

# AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol 41.

CONTENTS FOR JULY, 1926

No. 4.

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# AMERICAN BUILDER

Formerly AMERICAN CARPENTER AND BUILDER  
1827 Prairie Ave., Chicago — 250 Park Ave., New York City

## The Ideal Farm Home

WHAT farm residents and, more particularly farm women, consider the ideal farm home was recently brought to light in a paper presented by William Draper Brinckloe, architect, before the Society of Agricultural Engineers. He reported the results of an extensive investigation in which women in all parts of the country gave their opinions and plans of what they considered desirable in a home; and these results show a number of interesting and significant facts.

The two-story house is slightly more popular than the bunaglow and most of the plans for two-story dwellings included one first floor bedroom. In the matter of size the tendency seems to be away from the big farm house of the past and toward smaller houses than have been customary. Twenty-six per cent of the plans were for six rooms, 23 per cent for five rooms, 20 per cent for seven rooms and only 17 per cent called for eight rooms. The remaining 14 per cent showed a slight preference for four-room houses.

Hardwood floors were popular, kitchens were smaller and a washroom, combining the purposes of an entry, storage for working clothes and boots, and a place for workers to clean up, was required by many. Breakfast nooks, sleeping porches and screened or glassed in porches off of kitchen or dining room were popular but the sun room, so frequently seen in city homes, appealed to few and the front or entrance hall was found in only an occasional plan.



## The New Business Standard

INDIVIDUAL business men throughout the country were recently asked what, in their opinion, was the most important thing which has happened, in the last 25 years, to affect the world's business. The answers were varied but it is noteworthy that each answer carried the idea of a new and higher ethical standard.

It may seem surprising that such material advances as the development of the radio and perfection of the airplane were ignored but the answers were all along the line of, "a higher moral standard in business," "recognition of the equal rights of buyer and seller," "the spirit of service" and "movements toward co-operation."

This new standard in business actually marks a new business era; for business men have come to realize that higher ethical standards, with advantage and satisfaction to both parties and co-operation in place of cut-throat competition, are more profitable to all concerned, producer, distributor and consumer, whose interests are in reality mutually interdependent.



## Construction Economy

ONE outstanding feature of the business development of the past few years has been the standardization movement. Through standardization and better business methods improvements and economies in construction as well as in many other lines of industry have been accomplished which run into millions of dollars. Nor is this the limit of accomplishment; for the work of standardization is

only just begun and much still remains to be accomplished not only in the working out of standards but also in the education of industry to the use of standardization.

That this educational work is not being neglected is evidenced in the recent completion of a speaking tour made by Charles F. Abbott and Lee H. Miller, executive director and chief engineer of the American Institute of Steel Construction. Addresses were delivered in 21 large cities in improvement and economies in steel construction through standardization and better business methods. The usual program was a meeting of fabricators alone in the afternoon, followed by a dinner and evening meeting attended by mill representatives, engineers, architects, contractors, bankers and municipal officials.

The success of the tour is attested not only by the enthusiasm displayed in every city but also by the fact that the speakers returned with a number of applications for membership from large fabricators and with notification from the Pacific Coast Building Officials Conference that the standard specifications of the institute had been recommended for adoption in 40 major cities in the western states.



## Lumber Standardization

THREE outstanding results have been reported from the national softwood lumber standardization meeting of the General Lumber Conference in Washington, D. C. These were: Achievement of a single standard of size by the simple expedient of substituting the term "industrial lumber" for the old term "extra standard." All lumber becomes either standard yard lumber or industrial lumber, the latter being intended for uses that require larger size than the former, the dimensions being the same as for extra standard.

A new short lengths rule was adopted as follows: "The marketing practice regarding yard lumber shall permit buyers to secure specified lengths or specified assortment of lengths."

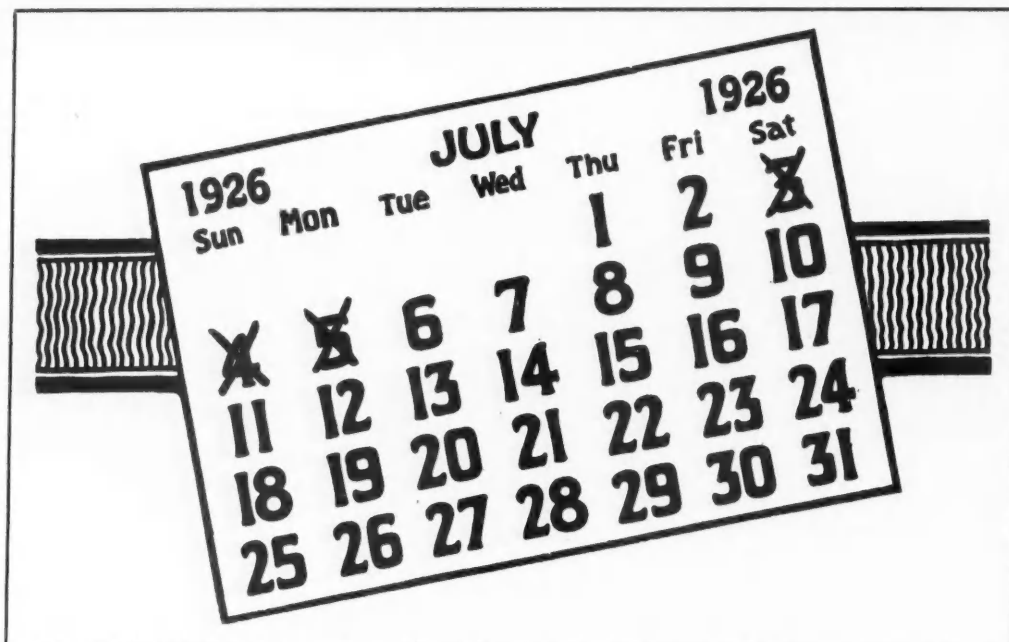
The petition of the West Coast Lumbermen's Association for reduction of standard widths for finish, rustic and drop siding, flooring, ceiling and partition was allowed. The original petition also asked for reduced thicknesses but the West Coast representatives cordially concurred in the final decision.

Another achievement was the adoption of basic grade classifications for softwood shop lumber.



## Safety Works Pays

JUST what an organized accident prevention campaign can really accomplish is evidenced by the report of 20 years of accident prevention activity in the plants of the United States Steel Corporation. In this period 46,000 men have been saved from death or serious injury, accidents have been averted which would have disabled 322,000 other workmen and there has been a large saving in money over and above the more than \$15,000,000 expended for the accident prevention work, according to the 1926 report of the corporation's Bureau of Safety.



# Concrete Placed and Ready for Use with Least Interruption to Business

Obtain *Strong* Concrete in 3 Days over July Fourth Holiday

Frequently repairs or improvements must be made with the smallest possible interference to business such as sidewalks, driveways or machine foundations.

You can take advantage of the holiday period over July 4 and 5 to make vital repairs and improvements available with the least interruption to business. By using well-authenticated methods and standard *Universal* cement, the same quality *Universal* regularly used, you can obtain *strong* concrete in 3 days.

Concrete placed according to these methods on July 2 will interfere with business only on Friday and a half day Saturday, as Sunday and Monday are holidays. The work will be ready for use Tuesday, July 6.

Detailed information on the methods for obtaining *strong* concrete in 3 days with standard *Universal* cement for use over all such holiday periods or on any rush jobs will be sent promptly on request. Simply use the coupon below.

**Coupon**

Universal  
Portland Cement Co.  
210 South La Salle St.  
Chicago

Please send me details on how to obtain *strong* concrete in 3 days with standard *Universal* cement.

Name.....

Address.....

## Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth  
Cleveland Columbus New York

*Concrete for Permanence*

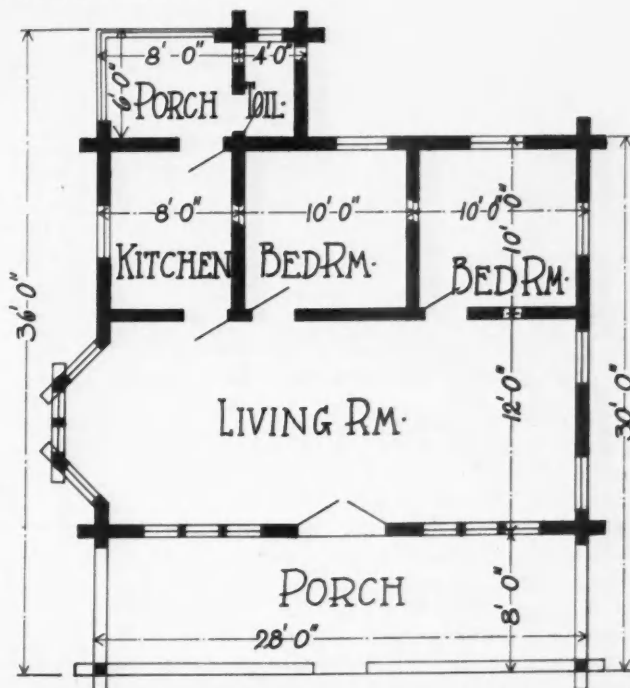
# Log Houses — Summer and Winter

By Leonard C. Vecelius  
Contractor and Builder,  
Hamburg, Michigan

I WAS quite elated to find that my interest in log construction was shared by the editors of AMERICAN BUILDER and that an article on the subject was considered worth publishing. I hope that my experience may prove helpful to others interested in building this type of summer home which, when properly constructed, affords a great amount of satisfaction to the owner.

Up until comparatively recent years the idea that a great many people had of a summer home seemed to be that it was a place to go for a regular rough house, that is a place so constructed and maintained that it did not matter how roughly it was used. All the old, cast-off furniture that we, or our friends had, was considered good enough and comfort was not expected. The place was used merely for a few week ends and perhaps for the two weeks when we had our summer vacation. If we paid \$100 for the lot and \$300 or \$400 for the materials and had our friends help nail the place together, we considered ourselves well fixed for a summer home. But ideas on this subject seem to have changed along with a great many others.

About five years ago, while traveling through the country, I occasionally saw an old log cabin, some 50 or 75 years old, which was still in fairly good shape. The thought occurred to me that log structures, with modern designs and comforts, ought to be attractive not only as summer homes but as permanent homes as well. I drew plans and built some cabins. They took well with the public and every prospective buyer would give me new ideas, both on



For the Average Family a Log House Built from This Plan Is Entirely Practical and Will Make the Summer Vacation a Time of Real Pleasure.



The Small Summer Home of Logs May Be Attractive in Appearance, Full of Comfort and Yet Inexpensive in Cost, in Fact Log Construction Permits Practically Any Sort of a House that Is Possible with Other Building Materials.



**Log Houses Are Not Always Restricted to Summer Use.** They may be made as attractive within as any other type and are easily heated.

design and construction.

As I progressed I found the log cabin could be built and utilized for a year around dwelling. The people who now own cabins I have built use them, not only during the summer months, but practically every week end throughout the winter months and also as permanent homes. Inside of half an hour these houses can be heated, after being cold for the entire previous week, and made as warm and comfortable as one could wish.

When asked to submit plan and specifications for a log house, I much prefer to see



**Dead Rafters Which Equalize the Gables of the Various Rooms Also Provide an Excellent Insulating Air Chamber Above.**

quite readily and becomes very hard and light. It takes the varnish well, giving a very glossy finish.

I always use dead rafters to give all rooms an equal gable and in doing this provide air chambers above the ceilings which gives better insulation. I use fiber wallboard and quarter-sawed logs for ceilings. The wallboard is finished by using sponges to apply different colors of either stain or paint.

In laying the logs they must be laid as close together as possible, in fact close enough to use a  $\frac{3}{4}$ -inch trowel to apply the chinking. I chink with a mixture of lime, cement and sand. As the logs are laid up they are fastened together with No. 60 spikes. We bore a 1-inch hole half way through the log on the top side and drive the spike in this and down into the



**An Enclosed Porch Adds Greatly to the Enjoyment of the House Whether It Be Used as a Summer Cottage or as a Year Around Dwelling.**



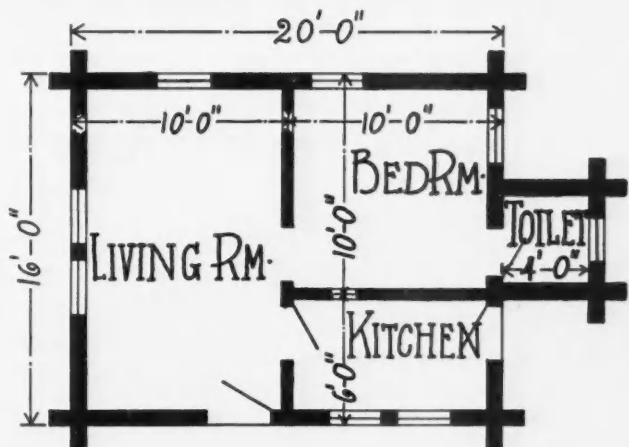
Even a Tiny House Like This May Be Made Attractive and Provide a Summer Cottage Which Offers a Plenty of Comfort and a Distinctive Charm. The cost of log construction is less than for frame construction from the same plans, and when properly built the log house is one of the most comfortable and satisfactory types of dwelling that has ever been devised.

log below, which keeps all the shift out of the walls. These spikes are placed every 4 feet and they are staggered from log to log.

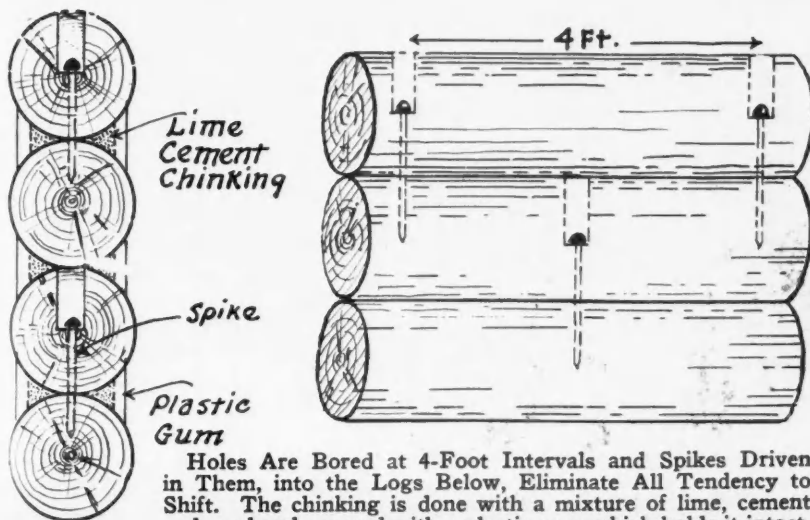
After the chinking is thoroughly dry, I cover the chinking, and lap over about 1/4 inch onto the log, with a plastic gum which comes in various colors. This gives and takes the settling of the logs and holds the chinking intact indefinitely.

I find that any good, hot air furnace, with a 24-inch fire pot, will heat a cabin as large as 48 feet by 54 feet, using about nine tons of soft coal a year. I have one cabin that is 52 feet by 64 feet, with 56 windows measuring 22 inches by 24 inches, that is heated with an Arcola heater with very good results.

All door and window frames, screens and rafters are cut at our warehouse and taken to the job. The logs are cut in lengths of from 12 to 20 feet in the woods, trucked to



A Living Room, Bedroom, Kitchen and Toilet, Within These 16 by 20-foot Walls, Offer as Much as the Modern Kitchenette Apartment.



the job and then sawed to length by power saws. When we use logs for window and door frames, they are taken to the warehouse and slabbed for the jambs and window tops. The sub-floors and partitions are built in before the roof is put on to tie the outside walls.

Our furniture department builds all kinds of log furniture, including lighting fixtures and lamps. We build anything in the line of buffets, china closets, cellarettes, dining tables and writing desks, to the customer's order as to style and dimensions. Some of the rustic pieces are shown in the illustrations.

# Homes Sold "Across the Counter"

A Complete Model House Built in a Chicago Department Store Is Proving to be an Effective Means of Selling Homes

"I THINK I will take that little green house you are advertising as a special for this week, the one with five rooms and two baths and the cute little breakfast nook. Just charge it to my account and please see that it is delivered not later than tomorrow afternoon. We are expecting guests for dinner tomorrow and we simply must have a new house before they come. Yes, the name is Mrs. Newton Suburb, 1000 Home Avenue."

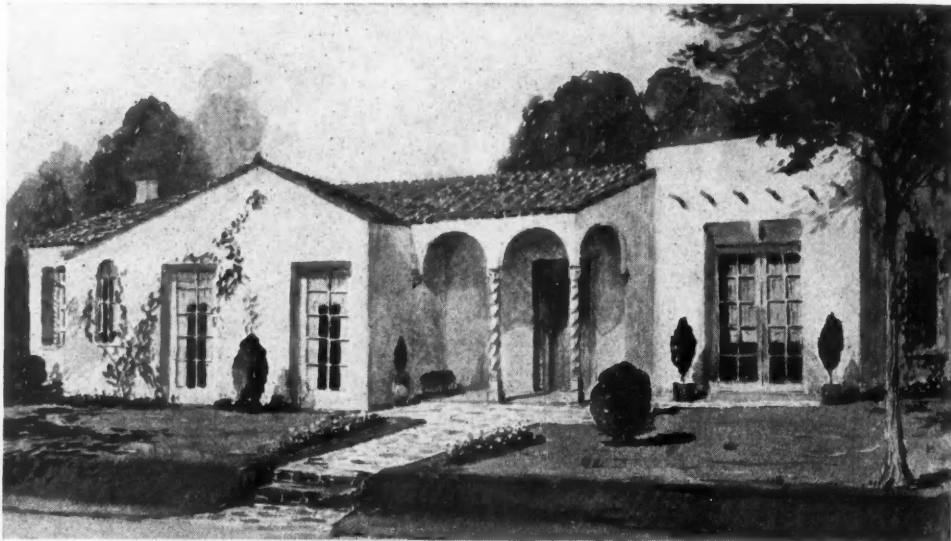
If you happen to drop into a department store and overhear a customer giving such an order to the clerk what would you think? You would probably notify the police that there was a crazy woman down at Blank's Department Store and they had better send the wagon in a hurry. Houses are not sold in department stores, "across the counter," like needles and thread and gloves and shoes and all that sort of thing.

But aren't they? Every once in a while someone gets a new idea which is not only sufficiently novel to attract widespread attention but sufficiently practical to appeal to people in general and to be assured of a long and successful life. Selling houses "across the counter" is just such an idea and it is being done and done successfully right now.

If you should happen to be in Chicago sometime soon just drop into The Fair. The Fair is one of Chicago's biggest downtown department stores, right in the heart of "Loop." Go up to the sixth floor, to the State and Adams Street section, and there you will see the new idea being put into practice. There is the Nixon home, an attractive Spanish type bungalow, suggestive of the days when southern California was but a short step removed from the colorful and romantic old Spain.

This is not a miniature house model, nor merely a device for the display of house furnishings such as is frequently seen in large department stores. It is an actual, livable home, built by George F. Nixon & Company, Chicago realtors and home builders, for the purpose of selling homes "across the counter" just as ordinary merchandise is sold in the store.

An official of the Nixon Company reports that a number of bunaglows, exactly like the one on display, have already been sold and estimates that his company has, so far, secured 750 really worth while prospects. By the time this article



The Nixon Home, a Full Size Cottage with All the Style and Tone of Sunny Spain, Is Built Within a Chicago Department Store for the Purpose of Selling Homes "Across the Counter."

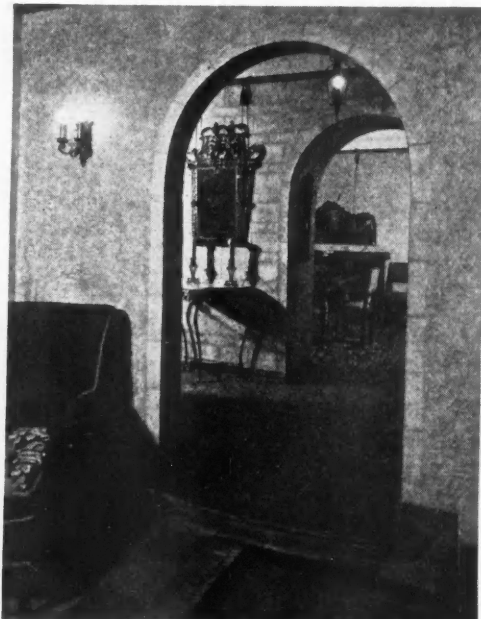
is published the number of both sales and prospects undoubtedly will have increased to a much greater figure. It would seem, therefore, that it is not a bad idea to sell houses "across the counter" of the department store, no matter how startling it may appear.

Once you have crossed the threshold of the Nixon home you quickly forget that you are in the heart of one of the world's largest and busiest cities. The commercial air of the store disappears, and almost unconsciously you remove your hat. Indeed, you would not be at all surprised if suddenly your host appeared before you inviting you to be seated. For here each room contains the homey atmosphere that comes with complete furnishings. Even the fireplace

in the living room is aglow with make-believe logs; while, as you pass the breakfast porch to go into the dining room, you would not be at all surprised if a canary bird greeted you from his wicker cage.

The Nixon home is a five-room bungalow of six-room efficiency—for we must not overlook the loggia or breakfast porch. The home is of hollow tile construction, thoroughly insulated and finished with stucco. The interior walls are finished with a durable and pleasing plaster composition which comes in any tint that is desired. Each room is tastily furnished, as every one of the hundreds who each day visit the bungalow will readily admit.

But while all of the rooms appeal to home lovers, it is the kitchen that wins the greatest praise. The visitor, if he is a man, soon senses when he steps into it, that efficiency plays as important a part in home keeping as it does in the handling of office routine; while if the visitor is a woman, her delight upon in-



A Vista Glimpsed from the Living Room, Through the Breakfast Porch and Into the Dining Room.



specting this model home "factory" knows no bounds. For it is she who realizes most keenly the time and labor saving value of the built-in cabinet with its innumerable compartments and bins. And it is her experienced eyes that note with approval the size and placement of the refrigerator, the height and position of the sink, the number of burners on the gas range, the roominess of the oven, and a multitude of other details.

What is true of business offices is also true of kitchens in the home. Up to a certain point one is much like another. But now and then a kitchen, like the exceptional office, stands apart from all others in that it is as near 100 per cent perfection as it seems possible for it to get. This is especially true of the Nixon kitchen. Besides the obvious improvements to be found in every so-called modern home, it possesses another feature that places it in the class of the ultra modern, an electric ventilating fan.

Even the most casual observer knows that the average woman abhors odors and fumes. Her most sensitive nostrils dislike intensely the malorodous after-effects of meal preparation. She knows, too, it is more than likely that for hours after these disagreeable odors will remain as tell-tale evidence to the chance visitor. Besides, the fumes,

producing fresh, temperate air.

There can be no doubt that as a feature the kitchen ventilator is deserving of special mention. Everything else being equal, the house that is ventilator-equipped will be rented or sold more easily than the one that is not. Builders should realize this, and many of them do. For selling houses is like selling any other commodity. The more talking points the house has, the easier it is to interest people in it. The ventilating fan, while adding only an insignificant sum to the cost of home construction, adds no inconsiderable feature to those other and more obvious features that help to win interest and promote sales.

It isn't so many years ago that running water in the home was the outstanding sales clincher. In course of time gas fixtures proved to be a wonderfully potent sales argument. Later came electricity. These features, and other like them, have by themselves sold homes that might otherwise have gone begging for occupants. The psychology of this is as apparent as it is sound. The newer improvements, even though some of them may seem trivial as items of building cost, carry with them a very definite suggestion of care in construction, of up-to-dateness in facilities. In other words, they get across the idea of quality.

The Nixon home has unquestionably "gone over," not only because of the house itself, but also because of the



**A Living Room in True Spanish Style with a Ship Model in the Niche Above the Fireplace.**

carrying a fine "precipitate" from steaming kettles or reeking pans, deposit this on walls and ceilings, thus in time turning a spotless kitchen into a greasy, dirty one. Where is the woman who has not often wished for some means of protecting her kitchen from such an onslaught?

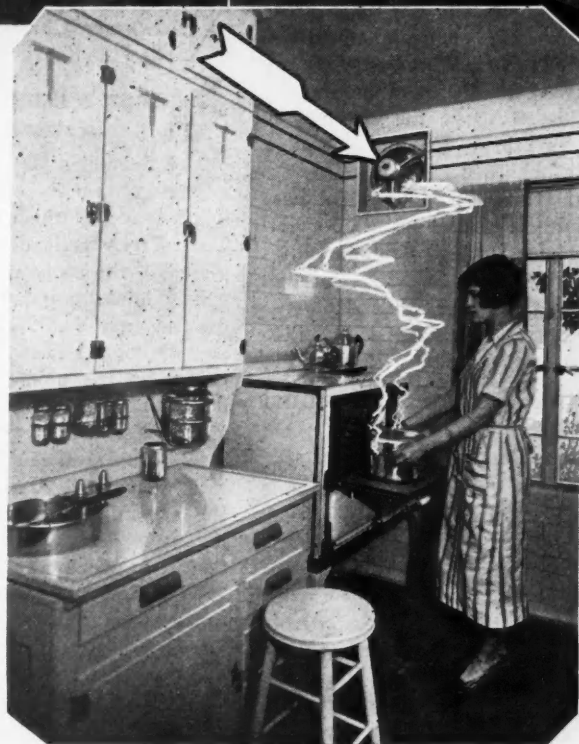
But the Nixon kitchen, equipped with a ventilating fan which draws off all odors and fumes, is assured of an atmosphere free from every cooking taint. The fan is built into the wall. It operates by means of a motor, which is fully enclosed and entirely self cooled. The mere touch of a button puts the fan in motion; and its smooth, quiet revolutions, attracting not the least bit of attention, keep the home clean of odors and fumes at a cost of but a few cents a day. In winter as well as in summer the fan exhausts "tainted" atmosphere, gently in-



**A Dining Room of Rare Beauty but Preserving the Homey Atmosphere as Well.**

features it possesses. Although but six weeks old at the time this is being written, it is attracting wide and favorable attention. A check shows that between 750 and 1,000 persons visit it daily, and while many of these come merely to satisfy their curiosity, many are likely prospects for homes and home equipment. It is too early yet to say just how successful the idea will be, but indications are that it will produce a nice volume of business for its sponsors.

There is no reason for believing that the Nixon home idea will cease to interest Chicago home builders.



**A Model Kitchen and One that Is Thoroughly Modern Even to the Ventilating Fan Which Effectively Removes All Odors and Fumes of the Cooking.**

# The World's Greatest Business and Convention Building

Agricultural Mart Building in Chicago Will Have Largest Convention Floor in the World

By **BERNARD L. JOHNSON**

*Editor, American Builder*

**S**EVERAL quite impressive and notable structures are illustrated from the architects' perspective drawings in this month's supplement of notable architecture. For beauty of design, Cram and Ferguson's Princeton University Chapel will be admired by all lovers of good architecture and for huge monumental effect, the American Agricultural Mart will be a national landmark. Granger and Bollenbacher and George C. Nimmons and Company, associated architects, have developed a design which seems eminently fitting for a building of this type.

## Princeton University Chapel

*Cram and Ferguson, of Boston, Architects*

The new chapel at Princeton has been designed distinctly as a college chapel, and not as a parish church, or a cathedral. It follows English Gothic precedent in a general way, but there has been no copying of detail. This has been freely designed and is not intended to follow archaeologically and particular period or country.

The exterior will be built of warm colored stone trimmed with buff Bedford limestone. The interior will be mainly buff limestone; the vaulted ceiling will be built of special buff sound absorbing tile; certain additional areas of this tile will be used on the walls to make perfect the acoustical conditions of the interior.

The exterior is simple, except for a good deal of elaborate ornament at the entrance and on the main front. The aisle windows are comparatively small, most of the light coming from the clerestory windows, and the four great windows at the extremities of the nave, choir and transepts. The main entrance doorway is recessed and very richly treated. Flanking it are two turrets combined with buttresses on the front and sides. Above the doorway is the great west window; higher still is an open arcaded gallery, with the western gable behind it.

The main dimensions of the building are as follows: Length over all, 275 feet. Width of nave over all, 76 feet. Width of transepts over all, 115 feet. Clear height of interior, floor to vault, 74 feet 6 inches. The cost of the chapel will be about \$1,500,000.

Cram and Ferguson's design is a notable addition to American college architecture.

## South Side Buick Building, St. Louis, Missouri

*Carl E. Etz, St. Louis, Architect*

*Smith-Cunliff Co., St. Louis, General Contractors*

It is gratifying that the number of architecturally fine business buildings is constantly increasing and this Buick Sales and Service Building in St. Louis, is certainly most attractive and pleasing in its appearance. It is said to be of Spanish architecture but the corner tower and the arched windows of the lower story seems to draw inspiration from the Byzantine, which lends distinction and grace to the entire structure.

It is a two-story, reinforced concrete building having a frontage of 150 feet on one street and 100 feet on the intersecting street. The outer walls are faced with stucco over masonry and the wall copings and tower roof are of Spanish tile. The first floor is to be entirely devoted to new and used car departments and the second floor to service. The estimated cost of this building is \$100,000.

## American Agricultural Mart, Chicago

*Granger and Bollenbacher and George C. Nimmons and Company, Architects*

When the Furniture Mart was erected in Chicago, nearly two years ago, it was the world's largest building. Whiting and Company, of Chicago, who so successfully promoted the former project, are now promoting an even larger building—the American Agricultural Mart. This huge building will have the world's largest convention hall, in size nearly twice as large as a football field, the area of the exhibition floor being 360 by 180 feet, or five acres in extent. The building will have a total floor area of over 70 acres and the cubical content will be about 59,000,000 cubic feet. The estimated cost is \$30,000,000. This enormous cost seems to be justified by the expectation that the building will actually be headquarters for the agricultural interests of the nation, and it will undoubtedly be the national headquarters for all of the organizations, manufacturers and associations identified with or related to agriculture. It will have millions of feet of permanent display space at reasonable rentals which will afford ideal opportunities to all interests serving the rural market. Buyers to the number of 300,000 are expected to attend yearly.

In addition to its location in Chicago, the railroad center of the country, it is actually being built over a railroad, alongside a river and near the business and shopping center.

The building was originally planned to be 34 stories in height to the top of the tower. It is to be built on the site of the former Chicago and Northwestern Railway station at Wells and Kinzie streets, Chicago.

## Seaman's Bank for Savings, New York City

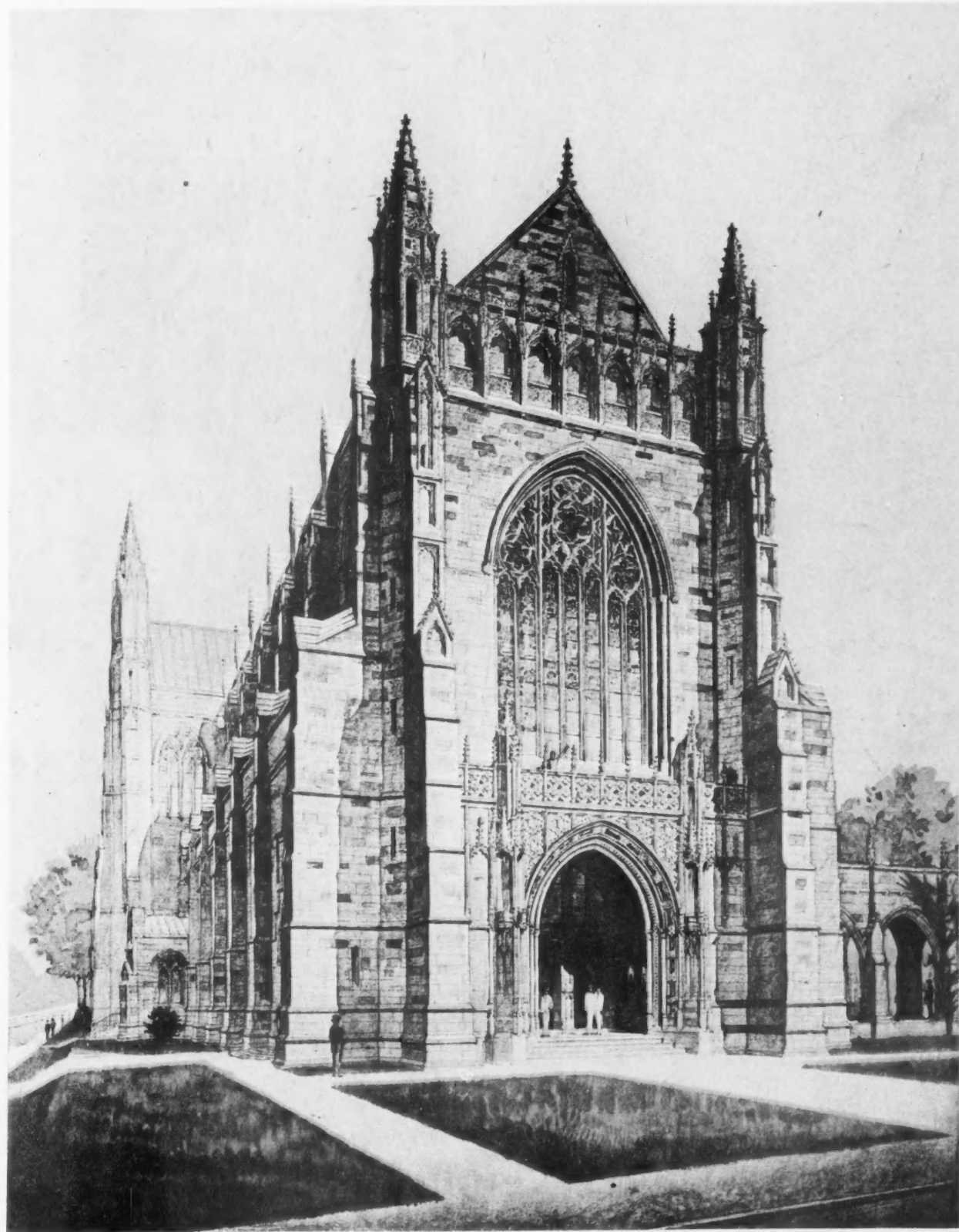
*Benjamin Wistar Morris, Architect*

The Seamen's Bank for Savings is erecting a new building to contain its own banking quarters and 10 floors of office space, at the corner of Wall and Pearl streets, New York City. It is expected that the building will be completed in the early winter of 1926.

The banking quarters consist of a large banking room on the first floor, approximately 70 feet by 125 feet in size, built of Italian limestone, and with a finely decorated ceiling in the medieval Italian manner. Very large windows occur along the entire Pearl Street front and also along Wall Street to light the banking room. The bank also occupies the Wall Street end of the basement as a safe deposit department, as well as two mezzanines and the second floor for their banking facilities. The whole layout is designed in accordance with the latest methods and, it is expected, will be a fine example of architecture.

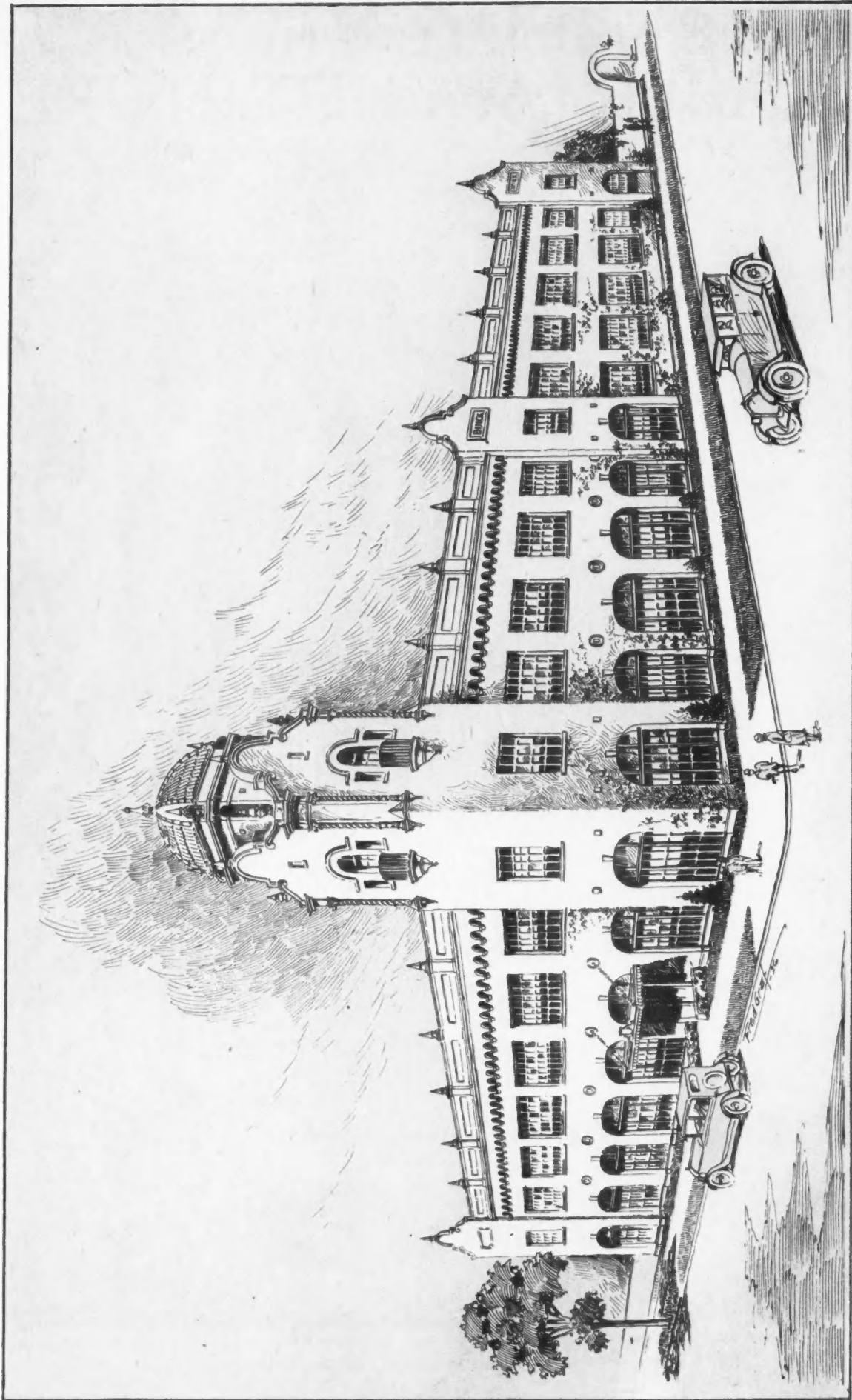
The third to the twelfth floors inclusive are devoted to office space. The top floor of the building, which is surrounded by a promenade, is devoted to the dining rooms and lounges for the officers and employes of the bank. This is quite a feature of the building, and in addition to the fine view of the East River and New York Bay which can be obtained from this height, the dining room service for both officers and employes will be of the most up-to-date character. On the roof will be a handball court for the use of the employes of the bank; and shower baths, etc., are provided for use after such exercise.

# ART SUPPLEMENT *of* NOTABLE ARCHITECTURE

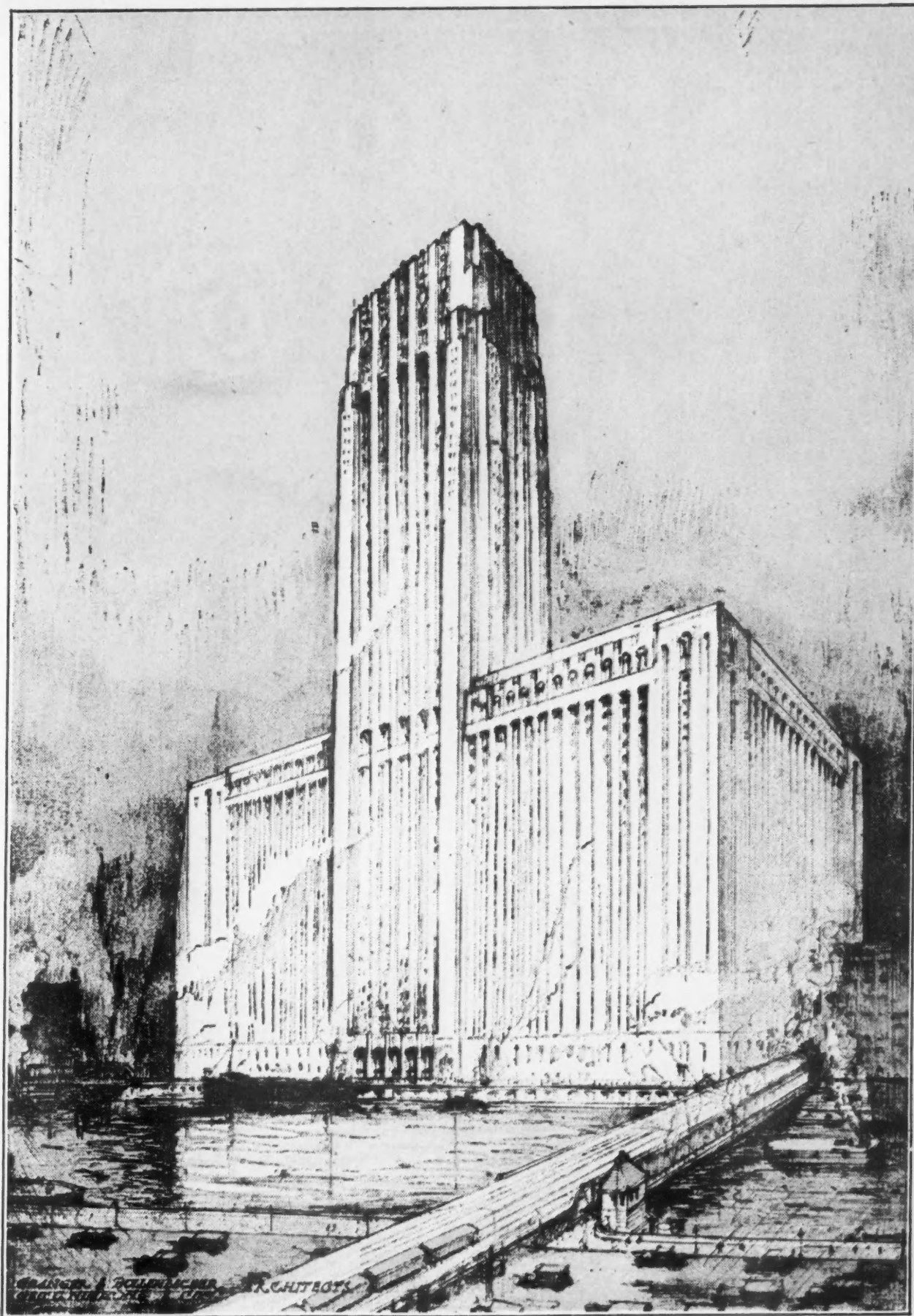


*The* CHAPEL, PRINCETON UNIVERSITY; Cram & Ferguson  
of Boston, Architects.

