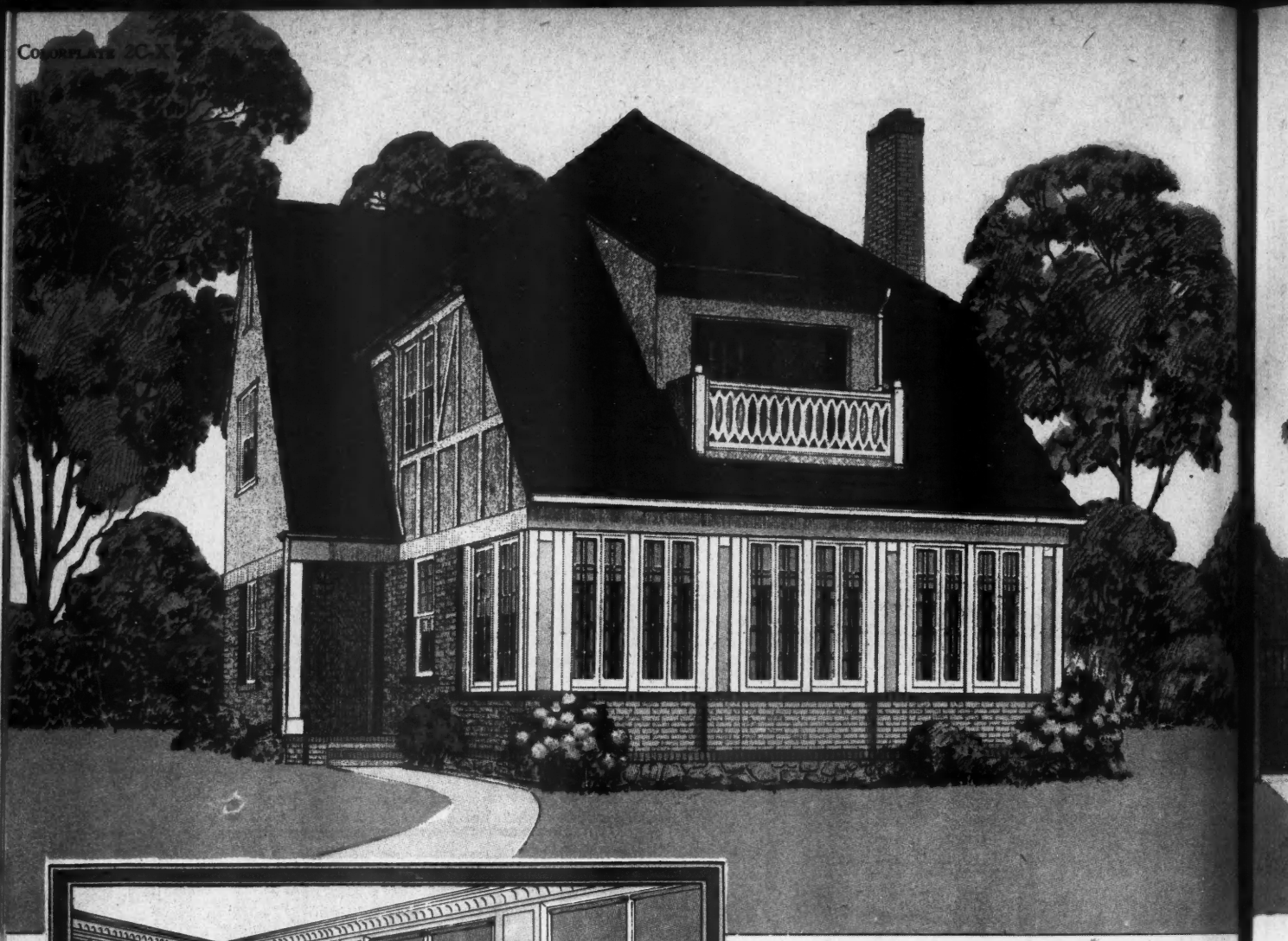
ABOVE and to the left is a popular narrow lot bungalow of five rooms and bath, size 22 x 26 feet.

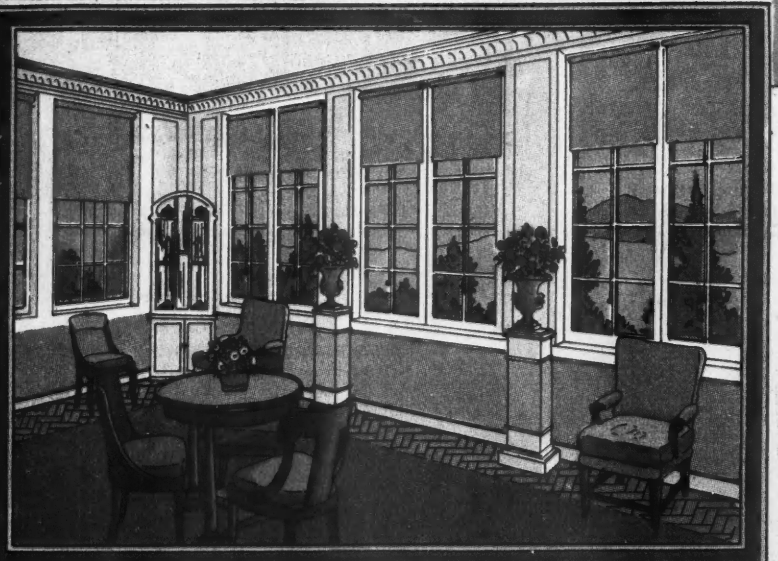
The CHELSEA

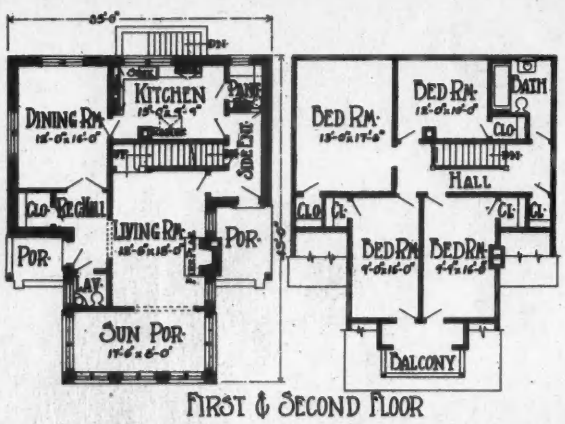
BELOW and to the right is an interesting five room efficiency bungalow, size 22 x 34 feet.







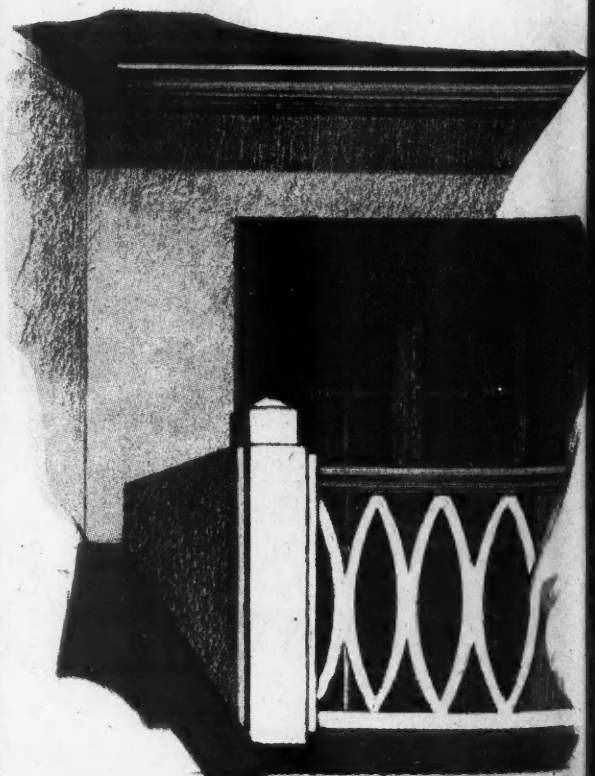




FIRST & SECOND FLOOR

The CAMERON

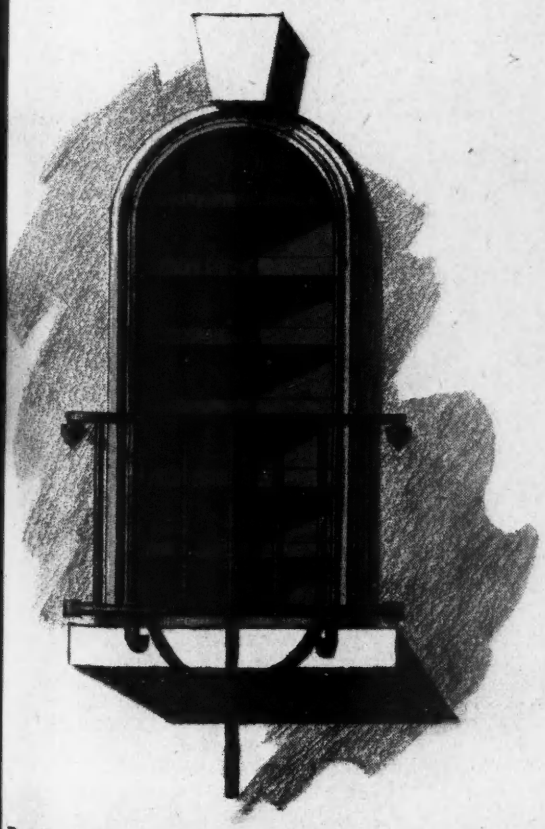
A SUBSTANTIAL and popular home design in brick and half timbered stucco. The arrangement of the seven rooms, bath and sun parlor as illustrated below, is very convenient.



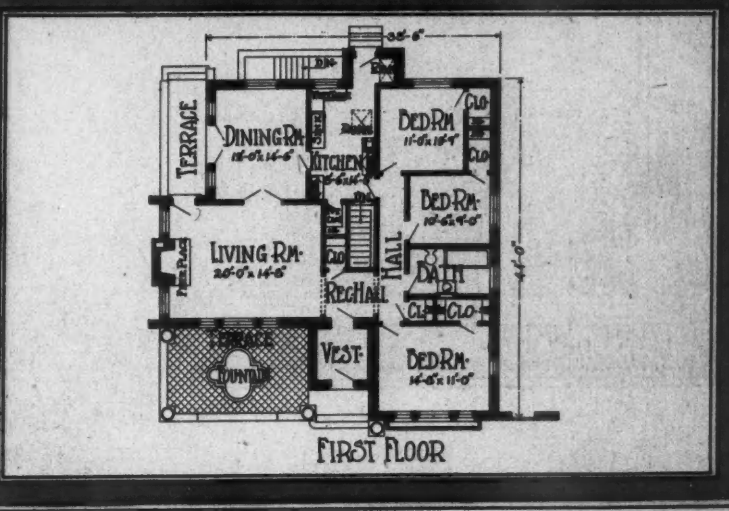
Detail of Ornamental Balustrade for the Roof Dormer.

The CAMBRIA

A TYPICAL Spanish design of unusual charm containing six rooms and bath.



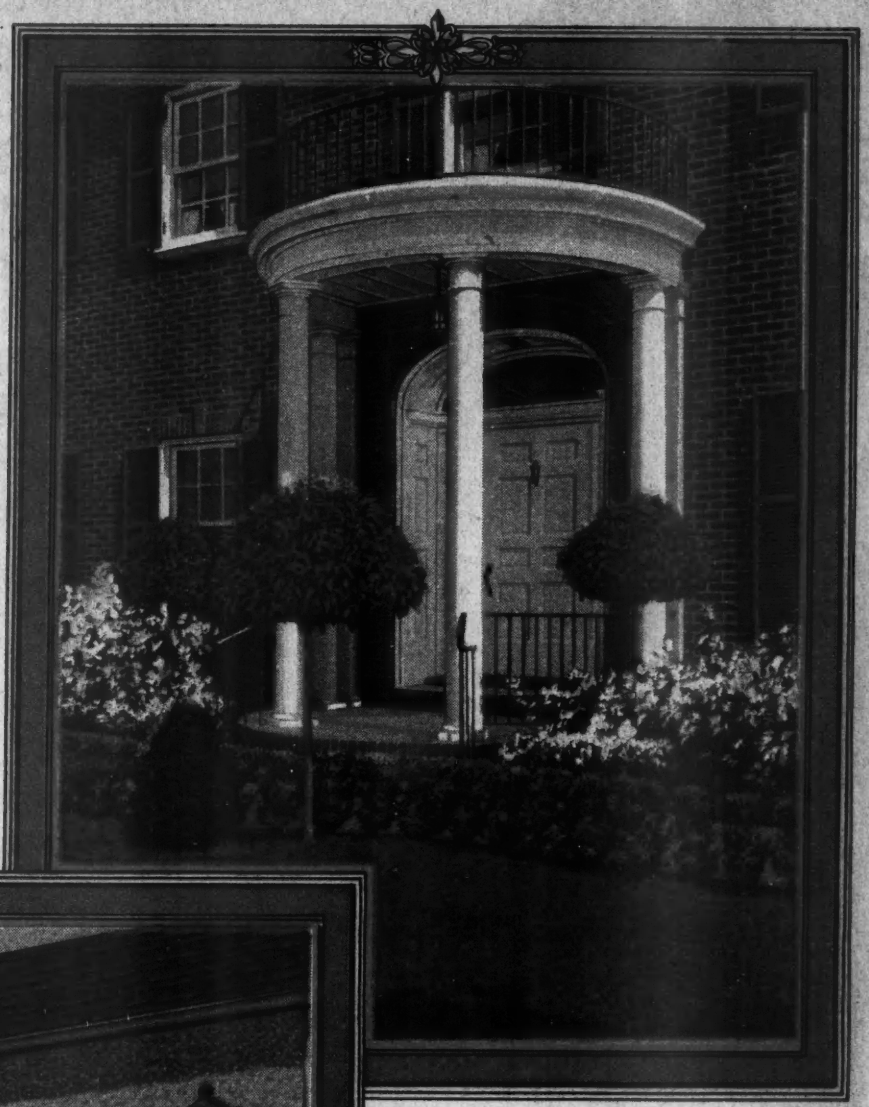
Detail of Ornamental Window with Wrought Iron Guard in the Tower.

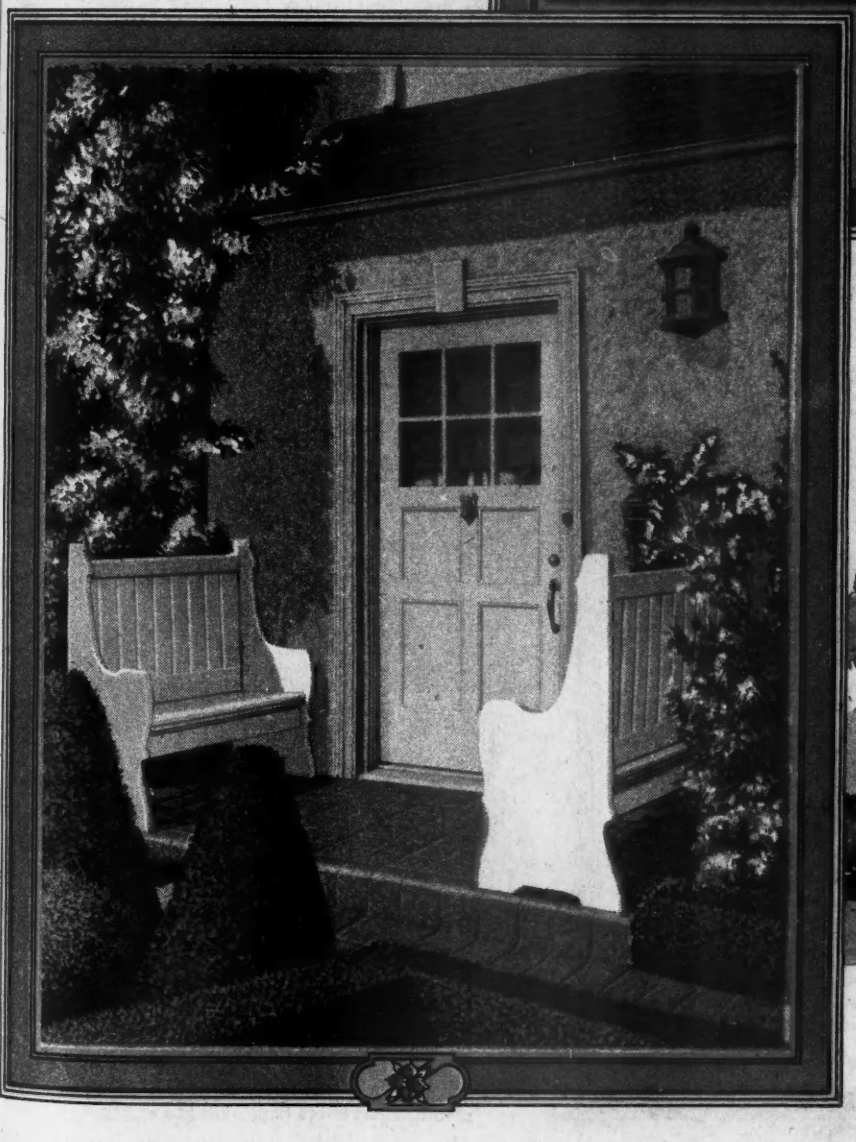


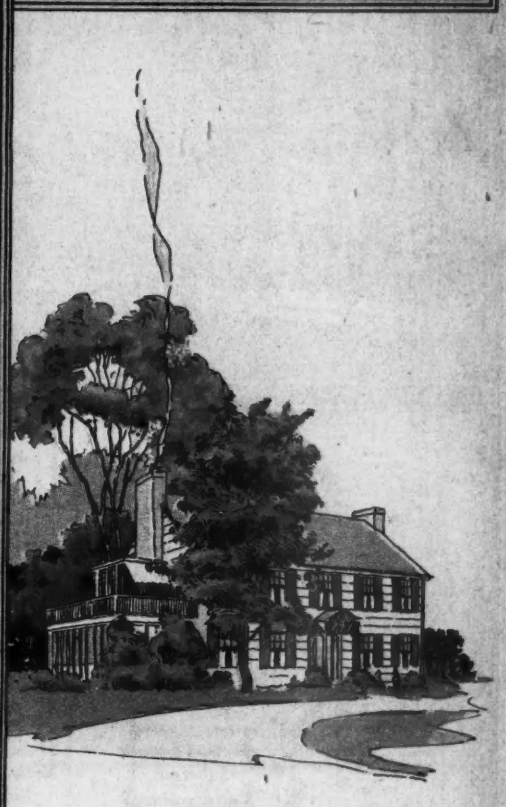
CONSIDER THE ENTRANCE

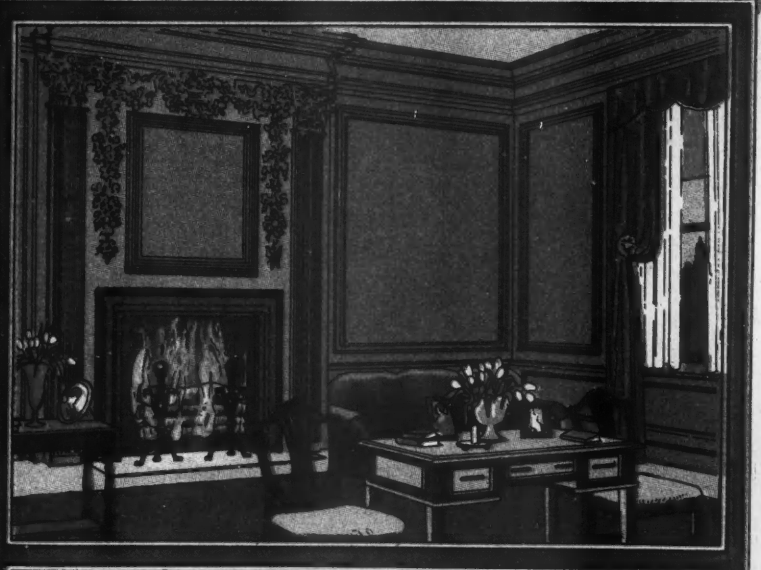
NO part of the home is more important architecturally than the front entrance, including the door with its hardware, the trim around the door opening, and the porch with its columns, balustrade and other accessories.

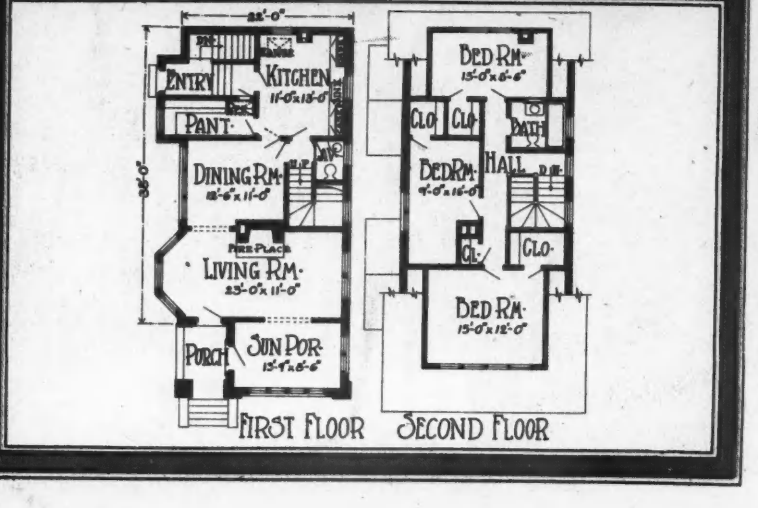
The popular Southern style two story porch is illustrated on the opposite page; to the right is a Georgean design and below a present day English terrace entirely without roof covering.





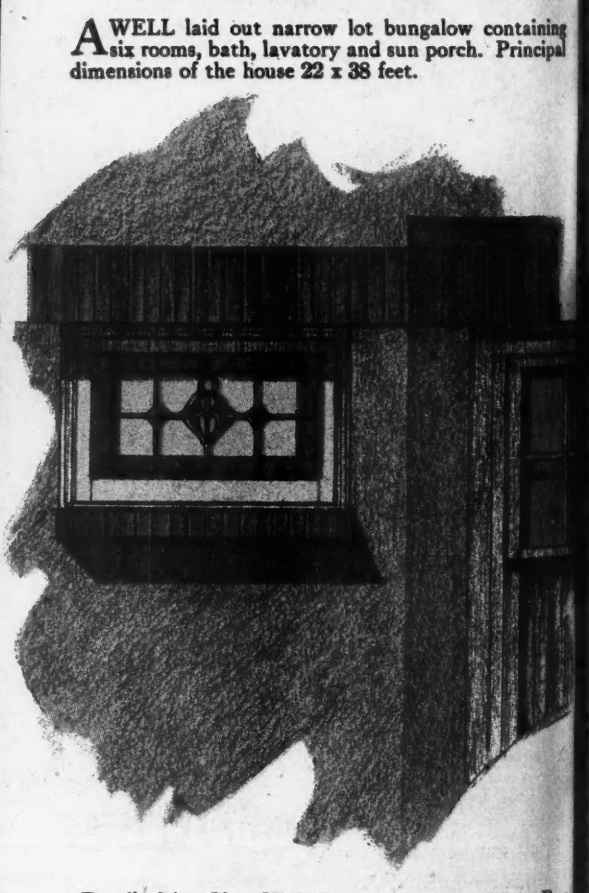




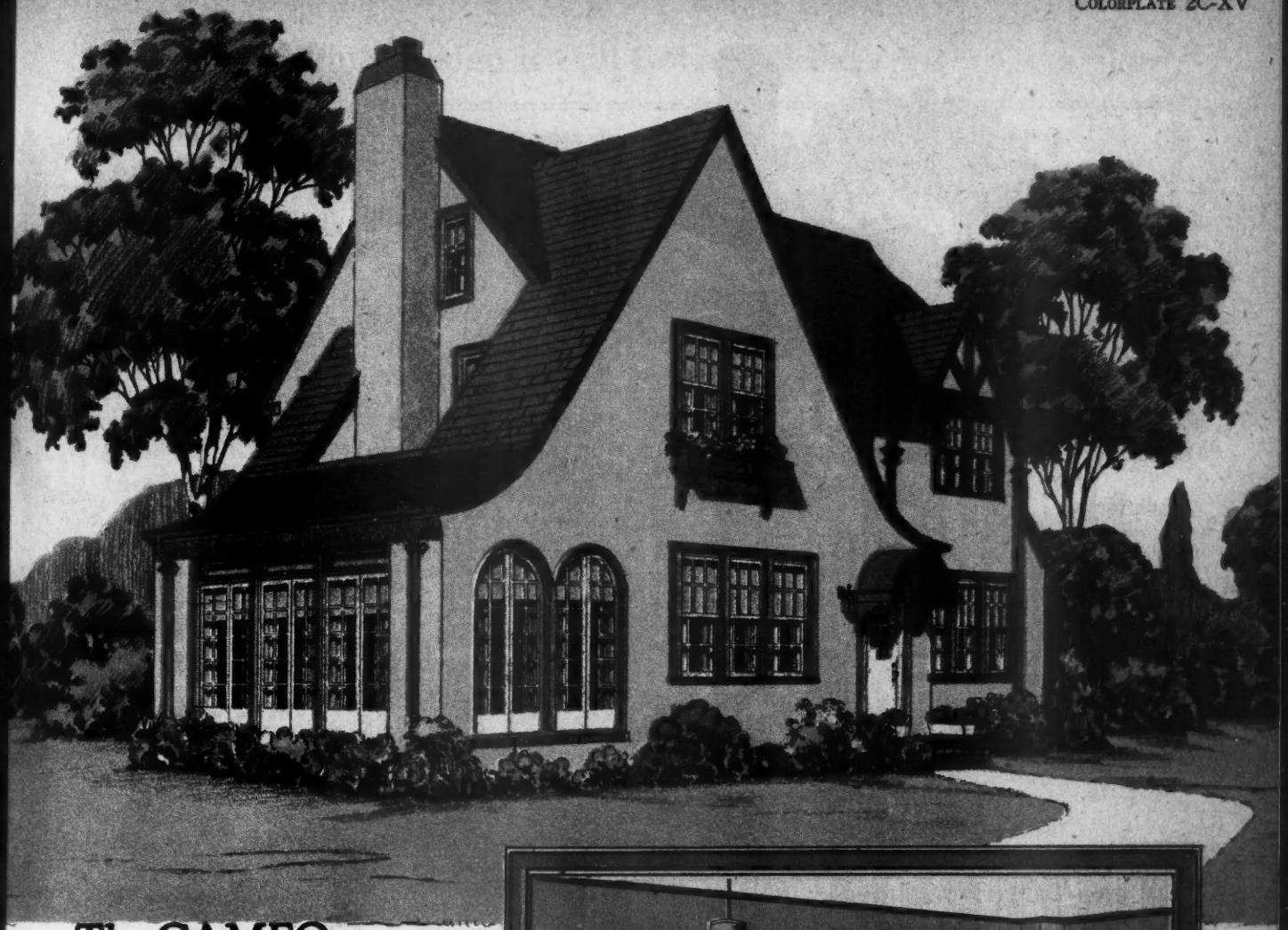


The CAPE MAY

A WELL laid out narrow lot bungalow containing six rooms, bath, lavatory and sun porch. Principal dimensions of the house 22 x 38 feet.



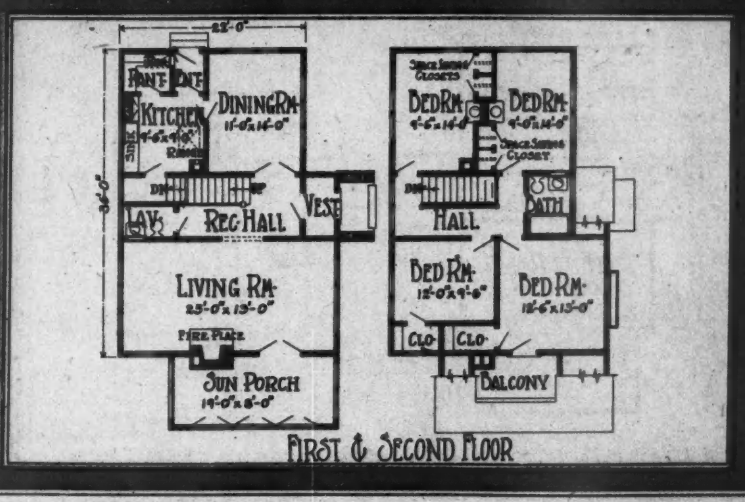
Detail of Art Glass High Window in Living Room Bay.

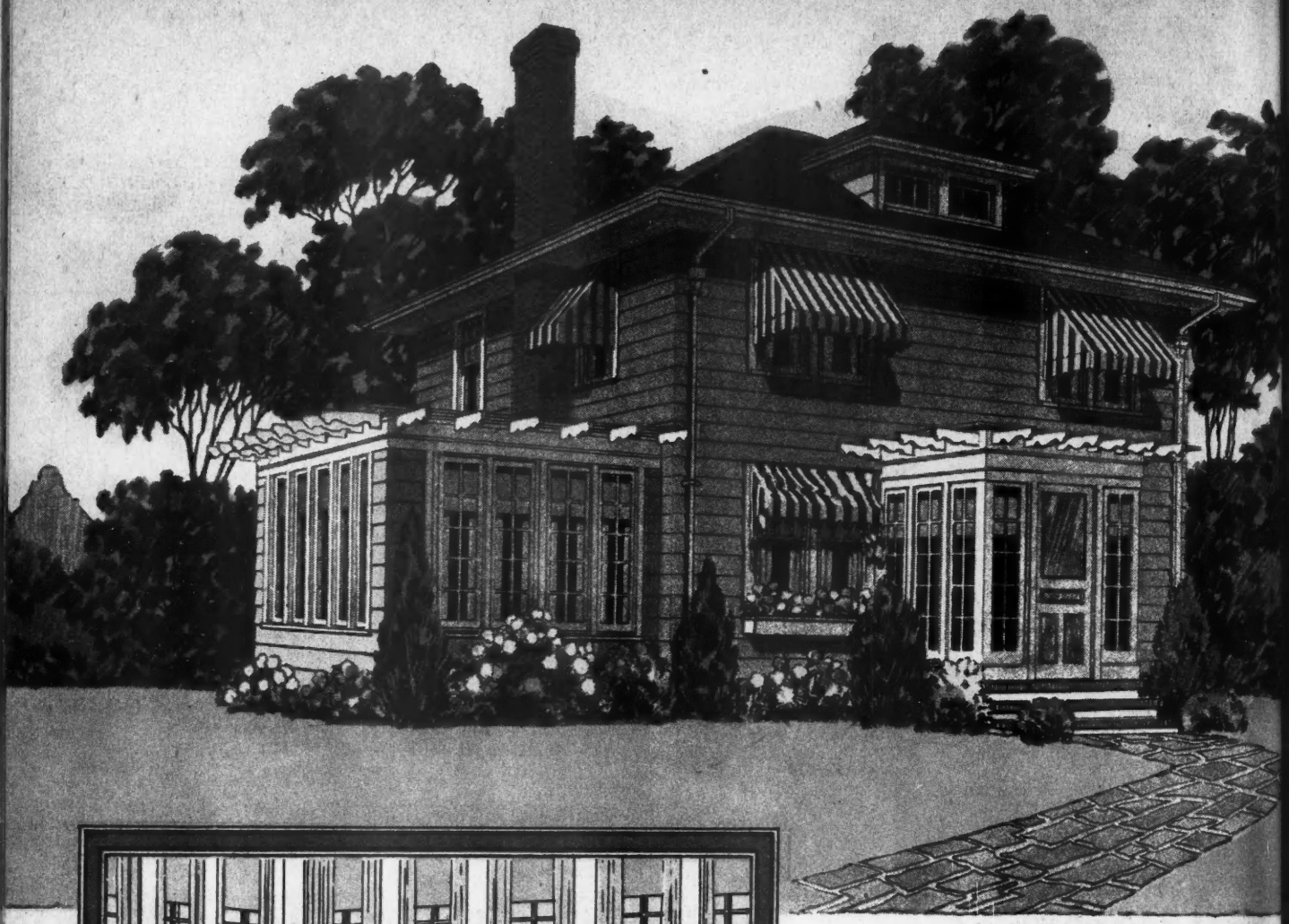


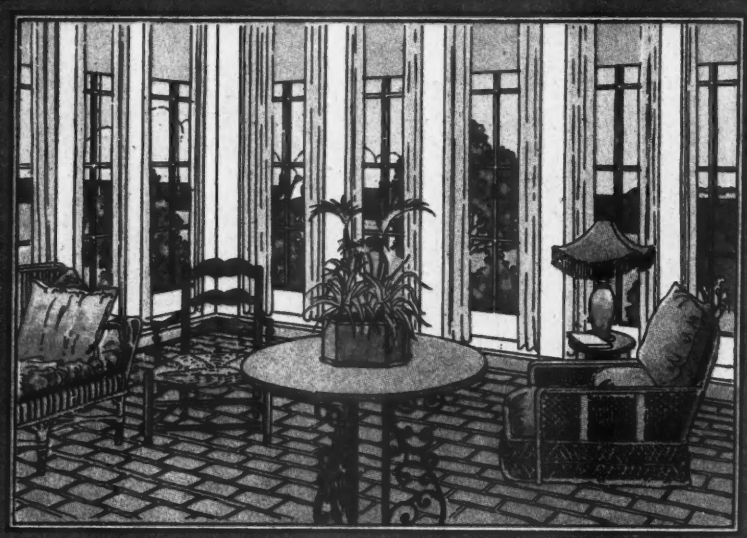
The CAMEO

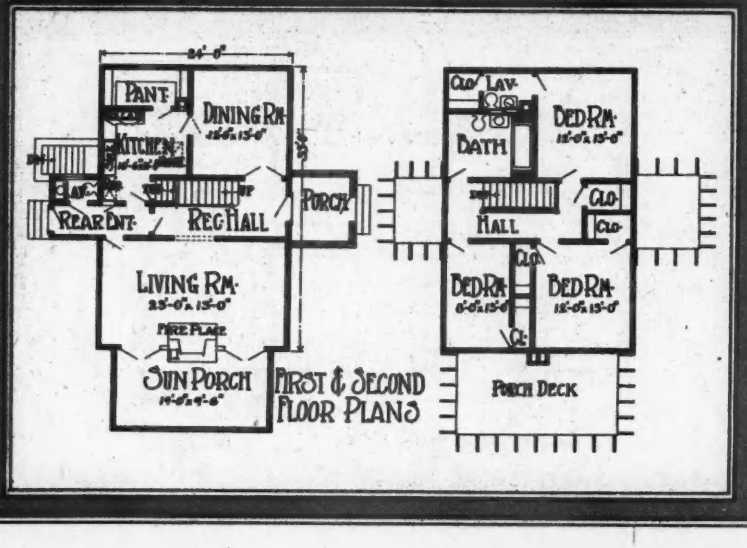
AN English home of distinction, very suitable for a corner lot. The depth is only 22 feet, while the width across the front is 36 feet plus 8 feet for the porch. An interesting feature of this plan is the built-in lavatory and space-saving wardrobes in two of the bedrooms. The color sketch shows this very nicely.

Detail of Entrance with Circle Head Canopy



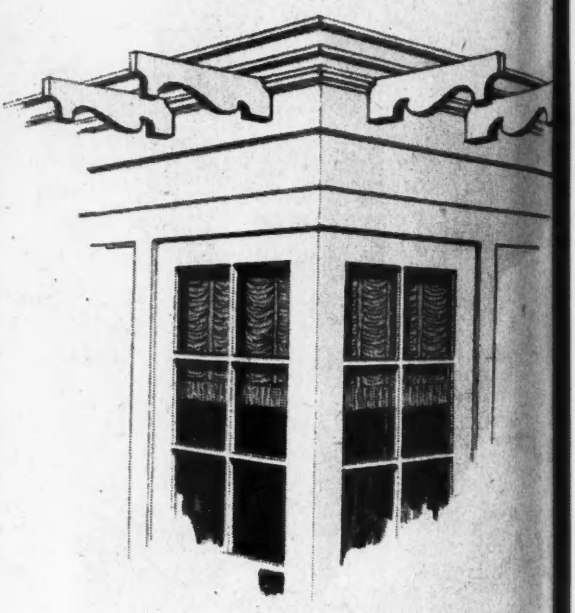






The CHURCHILL

A POPULAR rectangular hip roof design with u usual supply of glassed in porches. The big por opening from the living room is well illustrated in t color sketch. Here is solid comfort.



Detail of Corner Construction of Glazed Entrance Porch.

OUR FRONT COVER HOME

A Dutch Colonial Modernized to Meet Every Requirement of the Present Day Home Builder, But Retaining the True Colonial Effect

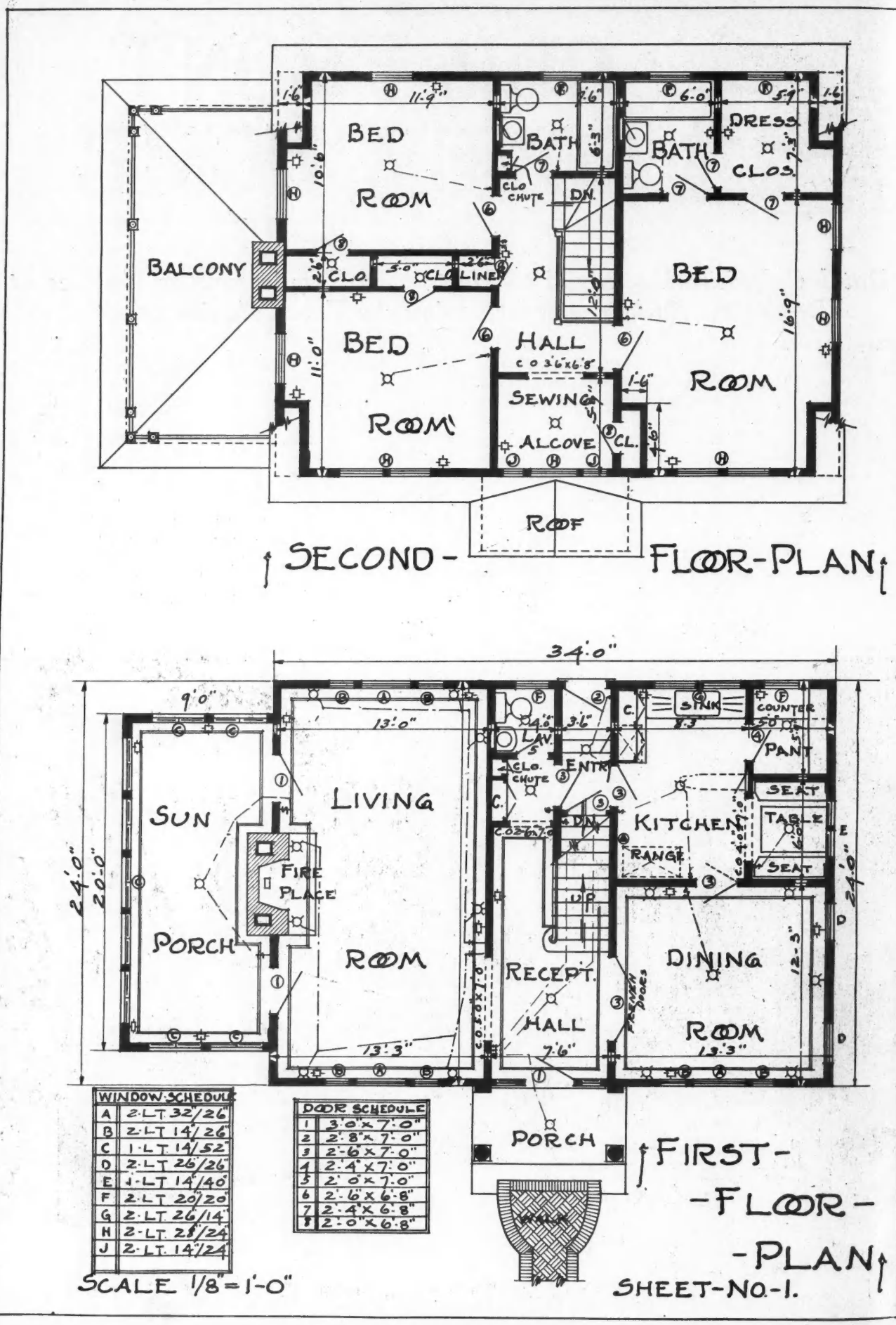
THE past few years have been marked by a growing interest in and popularity of things Colonial, particularly Colonial architecture. Many people talk freely of Colonial architecture, apparently unaware of the fact that the term is a broad one including several distinct styles. New England Colonial is one thing, Dutch Colonial another and Southern Colonial still another, though all possess certain characteristics in common, expressing the classical influence which dominated the period.

But whatever the type of Colonial architecture adopted by the prospective owner for his new home, it will, if discretion is used in its modernization, afford him a dwelling which will possess a permanent beauty and charm based on sound architectural principles. The modernization, which is essential to living comfort according to present day standards, must be handled with discretion however, for the simplicity of the true Colonial is easily marred by an inharmonious sun porch or garage or an uninformed selection of trim or decoration.

A sun porch is quite generally considered essential to the modern house and the designer of Our Front Cover Home has most successfully accomplished this addition to the Dutch Colonial residence. The house, then, presents a highly satisfactory appearance and one which will preserve its charm through the passing years regardless of changing styles of less substantial origin.

This sun porch is a completely enclosed addition to the large living room which extends across one end of the house. The first floor also includes a reception hall, dining room, a kitchen with breakfast nook, an ample pantry and a convenient first floor lavatory. Above stairs there are three bedrooms, a sewing alcove and two bathrooms.

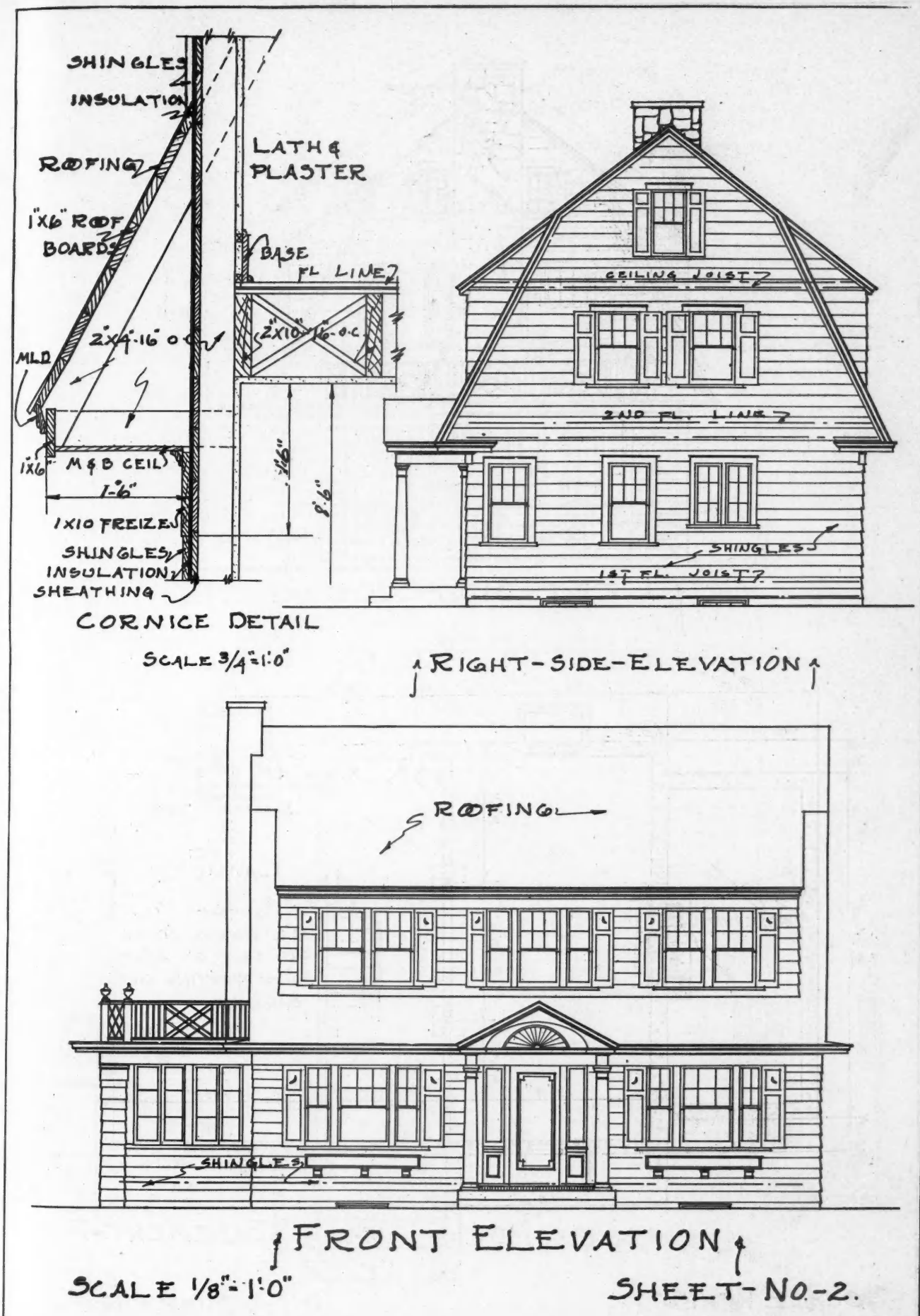
After Seeing the Exterior of Our Front Cover Home, as Shown in the Photograph Above and, in Colors, on Page One, It Is Only Natural to Be Curious as to the Plan of This Attractive House and that Curiosity May Be Satisfied by Turning to the Pages Following This.



WINDOW SCHEDULE	
A	2-LT 32/26"
B	2-LT 14/26"
C	1-LT 14/52"
D	2-LT 26/26"
E	1-LT 14/40"
F	2-LT 20/20"
G	2-LT 26/14"
H	2-LT 28/24"
J	2-LT 14/24"

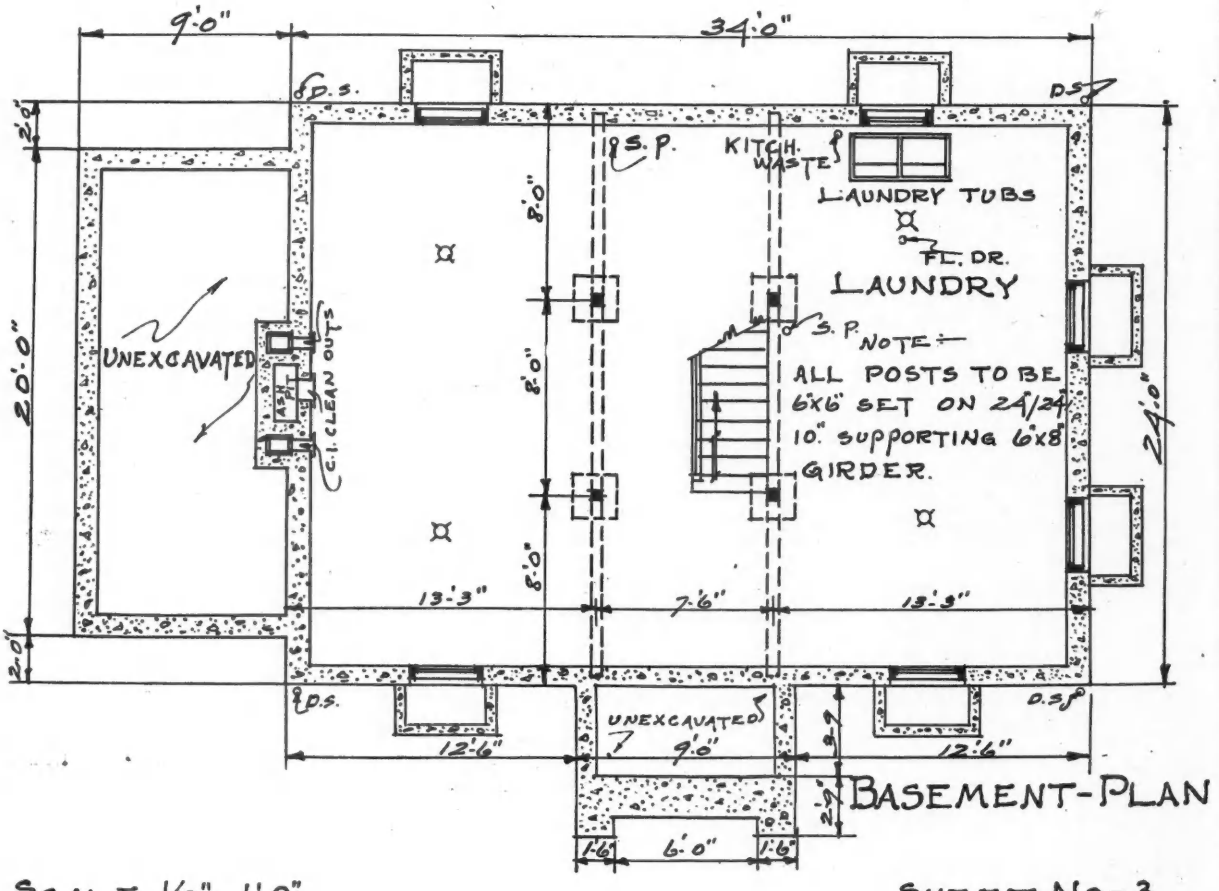
DOOR SCHEDULE	
1	3'0"x7'0"
2	2'8"x7'0"
3	2'6"x7'0"
4	2'4"x7'0"
5	2'0"x7'0"
6	2'6"x6'8"
7	2'4"x6'8"
8	2'0"x6'8"

Floor Plans Tell a Story of Planning Which Considers Every Need of the Family that Will Occupy Our Front Cover Home, a House Arranged for Comfort and Lending Itself to Effective Decoration.



These Elevations Show the Front and Right Side of the House While the Detail Drawing Indicates the Construction of the Cornice. The following pages tell more of the construction story.

LEFT-SIDE-ELEVATION

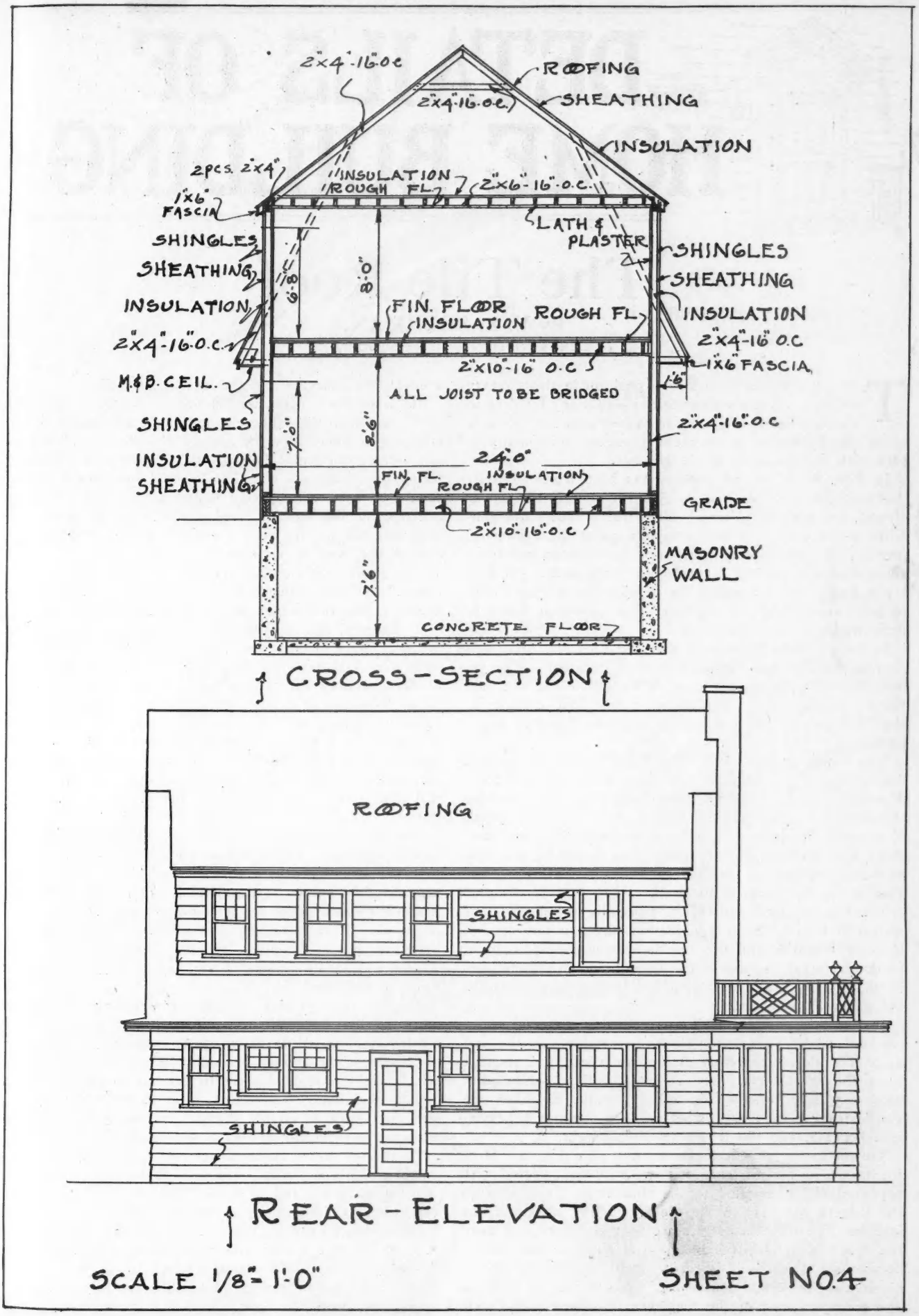


BASEMENT-PLAN

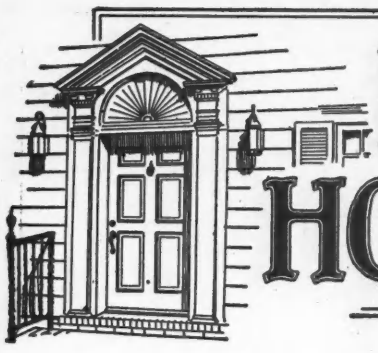
SCALE 1/8"=1'-0"

SHEET NO.-3

The Basement of Our Front Cover Home Is Completely Excavated and Affords Space Which Can Easily Be Utilized if Extra Rooms Are Desired. The elevation shows the placing of the fireplace chimney.



Floor, Roof and Wall Construction, with Thorough Insulation Indicated, Are Seen in the Sectional View While the Rear Elevation Completes the Story of Our Front Cover Home.



DETAILS OF HOME BUILDING

The Tile Roof

By V. L. SHERMAN,
Lewis Institute of Technology

TILE has grown to a strong position in this country and is now common enough to lead many builders to try their hands at variety in roof structure. To many of us tile is simply tile, to them it means individuality in part with the character of the house.

In Figs. 7 and 10, an attempt has been made to show this contrast. The Moorish or Spanish style is tile-capped always, but with an informal effect which shows the generous use of tile. The tile is not always of the cylindrical form. The adaptations are, even here, from an older civilization and used to decorate flat, thick walls. The tiles are in fact a roof for walls, low or high (as we sometimes forget), and might cap anything from a 7-foot court or patio wall to a very tall house.

In Fig. 7, it may be seen that the tiles are thin, well over-lapped, but not keyed, and quite irregular. The cementing under the ridge tile is plainly visible and not considered a handicap to appearance. The wall surfaces at the location of the sketch were unbroken except for a lantern.

Now consider Fig. 10. The French tend to localize decoration. The roofs are of uniform pitch, hip and cone. There is an attempt at symmetry which is emphasized by the use of a small pattern French tile used throughout. Practically all of the decoration is furnished by door, windows, and grounds, yet any other roof would be at a disadvantage because of its lack of fitness or severity. The French use that form of tile well.

Tile can be used with slate, especially rough slate, as shown in Fig. 8. Such combinations are common enough in some localities and this one is shown merely to point to the fact that the use of tile should not be closely confined. It may prove its worth and beauty in many ways not generally accepted.

In Fig. 9, a concrete wall was gabled with a roll and a tile roof used. This sketch shows perversion. In the first place, the tile is apparently of the thin variety. The ridge is of the same form. The roof itself, then, while comparatively light, is sunk into a heavy wall. Evidently the extra strength of the walls is used to support a heavier roof beneath, and the tile is an afterthought.

To get to the practical side of tile, note Fig. 3. Here we have a properly framed roof we will say, covered with paper which is strapped to the sheathing. Over this go the ledgers which raise the tile above the surface of the boards. The tiles themselves are poor conductors of heat, the space below the tile being dead air is a still poorer conductor. The result is really double roofing so far as conduction of heat is concerned. Considering the stiffness and projected area of the tile, even on a nearly flat roof, how little effect would wind have on such a roof. In an average square of tile roof, the surface is well protected from all the elements and the interior as well.

But when the corners are reached more care is necessary to do justice to tile. There is nothing elastic about it and skimping is likely to work havoc. No tile roof should be laid without particular pains to make joints with chimneys, stacks, or upper walls complete. Sound and liberal flashing should be used with cement bedding. To make it really worth while the flashing used should have as good prospects for life as the tile. Corrosion advances quickly in out of the way corners and with the slightest excuse. What profit then is a permanent roof with permeable joints. Far less expense is incurred where all metal engaging a tile roof is part of and as permanent as the roof.

A tile roof, like a slate roof, is brittle in its elements. So long as its form is unaltered it is as good as new, but such a roof is beyond help if the structure is weak. At times a sagging tile roof is noticed and seems to strike us as pronounced because we know by instinct that with uniformity gone, the weakness is general. The rafters and sheathing for a tile roof should be substantial. No questions as to strength should be allowed. While not nearly so heavy as many imagine, and plenty light enough for any real roof, it is heavier than cedar, manufactured roofing, or slate.

The tile weight should be known and the framing computed therefrom. The irregular surface of the tile is likely to make snow-load more effective and that too should be considered. There is no hardship in such provision. Timber-strength tables are available to everyone and should be used. They save embarrassment. Some roofs we know do not fail simply because they lack temptation. That could hardly be said of tile, and perhaps that is why tile is so well liked.

Another point is this. As before mentioned the prevalence of the lower-pitched, hipped tile roof makes for needed caution. With rafter spans excessive, or with low pitches, bracing should be sufficient to prevent sagging which might be normal in the timber but hurtful to the tile. I have seen such roofs braced after completion with success, but with a narrow margin for safety to the roof. Strength is especially needed at the headers.

There are some failings, not very common, however, but of which a few words might be said. They have to do with appearances and I should like to wind this up by repetition. Chimneys above tile roofs may be large but should never be small. They should be plain, never ornate. A good tile roof suffers from a contrast above it, although as a roof it may be in strong contrast to the walls below. Tile should not be placed on a light structure, unless its appearance is just as light. This is easy since many tiles are thin. But one of the best things regarding tile roofs is the opportunity for color.

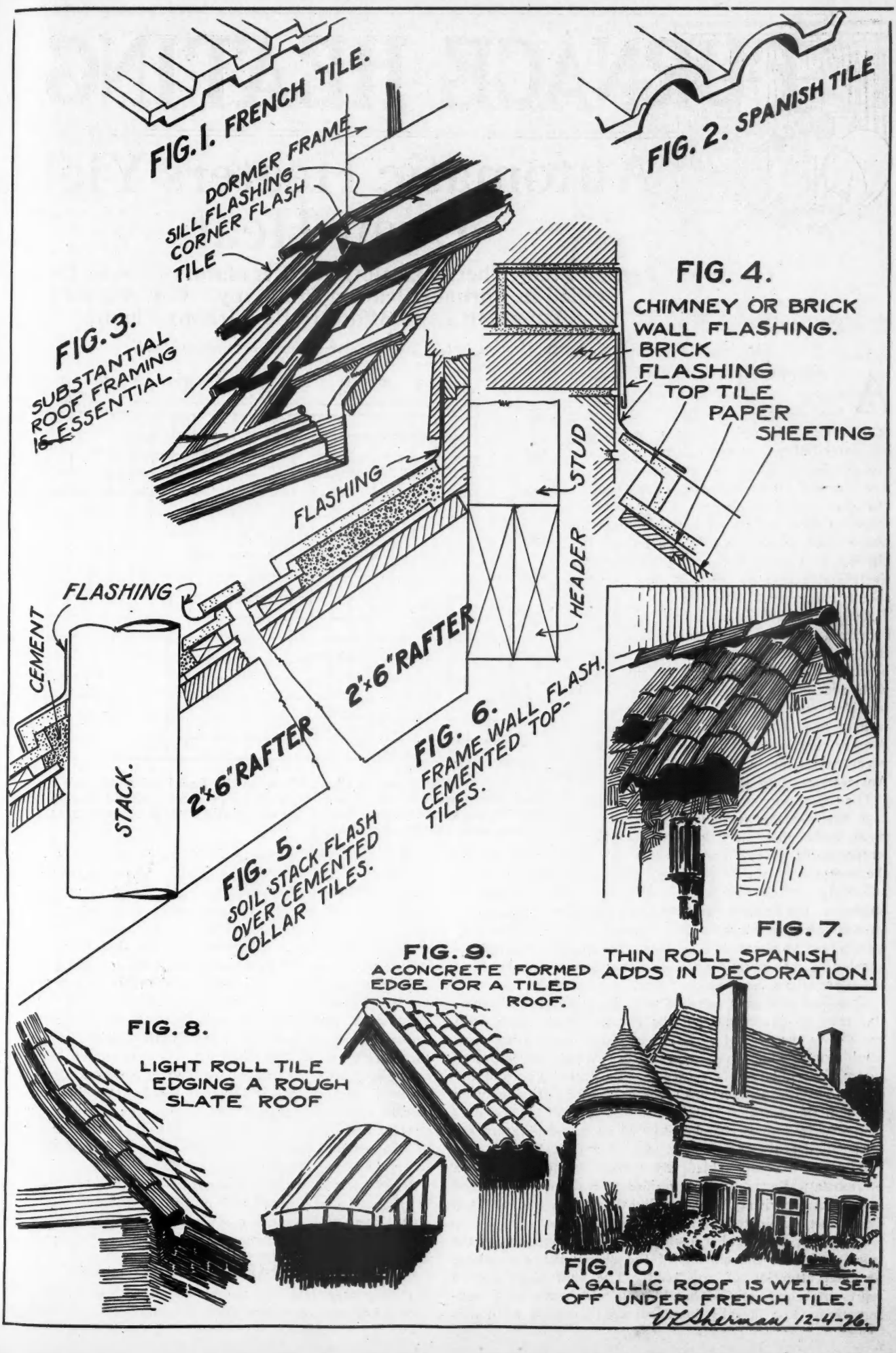
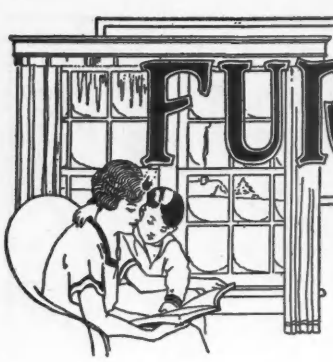


FIG. 1. FRENCH TILE.
FIG. 2. SPANISH TILE
DORMER FRAME
SILL FLASHING
CORNER FLASH
TILE
FIG. 3.
SUBSTANTIAL ROOF FRAMING IS ESSENTIAL
FIG. 4.
CHIMNEY OR BRICK WALL FLASHING.
BRICK
FLASHING
TOP TILE
PAPER
SHEETING
STUD
FLASHING
HEADER
FLASHING
CEMENT
2"x6"RAFTER
2"x6"RAFTER
STACK.
FIG. 5.
SOIL STACK FLASH OVER CEMENTED COLLAR TILES.
FIG. 6.
FRAME WALL FLASH. CEMENTED TOP-TILES.
FIG. 7.
THIN ROLL SPANISH ADDS IN DECORATION.
FIG. 8.
LIGHT ROLL TILE EDGING A ROUGH SLATE ROOF
FIG. 9.
A CONCRETE FORMED EDGE FOR A TILED ROOF.
FIG. 10.
A GALLIC ROOF IS WELL SET OFF UNDER FRENCH TILE.
V.Z. Sherman 12-4-26.



FURNACE HEATING

Automatic Heaters Yield Even Heat

Reasons Why Thermostatic Heat Regulators Should Be Installed in Furnace Heating Are Many. Can Building Owners, in Fact, Afford to Be Without Them?

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

ACCURATE data covering the financial saving possible with thermostatic heat regulators are difficult to muster, as types of warm-air furnaces, steam and hot-water boilers, oil and gas burners, differ greatly in design, size and construction. Every manufacturer of these devices, though, can give specific instances to prove their value. Cases are by no means uncommon where over 30 per cent of the annual fuel bill has been saved and it may be conservatively stated that 20 per cent may be taken as a fair average.

As thermostats are no longer novel, their operation need not be explained here further than to say that the type used in warm-air heating comprises three different pieces, with accessories. One thermostat, usually provided with a clock, is installed on the wall of one of the rooms to be heated and another thermostat is connected to the furnace bonnet, or in the largest leader duct. An electric motor is the third unit.

The operating principle is the same in both thermostats; namely, a bimetallic element, each end being responsive to different temperatures closes and releases an electric circuit to the motor. This then opens or closes the furnace drafts according to the demands for heat. The thermostat located at the furnace limits the temperature of the warm air passing upward from the heater to the rooms and is usually set at about 180 degrees, the temperature recommended as maximum by the National Warm Air Heating and Ventilating Association.