PLATE 93



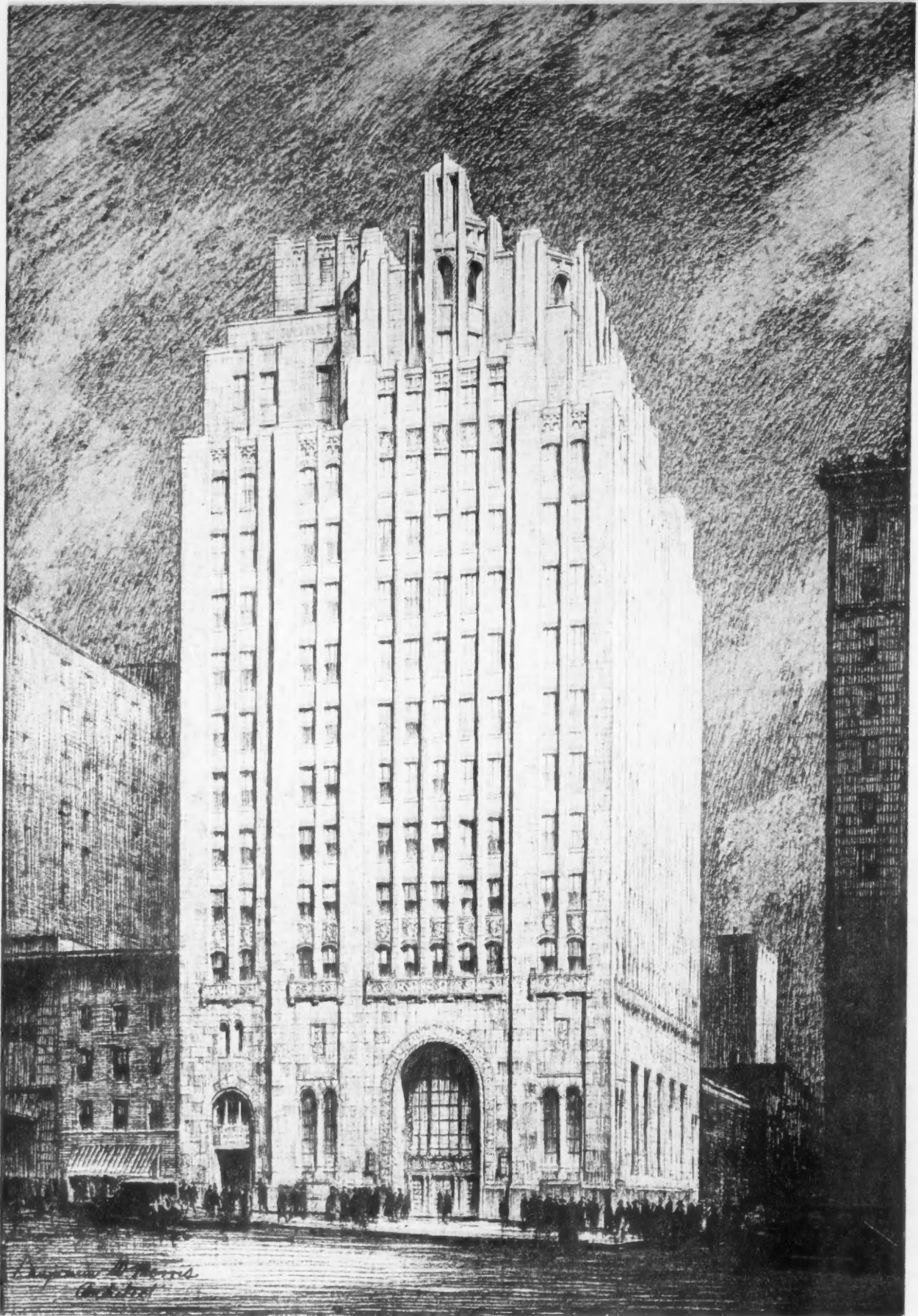
*The SOUTH SIDE BUICK SALES AND SERVICE BUILDING, St. Louis, Mo.;*  
Carl E. Etz, of St. Louis, Architect.



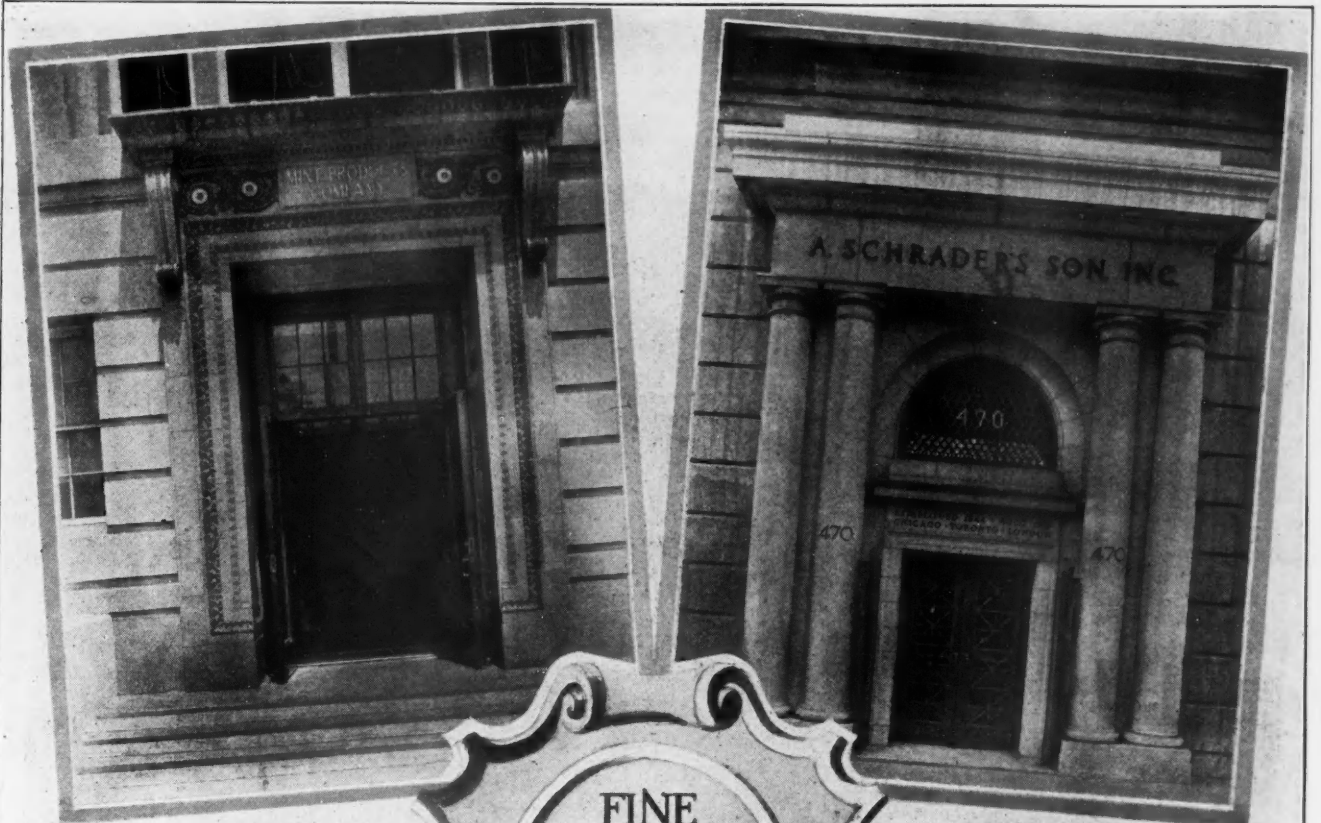
GRANGER & BOLLENBACHER ARCHITECTS  
CHICAGO, ILL.

PLATE 95

The AMERICAN AGRICULTURAL MART, Chicago; Granger & Bollenbacher and  
Geo. C. Nimmons & Co., of Chicago, Architects.



The SEAMEN'S BANK FOR SAVINGS, Wall and Pearl Streets, New York Cit.,  
Benjamin Wistar Morris, of New York, Architect.



Above  
**Mint Products Company**  
 Port Chester, New York  
*Lockwood, Green and Co., Architects*  
*Turner Construction Co., Bldrs.*

Below  
**Creighton Company**  
 Lynn, Mass.  
*Harold Field Kellogg, Architect*  
*Turner Construction Co., Bldrs.*

Above  
**A. Schrader's Son, Inc.**  
 Brooklyn, New York  
*Howard Chapman, Architect*  
*Turner Construction Co., Bldrs.*

Below  
**Centaur Company**  
 New York City, N. Y.  
*Helmle and Corbett, Architects*  
*Turner Construction Co., Bldrs.*

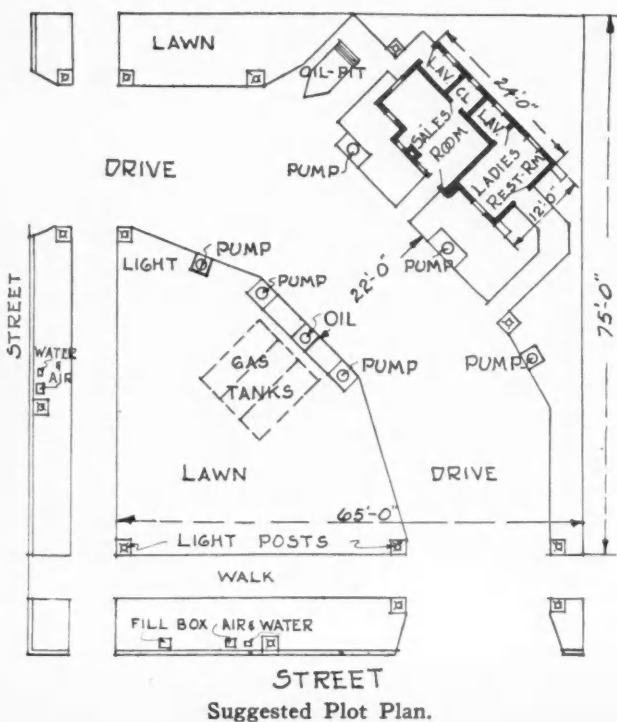
**FINE  
 DESIGN  
 In  
 FACTORY  
 ENTRANCES**



**Attractive Architecture Is Profitable Even in Industrial Buildings**



## Quaint Old English Architecture Is Feature of This Filling Station

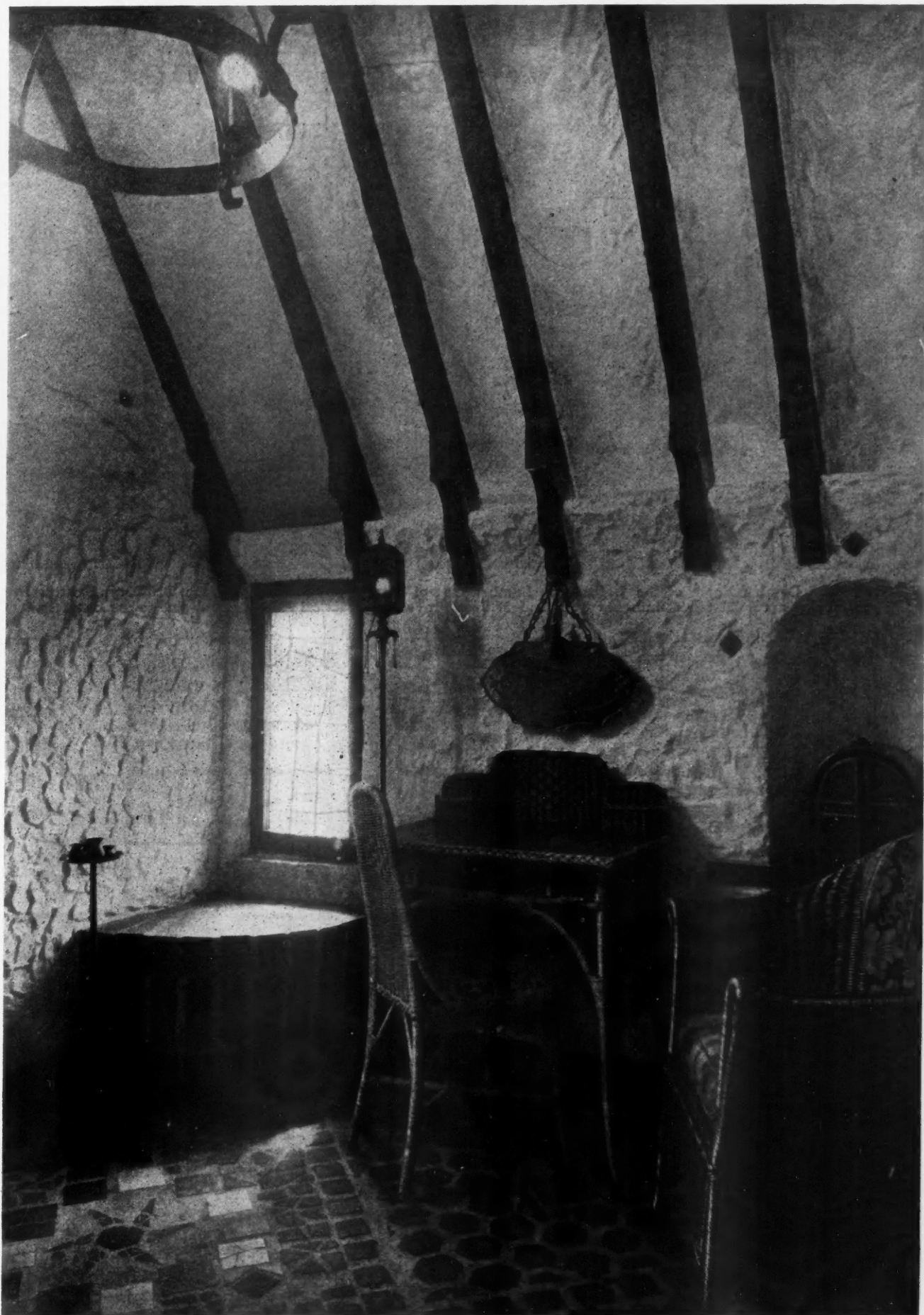


**O**LD English architecture reproduced with unusual exactness of style and detail has made this filling station at Manitowoc, Wisconsin, the talk of the countryside and of many tourists, as well. It is owned and operated by the Spindler Company, who are undoubtedly profiting by their enterprise in erecting what many travelers believe to be the most attractive filling station in the state, if not in the entire country. It is interesting to note that the Spindler Company, besides operating this station, are dealers in building material.

The layout of this filling station, as illustrated in plot plan, was designed by S. F. Bowser & Co. It will be noticed that the gas tanks are under ground and located under the grass plot across the driveway from the building. This station and plot plan are efficiently designed for rapid service to traffic passing in both directions, which is the only correct principle. Filling station business is rarely steady throughout the day but usually comes in rushes. Passing motorists will not stop for their supplies of gas and oil when there is evidence of waiting cars and slow service. There are no less than seven pumps of the latest efficient design in the equipment of this station, and the three gas tanks shown have a combined capacity of 15,000 gallons.

The designer of this fine filling station building is Mr. C. C. Reynolds, architect, of Manitowoc. Geo. J. Schoblaska Company, Inc., contractors.





Ladies' Rest Room in Filling Station Pictured Opposite. Passing Motorists Who Stop for Gas and Oil at This Filling Station Are Delighted with the Charm and Comforts of Its Interior Design Which Faithfully Carries Out the Spirit of Its Old English Exterior.

# Office and Display Rooms Which Have Advertising Value



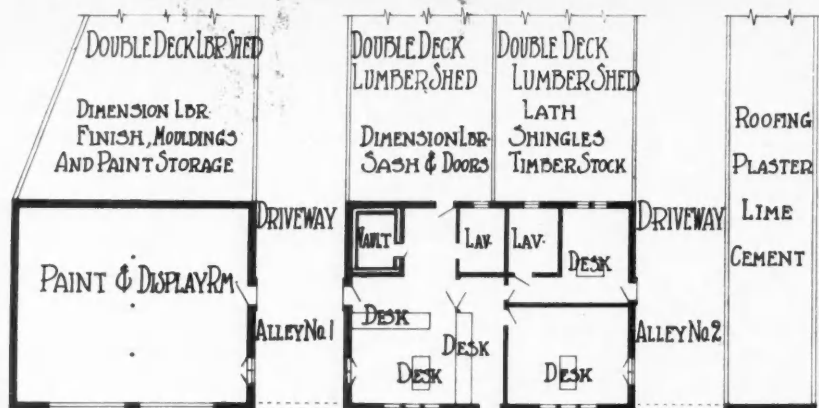
The Office and Display Room of the J. C. Ames Lumber Co., of Streator, Illinois, Is Not the Ordinary, Unattractive Type of Structure All too Commonly Seen and It Has Proved Its Practical Advertising Value to the Business.

**B**UILDERS everywhere are making great efforts to get away from monotonous, unattractive, small business buildings which for so many years have been accepted as a necessary evil in the housing of retail stores and offices. Such buildings are out of place anywhere but in the neighborhood business district, in close association with attractive residences, they are most particularly undesirable. Fortunately recent efforts for something individual, attractive and in harmony with the tone of a residence neighborhood, are proving productive.

While studying what he can do to achieve something different for his clients, the builder or building supply dealer would do well to think about whether his own office and salesroom measure up to the same standard. He can do no better than to compare his business home with that of the J. C. Ames Lumber Co., of Streator, Illinois, which is pictured at the top of this page.

When this company decided to build a salesroom and office which would get away from the warehouse front type and adopt the tone of the bungalow or residence office, it created a home which has proved to be a real business asset. Though unusual and attractive in design it is, at the same time, well designed for practical efficiency.

The office and display room is of hollow tile with corner trim, arches and base courses of selected, dark red, vitrified paving brick which contrasts most pleasingly with the gold colored stucco used on the tile walls. Back of the main building, not visible in the photograph but indicated in the floor plan, are the warehouses. These are of structural steel throughout and are designed to minimize the fire hazard in every practical way. These warehouses contain complete lines of building materials and practically



To the Rear of Office and Display Rooms Are the Warehouses Which Are of Structural Steel Throughout and Well Protected Against Fire Hazard.

every commodity carried is exhibited and demonstrated in the display room at the front.

This equipment is typical of the policy of the J. C. Ames Lumber Co., and serves to demonstrate why this progressive organization has maintained a steady growth since it was first incorporated 35 years ago. Doing business at the same address during the entire period, it has established a record of constant service to the community which is an assurance of its future. The building of the present modern structure was but a natural step in the progress of such an organization. Its worth is indicated by the statement of D. C. Brown, secretary and manager of the company, that the new building has amply repaid the cost and effort of its construction from the advertising standpoint alone.



“THE most humble dwelling may have all the elements that make a perfect architectural unit.”

# Largest Garage Built for Commercial Vehicles

Is This North Terminal Garage, Boston, Massachusetts, Designed and Built by the Aberthaw Company, Boston

**T**HE NORTH TERMINAL GARAGE located on Commercial Street, Boston, adjacent to the Boston & Maine Railroad terminal, is an unusually large structure and believed to be the largest building ever built for the specific purpose of caring for commercial vehicles only. It is designed to house 800 trucks of the largest size and will accommodate a greater number of smaller vehicles.

The building is a three-story structure fronting on three streets, having a total floor area of 189,000 square feet. The construction is of reinforced concrete with steel sash, and all material is non-burnable.

The particular feature of this structure lies in the fact that all entrances and exits to all three floors are at street level. This was accomplished by taking advantage of an up-grade on one side of the building. Through this feature a considerable saving in floor area has been made by the elimination of all ramps and elevators, which are commonly found in a structure of this size. Communication between floors is by small stairways, which are sufficient because of the fact that each floor is designed to operate independently, if this is desired.

In the design of the structure particular attention was paid to installation of service features such as gas, oil, air and water. Within the building there is a total of fourteen gas pumps—eight of these being air driven and six hand operated. There is a total of eighteen outlets furnishing hot water for the use of cars, and eighty-two similar outlets furnish cold water. Air is piped to all parts of each floor, there being thirty-six outlets.

Particular attention was paid to fire protection. A total of more than 2,000 automatic sprinkler heads were installed. In addition to the sprinklers, supplementary fire apparatus was installed consisting of ninety 2½-gallon soda acid extinguishers and ninety 1-gallon tetra chloride pump type extinguishers. Nearly 400 sand pails and scoops are distributed around the building.

Each piping system, whether sprinkler, heat, air or water, is painted a different color for easy identification. No special wash room is provided, but 40 floor drains throughout the building constitute as many wash stands so that cars are washed at practically any part of each floor.



Only a View from the Air Would Reveal the Great Size of This New Truck Garage Which Accommodates Many Large Fleets of Trucks. No ramps or elevators are required as the sloping site allows entrance at grade to all three floors.



Interior View of the North Terminal Garage, Which Gives Some Idea of the Vast Amount of Floor Space Available on the Three Floors of the Building. Although "fireproof," elaborate precautions have been taken to protect the contents against fire.

The garage offices are located on the first floor; and, in connection with these, there is a small salesroom carrying the usual automobile supplies and accessories. A small basement was constructed of sufficient size to house the oil heaters as well as the air compressors and tank.

This garage seems to have filled a need for such facilities, as indicated by the amount of business done immediately on opening. The building handles considerable transient trade but, also, has long-term contracts with many users of large fleets of trucks. Among other important clients it serves as the Boston terminus for the bus lines of the Boston & Main Railroad.

The building was designed and constructed by the Aberthaw Company of Boston.

# Strength and Dignity Join in This Bank Building

PHELPS & DEWEES, Architects,

IT is conventional in considering structures for various purposes to vision certain features which distinguish one type from another. When we think of a church we vision spires, gothic arches, colored glass windows and other features which will give it the tone uniformly associated with religious buildings. When we think of a hotel, it is with a court in order that all rooms may be favored with fresh air and sunlight.

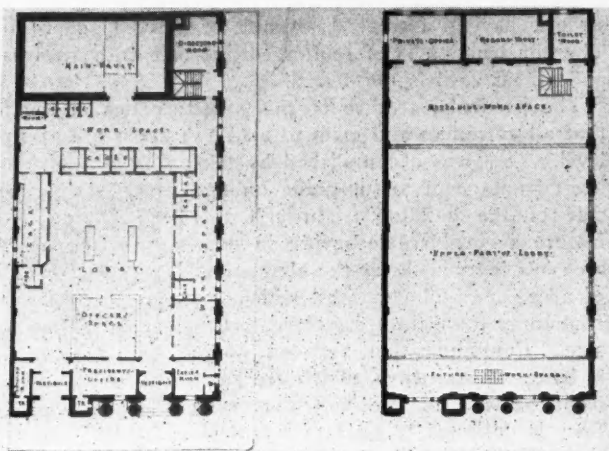
And, so it is, when we think of a bank or financial institution, we are reminded of strength, dignity, simplicity and reliability. It is because we have been educated to have confidence in banks. The architectural designs help to create and sustain this confidence. And that is the impression instantly made by the new home of the Commercial National Bank and the Commercial Loan & Trust Company.

Here, all that creates an atmosphere of strength and dignity through a generous use of simple lines, has been brought into play. From the sturdy entrance with its four columns across the front to the modern vault of waterproof construction, one is impressed in this manner.

The building proper is of concrete and reinforced steel. It is patterned after the Renaissance style of architecture. The building is distinctly separated into two sections: one for the Commercial Loan & Trust Company, and the other for the Commercial National Bank. The front entrance to the bank has been recessed with four columns of stone spanning the front, while the entrance proper is protected

by heavy bronze grille gates and doors of the sliding type.

Special care has been taken to have the entire construction harmonize in every detail. This has been worked out on the interior as well as on the front and sides, where the over-structure is a clean span from wall to wall, free from columns. In decorating, the pilasters, beams and interior trim have been specially designed to harmonize with the type of architecture.



The Interior Space Is Arranged to Accommodate Both Institutions with Ample Provision for Future Expansion.



This Architects' Perspective of the Commercial Loan & Trust Building, San Antonio, Texas, Shows How the Architects, Phelps & Dewees, of San Antonio, Have Achieved a Tone of Combined Strength and Dignity in Their Design.



A View of the Lobby Looking Toward the Main Entrance Shows the Arrangement of Cages, Officers' Desks, and President's Office as Well as the Interior Treatment of Walls and Equipment.

Not only has careful consideration been given to the present requirements of the bank, but ample space has been provided for future expansion, so that increased business may be easily assumed without embarrassing alterations or cramped facilities.

The space for the officers has been provided to the front of the lobby. To the left are the cages for the Loan & Trust Company, while the additional space is utilized by the bank. At the right of the entrance to the bank a ladies' rest room has been provided and comfortably furnished for the convenience of the bank's patrons.

The president's office is located between the two entrances just back of the officers' quarters. In addition there is a conference room, a directors' room and small individual booths where patrons who rent deposit boxes may examine

their papers in privacy without disturbance.

The entire structure is remarkably free and clean in design and an ample amount of light is provided from the sides and through an ornamental skylight. The interior stone and marble work has been given a subdued finish in order that it will not reflect any glare from artificial light. The onyx slabs in front of the tellers' windows have also been similarly finished to eliminate a trying reflection on the eyes.

For dignity, simplicity and reliability, it is one of the best buildings of its kind in southwest Texas. A new interpretation has been made of an ancient and pleasing style of architecture; an interpretation which brings out many pleasing features in an ingenious way.—B. C. REBER.



## Protect Against Rot

**A**LTHOUGH Americans are the greatest users of wood in construction and in industry, they are surprisingly indifferent to the prevention of rot, which is largely a matter of a little care. Rot is to wood what rust is to iron and steel. If rot can be prevented wood will last until it wears out which, in the case of the frame and walls of a house, might be centuries. Wooden furniture in Tutankhamen's tomb was found to be sound after 3,500 years. On the other hand, huge timbers have been known to rot through at the ends in less than four years when not given the proper protection which should be given to all materials subject to rot or rust.

The Research Bureau of the National Lumber Manufacturers' Association, Transportation Building, Washington, D. C., has made a popular summary of a study of the causes of rot and its prevention, prepared by C. J. Humphrey, pathologist of the U. S. Forest Products Laboratory, for the National Building Officials Conference



A Directors' Room, Placed at a Rear Corner Is Simply but Handsomely Finished and Equipped in Harmony with the General Tone of This Bank Structure.



# DETAILS OF HOME BUILDING

## Brick Veneer

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

AS regards building it is unfortunate that the word "veneer" has a double sense. While it may mean the covering of a substantial base by a surface of high value, it also means the hiding of a mean base by a gloss. It is unfortunate because brick veneer over frame or, in fact, any fabrication in building involving a dress coat, tile, terra cotta, brick, stucco or what not, is not actually a veneer. And, to digress a little, we might go further and attempt to prove that veneer in wood is everything but bad. We are quarreling with the sense of the word. The origin possibly came through some witless statement such as "in these products each unit contains air spaces which comprise about six-tenths of the total cubic area of the block" or "bungalows and residences."

Brick veneer over frame is of purer fabrication than its name. It is double cell construction of soundness, very nearly fireproof, cheaper than entire brick, and, when judiciously used, extremely attractive.

In these articles the aim so far has been toward the less expensive houses and this seems the logical point at which to raise the ante a little. The per cent increase in this type over the cost of frame or of stucco is a question of locality, but generally it is small and sometimes nil if upkeep is regarded.

As to soundness of construction this much can be said and applied to all types. If the work is confined to its intended limits and done in a workmanlike manner it is altogether satisfactory. The frame of the building is completed first, as shown in Fig. 1, and might be finished in frame or stucco, but in brick you will see that an extra foundation sill breadth allows for an air space of from one-half to 1 inch and for a separate brick wall to be tied to the studs as shown in Fig. 2.

Now as to the advisability of running a single-brick wall two stories up. Suppose a stucco house is subjected to a wind velocity of 80 miles per hour or a wall pressure of 30 pounds per square foot. Would you expect it to collapse? Certainly not. Suppose you replace the stucco with brick founded separate of the frame and tied to it with a 20 penny or 30 penny spike for every  $1\frac{1}{3}$  square feet of wall. (Every five courses, in all studs, at 16 inches on centers.)

Now suppose a 20 penny nail driven 2 inches into sheathing and stud and a hammer hooked to it with the claw up and the handle horizontal. You have something similar to a bell-crank lever with a ratio of about 10 to 1 favoring the handle. How much weight would be required to start the spike? This may give some notion as to the strength of the lateral bracing furnished by the spikes. With conditions fair such a wall has considerable advantage in strength over general framing.

It is shown in Figs. 2 and 4 that an air space is provided between the brick and the frame. This is practically an integral space and requires no recommendation.

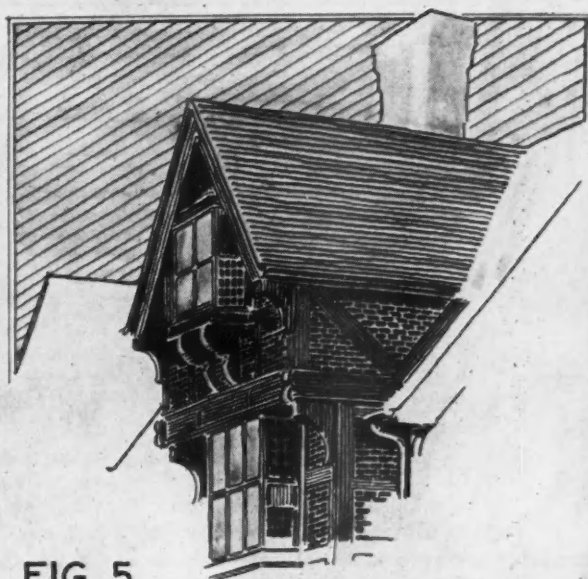
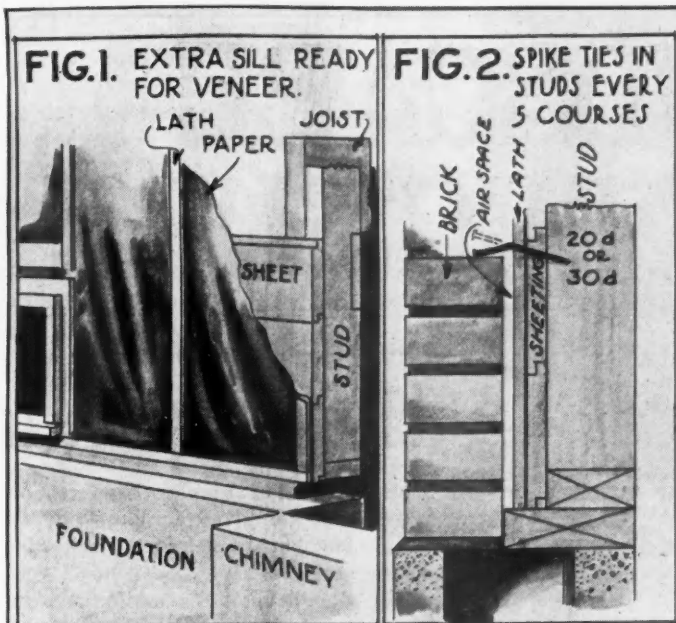
I presume too many "words" have been allotted to an unneeded defense of brick veneer. My excuse is merely that from what I know of this construction it is used altogether too infrequently. So many instances arise of unbalanced house costs that it is little wonder the high cost of building has become a by-word. If brick is wanted and fire-limits do not forbid there is no reason for not employing this type of construction.

In Figs. 6 and 7 are shown two homes in my neighborhood, both of good size, carefully planned and built for the owners, owners who have no intention of selling. They are both remarkably fine homes on excellent frontage. Fortunately some localities have been shown how successful this method is and have capitalized on it. The home shown in Fig. 6 is as commodious a bungalow as could be found. The environment pointed to brick, and a fine dark shade of brick with a generous roof covers a very hospitable spread of rooms. The particularity of the owner may be suggested by his hauling of flag stones of a particular variety from a particular spot for his walks.

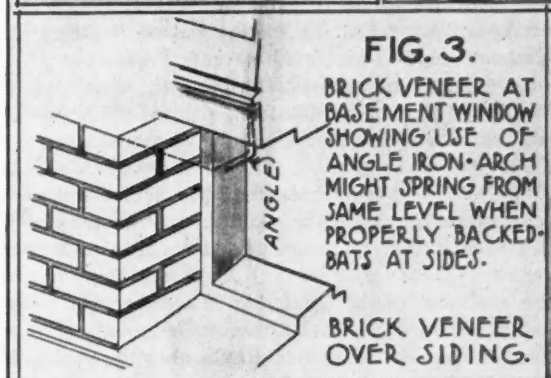
The home shown in Fig. 7 is a larger one than the sketch shows, and more than ordinarily expensive in essentials which do not show casually. Its setting and size required brick. These two sketches are used to show that brick may be best for certain types, that brick veneer fulfills all requirements, that sounder judgment in the matter of costs may prescribe its use, and that there is nothing cheap about it.

Having got this far it may be admitted that refurbishing an old house by surrounding it with brick may have laid some foundation for the expression "veneer." But if the value of the house is proportionate to the expense what better means could be used to improve its appearance? An extra foundation, a solid wall to the cornice carrying its own load on angles or arches over transoms, and properly tied to the frame. Perfectly all right, unless some with more ambition than head try to support wall sections entirely from the frame.

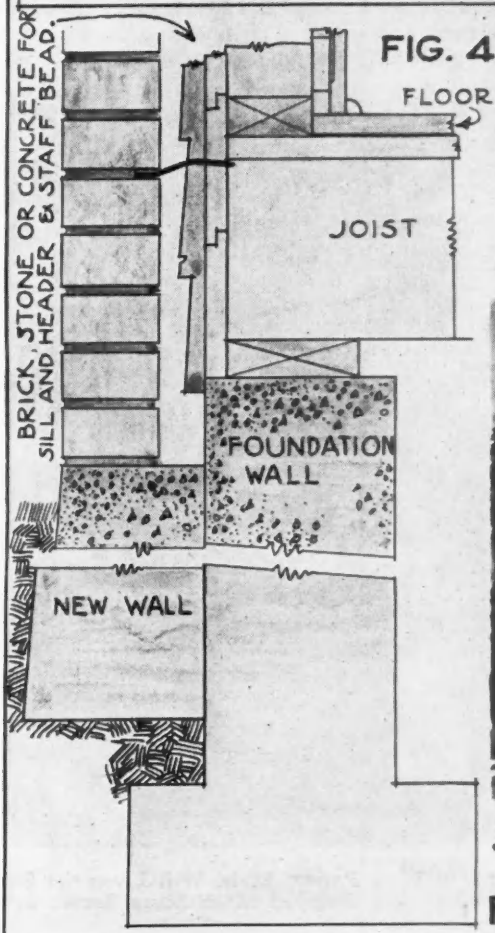
Brick should be thought of as a texture. It has its peculiar merits in house design which cannot be matched with any other means. Brick has the knack of light and shadow through its own lack of perfect uniformity. In a house the brick wall should never be blatant or even striking in its color but should be used as a foil for the decorative points. A house can be many things in brick which it cannot be in other material, for it will appeal to the sense as well as to the sight.



**FIG. 5.**  
BRICK AS USED IN OVERHUNG, HALF-TIMBERED STRUCTURE.

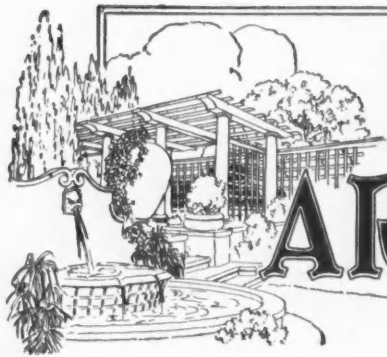


**FIG. 6.** THE UNCONVENTIONAL. BRICK IS ESPECIALLY SUITABLE IN THIS LAZY, DELIGHTFUL SORT OF HOME.



**FIG. 7.**

*V.L. Sherman - 6-4-26*



# LANDSCAPE ARCHITECTURE

By F.A. Cushing Smith Landscape Architect

## The Use of Water in the Garden

**W**HETHER your mood be happy or sad, rollicking or quiet, there is a water feature for your garden which can change the blue sky to a brighter hue, can drive sorrow away and bring to your day a joy and a thrill which it may have missed.

It matters not your age, for the trill of the fountain jet is no respecter of persons. Water in motion in the garden brings back youth to the aged, stimulates the imagination and bubbling joy of childhood, making everyone and everything in tune.

Water in motion may not be confined to formal flower gardens only, but may also serve a real purpose in an informal lawn area, where there may be room for a small bird bath, or for a waterfall or rivulet along the shores of which the buttercups vie with the iris in absorbing the treasured moisture.

Why is it that as a child we enjoyed most the spot known to us alone, where upon an old moss-covered log across a quiet flowing stream, in the heart of the woods, alone with nature and with God, we fished, dozed, swam, or

watched the old spotted turtle or the hurtling frogs as they sunned themselves on the river bank. This, the earliest form of water garden should be emulated more than has been the case in the past.

Where there is room enough upon the lot for a swimming pool, one can be built of concrete, with stratified rock edges, of the proper depth for safety, and be made rather informal even though constructed of cement concrete. The artificiality of the pool may thus be partially concealed by a cleverly designed rock garden, well planted with flowering shrubs and flowers, and the whole be made a part of the general landscape picture. Such a pool should be drained regularly, and the inside scrubbed, and disinfected.

To reproduce a spring fed brook in a naturalistic setting is a task of a lifetime, and is a work of art in the creation of which the efforts of even a Corot seem amateurish. Too often with the pliable changing materials with which we are working, we fail to realize the secrets of the natural physical phenomena, the physiographical and geological formations which must be studied and aspired to, as they



A Water Feature in the Garden Whether It Be of the Natural Type or in More Formal Style, Will Liven the Surroundings, Stimulate the Imagination and Recall the Days of Childhood When We Enjoyed Most Some Secret Spot Beside a Flowing Stream.



are spread out before our wondering eyes in our native landscape.

For a small pond for goldfish or even any pool of average size the water should be in motion to insure its freshness. This merely means that it should be changed often so that it does not become stagnant, or a mosquito breeding pond and a menace to the health of the entire neighborhood.

To insure proper overflow it is simple enough to control the depth of the pool by means of the height of the overflow pipe. This may be threaded on the lower end, screwing into the floor of the pool. When the water is to be drained out this pipe can be easily and quickly removed, and the pool cleaned and made ready for the further uses to which it is to be put.

Water lilies seem to do better in a sluggish or slow moving stream where the crowns or tops of the plants are not over 12 to 15 inches below the water surface.

The tender varieties of lily corms may be planted in tubs sunk in the bottom of the pool. With little care and right exposure you can be assured of blossoms the entire season.

In the case of the smaller pools, with few exceptions, notably large lily ponds where the banks may be of puddled clay, the material best adapted to their construction is cement concrete. The whole pool, sides and bottom should be reinforced with rods of adequate size to prevent any cracking and heaving from the frost of our extreme winters. If you do not care for the smooth cement surface, it can be masked by a weathered stone or even by a rubble wall. Slate in its varied colors is also well adapted to use on the coping or top edge of the pool.

For the more formal pools in the Italian, French or English gardens where the residence is of stone or of brick with stone trim, a cut stone pool with carefully cut stone coping in keeping with the architectural character of the house, will be correct and quietly attractive.

In shape and in size the pool must be designed to fit the size of the lot, the landscape plan which has been studied, and the use to which it is to be put. If for wading, then it should be shallow at least at one end; if for fish or for water lilies or for both, its depth will not exceed 18 to 24 inches; if for swimming avoid too great depth on account of danger to the children of the neighborhood, and avoid



Water May Be Introduced into the Pool by a Fountain, Falling Back into a Thousand Brilliant Drops and Ripples as It Strikes the Surface of the Pool.

further any jutting rock formations on which the child might be seriously injured.

The water may be introduced into the pool in a great variety of ways. A fountain of a single jet, falling back into a thousand brilliant drops and ripples as it strikes the pool surface is the simplest form. The pool may be fed from what appears to be a hidden spring which bubbles out of a stone pocket, trickles over the stone ledges until it loses its individuality in the quiet pool below. The water may in turn flow from the mouth of a grotesque set in the garden wall into a stone basin over the rim of which it clingly falls to the larger pools below.

The overflow should be so designed that it permits the maintaining of a uniform level, the opening being screened to keep out the leaves or foreign objects and yet so attached that it can be unscrewed and the pool drained and cleaned in the fall.

Among the gardens of the world in which water is ever present we immediately think of the cascades, waterfalls, pools and basins, secret fountain jets which sprayed the unwary passer-by, fountains of beautiful sculptural perfection and the water-organs of old Italy. It was here that the use of water reached its height with elaborate pumping and hydraulic systems to enable the estate owner to use the same water over and over again, pumping from the lower levels to the higher from thence by gravity the water appeared and reappeared on the terraced gardens into which the hillsides were divided.



### Promote Economical Building

A NATION-WIDE campaign to promote economical and efficient operations in construction work was launched following the conclusion of a recent conference of building experts held under the auspices of the Associated General Contractors of America. In this campaign action will be taken in more than 80 construction centers to secure practical application of the program and policies developed by the meeting, the principal attention being given to speculative building, misuse of lien laws, litigation arising from contractual relations, public works construction under the day labor method and activities of irresponsible bidders.



For the More Formal Italian, French or English Garden a Cut Stone Pool and Coping Is in Keeping with the Architectural Effect and Is Quietly Attractive.

# SAVE THE SURFACE DEPARTMENT

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

## A New Era in Hotel Painting

By HENRY A. GARDNER

*Institute of Paint and Varnish Research, Washington, D. C.*

**E**ARLY in the year 1908 a new school of thought in hotel decoration came into existence. At that time interior wall paints were made, but they were seldom used except in kitchens or hospitals where a full gloss was desired. Every painter knew how to prepare a flat paint for walls by thinning his pigment base with turpentine, but the finish produced apparently had not become popular at that period. In the year referred to, there were placed on the market by at least two firms, prepared products that had very great hiding power, and that dried rapidly to a matte finish surface of pleasing texture.

These paints were made principally of lithopone in the pigment portion, ground in light colored varnishes containing a high percentage of volatile thinners. The secret of their production was the use of very skillfully prepared varnishes as the binding medium, whereas practically all paint used previously for all work were made with raw linseed oil. The non-yellowing characteristics, washability, ease of application, and quick drying properties of the new paints added to their popularity, and they were eagerly welcomed by the trade. Walls that otherwise would never have been painted were now being treated with the new type of paints that had come into wide usage almost over night. Full credit for the production of such paints should be given the varnish makers whose skill in treating the required liquids made them possible.

### The Real Value of Interior Paints

Although hospitals have for a great many years insisted upon painted walls, few people understand the real reasons underlying the necessity of painted walls in hospitals. Apparently there is a direct analogy between this necessity in hospitals and in hotels and other public buildings. A wall, for instance, of glazed, vitreous tile is, of course, superior to any other from a sanitary standpoint, because of its non-absorbent, washable character. Bacteria can be deposited on tile but cannot grow, because there is no moisture or organic media to support reproduction. In other words, the surface is absolutely waterproof and is so smooth that organic matter can gain no foothold. Next to tile, which is of course too expensive for ordinary work and usually lacking in the desired



Henry A. Gardner.

color values, a painted surface is most satisfactory from the standpoint of waterproof character and smoothness of surface. It is these two properties upon which its success rests.

A rough or even a hard-surfaced cement or plastered wall of any kind, a wall made of wood or pressed or formed paper board, or of any similar untreated construction is porous. Moisture may be absorbed rapidly, and retained for long periods. Such surfaces, moreover, contain small craters in which floating organic matter may be deposited. Because such walls cannot be washed, this organic matter may not be removed. Consequently there may be present these two factors—moisture and organic matter—that are required for the growth of bacteria. The value, therefore, of oil or varnish paints is in putting a waterproof film on any of the above mentioned materials of construction and, in so doing, to

make a smooth surface that will not afford a resting place for easily available organic matter.

### Sanitation of Painted Walls

A prominent pathologist connected with a large hospital and medical school in Washington, at one time attempted the preparation of vaccines and antitoxins in a laboratory room where all precautions were observed, except that the plastered walls were not coated with oil paint. The cultures almost immediately became contaminated. It was not until the walls were oil-painted that successful results were obtained. Ever since a high gloss white paint that could be easily washed has been used, and no contamination of the cultures has been experienced. Paints drying to a flat or to an egg-shell gloss might also be used in such laboratories, provided they dry to as smooth a surface and as waterproof a film as the high gloss enamel referred to. For frequent washing, however, high gloss paints are usually preferred in certain laboratory rooms.

In the same hospital, the operating rooms are painted with a high gloss varnish paint so that fumes of formaldehyde may be used from time to time. Again, in infectious wards, where formaldehyde vapors are employed for disinfecting and where the painted surfaces are scrubbed occasionally with water containing substantial amounts of powerful antiseptics, a water resisting paint is used. In the main hospital, in the wards and private rooms, painted walls and ceiling are in

general use, and repainting throughout the hospital at least every two years, and generally every year, is the rule. This is, moreover, the practice in nearly every modern hotel. It is probable that infections in hospitals have been reduced comparatively to as great an extent through the maintenance of sanitary conditions by frequent painting as the infections of former days were reduced by the gradual adoption of the principles of Lister.

If the above constitute the requirements of hospitals, it is probably of greater importance that similar care be exercised in hotels where so many people congregate. In the kitchens and pantries where the food is prepared, washable surfaces should be carefully maintained. In the sleeping apartments sanitary conditions of the highest order should also obtain.

In order to get some further data on the subject, tests were arranged and carried out in the following manner: A laboratory wall surface was chosen for experimentation. One coat of paint was applied to a small area. After drying, this surface and an adjoining area of the unpainted surface were lightly rubbed with swabs moistened in sterile water. These were plated in agar-agar. The following results were obtained:

Unpainted area.....(Positive growth in agar)

Painted area.....(Negative growth in agar)

Cultures of bacillus subtilis, staphylococcus aureus, and bacillus coli were then incorporated in dry powdered calcium carbonate and blown upon the two wall surfaces. Liquid cultures of bacillus subtilis, staphylococcus aureus and bacillus coli were also sprayed upon adjoining areas of the two surfaces. Plates in agar-agar were made an hour later, and were positive in both cases, but not so pronounced from the painted areas. The two areas were then washed with soap and sterile water. Plates were made an hour later. The unpainted area cultures showed abundant growth, while the cultures from the painted area showed but very little. These tests show that when surfaces are contaminated the source of danger may be removed by washing, if the surface is painted. They also show that infected surfaces may be made sterile by painting.

#### Reduced Lighting Bills

With the introduction and use of the new type of paints it was found that their great light reflecting properties made it possible to use fewer electric light bulbs to supply the illumination that would make a room cheerful and well lighted at night. Bills for illumination in hotels were greatly reduced in many instances. It is probable that within the past ten years the amount of savable current that might be traced to the use of such paints would represent a sum greater than the entire cost of the paint and its application. The sanitary value of the paint, the beauty and freshness it has added to surfaces, and the cheerfulness it has provided have all come without cost.

As stated above, the modern types of paint are thoroughly

sanitary, and do much to maintain hygienic conditions that should be a fetish with all hotels. They contain no evil-smelling compounds that would give a musty color to halls or closets. Because of their washability, they may be easily restored after long service, by cleaning with a sponge and soapy water. It has been found, however, almost as cheap to apply a fresh coat, of such paints as it is to wash them. For instance, one of the earlier manufacturers had his product applied to a large office building in the South about twelve years ago. Although the paint was thoroughly washable, the owners of the building have made a practice of giving the walls one fresh coat of paint a year, of the same type of paint. Thus for a period of twelve years this paint has been used with very successful results. Such practice, being thoroughly satisfactory because of the character of film produced, should find a much wider application in the future.

It is of great importance to note the speed with which such paints may be applied. The writer has learned that in one very large apartment hotel re-decoration of the rooms takes place every time a new tenant moves in an apartment, which probably occurs at least once a year. When the old tenant moves out in the morning, the walls may be spray-coated with a fresh coat of waterproof flat wall paint in the afternoon. The following morning the paint is perfectly dry so that the new tenant can move in and be assured of perfectly sanitary surroundings. Modern practice in many transient hotels is to freshen the wall surfaces every year with a coat of waterproof flat wall color. This is done to show the guests that the hotel believes in maintaining sanitary conditions, and partly to lend interest to the surroundings by occasional change of the color scheme.

#### Psychological Effects

A few years ago, in an article on hospital decoration, the writer pointed out the different psychological effects of various individual colors upon the rooms and stated that dark colors should never be used if moroseness was to be avoided and that the large scale use of brilliant hues should be absent in order to prevent headaches, eyestrain, or similar minor nervous effects. He also suggested the use of either cream, pale sea green, pale blue, light pink or orchid as the proper colors for walls where cheerfulness and good light reflection were to be considered. The use of the latter tints for walls with a figured stencil border and a pale cream or white painted ceiling may be considered as best suited for hotel sleeping apartments.

Such conditions cause rapid yellowing of paints that do not contain skillfully prepared liquids. If one will then have the panels washed with a soap solution, three times a day for a week, he can observe the relative washability of the paints. As previously stated, however, paints that will withstand moderate washing are satisfactory if they are to be renewed every year, as repainting is often as cheap as washing.

## What the Builder Should Know About Varnish

SINCE the builder is concerned, if only indirectly, with the varnish finishes that are used in the houses he erects, it seems desirable that certain facts about this material be set down in brief, convenient form. Much information about varnishes has been accumulating during the past half century which everyone in the building trade will find useful.

No doubt the builder's most frequent concern with varnish has to do with troubles over that medium. Authorities state that the most fruitful cause of dissatisfaction and complaint is the persistent effort of most people to buy at

an impossibly low price the service and satisfaction obtained only from higher-price products. The temptation to economize on varnish finishes is one with which every builder is familiar. If he succumbs, the loss is on his own head, and the troubles as well.

No varnish manufacturer can produce superior products from inferior materials. Every reputable, experienced varnish manufacturer is capable of producing and does produce varnishes that will give adequate service and complete satisfaction.

The so-called "saving" effected by substituting a cheap

for a good varnish is very small, not over a few dollars at the most, whereas a good varnish will give good service over a long period of time. An example of the longevity of good varnish that has become a classic among varnish men, is that of a house built over thirty years ago in the Middle West. The woodwork was of unusually beautiful grain, and it, as well as the floors, were given three coats of the best varnish available. A moderate amount of care has been expended upon both woodwork and floors, but the house has been lived in constantly since it was built and with the consequent wear-and-tear. Today the original varnish finishes are still in good condition.

Varnish is defined as "a solution of fluid, usually transparent or translucent, though occasionally opaque, which, when spread upon a surface in a thin film dries . . .

to a continuous, protective coating which may be either highly lustrous or practically devoid of lustre."

The purpose of varnish is to enhance the beauty of surfaces, to protect them from injury, to increase the lustre or the hardness of other coatings, and, in its technical application, to exclude moisture and gases, vapors and other atmospheric agencies of decomposition or decay, to prevent corrosion and to reduce friction. There are over 200 varieties of varnish, many of which have special purposes. They may be broadly classified as oil varnishes, spirit varnishes, japans and enamels. Certain varnishes are designed especially for use on floors and will resist shock or abrasion. Shellac should not be used upon floors because the surface produced is rather brittle and readily affected by moisture.

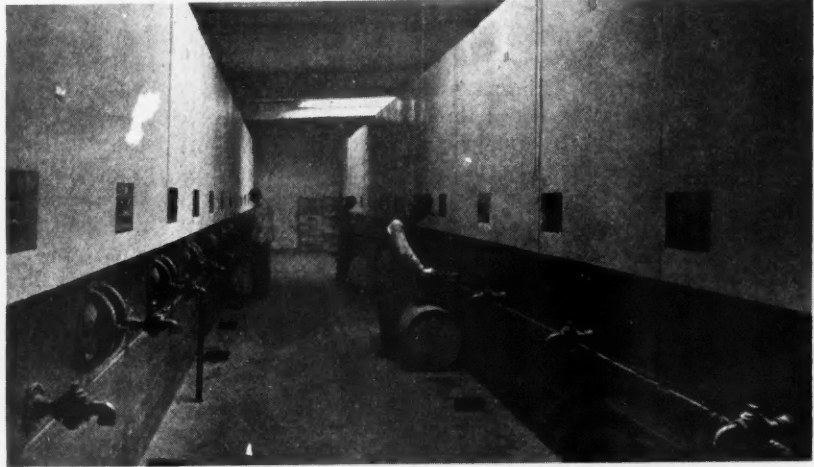
Here is a hint which any builder may pass on to his clients to their advantage. Never let the varnish finish of a floor wear through to the wood. As soon as signs of wear appear, give the floor a fresh coat. If this precaution is neglected it will be impossible to produce an unbroken surface without removing the entire original coating and refinishing the floor with three new coats. In this way a varnished floor may be inexpensively maintained.

The qualities to look for in varnish are good flowing properties, moderately quick drying, fair lustre, elasticity and hardness and especially no tendency to soften at the temperature of the human body. These qualities may be determined by applying a sample of the varnish to a test board.

Some of the commoner "troubles" that spring up and confront the builder are known as "blistering," "spotting," "crazing," "powdering," "deadening," "wrinkling," and so on. Most of these are caused either by improper handling of the medium, or by using improper varnishes. Blistering is usually due to underlying spots of grease, sap or moisture, or to excessive heat. Direct exposure to the sun during the process of drying will produce blisters on the varnished surfaces.

Spotting may be due to chill of fresh varnish, to substances on the surface at the time of varnishing, or to splotches of liquids before the varnish has dried. The appearance of minute interlacing cracks on a varnished surface is called "crazing." It may be due to extreme cold, to excess of hard gums, or to the selection of a varnish insufficiently elastic for the use to which it has been adapted.

Powdering is usually the result of the selection of an improper varnish for the use, such as when an interior varnish is substituted for an exterior varnish. Sometimes varnish "deadens" or loses its lustre. This may be due to insufficient or defective undercoat, and most frequently



Storage Tanks Where the Varnish, Made from Fossil Gums, Oils and Volatile Thinners, Is Aged.

to improper filling of the wood. When a few heavy coats of varnish are substituted for several thin ones, the finish is apt to wrinkle. A sudden lowering of the temperature of the room is a frequent cause, too.

Since the manufacture of varnish is not a completed science, new improvements are being made continually. New materials are being discovered, research work is being carried on and better processes are always in the stage of evolution. Varnish-making is an interesting subject and keeping up-to-date with its progress is both valuable and educational, for the builder and layman alike.



### Need for Paint Inspections

YEARLY inspections of the paint on all surfaces, exterior and interior, of hotels, and, in fact, of all large buildings is an important matter. Such an inspection can accomplish much, and is just as important as yearly inspections for fire hazards and for the determination of the observance of sanitary conditions. It is especially advisable to make a yearly inspection of fire escapes to see that they are properly coated. A fire escape rusting from lack of paint portends future disasters. Metal cornices, copings, and even the metal parts of roofs should all be looked after. Sir Robert Hadfield, in his report on the corrosion of ferrous metals to the Institute of Civil Engineers of Great Britain, has stated that during 1920 the amount of iron metals wasted away as rust amounted to probably 29,000,000 tons. This amount would have an economic value, counting the cost of the metal, fuel and labor of nearly \$3,500,000,000.

One very important consideration for the hotel painter is the coating of window sills. Nothing could be more indicative of neglect than a scaly sill, and no surface more apparent, because people sit so much at their windows. The window sill is subject to very rapid contraction and expansion, due to the wide range of temperature resulting from the opening and closing of the windows in cold weather. Nothing can work more hardship on an old paint film than expansion and contraction. Accordingly, the remedy is to sand down and repaint every sill at the first indication of checking or cracking.

The use of coated fabric for walls has come into wide and successful use as a base for wall paints. These satisfactorily hide defects in plaster, and they give a good base for paints. Similarly, table oil cloth, a muslin base coated with six coats of white paint, is finding a constantly growing use in hotels. Renewals of the surface with light colored varnish or with white enamel is feasible, and is practiced successfully in some establishments. The care of linoleum in kitchens, hallways, and closets of hotels is another matter of importance.

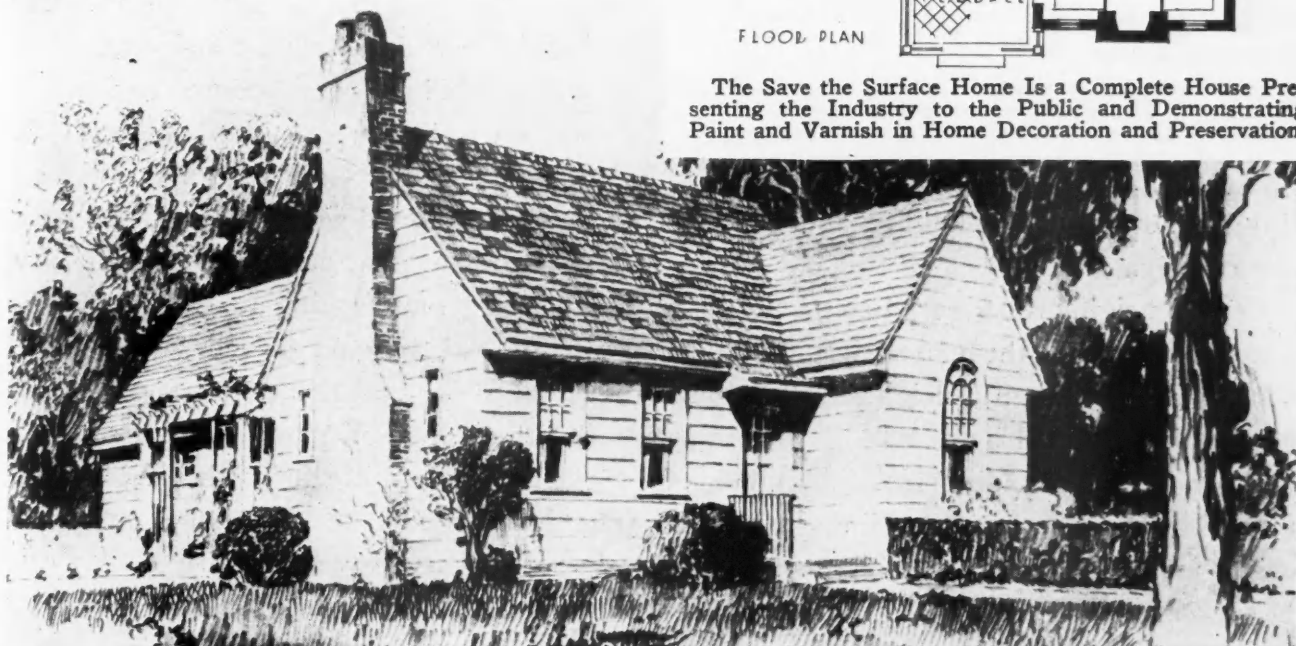
# Dedicate Save the Surface Home at the Sesqui-Centennial

**W**HEN you visit the Sesqui-Centennial Exposition at Philadelphia you should be sure not to miss seeing the Save the Surface Home for it is one of the most attractive and interesting buildings on the exposition grounds. This house has been built by the paint and varnish industry, under the auspices of the Philadelphia Paint, Oil and Varnish Club, as a highly individual presentation of the industry to the public and a demonstration of the use of paint and varnish in decorating and preserving the home.

On the afternoon of June 2, the members of the Philadelphia Paint, Oil and Varnish Club and a large crowd of centennial visitors took part in the fun in connection with



The Save the Surface Home Is a Complete House Presenting the Industry to the Public and Demonstrating Paint and Varnish in Home Decoration and Preservation.



These "Painters," Leading Men in the Paint and Varnish Industry, and the "Apprentices," Girls from the "Queen High" Musical Comedy Company, Officiated at the Dedication of the Save the Surface Home.

Architect's Sketch of the Save the Surface Home Erected on Grounds of the Sesqui-Centennial Exposition at Philadelphia.

the dedication of the house. The ceremony was conducted by a group of "painters" and "apprentices," who appear, in costume, in the photograph reproduced below. The "painters" included some of the leading men in the paint and varnish industry.

As they appear in the picture from left to right, these men are George V. Horgan, general manager, and W. P. Allen, executive committee, of the National Paint, Oil and Varnish Association; R. B. Robinette, president of the N. P. O. & V. A.; A. D. Graves, president of the National Varnish Manufacturers' Association; D. W. Figgis, executive committee of the N. P. O. & V. A.; S. R. Matlack, president of the Philadelphia Paint Club; J. Sibley Felton, president of the Paint Manufacturers' Association of the United States; Ernest T. Trigg, executive committee, N. P. O. & V. A.; R. Fee Johnson, executive committee, N. P. O. & V. A.



# Homes in COLORS

*Pick a House to Fit  
Your Building Site*

By WILLIAM A. RADFORD

*President and Editor-in-Chief of the American Builder*

**M**UCH of the success of the new home depends on how well adapted the building design is to the locality and the site on which it is built.

Our readers in their work of planning and building homes for individual clients and for sale can help mightily by giving thought to this matter of real suitability and advising accordingly.

Certain neighborhoods are being built up in a monotonous way, the houses all running just about alike; and such a neighborhood would be greatly benefited by a dash of something entirely novel and different. A house of unique design in such surroundings stands out even more prominently and attractively because of its surroundings. This means bigger value for such an outstanding house itself and enhanced values for the other more commonplace houses nearby.

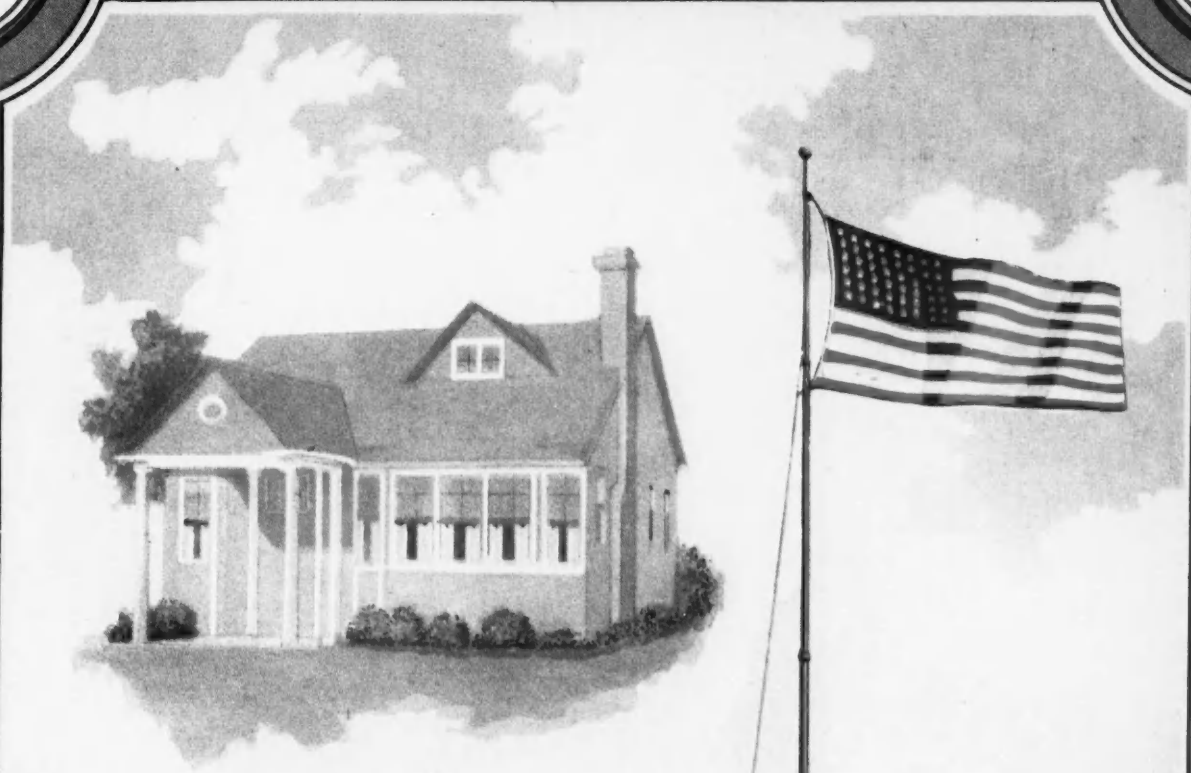
Then, too, there are districts where all of the houses are individually planned using really good designs. Some one style may have been used throughout as, for instance, a street of English cottages, a Spanish garden group, or a Colonial lane. The whole street or subdivision then is in harmony. A unified scheme of landscape development can be followed and the quaint homelike atmosphere of such a home section becomes one of its priceless charms. Every house can be in harmony within the limits of the basic style or period chosen, at the same time enough variety is easily secured to prevent any monotony in appearance.

Building on a wide lot, perhaps well wooded and rolling, is one thing and building on a narrow, flat-lying city lot is quite another. We all admire the designs built low and broad with long windows coming down to the floor through which you can step out onto the grassy terrace. Such a design is ideal for those who can build well back from the street on a rise of ground and have enough room for planting and fencing to give them that sense of security and privacy which is so essential to the real home.

But the trouble is, many building sites are not at all appropriate for such ideal designs. The narrow city lot, especially on streets where the houses are built fairly close to the sidewalk, calls for quite another planning. A maximum of sunshine, fresh air, security and privacy must be planned into the house that is to go on such a narrow city lot. These considerations are more important than Spanish, English or any other style of architecture.

The clever designer and builder can usually secure these practical benefits and in addition put in those touches of real style to give the new home its maximum attractiveness and sales value.

In selecting the home designs to present in this popular American Builder department of Sixteen Pages of Homes in Colors we have in mind the problems of the narrow lot builder and many of these designs will be found very suitable for narrow lots as well as for the broader suburban building sites.



**The Home Road**

Sing a Hymn of Freedom, fling the banner high!  
Sing the songs of Liberty, songs that shall not die.

In the quiet hours of the starry night  
Dream the dreams of far-away,

Home fires burning bright.

For the long, long road - -

- - is the road that leads me home.

O'er hills and plains,

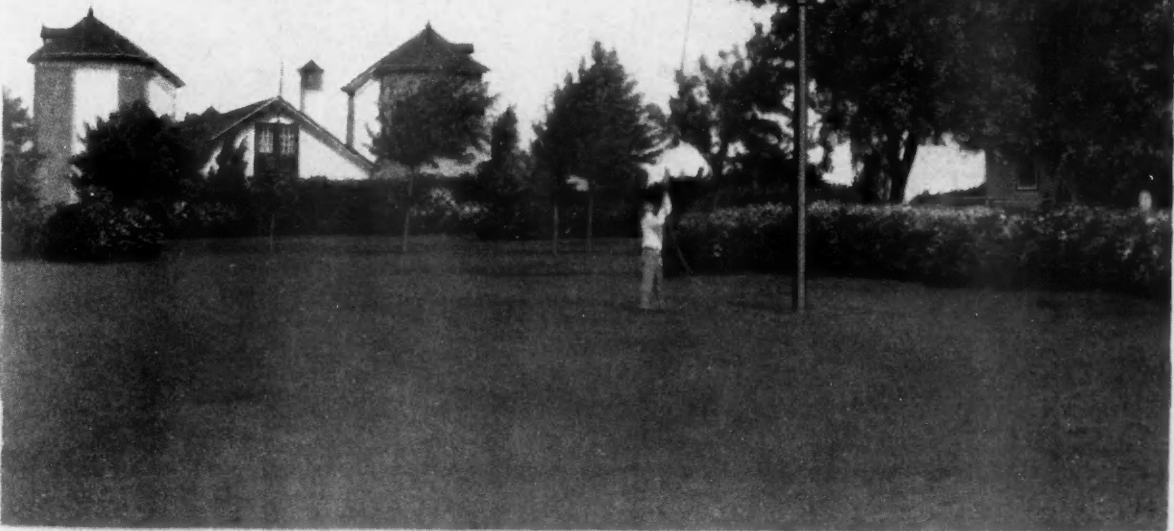
By lakes and lanes,

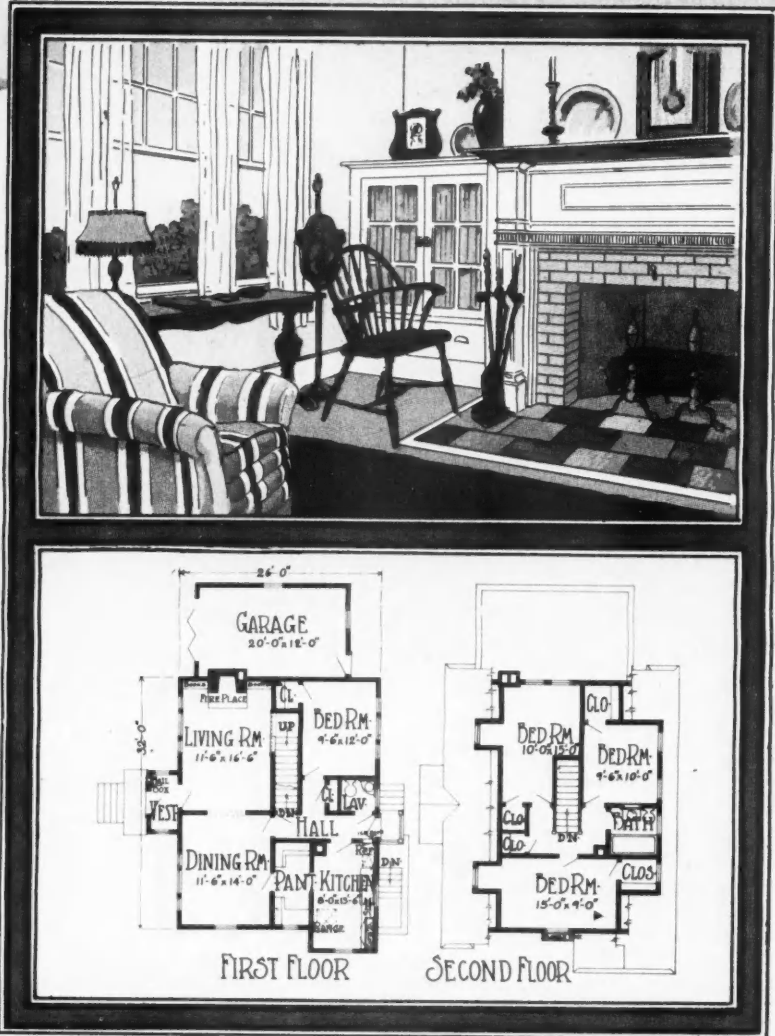
My woodlands! My cornfields! My Country!

My Home!

—John Alden Carpenter

Pat. March 15, 1921 and Sept. 30, 1924.  
Copyright 1926. Wm. A. Radford, Chicago.





## The VIRGINIA

A COLONIAL cottage of seven rooms and attached garage. Color sketch shows a corner of the living room

A S  
ga  
wicker.



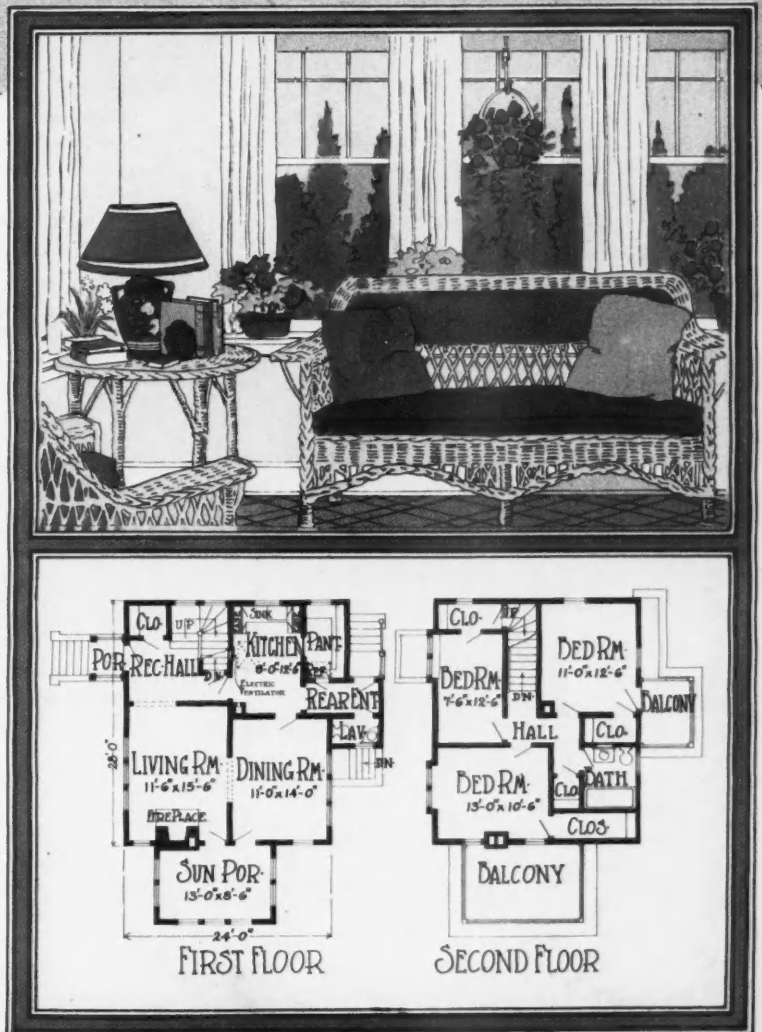


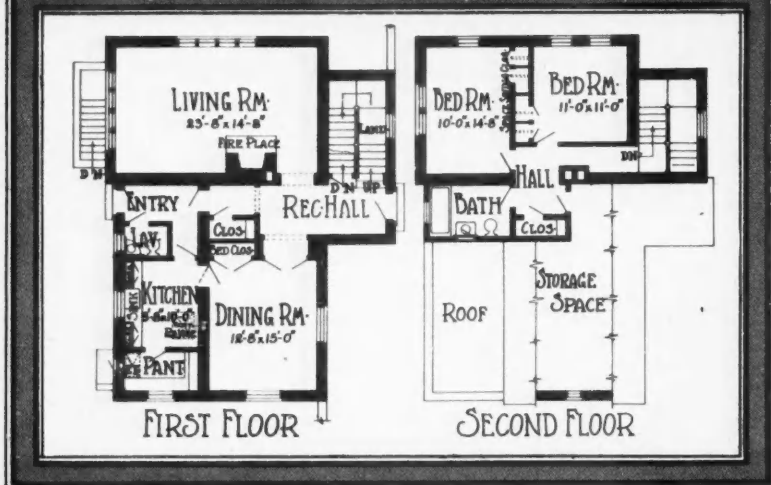
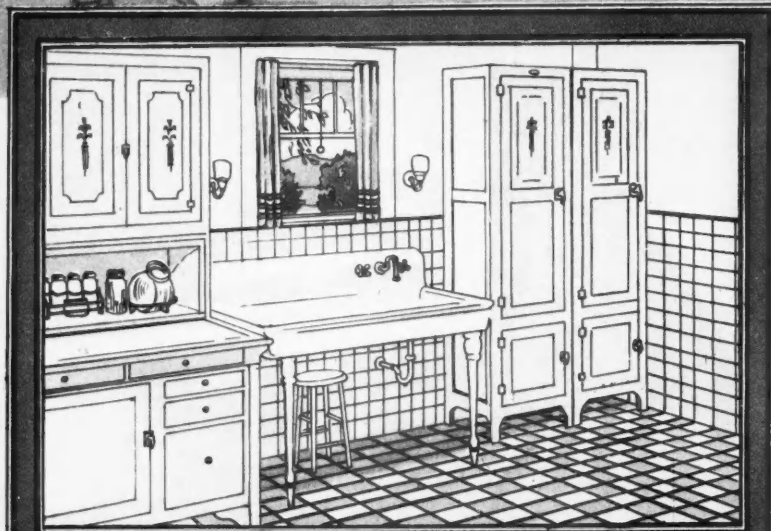
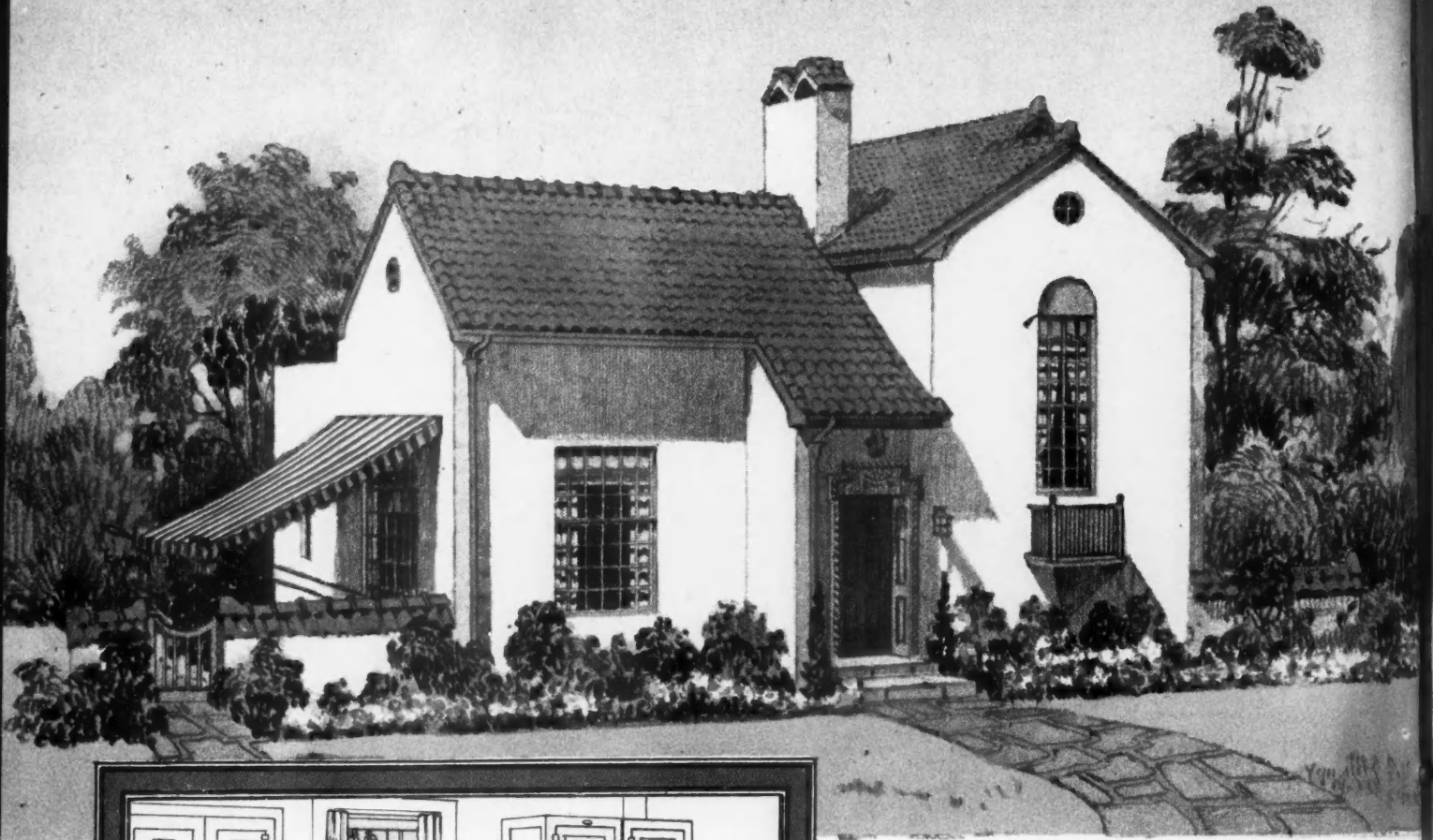


## The VILLA PARK

A STYLISH English design with interesting paneled gables. Color sketch shows a sun parlor furnished in wicker.

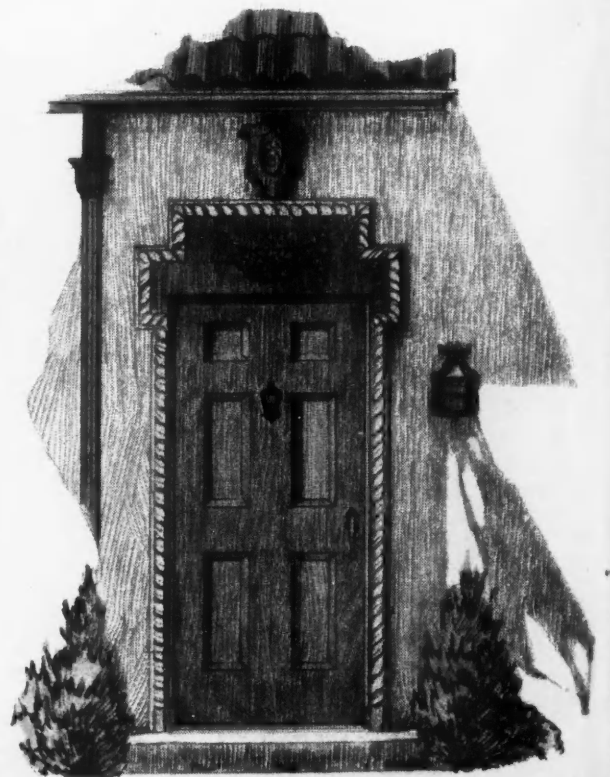
attached living





## The VERONA

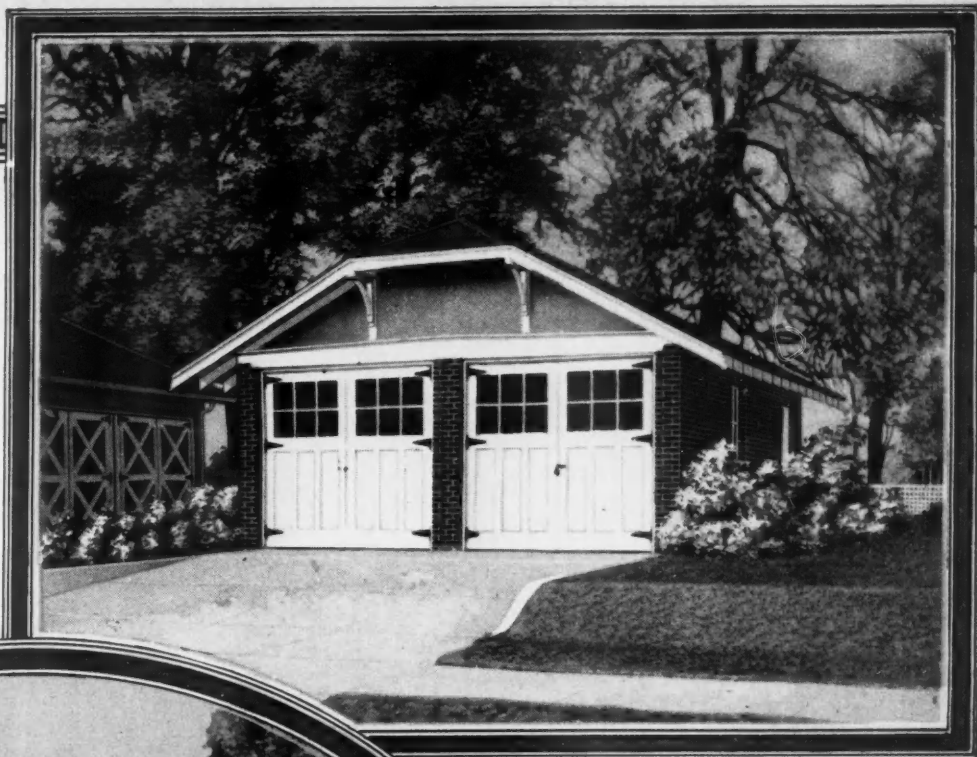
A DELIGHTFUL Spanish design of six rooms. Color sketch shows the attractive kitchen.



# THREE GOOD GARAGES

## *The* VAUGHN GARAGE

Below is illustrated a practical two-car frame garage.