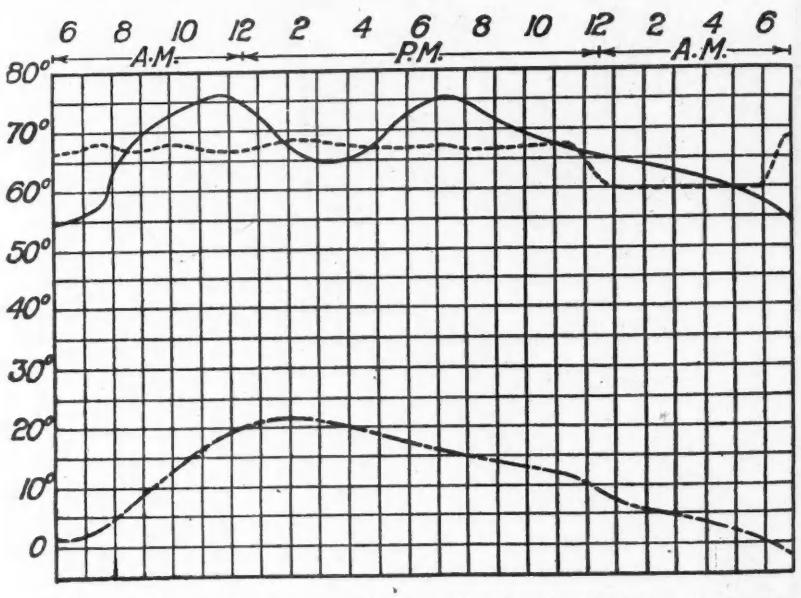


Fig. 1. Temperature Chart Showing the Result of Automatic Control Contrasted with Hand Firing in Domestic Heating. Solid line indicates hand firing temperatures, dotted line automatic control temperatures, lower broken line outside temperature.

How fuel saving is possible with the automatic thermostat may be observed from the chart, Fig. 1. The solid line shows the typical variation in room temperature with hand firing. The even temperature which accompanies automatic regulation is shown by the dotted line and the normal exterior temperature over a 24-hour period may be noted in the dot and dash line at the bottom. Thus it is seen that in average hand firing the room temperature exceeds 76 degrees twice daily and at 6 o'clock a. m. the building is uncomfortable. By contast, temperature in a thermostatically controlled residence has nearly reached normal at the rising hour, or slightly earlier, and physical discomfort eliminated at this time.

The clock on the thermostat has caused opening of the front draft and the closing of the check damper without personal attention of any kind. The chart here shown represents conditions of hand firing which are quite conservative. For literally hundreds of thousands of homes interior temperature exceeds 80 degrees many times. High temperatures are injurious to health and as dangerous, or more so, than poor ventilation. Excessive heating dries the throat and nasal passages, making it easier to take cold on going outdoors, dries up office equipment and household furniture. Engineers tell us that warm air is fatiguing and lowers human efficiency to a marked extent.

Some studies along this line made by the experts at the research laboratory of the American Society of Heating and Ventilating Engineers, in collaboration with the U. S. Bureau of Mines and the U. S. Public Health Bureau, in Pittsburgh, are of great interest. It was shown here, for example, from observations of human subjects that with air at 71 degrees and 55 per cent relative humidity and air motion of 350 linear feet per minute the average person can do four times as much work as in saturated air at 98 degrees and six and one-half times as much work as when the air is 110 degrees.

It was found, further, that when the air was still, as it is in the average home and office, the subjects examined complained of fatigue for several hours after leaving the laboratory when the temperature rose above 80 degrees.

Shoveling Coal Out the Window

Rather than take the trouble to adjust the drafts when rooms become too warm, most householders open the win-

dows to cool off. This is equivalent to throwing about two of every five shovelsful of coal supplied the heater out the window, needless to say a wasteful way of "tending the furnace." The economical housewives, for it is the women of the house in most instances who have the handling of the furnace during the day, when the male members of the family are at their business, may make something like half a dozen trips to the basement during the day to open or close the drafts, besides the trips necessary to add fuel to the fire.

Special attention has been given to the application of thermostatic regulators in warm-air heating with the result noted in Fig. 2 and Fig. 3 showing the dual control as it functions in use. Attention is called to the use of the electric furnace fans, now coming into common use. In the drawing, Fig. 2, it is understood that the furnace fan gets its air supply from a duct, not shown, and not from the basement, as this practice is no longer recommended in view of the probability of the basement air being impure. When the furnace fan is used it is started simultaneously with the opening of the ashpit door and closing of the check draft.

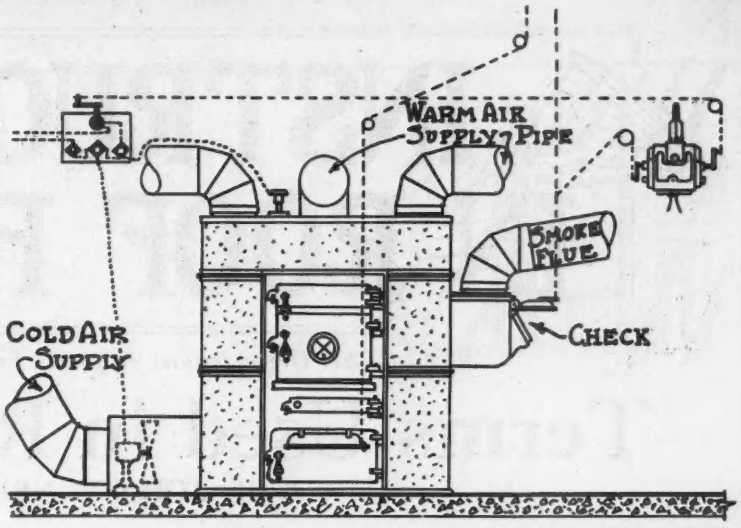


Fig. 3. Another of the Accepted, Dual Control Methods of Thermostatic Regulation of Warm-Air Heating Systems.

It likewise is observed that the limiting thermostats are shown in two locations, one at the side of the bonnet and the other in the largest warm-air leader. Some engineers advise placing the limiting thermostat far enough away from the body of the furnace as not to be affected by the radiant heat, hence recommend placing it in the warm-air pipe. In either case the instrument includes a special flange to provide a tight joint where the thermostatic finger protrudes within the pipe or bonnet and into the path of air flow.

Overheating of furnaces due to excessive firing, insufficient air supply, lack of inner casing and structural shortcomings is known to be responsible for the deterioration and short life of many fine plants. It is, in fact, one of the serious problems confronting the furnace industry today. By preventing excessive bonnet temperatures overheating is impossible, the cellar is kept comfortable and the life of the furnace prolonged.

The author recalls one installation in particular where overheating proved expensive. The building was a residence with an herbarium at the rear. At the time the heating work was estimated it was apparent that the herbarium was not in use, the large windows on that side of the house having been closed in with matched boards. About a year after the installation of the furnace the owner decided to use the herbarium again and removed the boards over the windows. Though the glass exposure was on the south side it was found on cold, wintry days that the extra glass surface made that side of the building difficult to warm.

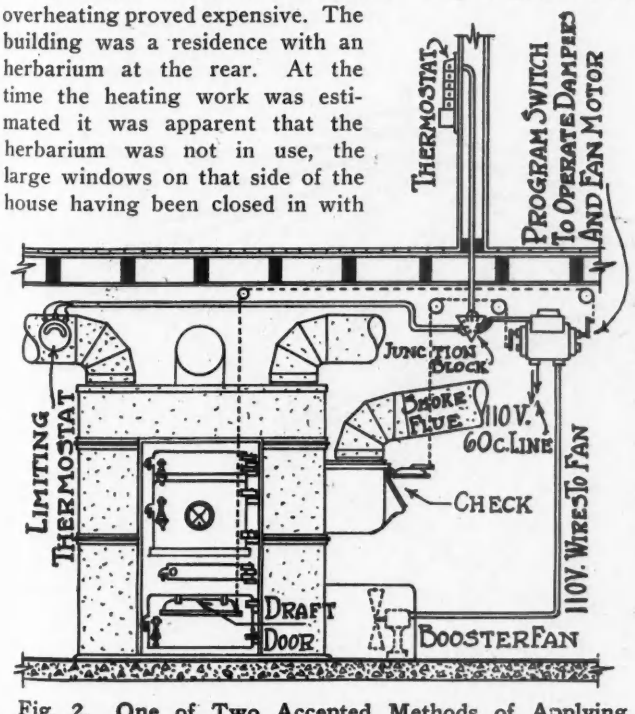


Fig. 2. One of Two Accepted Methods of Applying Thermostatic Regulators in Warm-Air Heating Systems, Showing the Dual Control.

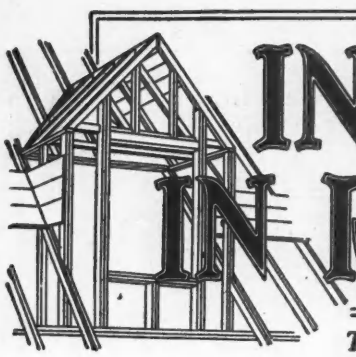
The owner immediately began to force his furnace and partially closed the slides, or vanes, of the registers in certain rooms. These rooms became overheated and register temperatures often reached 220 degrees. The furnace became a veritable coal hog. At the end of the heating season under this arrangement some sections of the furnace had sprung apart and the grate was twisted and broken as if some one had struck it with a sledge hammer. Considerable expense accompanied repairing the heater and the owner accused the contractor of having installed too small a plant.

Though not true in the foregoing circumstances, installation of too small a plant is a common mistake of owner and installer alike. The latter fears losing the contract on account of high price and the owner often refuses to pay enough to include the installation of a first class job. Many times the installer would be far better off in the end to permit some other contractor to take a job of this kind. Often, too, a matter of $40 or $50 spent at the outset to obtain an adequately sized plant is the deciding factor in getting satisfactory heating or the reverse.

Too small a plant is poor economy under any conditions. What happened to the owner mentioned and his furnace under forced conditions should be a danger signal to all who like to "whoop up" the furnace at times and permit it to almost go out at others. The prime object sought should be even heating, and this can best be accomplished through the use of automatic thermostatic regulators.

In addition to the wide publicity of manufacturers, the greatly increased popularity of thermostats in the last few years has come about in part from the extended use of oil burners. Practically all makes of oil burner now incorporate automatic, thermostatic regulation as a fundamental part of their apparatus. In fact, this is almost a necessity here, for otherwise home owners would have to turn off the fuel supply every time the room temperature is exceeded and open the line again when more heat is desired. This would be a hopeless task and involve more trips to the basement than owners have to make now with coal heaters when operated by hand.

(Continued to page 170)



INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder—Editor

Terms Used in Roof Framing

By JOHN T. NEUFELD

WITH this lesson we begin a series of articles on roof framing that will cover every phase of the subject with which the ordinary carpenter has to do. For a good foundation for this study we must become familiar with the terms as they are used in a study of roof framing. We have therefore devoted this lesson to a study of terms only. Some of the terms used may not agree with terms used in every part of the country. The explanations and definitions for the terms as given here

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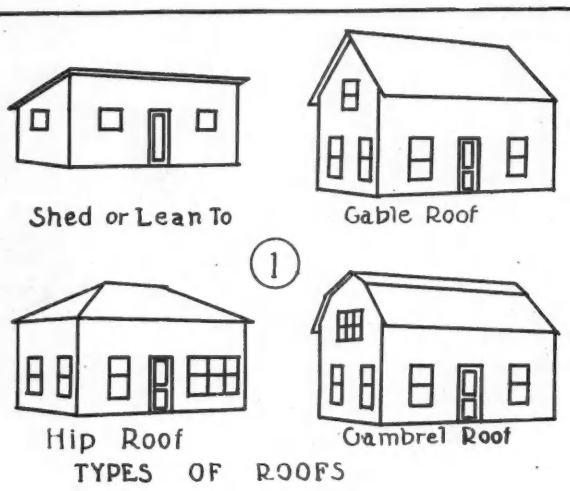
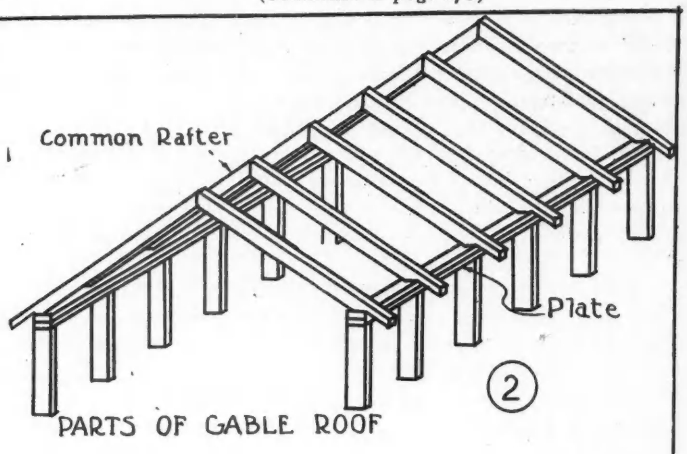
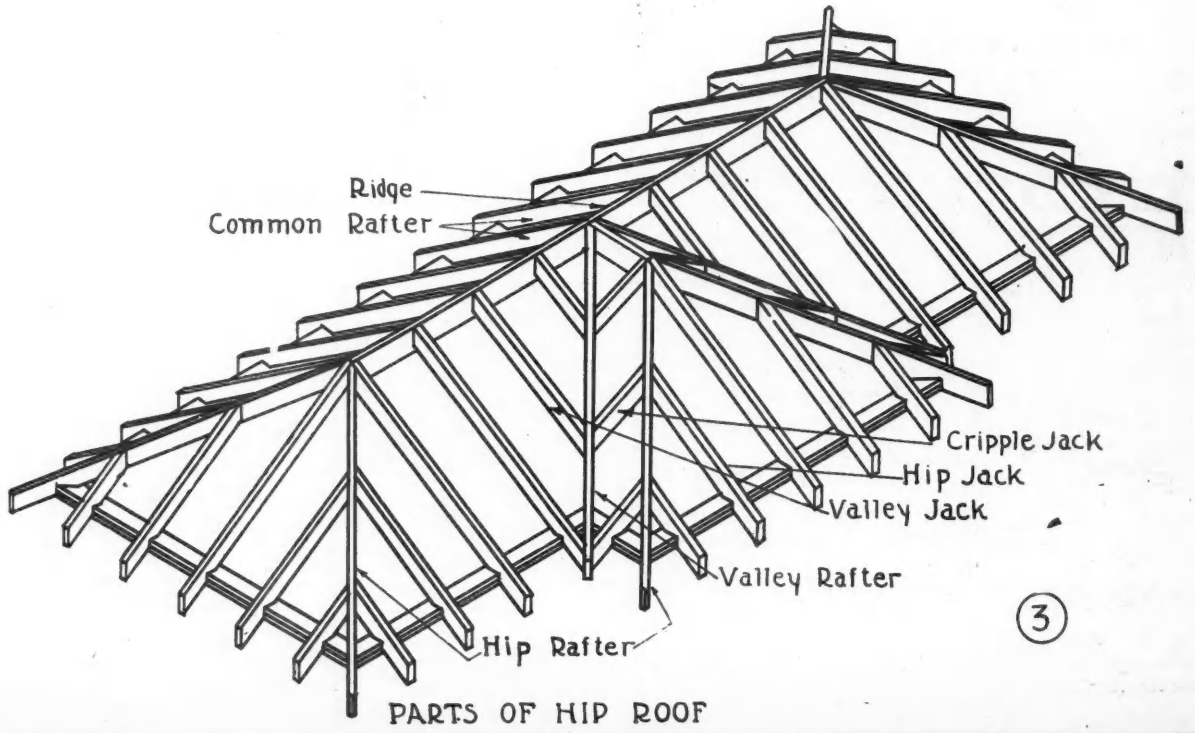
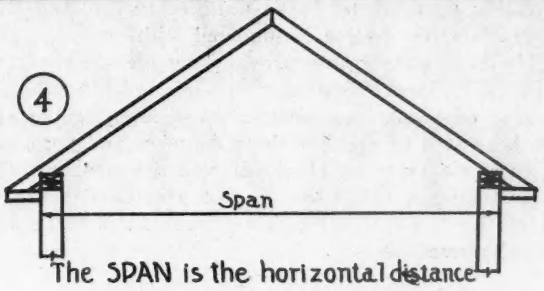
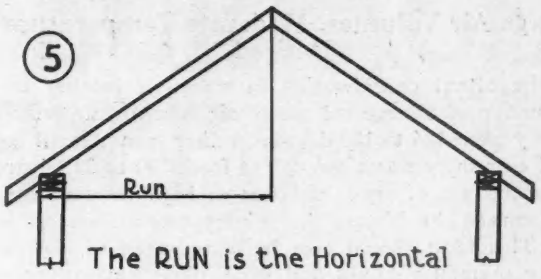




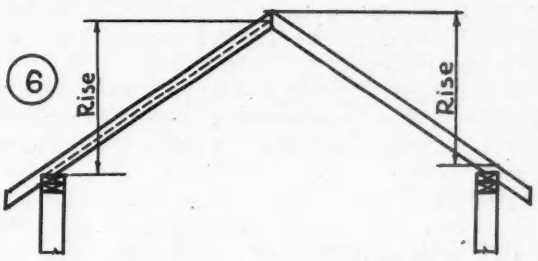




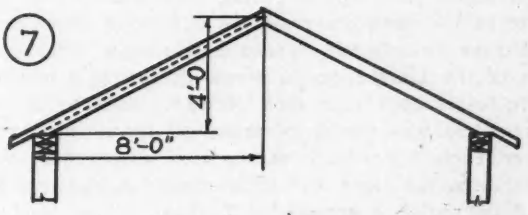
The SPAN is the horizontal distance covered by the roof, usually taken from outside to outside edge of plate



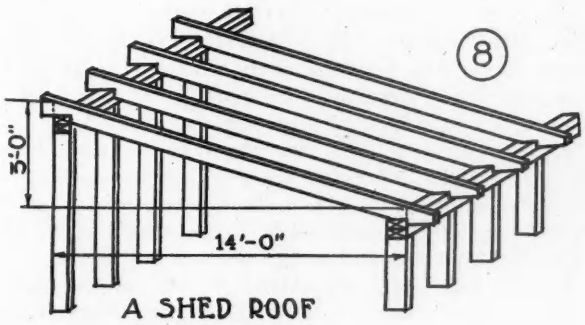
The RUN is the Horizontal distance covered by one rafter



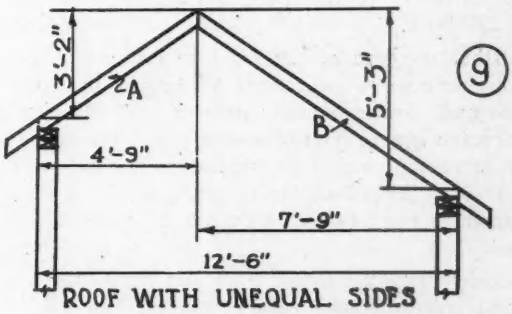
Showing what is meant by the RISE of the rafter



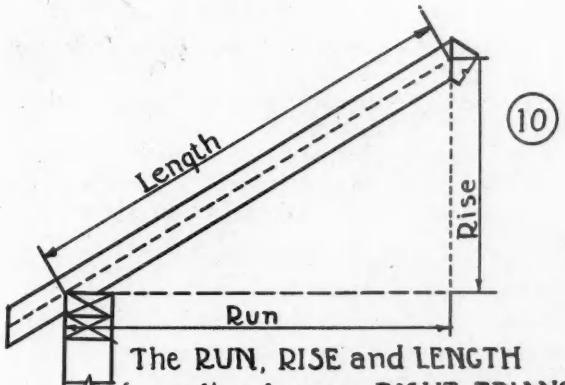
Rise = 4'-0"
Run = 8'-0"
Span = 16'-0"



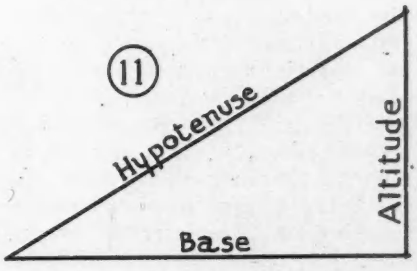
A SHED ROOF
The RISE is 3'-0"
RUN and SPAN 14'-0"



ROOF WITH UNEQUAL SIDES
Rafter "A" Run 4'-9" Rise 3'-2"
Rafter "B" Run 7'-9" Rise 5'-3"



The RUN, RISE and LENGTH of a rafter form a RIGHT TRIANGLE



The RUN is the Base, The RISE is the Altitude, The LENGTH is the Hypotenuse

Illustrating the Various Terms Used in Roof Framing.

Furnace Heating

(*Continued from page 167*)

Large Air Volumes, Moderate Temperature Desired

An important consideration in warm-air heating is the introduction of a large volume of air at moderate temperature, say from 145 to 180 degrees, rather than a small quantity of extremely warm air, say at from 180 to 225 degrees. It was the use of small volumes of high temperature air which caused the furnace to be known as a "hot air" system. This term should now be discouraged as high temperatures, small volumes and small pipes have given way to large volumes of air, larger ducts and registers, larger heaters and inner casing placed within an inch or so of the outside casing. These are usually of tin or galvanized iron and merely provide a stream of cool air as insulation for the exterior of the plant.

To illustrate just how important this item of air temperature at the registers really is numerous tests on the subject have been made at the Engineering Experiment Station of the University of Illinois. During a low temperature test each square inch of leader duct to the first floor registers was found to supply 50 B.t.u. (heat units) per hour, each square inch of stack to second floor registers 89 B.t.u. per hour and each square inch of stack to third floor registers supplied 122 B.t.u. The draft was 0.05 inch, water gauge, and the rate of combustion was 3.8 pounds of coal per square foot of grate.

By merely increasing the draft to 0.14 inch, w.g., the combustion rate rose to 5.6 pounds of coal per square foot of grate and the average air temperature at the registers became 175.8 degrees. This raised the useful heat carrying capacity of each square inch of leader pipe for the first floor registers from 50 to 103 B.t.u. per hour, for the second floor from 89 to 153 B.t.u. and for the first floor from 122 to 204 B.t.u.

A further increase of the draft to 0.16 inch, w.g., gave a still higher combustion rate of 6.5 pounds per square foot of grate and correspondingly greater heat carrying capacities for each square inch of leader pipe. Hence, it is seen that an increase in register temperature not only adds more heat to every pound of air supplied at the registers but also increases the number of pounds of hotter air which is supplied.

By merely increasing the draft and combustion rate the register temperature was raised from 141.2 to 197.5 degrees and the heating capacity was increased from 58,500 to 130,000 B.t.u. per hour, or an increase of 122 per cent. The outstanding fact in connection with the rise in heating capacity is that the free area through the furnace and leader pipe remained the same. In rating a furnace, therefore, on the basis of the number of square inches of leader pipe which it will supply, when one furnace is to be compared with another as to capacity, the air temperature at the register should be stated at the same time.

The test figures just cited illustrate what happens when the average person operates a warm-air plant by opening and closing dampers. When there is no fan, opening the ashpit door causes the drawing in of a greater supply of air due to chimney draft. The increased air supply, mixing with the coal gas, results in more rapid combustion, burning of a greater quantity of fuel, raising the temperature of the air to be delivered to the upper part of the building and often overheating the furnace in the process. As the combustion rate increases the efficiency of the heater falls off, in most cases, and the fuel provides less of its potential heat for warming purposes.

No evidence of the modern trend towards convenience and economy in heating is more convincing than that of the automatic thermostatic heat regulator This little instrument, almost worth its weight in gold, is daily finding its place in our homes, offices and public buildings and will probably continue to do so until every building having a central heating system is equipped with one.

The even temperature provided by the automatic control relieves the succession of over and under heating, makes raising of windows needless, saves innumerable steps to the basement to regulate draft dampers and permits maximum efficiency to be obtained from the furnace. The cost of installing a thermostat is not great and these devices should pay for themselves in two seasons in fuel saving and added convenience.

Terms Used in Roof Framing

(*Continued from page 168*)

refer especially to the interpretation that will be given to these terms in the following lessons. If you are used to calling a certain kind of a rafter with a different name than what has been given to it in this lesson, you may continue to do so. We are not laying down absolute laws in this respect.

Let us consider for just a short time the different types of roofs so that we may know the shapes of each. Following this we study the different parts of the gable and hip roof.

The following terms, span, run and rise, should be understood by each one. Notice especially that in a gable roof the span is generally twice the run unless the roof is of uneven sides as shown in Fig. 9.

Note also that on a shed roof the run and the span are equal.

In Figs. 10 and 11 we introduce one of the more important facts in roof framing. This is expressed in the following statement. "The run, rise and length of a rafter form a right triangle." Very often carpenters and even instructors write to us and tell us of a certain method of roof framing which they think is the best and the only method, but judging from the varieties given, we seem to come to the conclusion that there must be many "best" methods. But regardless of the method used, the above stated principle is always involved; we therefore suggest to the reader to study up on the right triangle in his old geometry books. Anyone that understands the right triangle will be able to figure out several methods of finding the lengths of the rafters without further instructions.

In the next issue the all important subject of "roof pitches" will be discussed in detail, beginning from the method that was used by the primitive man in expressing the pitch or slope for the roof of his tent or hut to the method used at the present time.

Questions

1. What is the run of the rafter for a gable roof with a span of 26 feet?
2. How many common rafters are shown for the roof in Fig. 3?
3. How many hip rafters are shown in Fig. 3?
4. Haw many valley rafters are shown in Fig. 3?
5. How many cripple jack rafters are shown in Fig. 3?

Answers

1. The run is 13 feet.
2. There are 16 common rafters shown in Fig. 3.
3. There are 6 hip rafters shown in Fig. 3.
4. There are 2 valley rafters shown in Fig. 3.
5. This may be answered in two different ways. We may say either 4 or 6 cripple jack rafters are shown. The lower rafters frame to the plate at the lower end, but their tail end also extends to the valley rafter. For this reason they may be termed cripple jajck rafters, others might call them hip jack rafters.

SAVE THE SURFACE DEPARTMENT

"Save the surface and you save all"—Paint & Varnish

Paint Influences Sales

ALTHOUGH the builder willingly assumes the responsibility of selecting the materials that go into a house, he is apt to be lax regarding the paint and other finishing materials. Paint, although it is practically the last thing to be added to the structure, should be given the same attention, and have the same restrictions placed upon its selection, as any other material. The painting contract should be given to a reputable painter and the builder should insist upon the use of a reliable brand of paint.

This is important, for while foundations and insulation may be excellent, it is the color and general appearance of a house that first impresses a buyer, and, as everyone knows, first impressions influence those that follow. A well painted house creates a good first impression. The quality of the paint used is of great importance in making this first impression effective. People know more about paint and varnish now than they did ten years ago. They are no longer fooled by a sleazy but flashy job. It is valuable, too, for the builder to know something about the materials, so that he understands any guarantees made by the manufacturer, how long the materials should last and when renewal is most economical. This information a prospective owner will appreciate. A good paint job is one of the best advertisements a builder can have.

Another important point, which is sometimes overlooked, is that the painter should be allowed sufficient time in the house to do a thorough job. Don't hurry him or cut a day or two off his allotment, for paint and varnish, to give good service, must have time to dry properly. It is false economy to fail to have the proper number of coats applied.

Aside from the danger which the builder runs, in having his house look cheap and shabby within a short time (the almost inevitable result of poor or hurried painting), there is another reason why he should not let the finishing touches be hurried or skimped. People in general carry about with them a superstition that home owning involves certain mysterious "upkeep" expenses, among which paint and varnish figure. Every prospect approaches a new

This Attractive Little House Might Have Been Ruined by a Sleazy Paint Job. Buyers see the color and surface condition of a house first. It creates the primary impression. No builder can afford to run the risk of disregarding the paint finish on new houses.

house with a weather eye for conditions that are going to run into extra expenditures for him. Cheap paint, poorly applied, catches the eye. It means repainting within a year or two or the alternative of having the new house look poor and shabby. Good paint and a good job, however, are reassuring.

Good paint and varnish protect the builder's reputation. They keep his houses looking smart and trim. They afford excellent selling points, and they inspire confidence—provided, of course, that the short-sighted policy of giving out the painting contract to the lowest and least responsible bidder without any stipulations as to the quality of materials to be used, or without allowing the painter sufficient time to do a good job, is not followed.

The Necessity for Handling Only Good Brands of Paint

IF a customer is worth having he is worth keeping. Therefore, the dealer should strive always to keep his stock fresh and to handle nothing but the best grades of any product. Particularly is this true of paint and varnish. There is no product that requires more care in its manufacture. Due to its complex nature, paint requires the utmost skill and scientific knowledge in its preparation.

For this reason, paint manufacturers employ chemists to analyze their raw materials before they will use them, and some of the important raw material manufacturers have research departments and corps of experts to supervise their manufacturing processes. In this way, the paint and varnish industry insures products of high quality, and the dealer can rely with confidence upon the products of any reputable paint or varnish manufacturer.

High Class Patronage Confines Itself to Those Dealers Who Handle Fine Goods. A house of this type is a steady customer for good paint and varnish. The wise dealer supplies himself with materials that satisfy such a customer and confines his stock to good brands.

Then, too, it is important that the dealer handle none but the very best grades of paint or varnish, for only the best products will meet the many trying demands made upon them. Frequently, of course, it is the purchaser's fault if a good paint or varnish does not "stand up" on a painting job. Either the surface was not properly prepared before the paint was applied, or some of the conditions of good painting were not observed.

But, as every dealer knows, a customer can seldom be blamed without offending him. Therefore, it is best to eliminate, as far as practicable, all possible sources of error on the dealer's part by having the products which he handles of such superior quality that they are practically fool proof. Then, at least, whatever happens, the dealer cannot be blamed. Further, if he is dealing with a reputable house, he can always refer any customer's complaints back to the manufacturer, who will always be glad to give any help and advice possible, and will make good on any real faults of his product.

All of these little services in the paint department of any building supply dealer, will help to establish that confidence and good will on the part of the purchasing public, which may eventually make paint and varnish one of the main branches of his business. It is certainly worth considering.

That the policy of handling only reliable paint products, coupled with candor and honesty toward the customer pays, is attested by the experience of the Aitken Lumber Company, of Holywood, Kansas. To quote an experience of Mr. E. W. Raymond, manager of the company:

"I sold a customer a bill of paint amounting to approximately $75 with a probability of reaching $160. But I could not sell him the oil. He said I was too high. So he went across the street and bought five gallons of oil and came back to get the paint.

"'Let me see the oil,' I said.

"After examining the oil, I said: 'I am sorry but I can not sell you that paint if you are going to use this oil.'

"'Isn't that good oil?' he asked.

"'Feel of it and smell of it,'" I said.

"This he did. The oil had the odor of coal oil.

"'Now,' I said, 'let me show you some pure oil.'

"I took a sample and he felt of it and smelled it.

"'It does seem different,' he agreed.

"So he took the oil back where he bought it.

"That was one of the best advertisements we ever had, and we have never had to replace a gallon that went bad."

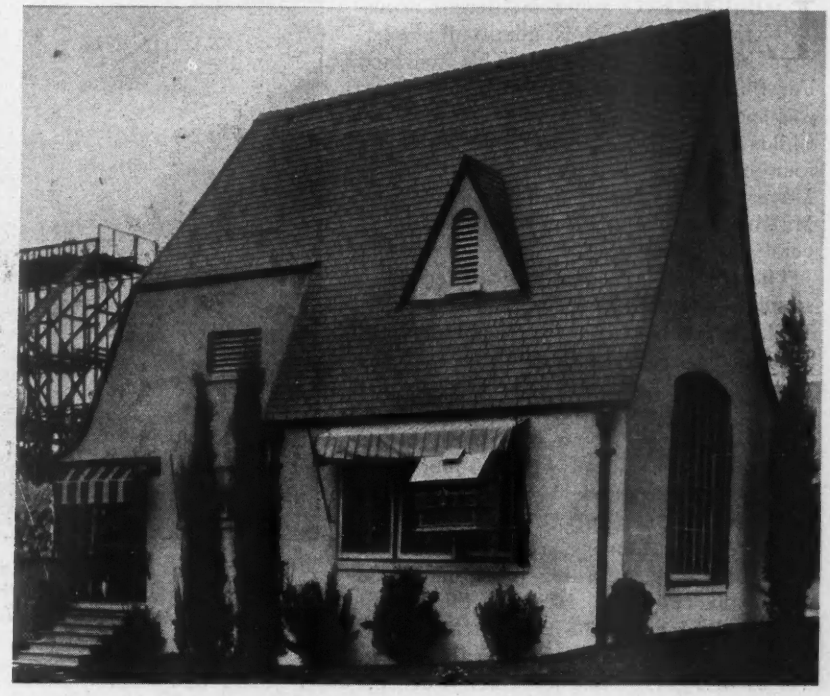
This is a clear illustration of the fact that misrepresentation does not pay in merchandising such complex materials as paint products. In the long run, the dealer who is scrupulously honest, both with himself and with his customers, will win out. The building supply dealer may rest assured that the market price for pure linseed oil, or any other of the raw materials that go to make up good paint and varnish, is always well established, and these materials cannot be bought much under current quotations. It should not be difficult for him to convince a prospective customer that any "cheaper" product is almost certain to be an adulterated product, and that it will pay him to buy nothing but the best paint or varnish.

The Stucco House Vogue Offers New Color Opportunity

SINCE stucco has become popular for homes as well as for commercial buildings, the decoration of this material becomes a matter of importance. Especially in developments, where the majority of houses are stucco, color is a problem. The builder, and architect, too, know from experience that color variety and distinction have sales value. No matter how much variation there is in the design of the houses, if they are all of one color, or if their colors are strictly limited to a few tints, the whole section presents an uninspired appearance.