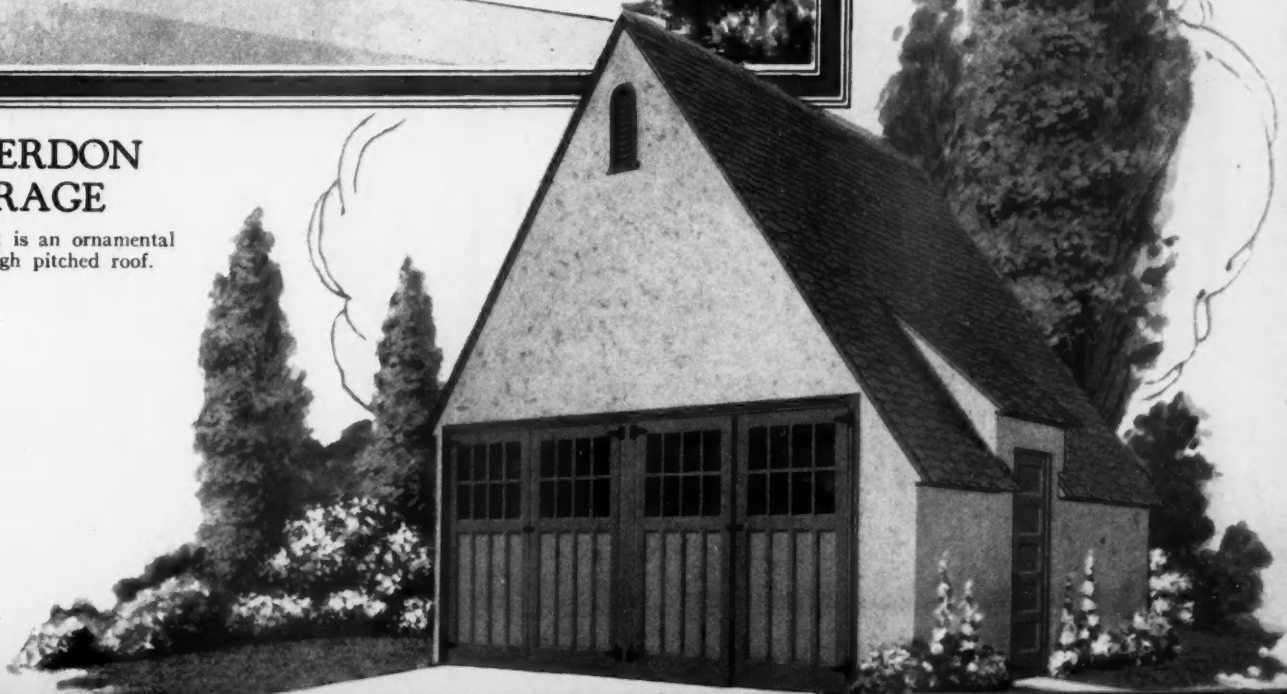
## *The* VENICE GARAGE

Above is illustrated a very neat two-car brick garage.

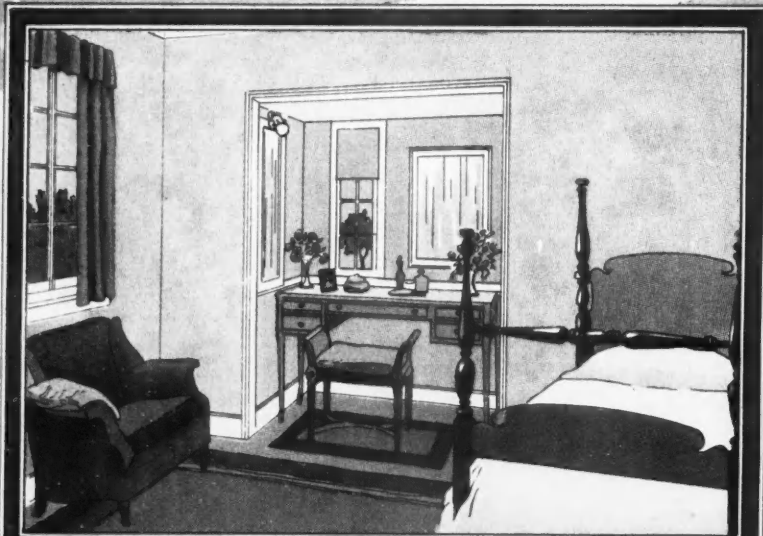


## *The* VERDON GARAGE

To the right is an ornamental design with high pitched roof.



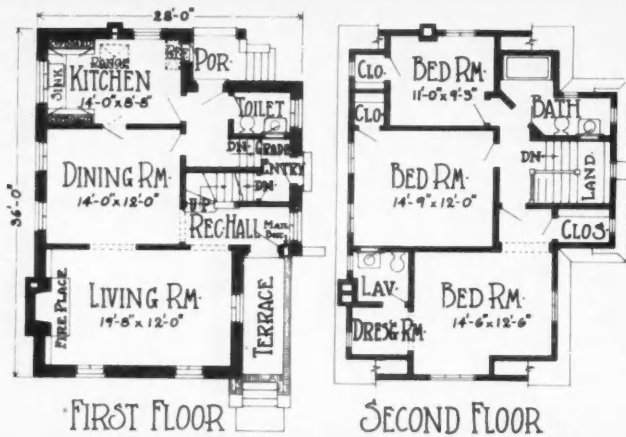
Color

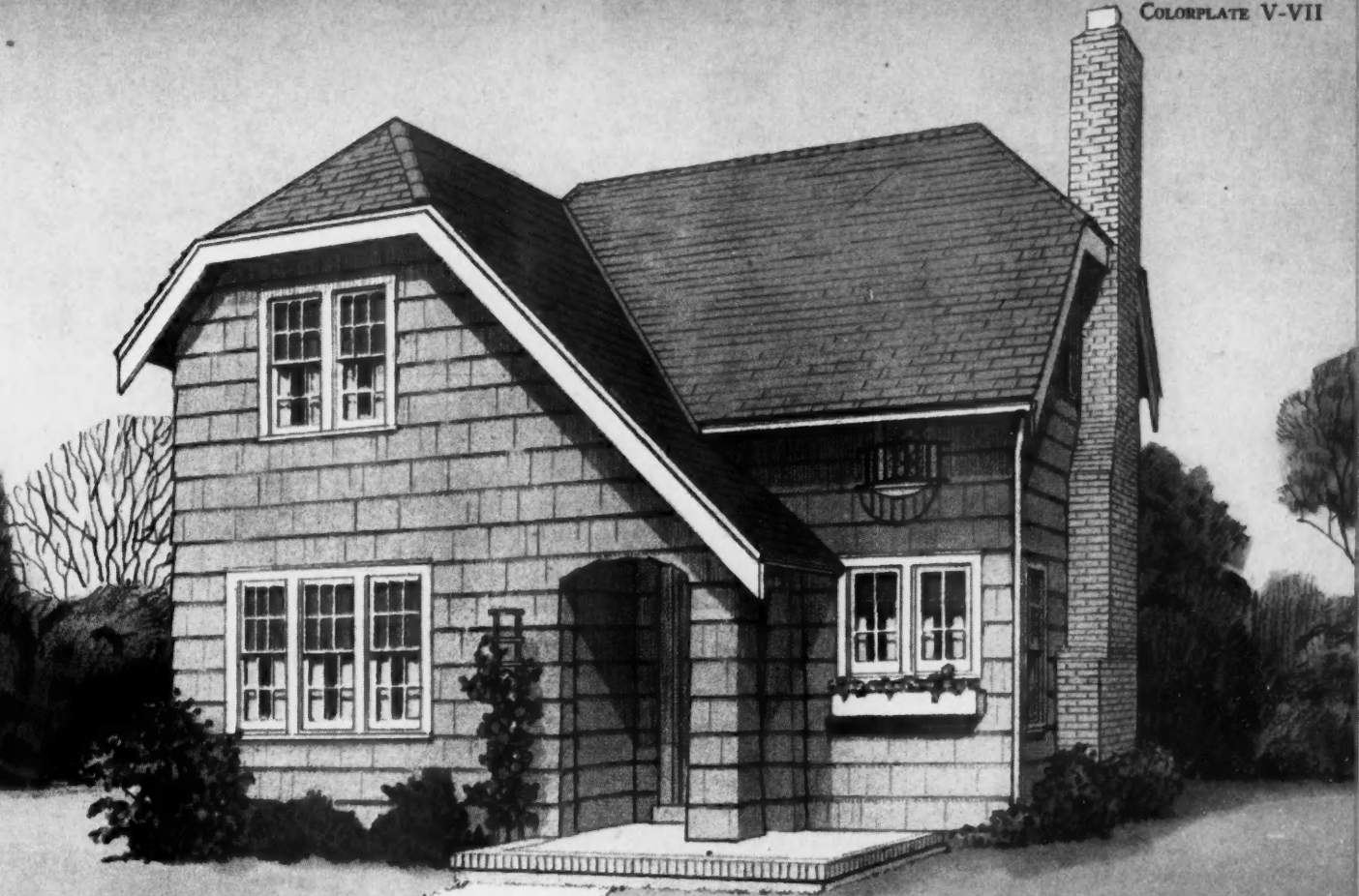


## The VALENTINE

AN artistic English cottage of six rooms. Color sketch of bedroom looking into the dressing room.

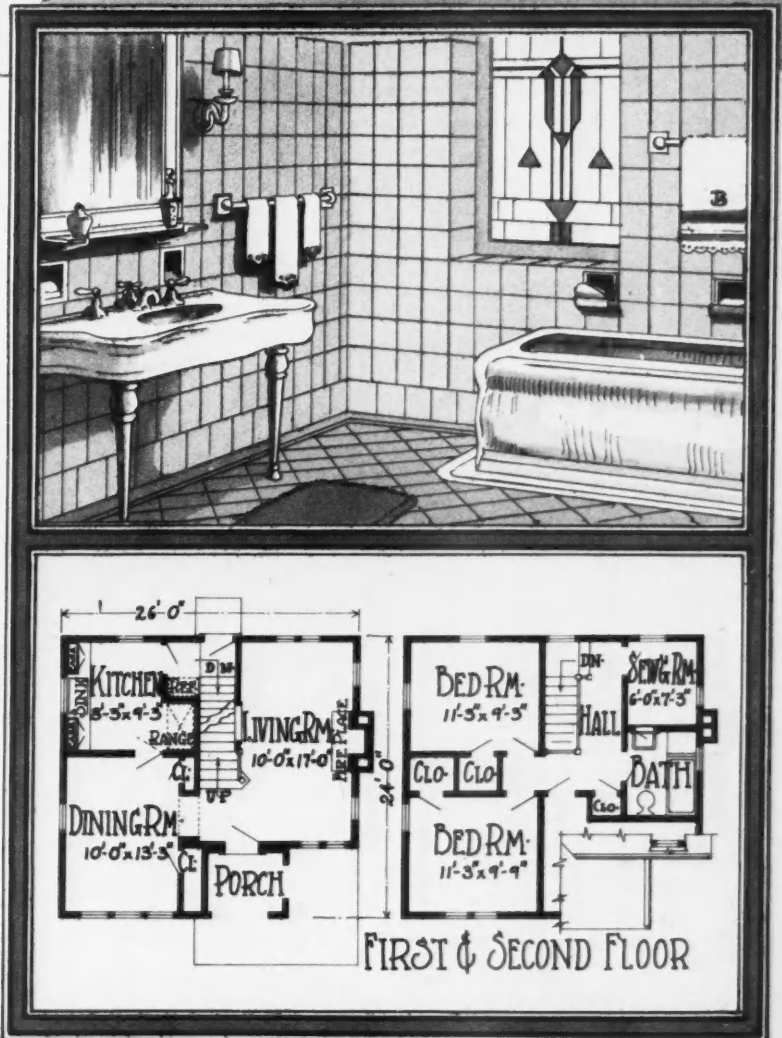
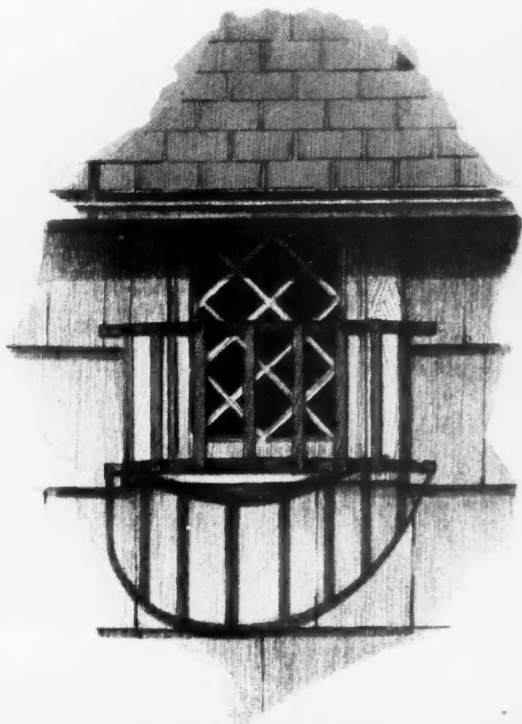
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sh  
tile

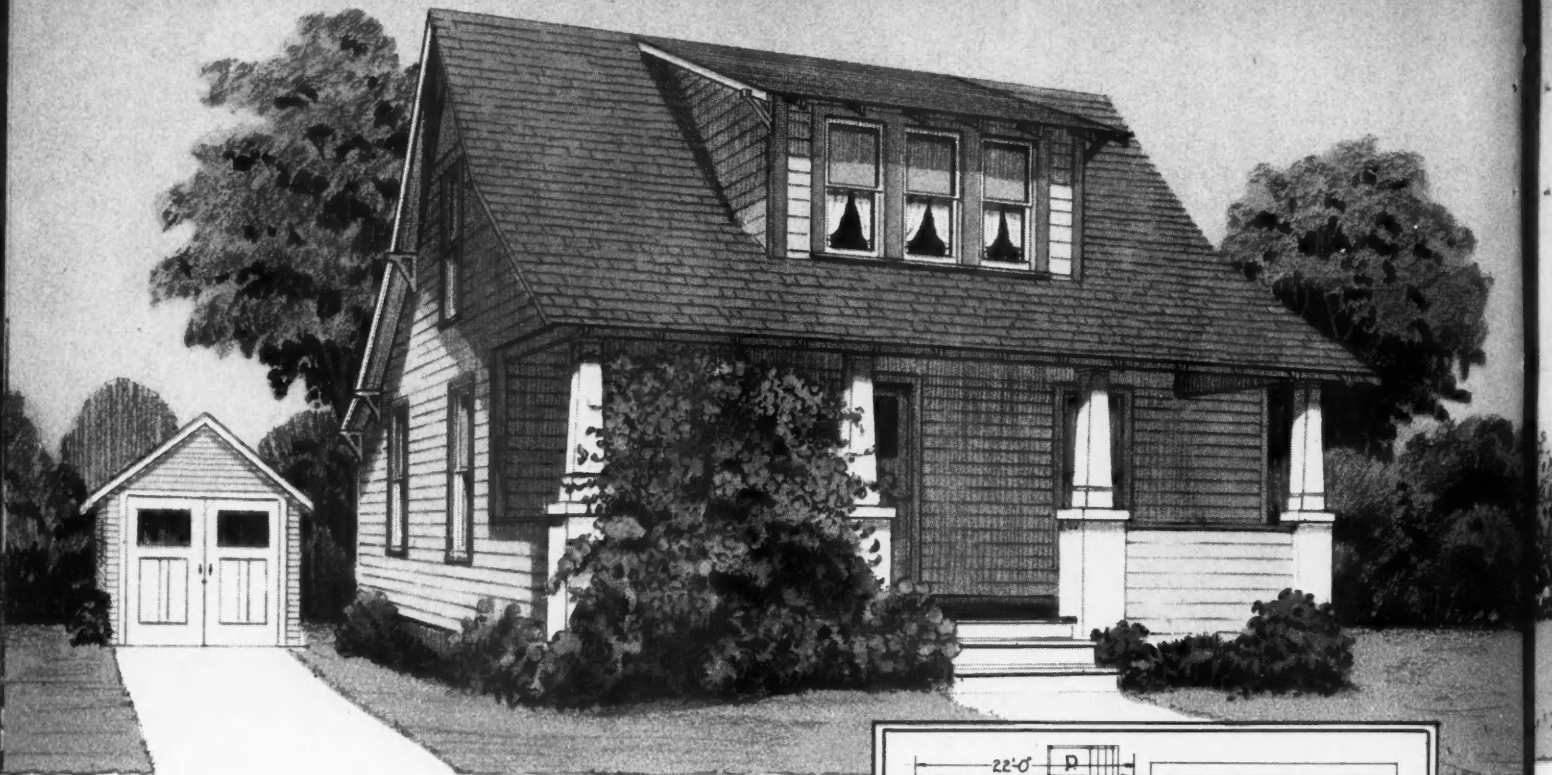




## The VALLEY VIEW

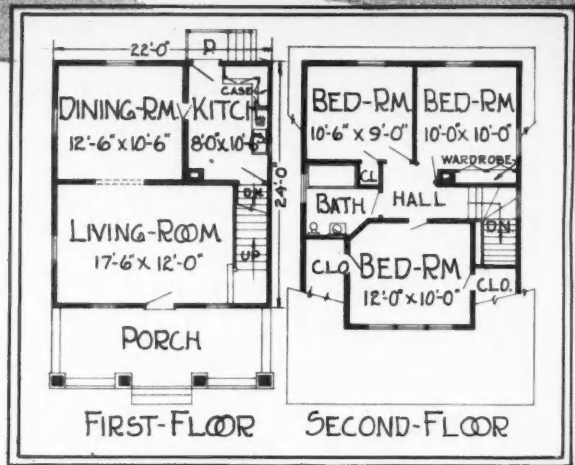
AN interesting shingled home of six rooms and bath. Outside dimensions 24x26 feet. Color sketch to right shows rich finish for bathroom with built-in fixtures and tiled walls.





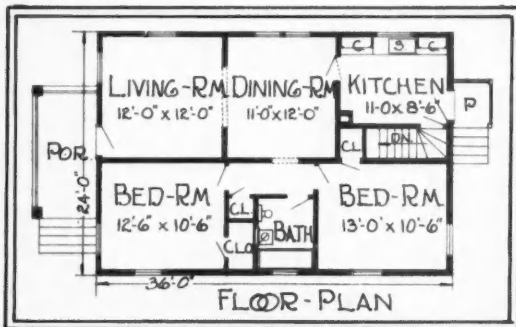
## The VIOLA

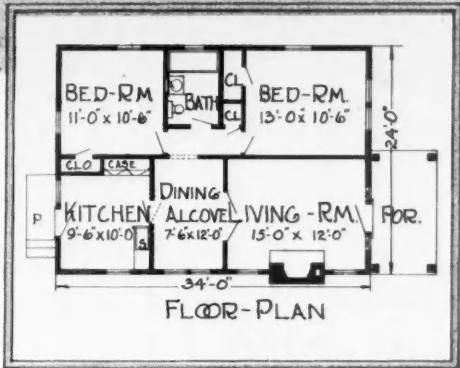
Above and to the right this five-room house is illustrated. Size 22x24 feet.



## The VESPER

Below and to the left is illustrated a practical five-room bungalow 24x36 feet.



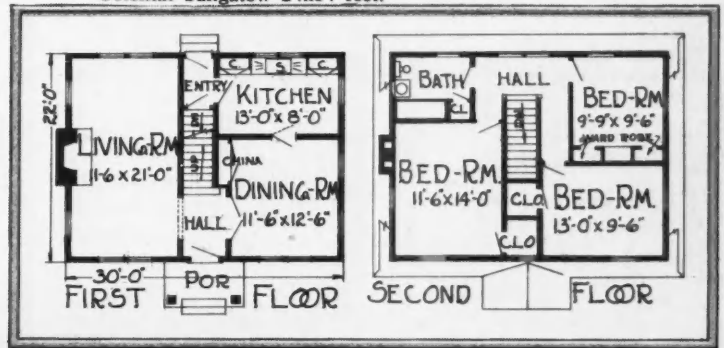


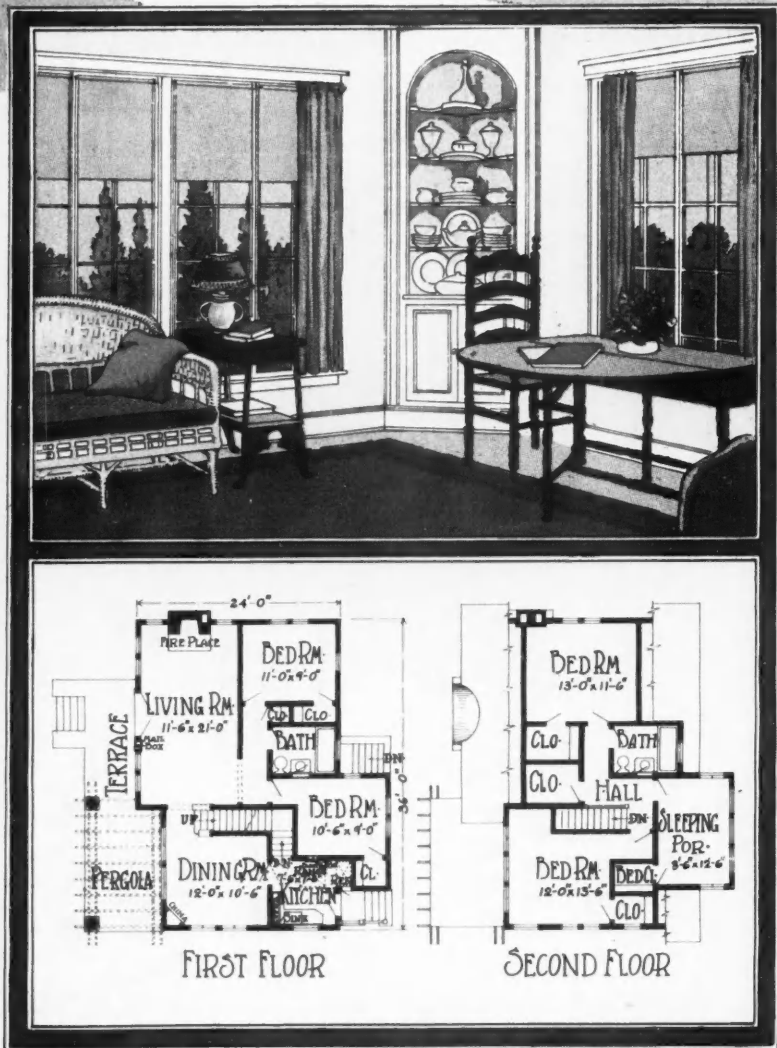
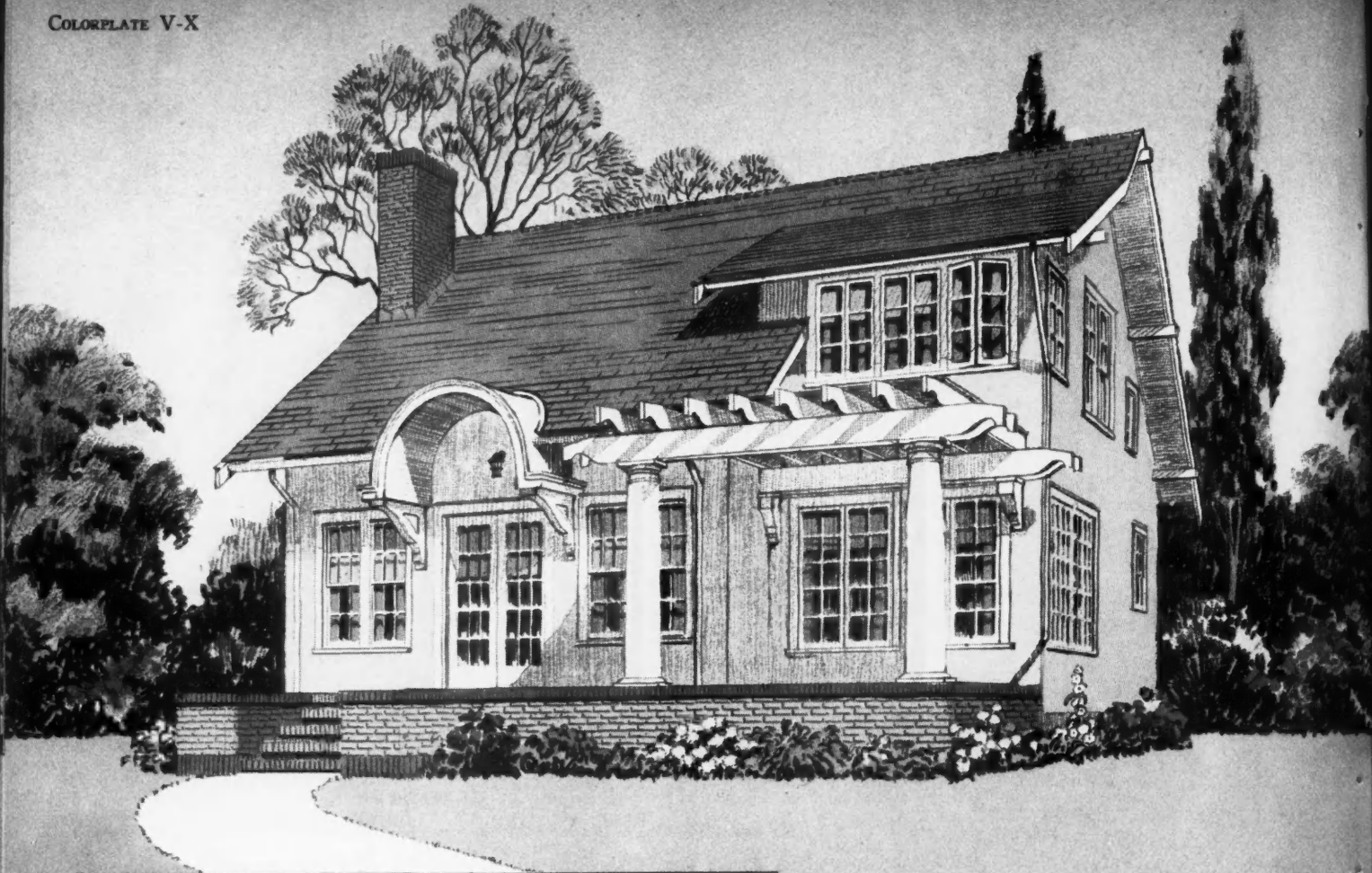
## The VASSAR

Above and to the left is illustrated this five-room Colonial bungalow 24x34 feet.

### The VALUE

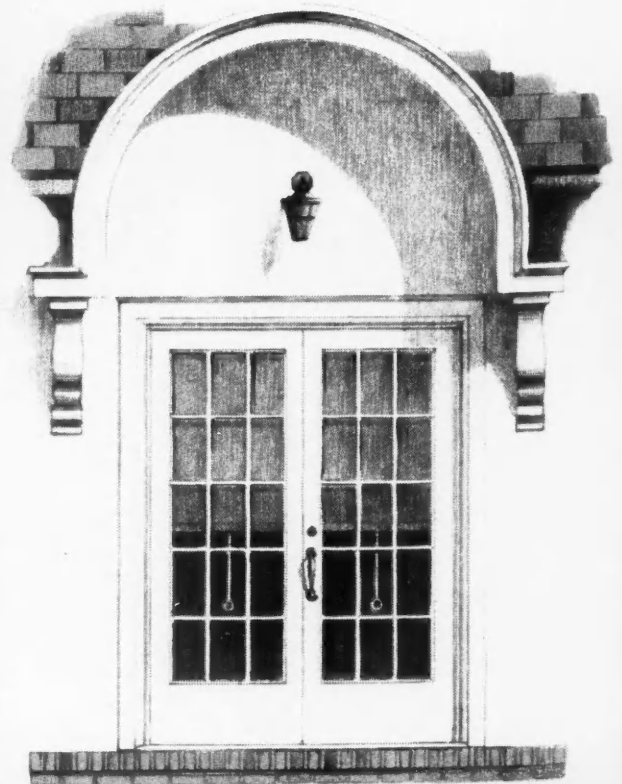
Below and to the right we show a six-room Dutch Colonial home 22x30 feet.



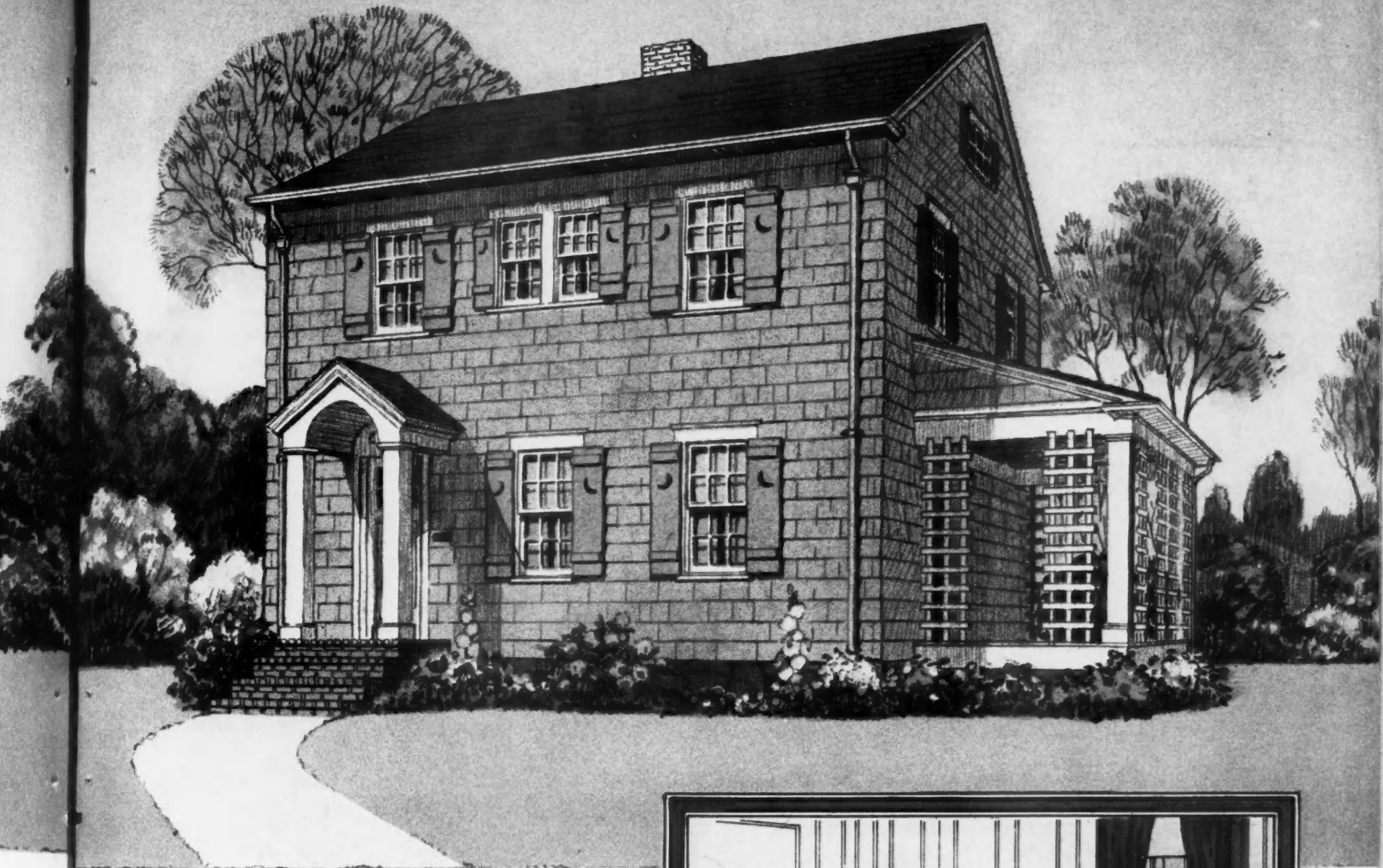


## The VINELAND

A VERY attractive seven-room home of stucco over tile. Color sketch to left shows the cheerful dining room with corner cupboard.

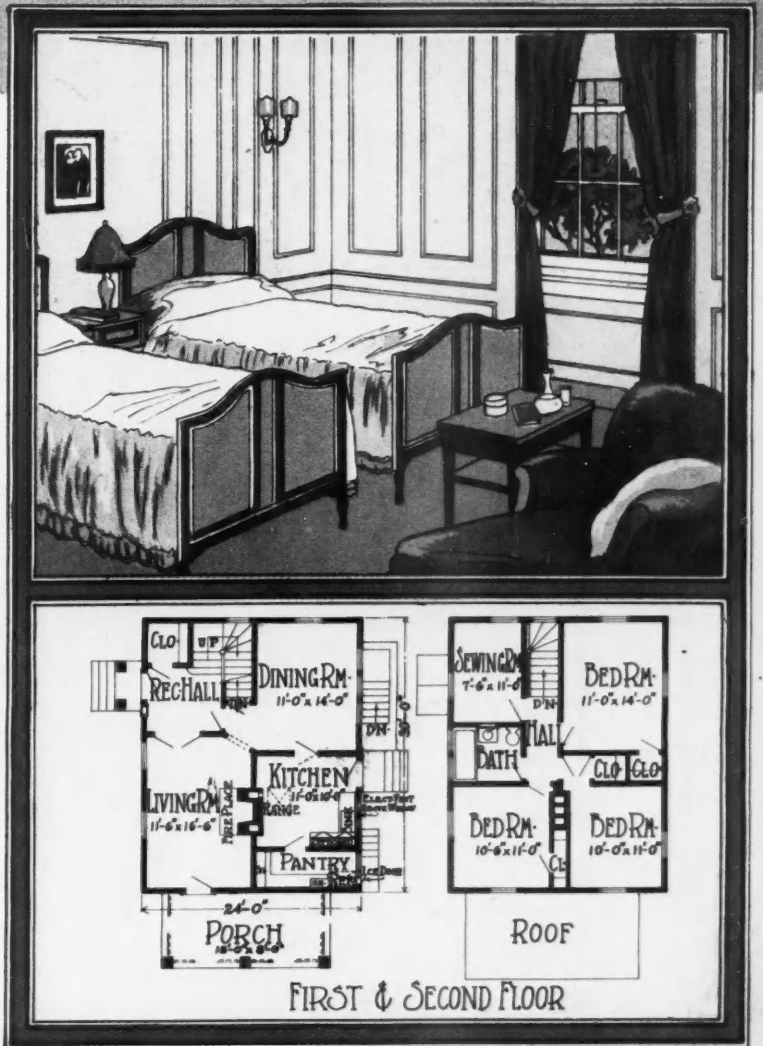






## The VAN BUREN

A STRAIGHT gable Colonial design of approved details containing seven rooms. Color sketch of well furnished bedroom.



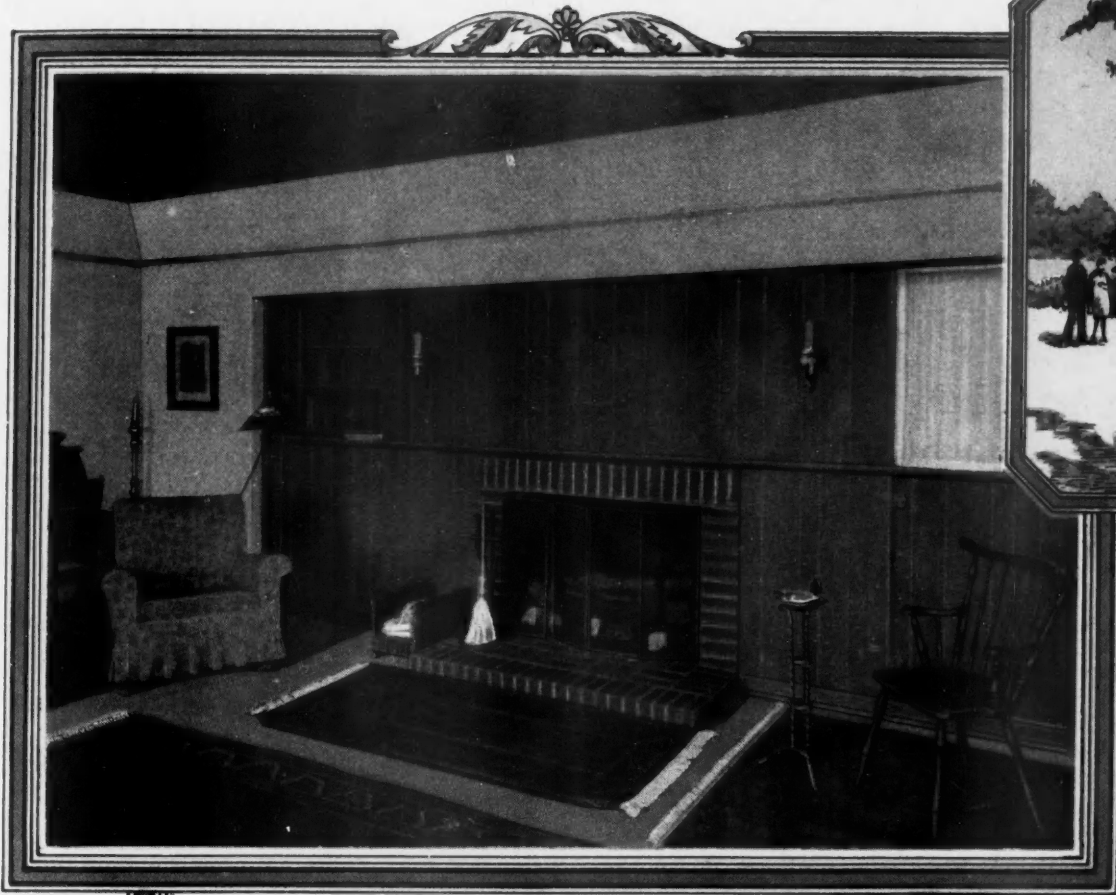
tile.  
room



Curved Ceiling  
Living Room in a  
Los Angeles Home  
Beautiful Demon-  
stration.



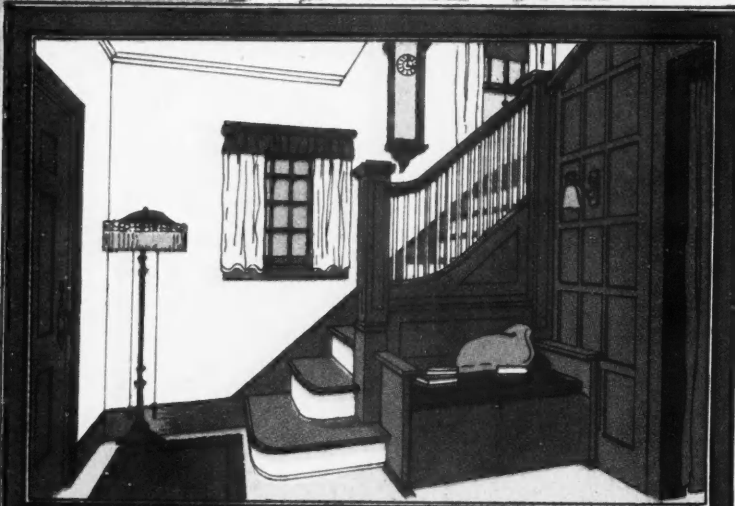
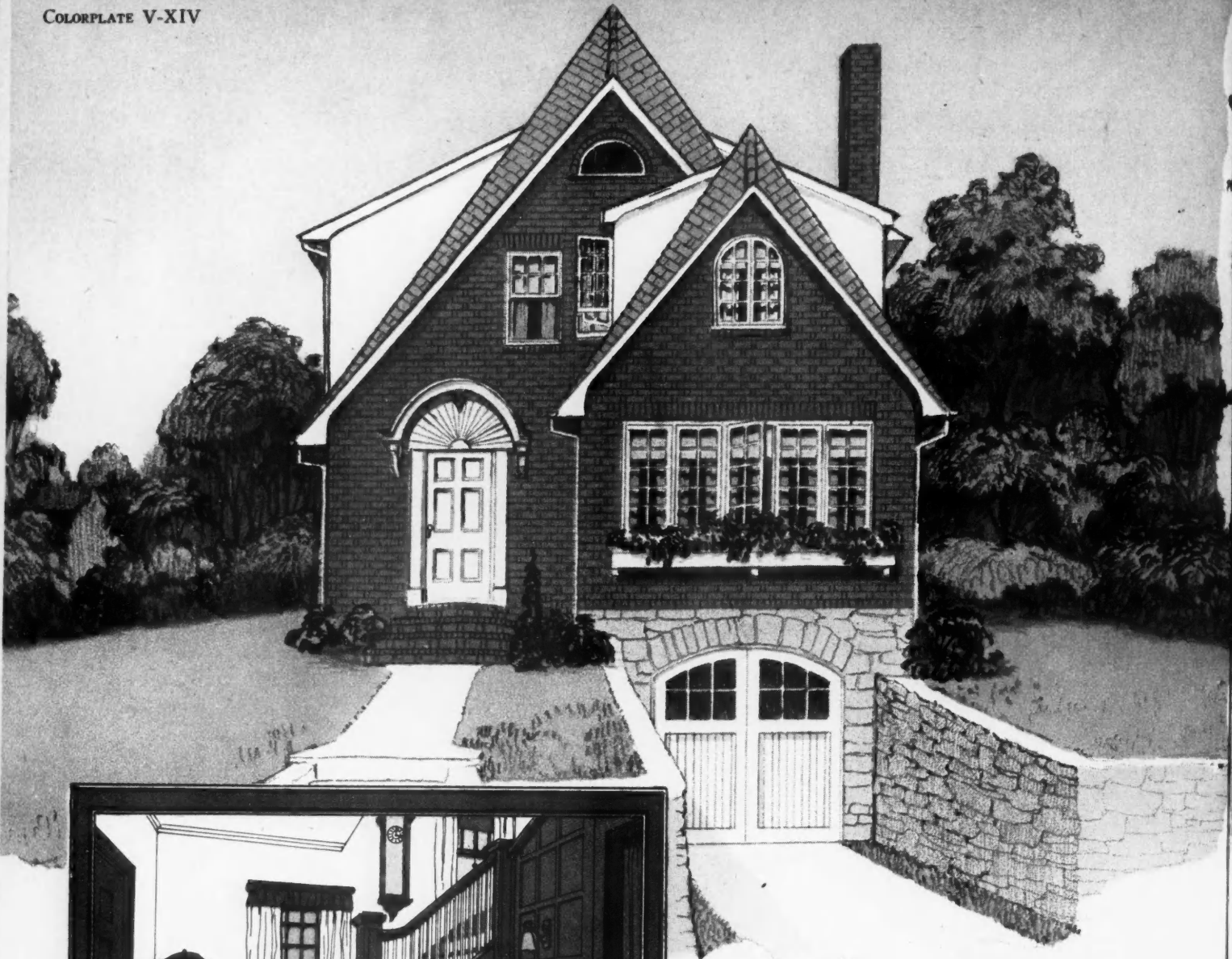
Library With Open Book Shelves in  
a Beverly Hills, California, Home.



Living-Room with Interesting Wood Paneling Around the Fireplace. Marshall P. Wilkinson, Architect.

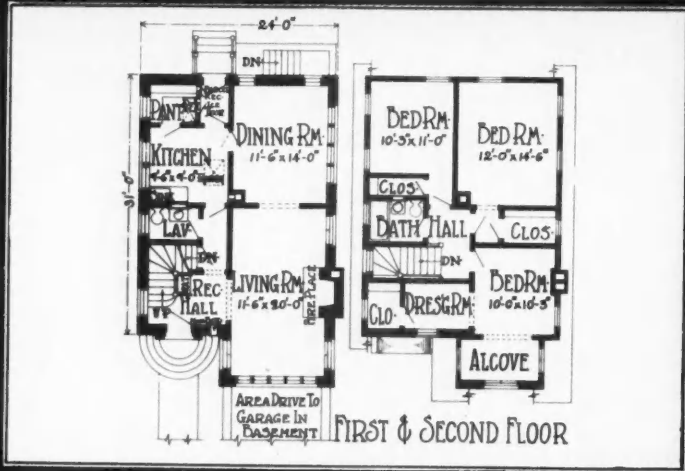


Beautiful Radiator Furniture Enamelled to Match the Other Furnishings is a Feature of this Bedroom.



## The VICTORIA

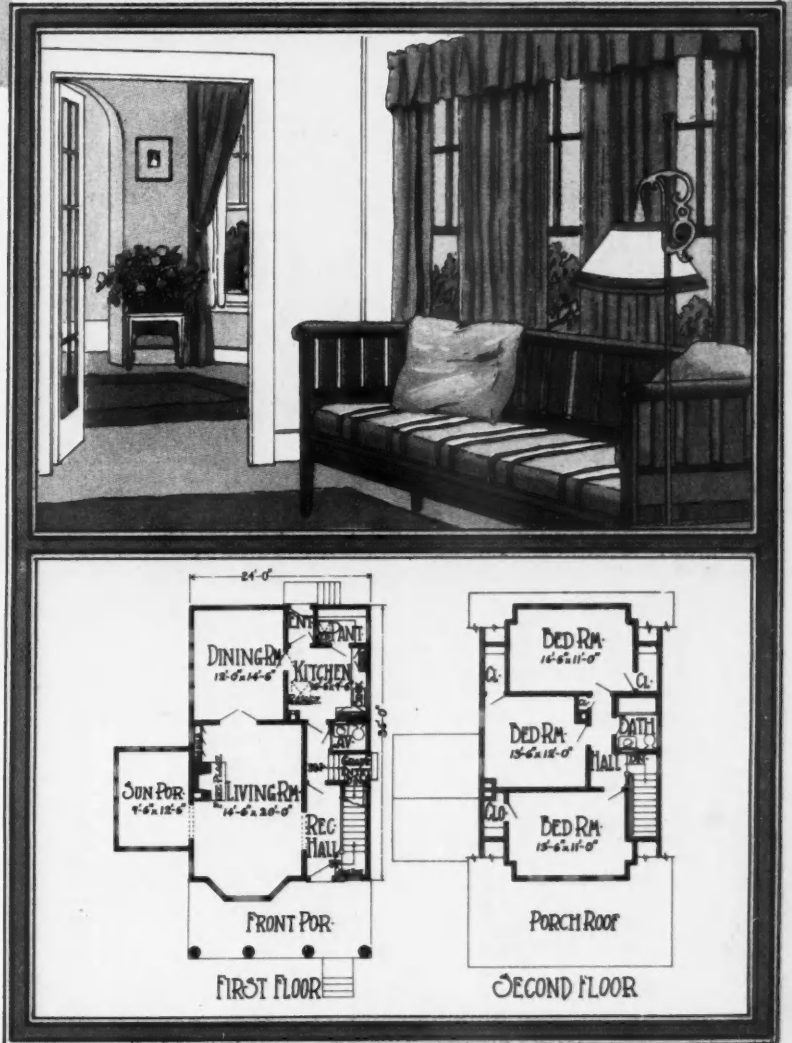
A NARROW lot brick home with attached garage. Color sketch shows details of interesting stair hall.





## The VISTA

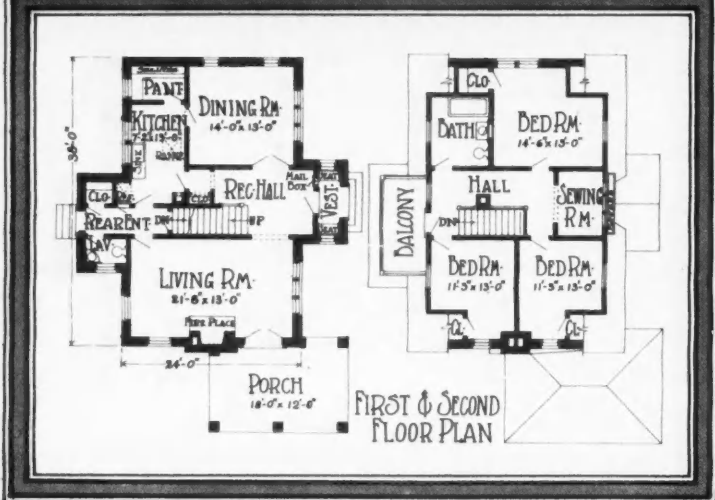
A PENNSYLVANIA Colonial bungalow with rolled cornice. Six rooms, bath and sun parlor are provided.

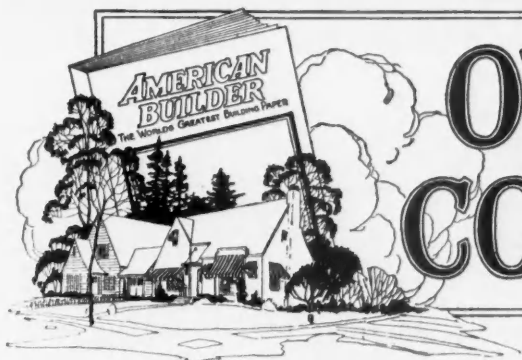




## The VANDYKE

A COLONIAL home in stone possessing real charm and distinction. The house proper is 24x38 feet and contains seven rooms and bath besides the big reception hall and the sewing room alcove off the upper hall. Color sketch to left suggests attractive furnishings for the big living room.





# OUR FRONT COVER HOME

*Old English in Style, Modern American in Arrangement and Equipment, a Home of Individuality and Quaint Charm*

FOR downright individualism and quaint charm one might go far before seeing another such successful home as that pictured in the photograph below and in colors on the front cover. It possesses so many fascinating features that an enumeration is difficult in limited space. Rough stone wall in the lower story, rugged stucco and timber above, sharp gabled roof with curving eaves, chimney of rough stone topped by conical chimney pots, casement windows with small panes and a multitude of other details blend to form the perfect whole.

The house seems like a bit of Old England transplanted to American soil and thriving in a beautiful setting of trees and gardening. It carries an air of rambling informality entirely devoid of any suggestion of lack of unity, an effect produced only by the art of the most skillful design. Every detail, even down to the irregular flagstone walk, has been carefully studied by the architect to accomplish a completely harmonious tone throughout.

Nor is the interior in the least disappointing after the promise of exterior individuality. Turning to the pages

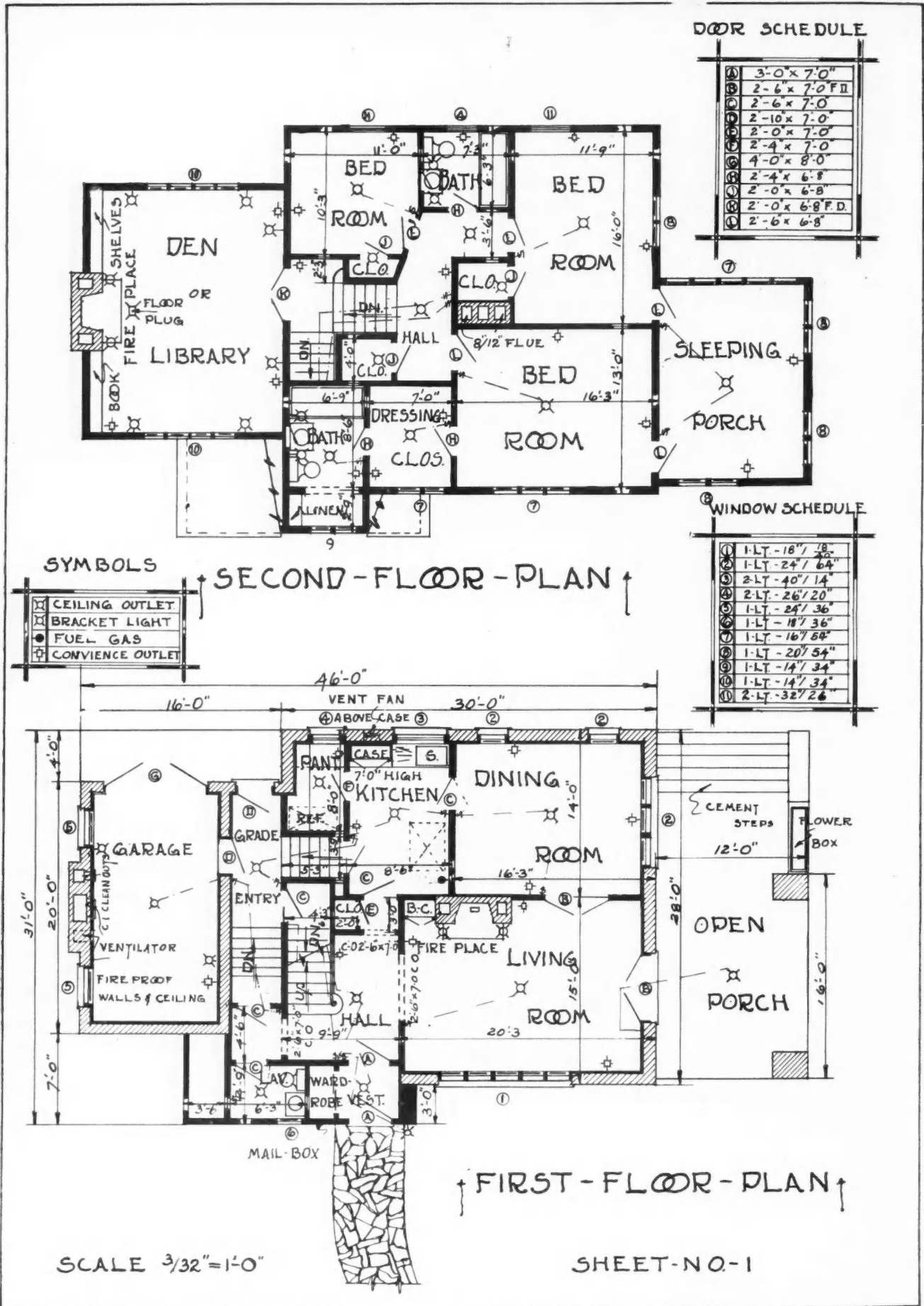
which follow this, plans, elevations and details may be seen which demonstrate an arrangement of space which carries on the fascinating novelty of the outward design and at the same time is practical, convenient and compact.

At the left there is a wing which provides space for an attached garage, half below grade and half above with a spacious library or den above it. This den is on a separate level between the levels of the first and second floors. Double doors open from it into a central hall from which short flights of stairs lead up to the second floor and down to the first floor.

On the first floor there is a large living room with a second fireplace and opening onto a grade level porch at one end. By a doorway one enters the living room from the reception hall where is found the stairways leading up to the library and second floor and down to the garage. The kitchen is to the rear of the reception hall while back of the living room is an ample dining room. Passing to the upper floor we find three large bedrooms, a sleeping porch and two bathrooms.

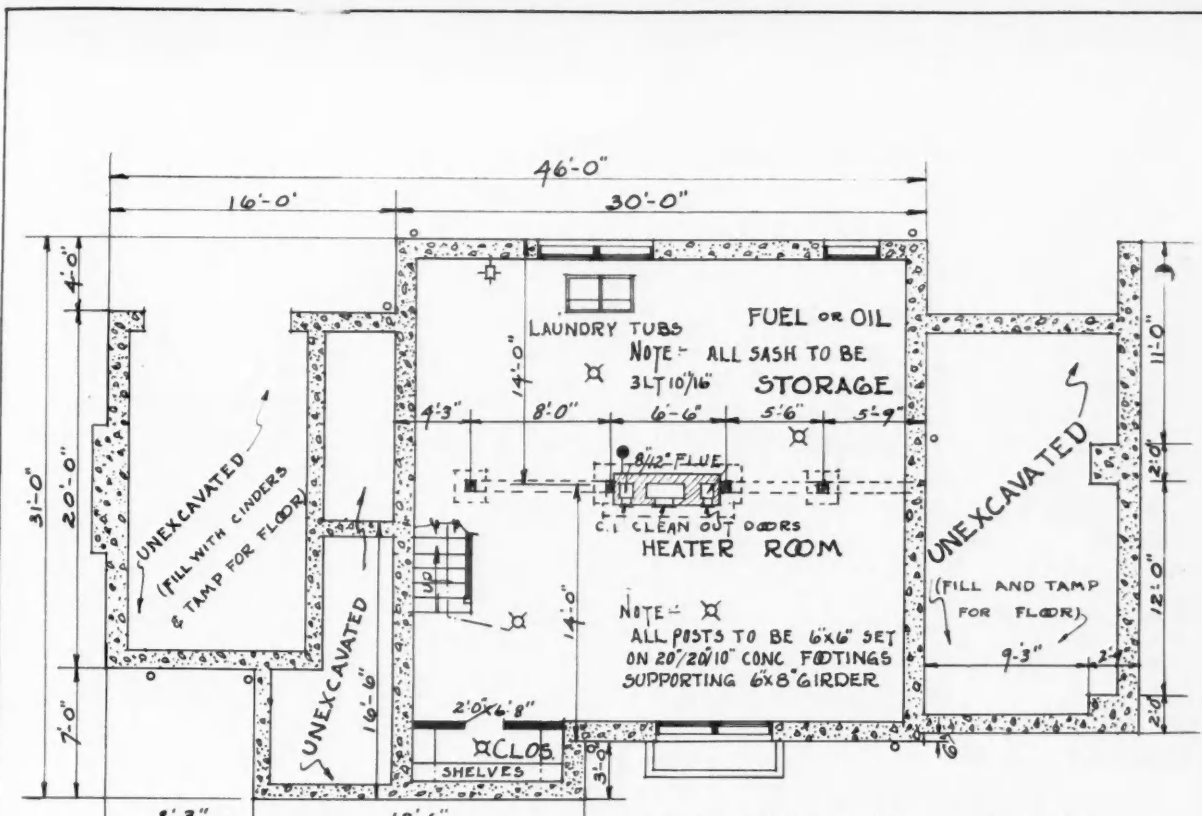


It Looks Like a Bit of Old England Transplanted to America, Individual, Quaint and Thoroughly Charming, Our Front Cover Home Is an Outstanding Example of the English Style as Adapted to Modern American Standards.



A Plan Which Presents, for Our Front Cover Home, an Interior Possessing an Arrangement Equally as Individual and Effective as the Exterior Design Pictured on the Preceding Page. The separate level arrangement of den and garage is particularly noteworthy.

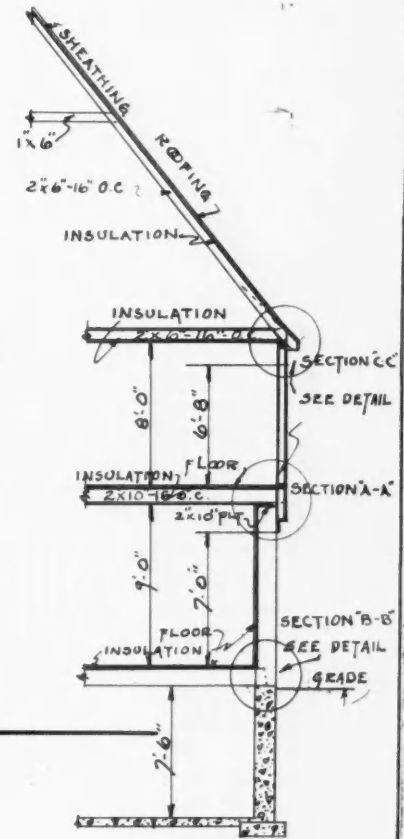




BASEMENT - PLAN



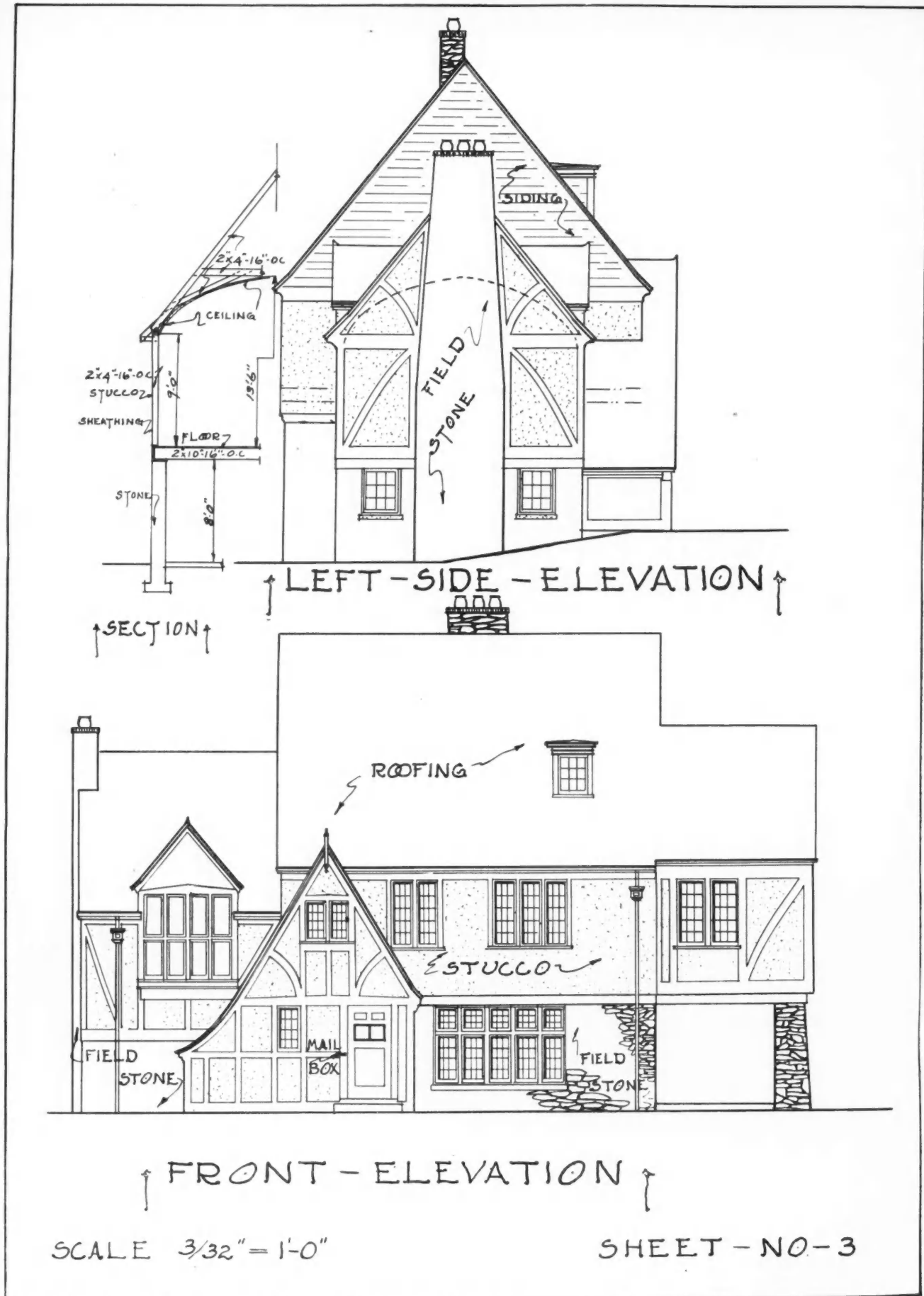
RIGHT-SIDE-ELEVATION



SECTION SHEET NO-2

SCALE 3/32"=1'-0"

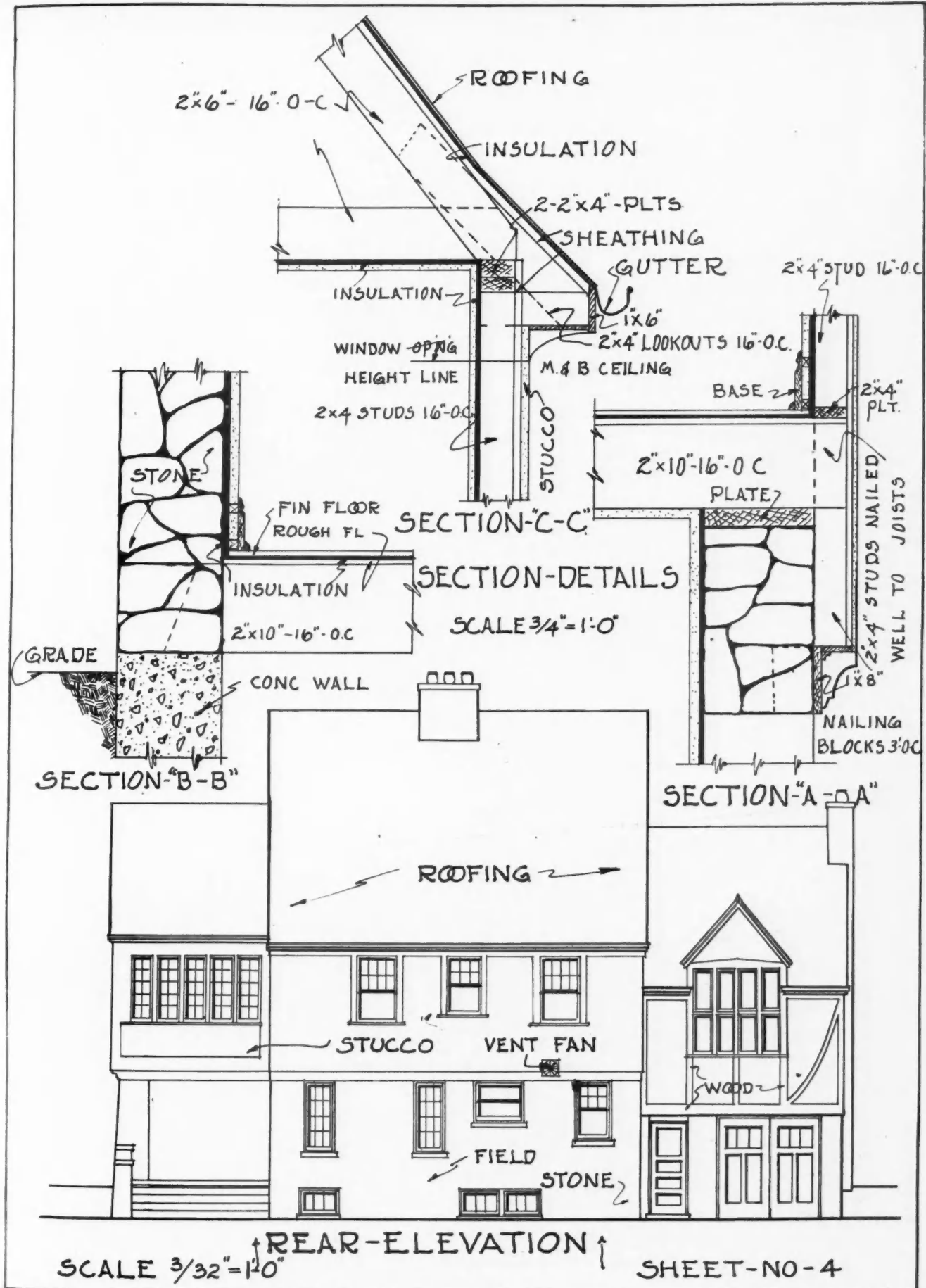
Here We See the Basement Plan with Only a Portion of the Building Space Excavated While Below the Right Elevation and Wall Section Give Us an Idea of the Construction Which Is More Completely Shown on the Next Two Pages.



SCALE 3/32" = 1'-0"

SHEET - NO - 3

The Use of Field Stone and the Construction of the Garage and the Library, with Its Arched Ceiling, as Well as the Placing of Windows and Detail of the Built-In Mail Box, Are Featured in the Left Side and Front Elevations of Our Front Cover Home.



A Rear Elevation Completes the Elevations Drawings While Above are Shown Sectional Details of Wall Construction and Roof and Eaves with Their Provision for Effective Insulation at Every Point.

# Advertising Agency Opens Unique Building

George Harrison Phelps, Inc., Have Beautiful New Structure of Italian Renaissance Architecture for Their Exclusive Use

**A**N office building and studio, planned and erected for the exclusive use of a national advertising organization, was formally opened in Detroit, Saturday, May 15.

The structure, located at the northwest corner of East Jefferson and Joseph Campau avenues, is the new home of George Harrison Phelps, Inc., the organization that produces advertising for such well known products as Dodge Brothers motor cars, Graham Brothers trucks, Master Woodworker, Berkey & Gay furniture, Iodent tooth paste, Ajax, Mohawk and Racine tires, The Humphrey Radiantfire, Whitehead refrigeration and others.

In planning this new building it was desired to develop a structure suitable in every respect for the needs of a national departmentalized advertising organization of 106 people and, in addition, produce a building, distinctive, interesting and beautiful—a design that would compel attention, cause admiration and serve in a dignified way as the home of the organization.

That was the problem presented to the well-known Detroit, architects, Smith, Hinchman & Grylls.

The usual solution would have been a three-story box-like structure, punched full of holes for the various offices,

topped with, or without the usual cornice, etc., and the result would have been the ordinary building which may be seen on any business street.

With an owner desirous of avoiding such a structure and more than willing to assist in developing the architect's suggestions, the result shown in accompanying photographs was attained.

The building is set back from the Jefferson Avenue street line about 30 feet, on a brick walled terrace. This allows space for planting and removes the offices from the noises of Jefferson Avenue. Rising between the trees is a facade of brick and stone, not a flat box-like face, but one irregular in outline, that expresses the plan within. The architectural character of the design is a modified form of that brick architecture found in northern Italy, from the time of the Middle Ages and the Early Renaissance. A well marked door and terrace of stone indicates the public entrance. To the left is a semi-circular bay where the stair tower shows itself. To the right extending up through the second and third stories is a double arched opening with a column of Breche violet marble forming a balcony and great window for Mr. Phelps' studio. These three features on the exterior are set off by the small office windows which have



The Italian Renaissance Building, Planned by Smith, Hinchman & Grylls, Detroit Architects, as the New Business Home of George Harrison Phelps, Inc., Is Distinctive and Beautiful, a Wide Departure from the Type of Building Ordinarily Erected for Purely Business Purposes.



The Private Studio Occupied by Mr. Phelps Is Two Stories High with a Barrel Vaulted Ceiling. It is decorated in full colors, includes an old Italian fireplace of stone and is furnished with splendid old furniture and wall fabrics in keeping with the style of the room itself.

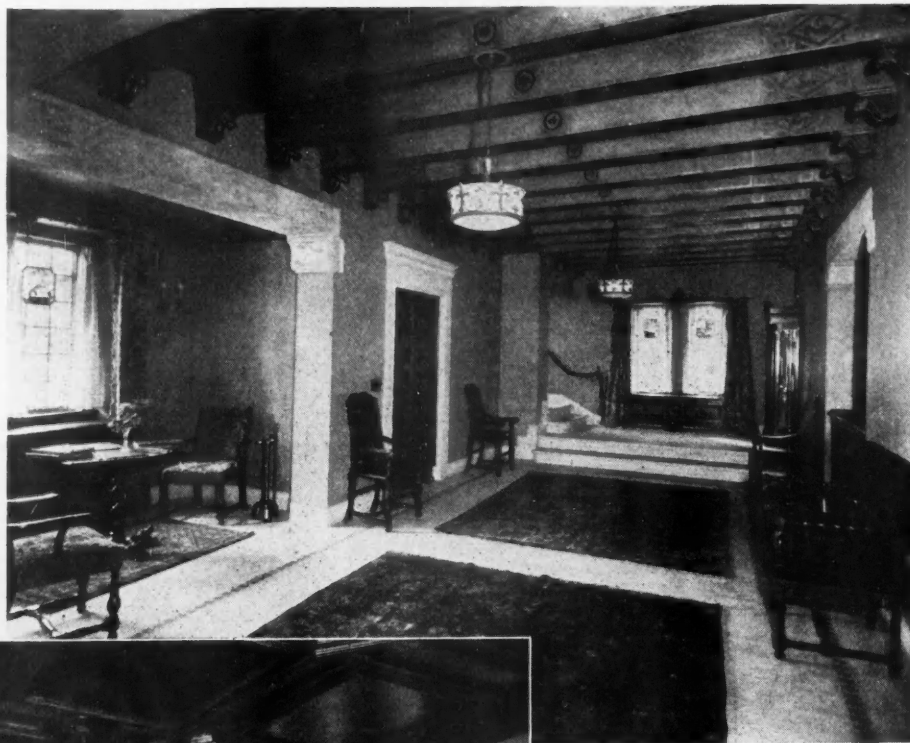
been grouped to avoid the monotony of regular spacing. On the Joseph Campau Avenue side similar features of interest are apparent.

The walls are of brick, varied in color, soft in texture and with the brick laid in pairs to produce the effect of a long

Roman brick, with mortar joints 1 inch thick. The stone trim is likewise varied in color and texture to harmonize. The roof is of tile, in shingle form, hand made with a variety of color and exposure. The windows are of metal casements with leaded glass. The general structural work

is fireproof with reinforced concrete frame and floors. Mechanical equipment and facilities are of the best and include oil burning steam heating plant, private telephone system, etc.

On entering the building through the vestibule one steps into a public reception room, finished with Travertine marble floors, antique plaster walls, and a beamed ceiling treated with polychrome stencils. This room provides for an information, telephone and telegraph desk in an alcove and waiting space for visitors. It gives access to the business offices on the first floor and to a fine stairway leading to the studio and second story offices. This stair hall is similar to the reception room in mate-



A Public Reception Room, Just Inside the Main Entrance of the George Harrison Phelps Building, Provides Space for Waiting Visitors and, in the Alcove, an Information, Telephone and Telegraph Desk.



This Conference Room Opens Off of Mr. Phelps' Studio and Connecting with It Is a Complete Kitchenette, One of the Numerous Special Features of This Unique Building.

rials, except for the ceiling which is of coffered wood panels.

At the head of the stair is a library and office for Mr. Phelps' secretary, as an ante-room to the studio, the room, which by nature of its use, location and size, gives to the exterior a dominating feature. It is two stories high, having a barrel vaulted ceiling, with penetrations along the side and decorated in full color. The walls, almost unbroken by windows, because of the great window looking out through the balcony, offer splendid space for the fine old furniture and wall fabrics installed by Mr. Phelps. At the end opposite the great window is an old Italian fireplace of stone, its design in keeping with the style of the room.

In addition to the special rooms just described, the first and second stories contain a dozen private offices for the various executives, with a mailing room and barber shop on the first floor and library and conference room with kitchenette on the second floor. The third floor provides

for the bookkeeping and clerical forces, vaults, the auditor, dictaphone and statistical departments.

The basement has, besides the usual heating plant and store rooms, a five-room apartment for the caretaker; and, most unusual, a regulation size squash court with dressing, locker, shower and rubbing rooms. In connection with these athletic facilities is an open-air volley ball court.

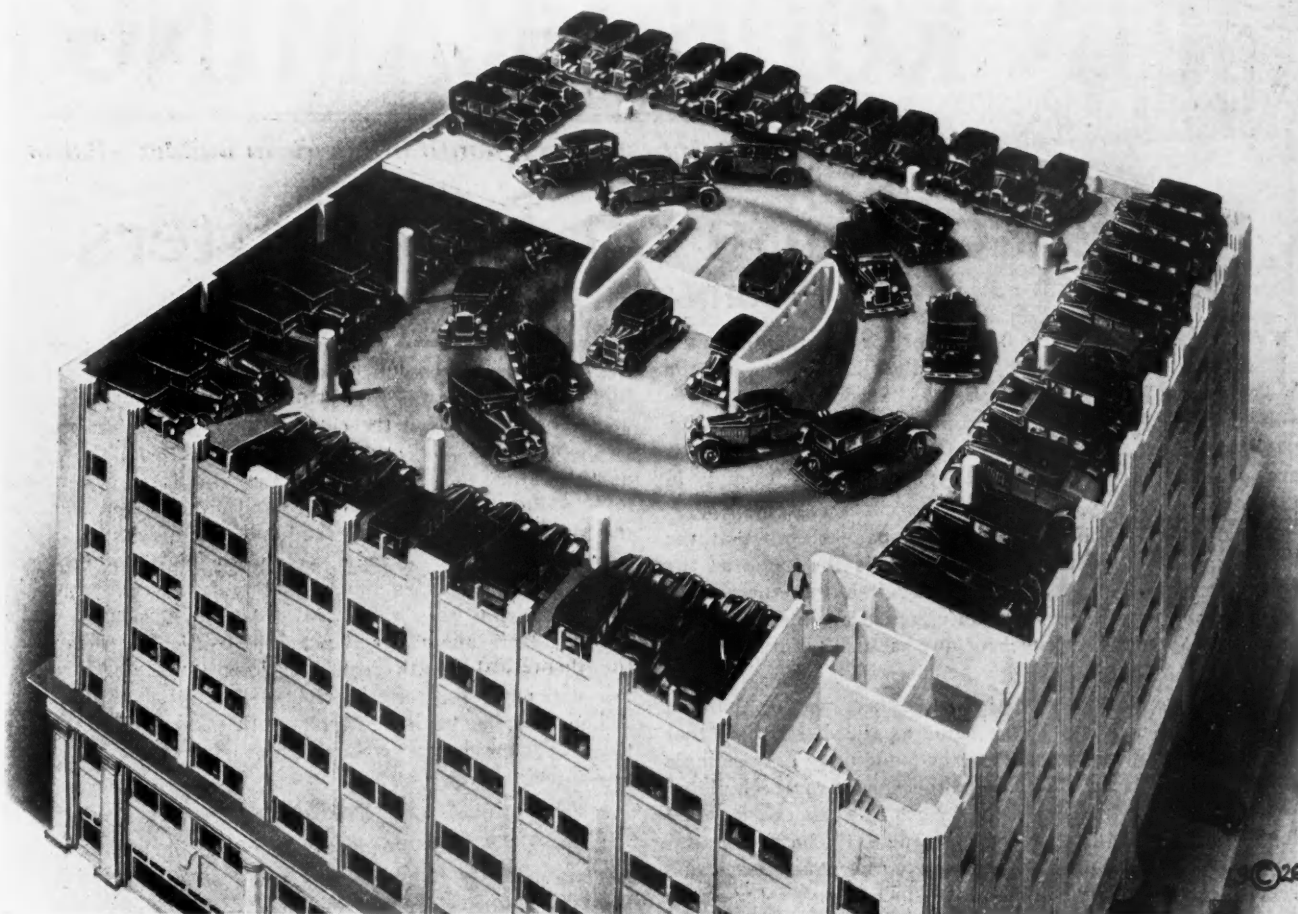


### Farmers Interested in Forestry

“OF special interest to the cause of forestry is the increased attention that has been

developing in recent years on the part of the farmers,” says Albert R. Israel, of the Southern Pine Association. “Nearly half of the average farm in the southern states is wooded land and the farmers own about half of all the forest lands in the South. Southern farmers now are receiving about \$220,000,000 a year from their forest products and they are finding that their value is increasing rapidly. One-fourth to one-third of the annual farm income often is derived from the woodlands. In some southern states a new industry has developed. Owners of motor trucks are driving along the highways in the wooded sections and buying merchantable logs, in small lots, from the farmers, paying \$4 to \$5 each for the logs. They then convey the logs to the mills and sell them to the manufacturers at a good profit. This increased interest of the farmer in forestry is expected to reach a higher development in the future and will mean much to the cause of reforestation.”

# New Spiral Floor Garage Design Said to Solve Parking Problem



Five Garages of This Type, Each Ten Stories High, Would Accommodate as Many Cars as Could Be Parked Along the Streets of Chicago's Loop.

**A**N entirely new form of garage design has been patented in which a garage building of considerable height has one continuous spiral floor from the ground to the top. There is a slope or pitch to the floor which is carried right into the corners.

This system of construction—called the Lancaster System, after one of its inventors—allows free and rapid movement of cars on a double driveway, under their own power going up and coasting down. In fact, it is claimed that a ten-story garage of this character will house over 500 cars without crowding and that the building can be completely emptied of cars in 17 minutes, as compared with five hours for an ordinary garage of the same capacity served by elevators.

The Lancaster design provides a driveway with only a 6 per cent grade, which is no steeper than some bridge approaches and allows a safe driving speed greater than is possible in street traffic of congested districts. The estimated speed is eight miles per hour with cars on the driveway spaced 47 feet apart. It is claimed that garages of this type will solve the parking problems of our metropolitan cities, as a Lancaster ten-story garage, 15 feet square, will have parking space equal to both sides of a street extending 16 blocks. In other words, five Lancaster garages of the size mentioned would accommodate all the cars which could be parked along the streets

of Chicago's Loop, with a continuous line of cars at each curb.

One great advantage of the Lancaster System is that owners can drive their own cars to the parking spaces and that there is free and unobstructed vision, due to the one continuous spiral floor feature. Were it not for this feature, there would be obstructed vision in climbing to each floor and turning on the level.

The turning radius required by the driveways is such as to allow a central parking space at each floor level, flanked by large ventilating shafts on two sides. The exhaust fumes from cars on the drive are drawn in to the ventilating shafts by the suction of exhaust fans, which clear the air effectively.

Several types of construction are possible with the Lancaster System, but reinforced concrete is best adapted for the purpose and will probably be recommended by the engineers in most cases. It is possible to combine stores and offices with such buildings and thus add considerably to the revenue obtainable from the building and utilize valuable street frontage to the best advantage.

The inventors of this garage system are Samuel C. Lancaster and C. O. Hjerstad, of Chicago. An engineering firm of very high standing—Condon and Post, who were consulting engineers on the 23rd Street Viaduct for the Chicago South Park Commission—are also consulting engineers for the Lancaster Spiral Floor System.



# INSTRUCTIONS IN ROOF FRAMING

*This Department Appears Every Month in American Builder—Editor*

## A Discussion on Jack Rafters

By JOHN T. NEUFELD

**J**ACK RAFTERS are nothing more or less than common rafters cut off. They lie in the same plane as the common rafter and therefore have the same slope and the same length per foot run. The illustration on this page shows the different kinds of jack rafters. Jack rafters are classified according to the position they occupy in relation to the hip and valley.

The first sketch on the illustrated page shows that the length per foot run of the jack rafter is the same as the length per foot run of the common rafter, therefore, when we have the length per foot run either in a table or figured out, we may find the length of any jack rafter if we know the run.

In the second sketch on the same sheet we see that the run of any jack rafter is the same as the distance of that jack rafter from the corner of the building. For example a jack rafter placed 2 feet from the corner of the building has a 2-foot run, therefore, the length of such rafter would be two times the length per foot run. If the jack rafter is placed 1 foot 4 inches from the corner and every succeeding jack rafter placed 1 foot 4 inches on centers, then the length of the first is  $1\frac{1}{3}$  times the length per foot run. The second jack rafter is always twice as long as the first provided the spacing is the same. The third jack rafter is three times as long as the first, etc.

### The Cuts for Jack Rafters

Jack rafters have a seat and plumb cut the same as any common rafter. At the end where the jack rafter frames to the hip or valley a side cut is required. The illustration at the left hand corner shows a large square applied to the rafter in such a manner that the edge of the blade falls along the common rafter and the edge of the tongue falls along the plate of the roof. This plate or the distance along the plate is called the tangent of the common rafter because it makes an angle of 90 degrees with the common rafter.

If we take the distance representing the length of the common rafter and the distance representing the tangent and use these numbers on the square, we may lay out the side cut as shown in the upper right hand corner sketch.

Another rule for the side cut is to take the length per foot run on one arm of the square and 12 inches on the other (the 12 inches represents one foot of run). The cripple jack has a side cut on both ends.

### Where to Measure the Rafter

The theoretical length of the rafter is to the center of the hip. However, if the

theoretical length is measured to the longest point of the jack rafter then no deduction has to be made for the hip, as this longest point is in line with the point where the center of the hip and the center of the jack rafter meet.

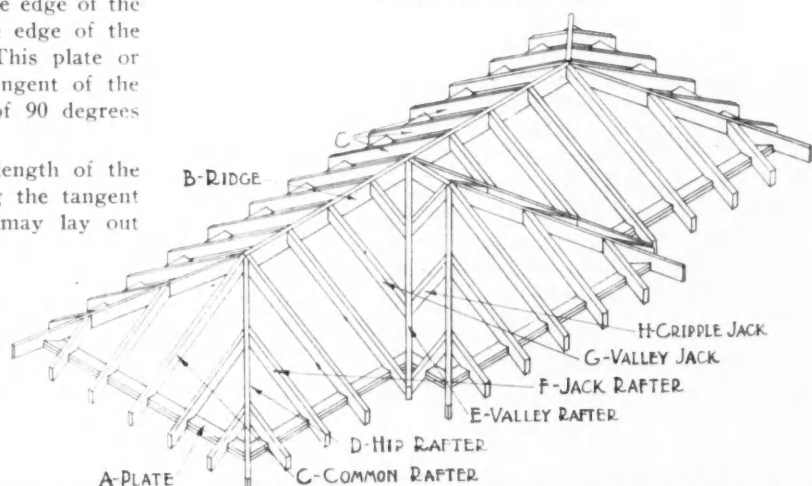
The length of the cripple jack rafter is from the center of the valley to the center of the hip as shown in the middle illustration on the right hand side. From this half the thickness of the valley and half the thickness of the hip measured at an angle as shown must be deducted or in other words as much as the distance X must be deducted from this rafter in order to get the correct length. Here again it will generally work out to measure the theoretical length from the longest points, however, this will make the rafter a trifle too long.