Many people are under the impression that stucco, brick, concrete or cement cannot be painted. As a matter of fact, these materials may be decorated quite as readily as wood. They benefit from it, too, in being made even more durable and waterproof. Paint protects from moisture and other factors of disintegration from which no structural material is exempt.

Special paints are made for stucco and cement. That it is important to paint these materials is demonstrated by the many experiments and tests which are continually being made by paint manufacturers, chemists and engineers. Advice upon special problems that may arise may be obtained from the paint manufacturers.



Mary Pickford's Bungalow Dressing Room on the Pickford-Fairbanks Lot Is Typical of the Colorful Type of Architecture that Is Increasing in Popularity Each Year. The stucco walls are tan while the strim is bright green.

The essential difference between painting stucco, cement and concrete, is the physical difference in porosity and texture. Those which have the roughest surface and are the most absorptive, require a paint which contains an excess of liquid ingredients. Paints for stucco need not contain such an excess of vehicle oil, though they require more oil than the less porous wood surfaces or the practically non-absorbent metal surfaces.

There are three general types of stucco, according to surface texture—plain, pebble-dashed and sanded. A plain surface, being smooth, may be readily painted with the brush, though the spray machine is more economical in time and labor, but the sanded and pebble-dashed stucco, being extremely rough, lends itself admirably to decoration by the spray painting method. Even then, however, it is not impossible to paint rough stucco with a brush, although the work is somewhat slow and tedious and rapidly wears out the brush.

Stucco is eminently suited to unusual color schemes—probably because of the textural quality of the stucco which softens the most strident tones. Another reason why stucco carries colors that would look strange upon shingled or clap-boarded houses, is that stucco, being recently placed in general use, is not hampered by tradition. Pale green, lavender gray, pink, yellow, rich Tuscan red, bright blue, jade green, amber and a host of other unusual and attractive colors are looked upon favorably when they appear on a stucco house, whereas on a frame house the adjective "bizarre" would be applied immediately.

Stucco houses afford one of the most interesting opportunities for a free use of color in the whole building field. Here is an opportunity, not only to break away from stereotyped color schemes, but also to create new sales appeal in houses by means of their distinctive appearance, color appeal and the added strength and protection that painted surfaces possess.

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Recommends Stress Standards

AMERICAN lumber standards grades for structural materials have been followed by the Building Code Committee of the Department of Commerce in drafting its recommendations for working stresses for timber, according to a recent report. The committee advises the adoption of the working stresses in municipal building codes.

Engineers of the National Lumber Manufacturers' Association point out that most building codes either fail to mention the stress to which the various materials used in building may be subjected, or do not correlate qualities of materials and permissible stresses. Building materials are not always of exactly the same grade or quality, but building codes frequently take no cognizance of this fact, and restrictions or limitations are frequently uneconomic or wastefully expensive. Sometimes the permissible stresses are suitable only for the poorest quality of material found in the local market, putting a premium on poor material.

✣

Offer Course on Lumber Retailing

THE second short course in lumber and building material retailing to be held at Antioch College, Yellow Springs, Ohio, will open February 7, and continue till March 5, 1927. Indications are that there will be a good enrollment because of the widespread interest which has been shown by retail lumber dealers, supply dealers and material manufacturers. The course is sponsored by the Ohio Association of Retail Lumber Dealers.

Acoustical Plaster Applied in University Building

LECTURING under indifferent acoustical conditions is admittedly wearing on the lecturer and his audience. For this reason a special acoustical plaster was specified by James Gamble Rogers and Childs & Smith, associate architects, for four of the lecture rooms in the Levy Mayer Hall of Law, a unit on the new McKinlock Campus of Northwestern University, Chicago.

The acoustical plaster was applied under standard plastering conditions in Hurd Hall, Hoyne Hall, Lincoln Hall and Booth Hall of the Levy Mayer Hall of Law. The material used was one developed by Dr. Paul E. Sabine, of Riverbank Laboratories, Geneva, Illinois, as an outgrowth of the researches into the physics of sound made by the late Professor Wallace C. Sabine, of Harvard University.

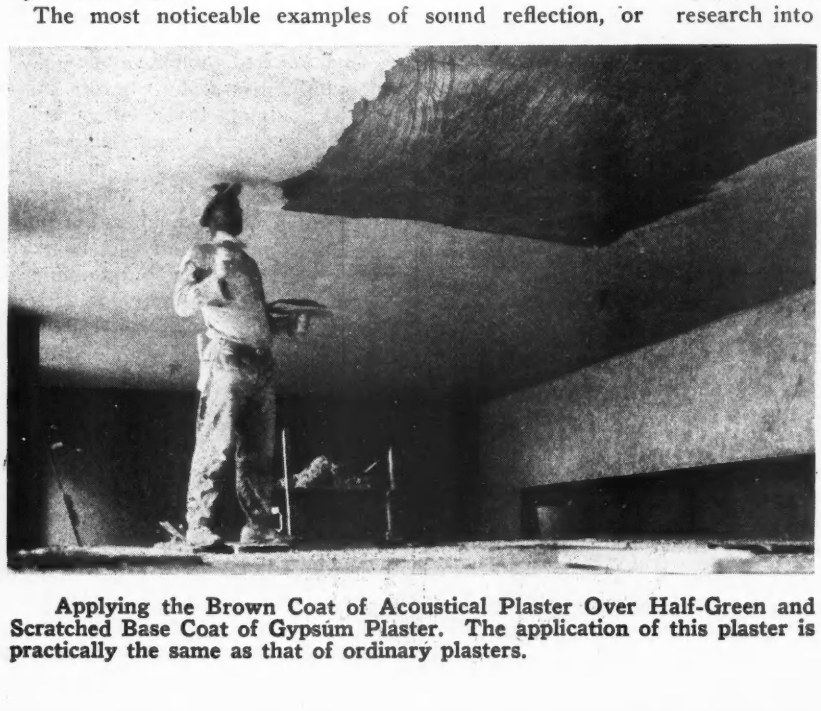
Darbying Acoustical Plaster in the New Levy Mayer Hall of Law, Northwestern University, Chicago, Where This New Product Has Been Applied to Overcome the Acoustical Difficulties Usually Found in Lecture Halls.

Ineffective acoustics are due in the majority of cases, according to Professor Sabine's theory, to the fact that the average interior surface in the average building is more highly reflective of sound than a mirror is of light. Thus a spoken word or other sound hits against a wall, ceiling or partition and instead of a goodly part of it being absorbed, almost all the sound energy is bounced back to meet the next oncoming sound. Every one is familiar with reverberation, which exemplifies the bouncing back of sound, as does echo. Succeeding sounds add to the confusion.

Now, clothing, rugs, drapes, etc., are absorptive and in most homes and many offices greatly reduce the confusion of sounds so that the average dweller or worker is not conscious of them. This is less true, of course, of large bare offices where there are many typewriters and calculating devices, and virtually all workers in such offices are conscious at one time or another of the fatigue induced by excessive sound.

The most noticeable examples of sound reflection, or reverberation, are found in empty auditoriums, churches, theaters and lecture rooms. To obtain proper acoustical conditions in these, especial designs, that have for their purpose the concentration of the reflected sound, generally are employed. However, Professor Sabine discovered that in most such structures the trouble was from too much sound, rather than from too little, and that the greatest acoustical benefits came from the clothing of those seated or standing in the auditorium, from drapes or other absorptive materials, and that the acoustical efficiency of the room varied with the numbers of people within.

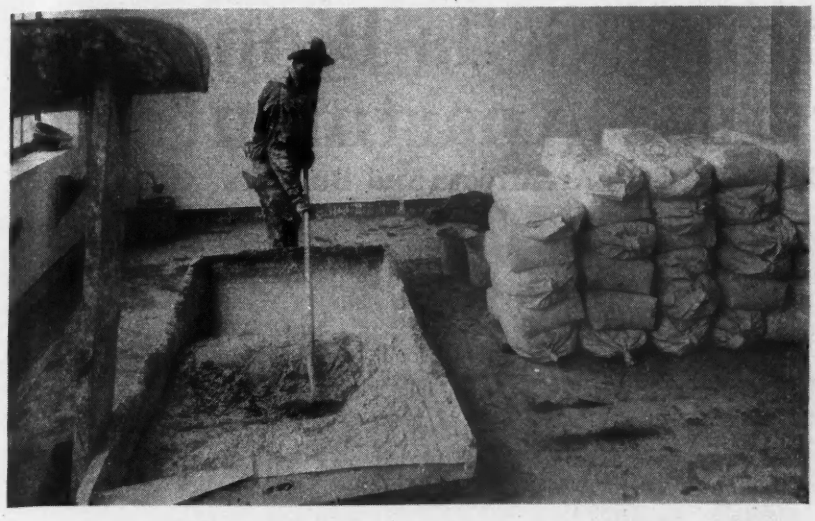
The studies of Professor Sabine many years ago attracted the notice of Colonel George Fabyan, who built for the Harvard savant, at Geneva, Illinois, the most thoroughly equipped acoustical laboratory in the United States. Here research into the physics of sound was pursued until Professor Sabine's death. Then, after a short interval, Professor Sabine's cousin, Dr. Paul E. Sabine, was appointed to carry on his studies.



Applying the Brown Coat of Acoustical Plaster Over Half-Green and Scratched Base Coat of Gypsum Plaster. The application of this plaster is practically the same as that of ordinary plasters.

Something over six years ago Dr. Sabine put to its first practical test his acoustical plaster, the composition and application of which makes it porous instead of dense, as is ordinary wall plaster. This material absorbs and changes into another form of energy from 15 to 20 per cent of the sound that strikes it. Based on the comprehensive data that had been accumulated by the multitude of painstaking tests of various sorts conducted by both the Sabines, and by tests of the acoustical plaster under differing conditions, it was established that virtually perfect acoustics could be obtained for any room by a formula that took into account the wall and ceiling areas, the seating capacity and the percentage of absorption of the acoustical plaster.

It was six years, however, before the



A Mix of Acoustical Plaster Ready for Application to the Walls of the Lecture Rooms in the Levy Mayer Hall of Law at Northwestern University.

material was offered for general sale and in this six years it was subjected to actual job tests in many kinds of rooms, which completely confirmed the laboratory experience. Then the material was licensed under letters patent for manufacture and sale to one of the leading manufacturers of gypsum products.

In the four lecture rooms in Levy Mayer Hall of Law standard application practice was followed. A base coat of gypsum plaster was applied and scratched to present a rough surface. Then the first coat of acoustical plaster was applied to a thickness of ¼ inch with a trowel and straightened with a darby. As soon as the water was out the surface was broomed.

While the brown coat still was half green the finish coat was applied and brought out to a full ½-inch thickness of acoustical plaster. It then was darbied to a true surface. To determine whether or not the surface was ready for floating a small patch first was floated then the mechanic looked along it toward the light. If the surface appeared shiny it was indicated that it was still too wet to float. Cork floats were used as carpet floats impair the porosity of the plaster.

The finished walls and ceilings are gray in color and of about the texture of sand-float finished plaster. In themselves they appear sufficiently decorative, particularly for a large room, or in a structure of the English architectural style. In Levy Mayer Hall of Law, however, all acoustical plaster surfaces are to be painted, but that the porosity, and thus the acoustical value, of the plaster be not destroyed, the paint is to be a special material applied with a spray gun.

Figures taken from the preliminary estimate of the plastering contractor, the D. T. Shea Company, showed that 30 tons of the acoustical plaster would be required and that the yardages to be covered with the material in the four rooms would be as follows: Lincoln Hall, 700 yards; Booth Hall, 415 yards; Hoyne Hall, 340 yards, and Hurd Hall, 252 yards. The actual yardage obtained on the job was 60 to the ton of plaster.

Copper and the Building Market

IN an address before the American Mining Congress, at Washington, D. C., on December 8, Thomas D'Arcy Brophy, of the Anaconda Copper Mining Company, presented a statement of the increasing part which copper is playing in industry and of the enormously greater part which it may be expected to play in the future. The figures which he offers in relation to the building industry are of particular interest and significance. Mr. Brophy said, in part:

"Perhaps of all the markets that have shown a substantial increase in the use of copper and brass, none can compare with the building industry. Prior to 1921, the consumption of brass pipe for plumbing was negligible and the use of brass or copper pipe for underground service connection was practically unknown. The same was true of copper downspouts, eaves trough and roof flashings as well as copper and bronze window screens and bronze weather stripping. In 1922 with a total building volume of $4,920,000,000 the building industry consumed 164,000,000 pounds of copper. In 1926 with an estimated building volume of $5,500,000,000, copper consumption will increase to at least 275,000,000 pounds, a growth in five years of 111,000,000 pounds or 68 per cent.

"As an example of the tremendous possibility for still further increase of copper, brass and bronze in the building industry, analysis of the potential market for brass pipe will be interesting. There are not less than 12,000,000 residences available for brass pipe installations in the United States and each residence can use from 200 to 1,000 pounds of brass pipe, with 400 pounds a fair average. With an allowance for obsolescence of residences before present plumbing needs replacement, it is estimated that the potential market for brass pipe in existing residences is over 2,000,000,000 pounds, and that the annual potential market in new house construction is over 100,000,000 pounds.

"A fair estimate of the amount of copper required for equipping the average house with eaves trough, downspouts and roof flashings is 200 pounds, which makes the potential market, roughly, half the market for brass pipe.

"The recent development of several types of copper shingles has materially increased the consumption of copper in the small house field. The average house roofed with copper shingles and fitted with copper gutters, leaders and roof flashings consumes about 600 pounds of copper. It is estimated that the potential market for copper shingles is 2,400,000 squares per year—consuming 48,000,000 pounds of copper.

"During recent years intensive effort has been made to demonstrate the efficiency of copper lightning rods as a protection against damage by electrical storms and a substantial market has developed in a relatively short time. In the manufacture of lightning rods about 15,000,000 pounds is now used each year. If complete protection by copper lightning rods were provided for all exposed buildings, it is estimated that over 200,000,000 pounds of copper would be required.

"The great increase of the past few years in the number of residences wired for electricity has provided a corresponding increase in the market for lighting fixtures. Brass is the material largely used for fixtures to be used in residences and bronze for the more architectural type of fixtures for halls and public buildings. For outdoor fixtures, such as porch and garage lanterns and many kinds of traffic signals, sheet copper is used. The lighting fixture industry, as a whole, consumes over 40,000,000 pounds of copper per year in all forms."

Good Planning Sells Pioneer Co-operative Apartment

KENNETH M. DeVOS & CO., Architects and Builders

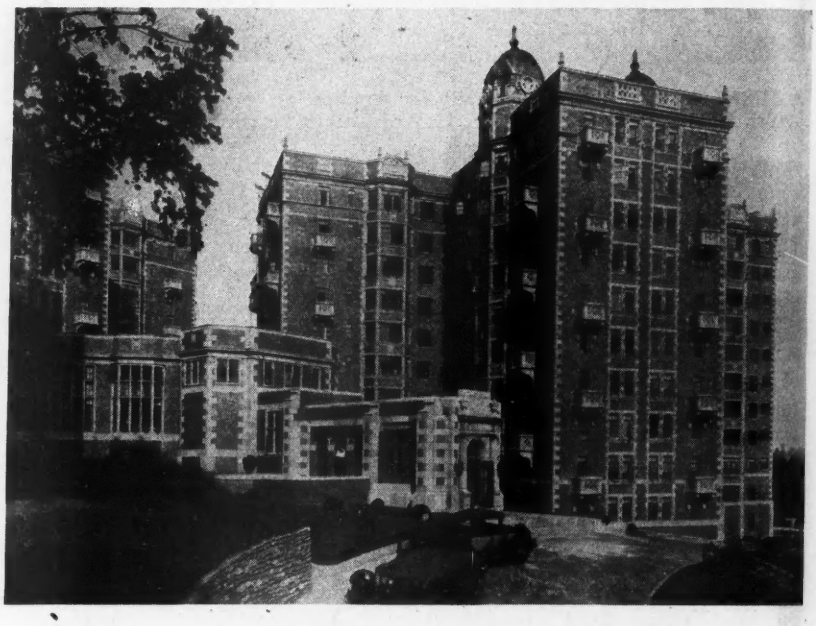
ALDEN PARK MANOR embodies a complete departure from accustomed precedent in Philadelphia in the matter of apartment house conception. In the first place, the ownership and administration are arranged on the co-operative basis; in the second, the scheme of plan and composition exhibits a treatment quite different from the too common crowding of the maximum cubage of structure on every available square foot of the site, without sufficiently considering either the architectural aspect or the comfort of prospective occupants.

When the co-operative project was first mooted the promoters of the undertaking were told that the public would not support the venture and would not buy apartments nor stock in the company. In spite of this, the sponsors of the concern went ahead with the scheme they had outlined. Before the interior was fully completed the majority of the apartments were sold and many of them were occupied, leaving only a relatively small number to be disposed of.

The site chosen was a tract of land formerly occupied by a large suburban residence in a desirable neighborhood. Only a portion of this ground was built over, leaving a broad surrounding area of lawn with its natural levels and old shade trees. There are no courts, no rear apartments and no inside rooms. Each room in every apartment has the advantages of sunlight, air and pleasant outlook.

The three buildings, each of nine stories with full basements, are designed in the Elizabethan manner and constructed of rough-textured brick with variations in color from red and buff to blues and brown. All the courses are rough-laid and the trimmings are of reddish hued cast stone. There are 270 apartments in all, ranging in size from three rooms and one bath to ten rooms with five baths. In all the apartments are light, spacious living rooms with coved plas-

(*Continued to page 178*)



Alden Park Manor Consists of Three Buildings Containing 270 Apartments with No Courts, No Rear Apartments and No Inside Rooms.

The Buildings in This Group Are Surrounded by Wide Areas of Lawn with the Natural Levels of the Old Suburban Residence Site on Which They Were Built and with the Old Shade Trees Preserved Giving the Effect of a Suburban Location with Ample Sunlight, Air and a Pleasant Outlook.

Filling Stations That Ornament Wisconsin's Highways

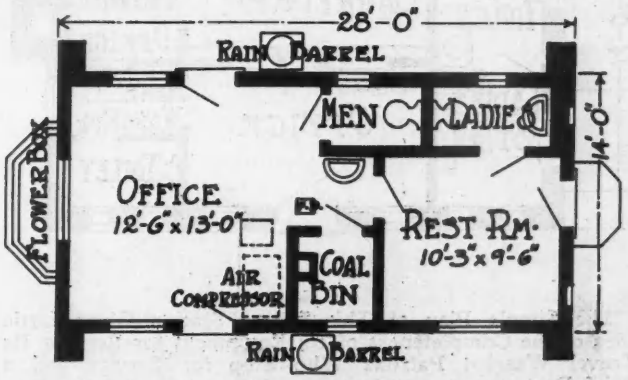
The Powder Puff Filling Station, at Waupun, Wisconsin, Was Designed by Foeller, Schober & Stephenson, Architects, of Green Bay, Wisconsin. It is one of the most attractive bits of scenery to be found along the highway and appeals strongly to the passing motorist to stop and make its acquaintance.

THE state of Wisconsin is noted for its excellent highways and tourist accommodations and this applies also to the filling stations which are observed as one motors through this vacation region of the Middle West. Two of these attractive filling stations, pictured here, have been described as "the two most photographed filling stations in the state" and they might well deserve that title for what passing motorist, with his ever ready camera, could resist the temptation to snap a picture of these fascinating bits of Dutch Colonial architecture.

And once the tourist pauses to add to his collection of picture souvenirs he is more than likely to avail himself of the service which this model offers. For this reason the owners feel that their money has been well invested in the architecture which has made these buildings distinctive.

The design of the "Powder Puff," at Waupun, Wisconsin, was prepared by Foeller, Schober & Stephenson, architects of Green Bay, and is considered a model of completeness. The cream colored stucco wall finish is strikingly beautiful and is further enhanced by delft blue blinds decorated with powder puffs done in yellow. The chimney, too, is of stucco and is effectively set off by highly colored, fireproof, composition shingles.

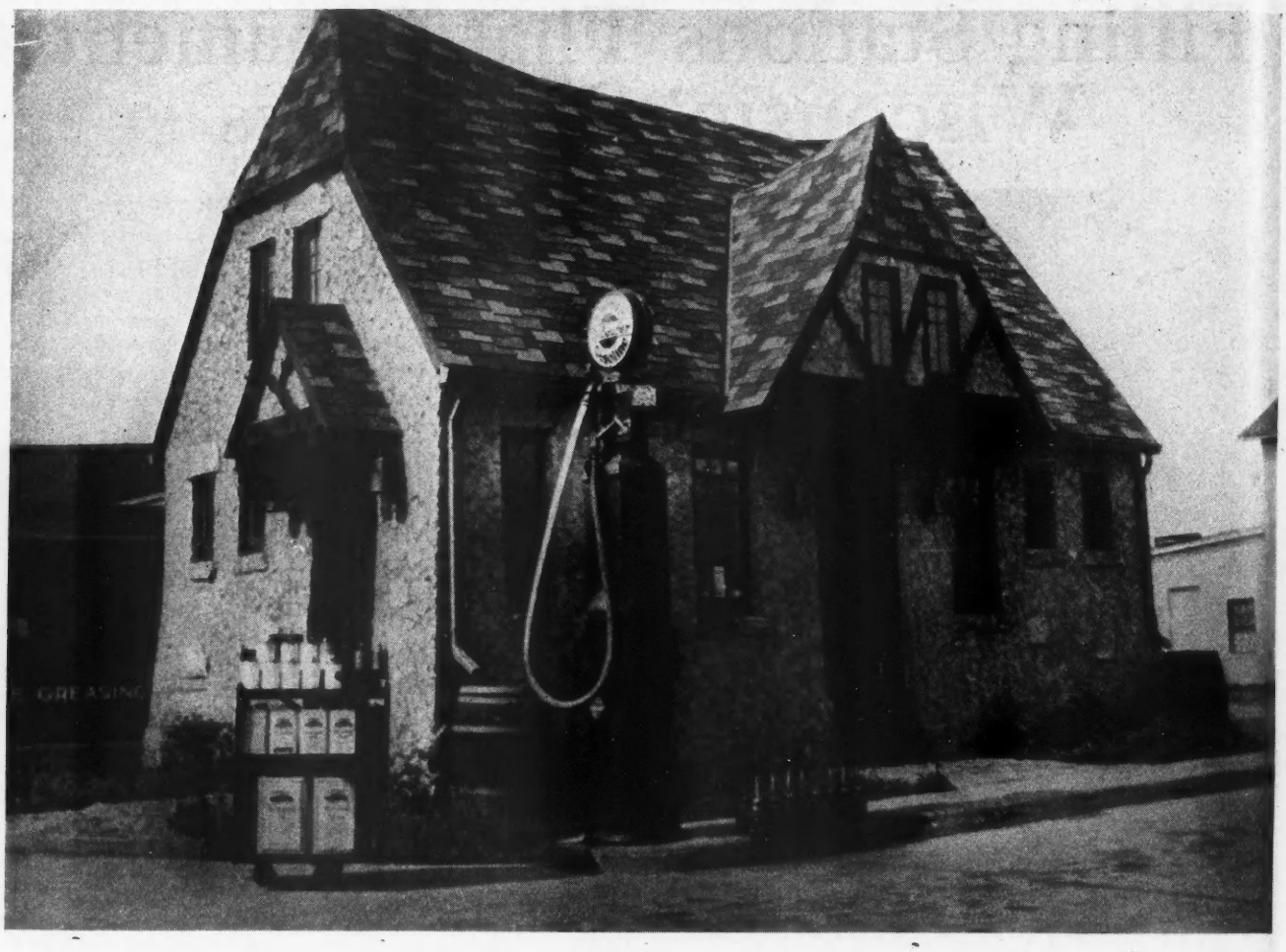
The building proper measures 14 by 28 feet on the ground and is 21 feet high. The interior plan provides for a ladies' rest room, lavatories, an office and a coal bin. The rest room is furnished with a wicker settee, wicker chairs and reading table, cretonne draperies and a tapestry rug.



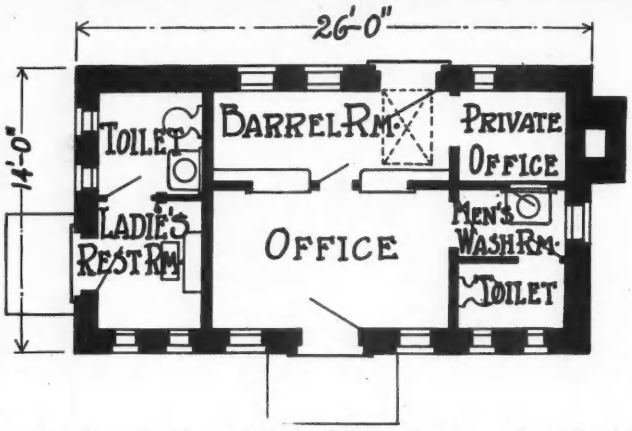
The Interior of the Powder Puff Is Arranged for the Comfort of Its Patrons, the Ladies' Rest Room Making a Special Appeal to the Feminine Motorist.

The ladies' lavatory is delightfully equipped with all the necessities pertaining to the comfort of its patrons, the face powder and individual powder puffs, especially, have been enthusiastically received by the feminine tourists. The rest room, 10 feet 3 inches by 9 feet 6 inches, affords a comfortable space for relaxation during a pause in the day's travel while the car is receiving attention outside.

The second of these stations is the DeBaufer Filling Station at Menasha, Wisconsin. The design was done by W. H. Gmeiner, architect of Appleton, Wisconsin, for the owner, A. W. Borens, of Menasha. It has the effect of



At Menasha, Wisconsin, the Motor Tourist Will Find the De Baufer Filling Station Waiting to Charm His Eye and Serve the Requirements of His Car. The architect was W. H. Gmeiner, of Appleton, Wisconsin, and he has produced a building which is a colorful spot along the main highway.



The Simple Plan of This Filling Station Gives Little Idea of the Completeness of Its Equipment for Serving Its Travel Wearied Patrons Who Stop for Service and a Brief Rest.

friendly hominess which is associated with the Dutch cottage and this impression is furthered, upon entering, by the roominess evident throughout.

There are five rooms including a main office, private office, two rest rooms and a barrel room for the storage of oil and other supplies. The ladies' rest room is of ample proportions and is equipped in much the same manner as that in the Powder Puff Filling Station already described. All of the inner walls are finished in "icicle" plastering, with the ceilings timbered in true Colonial style.

This building rests upon a concrete foundation, above a basement, and has exterior dimensions of 15 by 27 feet. The walls are of brick, 12 inches thick, and are covered with stucco in tones of cream and purple. The doorways are ornamented with bronze wall brackets, and the windows, both the dormers and those in the walls, are of art glass. The doorways are of lumber used in the rough state, as it came from the factory. It has been stained and left to weather, giving a most pleasing rustic effect.

✣

C. H. Edwards.

Alden Park Manor

(*Continued from page 176*)

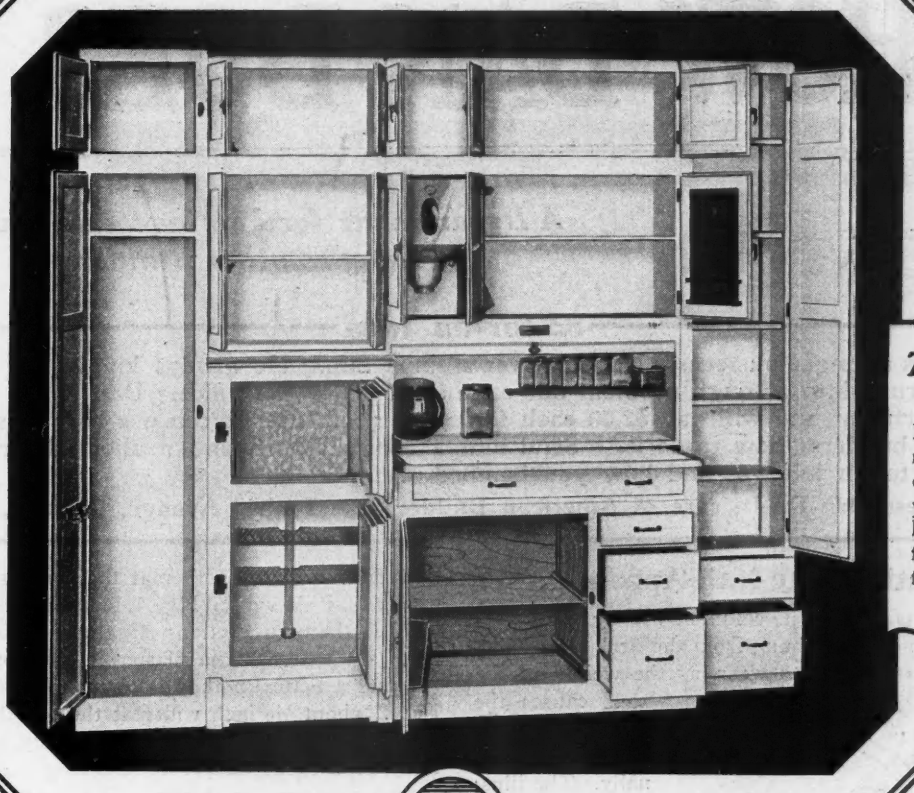
tered ceilings, bookcases and fireplaces. The bedrooms are large and well-lighted many of them have open balconies. The bathrooms are equipped with showers as well as built-in tubs and all other accessories of the most approved type and the kitchens all have mechanical refrigerators, white enamel stoves, steel kitchen cabinets and all the other appointments that convenience can suggest.

In short, every provision was made, inside and out, on the score of architectural treatment, plan, and interior finish and equipment, that would ensure favorable consideration when prospective occupants came to subject every feature to the rigid scrutiny they would naturally apply before putting their money into what ought to be regarded not only as a dwelling but also as a safe investment.

✣

Inspect Slate Production

A THREE day tour of the slate quarries and mills in the vicinity of Pen Argyl, Pa., was recently made by a group of prominent architects, engineers, college professors, U. S. Government technologists and others, with the officers of the National Slate Association, The Structural Slate and Natural Slate Blackboard companies and the Bangor Slate Association acting as hosts.



Agent Territories

If you are the right man there is a splendid opportunity for you in one of a few localities still open for a Napanee manufacturer's agent.

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Where can You get as fine a Unit~ *all Hardwood*

ARCHITECTS and builders, knowing construction, and trained in appraising values on the basis of hidden details as well as surface appearances, are quick to appreciate the vital importance of Napanee *all Hardwood* Construction.

Our Architectural Service Department will help you apply Napanee Kitchen Units to your needs. In laying out, designing and figuring we are prepared to help you achieve kitchens which represent the maximum of beauty, efficiency and durability.

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There is a Napanee Kitchen Unit, or group of units, for all needs—for any size space—for any arrangement of doors and windows. Let our Architectural Service Department assist you in planning or figuring.

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Gentlemen:—Please send me your illustrated catalog of Napanee Dutch Kitchen Units.

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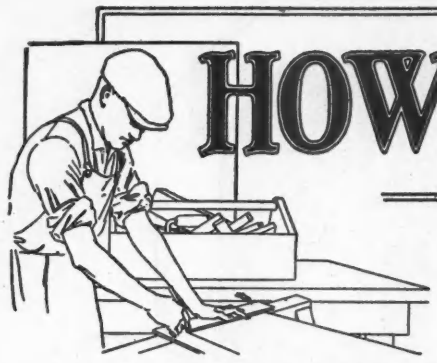

HOW DAN DOES IT

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

$2 for an Idea

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

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

A Comfortable Nail Apron

THE ordinary nail apron in common use by most carpenters (the kind that is hung from the neck by a loop) is a very uncomfortable rig to wear, as the weight of the nails causes the loop to cut into the neck continually. The illustration shows an apron with shoulder straps attached in such a way as to throw all weight of nails entirely upon the shoulders.

This Method of Hanging the Nail Apron from the Shoulders Will Be Found More Comfortable Than the Usual One.

When in position upon the person, the neck will be at O, but the straps will cross down in middle of the back instead of at X as in the diagram. Strings are attached for tying around the waist as on the ordinary apron.

This apron can be home-made of good heavy duck or bed ticking. Or, the neck strap may be removed from the regular style apron and shoulder straps sewed on as in the diagram.—E. J. Wilson, Gen. Del., Portland, Ore.

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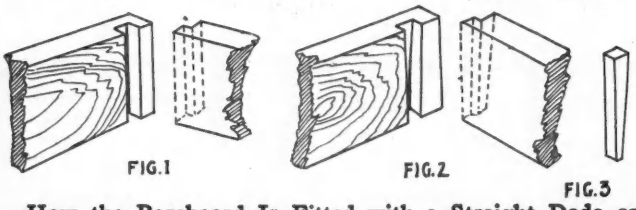
Dado the Baseboard

THE article by Mr. Johnson, on page 196 of the June issue, is very good as far as it goes but it does not go far enough. In this locality first class work requires us to dado our base together at the corners. Some workmen proceed as shown in Fig. 1, cutting a straight dado and forcing the two sections together horizontally, which is quite apt to crack the plaster in the corner.