The last illustration shows another method of finding the side cut for the jack rafter; this method works for any pitch.

### Problems

1. A jack rafter is placed 1 foot 4 inches from the corner of the building and the succeeding jack rafters are placed 1 foot 4 inches on centers. If the length per foot run of the common rafter is 13.42 inches, what is the length of the first jack rafter?
2. What is the length of the third jack rafter counting from the corner of the building?
3. If the pitch of the roof is  $\frac{1}{4}$ , what numbers on the square will give the plumb and seat cut?
4. What numbers on the square will give the side cut for these jack rafters?
5. The length of the common rafter on a certain building

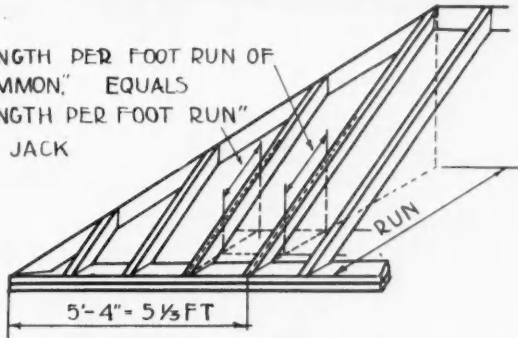
*(Continued to page 208)*



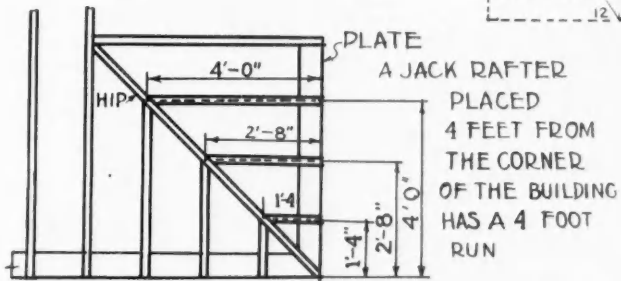
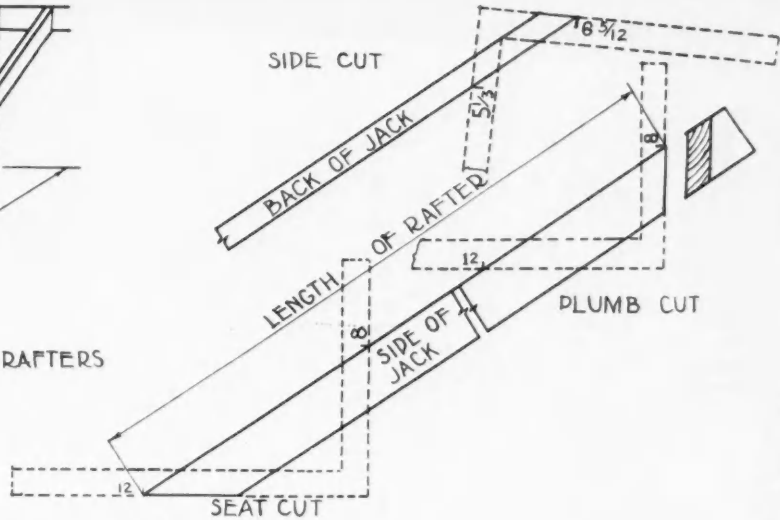
This Sketch Illustrates the Different Kinds of Jack Rafters Each One Being Named and Indicated in the Drawing.



"LENGTH PER FOOT RUN OF COMMON," EQUALS "LENGTH PER FOOT RUN" OF JACK

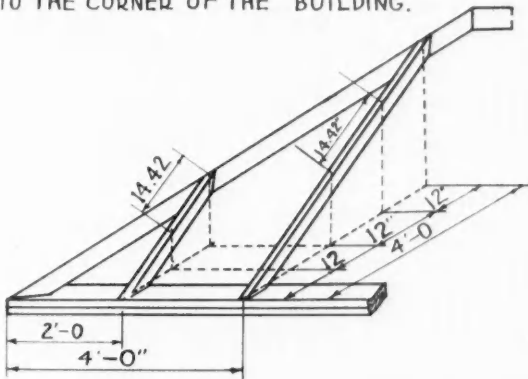


JACK RAFTERS ARE SIMILAR TO COMMON RAFTERS EXCEPT THAT THEY ARE CUT OFF. THEY LIE IN THE SAME PLANE.

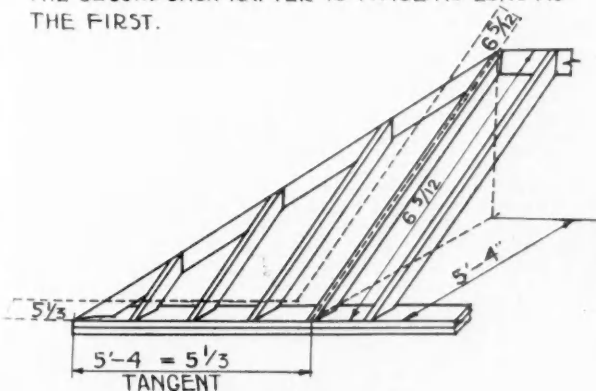


PLAN OF ROOF

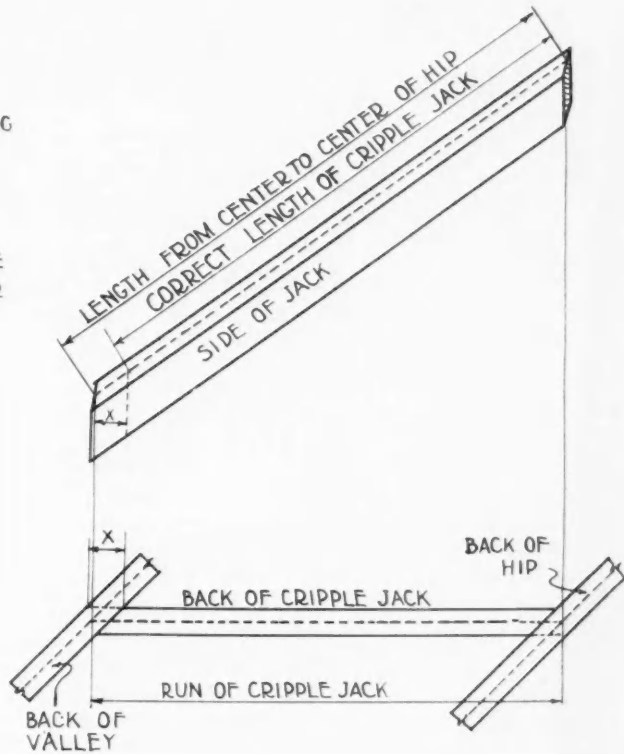
THE RUN OF ANY JACK RAFTER IS THE SAME AS THE DISTANCE FROM THE SEAT OF THE JACK RAFTER TO THE CORNER OF THE BUILDING.



A JACK RAFTER PLACED TWO FEET FROM THE CORNER OF THE BUILDING HAS A TWO FOOT RUN THE FIRST JACK RAFTER ABOVE IS  $2 \times 14.42 = 28.82'$  THE SECOND JACK RAFTER IS TWICE AS LONG AS THE FIRST.

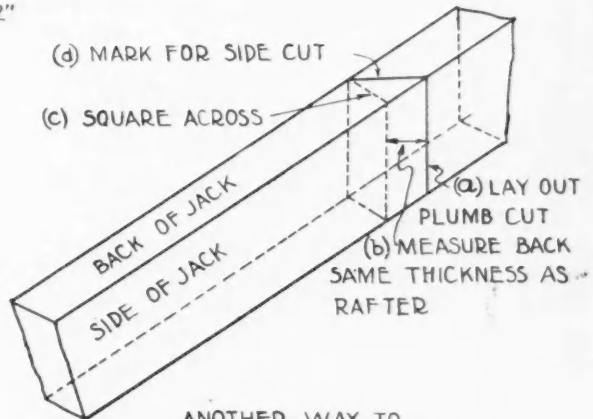


THE TANGENT EQUALS THE RUN, THEREFORE THE RUN TAKEN ON ONE ARM OF THE SQUARE AND THE LENGTH ON THE OTHER ARM GIVES THE SIDE CUT OF JACK.



(d) MARK FOR SIDE CUT

(c) SQUARE ACROSS



ANOTHER WAY TO OBTAIN SIDE CUT OF JACK

*Particular  
Painting*



# J.M. Eckert Co

*Distinctive Decorating*  
5524 BROADWAY

Chicago, April 22, 1926.

Mr. L.M. Fowler,  
Kisow Fowler Real Estate Agency,  
Badger Block,  
Racine, Wisconsin.

Dear Sir:

Your original request that we purchase, wherever possible, our materials for the New Racine Hotel, from S.C. Johnson & Son, has been strictly complied with.

The results have proven so exceptionally satisfactory, that we believe you will be pleased to note that your request has proven mutually beneficial.

We find that the wall paint which we are using is far superior in covering capacity and working properties, to any other paint which has been brought to our attention. Our foreman, Mr. Geones, who was a strong believer in \_\_\_\_\_ materials, is more than sold on the superiority of Johnson's Permacote.

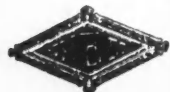
We find the varnish which they are furnishing us to be exceptionally good and believe we shall continue to use this piece of goods regularly in our new building work.

We have taken the time to bring this matter to your attention because we believe that you will be pleased to know the extreme satisfaction which we are experiencing in complying with your request to use Johnson Materials in connection with your Hotel.

Yours very truly,

J. M. ECKERT CO.,

JME:CH



TELEPHONE  
EDGEWATER 5486



The men who applied 895 gallons of Johnson Finishes on the Hotel Racine job.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



## “A Prophet in His Own Country—”

If ever a Man or Material is put to a real test it is in the Home Town. Fame may be world-wide, but you have to have “The Goods” to rank high with the neighbors.

Racine has just built a new hotel. J. M. Eckert, of Chicago, had the painting contract. The Racine Hotel Company specified that Johnson Finishes be used throughout.

Mr. Eckert’s men have been using another brand of material with entire satisfaction for some years. And you know how painters hate to change! Any new material starts with a big Handicap. That is why we print this unsolicited letter (it is not even addressed to us) with justifiable pride.

YOU can use Johnson Finishes---get better Results---and save Money. Service from 15 Factory Branches all over the country.

**Write for Wholesale Price List today.**

### JOHNSON’S INTERIOR FINISHES

VARNISHES  
ENAMELS  
UNDERCOATS  
WOOD DYES  
FLAT WALL FINISH  
WAXES  
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# Better Plastering

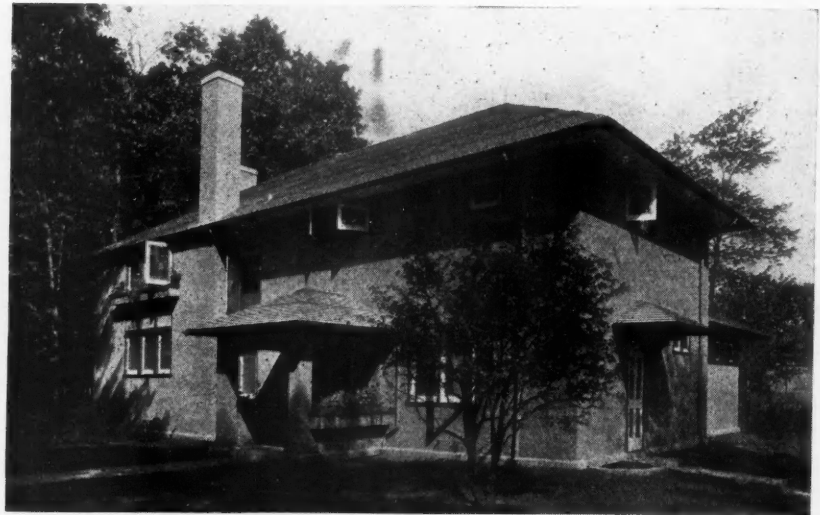
## Some Points on the Protection of Stucco Against Stain and Water Penetration

**W**E will now continue the discussion of the cardinal principles of good stucco construction started in the May issue. The last article covered the first and second points relative to using a substantial base course and carrying it up 9 to 12 inches above grade, the development of stucco design details so as to provide proper overhang and drip for all window sills and horizontal woodwork, and provisions for end stops on window sills to prevent erosion and tear stains. We now come to the third cardinal principle of good stucco: "The design should be chosen to permit of a generous overhang of eaves and cornices."

No better way can be found to illustrate this essential of good stucco construction than by reproducing photographs of buildings in which it has been used. Fig. 1 shows a handsome stucco house designed by a firm of Chicago architects in which the overhanging eave principle has been carried out, not only for the roof of the house but also for the roofs over the entry porch, side entrance and the one-story addition in the rear which might be that of an attached garage.

In Figs. 2 and 3 we have contrasting types of construction showing both proper and improper construction of eaves. This is clearly shown in the detail just over the bay window in Fig. 2 where it will be noticed that the eaves and gutter line have been extended so as to give considerable projection over the bay, although not quite as large projection as over the remainder of the building.

The builder who happened to put up this house shown in Fig. 3, has the eave line straight past the bay window so that at that point there was practically no projection; and the gutter, if it leaks, will permit water to run down the face of the stucco or possibly get behind it. Undoubtedly it cost more to build the eaves as in Fig. 2 than in Fig. 3, but the purchaser of the house in Fig. 3 will have consider-



**Fig. 1. Overhanging Eaves Are a Cardinal Point in Good Stucco Design. They protect the stucco, to a great extent, from direct erosion and prevent water from penetrating behind it.**

able repair bills in the event that the gutter leaks and causes disintegration of the stucco. This cannot happen in the case of the house shown in Fig. 2.

On Italian, Spanish and in certain Pacific Coast types of houses the character of the design sometimes does not permit of wide overhanging eaves, as shown in Fig. 4. Here at the left hand side of the picture it will be noted that the rake of the eaves does not permit of the overhang of the tile, and for places like this it is imperative that very careful precaution be taken to provide the flashing and waterproofing at the top of the stucco to prevent water from penetrating just under the roof tile.

A totally different type of house requiring the same precautions as to flashing under the rake of the eaves shown at the right in Fig. 4, a home also built in Los Angeles.

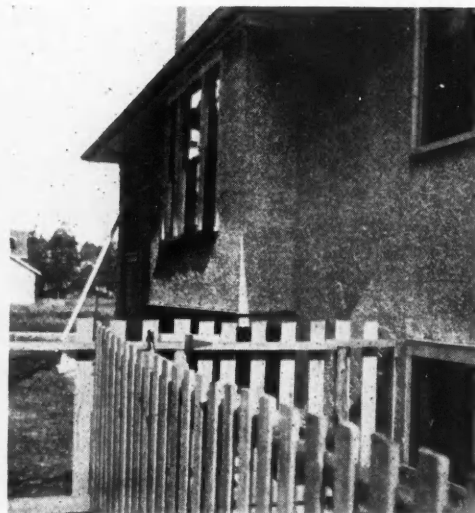
The carrying out of this point of good stucco design is especially applicable to construction around entrance stairways. As we know the small bungalow is almost certain to exhibit stucco cracks around the stairway, and the porch details shown in Fig. 5 have been worked out to indicate a satisfactory method of construction for this particular type of building.

Since the picture shown in Fig. 6 was taken several years ago cracks have appeared at the corner posts shown in the foreground. This was because the Byrkit sheathing used for the stucco base was not reinforced at the corners.

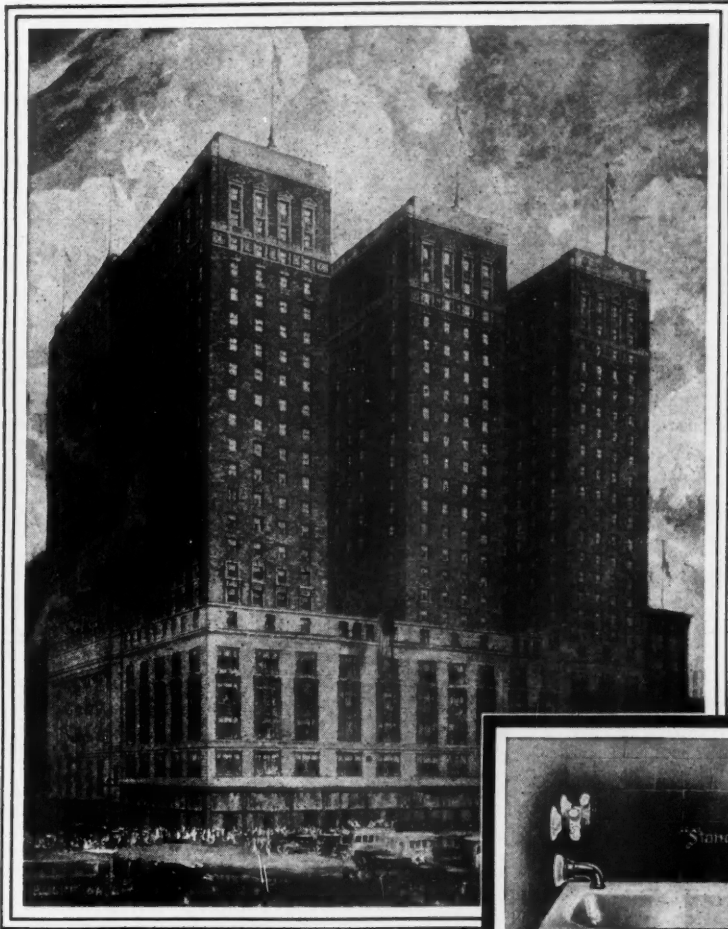
Proper construction details showing use of metal lath for corner reinforcement are shown in Fig. 7. This is adapted not only to wood lath, but also on all other bases not of metal lath. When the latter is used throughout it affords a satisfactory reinforce-



**Fig. 2. A Small Bungalow Showing Good Construction in the Offset of the Eaves at the Bay Window.**



**Fig. 3. A Small Bungalow with Faulty Construction in the Insufficient Projection of Eaves and Gutter at the Bay Window.**



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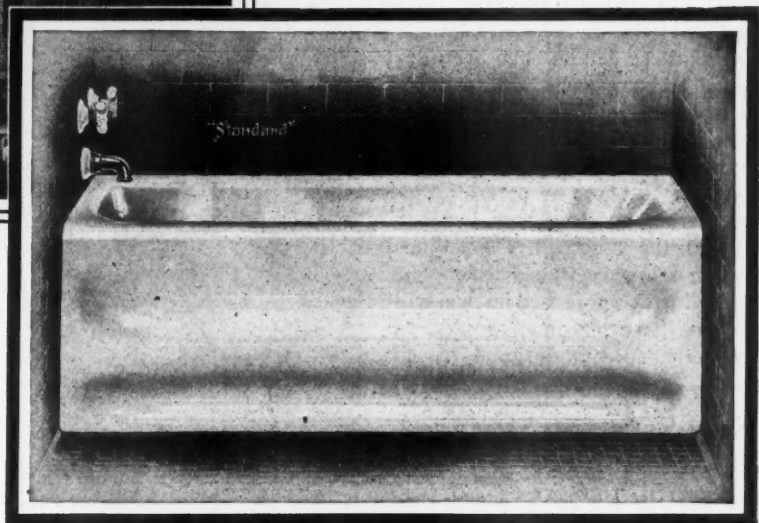
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nopoly of the adjoining bath. Not that he enjoys the hotel bathroom more—but the average home facilities are so woefully inadequate that regular habits are slighted.

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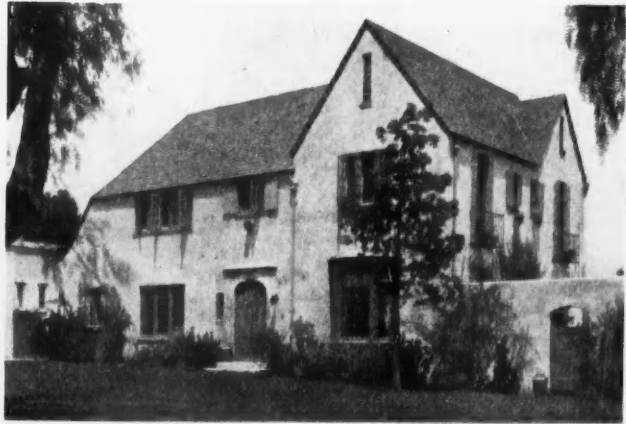


Fig. 4. In Certain Styles of Architecture, Notably the Spanish and Italian, the Character of the Design Does Not Permit Wide Overhanging Eaves. Two different styles of this type are shown here and in these houses it has been necessary to take particular pains with the flashing and waterproofing at the top of the stucco to prevent water from penetrating behind it.

ment for the stucco with which special provisions are not necessary at corners.

Some contractors have eliminated cracking of stucco around porches by the construction shown in Fig. 5. Note the use of wood both for the inclined and horizontal parts of the stair copings.

All of these details have been developed and are necessary to make it absolutely impossible for water to get behind the stucco. If this is accomplished successfully there is no reason to fear any deteriorating effects whatever from the weather provided the stucco has been applied on a proper stucco base.

In a forthcoming article we will develop these cardinal points to cover other points of good stucco design.



### New Save the Surface Manager

ARTHUR M. EAST, who has been business manager of the Save the Surface Campaign for the past five years, has resigned to become vice-president and director of Home Owners' Service Institute, Inc., an organization which is conducting a national model home

demonstration campaign throughout the country, on behalf of a group of nationally advertised building materials.

Mr. East has been succeeded as business manager of the

Save the Surface Campaign, by William R. McComb, whose experience particularly fits him for this position. He was formerly employed by the Phelps-Dodge Company as chemical engineer and later conducted a survey of industrial plants in New England. During the war he served as an officer in the Chemical Warfare Service and afterward resumed the work of making special surveys of business. He has more recently held the position of assistant manager of the Industrial Department of the Merchants' Association of New York, later taking over the management of the development department of the Brooklyn Chamber of Commerce.



“A GOOD plan must grow from the foundation up. Each part of the building must have its function and each subdivision of the plan must be studied with respect to the other parts. But the plan should govern the details of design.”

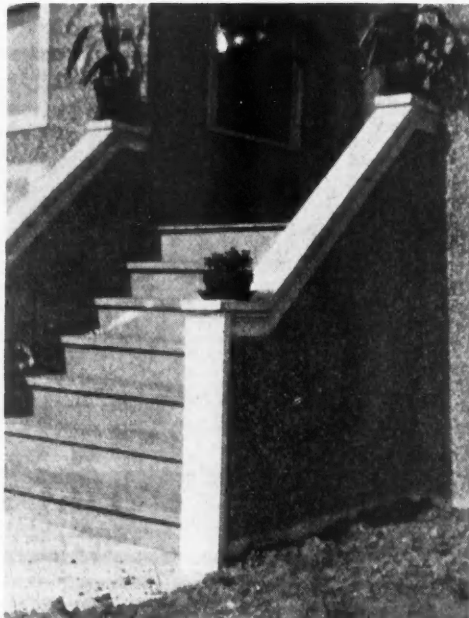


Fig. 5. Cracks Can Be Eliminated Around Porch Stairways, in Stucco Construction, by the Use of Wood as Shown in These Horizontal and Inclined Railings.

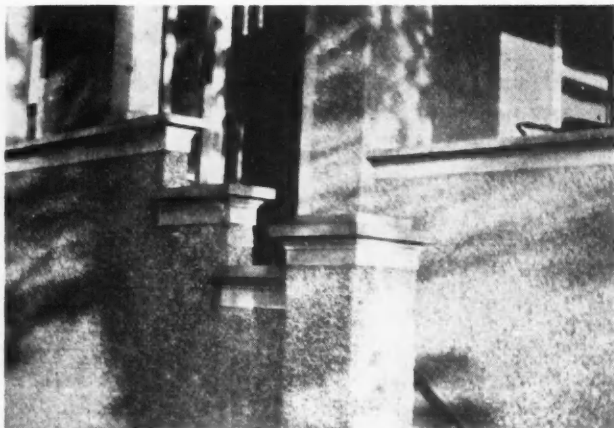


Fig. 6. A Close-Up of a Porch Detail Illustrating a Good Type of Construction to Protect the Stucco.

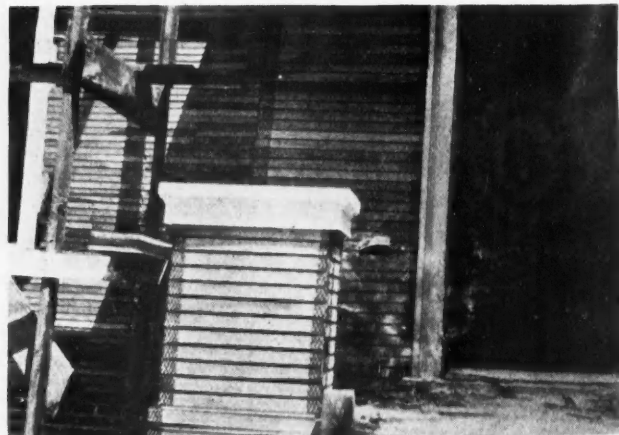


Fig. 7. Another Close-Up Showing the Use of Metal Lath to Prevent Corner Cracks in the Porch Construction.

Tuxedo Golf Club, Tuxedo Park, N. Y. Robert W. McCready, Contractor, Kenneth M. Murchison, Architect. Celotex Insulating Lumber used as sheathing, under plaster and as interior finish. Read Mr. McCready's interesting letter.



"I have found complete satisfaction in the use of Celotex as sheathing, under plaster and as an interior finish.

"All the buildings of the Tuxedo Golf Club were sheathed with Celotex and stuccoed with magnesite. The use of Celotex on this job helped the speedy progress of the work, gave splendid results as sheathing and stucco base and above all is every day delivering insulation from heat and cold.

"I am today using Celotex for one or more of its major uses on every job in Tuxedo and with uniformly good results.

"I believe that Celotex has opened a new era in the building industry."

*Robert W. McCready*

# "It has Opened a New Era in the Building Industry"

*So says Robert W. McCready, Contractor, President Master Builders Association, Tuxedo Park, N. Y., of Celotex Insulating Lumber. This insulation offers you advantages found in no other material*

THIS progressive contractor knows that insulation is one of the most important features of any house built today. He knows that the usual building materials, wood, brick, plaster, concrete, etc., alone, do not keep sun heat out and furnace heat in.

And he agrees with hundreds of other building authorities that Celotex is revolutionizing building practice, because this remarkable heat-stopping lumber now provides insulation at little or no extra building cost.

Today, Mr. McCready is using Celotex on every job in Tuxedo Park, "with uniformly good results."

Celotex is made from tough cane fibre into broad, strong boards that serve both as insulation and lumber.

### Little or no extra cost

Unlike ordinary insulation, Celotex replaces other materials—is not an extra item in the building. As sheathing, it

adds nothing to the cost of a house. Under plaster it costs a trifle more, but gives great advantages.

- ① As sheathing, Celotex supplies the insulation needed back of stucco, brick or wood exteriors. Here it replaces the rough boards formerly used, giving greater strength to the house walls. Building paper is unnecessary.
- ② On inside walls and ceilings plaster is applied directly to the surface of Celotex. This eliminates the use of lath, and forms stronger, insulated walls, free from lath marks.
- ③ Celotex should always be used as roof insulation; either over or under the rafters. Both applications are recommended because the greatest heat leakage is through the roof.
- ④ Celotex is used for interior finish. It may be left in its attractive natural tan color or stained, or painted.

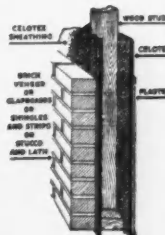
- ⑤ It is also used as exterior finish. When painted, Celotex resists exposure as well as wood lumber.

### Easy to apply

Celotex is exceptionally economical to apply—it saves labor as well as material. It is sawed and nailed just like wood lumber and with less waste in trimming. Celotex comes in stock sizes: width 4', lengths 8' to 12', thickness 7-16", weight about 60 lbs. per 100 sq. ft. Smaller, less expensive heating plants and radiators are needed to keep a

Celotex house comfortably warm.

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# Skintled Brickwork

By RICHARD G. COLLIER

**T**HERE have been noteworthy developments in the effects obtainable in brickwork during the past twenty-five or thirty years. Even the casual observer knows that there has been a great advance, that the effects obtained today represent great strides over the practice which prevailed in his boyhood days. Yet the great multiplicity of effects now produced, if analyzed, reveal the fact that they are all due to not over two or three fundamental changes or variations of the practices of half a century ago.

Skintled brickwork is the most recent of these fundamental steps in the logical development of brick effects. It has awakened a large response from prominent designers throughout the land who are alive to the new opportunities that skintled brickwork affords as a vehicle for expressing their conceptions, especially in the residential field.

In the early days of this republic there was a greater appreciation of the nature and of the proper use of brickwork than prevailed at some of the later periods, now happily passed. Such outstanding examples as Independence Hall, the old State House in Boston, and many other buildings which are now national monuments, were constructed of brickwork—which displayed the natural slight irregularities in the brick units, both as to form and color, which form one of the chief reasons for its charm. A brick is a clinker of Mother Earth. By nature it is rough and rugged. Brick clay has successfully withstood great convulsions of nature, terrific heat and glacial action, and brick is among the most nearly permanent of all the materials

on this globe. Brickwork is never so charming as when these characteristics are clearly expressed, and as might be expected, the historic buildings mentioned, which well typify the brickwork of that time are laid of brick of which the face is not too smooth, and with corners that are not always too mechanically sharp and square, and exhibiting those slight differences in shade which result from the irregular action of the fires in the kiln.

Such brickwork always satisfies the eye and may be properly regarded as standard brickwork.

But with the Victorian era there came a decline in architecture and the crafts. Strained and false effects became all the rage. Everybody remembers the time when a sort of observatory or cupola on the roof was the hall mark of distinction in house design, and bargeboards and wood porches were marvels of jig saw patterns, and mansard roofs and cast iron dogs dominated the scheme of things. The debasement of taste was equally expressed in interior architecture. High and narrow rooms and porches, marble fireplaces of weird design and mantelpieces with many shelves on slight spindles were the pride of their owners.

And brickwork suffered too. Monotony of effect was the cherished goal. Every brick had to be absolutely perfect, with sharp corners, face in a perfectly even plane, and in color and shading each brick had to be as alike as two peas. And the mortar joint was a thin hair line. The effect was a forced and unnatural appearance entirely unfair to the material, but in entire harmony with the ideals of the mid-



A Close-Up View of Skintled Brickwork as Used for a Home in One of the Fine Residential Suburbs Near Chicago, Showing the Beautiful Soft Texture of the Wall. James Roy Allen, architect.



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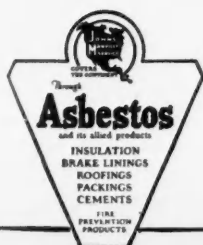
In the meantime, John Citizen is doing some thinking on his own account so that dealers and speculative builders are finding asbestos shingles increasingly profitable.

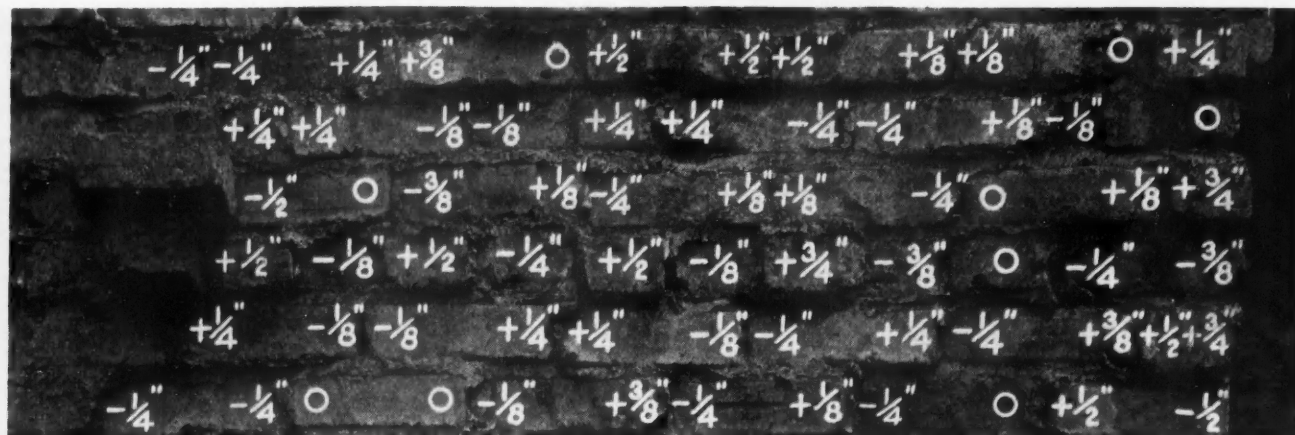
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Detail of the Type of Skintled Brickwork Used in the Home Shown Below. This is known as skintled brickwork, C. B. M. A. effect number three. The numbered notations show amount of variation of each brick end in or out from the normal vertical surface designated "O."

Victorian era. And it was not only new brickwork that was thus affected, but many of the finest examples of brickwork on the continent were painted over to make them look slick and smooth, and in some cases artificial joints were painted with white paint over the red painted background. The old State House in Boston recently had its

coating of paint sand-blasted off and the brickwork restored to its former beauty. The device known as "tuck pointing" was in its glory in those days. This mistreatment of old brickwork consisted in first filling the joints with cement flush with the brick and then coloring the entire face of the wall by rubbing it with pieces of soft brick or with a

mixture of copperas and pigment, afterwards putting on thin white artificial joints with lime putty. Sometimes these "joints" were raised, and ran impartially over brick and real joint alike.

This period of strained effects, both in brickwork and in architecture generally obviously could not last. In the 80's came the Romanesque revival, and then followed the restoration of good taste and development of good architecture, which has proceeded steadily to the present day. And this period has witnessed the remarkable development in brickwork effects before referred to. Brickmakers, always striving to please their patrons, could not at first quite realize that the day had passed when a keen-eyed sleuth of an inspector would condemn every brick that departed but slightly from the color of the sample. The classic example, of course, is that of Stanford White, who found on a brickmaker's cull pile the beautiful brick he selected for the gates of Harvard University (this brick being afterward named Harvard brick).

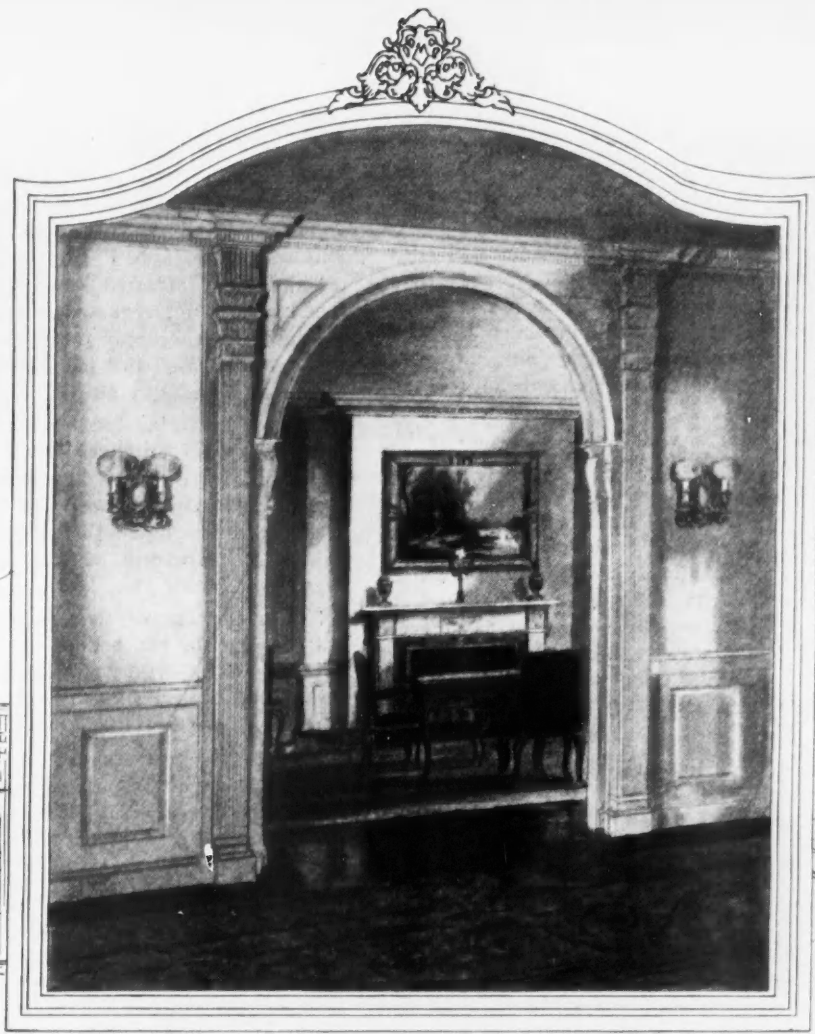
The appreciation of the real nature of brick returned, and architects again began to create masterpieces in which the harmonious blending of the slightly varying shades of the individual bricks, and the slight roughness of their surfaces, together with the proper value given to the mortar joint, all played an important part. Then followed the period in which brick, with a deliberately roughened face, creating most interesting textures, was popular. These rough texture effects still have a wide vogue and probably will continue as permanent and deserved favorites of a large number of architects and of a considerable proportion of the public.



Skintled Brickwork, the Most Recent Step in the Development of New and Attractive Brick Walls, Originated Among Chicago Architects About Four Years Ago. This house is an example of the work of S. S. Bemen, architect.

**American-Colonial**

The walls were expanses of smooth or sand-finished lime plaster — painted or tinted some pale, cool color—grey, pearl, buff, or light green. The fine-stippled surface was consistent with the quiet simplicity of the Colonial home. Pilasters, capitals, pediments, friezes and cornices revealed the influence of the Adam Brothers, from whose English architecture much of the American Colonial was derived.



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“SPREADS LIKE WARM BUTTER”

And as a logical and inevitable step in the development of these artistic effects, skintled brickwork was fully developed by prominent Chicago architects about four years ago.

Briefly stated, the underlying principle of skintled brickwork is to produce strong light and shade effects by the projection and recession of the bricks themselves with respect to the normal wall line, assisted by the irregular finish of the mortar joint. The illustrations which accompany this article tell the story much more completely than a written description could do, but even so the finest illustration cannot do full justice to the rich and harmonious effects which this type of bricklaying produces, because the lights and shadows only are emphasized, while in reality the color of the brick and of the contrasting mortar joints also play an important part and add to the striking beauty of the wall surface.

In the fashionable suburbs which skirt Chicago it has been conservatively estimated that between four and five hundred skintled brick houses have been built, all of them by the city's best architects. And the low cost of skintled brickwork (almost always skintled brickwork is constructed with common brick) is emphatically not the reason for its wide and spreading popularity, for almost without exception these houses cost between \$15,000 and \$75,000 each. This achievement of beauty with economy has a significant appeal to the builder, however, who is constantly seeking to reduce his costs legitimately and still deliver full value to his clients.

Not only is the wall material itself low in cost, but the bricklayer can lay more skintled brickwork per day than the older types of traditional brickwork. There is nothing difficult or complicated about it. Any good mechanic worthy of the name can lay it without previous experience, if he uses a little care in placing the first few courses. The bricklayers who have had experience with skintled brickwork are justly proud of these beautiful effects.

A contractor who has had much experience with skintled brickwork states that he can conservatively and safely estimate that a bricklayer will lay 1,000 brick per day in an 8-inch wall, and 1,500 brick per day in a 12-inch wall.

The line is generally placed at the back of the wall.

Skintled brickwork has already spread far and wide the

country over. It is destined to make a deep impression upon architecture. It will be used more and more because it is beautiful and yet is economical.



### Treated Lumber for Houses

**T**HE careful builder of the future will use chemically treated lumber wherever decay favoring conditions exist about the house, according to predictions made by M. E. Dunlap, of the U. S. Forest Products Laboratory.

"The use of treated wood, and particularly 1-inch and 2-inch boards impregnated through and through, will offer a solution to the decay problem of the home owner just as the use of treated ties has enabled the railroads to reduce their tie renewals by 60 per cent or more.

"At present retail lumber dealers do not carry stocks of treated boards or timbers nor do treating plants exist which specialize in treating ordinary lumber. Treated boards for ordinary construction work, to be really resistant to decay, must be impregnated through and through, a result difficult to obtain except in efficient, large scale, pressure impregnation plants.

"With the use of thorough treated boards the builder will be free to cut boards to length at will without the necessity of resorting to the not always dependable brush treating method used to cover untreated wood exposed on cut ends.

"For many purposes treated boards to be really marketable will have to be painted although this will not be true for all uses. In many places it should prove practicable to use creosote, a preservative which has so far proved difficult to paint."

Anticipating the demand for thorough-treated lumber the U. S. Forest Products Laboratory has started studies both of methods of getting complete penetration of building lumber and of painting over woods impregnated with zinc chloride, sodium fluoride, creosote and other preservatives. Results of these studies, according to Mr. Dunlap, will probably not be available for some time but it is expected that the study will be well abreast of economic developments leading to the general use of treated lumber.



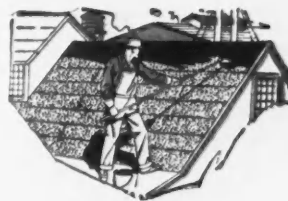
On July 4, 1926, the Formal Opening of the Largest Suspension Bridge in the World Will Be Held. This bridge, spanning the Delaware River, at Philadelphia, and connecting that city with Camden on the opposite shore will form a new link between the states of Pennsylvania and New Jersey.



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**Genasco Sealbac Shingles**



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Smooth-surface roll roofings need a roof coating every two years to prolong their life.

Genasco Roof Coating is a heavy black liquid asphalt—dries to a tough elastic coating. 1 and 5 gallon pails, and 50-gallon drums.

Genasco Asphalt Fibre Coating contains asbestos fibre—permits a much heavier application, without danger of flowing in hot weather. 1 and 5 gallon pails, 30 and 50-gallon drums.

Trinidad Lake Asphalt is nature's own waterproof—unequaled by manufactured compounds. It is the foundation of the entire line of Genasco Roll Roofings and Shingles—the thing that makes them so desirable for you to handle. Trinidad Lake Asphalt is dug from the surface of the lake with mattocks. Used for a half-century as a street-paving material. Famed the world over for its weather and wear-resisting qualities.

Other Genasco Products follow. Full information on request.

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# Building Insulation Into Walls

**W**ITH the added attention that is being paid today to effective insulation, a system of wall construction which provides built-in insulation has come in demand for the constructing, at low cost, of buildings offering great resistance to heat and cold. This system consists of building structures with two walls instead of one and leaving an air space between the walls as an effective barrier to the passage of heat, cold, fire, dampness or noise.

This is effected by means of a set of small portable machines that build at one operation a double concrete wall separated by a continuous air space  $2\frac{1}{2}$  inches wide. These machines are so simple and so easy to operate that the builder can use his regular men to work them. It has been found that without previous experience such a crew will be building double walls with only two or three hours of practice and at a surprising rate of speed.

Not only does this equipment "build in" insulation, but it offers unusual speed and economy. Double concrete walls can of course be poured with forms but the work is slow and tedious. Here the machine is simply placed on top of the solid footing at the cellar bottom and filled with a semi-dry mix of concrete that is then tamped down. This packs the concrete within four plates held together by a lock and releasing bar.

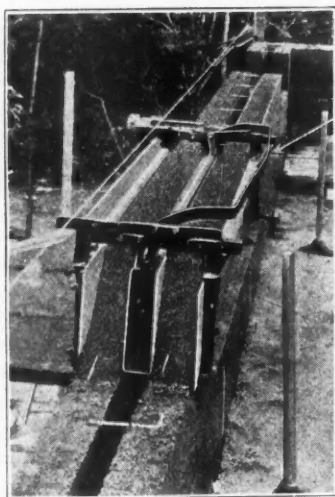
As soon as the concrete has been tamped, the releasing bar is raised and the plates open up away from the wall which they have just molded. The inner core contracts, the outer plates expand and the machine is thus released from the newly made wall and immediately slid along.

Each operation builds a section of wall 5 feet long, 9 inches high and of any desired thickness. This last item is regulated by setting the plates 3, 4, 5 or 6 inches apart as may be desired. The machine consists of few moving parts and is easily handled. Two men can easily lift it.

After one course has been built, wall ties of galvanized iron wire cut to 10-inch lengths are set in across the air space. The machine is then laid on top of the course just finished, the cross ties supporting the inner core of the machine, and another course begun. The concrete of the top course solidifying with the concrete of a course below the result is a double monolithic wall, solid from footing to roof.

That there may be no doubt as to the concrete standing up immediately it has been tamped and the machine slid along the following test is suggested: take a handful of concrete somewhat dryer than that ordinarily used in form work and squeeze it into a ball. If the concrete is too wet, water will flow through the fingers; if too dry, it will crumble away. Between these two extremes is a mix that will stand and show initial set as soon as it is tamped. This is in keeping with the recommendations of the Portland Cement Association.

Because of the insulating quali-



The Double Wall Form Is Set in Place on the Solid Footing and Concrete Is Tamped Into It.

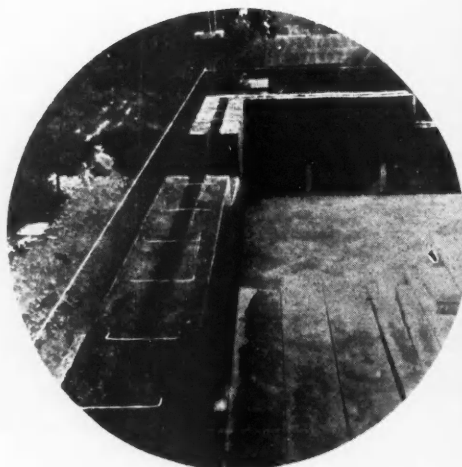
ties of a continuous air space between double concrete walls, all furring, lathing or scratch coat plaster is said to be rendered unnecessary by this system. Plaster may be applied to the concrete surface directly on the inside and stucco or face brick may be applied without further preparation on the outside. Among some 30,000 structures already erected by this system, many have been left with the natural concrete finish in imitation of stone.

Builders using these machines for residential work are finding it an extremely profitable field. They are not limited, however, to use in the construction of dwellings. A typical example of their use in commercial structures is a building erected in New York City by the well-known firm of Isaac A. Hopper's Sons. This is a large garage, 200 feet long by 125 feet wide, built for the Yellow Taxi Cab Company.

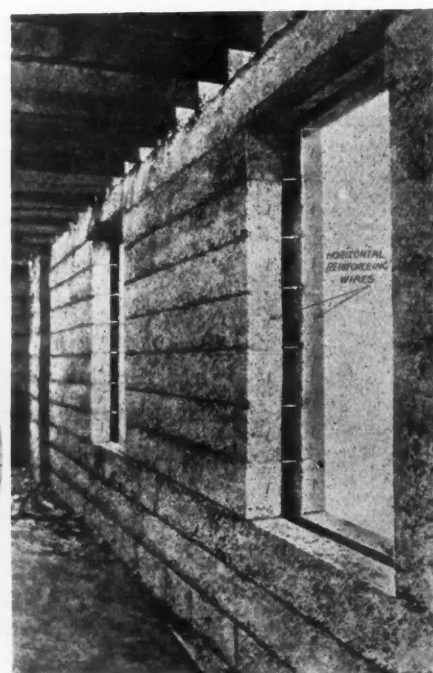
This was a competitive job which went to the successful contractors by reasons of the saving which the machine permitted in labor cost and through rapidity of construction. The building has proven the desirability of the double wall system of construction, as the temperatures noted both in summer and winter show a decided difference in comparison with similar buildings of different material. In other words, the protection afforded by the gap between the two walls keeps out cold in winter and heat in summer.

This same firm of contractors have utilized this system in constructing theatres, cold storage warehouses, fire department headquarters, power houses and other buildings two and three stories high on which the savings in cost have varied between 20 and 40 per cent.

The advantages of this mode of building benefit not only the builder but also the owner, as there is a great saving in fuel consumption, a slower depreciation and a longer life for the constructed property.



After Each Course Is Laid, Galvanized Iron Wire Ties Are Set in Across the Air Space.



When Complete the Wall Is Really Two Monolithic Concrete Walls with an Air Space Between.

Last Year

# CHICAGO used a half million sacks of Carney!



**WHEN** the city of Chicago, alone, consumes a half million sacks of Carney in one year, it's reasonable to assume that builders have found some mighty convincing reasons for putting it on jobs.

The reasons are simple. Carney lowers the pay roll decidedly, cuts material costs to the core, and produces the finest bond you ever laid eyes on.

With Carney, you don't need to pay a crew of men for soaking, slaking and adding lime. Carney comes ready to use. Add water and sand—that's all. One man with a machine mixer can easily supply mortar for 30 masons.

You will find the masons can lay more bricks in a day with Carney. Tamping and tempering on boards aren't necessary with Carney Mortar. The mason's time is all spent laying bricks.

Besides, you will find Carney a big material saver. Where other cements mix 3 to 1, Carney mixes 4 to 1 perfectly. You can't beat that combination for an all round time and money saver.

"Carney cement was used throughout the White Transfer & Storage Company building and the Annunciation Roman Catholic School building for the brick work and it has proved satisfactory beyond our expectations. Our workmen were glad to use it and the owners and architects were pleased with the strength and uniformity of color. We also found it to be much less expensive in comparison with other kinds of mortar we have heretofore used.

We gladly recommend the use of Carney Cement for brick mortar to the building trade at large."

JOHN GEFTEL,  
PITTSBURGH ENGINEERING  
& CONSTRUCTION CORP.,  
Pittsburgh, Pa.

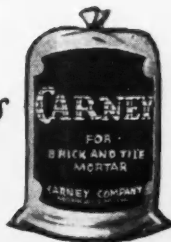
Specifications:

1 part CARNEY  
to 4 parts sand.

## THE CARNEY COMPANY

District Sales Offices: Cleveland, Chicago,  
Detroit, St. Louis and Minneapolis.

Cement Makers **CARNEY** Since 1883



# CARNEY

for Brick and Tile Mortar

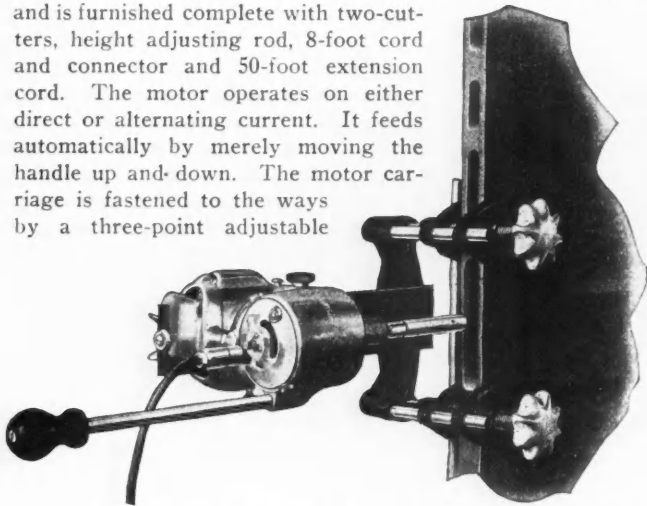
# WHAT'S NEW ?



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## A Better Mortiser

**T**HE illustration shows a door lock mortiser which is one of the late developments in this type of tool. It is operated by a ¼ H. P. motor on either 110 or 220 volts and is furnished complete with two-cutters, height adjusting rod, 8-foot cord and connector and 50-foot extension cord. The motor operates on either direct or alternating current. It feeds automatically by merely moving the handle up and down. The motor carriage is fastened to the ways by a three-point adjustable



**A New Door Lock Mortiser Which Incorporates a Number of Improved Features for Better and Faster Work.**

bearing and is quickly adjustable for the distance of the mortise from the floor, depth of mortise and length of mortise. The width of mortise is determined by the diameter of the cutter used.

The clamps are self-centering and the speed and accuracy of the tool assures perfect work. Once it is adjusted no further measuring or adjusting is necessary for any door with the same mortise. About 40 seconds is required for cutting the mortise after attachment.

## New Surfacing Machine

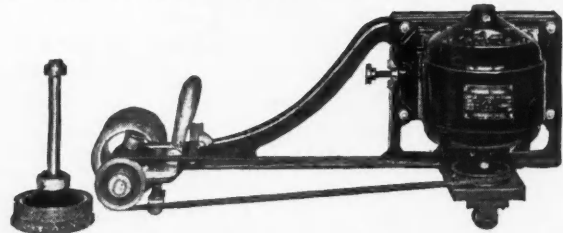
**B**UILDERS, contractors, architects and others in the building trades will be interested in a new type of surfacing finisher recently placed on the market. The outstanding advantage of this machine is its ability to do a complete job of finishing in places that, up to its advent, were inaccessible to machines and required slow hand work.

The accompanying illustration shows the compactness of the new finisher. Both disk and drum are supplied with the machine. The machine turns at a 90-degree angle so that when turned one way it is set for using the disk and when turned the other it is ready for the drum. To reverse the motion or get opposite rotation it is only necessary to give the belt a half twist. To take up any extra slack in the belt the machine is provided with a belt tightener.

Another exclusive feature is the method of fastening the sandpaper to the drum and to the disk. The drum is split, so that when the sandpaper is placed around it and the drum brought together the sandpaper is automatically tightened—a small wedge then holds the paper securely.

On the disk, the sandpaper is held securely in place by means of an ingenious ring that automatically tightens the paper and then holds it fast.

A quarter horsepower motor gives all the power necessary. The machine is light and one man only is required to operate it. A handle is provided for guiding the machine.

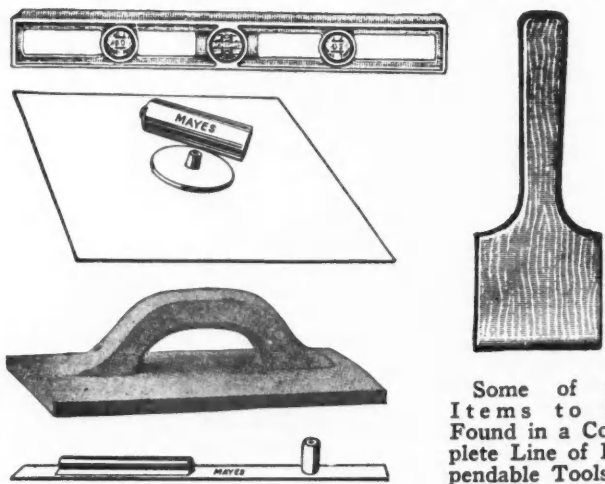


**This New Surfacing Machine Will Work Under Radiators, into Corners and Many Other Places Where Hand Work Has Been Required.**

There are many uses for which this new machine is adapted. For instance, it can be used in small show windows, small closets, toilet and bathrooms, on the stair treads, risers, etc. Its use is not confined to wood as it will operate just as efficiently in finishing marble, slate and other hard surfaces.

## Dependable Tools

**E**VERY good workman appreciates the value of good dependable tools. A real craftsman will always select the best tools available and will give them the best of care for he knows that only in this way can he have tools which can always be depended upon to give satisfactory service.



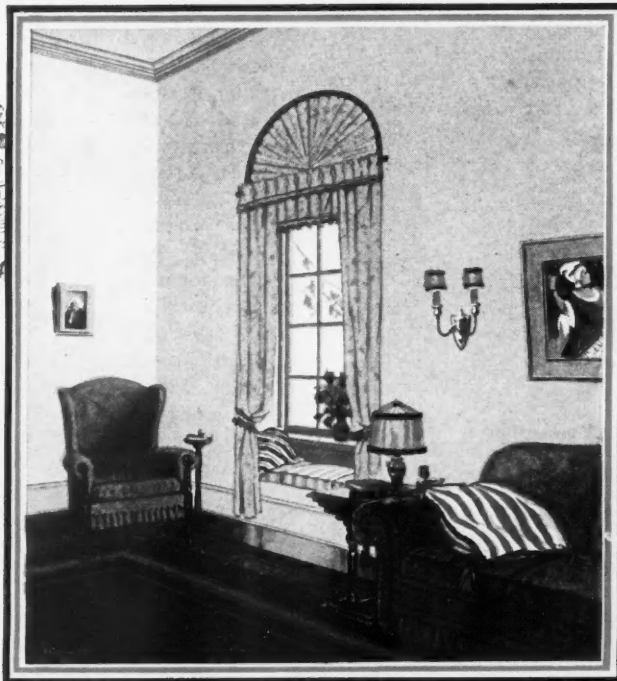
**Some of the Items to Be Found in a Complete Line of Dependable Tools.**

A highly dependable line of tools is illustrated in part here. The company making these tools has a record for fine products and its line includes, in addition to carpenters' levels, farm, mason, and line levels, aluminum and wood hawks, wood and cork floats, wood and aluminum darbies, plasterers' paddles and a callous preventer.



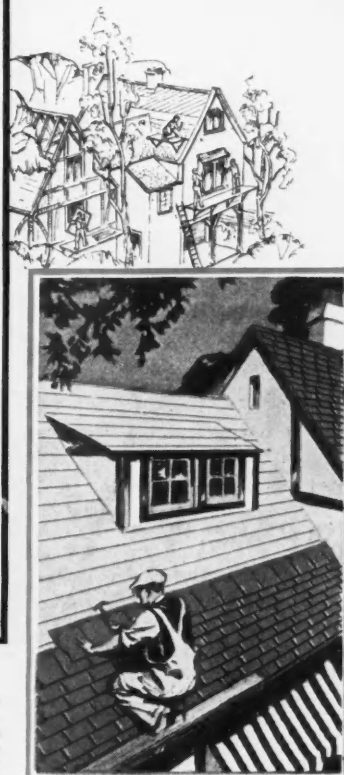


For beautiful white enamel kitchens and bathrooms use Beaver TILED Wall Board



**Build walls of endurance with Beaver Bestwall**

Test and compare this superior plaster wall board for strength. Test it with fire—with water. Test the improved fibre-binder for toughness. See why its distinctive cream-colored surface takes decoration more artistically and more economically. Compare it. Prove that Bestwall will serve you better than ordinary plaster wall board. Send for sample and literature.



Beaver Vulcanite Roofing is tough, fire-safe and lasts for years

## Building mistakes can be prevented

WHY do so many glaring defects crop out months after the last nail has been driven? Does the fault lie in poor construction? In most cases, *no!* Carelessness in selecting materials is to blame—haphazard selection without thorough investigation. When you build, adopt the safe course—*test and compare!*

Investigate Beaver Products for walls, for roofs. Send for samples. Test them yourself. Compare them. Their quality welcomes the opportunity to demonstrate its superiority. Prove in the one conclusive way—*by testing and comparing*—that Beaver Products build more beautiful, more durable walls; more attractive and tighter sealed roofs.

For walls of beauty and long life there is time-tested Beaver Bestwall, "The Superior Plaster Wall Board," with the better surface for decorating.

For quick remodeling that lasts there is famous Beaver Wall Board, identified by the familiar Red Beaver Border. Comes plain and extra thick; also tiled for walls in bathrooms, kitchens, etc.

Beaver Gypsum Lath with its heat-, cold- and sound-retarding qualities, forms an ideal base for walls of Beaver American Plasters.

And for roofs that are fire-safe, weather-tight and of unusual beauty, Beaver Slabs and Shingles offer a wealth of opportunities.

We invite you to personally test and compare these Beaver Products. Consult your Beaver Products dealer, or write for samples and literature.

**THE BEAVER PRODUCTS CO., Inc.**  
Dept. 1807, Buffalo, N. Y.



### for ROOFS

- Beaver Vulcanite Hexagon Slab Shingles
- Beaver Vulcanite Self-Spacing Shingles
- Beaver Vulcanite Slate and Smooth Surfaced Roll Roofings
- Beaver Vulcanite Built-to-Order Roofs
- Beaver Vulcanite Roof Paints and Cements



### for WALLS

- Bestwall Plaster Wall Board
- Beaver Fibre Wall Board
- Beaver American Plaster
- Beaver Gypsum Lath
- Beaver Gypsum Block
- Beaver Varnishes and Enamels

# BEAVER

P R O D U C T S

**PLASTERS - WALL BOARDS - ROOFINGS**

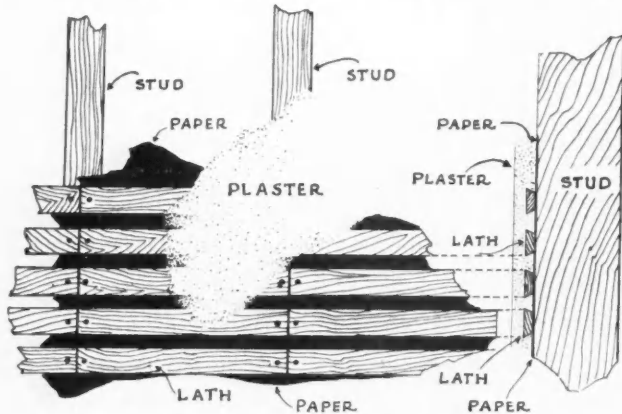
THIS AD APPEARS IN THE JULY 24TH ISSUE OF THE SATURDAY EVENING POST

499

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

### An Improved Plaster Base

VERY strong claims are made for the plaster and stucco base illustrated in the accompanying sketch. This base is built up of carefully selected and treated wood strips



A Type of Plaster Base Which Is Easily Applied and Gives a Lath Base with Asphaltic Paper Backing in a Single Operation.

beveled on each edge, each strip being of the width and thickness of an ordinary wood lath. These strips are embedded, under hydraulic pressure, in a heavy coat of special, asphalt mastic spread on a heavy fiber background. The narrow side of the strips is placed next to the background so that when plaster is applied a clinched key is formed.

The base is applied direct to the wood studs with a single five-penny cement coated nail in each strip at each stud. The plaster or stucco is then applied to the wood strips exactly as to ordinary lath. The joints over the studding are broken automatically in accordance with the best lathing practice and no cutting is necessary in breaking the joints. There is no waste of material in the application and less plaster is said to be required over this base.

According to the manufacturers this base has a very high insulating value against heat and cold and also is an effective sound deadener. They also state that it is sufficiently elastic to take up stress caused by the shrinkage of timbers and settling, thus eliminating cracks, and that it is stronger than  $\frac{7}{8}$ -inch sheathing with wood or metal lath. This base is shipped in either roll or package form. The roll contains 100 square feet and is applied by rolling down from the top of studs. The package contains the same coverage but is especially convenient for interior work, ceilings and walls and is more easily handled. It is in sections, each section having an over-lapping flap to insure continuous backing.

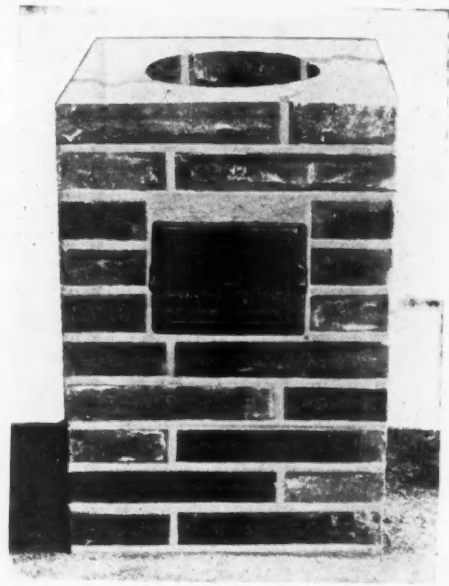


### Special Round Flue Chimney

IT is a well-known fact that the round chimney flue is far more efficient than a flue of any other shape. It is equally well known that defective chimneys are the greatest single cause of the tremendous number of fires which destroy millions of dollars worth of property annually, and that soot collection and leaky flues are the principal chimney defects. It follows then, that any chimney which gives a round flue and eliminates leaky chimneys and the collection of soot will afford a large measure of economy and safety.

Such a chimney is illustrated here. The construction of a chimney with these special units provides a round, smooth surfaced flue through which smoke and gases may pass in a natural spiral without resistance. It is stated that, under actual tests, this chimney gives an average of 40 per cent greater draft, resulting in a  $12\frac{1}{2}$  per cent greater heat delivery, than a square chimney flue of equal size and area.

Since this flue is round and smooth the collection of soot, which is the cause of chimney fires, is impossible. Leaky chimneys are done away with by the form of construction. There is only one vertical joint to each side of the chimney and this is an interlocking joint which makes it impossible for mortar to drop out through disintegration. The manufacturers of this chimney quote several high authorities as recommending this construction for its safety and efficiency.



A Chimney Built of Special Units Gives a Round Flue Which Means Efficiency and Safety Because Its Form and Smooth Surface Reduce Resistance and Prevent the Collection of Soot.

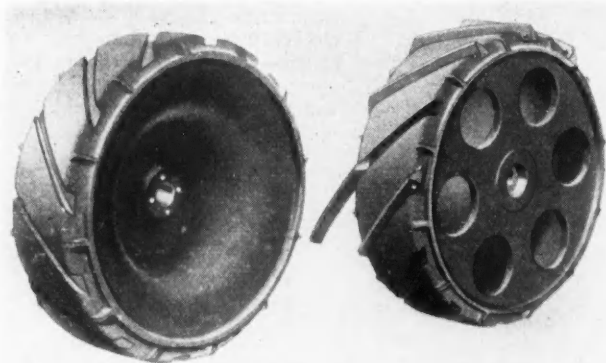


### Special Tractor Wheels

A NEW wheel for Fordson tractors fills an "in between" need where work on loose ground makes the ordinary wheel ineffective but does not require a crawler type of equipment or where the loose ground work is not of sufficient volume to warrant an investment in crawler equipment.

This is a broad cast wheel with quickly detachable lugs. With the lugs removed, the smooth tread can be used on paved roads. With the lugs in place, it does not entirely replace crawler traction but meets many needs where crawlers would otherwise be required. The new wheel weighs 1,000 pounds and is cast hollow with openings on the inside of the wheel to permit loading with a mixture of cement and steel punchings sufficient to bring the weight up to an additional 400 to 700 pounds.

The lugs are drop forged from high grade steel and are held in place by the tapered grooves cast in the rim of the wheel. One end of the lug has a "stop boss" and the other a hole for a pin, permitting quick, easy attaching or detaching, while being fully as permanent and durable as bolted or riveted lugs, it is said.



The Lugs Can Be Quickly and Easily Attached or Detached from This Tractor Wheel Which Affords Good Traction in Soft Ground Without the Expense of a Crawler.

# See how others use HORSE HEAD ZINC

Here is a new booklet that will help you decide on the metal to use for your sheet metal work and roofing. It shows you how others have saved money by using Horse Head Zinc. And how you can make the same saving when you use this permanent, rust-proof metal.

The use of Horse Head Zinc gives you permanent, stainless sheet metal work at the lowest possible cost.

Horse Head Zinc is widely used for leaders and gutters and roofing on large and small homes and public buildings. Photographs of many installations are shown in "Once in a Lifetime," with much other information that will prove valuable to anyone interested in building.

This booklet will be sent free on request—use the coupon or write us for a copy of "Once in a Lifetime."

**The New Jersey Zinc Company**

*Established 1848  
Products Distributed by*

**The New Jersey Zinc Sales Company**

160 Front Street, New York City

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SEND FOR THIS FREE BOOKLET

THE NEW JERSEY ZINC COMPANY  
160 FRONT STREET, NEW YORK

Send me a copy of "Once in a Lifetime" you new booklet on Horse Head Zinc for sheet metal work and roofing.

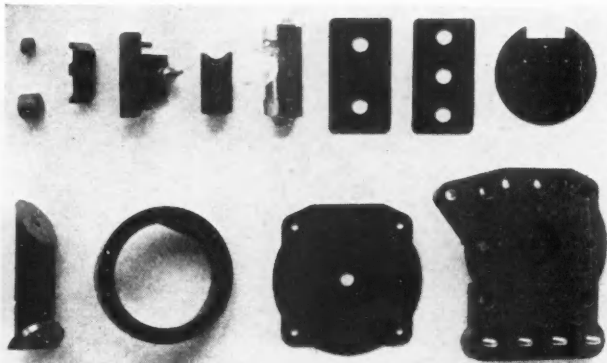
MR. \_\_\_\_\_

ADDRESS \_\_\_\_\_

T-A. 11.

### Bakelite Parts in Oil Burners

FOR many years the problem of developing an oil burner which would make oil available for heating homes remained unsolved in spite of persistent research and it is only comparatively recently that practical oil heating has been open to home owners. The solution of the problem was greatly facilitated by the discovery of the new material known as Bakelite.



Some of the Molded Bakelite Parts Used in One Well-Known Oil Burning Heater. Note the metal inserts and variety of shapes.

This material is manufactured by a special process, evolved by Dr. Baekeland, for the union of two chemical liquids, carbolic acid and formaldehyde solution. It is light, durable, strong, heat resistant, non-corroding, unimpregnable by oil or water and electrically insulating. In addition it is easily molded so that parts may be formed from it with metal inserts, holes and threading, all in a single operation. This eliminates much of the expense of assembling and machining which would otherwise make the burners too expensive for general use.

This combination of qualities came to the aid of the designers of oil burners and is now used for as many as 31 parts in one successful burner. It solved the problem of effective insulation for high tension conduits and switch bases and of resistance to wear and tear and to the effects of lubricating oil in other parts. As a result these oil burners are assured of reliability and safety in operation.



### A Steel Cabinet for the Kitchen



A Convenient Sheet Metal Cabinet for the Kitchen Takes Care of Non-Perishable Food and Small Equipment.

THE illustration shows one of a group of built-in all-steel cabinets manufactured by a company specializing in sheet metal work. This cabinet is known as a

kitchenette cabinet and has proven a valuable piece of equipment for the kitchen where it furnishes a clean compact storage space for non-perishable foods and kitchen equipment.

This cabinet is designed to fit snugly between the standard 2 by 4 joists, in both width and depth. It is easily and quickly installed, requiring only eight wood screws and a few minutes of time.



### Cutter for Corrugated Sheets

THIS shear for cutting corrugated sheets has been placed on the market by a large manufacturer. It is a



Corrugated Sheet Metal Can Be Cut Right on the Job with This Light, Handy Tool without Distortion.

tool which can be taken out on the job and is, in fact, almost light enough to carry in the pocket. It cuts quickly, either straight, on a curve or obliquely across the corrugation, without any distortion.

The cutting is done by a pair of rotary double-edged cutters, knurled round the shearing edges. The upper cutter is driven by an internal ratchet which is operated by handles. The lower cutter

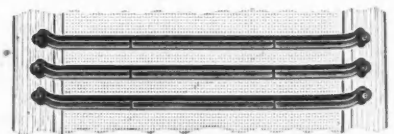
runs free. The driven cutter is adjustable by means of a cap screw, thus assuring a continuous, even feed on all sheets within its capacity. The tool may be withdrawn from the sheet at any point by simply loosening the adjusting screw. This permits the use of the tool in cutting out corners or angles.



### Adjustable Screen Guards

AN adjustable screen door guard, which saves both the screen wire and the frame, is shown in the illustration.

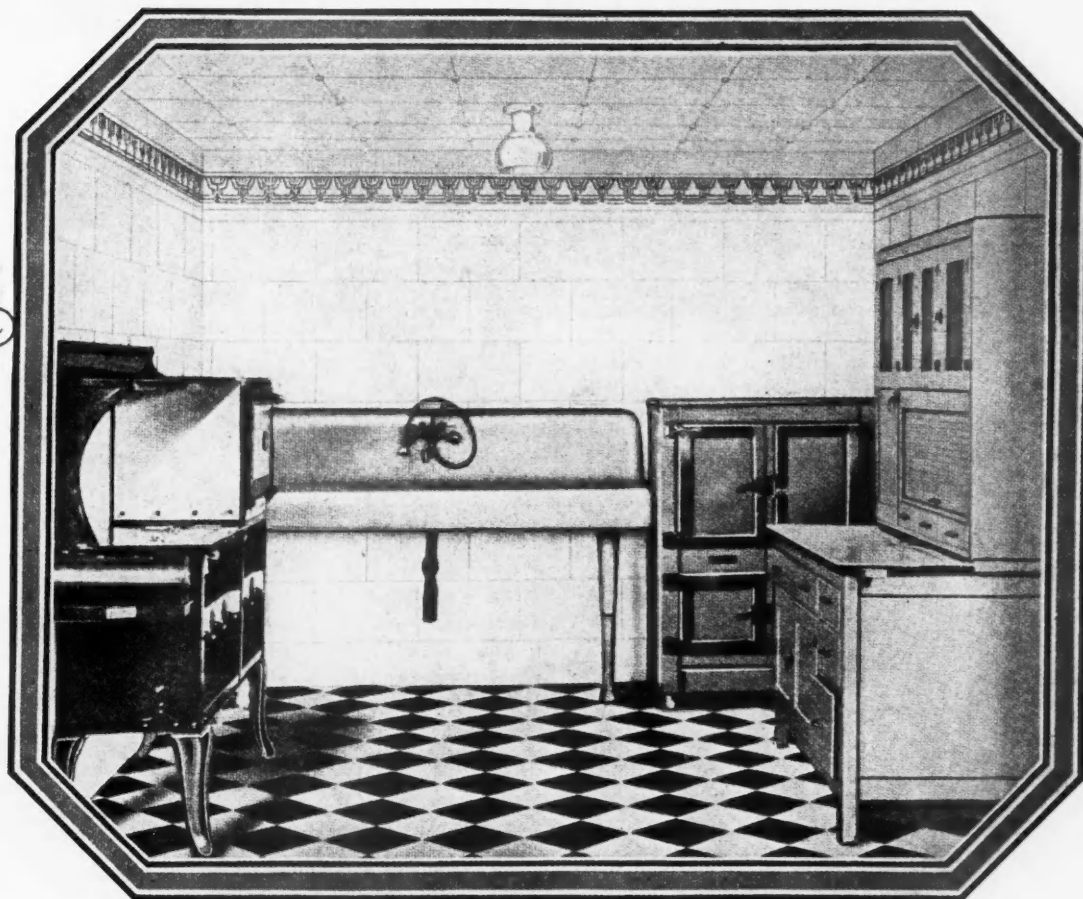
This guard is made in one size only but is adjustable to fit all doors from 2½ to 3½ feet in width. It is of good, strong, 20-gage, pressed steel, deeply channeled and corrugated. Each guard is ¼ inch wide with a ½-inch channel and with the center section turned back to give added stiffness.



Screen Guards, Adjustable to Any Size Door Protect the Wire Screening and Keep the Frame from Becoming Soiled.

When applied to the door they protect the screen wire because the hand naturally grasps the guard to push open the door instead of pressing against the wire. In the same way they keep the frame from becoming soiled. In addition to this they brace the frame very effectively adding to the life of the door.

The regular finish is black, baked Japan on steel but the guards can be furnished also electro plated or electro galvanized on steel and in solid brass or bronze.



**SANI ONYX**  
**A VITREOUS MARBLE**  
A PRODUCT OF THE MARIETTA MANUFACTURING COMPANY

*is now supplied in polychrome!*

SANI ONYX in polychrome banishes limitations in decoration. Now you may specify this ideal wall and ceiling material for every room. Color schemes can be followed through to the smallest detail and effects secured that surpass those possible with any other medium however costly.

*Permanent coloring—somber, vivid, subdued  
 or brilliant—as you choose*

Polychrome SANI ONYX is made to order by an exclusive process. None of the many desirable and exclusive SANI ONYX advantages have been sacrificed to attain this added beauty. Register now for the new brochure containing four color illustrations of actual installations.

*Five Standard  
 Colors*

IVORY-WHITE  
 BLUE-GRAY  
 BLACK

in plain or tile pattern  
 sheets

*Five Surface  
 Textures Supplied*

FLAME GLAZE  
 SEMI MATTE  
 MATTE  
 TAPESTRY  
 AND  
 POLYCHROME

**MARIETTA MANUFACTURING COMPANY**

Main Office and Works—80 BROOKSIDE, INDIANAPOLIS, INDIANA  
 Canadian Factory—Sani Products Co., Ltd., 155 Richmond Street, West, Toronto

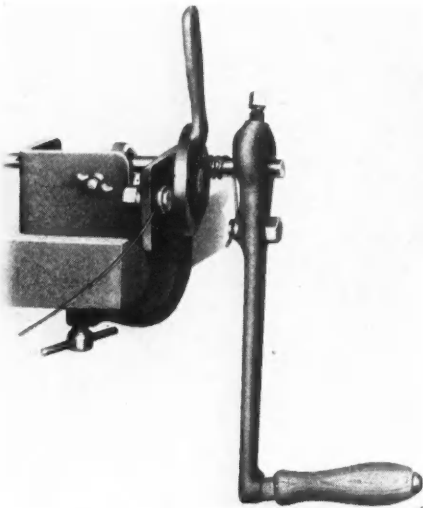
Distributors in principal cities throughout the United States and Canada

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

### A Simple Spring Winder

**A** MAN working in the oil fields of northern Ohio was continually confronted with the need for coil springs in various sizes and of both compression and expansion types, to replace springs that were breaking every day on the oil well machinery. He found it both difficult and inconvenient to get the needed springs from any dealer, both because of the variety and the infrequent call for any one kind of spring. He determined to see if there was not some way by which he could make his own springs as he needed them without the expense and bother that he was experiencing.

After much experimenting he finally devised a machine which did the work exactly as he wanted it done and with surprising ease and speed. He made a crude model and



**With This Simple Appliance Anyone Can Produce Any Kind of Coil Springs as Well as an Expert.**

used it successfully, for coiling springs of any size or length and in either right or left hand "lead" or twist, as desired.

Later the device was shown to a mechanic who suggested some improvements, then had patterns made and a really marketable device was produced. This device was brought to the attention of a manufacturing company which put one in its shops for a practical test. It worked so successfully that the company became interested and is now putting this machine on the market.

The illustration gives a clear idea of this simple machine which, according to the manufacturer, can be operated by anyone without skill or experience and will turn out a spring equal to that made by an experienced mechanic on a high priced lathe. The size of the spring is determined by the size of the mandrel used, while the pitch, or lead, of the spring is determined by the position of a small cam which can be set in any position to produce a spring of any desired pitch, or lead. Complete instructions accompanying each machine make it possible for anyone to turn out all kinds of coil springs.



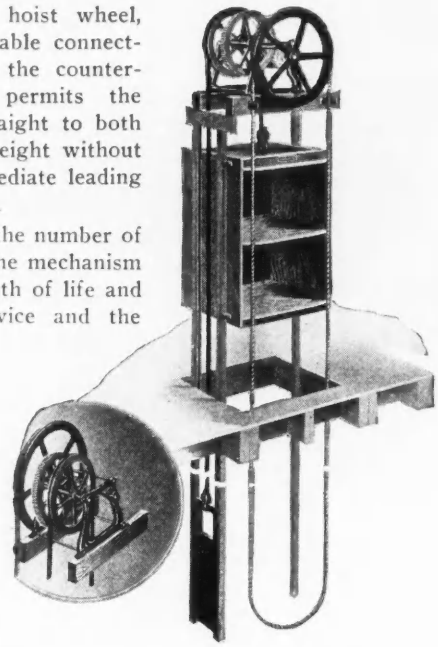
### Dumb Waiter Improved

**A** NEW type of geared, automatic brake, dumb waiter, designed for use in hospitals, hotels, clubs, restaurants, schools, churches, libraries, commercial and industrial buildings represents a marked improvement in dumb waiter equipment. Each machine is a complete self-contained unit. The automatic brake, operating whether the counterweight is located at the right or left of the car, permits smooth safe operation, adjusting itself to the load carried.

Anti-friction, roller bearings make for ease of operation, quiet running and increased life of the machine. Machine cut gears eliminate the possibility of unevenness in machine performance and by means of the gears each pound of pull on the hand rope can be made to raise from 4 to 10 pounds of load, depending on the gears and hand wheel use.

A full diameter hoist wheel, over which the cable connecting the car and the counterweight travels, permits the cable to drop straight to both car and counterweight without the use of intermediate leading sheaves or idlers.

A reduction in the number of moving parts in the mechanism increases the length of life and reliability of service and the full diameter hoist wheel gives a 50 per cent gripping surface of the wheel on the car cable effecting certain and unfailing transmission of the automatic brake action. The small head room required is an added convenience where space is limited.



**This Geared, Automatic Brake Dumb Waiter Is Said to Represent a Marked Improvement Over Older Models.**

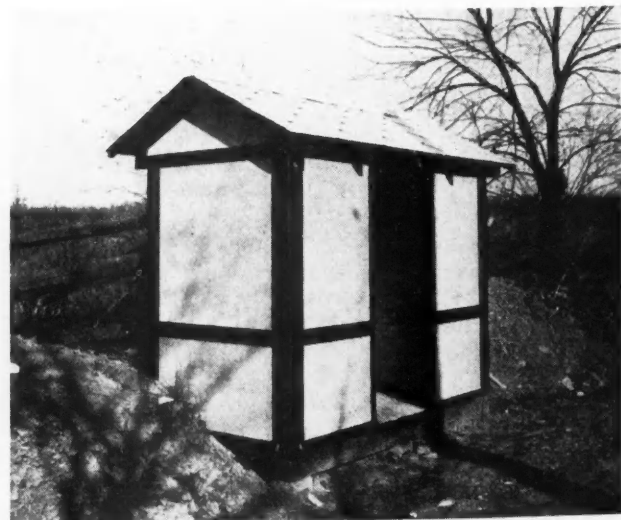


### Fireproof Shelter Booths

**K**NOCKDOWN shelter booths, for the protection of children while waiting for the school bus, are now being manufactured. These booths are constructed of sheets of fireproof, weather-proof, asbestos lumber, with roofs of asbestos shingles.

The asbestos lumber and shingles used in the manufacture of these booths are made from asbestos and portland cement, beaten together and built up in layers which are consolidated under tremendous pressure in hydraulic presses. They are not affected by fire or water and do not shrink, warp, swell or dry out under any weather conditions but grow stronger with age, according to the manufacturers.

Wood sills, flooring, batten strips and rafters, cut to size and ready to be put together by unskilled labor, are supplied by the manufacturers.



**A Shelter Like This, for Children Who Must Wait for the School Bus, Is Entirely Fireproof Because Built of Asbestos Lumber.**

# Why Pay Six Men For One Man's Job

Every contractor without an American Universal Floor Surfacing Machine is increasing his payroll by six men every day he pays for scraping floors by hand. Think what it means to your payroll over a period of a year, and what it would mean in profits over the same year, if you owned an American Universal Floor Surfacing Machine.

Every man with an electrically driven

## American Universal FLOOR SURFACING MACHINE

can earn from \$25 to \$50 a day, year in and year out, as it does the work of six men and earns six men's pay.

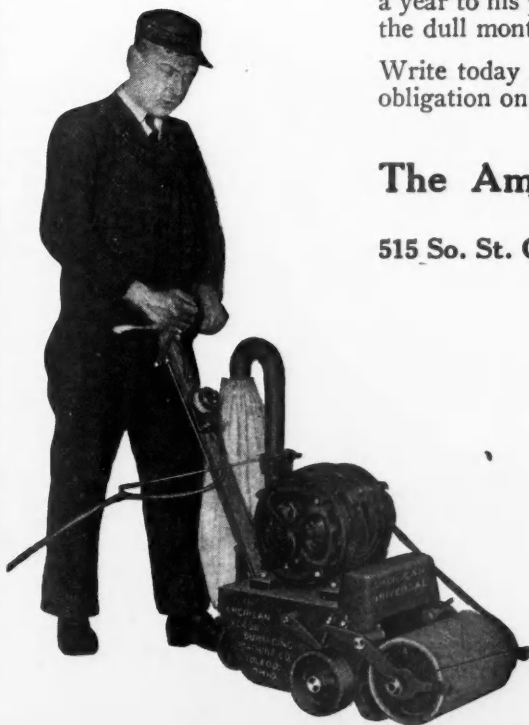
### Work Easy to Get

Not only new buildings but old buildings must have their floors resurfaced to be put in shape. The beautiful, smooth, uniform work which the American Universal Floor Surfacing Machine turns out cannot be equaled by hand scraping or any other method of floor surfacing.