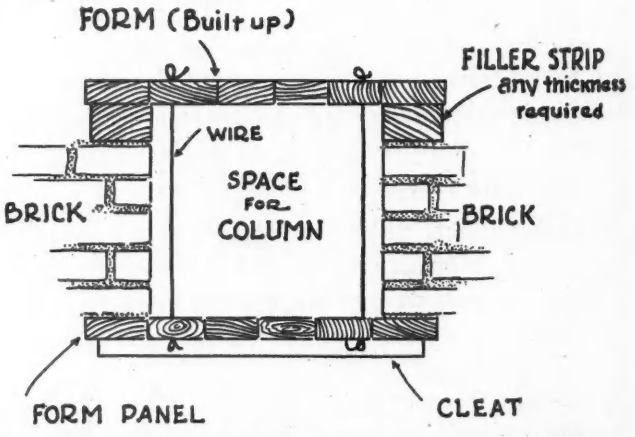
How the Baseboard Is Fitted with a Straight Dado or with a Tapering Dado Giving a Tight Fit and No Plaster Cracks.

I find a better method is to make a tapering dado, as in Fig. 2, about 1/16 inch wider at the top than at the bottom, and put the sections together vertically, making a perfectly tight fit without danger of cracking the plaster. I use a tapering pattern, as shown in Fig. 3, to mark both sections. —L. W. Pike, Brattleboro, Vt.

✣

Building Concrete Piers

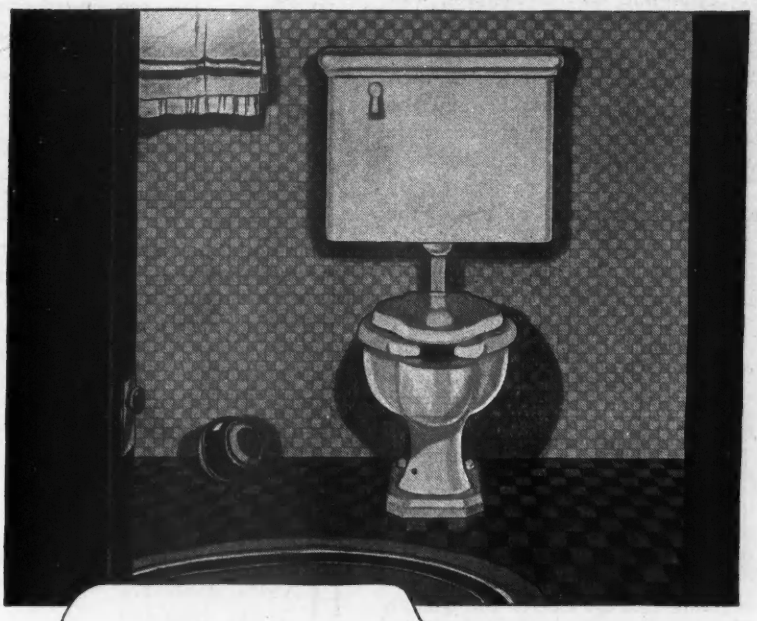
WHEN concrete piers or columns are built in a brick wall it is the usual method to build up the forms and pour the concrete and, after the concrete has set, to remove the forms and build up the brick work. This often ties up the masons for a week or more and requires a lot of unnecessary form work.



By This Plan the Brick Wall Is Built First and Serves as a Part of the Concrete Column Form.

To expedite matters, especially on a small jub, and to save form work, the brick walls can be built first, leaving openings or spaces in the walls for the columns. Forms are then required for only two sides of the column and no braces are needed. Good lumber should be used and, if the forms are securely wired, a good clean job can be made which has a solid bond with the brickwork.

If the walls are built of tile, the tile next to the opening should be set on end. Such columns can be made either flush with the wall or wider, by the use of filler strips as shown in the illustration.—Paul Bennett, Architect, Milwaukee, Wis.



The Purimo Proves the Quality of Your Houses

"Standard" Purimo, complete as shown,
$95.00
Exclusive of installation cost.

You can talk all day of the modern equipment in your houses—and not be as convincing as when you point out the special advantages of the Purimo Toilet. Discriminating home buyers are quick to recognize these advantages:

1. Extended lip both front and back—making for the utmost comfort, cleanliness, and sanitation. In no other toilet is this obtainable.

2. White seat divided at the back as well as in front for greater cleanliness.

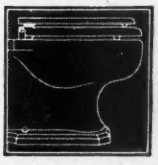
3. Large water area with a minimum of exposed fouling surface.

4. The new "Standard" Tank Fitting that insures quiet, efficient action under all conditions.

The Purimo is made complete in "Standard" Factories and backed by "Standard"'s reputation as the largest manufacturer of Plumbing Fixtures. When you specify it you specify a fixture that is sure to appeal to home buyers.

Standard Sanitary Mfg. Co. Pittsburgh

LOOK FOR THESE FIVE FEATURES IN SELECTING A TRULY MODERN FIXTURE. "Standard" PURIMO HAS THEM ALL.

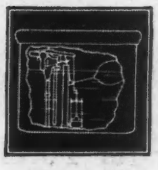


This shape in front

Extended front; cut-out rear

Large water area

White seat divided front and back



Quietness with efficiency

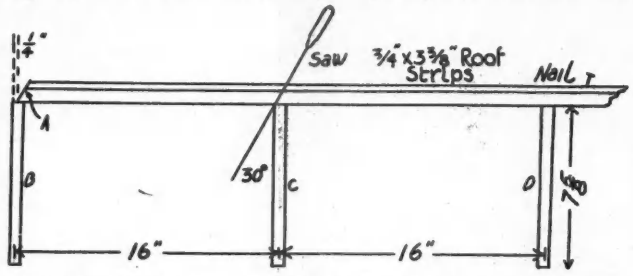
"Standard" PLUMBING FIXTURES

How to Cut Bridging

I HAVE shown in the sketch how I cut bridging to go between joists where we use roof strips. I take two clear, soft pieces and lay them together and drive a nail to keep them from slipping. I then lay the two pieces square across the joist over the line of the bridging and cut both off at once at the point marked "A." This cut is on a bevel of about 30 degrees.

Now, if the point "A" is placed about one-fourth inch back from the front side of the joist marked "B" and the two are squared off alongside the joist "C," at the same bevel used before, you have the two pieces for this space.

Two by two bridging can be cut in the same way by placing the pieces side by side instead of one on top of the other. On 10-inch joists the point "A" is set about ⅜-inch ahead of the joist "B" and the cut is slightly more than 30 degrees. The dimensions may vary slightly from the ones



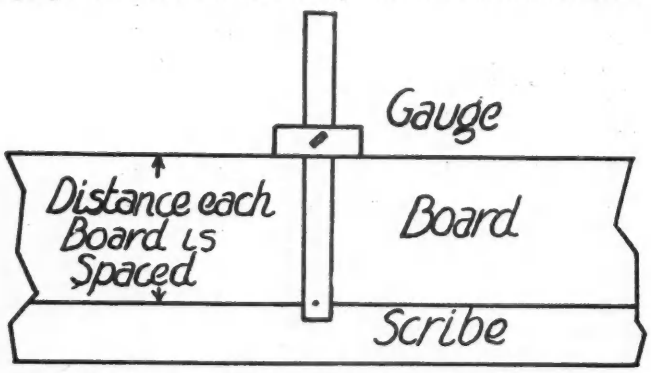
Bridging to Go Between Joists Can Be Cut to Fit Quickly and Accurately by the Method Described and Illustrated Here and a Little Practice Will Increase the Speed of the Work.

given but after a carpenter cuts two or three pairs he will be able to sail right ahead, using this method.—ALBERT H. DEPP, Toledo, Ohio.

✣

To Lay Siding Straight

I USE a method for keeping siding or weather boarding straight and true which I find is the best I have ever heard of and enables one to work rapidly without danger of error. I carefully apply the first board so that it is absolutely straight and true. I then take an ordinary wood gauge and scribe the correct lap and nail the next board to



By Means of an Ordinary Wood Gauge, Siding Can Be Marked and Laid True and Straight Quite Rapidly Without Danger of Error.

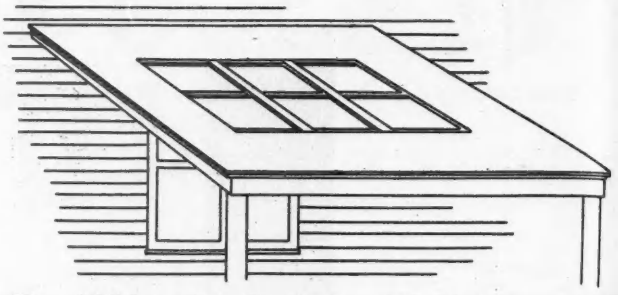
this line. This does away with sighting or snapping a chalk line and is more accurate.—OLIVER C. PIERCE, Decatur, Illinois.

✣

Light for Porch Windows

THE addition of a large, square porch on the front of a certain house was delightful from the standpoint of an outdoor living room, but unfortunately the porch roof darkened the large living room inside.

This seemed inevitable until the resourceful son of the family came home for vacation, and pointed out how easily a large porch window of ribbed wire-glass could be put in the porch roof, permitting plenty of light to shine through, and thus relieving the gloom into which the living room had been cast.



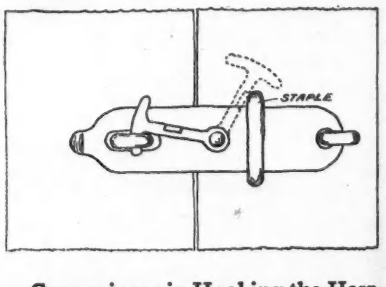
The Addition of a Porch Cut Off Light from This Window, but the Situation Was Relieved by Means of a Skylight in the Porch Roof and the Room Was Bright and Cheerful as Ever.

To prevent a glare of light in the summer time, for the users of the porch, an adjustable awning curtain of striped green and white canvas was arranged on a rod with rings, so it could easily be adjusted with a light curtain stick.—LESTER G. HERBERT, Auburn, N. Y.

✣

Handier Hasp Action

HASPS that are freely mounted on their securing staple are not the handiest things in the world when it comes to the matter of closing them. Anyone carrying at least a one-arm load has long realized this. To make a hasp really easy to close, engage it with the locking staple, shape a third staple so that it may be driven down crosswise of the hasp, position it as indicated in the sketch, and drive it home.



Convenience in Hooking the Hasp, Even When Carrying an Arm Load Is Possible by This Little Device.

This will hold the hasp in position to close over the locking staple at all times, and render it easy of closing. Drive the wide staple far enough back from the hook pivot so that the balance of the hook against it will hold the hook in a back position of itself.—LOUIS SCHNEIDER, Clinton, Mo.

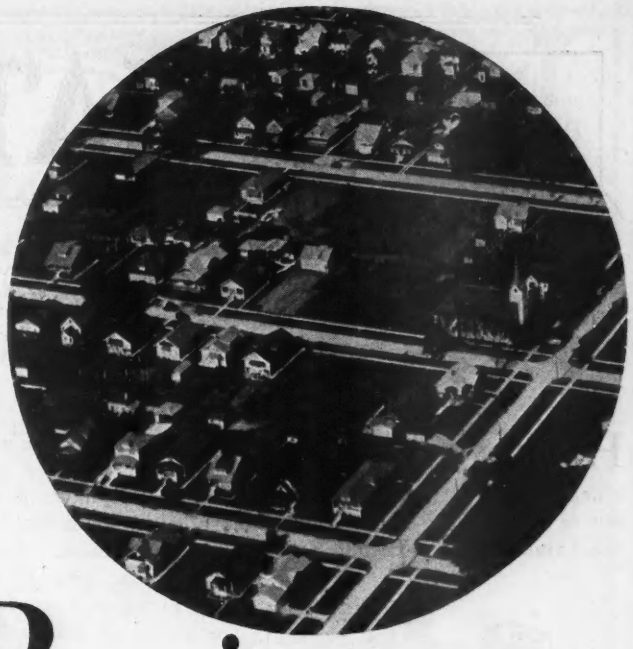
✣

Aid in Applying Wall-Board

WHEN installing wall-board in an old building or one in which the walls are slightly out of plumb, it is quite a problem to get the cut of the ceiling end of the sheet without scribing. Scribing is a difficult matter with gypsum filled wall-board on account of its weight. I devised a method that can also be used to get the wall cut of a ceiling sheet when the walls are out of plumb.

I made a square out of pieces of waste lumber, the blade 4 feet long and the tongue 2 feet long. In using this I place the tongue against the wall or stud and the blade against the ceiling. Of course, if the blade fits tightly against the ceiling, no cutting is necessary, but if either end of the square shows a gap, the gap is measured with a rule and the wall-board cut accordingly.

For instance, if a gap of 1 inch shows between the right-hand end of the square and the ceiling I measure 1 inch on the left-hand corner of the sheet and cut from this mark to nothing at the opposite corner.—J. JOSEPH ALPINE, South Amboy, N. J.



Almost every roof in your town needs the protection of Celotex attic lining. You don't have to wait for people to build to get this profitable business.

New Winter Business *waiting for you!*

Here is a steady source of income during the dull months . . . a way to offset the winter building slump.

AN UNUSUAL winter profit opportunity has recently developed for every carpenter and builder.

New business, never before available, is waiting for you today in almost every house in your town. Hundreds of sales opportunities are open *right now* . . . while building jobs are scarce.

People everywhere want to make their present homes more comfortable and get their share of the big savings Celotex Insulating Lumber makes in fuel bills.

They are lining attics, basements, porches and garages with Celotex . . . making their homes more livable all year 'round and saving money at the same time.

This idea is being featured in Celotex national and newspaper advertising during the fall and winter months. It offers you a big opportunity to develop an extra volume of business at a time when it will be most welcome.

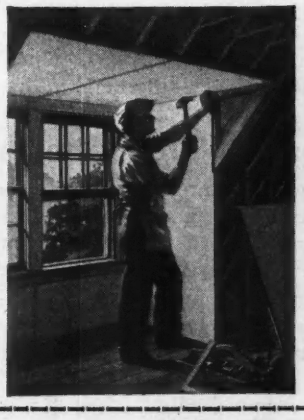
You can make a good profit on each job because Celotex is so easily and quickly applied. The broad, light boards are sawed and nailed just like wood lumber. And every piece is usable—free from cracks, knotholes or stain. That saves material.

This profitable extra business isn't hard to get. When you explain the many advantages and the low cost of lining an attic, basement, porch or garage with Celotex you are offering your prospects a real service—one they'll be quick to appreciate.

Get in touch with your lumber dealer. He will be interested in getting some extra business too and will be glad to work with you.

Also send the coupon below for more information about the winter uses of Celotex and about how you can sell them. It may well be the means of increasing your profits several hundred dollars this season. And all it will cost you is a postage stamp to mail the coupon.

THE CELOTEX CO., CHICAGO, ILL.
Mills: New Orleans, La.
Branch Sales Offices in many principal cities
(See telephone books for addresses)
Canadian Representatives: Alexander Murray & Co., Ltd.
Montreal, Toronto, Halifax, Winnipeg, Vancouver



97% of America's homes need this protection

Lining attics with Celotex is profitable business not hard to get. Here is a big immediate market that does not depend on new construction

CELOTEX
INSULATING LUMBER

THE CELOTEX COMPANY, Dept. T-501
645 N. Michigan Ave., Chicago, Ill.
Send me your Winter Use Folder.

Name.....

Street.....

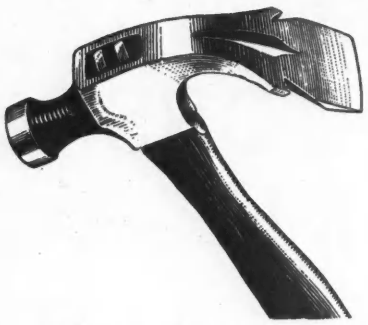
City..... *State*.....
Am. Builder, 1-27

WHAT'S NEW ?

EDITOR'S NOTE: *The* AMERICAN BUILDER *does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address* AMERICAN BUILDER *Information Exchange, 1827 Prairie Ave., Chicago.*

This Novel Tool is Useful

HERE is a novel tool which should prove widely useful. It is a perfectly balanced, one pound hammer of crucible steel. In this hammer the claw ends have been put to use by being finished with a chisel edge. This makes the hammer also a cutting tool of great usefulness. You can chop with it in places where a hatchet or chisel are ordinarily used, pry open boxes and crates, dress down or level planks or beams, scrape old markings off boxes or floors and take off a tongue and groove. The angle at which it is set enables even an unskilled workman to chip away wedge after wedge of wood without effort.



A Hammer of Unique Design Which Is an Efficient Tool of Finest Quality.

Instead of two claws there is an oval hole with two beveled ends. It is possible to pull nails with either end of this hole. The lower end is very carefully designed and bites right into the nail. With soft wood, you can get a grip on the pointed end and pull the head right through the wood. Two extra claws are provided on the outside edges and these make it possible to grip a nail close to a wall or any other obstruction where the ordinary claw hammer cannot reach.

The head, or hammering end, is lowered a full inch from the curved top making a semi-circle from end to end. This permits the full leverage of the claws to be used. In the ordinary hammer the driving end gets in the way and stops the leverage. This offset also creates a perfect balance and gives an additional inch fulcrum.

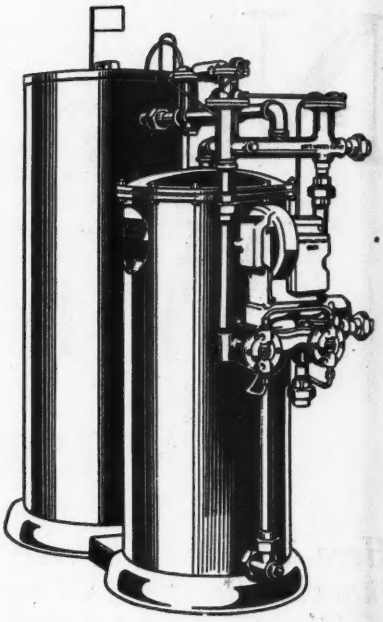
✣

An Automatic Water Softener

ONE of the largest manufacturers of water systems and water softeners has now announced a new, automatic softener which represents their latest development of this type of home equipment. It is sold at a price which makes it available to the average home owner and its simple automatic action is designed to do away with the bother of reconditioning the mineral which has been an objection to the older models. It is a zeolite type in which the reconditioning is done automatically.

The water passing through a meter rotates a shaft and drive wheel which can be adjusted for varying degrees of water hardness. These in turn drive a disc and cam which, at a certain point, depending on the adjustment push a lever which in turn operates a series of valves. By this action the water is turned through a by-pass and brine is flowed through the mineral from the brine tank.

When the brine drops to a predetermined level the action is reversed and water again passes through the softening mineral. A red flag indicator on the brine tank indicates the salt level and when it touches the lid of the tank more salt must be added. This is the only attention required to keep the softener in constant operation.



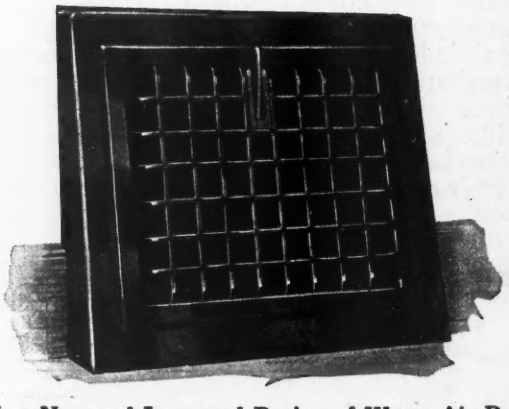
Here Is a Domestic Water Softener in Which All the Labor of Regenerating Is Performed Automatically.

✣

Improved Warm Air Registers

A LEADING manufacturer of warm air registers has announced a new model, one piece, baseboard register with square corners, as shown in the illustration. It is made in sizes from 8 by 10 inches to 14 by 14 inches and with face open areas of 58 to 148 square inches. A deep flanged back frame fits into the register box making a tight fitting connection adjustable to various thicknesses of plaster. The deflectors are embossed, making them rigid and tight closing.

Maximum air openings, correctly proportioned, are provided without sacrificing the essential features of a register. A wide margin between the grille and outer return flange allows for trimming or covering broken, unfinished plaster. These registers are neat and decorative as well as efficient fixtures.



This Is a New and Improved Design of Warm Air Register with Pleasing Style and Maximum Air Openings.

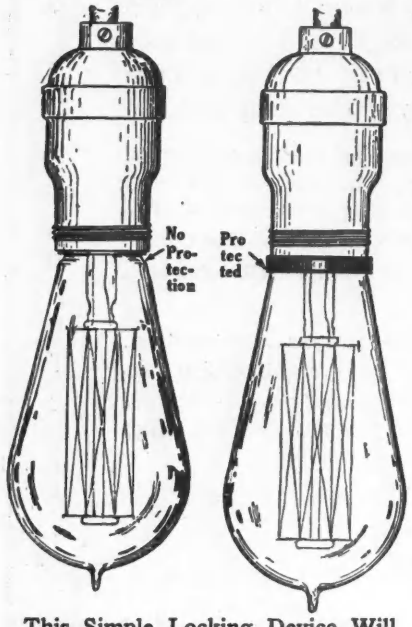
Lock Your Light Bulbs

HERE is a lock for electric light bulbs to prevent them from being removed by unauthorized persons. This lock fits the standard brass and porcelain sockets but not molded composition sockets. It consists of only two parts, a coiled spring and a grooved ring. A special punch is used to attach the lock to the socket.

1. A Coiled Spring

2. A Grooved Ring

Standard light bulbs of all sizes may be used with the lock as it grips the base of the lamp only. There is no wire cage to cast a shadow and no key to be lost or imitated. The locks are suitable for use in schools, public buildings, mills, factories, mines, railroads, steamships, and, in fact, anywhere that electric lights come within reach of the public.



This Simple Locking Device Will Prevent the Removal of Light Bulbs in Public Places.

✣

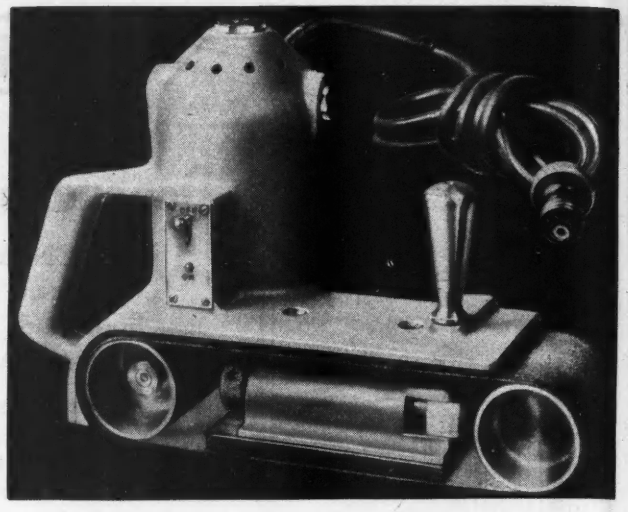
Economical Hand Sander

THE manufacturers of the new sanding machine illustrated here states that, after more than a year's experimenting, in which they have produced four different models of hand sanders, each better than its predecessor, they have succeeded in producing this thoroughly satisfactory hand, belt sanding machine. It is planned that this machine will be used in place of hand sanding or polishing on wood or metal. Tests have convinced the manufacturer that it will do this work more quickly and leave a better finish than when done by hand at a negligibly small operating cost.

Because the use of the hand plane is natural and familiar to everyone, this machine was designed so that the method of operation over a surface is similar to that of the plane. Not only may flat surfaces be sanded, but also concave and convex surfaces because the shape of the block over which the belt travels determines what form the belt shall take. It is furnished regularly with a flat hard wood block which is simple in construction and may be changed quickly so that the operator can use blocks of other shapes.

If the flat block is used it is impossible for the surface to be wavy when the machine is used in its ordinary position. In connection with the sanding of floors, it is usual to leave a small strip along the line of the baseboard to be sanded by hand as the larger machine cannot get close to it. This machine is constructed so that the right-hand side is clear and the belt is thus allowed to sand right up to the baseboard, thus doing away with hand work. For use in small shops the machine may be turned on its side and fitted into a supporting frame. This allows it to be used as an edge sander or tool grinder and for removing burrs and surplus stock from small wood or metal pieces.

The entire frame of the machine with the exception of the motor cap is a one-piece aluminum casting and the motor cap and pulleys are also cast from aluminum. In fact, all parts except a few necessary bronze and steel fittings and the form block are of aluminum. This accounts for the low weight of 12 pounds which allows the machine to be lifted about easily. It is equipped with a ⅓ horsepower universal motor. A feature is the ability to change belts in the fraction of a minute. An aluminum guard, which is part of the frame, protects the hand from the belt and eliminates all trouble from dust.



A Hand Sander Which Is the Latest of a Series of Machines Produced by a Leading Company in Its Development of the Electric Sander.

✣

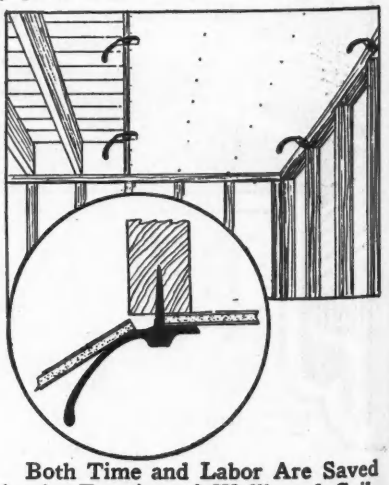
Handy Wallboard Hanger

A NEW tool that saves both time and labor in the erection of wallboard ceilings is being provided as a service to carpenters by a leading manufacturer of wallboard. The illustration shows the design of this wallboard hanger. It is made of cast iron and measures 4½ inches from shank to shank. The hexagon shaped pin is 2 inches long.

When using this tool, the first course is started by driving two or three hangers, at equal distances, into the top plate or ribbon so that the curved shank is far enough from the joist to allow the panel to be easily slid into place. The panel is raised so that the edge rests on the curved shanks. The opposite edge is then raised to about 6 inches from the ceiling and the panel is shoved against the pins. Two more hangers are then driven into the joists that support the outer edge. The panel is now held securely in place so that it may be nailed easily.

After the first course of panels is in place, hangers are driven along the edge of the panels already applied and the work is repeated as in the first course. The hangers are removed by twisting. The hexagon pin reams a hole so that the hanger is easily pulled out.

These little tools are so rigidly constructed that panels of fiber or plaster wallboard of the largest size are readily applied, slid into place, spaced automatically and supported to permit quick easy nailing. They do away with "T" props, staging, scaffold-jacks and other similar appliances. Reduction of time and labor from using these hangers is said to be as much as one-third.



Both Time and Labor Are Saved in the Erection of Wallboard Ceilings by the Use of This Hanging Device.

Easy to lay—

ONCE the starters have been laid along the eaves, the job is practically all laid out. The accurately punched anchor holes guide each successive shingle into place. The nail holes too are already punched. Any carpenter can get the hang of it immediately. He'll be through and ready for the next job in no time.

There is a bunch of re-roofing business in your town. Lay Johns-Manville Asbestos Shingles right over the old roof and you will find the business easy to get and the work easy to do.

JOHNS-MANVILLE INC., 292 Madison Ave. at 41st St., New York City
Branches in all large cities For Canada: Canadian Johns-Manville Co., Ltd., Toronto

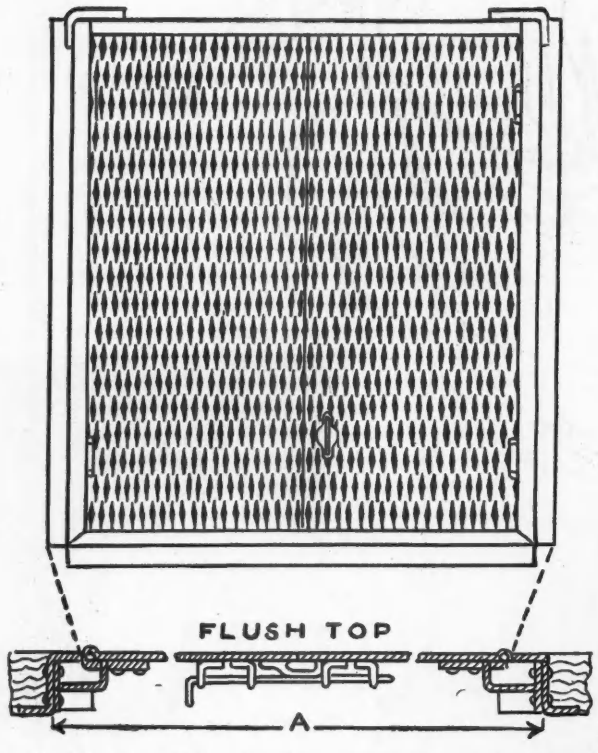
Public opinion is swinging to asbestos. The shingle that defies the blow torch is steadily climbing in popularity. People are turning more and more to the beauty, permanence, and fire-safety of Johns-Manville Asbestos Shingles.

JOHNS-MANVILLE
Asbestos Shingles

Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PROTECTION PRODUCTS

Quality Sidewalk Doors

THE illustration shows a quality sidewalk door, manufactured to compete in price with doors of cheaper construction. This is made possible through quantity production. It is a rigidly constructed door of extra heavy gage, special sections. It gives unusually long wear because only genuine wrought iron of the highest quality is used in its construction and because weak points such as rust and corrosion of hinges are eliminated. The hinges are of extra heavy rolled brass.



This Quality Sidewalk Door Has, Through Quantity Production, Been Priced in Competition with Doors of Cheaper Quality.

This door sits flush with the surface of the sidewalk, has a non-slip surface and is watertight. It is furnished in three stock sizes, 50 by 50 inches, 44 by 50 inches and 38 by 44 inches. Other sizes are furnished to order at proportionate prices but with a slight delay in delivery.

✣

New Unit Hoists

THIS hoist, built on the unit plan, that is designed so that an additional drum may be added, has been placed on the market by a well-known manufacturer of concrete mixers. This line of hoists ranges in capacities from 2,000 pounds to 8,000 at 165 feet per minute. A distinctive feature of the two and three drum hoist is the banking of the operative levers at the rear of the hoist so that the operator always has a forward view of all operations in and about the equipment. The power units are gasoline engines ranging from 15 to 60 horsepower.

An Additional Drum May Be Added to This New Unit Hoist.

A Permanent Wall Covering

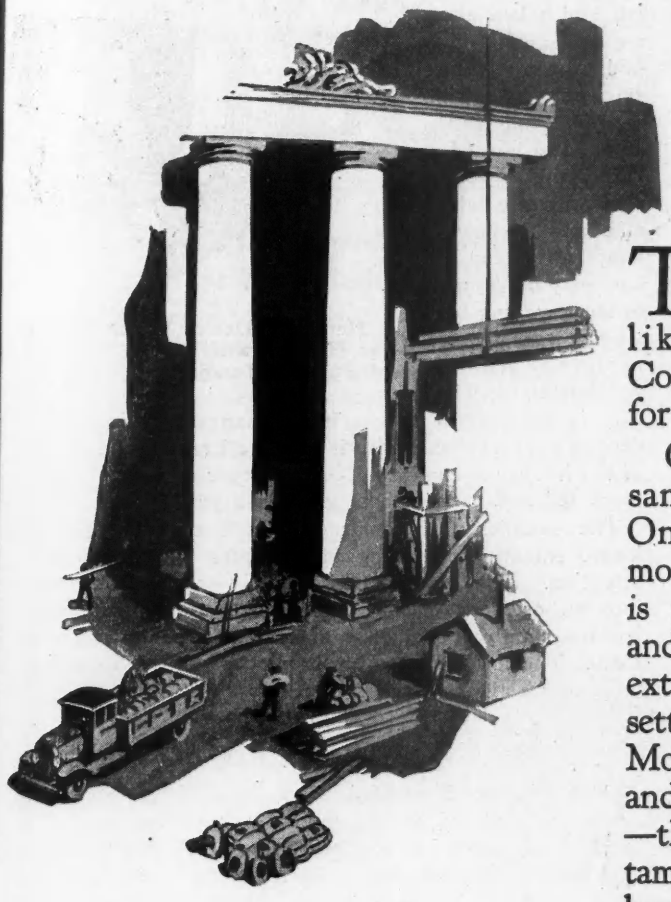
HERE is a wall covering which is permanent and practically indestructible. It is built up, in solid relief, with a combination of linseed oil, cement, lithophone and so forth, which becomes harder and more durable with age. The pattern is molded on heavy paper by means of hot, steel rollers on which the design has first been hand engraved. The finished material has the consistency of hard rubber and makes a wall covering which is impervious to moisture and is not affected by atmospheric or climatic changes. It can be washed and renovated indefinitely and can be redecorated with paint. It can be applied to any plastered wall, new or old, and in the case of old cracked or broken walls, because of its hard but pliable paper backing, it furnishes a substantial support as well as a wall covering.

This material is made in a wide variety of patterns and colors to meet all the usual requirements for the proper decoration of all parts of residences, apartments and public and business buildings. A particular effort has been made to provide desirable and attractive coverings for the walls of entrance halls of hotels and apartments as well as of vestibules, living rooms, libraries, dining rooms, kitchens and bathrooms in private houses. There is no limit to the variety of designs available as, where the quantity ordered justifies the additional expense, the manufacturer can produce special designs to order.

A Number of Highly Desirable Qualities Are Combined in This Wall Covering Which Is a Permanent Decorative Material.

The application of this material is the same as for wall paper, a flour paste being used as the adhesive medium and a felt covered roller from 6 to 9 inches in width to press the sheet onto the wall. A single roll of material averages 19½ inches wide by 8 yards in length and, unless otherwise ordered, it is furnished in a single piece of four rolls, 32 yards long.

JOHN T. WILSON used Carney Cement on four MILLION DOLLAR JOBS!



THERE are some mighty good reasons why people like the John T. Wilson Company use Carney Cement for their mortar.

Carney Cement takes 4 parts sand where others take 3. One man can easily furnish mortar to 30 masons, because he is not bothered with soaking and lime is not needed. The extreme plasticity and gradual setting quality of Carney Cement Mortar stops mortar wasting and gives the masons a bigger day —they are not hampered by tamping and tempering on the boards.

The builder who is looking to costs can hardly afford to pass up this quality cement.

THE CARNEY COMPANY

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

"We used Carney Cement, which was entirely satisfactory, in the following buildings in this city, each of which cost over a million dollars:

Miller & Rhodes—Department Store,
Office Building for Life Ins. Co., of Virginia,
Office Building for the State of Virginia,
Bank and Office Building for the State and City Bank & Trust Co.

S. VER VEER, Vice President,
JOHN T. WILSON COMPANY, Inc.
Richmond, Virginia.

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

Cement Makers

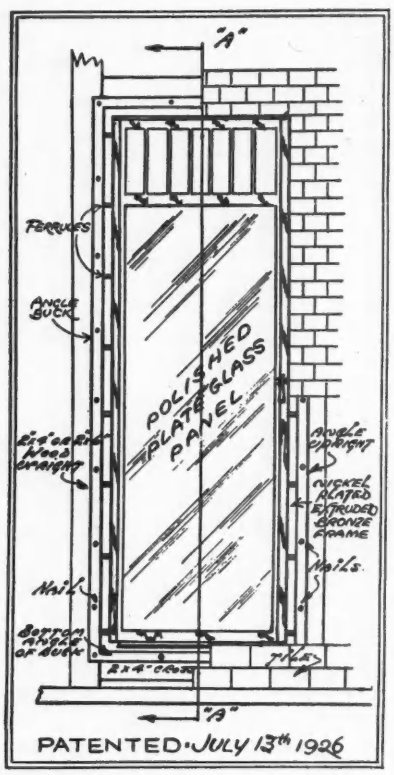
Since 1883

CARNEY CEMENT

for Brick and Tile Mortar

Glass Doors for Shower Stalls

ONLY a few years ago a shower bath in the private house was a novelty, today it is rapidly becoming an essential part of the well appointed home. With the growing demand for shower baths has come a demand for glass shower doors which replace the rather ineffective rubber curtain and admit ample light to the shower. The shower door shown here was developed to meet this demand with a quality door at a reasonable price and, because of quantity production, it has been possible to produce this door at a price within the reach of the average home builder.



A Glass Shower Stall Door Which Is Proof Against Corrosion Is Available at a Reasonable Price.

This door is made of extruded bronze, making it rust and corrosion proof. All joints are welded, the finished door being one solid frame. High quality, polished, plate glass, either clear or wire glass, is set in rubber with ample allowance for expansion and contraction. A condensation gutter at the bottom drains all moisture back into the shower stall and an adjustable rubber gasket across the bottom of the door prevents leakage between door and curb. The metal parts are nickel plate finish. Standard doors are 24 inches by 72 inches and special sizes are supplied to order. All doors may be obtained either with or without top grills.

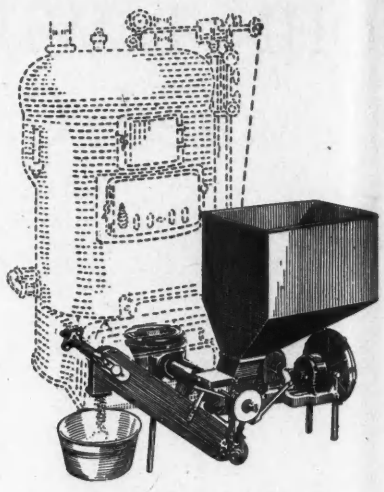
In installing this door the old method of drilling holes in after the tile is set, with the liability of cracking and later of sagging, is eliminated. With this door an iron frame or buck is furnished made of 1¼-inch steel angle, braced across top and bottom and welded solid. The sides of the buck are fastened to the wood studding or to the metal partition. Being built into the wall it becomes a part of the wall and its construction reinforces the door opening.

The frame is fitted with brass ferrules or tubes that are cemented in tight when the wall is tiled. These tubes are held in place by a temporary angle iron which also acts as a guide for the tile setter. Attached to the door by a continuous hinge is a heavy brass angle. When ready to hang the door, all that is necessary is to remove the temporary angle and attach the brass angle with brass bolts, which are furnished, and the door is ready to operate. No fitting is necessary and a perfectly watertight joint is made. No particular knowledge is required for hanging. It need only be set in the studding, leveled and plumbed, which any carpenter can do in 30 to 45 minutes.

✣

Electric Furnace Stoker

THE automatic coal burner shown in the illustration is an electrically operated, time, money and labor saving device. It is easily and quickly installed in the average warm air furnace, steam or hot water boiler and performs the labor ordinarily done by hand. It puts on the coal, keeps the fire burning and takes away the ashes and, it is said, does it more efficiently by giving complete combustion of the coal burned.



Here Is a Device Which Relieves the Home Owner of All the Labor of Furnace Tending.

The coal is fed at a steady rate which maintains an even temperature and the feed may be adjusted to meet varying temperature requirements. With the thermostat, which may be attached at option, it automatically maintains any desired temperature. With it in use, all raking and shaking of the furnace is eliminated. A conveyor receives the ashes discarded and carries them to an ash pail.

The simplicity of construction and ease of operation insure smooth functioning at all times with little or no attention. The motor attachment is screwed or pushed into an ordinary electric light socket for operation and consumes only the amount of current used by a 75-watt lamp. The coal is placed in the hopper and the fire started, after which all the work is done by the burner.

✣

A New Closet Fixture

THE fixture illustrated, a piece of home equipment recently placed on the market, offers new possibilities in the designing of closets and dressing rooms by increasing the capacity of the available space. It is a clothes hook only six inches long and notched to securely and compactly hold six clothes hangers. It is as easily installed as an old-fashioned clothes hook and a set of three equips any closet to accommodate 18 garments in an accessible manner and without mussing.

Individual notches for each hanger hold the garments apart, prevent crowding and make selection easy without rummaging. These hooks are stamped from steel, nickel plated and make an attractive fixture for the closet, dressing room, bathroom or wherever clothes are hung. Finishes in varied color enamel may be obtained.

The Capacity of Closets Can Be Greatly Increased by the Use of These Hangers.

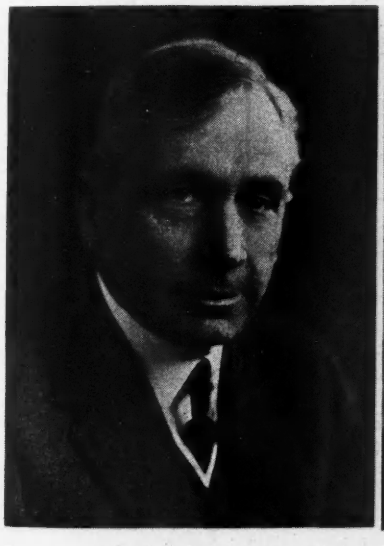
(Department continued to page 202)

NEWS of the FIELD

New Company Formed to Manufacture and Sell Steelead Skylights

A NEW corporation has been formed to take over the skylight business of the American 3 Way-Luxfer Prism Commpany, under the name of "Skylights, Incorporated." Prominent in the company are Irving G. Brown, general manager, and Samuel B. Harding, president. Robert B. Newell, of the R. B. Newell Company, advertising agency, will continue in charge of sales plans and promotion literature for these products which have been in his care for the last four years.

The American 3 Way-Luxfer Prism Company will continue the manufacture and sale of their well-known sidewalk lights and prism transoms in their plant in Cicero.



Samuel B. Harding, President, Skylights, Inc. **Irving G. Brown, General Manager, Skylights, Inc.**

By the formation of a separate corporation for the manufacture and sale of the skylight part of their business, the American 3 Way-Luxfer Prism Company will now have the additional plant and office space made necessary by the growth of their sidewalk light and prism transom business which has grown to large proportions in the last ten years.

The transfer of the skylight business becomes effective January 1. Skylights, Incorporated, will maintain a sales and administration office at 58 E. Washington Street, Chicago, but will continue all former sales and distributing connections, so that architects, builders and contractors will receive uninterrupted service all over the country.

One of the first efforts of Skylights, Incorporated, will be to standardize permanent skylight construction. Skylights are now built in haphazard sizes, usually at the discretion of the sheet metal contractors, but designers of buildings will now be able to secure heavy sheet metal ventilating skylights and lead-sheathed permanent skylights with the advantages and economy of standard stock sizes.

✣

Bureau Will Continue Service

AN announcement has been made by the Indiana Limestone Company, Bedford, Indiana, of the establishment of its Architects' Service Bureau. In the formation of this company the quarries, sawmills and cutting plants of 24 companies, formerly operating individually, were acquired and combined. Since the output of 14 of these companies, who were formerly members of the Indiana Limestone Quarrymen's Association, totaled over 80 per cent of the total output of the membership of the association, the association has also been taken over and reorganized as a subsidiary but separate department of the new company, in the interest of economy and greater service to the architectural profession.

The last mailing of literature of the Indiana Limestone Quarrymen's Association has recently been sent out but the service and activities which were formely carried on by the association have been provided for. These activities all have been taken over and will be expended wherever possible by the Architects' Service Bureau of the Indiana Limestone Company.

✣

Teach Building Construction

A COURSE in building construction to develop professional builders with a broad training in building operations, including business and engineering administration, has been established at Massachusetts Institute of Technology, and will begin its second term in February. The course was founded by Louis J. Horowitz, president of the Thompson-Starrett Company, of New York, through a grant from the Louis J. and Mary E. Horowitz Foundation.

The course is designed to give a thorough knowledge of the methods, machinery and appliances that enter into assembling and erection of materials of building, and particularly in the co-ordination of the various crafts and the formulation of time schedules. It is designed to qualify men for the building profession in all its aspects, will cover four years and leads to the degree of bachelor of science.

✣

Bonded Insulation Established

TO the owner of every house in which Celotex insulation is used, The Celotex Company, 645 N. Michigan Ave., Chicago, is now offering a $200 bond guaranteeing that the material has been applied as specified. These bonds are underwritten by the Fidelity & Casualty Company, of New York, and guarantees the owner the sum of $200 upon production of conclusive evidence that Celotex has not been used as stated.

This aid to the contractor is provided without expense to him or to the dealer who supplies him with Celotex. The dealer appoints some employe in his office to act as a registrar of bonds. This person receives the application, which must be signed by the contractor and dealer, stating that so many square feet of Celotex was sold and installed in a certain building and in a certain way. The application is sent to the Celotex Company by the registrar who receives $1 for each application handled, and the bond is issued to the owner.

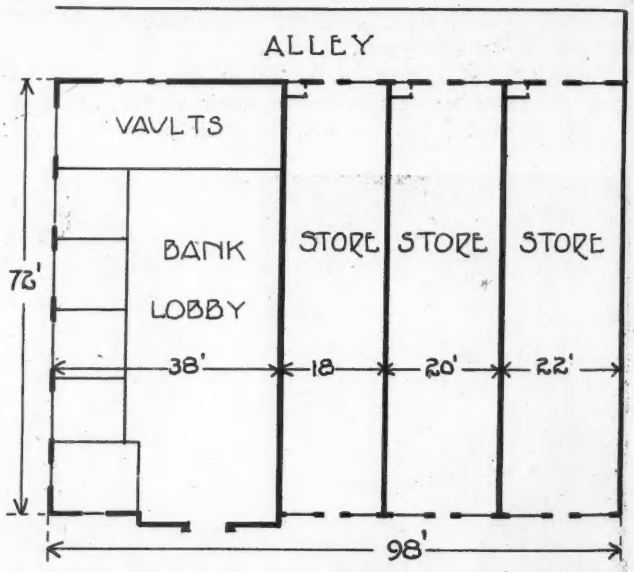
(Department continued to page 198)

Housing the Branch Bank

Here Is a Decided Variation from the Usual Type of Bank Architecture Which Is Attractive, Distinctive and Dignified and, with the Store Space Provided, the Building Is a Real Income Producer. It was designed and built by B. J. Caileri, of San Diego, California.

VERY seldom does a banking house occupy quarters that it doesn't own. Still less frequently will one encounter a bank owning a piece of property from which there is no income. It might even be said that "bank" and "income" are synonymous. The main office of a bank, usually located in a down-town district, almost invariably nestles in a corner of an office building where it will be handy to the most possible clients within a given radius. That's natural.

The branch bank, on the other hand, has a different problem to deal with. Its customers are scattered about the neighborhood. Mothers and daughters, butchers and bakers, are its patrons. The branch bank is as much of a community affair as the movie theatre. Both enterprises draw the same crowds, only one attracts during the daytime and the other at night.



In Addition to the Necessary Banking Space This Building Provides Three Good Store Spaces Which Can Be Rented to Provide a Regular Income.

The Bank Entrance Is Simple and Dignified and Does Its Part in Making This Building an Attractive Addition to the Community.

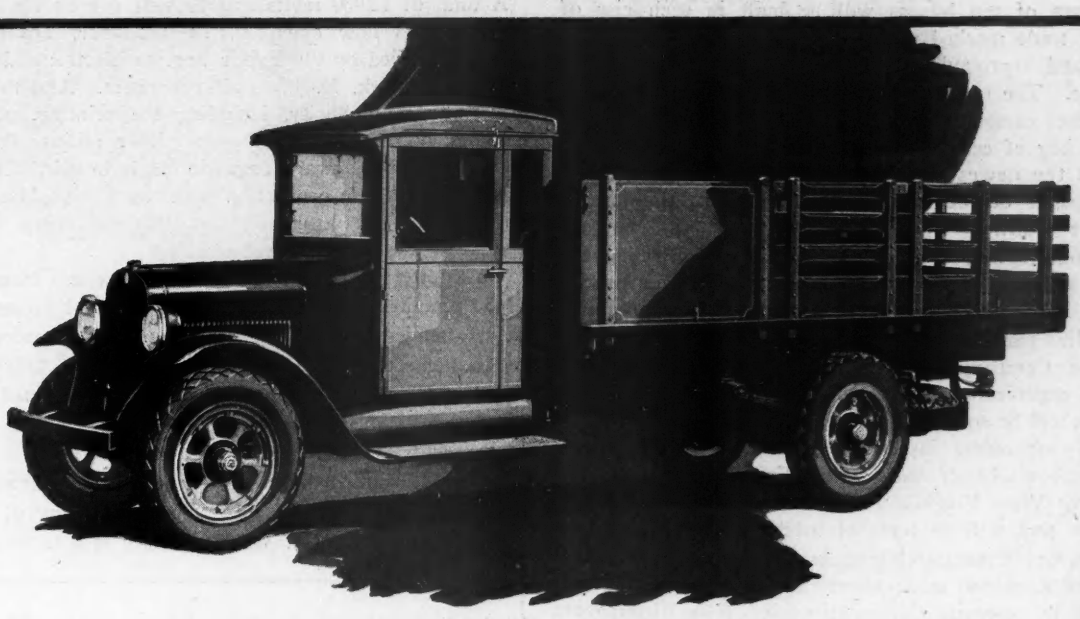
The Normal Heights branch of the Southern Trust and Commerce Bank of San Diego, California, has solved the building question in an enviable manner. On a prominent corner in Normal Heights, an outlying section of the city, there stands a one-story, stucco building that is a credit to the community. Red Spanish tiles cover the roof. The entrance facade of the bank is done in pressed stone.

The entire building measures about 72 feet deep and 98 feet wide. Besides the portion occupied by the bank there are three stores 18 and 20 feet in width. At the rear of the building there is a private alley where delivery matters can be cared for without cluttering the front curb.

The building has a particularly neat appearance. What few exterior ornaments there are, are well chosen and in good taste. This gives to the building a reserve or dignity that is entirely suitable for occupancy by a well-established banking house, and also gives to the three stores a certain class that would be lacking if they were part of an ordinary store building.

J. HAROLD HAWKINS.

GRAHAM BROTHERS TRUCKS



Complete—Ready to Work

When your business requires a truck—or additional trucks—the need is immediate.

You can get the Graham Brothers Truck you want—without long delay. They are built in the right sizes and with the correct body styles to fit your needs.

And your dealings throughout the long life of the truck are with one concern—the Dodge Brothers dealer. He will be right there year after year to sell and to serve.

Only great mass production enables Graham Brothers to build for you such sturdy, dependable trucks at such low prices.

GRAHAM BROTHERS
Evansville—DETROIT—Stockton
A DIVISION OF DODGE BROTHERS, INC
GRAHAM BROTHERS (CANADA) LIMITED—TORONTO, ONTARIO

Graham Brothers Trucks and Commercial Cars meet 91% of all hauling requirements.

¾-TON COMMERCIAL CHASSIS	$ 670
1-TON CHASSIS (G-BOY)	885
1½-TON CHASSIS	1245
2-TON CHASSIS	1445*

*Disc Wheels With Dual Rear, Optional.
Prices f. o. b. Detroit

SOLD BY
DODGE BROTHERS
DEALERS EVERYWHERE

Latest News of Nationwide Demonstration Campaign

By L. PORTER MOORE

President Home Owners' Service Institute

THE National Model Demonstration Homes campaign, destined to show the public the difference between good home building and cheap construction, is gathering momentum down south, where tradition has it that home ownership is taken very seriously. Construction of expert small homes is now under way in Louisville, Nashville and Birmingham under this comprehensive program set up by the Home Owners' Service Institute covering cities in 36 of the key centers throughout the United States.

A minimum of ten houses will be built in each city of standard or trade marked nationally advertised materials and equipment and surrounded with publicity that only experts could devise. The organizers of this national model demonstration homes campaign have taken the lowly brick and the unromantic bag of cement and the wornout model home and made them the newest thing in town by placing them on the front pages of the leading newspapers in the largest cities in the country.

The Allison Russell Withington Company of Birmingham, Alabama, is building the Birmingham model demonstration house, and ten other houses of standard materials required of all builders participating in this program. The Paramount Construction Company of Birmingham, a subsidiary of the Withington organization, has begun construction of the model home which will be completely finished, furnished and equipped and opened for public inspection under the supervision of the *Birmingham Age-Herald*. The Birmingham home will be located at West Virginia Heights at Cullum Avenue and 20th Street, and will be built of brick veneer. Furner & McPherson, well-known architects in this Southern city, have been selected to choose an architectural design suitable to that market and to supervise the construction. The Birmingham Gas and Electric Company will flood-light this house during the time it is open, will support the project by newspaper advertising and will mail invitations to all of its customers, inviting them to visit this efficient home. The far-reaching co-operation of the public utilities in all of the cities is only one small part of the "merchandising" program under which these houses are being brought to the attention of builders as well as the public.

Ground was broken early in December for the Louisville, Kentucky, model demonstration house being built by the Webb-Clark Company, prominent members of the Real Estate Board of that city, for whom the Mueller Metzner Company, also realtors, are sales agents. This house and the nine others, required of all the builders, will be located in the Castleton Addition development in this southern city. The *Louisville Herald Post* will feature the undertaking on its new weekly model homes page.

Though Nashville, Tenn., was not on the original schedule of cities in this program, the *Nashville Tennessean*, realizing the educational possibilities of such a campaign, succeeded in having it added to the list of key centers, and construction of this home began early in December at Green Hills, owned by John Calhoun for whom the Nashville Trust Company is exclusive sales agent. T. J. Haile, Jr., is the contractor-builder and Tisdale, Stone & Pinson are the supervising architects in this city.

In Omaha, Neb., the former governor of the Canal Zone, now president of the Metcalfe Company, one of the largest builders in the state, is showing the Omaha public the right way to build a home. Richard L. Metcalfe has a construction force of 350 people and is now operating five subdivisions in Omaha. During the first ten months of this year this firm did more than $3,600,000 worth of business and have also sold 450 houses in the last three years. The *Omaha World-Herald*, the leader in the Omaha field, will record each step in the building of this house and tell the Omaha public why certain materials were used and processes followed in the building of this model home. Ernest F. Schreiber, A. I. A., is the supervising architect in this city. The Maurice B. Griffin Co., Omaha realtors, are to act as sales agent for the Metcalfe Co.

Among the recent cities where building is under way is Aurora, Illinois, where Walter Cornell is building the Aurora model home for Frank H. Riddle, prominent realtor of that town. The Western United Gas and Electric Company, with headquarters in Aurora, is giving the support described in the written set up of this program and which, unlike so many similar projects, is actually materializing.

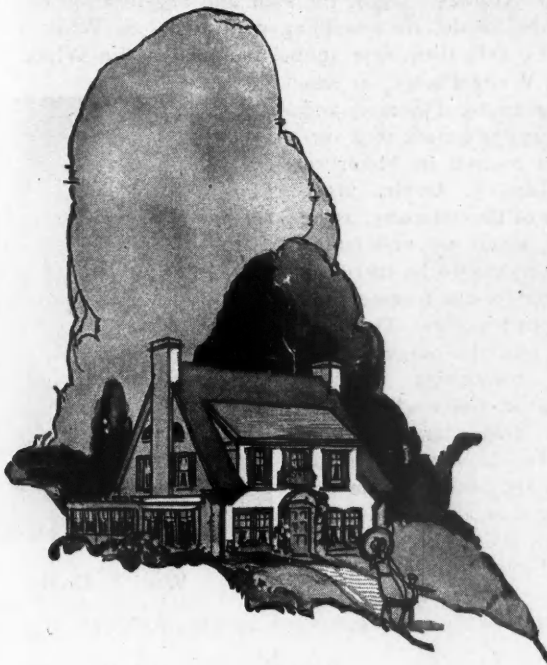
A total of 12,000 invitations to visit one of the New York model homes now open at Phelps Manor, Teaneck, N. J., has been mailed by the Public Service Electric and Gas Company of Newark, N. J., to all customers. And this valuable direct-by-mail publicity, including the printing, postage and mailing costs, is paid for by the public utilities in each city. In addition the Newark organization is broadcasting from its station WAAM in connection with the Phelps Manor demonstration, inviting listeners-in to visit the home and giving special talks on home subjects.

On a bitterly cold day late in November in Chicago, a party of 50 prominent people representing the real estate and allied fields attended the breaking of ground for the second Chicago model home that is being built at Glen Ellyn, Illinois. Clement W. Dipple of Elmhurst, who has associated with him his father, Robert Dipple, a builder of 40 years' experience, is the contractor on this project and the home is located in the Woodthrop subdivision of Lothrop Lee Brown of Oak Park, for whom the W. H. Wright Company of Oak Park are sales agents. Mrs. W. H. Wright is a nationally known

HONOR ROLL OF MANUFACTURERS

of Quality Materials and Equipment Chosen for the National Demonstration Model Homes

American Brass Company—Anaconda Brass Pipe, Copper Gutters, Leaders, Flashings and Bronze Wire for Screens.
American Gas Association—Gas Burning Domestic Appliances.
American Radiator Company—Corto Radiators—Ideal Arco Boiler—Arco Hot Water Tank.
Baeck Wall Paper Company—Muralia Wall Papers.
Blaw-Knox Company—Tru-Tye Steel Bridging and Steel Forms for Concrete Construction.
The Celotex Company—Celotex Insulating Lumber.
Common Brick Manufacturers' Association—Brick.
Congoleum-Nairn, Inc.—Nairn Gold Seal Inlaid Linoleum.
Copper and Brass Research Association—Copper and Brass Products.
P. & F. Corbin—Locks and Builders' Hardware.
Crane Company—Plumbing Materials.
The Crosley Radio Corporation—Radio Receiving Sets and Equipment.
Detroit Steel Products Company—Fenestra Casement and Basement Steel Windows.
E. I. DuPont de Nemours & Co., Inc.—Tontine Window Shades, Duco Furniture Finish, Rug Anchor.
The Fairfacts Company, Inc.—Fairfacts China Bathroom Accessories.
General Electric Company—G-E Wiring System.
Graybar Electric Company, Inc.—Graybar Clothes Washer.
The Hoover Company—The Greater Hoover Suction Sweeper.
Kelly Island Lime & Transport Company—Tiger Finish (Hydrated Lime) Walls.
Kerner Incinerator Company—Kerneator Chimney-fed Incinerator
Lehigh Portland Cement Company—Lehigh Portland Cement.
The Long-Bell Lumber Company—Long-Bell Trade-Marked Lumber and Oak Flooring.
Minneapolis Heat Regulator Company—The Minneapolis Heat Regulator for Coal, Gas, Oil.
National Fireproofing Company—Natco Hollow Building Tile.
National Lead Company—Dutch Boy White Lead for Interior and Exterior Painting.
Paine Lumber Company, Ltd.—Miracle Doors.
The Richardson Company—Richardson Multicrome Roofs.
The Edward N. Riddle Company—Riddle Decorative Lighting Fitments.
The Servel Corporation—Servel Electric Refrigeration.
Standard Gas Equipment Corporation—Vulcan Standard Smoothtop Gas Ranges.
Valentine & Co.—Valspar Varnishes, Varnish Stains, Enamels.
Wallpaper Manufacturers' Association of the United States—Wallpaper Guild.
Wasmuth Endicott Company—Kitchen Maid Standard Unit System of Kitchen Equipment.



The Nation is interested in BETTER HOMES

Modern Equipment in Home Owners Service Institute Model Homes Inspected by Millions

The great national Model Homes campaign of the Home Owners' Service Institute is revolutionizing the ready built home field. It is opening the way to new profit possibilities for operative builders.

Whereas a few years ago price was the most important consideration, today prospective buyers have been educated to look to value, the question of upkeep, re-salability and other factors aside from price.

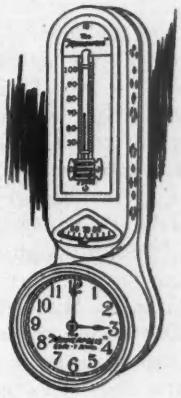
That has led to the firm establishment of the well-built, completely equipped home. The model homes of the Home Owners' Service Institute, for which the Minneapolis Heat Regulator has been chosen, are doing much to promote the sale of completely-equipped homes. Builders who include the Minneapolis in their houses are directly benefited by this.

Cash in on the Minneapolis

—in every home you put up. The Minneapolis stands out as a mark of quality construction, creates confidence, enhances value, increases salability. It is known everywhere. Millions are enjoying the comfort, convenience and economy it brings.

Start now to cash in on Minneapolis prestige. Whether you build small or large houses, it will pay you to include the Minneapolis.

Write today for complete information about the Minneapolis for coal, gas or oil heating.



The Minneapolis Model 77 with 8 Day, 7 Jewel Clock

Minneapolis Heat Regulator Co.
ESTABLISHED 1885
402 E. 28th Street, Minneapolis, Minn.

The "MINNEAPOLIS" HEAT REGULATOR for COAL—GAS—OIL

realtor and expert on home building problems and holds the chairmanship of the advertising committee of the National Association of Real Estate Boards.

The Chicago demonstration homes—one at Glen Ellyn and one at Elmhurst, Ill., are progressing nicely. The roof was being laid in Elmhurst on December 15th and the foundation was finished in the Glen Ellyn home on the same date.

All of the demonstration houses are six-room homes, most of them having been designed by notable architects especially for the Home Owners' Service Institute. The plans include bungalows and cottages, some with attached garages, and cover brick, frame, stucco and combinations of these materials. In many of the cities where the demonstrations are being held, these designs have been slightly changed or adapted by local architects to meet local requirements.

On Sunday, December 5th, more than 30,000 people had passed through the Buffalo model demonstration house on Sheridan Drive, Buffalo, sponsored by the *Buffalo Courier Express*. People throughout western New York have inspected this house at the rate of 10,000 a week, in spite of most unfavorable weather. Half timbered effect, stucco and brick was used by the Kinsey Realty Co. in building this six-room English cottage design, while, on the same day (December 5th) the third home to be built in the New York territory, was opened at Wantagh, Long Island, with elaborate ceremonies. The School of Architecture of Columbia University turned out to honor Alexander T. Saxe, the builder of this house, who acquired his knowledge of architecture, and his skill as a builder, in this school. The *New York Herald Tribune* is the sponsor in the New York City district.

Detroit also launched its part in this national campaign on December 5th, when E. D. Stair, publisher of the *Detroit Free Press* turned the key in the entrance door of the six-room Connecticut Colonial cottage, built on Hendrie and Pembroke Boulevards, Huntington Woods, Detroit. The formal opening of this house concluded the three months of intensive, earnest and carefully supervised construction, on the part of the Miller-Storm Company, builders, with the co-operation of Ralph Collamore, member of the firm of Smith-Hinschman-Grylls, supervising architect.

In Cleveland, the model home being built by the Wm. J. Mitchell organization, well-known realtor-builders, of that city, drew record crowds before the foral opening of December 19th, when an impressive program was held. The speakers included the City Manager of Cleveland, W. R. Hopkins, and Mayor John D. Marshall.

Visitors to the Pittsburgh demonstration in Brookline are being escorted through this most modern house by "Miss Pittsburgh," who as Miss Thelma Williams, represented the city in the 1926 beauty pageant of Atlantic City, N. J., and who in addition to being a noted beauty has specialized in interior decorations. This is a clever publicity touch that has done much to lure really good prospects to this home.

✣

Plan Heating Exposition

THE second annual National Heating and Ventilating Exposition will be held at the 12th Regiment Armory, Columbus Ave. and 62nd St., New York City, from March 14 to 19, 1927. The exposition will be under the same management as last year, the National Exposition Co., Inc., with E. P. Frenz as business manager.

✣

Plan Home Complete Exposition

THE Sixth Annual Home Complete Exposition of the Indianapolis, Indiana, Real Estate Board, will be held April 2 to 9, 1927, according to an announcement made by Director J. F. Cantwell. This exposition is held with the idea of creating a desire for home ownership, a desire to own better homes and a desire to have in these homes the best of everything.

Hold First Annual Banquet

ON Armistice night, the staff and organization of Frank N. Goble, Inc., building contractors of White Plains, N. Y., held their first annual banquet at the White Swan Inn, White Plains. It was attended by 145 men and was in the nature of a surprise to and in honor of William J. Goble, president of the company, as he was given to understand that it was to be merely a dinner for the foremen and superintendents. This dinner was the outgrowth of the company's monthly shop meetings which have been held over the period of the past three years and was suggested by the employes as an annual affair. The shop meetings are held generally in the company's offices and at each meeting a short program is presented followed by a social hour.

Wm. T. Goble.

✣

Test Cinder Block Sound Insulation

THE National Building Units Corporation, 1600 Arch St., Philadelphia, Pa., has recently published two bulletins which should prove of particular interest to those engaged in the construction of buildings in which sound insulation is an important requirement. The first of these, "Sound Absorption of Cinder Concrete Building Units," describes tests made of the insulating qualities of this company's building units by the University of Toronto and the Detroit Testing Laboratory.

✣

Hold Lighting Exhibition

PLANS have been completed for the National Lighting Equipment Exhibition to be held at Cleveland, Ohio, January 31 to February 4, 1927, under the direction and management of the Artistic Lighting Equipment Association. At this exhibition will be shown new designs, parts and accessories and it is expected to be the largest exposition so far held.

✣

Association Elects Officers

AT the recent annual meeting of the Portland Cement Association, G. S. Brown, president of the Alpha Portland Cement Company, of Easton, Pa., was elected president of the association. Mr. Brown succeeds Blaine S. Smith, vice-president and general sales manager of the Universal Portland Cement Company. Col. E. M. Young, president of the Leigh Portland Cement Company, Allentown, Pa., and Robert B. Henderson, president of the Pacific Portland Cement Company, San Francisco, were elected vice-presidents. John W. Boardman, vice-president of the Huron Portland Cement Company, Detroit, was re-elected treasurer.

✣

Bureau Supplies Free Sales Aid

THE Oak Flooring Bureau, 828 Hearst Building, Chicago, is featuring in its advertising the sales helps which it offers free for the use of retail number dealers, builders and floor layers, and the national advertising campaign which it conducts in some 29 leading periodicals. The bureau states that over 2,000,000 pieces of printed matter were sent out by it during the year 1925.

Refrigeration –a key to home management

Architects are much concerned with the utility and permanency of household equipment. Therefore, the vital question is: "Has the electric refrigerator come to stay?"

THE improved methods, which the electric refrigerator brings into the kitchen, mean the further emancipation of the housewife.

They help in kitchen routing; preparation, cooking and serving. They make marketing simpler. They make food cheaper, because one can buy in larger quantities; and the constant low temperature, automatically controlled, will preserve food for long periods.

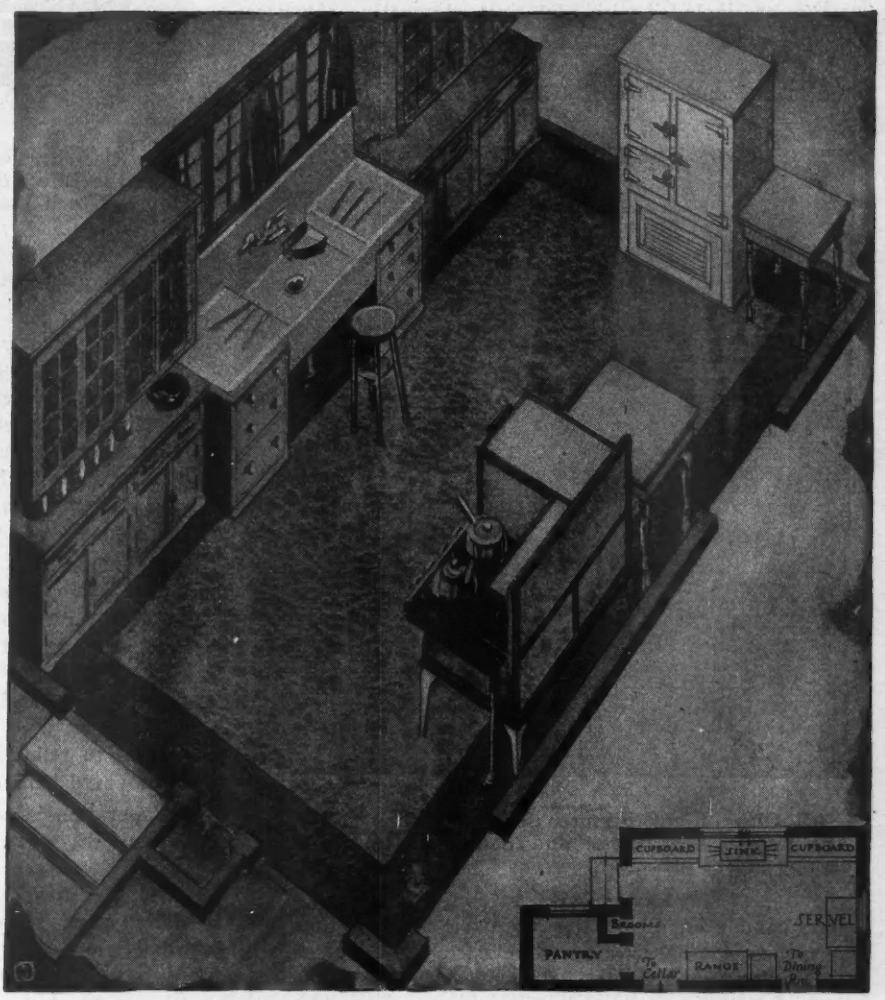
Any appliance which does these things is here to stay.

Another factor is this: The electric refrigerator can be put into any kitchen and it is available for most purses. Finally, the best ones are beautifully contrived; they endure and they do not give mechanical trouble. Electric refrigeration is a permanent investment.

Electric refrigeration has been long in appearing, but now it has definitely arrived—a proven, permanent household aid. It is a key to the smoother home management for which we all are striving.

Obviously, the kitchen plan which assures electric refrigeration, assures as well the approval and gratitude of the architect's women clients.

Why Servel? (1) Servel uses the coldest domestic refrigerant. (2) Its motor starts and stops less frequently. (3) Its operating costs are low. (4) Its service is remarkably enduring. (5) It is sold by more electric light and power companies than any other electric refrigerator, also by leading specialty dealers everywhere.



It is easy to see how Servel, placed as it is, saves hundreds of steps and waste-motions. Its steady, quiet, automatic refrigeration makes such a placement possible.

The Engineering Department is organized to assist architects with all problems of domestic and commercial refrigeration. Please address the Servel Corporation, 51 East 42nd Street, New York. Branches in principal cities in the United States. In London, England, Servel, Ltd.

Trade Marks Reg. SERVEL U. S. Pat. Off.

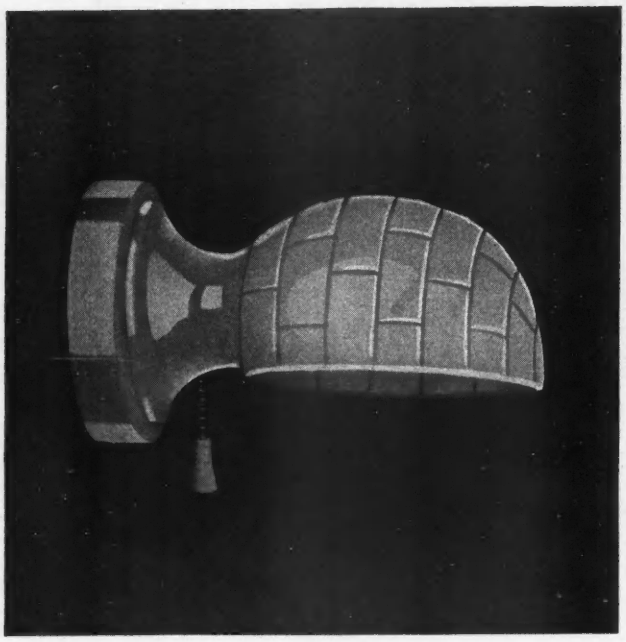
6131-37

SERVEL AUTOMATIC refrigeration

Sold and recommended by more Electric Light and Power Companies than any other electric refrigerator — also by franchised dealers everywhere.

All Glass Lighting Fixtures

ALL glass lighting fixtures for bathrooms and kitchens recommend themselves as being easily kept clean and therefore as an aid to sanitation. At the same time they are neat, attractive and efficient. In these fixtures both the shade and canopy are of glass, eliminating all metal except the small amount contained in the mechanism of the porcelain lamp receptacle, nor do they have any set screws or crossbars to adjust. Two solderless and tapeless connectors are included with each unit, eliminating the necessity of soldering and taping connections. The adjustable saddle attached to the receptacle is screwed to the fixture stud in any outlet box of 4 inches diameter or less. The glass canopy slips over the receptacle and box and is held by means of a fibre washer screwed to the lamp receptacle. The collar of the shade is then placed against the neck of the canopy and supported by means of a porcelain screw ring, attached from inside of the shade direct to the lamp receptacle.



All Glass Light Fixtures for Bathrooms and Kitchens Are Easily Kept Clean and Sanitary. Both shade and canopy are of glass.

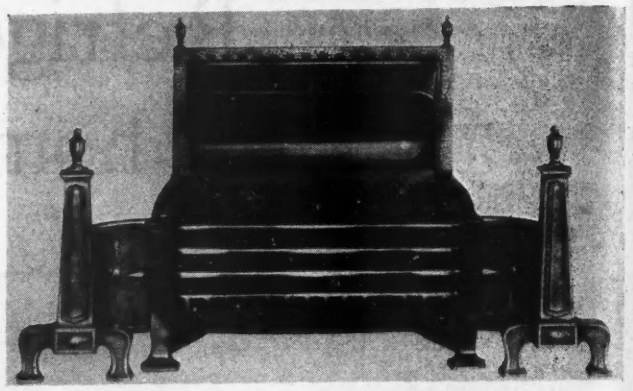
These fixtures are supplied in three styles, a wall bracket, a ceiling fixture and an enclosed kitchen unit. The first two may be had with either a plain or tiled shade and either keyless or with a pull chain. The kitchen fixture may be had either keyless, with individual switch control or with individual switch control and convenience pentap outlet suspended from 5 feet of conductor wire.

✣

Electric Fireplace Heater

THE fireplace has always stood as the center of the home and there is something about the cheerful open fire which appeals to everyone. Unfortunately, many homes, both old and new, do not have fireplace flues and so must do without the cheerful blaze. For these, however, the fixture shown here comes to relieve the situation and supply an attractive fireplace.

This fixture may be set into any fireplace opening and connects with the house wiring system or with the meter by direct wire. It gives the appearance of a real fire and, at the same time, supplies an ample heating for the chilly days of fall or spring or extra warmth on very severe days in winter, without dirt or bother.

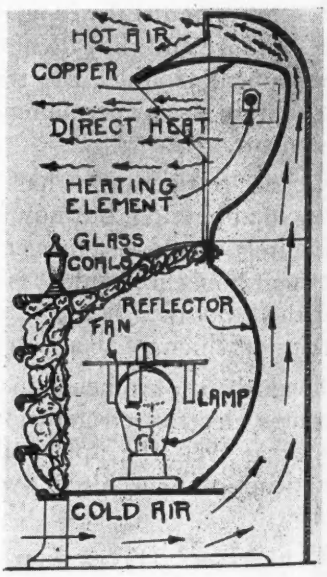


An Electrical Fireplace Which Is an Efficient Heater and Gives the Effect of a Hard Coal Fire Adds Coziness to the House Which Lacks a Fireplace Flue.

The lower part of the fixture consists of a compartment containing two 50 watt electric lamps, concealed under a heavy mesh screen. This screen supports colored glass coals which, when illuminated by the lamps below, have the appearance of a hard coal fire. On the top of each lamp a small aluminum fan is mounted on a pin pivot. The heat from the lighted lamps makes the fans revolve causing a natural flicker, as of actual fire, through the glass coals.

The upper part of the fixture consists of a fireplace hood under which a heating element is mounted between spring support terminals which hold it in place. This element is of the newest and most efficient type for converting electrical energy into heat. It is surrounded by a concealed wire mesh screen which protects it and prevents any contact with inflammable material. A copper reflector, shaped to reflect all the heat rays directly into the room, is mounted behind the heating element.

Operation is controlled by single, three-point switch on the outside. The first turn lights the lamps, the second turn sends the current through the heating element and the third shuts off both light and heat. This allows the fireplace to operate with only the lamps burning or with both lamps and heating element in operation. The air is kept in constant circulation because, between the rear wall and the reflector, there is an air space which is open at bottom and top. As the air in this space is heated it rises and enters the room through the openings just over the hood and fresh air is taken in at the bottom.



This Sketch Shows the Construction of the Electric Fireplace Heater.

In construction this fireplace is both substantial and artistic. It is built of gray iron castings making a rigid and durable grate. A steel plate, screwed on the back gives access to wires and plug. Two light sockets for lamp illumination of the coals are mounted on the formed steel bottom or firepot.

Why YOU Builders

should always specify the standard

San-Equip SEPTIC TANKS

Following are interesting paragraphs from a letter by a noted director of rural sanitation. (Name upon request.) He is without bias or prejudice in any way and he has had intimate experience for years with several thousand septic tanks.

An Interesting Slant

"The use of septic tanks must be considered from two main standpoints: 1. Installation. 2. Service after installation.

"Improper installation is the greatest single source of trouble. Therefore, the most valuable tank is the one that lends itself most readily and naturally to proper installation. In this item, the metal tank is in a class by itself.

"They are easy to install, being light in weight; one man can handle and install them; because of this easy installation, they are cheaper.

"In practice, we get better installations from them than other types.

"You will note that our experience from the 'Installation' viewpoint is entirely in favor of the metal tank.

"Under the heading 'Service' I cannot tell you very much for the reason that practically none of our properly installed tanks has ever given any trouble. Inasmuch as our metal tanks are practically all properly installed, we have never had any trouble with them that I recall now. Most of our trouble comes from what might be called 'bootleg' tanks, generally made by unlicensed plumbers, concrete workers, or 'jacks-of-all-trades.' These tanks are generally of the home-made variety."

As a builder your judgment and reputation is at stake with every new home you build.

This is true whether you build under contract or build homes and sell them.

The obligation of protecting home and family against the danger of typhoid and other infectious diseases makes a safe and modern system of sewage disposal of the greatest importance.

In fact, the most important of all the home equipment is buried in the ground—the septic tank. If it's a concrete or tile (in which you wouldn't store even gasoline) and is cracked by frost, there are no indications of danger until it is necessary to call a physician.

Builders everywhere are recommending and using the San-Equip heavy gauge copperoid iron tanks.

First, because of superior reliability and a desire to give honest, efficient service to their customers.

Secondly, because of the convenience of having the complete plumbing job handled together in one contract, saving time on supervision and getting the detail off their hands.

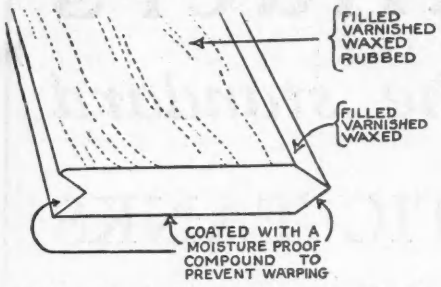
San-Equip is known to be a reliable advertised septic tank. It will help you sell your homes.

No matter where you build, you can have San-Equip Septics installed right along with the other plumbing fixtures. Ask your plumbing dealer to figure the complete job including a San-Equip Septic.

CHEMICAL TOILET CORP. 901 East Brighton Ave., Colvin Sta. P. O. **Syracuse, N. Y.**

Oak Flooring Improved

THERE is one well-known brand of oak flooring which is furnished in a ready finished condition so that it may be laid and used immediately. The finish is applied by patented machines, the only ones of their kind known, and this machine finishing means a considerable saving of time in laying of the floors and in economy in the cost of finishing.



This Sketch Shows How the Ready Finished Flooring Is Treated to Prevent Warping.

The upper surface of this flooring is filled, varnished, waxed and rubbed, the upper side of the wedge-shaped tongue is filled, varnished and waxed. The under side of the wedge-shaped tongue, the under surface and the groove are all coated with a moisture proof compound to prevent warping. Formerly the groove was filled, varnished and waxed. The change in treatment appears like a minor technical detail but is in reality of importance because of the increased protection is gives against warping and therefore against unsightly or ruined floors.

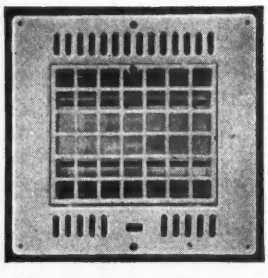
In addition to its ready finish this flooring possesses another distinctive feature. Instead of the ordinary tongue and groove, it has a wedge-shaped tongue and a "V" shaped groove, as may be seen in the illustration. This makes for quick, easy laying, prevents damage in nailing and makes an easily cleanable surface because, instead of the familiar square, dirt holding crack, the joint is a shallow, rounded, easily cleaned groove.

✣

Wall Type Electric Heater

A WALL type, electric heater, approved by the Underwriters' Laboratories, has recently been placed on the market in response to the demand of the modern home owner for a quick, clean, safe and economical auxiliary heater for the bathroom, bedroom, or dressing room. This heater is a permanent installation which, as shown in the illustration, is set flush with the wall. It is usually placed about 12 inches above the floor as this has been found to be the most practical height.

Two heating elements are mounted in an asbestos lined metal box, in front of a highly polished nickel reflector. This box, which requires a wall opening 14 by 14 by 3½ inches, has about 400 cubic inches of air at the sides and back of the reflector which becomes heated when in operation. This warm air is thrown out and increases the supply of heat. The asbestos lined, metal box prevents the scorching of walls and woodwork.



Here Is an Electric Heater Which Is Permanently Built Into the Bathroom Wall.

The heater is protected by a removable guard. Within 30 seconds after the switch is turned on a full supply of heat is given off which contributes to the economy of operation. The cost of operation is low, about the same as for an electric iron. Only 660 watts are used.

A portable heater, constructed on the same principles and using the same elements is also supplied for those who wish this type of heater. It can be plugged into a light socket anywhere to supply quick auxiliary heat where needed.

The particular feature of these heaters is the heating element. According to the statement of the manufacturers, this element is the most efficient, electrical, heating unit which has ever been produced. It is a rod-like, non-metallic bar that has a working temperature of 2,750 degrees Fahrenheit and will not decompose under 3,300 degrees, thereby insuring against burning out. In operation this bar glows a bright red and when the switch is turned on it becomes red in about 30 seconds.

It is also stated that this element has a greater radiation efficiency and dissipates a greater watt capacity in a given space than any other substance. Like electric light globes and vacuum tubes in radio sets, these heating elements are not permanent and must be replaced after two or three seasons (1,500 burning hours). Longer life has been sacrificed in order to obtain a lower current consumption. The cost of replacement elements, however, is not great.

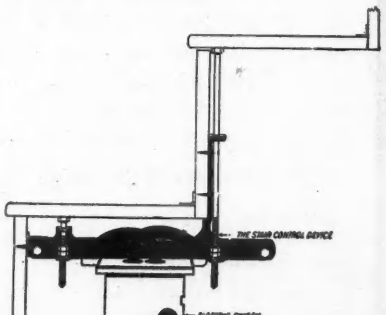
✣

Automatic Cellar Light Switch

"JOHN, that cellar light was left lit again today. It gave me a momentary scare, too. I was going down to the laundry and when I reached to turn on the cellar light I realized it was lit. I didn't know what to do. I was alone in the house and you know I'm timid about such things. Then in a flash I realized you'd left it lit as I knew the outside cellar door was locked and no one could be down there."

"I'm sorry, Mary; you know I do that quite frequently and it was only the other week you found I'd left the attic light burning for several days before it was discovered. Quite annoying, I'll try to be more careful."

"John, it's more than annoying, it's expensive. Electricity has to be paid for. And you know you have to get up every once in a while and go down to make sure you turned the lights off after fixing the furnace for the night. And you remember when Mr. Jones phoned after midnight one night? Said his suspicions had been aroused about prowlers in the side yard and he'd gotten up and seen our cellar lights were lit and the rest of the house in darkness?"



With This Switch Installed You Need Never Worry About Whether You Remembered to Turn Off the Cellar Light.

"I remember that well, Mary."

"And then, John, when I take down the clothes basket, I have to balance it with one hand while I snap on the light. And coming up, too. It's very inconvenient. Won't you do something about it, now, while it is fresh in your mind?"

This is the little human interest story which a certain manufacturer is using to introduce his new stairway switch and it points out the need for this convenient device in a most convincing manner. This simple switch can be easily installed in any stairway with a hammer and a screw driver in about two hours. Once installed it is entirely automatic. When you step onto the next to the top step of the basement stair, the basement lights are switched on and, coming back up, when you step on the same step they are switched off. The same switch is used on attic stairs but is placed under the bottom steps. It may also be used on any stairway as a burglar alarm, lighting up the house at night or operating a buzzer or bell.

OVER $1600 PROFITS IN THREE MONTHS

Made by J. A. Thomas of Montgomery, Ala.

THE fellow who is continually arguing that opportunities do not exist today should meet Mr. Thomas of Montgomery, Ala. His experience is interesting from the fact that he recognized an opportunity when he saw it and grabbed it. As Mr. Thomas puts it: "I was in very moderate circumstances trying to make both ends meet when I chanced to read an advertisement in regard to the American Universal Floor Surfacing Machine. I was sufficiently interested in this story to write them and soon after bought their machine. As soon as my American Universal arrived, I called on a few contractors and found that they had enough work to keep me busy for some time. From then on inquiries came to me from all directions. One day I surfaced four bowling alleys and had twelve calls the same day to go out and look over old floors and make prices on work for resurfacing and finishing. After owning the American for three months I balanced my accounts and found that I had made $1,653.44. Over $100 per week clear profit from the time I started in business. The best part of it is that business keeps on increasing, for as soon as I finish one job there is another waiting for me. There is a wonderful opportunity for men in all parts of this country to do just what I have done." Mr. Thomas is only one out of hundreds who have built up a big profitable business for themselves with the American Universal Floor Surfacing Machine. For detailed information address American Floor Surfacing Machine Company, 515 South St. Clair St., Toledo, Ohio.

Range for Electric Cookery

COOKING with electricity is an accepted development of the present day which, together with electric light, the telephone, radio and numerous other electrical comforts and conveniences relieves much of the drudgery and adds much to the pleasure of life. For the purposes of electric cookery the range seen in the accompanying illustration is one of the latest and most highly perfected pieces of equipment.

A New Electric Range, Built by a Company Long Known for Its Porcelain Enamelware and for Its Electrical Products, Is a Highly Attractive, Durable and Efficient Appliance.

This range is manufactured by a company which has for many years been making high grade, porcelain enamel, table tops, kitchen cabinet tops, refrigerator linings and stove parts and also electric lighting equipment and electric specialties. The electric range is therefor a natural addition to its line.

These ranges are all of porcelain enamel of great brilliance and smoothness. It is of the nature of glass yet very tough and durable. The surface gives lifetime service, is easily cleaned and kept sanitary. The construction of the range is rugged and durable and in appearance it is particularly attractive.

These ranges are made in several different styles and sizes and all may be obtained either plain, with theromstatic heat control or with both heat control and time control. All are equipped with accurate, easily read, mercury thermometers built into the oven doors. The time control clock is built into the back rail or cresting where it is out of the way. It is wound by setting and can not be over-wound or run down. It can be set to start and stop the heating of the oven at any desired time. The thermostat affords an absolute control of oven temperature which insures against the oven getting too hot and also saves current.

The cooking top is supplied with the open type coil for voltages up to 125 and with protected coil for higher voltages. The protected type may also be had for the lower voltages. These heating elements are built to withstand wear and tear and even a moderate amount of abuse. They are easy to clean and repair and will withstand temperatures far higher than any met in the range. The wire is not affected by spilled or boiling over liquids and when heated it quickly disposes of them. Each heating element is controled by a three-way switch plainly marked, high, medium, low and off.

The oven and door are insulated with a 2-inch thickness of insulating material which retains the heat so effectively that the kitchen never becomes hot and a vase of flowers set on top of the oven while in use will not be wilted. The tension of the door springs allows the door to be opened and closed with balanced pull and the latch always catches easily and tightly, preventing unnecessary escape of oven heat. An "unforced" vent pipe at the rear of the oven allows any surplus moisture to escape.

✣

Improved Steel Casements

A COMPANY which for years has been supplying industrial steel sash has recently begun the production of a solid, steel, casement sash for residences. These sash are a high quality product which not only add beauty and comfort to any home but are available at a price well within the means of the most humble home owner. They are made in all the universally accepted, standard sizes for casements and also special designs to harmonize with such architectural styles as Spanish, Elizabethan, Tudor, Gothic and so forth. The company also maintains a corps of experts to give informaiton and advice to prospective builders and architects.

The vital portion of this steel sash is a most original sliding hinge construction with a double adjustment feature which so fastens the entire hinge mechanism in place that it insures perfect contact of frame and sash on all four sides, without hammering, bending or forcing. The hinge is then welded in its correct position.

This hinge is one of the type known as the cleaning hinge which opens the sash to such a position as to make the outside of the glass readily accessible for cleaning from the inside of the building, although it gives the appearance of the standard butt hinge, the track and guide on which the sash rides being entirely concealed and therefore the neatness is not marred by unsightly projections of any kind.

All parts of this hinge are of solid bronze excepting the driven fit, steel pin, which is the tightest form of construction known. This almost flush hinge construction also prevents sagging which is very apt to occur with the use of extended hinge, as the entire weight of the open sash is suspended from the strong casement frame eliminating weakness by bending due to leverage.

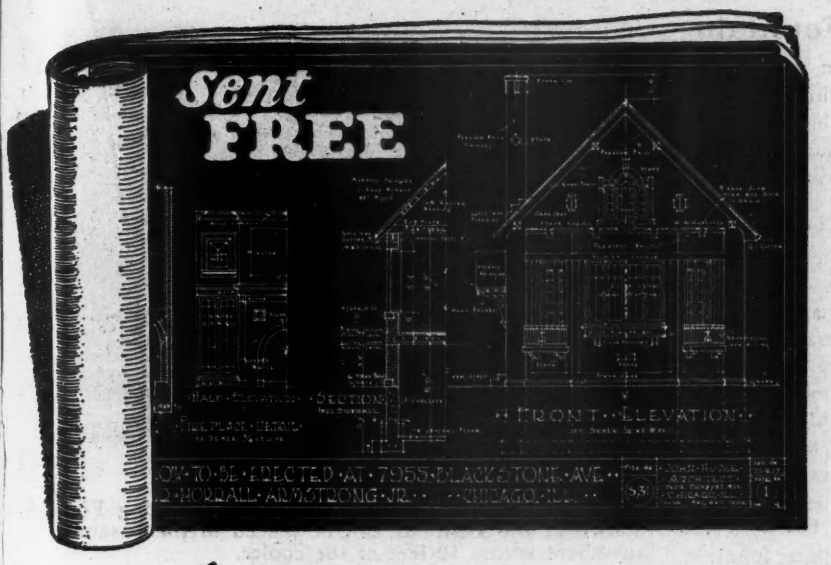
The Vital Portion of This New Steel Casement Sash Is the Original, Sliding Hinge Construction Shown Here.

At both top and bottom there is a friction adjustment which eliminates the necessity of using an exposed casement adjuster at the sill. Being held securely at both top and bottom, there is no twisting strain under wind pressure a feature which helps to eliminate distortion. This friction holder, once set is practically permanent though the adjustment is only the simple setting of a screw.

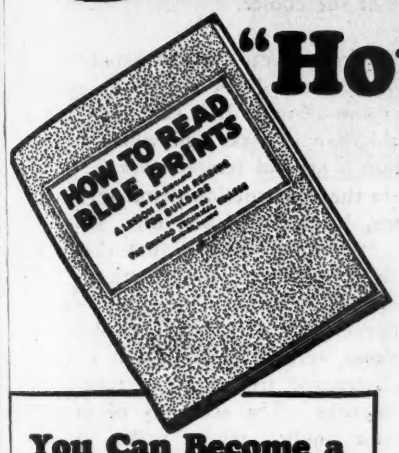
✣

Lumbermen Hold Convention

THE thirty-fifth annual convention of the Pennsylvania Lumbermen's Association, will be held at the Bellevue Stratford Hotel, Philadelphia, Pa., January 26, 27 and 28, 1927. Several nationally prominent speakers will discuss the problems facing the industry.



Mail the coupon for Blue Print Plans and 24-page Book: "How to Read Blue Prints"



Blue Prints are interesting to every man in the building trades. And more! They are the key to every builder's success. For until you can read and understand blue prints you will probably have to be satisfied with only a scale wage. The man who can read blue prints can become foreman, superintendent, or have a business of his own. To help every man who really wants to make money and get ahead in building, Chicago Technical School for Builders offers absolutely *free* these Blue Print Plans and a 24-page book "How to Read Blue Prints."

You Can Become a Building Expert

Plan Reading. Every man who has got very far ahead in any building trade can read blue prints. No man can expect to be a first rate foreman or superintendent until he knows what every line on a plan means and how to lay out and direct work from the architect's plans. By the Chicago Tech. Method you quickly learn to read any plan as easily as you read these words.

Estimating. Of course a man who wants to be a contractor or to hold a big job in a contracting organization must know how to figure costs of labor, material, and everything else that goes into any kind of building. The Chicago Tech. Course covers every detail of this important branch—shows you just how it is done from actual blue print plans.

Superintending. How to hire and direct men, how to keep track of every detail of construction as it goes on, how to get the work done in the least time at the lowest cost is also fully covered in the Chicago Tech. Builders' Course.

Also special courses in Architectural Drafting for builders, taught by practical men. These explained in Special Catalog "D" sent on request.

What this book is

This book is written by an expert . . . a practical builder who knows the game from top to bottom. It tells how different materials are shown on blue prints, how "sections" and "elevations" are shown on plans, how to lay out a building from a plan, how to take off quantities . . . and all the other interesting and important facts regarding blue prints. The book is as easy to read as your newspaper . . . written in plain, everyday English that everyone can understand. "How to Read Blue Prints" will be mighty helpful to you. Aside from the real help it gives you it will show you how clear and plain and easy the Chicago Technical Builders Course is . . . how quickly you can learn in your spare time . . at home . . . to become a building expert.

Learn at Home to make more money

For 23 years the Chicago Tech. School for Builders has been training men to advance and make more money in building. Hundreds of successful men, superintendents and contractors, owe their success to their Chicago Tech. training. We train you by mail . . . in your spare time . . . at home.

Send the Coupon . . . Now

With the free Blue Print Plans and our book "How to Read Blue Prints" we will send you another book . . . also sent absolutely *free*. It tells all about the Chicago Tech. Builders course . . . directed by practical building experts . . . tells what others say this course has done for them . . . shows pictures and gives all the facts about our method of training men . . . quickly . . . for the jobs that pay most money. This may be your golden opportunity. It costs you nothing to find out all about it. So send the coupon in *now* . . . for the *free* plans and books.

If You Live in or Near Chicago

Visit our School for Builders, open day or evening. 500 carpenters and builders attend each year. You can get the same training *at home*, by mail. Same plans; same lessons; same instructors. The Coupon brings all facts *Free*.

Mail the Coupon—NOW

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

Please send me without obligation your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below. It is understood that no salesman will call on me.

[Write or print name plainly]

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Address.....

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

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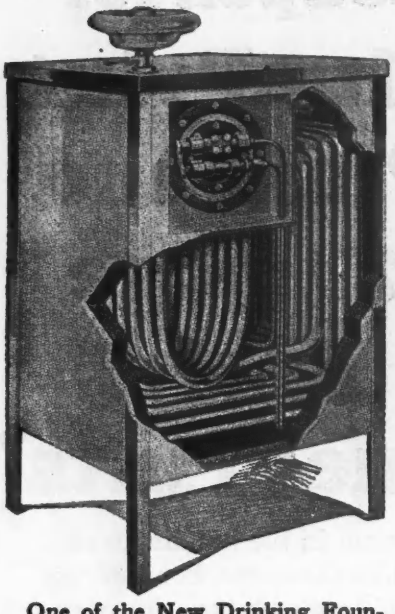
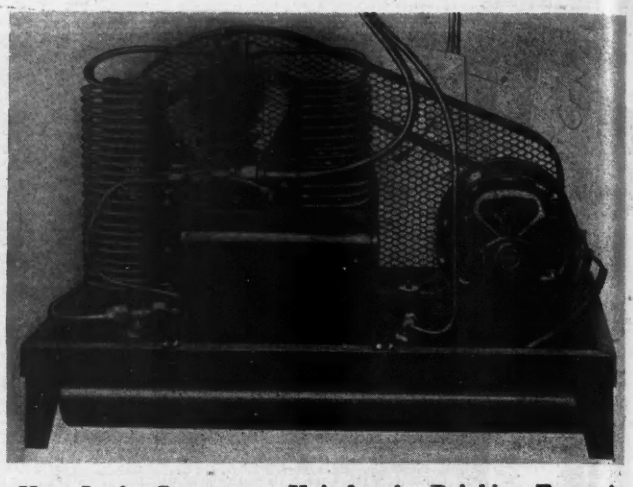
Electrically Cooled Drinking Fountain

ONE of the latest applications of electric refrigeration is to the cooling of water for drinking fountains. Clean, properly cooled drinking water is a big factor toward health and efficiency and wherever people are gathered in considerable numbers the problem of suitable water supply is an important consideration. The drinking fountain, some time ago, solved the problem so far as a clean, sanitary service was concerned. Now electric refrigeration has perfected the drinking fountain.



One of the New Drinking Fountains Cut Away to Show the Cooling Coils Which Keep the Water at a Constant Temperature.

This system gets rid of the trouble of ice service and at the same time insures a constant supply of water cooled to just the right temperature. Cabinets containing the cooling coils are located at convenient points for those who will use the fountains and a single compressor placed in the basement, or other convenient location within 50 feet of the cooler will serve several water coolers.



Here Is the Compressor Unit for the Drinking Fountain Shown at the Left. It can be placed in the basement or anywhere within 50 feet of the cooler.

✣

Here is a Glass Substitute

CONTRACTORS are finding new and profitable uses for a new material used as a glass substitute. This material is made of a strong, loosely woven fabric, impregnated with a new substance which solidifies, giving the cloth a transparent body, with the weather resisting qualities of glass. It is not brittle like glass, but is fully flexible and will not chip or crack. It is easily handled and comes in rolls so that it may be cut to any desired size or length, without waste. It is cut with common scissors. While it is not as long lasting as glass, it costs only about one-eighth as much as it is much easier to replace if need be.

The great economy is of course a feature but the healthful effects derived from its use are an important consideration. Used as an enclosure for sleeping porches in place of glass or where protection is desired, it can be used on light frames, with only center supports, constructed much like window screens. For this purpose it has a decided advantage over glass in its healthful effects. It is known by science that glass does not admit the vital life-giving elements of the sun's light, known as the ultra-violet ray. Research has shown that this material does admit the ultra-violet rays.

The ultra-violet ray is a generous creator of that element that scientists have classified as vitamine D and which is absolutely essential to life and health. In winter, when little children especially are necessarily confined indoors much of the time, they are lacking in this vitamine D, owing to the absence of the violet ray. This may cause undernourishment and even result in rickets.

The use of this new material, therefore, for sleeping porches or front or back porches, where children may play, is growing in popularity. The installation is healthful, satisfactory and economical and is very profitable from the contractors' viewpoint. Many sanitariums, too, are using it for sleeping porches, sun rooms, etc., where patients may get the benefit of outdoor light and yet enjoy the protection the closed porch or room affords. It is said to be a better non-conductor of cold than is glass and where used it is much easier to maintain a normal temperature.

It is also used widely in the construction of modern poultry houses, scratch pens, brooder houses, etc., where it entirely replaces glass. It has been found that the ultra-violet ray is an absolute essential to the growth of baby chicks and tests made by agricultural colleges and experimental stations show marvelous results from it. When it replaces glass in hen houses, scratch pens, etc., it is found that egg production is increased from one to four times during the cold winter months. The economy of installation in either old or new poultry plants makes it very attractive and is of course more profitable to the builder than the use of milled sash.

Nurserymen, greenhouses, truck gardeners and others in similar lines are also large users of it for hot beds, cold frames, etc. It is found that plant life in greenhouses, hot beds, etc., under glass cloth, where the ultra-violet ray is freely admitted makes a much stronger, sturdier growth and transplant easier.

✣

Protecting Concrete in Winter

WITH the rapidly increasing volume of winter construction every agency for the protection of concrete against freezing takes on a greater importance. Concrete which is frozen is as hard as concrete which is thoroughly set and appears to be all right. But if the forms are removed, when the first warm day takes out the frost the frozen concrete will fail. During the season when sudden drops in temperature are likely to occur it is of particular advantage to have the concrete set as rapidly as possible and if, at the same time, the freezing temperature of the concrete can be lowered a double safeguard is provided against unexpected freezing.

By the accelerating action of a new chemical, recently developed by a prominent manufacturer, the hydration of portland cement is increased with the result of early setting and early strength for the concrete. At the same the freezing point of the mixing water is considerably lowered. The manufacturers call attention to the fact that neither this chemical nor any other accelerator or anti-freezing compound, will give complete protection in very low temperatures. In such cases the tarpaulins and salamanders will be needed. But this chemical is dependable under the conditions for which it is intended and an important aid to the concrete contractor.

America Believes in Brick

The "KISHOWANA"
One of many practical and profitable Common Brick houses shown in the book—*"Your Next Home"*—listed below. We furnish, at nominal cost, specifications and complete original working blueprints for all these houses.

Brick Homes Sell Faster

THROUGHOUT the United States, builder after builder is making the discovery that it pays handsomely to specialize in Brick Homes.

The American public is favorable to Brick because of its beauty, its durability, its healthfulness, its safety, its *perpetual* economy—favorable to such a degree that an attractive Brick Home finds a buyer much more quickly than a home of less permanent construction.

To the builder building to sell, a quick sale is all-important. It frees tied-up capital for further operations, and the faster the turnover with each operation the bigger the profits at the end of the year. What's more—the builder who concentrates on Brick Homes finds it profitable not only in dollars and cents, but in the prestige it adds to his name.

At Your Service
These District Association Offices and Brick Manufacturers Everywhere

Boston, Mass.	11 Beacon Street
Chicago	614 Chamber of Commerce Bldg.
Denver	1735 Stout St.
Detroit	400 U.S. Mortgage Trust Bldg.
Hartford, Conn.	226 Pearl St.
Los Angeles	342 Douglas Bldg.
New York City,	1710 Gr'd Cen. Term'l Bldg.
Norfolk, Va.	112 West Plume Street
Philadelphia	303 City Centre Bldg.
Portland, Ore.	906 Lewis Building
Salt Lake City	301 Atlas Blk.
San Francisco	932 Monadnock Bldg.
Seattle, Wash.	913 Arctic Bldg.

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

BRICK forever

Common Brick Ass'n.
2131 Guarantee Title Bldg., Cleveland, O.

Send me the Books of Brick Beauty and Economy checked below, for which I enclose the price indicated.

- ☐ *"Your Next Home"*—(New Edition) Photos and Plans of 57 homes, 10c.
- ☐ *"The Home You Can Afford"*—62 homes 10c.
- ☐ *"Brick, How to Build and Estimate"*—25c.
- ☐ *"Skintled Brickwork"*—15c.
- ☐ *"Farm Homes of Brick"*—5c.
- ☐ *"Brick Silos"*—10c.
- ☐ *"Multiple Dwellings of Brick"*—10c.
- ☐ *"Hollow Walls of Brick"*—FREE.

Name _____

Address _____

Books, Bdlletins and Catalogs for You

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

"Lessons of the Storm" is the title of a booklet prepared by the Jones & Laughlin Steel Corporation, Pittsburgh, Pa., which is a brief, illustrated, engineering study of the effects on building construction of the recent hurricane along the southern coast.

The Patent Scaffolding Company, 1550 Dayton St., Chicago, has issued a new catalog, No. 21, covering its line of "Gold Medal" ladders and scaffolding.

The Master Rule Manufacturing Co., Inc., 821 E. 136th St., New York City, offers a catalog of the various types of rules which it makes.

The W. E. Putnam Company, 667 W. Boylston St., Worcester, Mass., has prepared a small pamphlet describing and illustrating its "Everlock" casement sash adjuster.

The Sidney Elevator Mfg. Co., Sidney, Ohio, offers a descriptive sheet on its standard, traction type, freight elevator and steel frame, elevator car.

The Hauck Manufacturing Co., 126 Tenth St., Brooklyn, N. Y., has published a Bulletin 1011 on the Hauck kerosene concrete heater equipment for tilting drum mixers.

The International Heater Company, Utica, N. Y., has prepared a broadside "Economy in oil burner installation" dealing with International Economy boilers.

The Associated Tile Manufacturers, 1102 Seventh Ave., Beaver Falls, Pa., have issued No. 4 of their Architectural Monographs on Tiles and Tilework, treating of ceramic art among the Greeks and Romans.

The American Gas Association, 342 Madison Ave., New York City, has published a folder containing the prize plans of its recent architectural competition with data on gas service and equipment in the home. It is prepared for the use of architects and builders in form for filing under the A. I. A. file system.

The Kenilworth Guild, Chattanooga, Tenn., offers a pamphlet on "The Hammer and Forge in History," which is distributes with its catalogs of wrought iron hardware and furnishings for the fireplace.

The Aeroil Burner Co., Inc., 266 Hudson Ave., Union City, N. J., offers a catalog of winter construction tools for heating, thawing, melting ice, snow removal. This is Bulletin No. 52.

The Halsey W. Taylor Co., Warren, Ohio, Catalog C-2, describes this company's line of drinking fountains including cooler types.

The John Herr Manufacturing Company, 44 N. 4th St., Philadelphia, Pa., offers a descriptive circular on its electric floor scrubbing and wax polishing machine.

The Newman Machine Co., Greensboro, N. C., offers a descriptive circular on its motorized, ball bearing, tenoner.

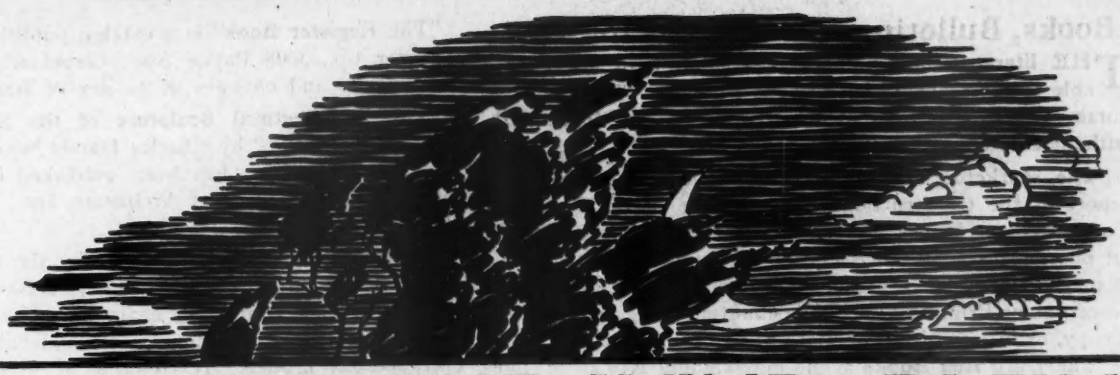
The Crist and Schilken Co., Inc., 500 37th St., Pittsburgh, Pa., offers a descriptive circular on its shower stall doors and shower shields.

The Himmel Bros. Co., New Haven, Conn., has published a complete price list of its Himco-Copper store fronts.

The Hanna Engineering Works, 1765 Elston Ave., Chicago, has published under the title "This Is the Age of Riveted Steel," a pamphlet containing an address on this subject by A. F. Jensen, president of the company.

The Ellison Bronze Company, Inc., Jamestown, N. Y., offers a circular describing the Ellison door ventilator, and containing a specification.

The Perry Company, Sidney, Ohio, offers a circular on the Perry automatic scraper for fills, hauls and dumps.



ALL NIGHT THE WIND BLEW

But it didn't blow away the builder's reputation for good judgement

THE REASON was because the solid steel casement window didn't rattle and bang in spite of heavy gusts of wind. And anyone who has been kept awake by the rattle—rattle—rattle of a loose, shaky window at dead of night realizes what a blessed relief a firmly held, quiet window is!

Builders and contractors realize the fact that the future sales of casement windows in their own vicinity depend on having each installation a complete success. There is no form of window so satisfactory as a steel casement window when at its best—and when it isn't, use some other type of window!

Thorn casements of solid steel can be relied upon to give satisfactory jobs and enthusiastic clients who tell others. There are sound reasons for this. The leaf of a Thorn casement is held firm *at both top and bottom* by a patented friction device which absolutely eliminates rattles, and requires not the slightest attention. The Thorn Cleaning Hinge construction (flat and unobtrusive as a well-made door hinge) allows a permanent factory adjustment against rain-leaking, sagging and sticking. Extra-deep leg sections, welded and buffed, assure rigidity for years of wear. The hinges and hardware are of solid bronze, the hinges having a driven fit pin construction, the tightest and best form known.

The Thorn Cleaning Hinge

THORN Casements *of Solid Steel*

Notice how this friction control at both top and bottom of a Thorn casement holds the leaf open firmly at any position

Dealer franchises are still open in some territories and we shall be glad to hear from those who would like to know about them. Contractors and builders can still obtain Thorn casements direct in territories not yet covered by dealers. A catalog and particulars will be gladly sent on request.

J. S. THORN COMPANY
2011 W. Allegheny Avenue., Philadelphia, Pa.

RETURN THIS COUPON FOR BOOKLET

J. S. THORN COMPANY
2011 West Allegheny Ave., Philadelphia, Pa.

Gentlemen: I would like to know more about Thorn casements. Kindly send me your free booklet.

Name_____

Street_____

City_____ State_____

AB-1-27

Books, Bulletins and Catalogs for You

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

"The Marketing of Short Length Lumber" is the first report of the Construction Subcommittee of the National Committee on Wood Utilization. It contains much data on possible uses of short lengths in building construction. It may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents a copy, or in lots of 100 or more at $4 per hundred.

"The Duro Red Book" is the new catalog No. 26 of The Duro Company, Dayton, Ohio, covering its entire line of pumps, tanks, water softeners and water supply equipment. This company also offers two pamphlets descriptive of its softeners and supply systems.

The Building Code Committee of the Department of Commerce, has published a report under the title "Recommended Building Code Requirements for Working Stresses in Building Materials." Copies may be obtained from the Superintendent of Documents, Washington, D. C., at 10c a copy.

"Built-In Beauty for Homes" is a booklet distributed by the Southern Pine Association, Dept. 132, New Orleans, La., for the service of home owners, lumber dealers, carpenters and builders. It contains photographs and working drawings of built-in furnishings. A second printing has ben prepared and is being supplied in any quantity at 10c a copy.

The Space-Saving Furniture Co., 148 E. 34th St., New York City, offers two circulars describing and illustrating the Phillips Dinette and the Phillips Invisible Wardrobe which it manufactures.

"The Register Book" is a catalog published by the Auer Register Co., 3608 Payne Ave., Cleveland, Ohio, covering additions to and changes in its line of warm air registers.

"The Architectural Sculpture of the State Capitol at Lincoln, Nebraska," by Charles Harris Whitaker and Hartley Burr Alexander, has been published by the press of the American Institute of Architects, Inc., New York City. Price $10.

"Ornamental Bronze" published by the Copper & Brass Research Association, 25 Broadway, New York City, is a handsome book containing examples of modern American design and craftsmanship in store fronts and building entrances in bronze. It contains 32 plates with a brief description of each installation shown.

"Architectural Specifications" is the subject of a new book published by the Architectural Division of the E. I. du Pont de Nemours & Co., Philadelphia, Pa., containing complete specifications and descriptions of all du Pont paint and varnish products of interest to architects. It is distributed to members of the profession.

"Radford Built-in Woodwork" is an attractive pamphlet, illustrated in colors, displaying the products of the Radford & Wright Co., Oshkosh, Wis.

"Self-Sentering Trussit" is a recent booklet from the General Fireproofing Building Products, Youngstown, Ohio, covering the subject of this combined form and reinforcement for floors and roofs.

The National Lime Association, Washington, D. C., offers its new Bulletin 318 on "The Value of Hydrated Lime as a Filler in Asphalt Paving Mixtures."

The Century Electric Company, 1806 Pine St., St. Louis, Mo., has issued a pamphlet on motors for house pumps, oil burners and electric refrigeration systems.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Japanese Adopt Yankee Methods

Oriental Workmen Are Quick to See Merit in American Construction Methods Used in Earthquake Area Rebuilding Operations

By R. E. J. SUMMERS, Chief Engineer, The H. K. Ferguson Co.

AMERICANS are being out-Americanized by the Japanese, right in the Japanese Empire. Once given an opportunity to learn the "tricks of the trade," whether they be concerned with business management or building trades employment, these people immediately attempt to go one step further than the Americans in doing things our way.

To the average American, the Japanese either does things backwards or does them in a round about way, at least when it comes to activities of such trades as are cared for by the building and construction employes. They use their saws just opposite to the American custom for example.

Once the native of Japan understands that our working methods are better, and learns how the trick is done, he will give up his practice, and start to show you how he can accomplish to better advantage the same task with the American method. On our ten million dollar construction job for the Shibauri Engineering Works at Tsurumi, Japan, the native workers at first would carry the hot rivets from the fires to the building, then have them hoisted to the iron workers.

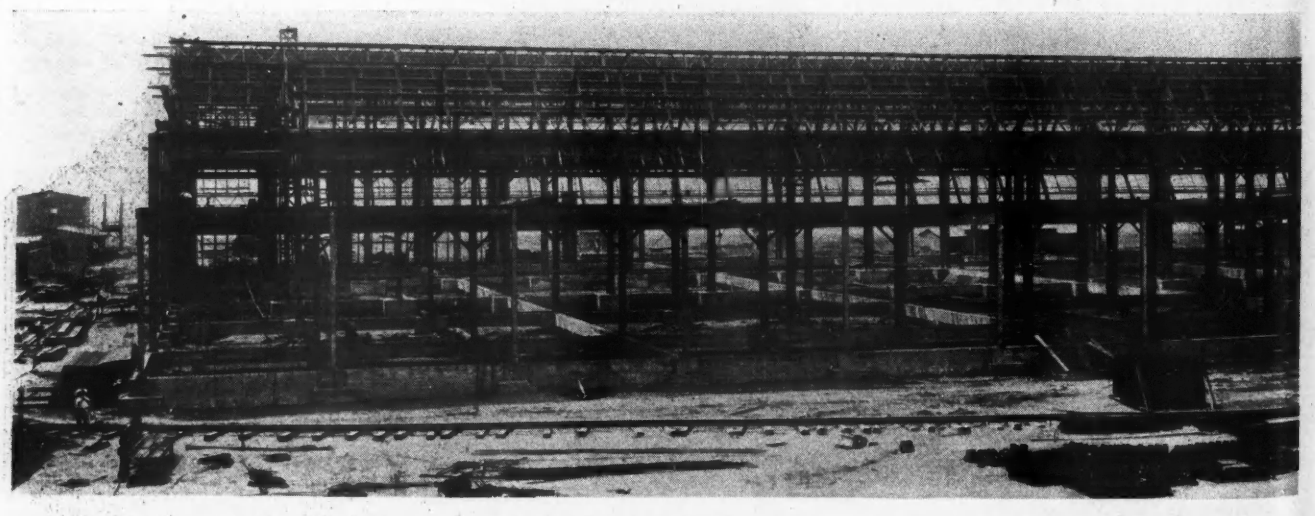
This method, of course, involved a great deal of lost motion and wasted time. Finally we taught them to throw the red hot rivets in the same fashion as is done in the United States. During my recent inspection trip to this job, it was interesting to watch the men use our system. So well had they mastered the new method that they threw the rivets just about twice as far as is done in this country, then they would turn around and for the benefit of all who might be near do a little strutting all of their own.

Practically all of the way through the construction we have been teaching the Japanese workers the American ways, which mean saving of time and money. Not only have the workers profited by this training, but on my last visit I found that a good many of the larger Japanese contractors themselves are in almost daily attendance at the job.

The importance of the adoption of the American ways in the building trades of Japan, is going to be especially stressed in the future, because of the increasing costs of such labor. As a result of the large demand for such tradesmen, due to the building activities resulting from the reconstruction following the earthquake, wages have increased in these lines on an average of fifty per cent.

The introduction of American ways into employment of the Empire is sure to be one of the indirect means through which the Empire will come more and more to favor business connections with our firms through which construction work can be handled. It has a tendency to bring the two interests together, and naturally enough those people will look to the United States for construction materials, when they find their workmen doing their tasks by our methods.

The majority of the large building undertakings will not be started for some time to come, save in territories outside of the earthquake and fire devastated areas. The government has issued an order which prevents the construction of permanent structures in the damaged territories for a period of three years, so that plans may be completed for comprehensive city plans, zoning and details worked out, covering the type of construction to be used. This of course means, that it is reasonable to look forward to a great deal of future construction in the Japanese Empire.



American Construction Methods, as Exemplified by the H. K. Ferguson Company, Are Finding Favor Among the Japanese, Where Rebuilding After the Earthquake Is Under Way. The illustration shows part of the $10,000,000 plant the Ferguson Company is erecting for the Shibaure Engineering Works at Tsurumi, Japan.

The Blue Bag Means Quality—

Quality from Stone to Finish

In this age of hustle and bustle—when speed counts—the building trade demands even *more* than quality in building materials.

A quick, easy and convenient way of identifying this quality is also wanted. There is no time for wondering, investigating or guessing.

For this reason the adoption of blue bags for our brands of finishing and building hydrated has met with enthusiastic approval.

It is now possible to pick our brands of finish out as easily and as quickly as pointing your finger. The distinctive blue bag positively identifies our brands. No mixups, mistakes or confusion. The blue bag means quality when its filled with Finishing Hydrated Lime.

The Woodville Lime Products Co.
Toledo, Ohio

WHITE ENAMEL - GOLD MEDAL AND WHITE LILY FINISHING - HYDRATED - LIME

Books, Bulletins and Catalogs for You

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

The Truscon Steel Company, Youngstown, Ohio, has just published a new catalog, No. 680, presenting details, features, specifications, drafting room standards and illustrations of the new Truscon, solid steel, double hung windows.

Thomas Savill's Sons, 1310 Wallace Street, Philadelphia, Pa., have issued circular matter illustrating and describing their new, Savill, shampoo, lavatory fixture, especially designed for beauty parlors.

"Chimney Pots" is a very attractive booklet published by the Atlantic Terra Cotta Company, 350 Madison Avenue, New York City, showing the various designs made by this company.

G. E. Walter, 157 East 44th Street, New York City, offers a booklet on Duretta, a product which is described as an exact, fireproof imitation of plain and carved woodwork or of metal.

The Phenix Manufacturing Company, 22 Center Street, Milwaukee, Wisconsin, offers catalogs and circulars covering its line of hardware specialties, screens and awnings.

The Peerless Foundry Company, 1853-1935 Ludlow Avenue, Indianapolis, Indiana, has published a very complete and well illustrated booklet covering its furnaces and heating equipment.

"Chimney Pots" is the title of an attractive and informative booklet published by the Atlantic Terra Cotta Company, 350 Madison Ave., New York City, illustrated both with color plates and detail drawings.

"Concrete Practice," by George A. Hool and Harry E. Pulver, published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City, is a simple, practical explanation of the best practice in proportioning, mixing and placing of concrete; in the inspection and testing of concrete; in concrete construction methods, and in making estimates for concrete jobs. Price $3.

"Industrial Buildings and Housing," published by The Architectural Forum, New York City, for The American Face Brick Association, Chicago, is a book full of valuable information for the designer and prospective owner of factories and homes for industrial workers. Price $2.

The Indiana Limestone Quarrymen's Association, Bedford, Indiana, has published Details and Data Sheet No. 14 which contains Details of Indiana Limestone Cornices for Reinforced Concrete Frame Construction and also plates Nos. 37, 38, 39 and 40 of its series of notable limestone buildings.

"National Reinforcing" is the name of the new publication of the National Steel Fabric Co., Union Trust Bldg., Pittsburgh, Pa. The first issue is dated December, 1926, and it is described as a monthly news sheet devoted to reinforced construction.

"Cooling Your Drinking Water Supply" is the title of a new pamphlet issued by the Delco-Light Company, Dept. R-19, Dayton, Ohio, describing its latest adaptation of electric refrigeration which is an electrically cooled drinking fountain.

The Utica Heater Company, Utica, N. Y., offers a series of pamphlets under the following titles: New Idea Pipeless Furnace, Super-Smokeless Warm Air Furnaces for Soft Coal, Superior Warm Air Furnaces, Utica-Imperial Super-Smokeless Boilers, Imperial Sectional Square Boilers and Utica-Imperial Super-Smokeless Boilers.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

American Steel & Wire Company's *Perfected* PLASTER-STUCCO *Reinforcement*

Here's a New Product You Should Know About

Here is the complete story of Plaster-Stucco Reinforcement—a folder of facts, —a sample of the product for close-up inspection! Send for these now, and have both on file for quick reference.

PERFECTED Plaster-Stucco Reinforcement—a combined lath, reinforcement, and base for Plaster, Cement and Stucco, is introduced to the building industry after extensive trial and test, on many operations. It comes to you fully tested and guaranteed!

What it is!—A two inch Electric Welded Mesh of Cold Drawn Galvanized Steel Wire backed by an extremely tough water-proof Kraft paper. The high strength Galvanized Steel Wire fabric functions primarily as a reinforcement and is completely embedded in the plastic material, adding strength and rigidity to the walls and the building.

It plasters quickly and without effort. The flat lay of the sheet against the framing and the paper back permit an even depth of Plaster or Stucco, making straight, uniformly perfect walls.

Builders, Contractors and Architects enthusiastically endorse this product. Owners welcome this new assurance of permanent, crackless, Plaster and Stucco.

Why it will pay you to use PLASTER-STUCCO REINFORCEMENT—is a subject covered most completely in our new folder. Please send for it.

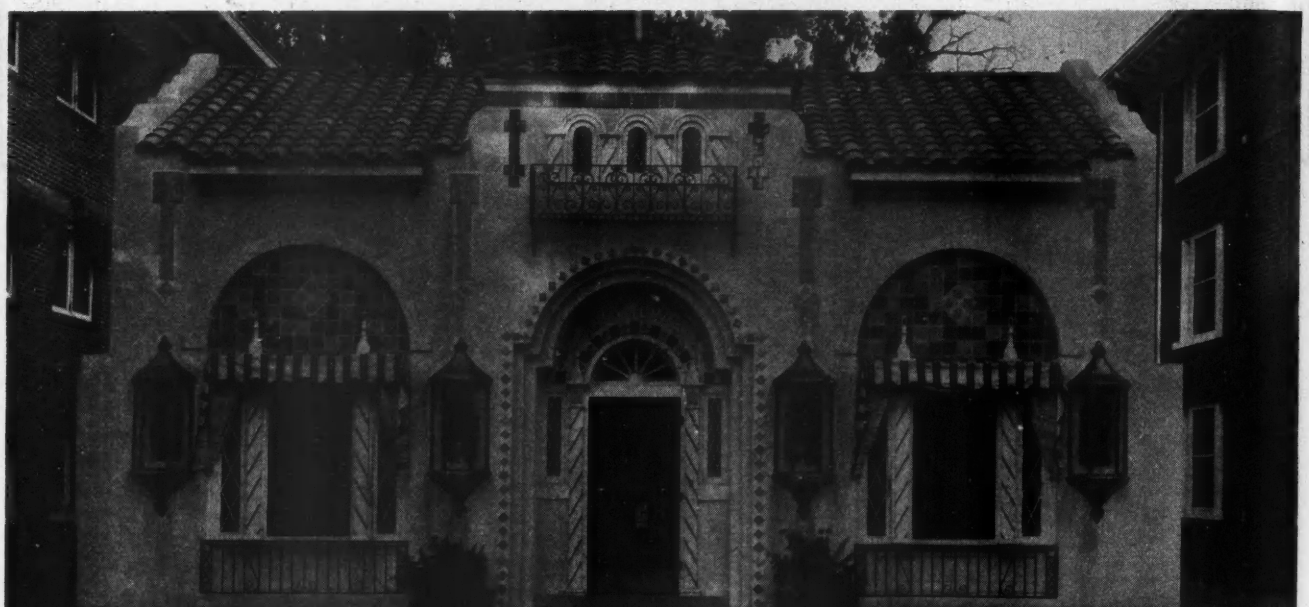
SALES OFFICES

CHICAGO...208 So. La Salle Street
CLEVELAND..Rockefeller Building
DETROIT.....Foot of First Street
CINCINNATI Union Trust Building
MINNEAPOLIS—ST. PAUL.....
Merchants Nat'l Bk. Bldg., St. Paul
ST. LOUIS.....506 Olive Street
KANSAS CITY..417 Grand Avenue
OKLAHOMA CITY.....
.....First Nat'l Bank Bldg.
BIRMINGHAM..Brown-Marx Bldg.
MEMPHIS.....
...Union and Planters Bank Bldg.
NEW YORK.....30 Church Street
BOSTON.....185 Franklin Street
PITTSBURGH.....Frick Building
PHILADELPHIA..Widener Building
ATLANTA.....101 Marietta Street
WORCESTER.....94 Grove Street
BALTIMORE..32 So. Charles Street
BUFFALO.....670 Ellicott Street
WILKES-BARRE..Miners Bk. Bldg.
DALLAS.....Praetorian Building
DENVER..First National Bank Bldg.
SALT LAKE CITY..Walker Bk. Bldg.

UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

An Attractive Office Building In Unusual Style

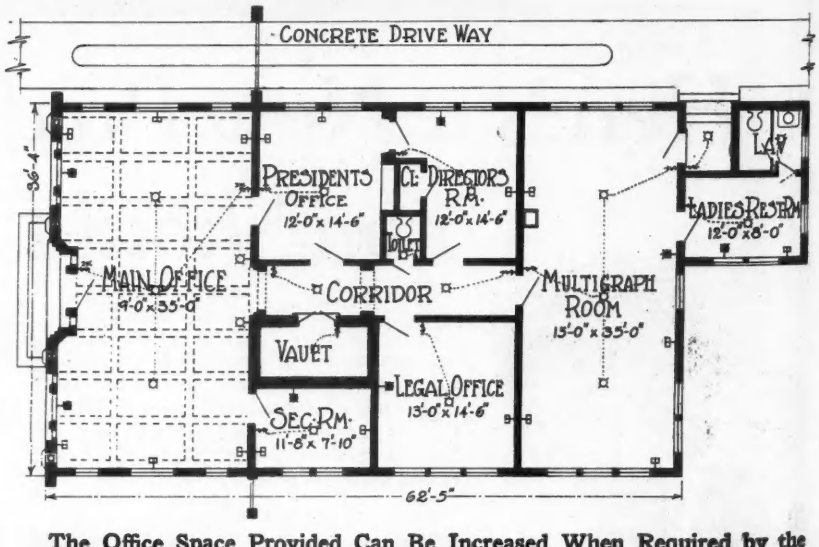
RAY BURKS, Architect



A Wide Departure from the Conventional Type of Office Building Is to Be Seen in the Attractive New Home of the Old American Insurance Company, in Little Rock, Arkansas.

IN Little Rock, Arkansas, Lloyd Judd has completed for the Old American Insurance Company an office building that is, in several respects, strikingly unusual. The structure is set down in the midst of a group of rather pretentious but conventional red brick apartment buildings, and the first thought that naturally would have come to the mind of a commercial builder would have been to erect a red brick which would correspond to the buildings already in the block but which would have had no individuality of its own.

Availing himself of the services of H. Ray Burks, Little Rock architect, Mr. Judd had plans drawn that incorporated many Spanish Mooresque features in both exterior and interior treatment. The result achieved is a building that is odd and attractive and which furnishes a pleasing contrast to the red brick apartment houses that flank it on either side.



The Office Space Provided Can Be Increased When Required by the Addition of a Second Story, Foundation Construction Having Been Planned with This in Mind.

Although occupying a key position, excellent use has been made of the situation, the building being placed back from the street sidewalk, sufficiently far to permit of a border of grass between the walk and the foundation. This grass plot is kept green and two large jars of ferns and other plants are kept growing on the entrance steps during the warm weather season. The entrance is plainly marked with gold letters over the doorway so that there is no mistaking the place. The front windows also carry the lettering of the company's name.

On entering the visitor finds himself in a large room 35 by 19 feet, that houses the desks of the stenographers and clerical force. This room extends clear across the front of the building and is well lighted from several fine windows. It is airy and an ideal working place. To the rear are four offices, a large work room, used by the multigraphing department, and the necessary rest rooms for both men and women employes.—A. W. Roe.

✣

Concrete Institute to Meet

AN announcement has been sent out that the twenty-third annual convention of the American Concrete Institute will be held in Chicago next February 22, 23 and 24 at the new Palmer House.

Positive Acting Bolts—

from a Complete Line of Guaranteed Builders' Hardware

The Foot and Chain Bolts in the Frantz Line of Guaranteed Builders' Hardware are constructed to eliminate all the disadvantages of ordinary types. In addition, the simplicity of construction of Frantz Bolts eliminates the possibility of their ever causing inconvenience through their not working properly.

The cases of Frantz Foot and Chain Bolts are made of cold rolled steel—in one piece. The screw holes are staggered so that no two screws will enter the same grain of wood. This assures additional long life and operation.

In the Foot Bolt, the Bolt itself is hollow, galvanized to prevent rust, and is operated by foot pressure on the top of the Bolt for lowering and on the pedal for raising. The hollow feature contributes to the light weight of the entire Foot Bolt and makes operation possible and easy even when the hole in the floor is filled with dirt, snow or ice. A friction device holds the Bolt at any desired position, up or down.

The Chain Bolts also have galvanized Bolts to prevent rust and insure perfect operation. Both styles are operated by a strong coil spring. The Bolts can be reversed easily by detaching the hook, specially designed for this purpose, at the end of the strong, well made chain.

The FRANTZ Line

Every piece of hardware, from the smallest to the largest, made in the Frantz Manufacturing Company Plant, is the result of high quality material fashioned by careful, expert workmen using modern machinery. A great deal of time and effort is spent in research and experimenting before a new item ever is added to the Frantz Line. Frantz workmen are trained thoroughly and well paid to insure excellent workmanship, no matter what their task may be. Every effort is made to use only the best and most practical materials in Frantz Products.

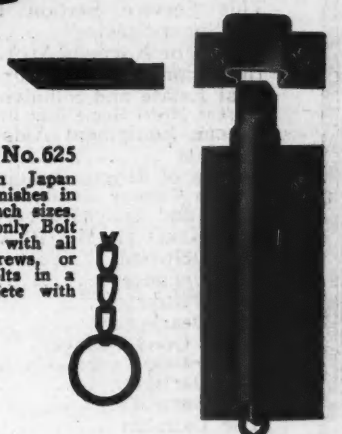
Frantz workmen long have had a reputation for producing easily installed, smooth operating and long lasting Builders' Hardware and of the goodwill this has created the Frantz Manufacturing Company justly is proud. To protect this reputation they place a written guarantee in every carton of FRANTZ Hardware.

In order that the users of Frantz Products readily may distinguish the line of Frantz Guaranteed Builders' Hardware, a bright red label is placed on each carton. Look for it. It is your guide to the satisfaction which only Frantz Guaranteed Builders' Hardware gives.

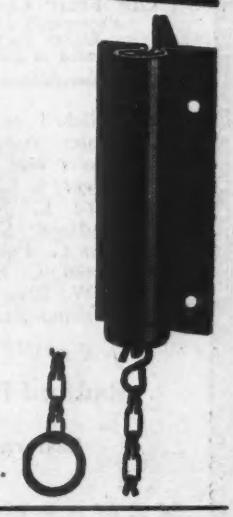
FRANTZ MANUFACTURING CO., Sterling, Ill.
Dept. A-2

FRANTZ
TRADE MARK
Red Label
GUARANTEED
BUILDERS'
HARDWARE

Foot Bolt No. 650
Furnished in Japan and plated finishes in 6-inch or 9-inch sizes. Packed one only Bolt in a carton with all necessary screws, or ½ dozen Bolts in a carton complete with screws.



Chain Bolt No. 625
Furnished in Japan and plated finishes in 6-inch or 9-inch sizes. Packed one only Bolt in a carton with all necessary screws, or ½ dozen Bolts in a carton complete with screws.



Chain Bolt No. 626
Furnished in Japan and plated finishes in 6-inch or 9-inch sizes. Packed one only Bolt in a carton with all necessary screws, or ½ dozen Bolts in a carton complete with screws.

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