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- I am a building contractor.
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 City.....  
 State.....

ONE MAN ON HIS FEET IS WORTH SIX ON THEIR KNEES



### One Piece Head and Shank

**H**AVING the head and shank forged in one piece so that it is impossible for the head to loosen or fly off, a new type of hatchet has been placed on the market by



The Head of This Hatchet Can Never Fly Off for It Is Forged, Together with the Handle, in One Piece, Assuring Complete Safety.

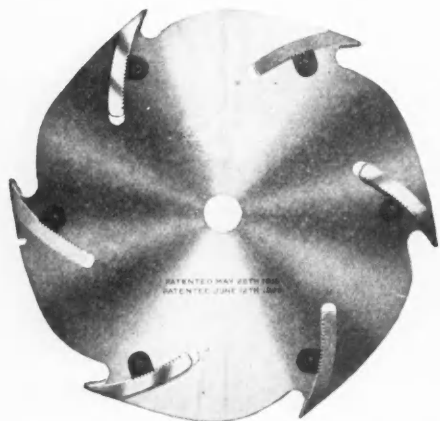
an eastern hardware manufacturing corporation to promote safety and convenience.

The weight and balance have been designed to be just right for its use as a general utility hatchet, it is stated by the makers, who characterize this product as "the hatchet that won't lose its head." A nail puller has been included in the head which is drop forged of steel. Hardwood scales riveted to the shank are cut to form a comfortable grip. The weight of the tool is 28 ounces and its length over all 12½ inches.—R. G. THACKWELL.



### Inserted-Tooth Saw and Groover

**A** NEW and better saw and groover adapts the inserted-tooth principle to grooving, moulding, beading and similar work. It does better work at a lower cost and is so simple that anyone can adjust it. High speed steel,



This Inserted Tooth Saw Is Designed for Grooving, Moulding, Beading and All Similar Work.

which holds the edge, is used for the teeth, making for longer service under fast feed and hard usage. The teeth can be removed in a few moments' time and replaced with others of the same kind or a different design for a different kind of work. When the teeth finally wear they are moved outward ¼ or ⅜ of an inch at a time to compensate. They may be touched up with a whetstone without being removed from the blade. The teeth are set into the blade on a spiral line which assures clearance in the cut and also a uniform cut, accurate in depth and width. The quick

adjustment assures against variation in the cut and the teeth can wear down their entire length without affecting the uniformity of the cut.

The teeth are held in the blade by a lock nut and screw which, together with the grooves in the sockets, hold them rigidly with no chance of movement inward, outward or to the side. A wrench and screw driver are furnished with this saw and are the only tools required for removing or attaching the teeth. Teeth are supplied in any desired size or form for all kinds of work and by the use of a special spur the saw can be used for cross-cutting as well as for ripping.

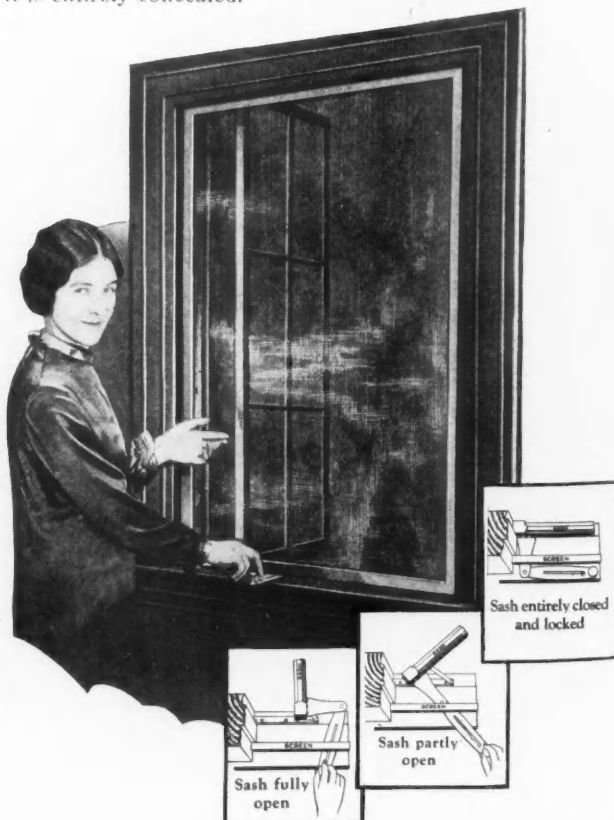


### Improved Casement Hardware

**A** NEW and practical device for opening, closing and locking casement sash without moving the screen has just been announced as an addition to complete a leading line of casement window hardware. This is a simple, self-contained unit which takes the place of hinges and adjusters in the installation of casement sash and transoms. It may be applied to single sash, pairs of sash and to multiple sash in wide openings without mullions. It is also suitable equipment for transoms that swing in from the top or in or out at the bottom.

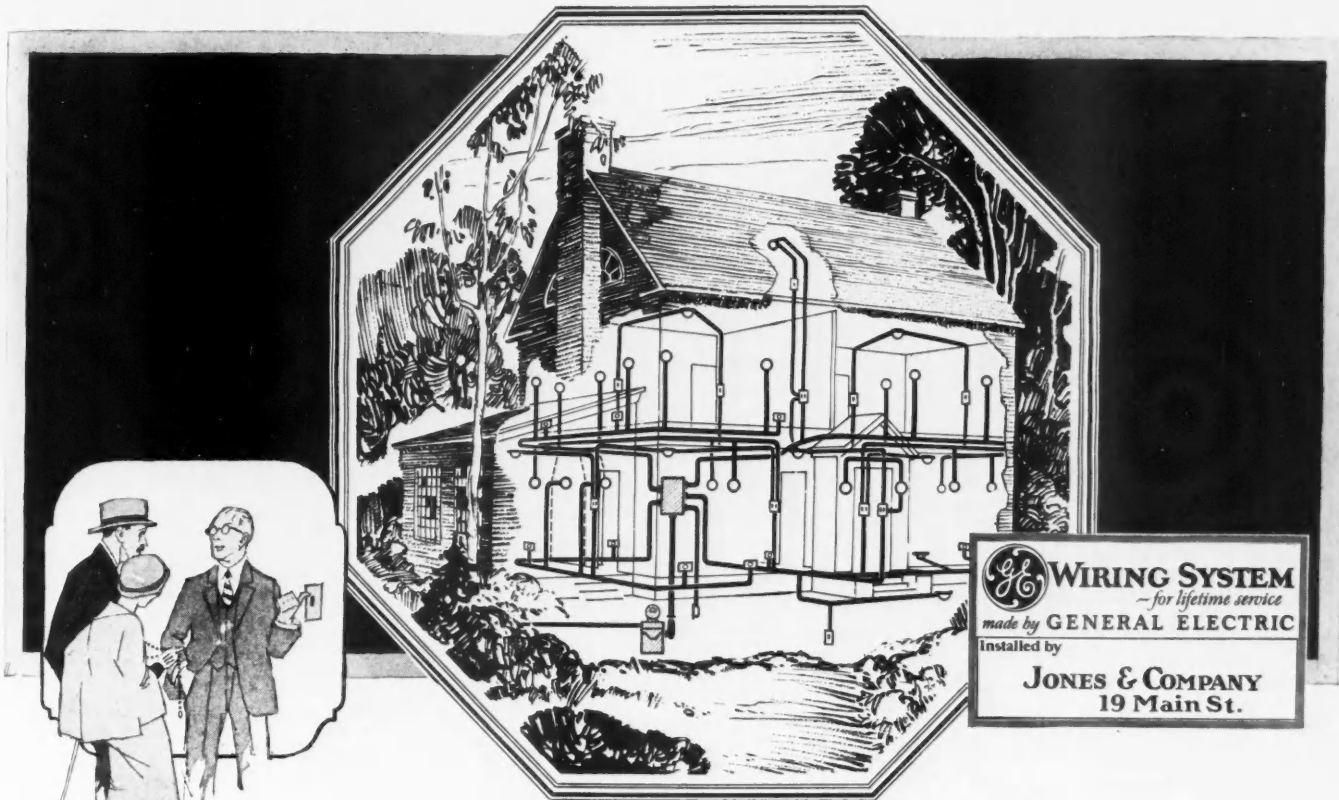
This device insures an easily operated sash at all times, but it holds the sash in any position, in any wind, without rattle. When open it is easy and safe to clean the sash from within the room and perfect ventilation is obtained regardless of the direction of the wind.

A set consists of two pieces, one for the top and one for the bottom of the sash or one for each side of the transom. These are identical except that one is the reverse of the other. One size fits all sash up to 30 inches in width and all transoms up to 20 inches in height. The installation is simple and may be made on either old or new sash. It can be done by any carpenter in less than 30 minutes, including fitting the sash into the opening. When installed it is entirely concealed.



Illustrating How the New Device for Opening, Closing and Locking Casement Windows Without Moving the Screen Operates.






## Can hidden wiring affect sales?

The G-E Wiring System is a system of housewiring embodying adequate outlets, conveniently controlled, and using G-E materials throughout. If interested, address: Section AB7.

Merchandise Department  
General Electric Company  
Bridgeport, Connecticut.

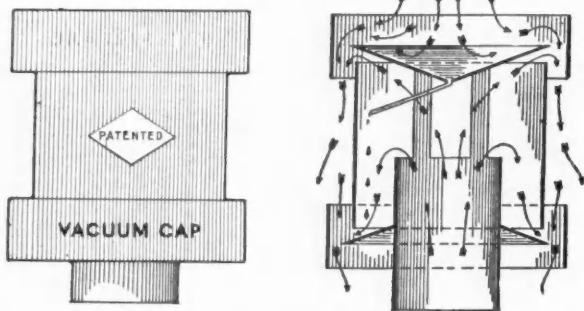
What has a piece of armored cable inside a wall to do with the quick selling of a house? Ask the man who has installed G-E Wiring Systems in his houses! Theory is proving itself in practice all over the country—for houses are proving more profitable when fitted with a G-E Wiring System. Today the public knows the economy of quality wiring—and home buyers want the comfort and convenience of a complete G-E Wiring System.

 **WIRING SYSTEM**  
—for lifetime service

# GENERAL ELECTRIC

### Flue Cap Prevents Blow Down

TWO views of an improved flue cap are shown in the illustration, one of these is an exterior and the other a sectional view showing the interior construction and operation of the cap. This flue cap is guaranteed to pre-



Exterior and Section Views Showing a Flue Cap and Its Action in Preventing Blow Downs Under Any Wind Condition.

vent a blow down when placed on the chimney flue even though it is located near a high wall or anything which would tend to deflect the direction of the wind. A vacuum is formed when the wind strikes it from any direction.

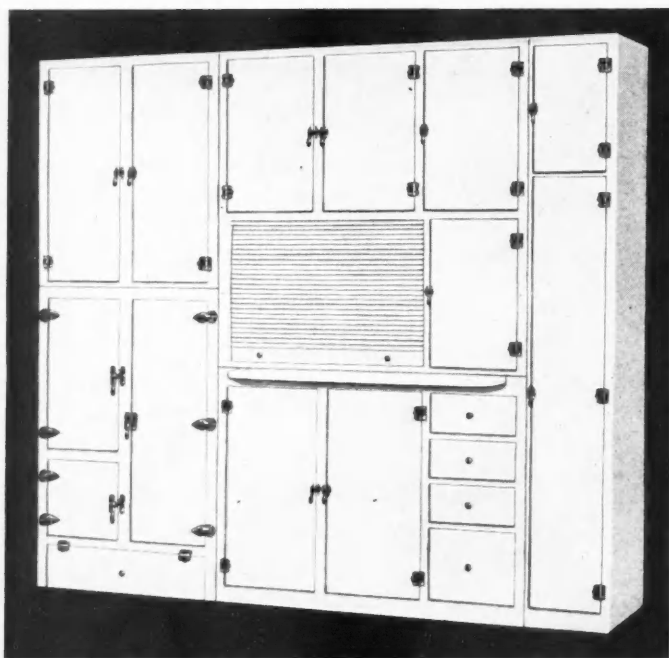
The total area of the slits between the two discs and body of the cap is more than double the area of the base connection. When the wind strikes in the direction shown in the sectional view, the outside air, compressed on the upper disc, is kept from sliding off by the surrounding band and is forced over the edge of the disc, at which point it expands, creating a suction on the slit or opening just back of the same. On the opposite end the air being forced past the slit creates a suction, thus drawing on both slits at the same time. The base connection can be obtained in any desired shape to fit any flue.



### Complete Kitchen Units

COMPLETE kitchen units which can be grouped in any manner to fit the individual taste or space requirements have accomplished much for the home builder, apartment owner, the contractor, architect and for the housewife. They make the selling of a home easier, renting less difficult and they increase the profits of either selling or renting by reducing the space required for the kitchen while simplifying and making easier the work of the housewife.

Units, of high quality construction, which may be added to or reduced at will are made of selected poplar, thoroughly kiln-dried, in three and five-ply laminated stock with hardwood core and built up with waterproof glue. They are of steel and all joints are dadoed, glued and nailed. All ends are flush, making sections interchangeable, and all are of one height and one depth



Plywood Kitchen Units of All Kinds May Be Grouped as Shown or in Any Other Manner to Fit the Space Available and the Taste of the Individual.

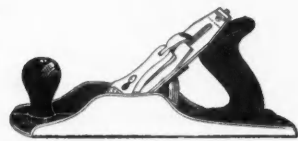
to permit any combination. All units are made in either rights or lefts and with rear or end ice and parcel service where desired.

Solid brass hardware, heavily nickel-plated, is used with extra heavy pieces on the refrigerators and mineral wool insulation is used in the refrigerators. The shelves are of heavy re-tinned wire and extra heavy galvanized linings, traps are removable for cleaning, ice chambers are large enough to accommodate mechanical refrigeration. These units are furnished with a set of high grade glassware, draw-out tables of solid porcelain and removable trays for silverware. They are finished in stock colors of white and battleship gray enamel.



### Three Improved Tools

SEVERAL new tools have recently been brought out by a well-known manufacturer, two of which are illustrated here. The ratchet screw driver is the result of producing and testing a number of designs to assure a high standard of sturdy construction and attractive appearance. The blades are of high grade tool steel, carefully hardened and tempered and the coco-bolo handles add materially to the appearance.

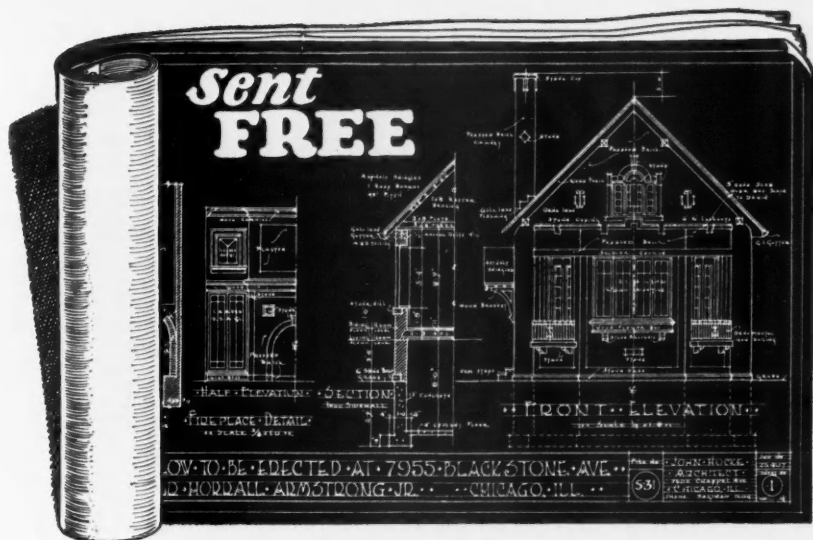


Above: An Aluminum Plane Designed to give the Lightest Possible Plane. Below: A simple and substantial ratchet screw driver.

The ratchet mechanism is of a very simple and substantial type. All parts are machine made and interchangeable and are made to withstand unusual pressure, which they have successfully done under severe tests. The complete ratchet mechanism is securely fastened to the handle by heavy tapered steel pins which prevent the handles from turning under the most severe pressure.

Two types of plane has been developed. One of these is a steel plane with accurate and positive adjustment and good balance. The bottoms of these planes are of pressed steel instead of the usual cast iron making them practically indestructible and very light in weight. The other plane, shown in the illustration, has been developed to give the lightest plane possible which would at the same time have strength and resistance to breakage. It is of aluminum. Since this metal is not as hard as iron and steel the bottom is apt to be more easily scarred by nails and other hard objects. This, however, will not affect the working qualities of the tool as is evidenced by the fact that many users prefer planes with corrugated bottoms. ✱

“THE elevation should be studied with the plan in order to produce a good design.”



# 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.”

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**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.

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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.

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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*.

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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.

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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.

### Mail the Coupon—NOW

**CHICAGO TECHNICAL SCHOOL FOR BUILDERS**  
 Dept. 736, Chicago Tech. Bldg.,  
 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)

Name.....

Address.....

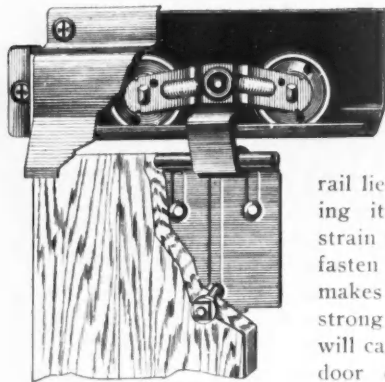
City..... State.....

## CHICAGO TECHNICAL SCHOOL FOR BUILDERS

Dept. 736, Chicago Tech. Building, 118 E. 26th St., Chicago, Ill.

### Door Hanger and Rail

THE most recent addition to one line of hardware is a door hanger and rail which is identical in principle and design with the standard hangers and rails made by this



**A Small Size Door Hanger and Rail Which Holds the Door Close to the Building and Has Unusual Strength.**

company but is of smaller size. The rail is so designed that it carries the door very close to the building and as the tread part of the rail lies flat against the building it produces a shearing strain on the screws which fasten it. This principle makes the track unusually strong and the combination will carry a shed door, garage door or the average small barn door with ease and indefinitely.

The rail comes in two pieces, the tread part and the cover part, and each functions independently. This makes the rail an easy one to hang because the tread part can be lined up and secured in place with nails, for which holes are provided. The cover is then applied and the screws set. The cover drops down well over the top of the door, protecting it from rain and snow and making it absolutely storm-proof and bird-proof.

A feature common to all hangers manufactured by this company is incorporated in this new hanger. This enables the door to swing out at the bottom when a pressure is brought against it from the inside but makes the hanger a rigid one against any pressure, like wind, from the outside. This insures an easy rolling door at all times and a minimum of wear on the bearings. These hangers are packed and shipped complete with bolts and also end caps and screws for the rail.



### Single Control Batcher

A SINGLE control batcher which, it is stated, will perform the complete operation of filling, cutting-off, dumping the batch of sand and stone, closing the lower and opening the upper gates in less than 10 seconds, is a recent development. This batcher is operated by a single lever. The upper and lower gates interlock automatically, producing accurate and uniform batches. Provisions are made for quick and accurate adjustment to compensate for bulking due to moisture content.

The sand batcher has a standard capacity adjustable from 8 to 14 cubic feet, and the stone batcher has a standard capacity adjustable from 18 to 28 cubic feet. Both have loading indicators to show when full or empty. The

batcher frame is a heavy steel channel and all operating parts are attached to the frame.

The upper gates have 14-inch diameter openings. The slide cut-off rolls on line point wheels. The lower gates have 18-inch diameter openings. They are the drop chute type, interlocking with the upper gates and operated by a single control lever. The batcher shell is round in cross section. The height over-all, when adjusted to 13 cubic feet capacity, is 3 feet, and, when adjusted to 28 cubic feet capacity, is 4 feet 8 inches. The batcher frame is drilled for attachment to practically any type of bin now on the market, whether steel or wood.



### Quick Drying Brush Lacquers

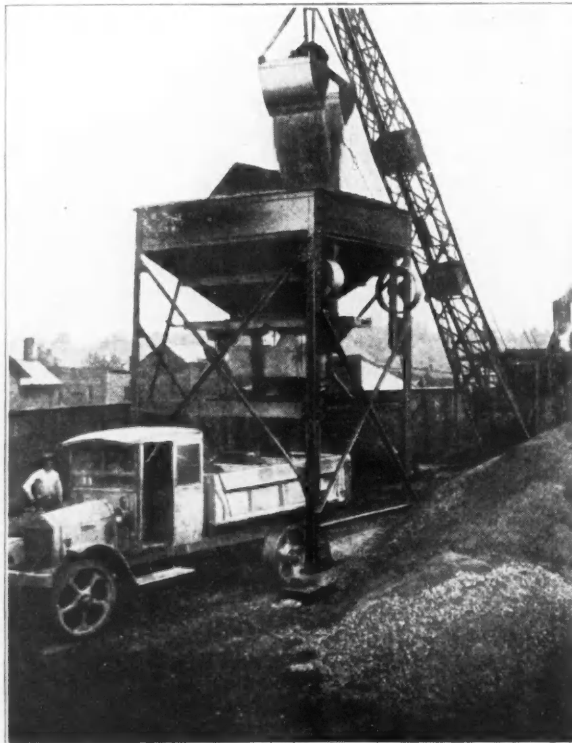
WHEREVER economy of labor, expense and time is desired a new line of quick drying finishes which has been developed within the past few years and is now being placed on the market, will be of interest. These products are all of a pyroxilin nature and consequently well adapted to use with one another. The line has been developed to form a complete method of finishing any sort of surface in the minimum time.

The first of these products is a pyroxilin wood preparation which is a combined filler, stain and waterproofing material forming a complete undercoating for lacquer, wax or varnish. It penetrates deeply into the wood but does not raise the grain and so eliminates sanding. In one operation it gives the same results as the three former operations of staining, filling and sanding.

It can be applied to a floor before the carpenters have completely finished work, wiped off and the carpenters can resume work. Shavings and saw dust do not affect it while drying. After drying over night it is ready for the finish coat of clear brushing lacquer and it may be waxed or varnished 48 hours after applying. It comes in five standard colors which are commercially permanent to light and bite deeply into the wood so that they are practically impervious to wear.

The colored brushing lacquer is available in practically all standard colors and is applied with a brush, flowing on freely and leveling itself to a smooth, durable, impervious surface. It can be applied over most old finishes or on new work. Within five minutes it is dry to the touch and within 30 minutes dry enough to recoat. Within an hour or two it is hard enough to stand any except most severe use.

The clear brushing lacquer is used over the wood preparation or surfaces of any sort. When thinned with one-third lacquer thinner, it is excellent as a primer for wood, cement or plaster walls that are to be finished with color brushing lacquer, varnish or wall coatings. In addition to improving the fullness of the final finish it gives a flexible waterproof sealing first coat. It exerts a hardening action on the surface of plaster walls and penetrates wood to such an extent as to furnish an anchor for finishes.



**The Complete Operation of Filling, Cutting-Off, and Dumping a Batch of Sand and Stone Can Be Completed in 10 Seconds with This New Batcher.**

# child's playground radiator warmed homes

**T**O every father and mother comfort and health for their children means more than anything else. That is one of the big reasons why builders have found that homes with **IDEAL BOILERS** and **AMERICAN RADIATORS** sell or rent more easily and for more money.

Your prospects know the value of radiator warmth because millions of advertisements in magazines and newspapers have been constantly carrying to them the story of the healthful comfort of radiator warmth.

## There is an IDEAL BOILER for every kind of building

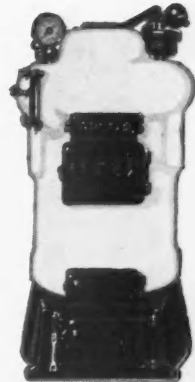
For every building, from the smallest cottage to the largest office building, there is an Ideal-American Heating Plant that will give perfect warmth—that will increase the value of any house—that will make it sell more easily.

The coupon below will bring you your copy of the new booklet, "Ideal Warmth and Comfort at Minimum Cost."

### AMERICAN RADIATOR COMPANY

Showrooms and sales offices: New York, Boston, Providence, New Haven, Newark, Philadelphia, Baltimore, Washington, Richmond, Buffalo, Pittsburgh, Cleveland, Detroit, Cincinnati, Atlanta, Chicago, Milwaukee, Indianapolis, St. Louis, St. Paul, Minneapolis, Omaha, Kansas City, Denver, San Francisco, Los Angeles, Seattle, Toronto, London, Paris, Milan, Brussels, Berlin

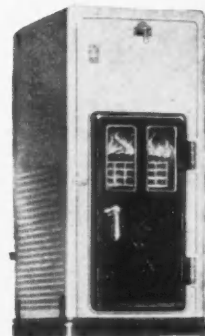
Makers of IDEAL BOILERS and AMERICAN RADIATORS and other products for heating, ventilating and refrigeration



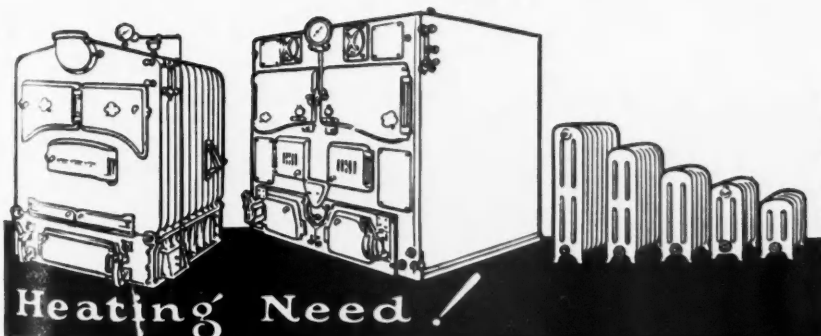
The famous Arco Boiler for medium sized homes and other buildings.



Ideal Arcola Heater for smaller homes and other buildings with or without basements.



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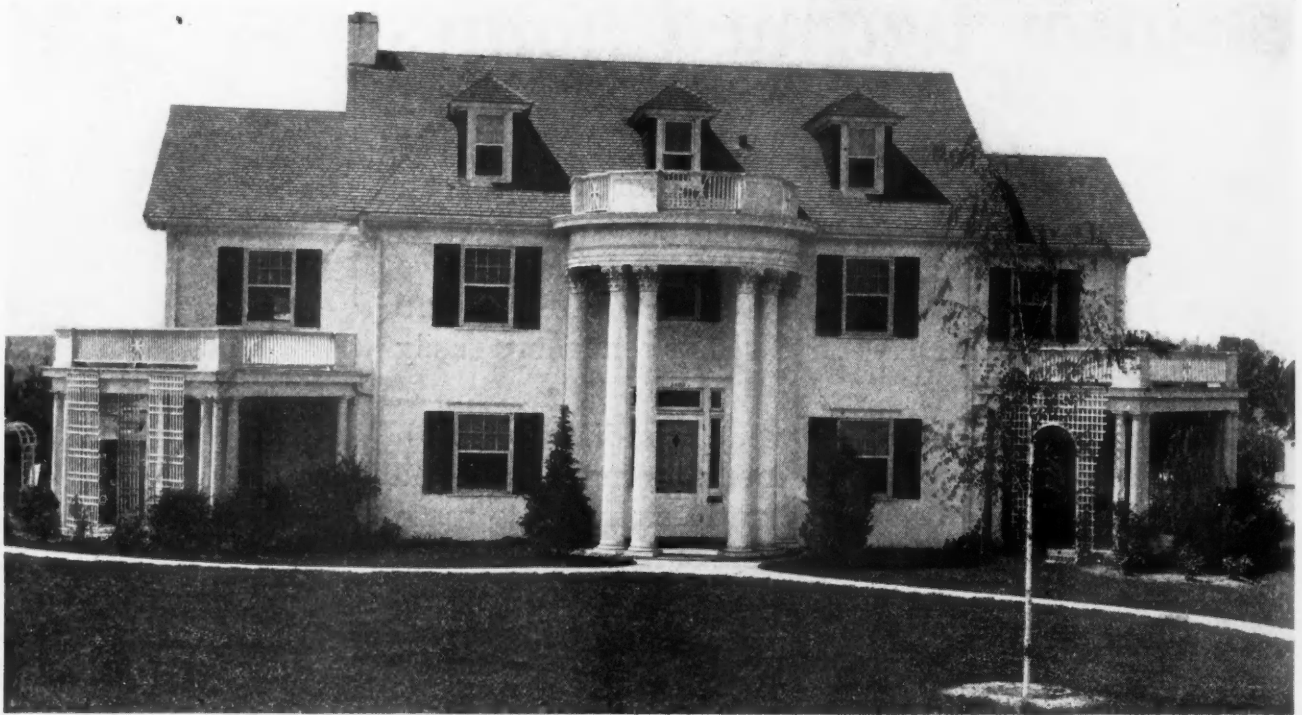
Very truly yours

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City \_\_\_\_\_ State \_\_\_\_\_

# Classic Columns Are Now Formed of Enduring Sheet Steel



There Is a Dignity and Charm in the White Columned Entrance Which Holds an Ever Constant Attraction, Not Only Because of Its Association with the Architecture of Our Colonial Period but Because of Its Inherent Worth.

**M**UCH of the enduring beauty of Greek and Roman architecture can be credited to the stately charm of the classical column which was one of the distinctive features of the architectural development of these early periods. In our own Colonial days the architectural inspiration was taken from the classical style and the tasteful dignity of the Colonial architecture, with its characteristic classic columns, has never been surpassed for homes and public buildings. Even today the Colonial home and Colonial or classic style in public buildings is highly favored and its permanent popularity is assured.

Many architects and builders who fully appreciate the value of columns have not used them freely because of the practical difficulties in obtaining columns which were correct in design, permanent in construction and reasonable in cost. These limitations, however, were removed by the perfection of pressed steel columns which meet every requirement both architectural and structural.

These columns are now made of copper bearing, galvanized steel of heavy gage. The smaller sizes are made in a single ply while the larger sizes are of two ply laminated construction. The galvanizing, both inside and out, protects the metal against the weather and it is also provided with a priming coat of red lead over which any color of finish coat may be applied after erecting. The vertical joints are double lock

seamed with the seam rolled on the inside so that the outside surfaces are clean and smooth.

These columns are made architecturally correct in the nine styles conforming to the different orders of Greek and Roman architecture, and providing for the requirements of all types of building from the small cottage to the most elaborate public building. The fluting is produced with clean cut lines and the capitals and bases fit perfectly over cast iron base flanges.

When using metal columns of this sort the builder is assured that they will not split, rot, warp, or open at the joints and that they are fireproof. They also possess high load bearing ability. Small columns have been tested to 13½ tons and larger columns to 15 tons without failure. These were tests on individual columns although in actual construction porch roof and pediment loads do not fall on one column but are always distributed between two or more columns.

Because of their structure and light weight they can be easily and economically transported and may be shipped and hauled to locations and under conditions which would rack other columns to pieces or involve a cost which would be prohibitive. Ordinary blows, bumps and rough treatment which would dent or chip other materials, have no effect on steel columns and their perfect lines have an enduring permanence through many years of service.



Columns Are Inseparably Associated with Public Buildings of All Kinds in the Mind of the American Public.

# Build homes instead of houses



## Fenestra Casement Windows

Residence of  
Mr. E. Freeman,  
Merion Station, Penna.  
Architects and Contractors  
Wallace & Warner,  
Philadelphia, Pa.



YOU'LL find another selling advantage in the bright, airy basement that's made possible by the use of Fenestra Basement Windows. Home buyers like these better steel windows because they cannot warp nor stick—always open easily, yet shut out the cold, stormy weather—and because they last!

—and sell them twice as quickly.

Bright, airy living-rooms, cheerful dining-rooms, cozy breakfast nooks and pleasant, comfortable bedrooms, made so with Fenestra Steel Casements, are factors that turn the otherwise ordinary house into a beautiful home. And the cost is little if any more than you are paying for ordinary windows.

Figure it out on your next job. Estimate the total cost of wood windows, include weight-boxes, weights and cords; carpenter's time for installing, fitting and putting on the hardware as well as building in the wood trim; add the cost of paints and the painter's time.

Compare this cost with the total cost of Fenestra. Then you'll be making a just comparison, and then you'll find that Fenestra Casements save many of your wood window costs—save time, labor, money; because they are delivered to the job *complete* with hardware and a priming coat of paint—ready for installation. No weights, no cords; no carpenter labor; no weather-stripping and no interior trim.

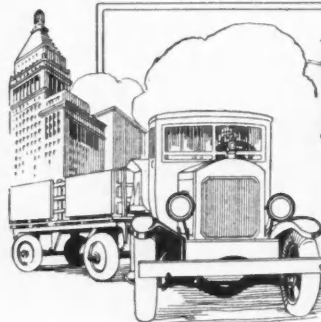
There are many Fenestra advantages that appeal to the home buyer. Let us tell you the whole story in our special literature for the builder.

DETROIT STEEL PRODUCTS COMPANY, C-2260 East Grand Boulevard, Detroit, Michigan  
Factories at Detroit, Mich., Oakland, Calif.,  
and Toronto, Ontario, Can.

# Fenestra

for homes, large and small  
shops and small factories  
garages and service stations  
stores and other buildings

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



# MOTOR TRUCKS AND TRAILERS

## Standardization On Trucks

**A** PROBLEM which every contractor who operates more than one truck must consider at some time is whether or not he should standardize on one truck or use trucks of various makes, models and sizes. Many fleet owners do standardize and insist that it is a decided advantage while others may be found who use different trucks for different purposes and claim that their method is more satisfactory. Obviously it is a question that cannot be settled off-hand. Also the answer will, undoubtedly, be a different one for different contractors as conditions are not always the same.

First let us consider the advantages of standardization. With a standardized fleet of trucks every driver is familiar with that type of truck and can be depended upon to get the best performance from it even though he does not drive the identically same truck every day. He will know its characteristics and be able to tell when something is wrong and needs attention. Service on all the trucks can be obtained to the best advantage from a single service organization which means uniform service and the simplification of dealing with only one concern.

In addition to this when a truck has been found which serves the contractor's needs to the best advantage, standardizing on that truck gives an assurance of even performance and eliminates the uncertainty of costly experimenting. There is also the advantage of interchangeability, a point which may prove extremely convenient, especially in an emergency. All of this applies most effectively where all, or most, of the work to be done is of about the same sort, without great variation in loads. Under such conditions the advantages are, probably, decidedly in favor of standardization.

On the other hand many contractors and building material dealers have a rather wide variety of hauling to do. Some of the loads to be handled will be heavy, compact materials such as sand, gravel, brick and cement, others will be lighter and more bulky such as lumber and shingles, again it will be necessary to handle tools and fixtures. The trips, too, will vary. At times regular hauling, at a moderate speed, of large quantities of material will be in order and at other times there will be the rush call for small quantities or even partial loads.

Obviously it would be wasteful to a big powerful truck, such as is suitable for handling the heaviest loads of cement, to transport tools, shingles or light fixtures, nor would the light, fast truck intended for such use be capable

of standing up under the strain of heavy hauling.

And so for the builder or dealer who must meet a wide variety of demands it will be more satisfactory to have two or more types of truck which can be assigned to the particular work for which they are designed. This does not necessarily mean, however, they must all be of different makes. With the complete line which many manufacturers now produce, it is possible to standardize on a single make of truck and still obtain a type to fit each requirement. Doing this will afford many of the same advantages as standardizing on a single truck.

There will be the advantage of a single service organization to deal with, at least, and this in itself will be highly satisfactory.

Before standardizing on any truck or on any line of trucks, however, a most careful study should be made of the requirements to be met and the qualification of each truck for meeting them. In the center of this page are listed five requirements which must be met by a truck in order to qualify as thoroughly dependable. Each of these is essential and all are so closely inter-related that it is impossible to treat them separately.

The truck should be the product of a soundly established organization, with large financial resources, because only such a company is capable of producing a first class machine which will measure up to the second requirement. The design-

ing and production of a modern motor truck is a costly undertaking and the development is a high class product, a problem which requires constant study and experiment, by the most expert engineers. Also, only the perfectly sound company can offer assurance of permanent production which will enable you to secure additional or replacement units as required and will not wink out and leave your machines orphans, depreciated in value, and possibly having difficulty in obtaining replacement parts.

It is obvious that a machine which must give steady daily service, often under the most difficult conditions, must be built only of first class material and uniform quality. The point of simplicity and accessibility is equally important for every truck will require maintenance and simplicity and accessibility mean quick and inexpensive work.

Closely related to this is the service organization which stands behind the truck prepared to keep it in good condition for steady operation. It should be widespread for it will not always be possible to reach the home shop when repairs are required and with a widely distributed organization maintenance will always be within convenient reach.

### **A Dependable Truck Must Be:—**

**T**HE product of a soundly established organization with large financial resources;

**A** WELL developed machine from an engineering standpoint, which can only be produced by such a company;

**P**RODUCED from first class materials and in accordance with strictest standards to insure uniform quality of construction;

**S**IMPLE in construction and accessibility in order to facilitate the ordinary work of mechanical maintenance;

**B**ACKED by a service organization which is widespread and of high quality.





*Etching made for the Kelly-Springfield Tire Company, by O. Kuhler Pittsburgh*

WHEREVER heavy burdens are to be carried, or unusually trying road conditions encountered, truck owners can depend upon Kelly Kats—the original notched-tread truck tires—to solve their tire problems. The reason is simply that no other type of tire offers the same combination of traction, resiliency and mileage.

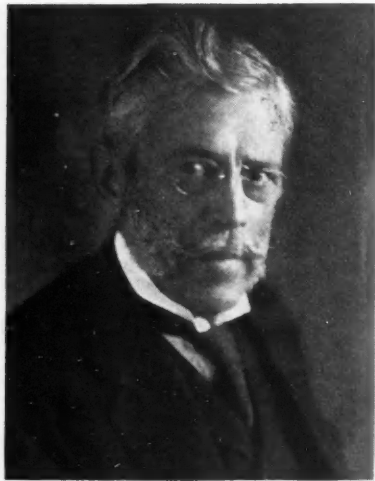
# KELLY~SPRINGFIELD TIRES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# NEWS of the FIELD

## Merger of Cinder Products Plants Is Completed

THE manufacture of building units made of concrete and cinders has assumed large proportions and a new company has recently been formed to take over 30 of the largest cinder concrete unit plants in the United States. This company will be known as the National Building Units Corporation with main offices in Philadelphia, Pa.



Charles R. Flint, Through Whose Efforts the Consolidation Which Formed the National Building Units Corporation Was Effected.

This consolidation was formed through the efforts of Mr. Charles R. Flint, of Flint & Company, 25 Broad Street, New York. The chairman of the executive committee of this corporation is Mr. LeRoy A. Goodwin, who is head of the Concrete Specialties Company, Camden, New Jersey.

The consolidation will include the best managed, the soundest financially and the most successful companies now operating in this industry. Thirty of these plants are already in the organization.

This merger is said to be the largest combination ever made of concerns manufacturing building units.

There are a total of 76 plants in the United States, making 50,000,000 cinder concrete building units, which is the equivalent of 600,000,000 bricks. These 30 plants will continue with their local directors and local managers, but all of the plants will have the benefit of the best and most successful methods so far used. In this way, the manufacture of cinder concrete building units will be definitely standardized.

When Mr. Flint first took hold of this proposition, he first organized the Building Units Patent Corporation. This corporation bought 77 per cent of the shares of Crozier-Straub, Inc., and 100 per cent of the shares of the Cinder Products Corporation. The first included the Straub patent and the second the Bo patent. At the same time, the corporation secured the Warner inventions, which cover a method of manufacturing and which will reduce the cost of production.

The Building Units Patent Corporation has ample financial facilities for purchasing inventions that will improve the quality and reduce the cost of production. All the shares of this corporation will be owned by the National Building Units Corporation. The new company will con-

tinue to license under both the Straub and Bo patents, and any of the plants that come into the organization later will have the protection of both of these patents.

Flint & Company, Inc., have formed a number of important consolidations and among these are the United States Rubber Company, American Woolen Company, International Time Recording Company, American Chicle Company and many others.



LeRoy A. Goodwin, Chairman of the Executive Committee of the National Building Units Corporation.



## Prizes for Grade Marking Tools Awarded

AN electrical grade-marking hammer, invented by E. R. Tidwell and L. A. Durocher, of the Edward Hines Yellow Pine Company, Lumberton, Miss., was awarded the first prize of \$500 in the contest conducted by the Southern Pine Association for the best suggestion of practical methods and devices for the grade-marking of lumber.

A total of \$1,000 was offered by the association as prizes in this contest. The second prize, \$250, was awarded to J. J. Rettmer, of the Long-Bell Lumber Co., Lufkin, Texas; third prize, \$100, to J. B. Wilkinson, of the Helen White Lumber Co., of Clyde, Miss., and C. L. Rice, of Laurel, Miss.; and three prizes of \$50 each to H. W. Whited, vice-president Frost Lumber Industries, Inc., Nacogdoches, Texas; R. E. Cassibry, resident manager Finkbino Lumber Co., D'Lo, Miss.; and E. W. Morton, of New Orleans.

As a result of the contest, three effective means for grade-marking have been found available to the lumber manufacturer, one requiring electricity for power, another using air, and the third, hand-operated. The six best ideas and devices were awarded prizes.



## Instructions in Roof Framing

(Continued from page 170)

is  $7\frac{1}{2}$  feet, the run of the common rafter is 5 feet 4 inches, what numbers on the square will give the side cut of the jack rafters?

### Answers

1. The length of the first jack rafter placed 1 foot 4 inches from the corner of the building is  $17\frac{7}{8}$  inches.
2. The length of the third jack rafter is three times  $17\frac{7}{8}$  inches equals  $53\frac{3}{4} = 4$  feet  $5\frac{5}{8}$  inches.
3. The numbers 12 and 6 taken on the square will give the plumb and seat cut of the jack rafter as well as the common rafter.
4. The numbers 12 and  $13\frac{1}{2}$  taken on the square will give the side cut for these jack rafters. The  $13\frac{1}{2}$  stands for the length per foot run and the 12 for 1 foot run.
5. If the length of the common rafter is  $7\frac{1}{2}$  feet and the run is 5 feet 4 inches or  $5\frac{1}{3}$  feet, then the numbers  $7\frac{1}{2}$  and  $5\frac{1}{3}$  will give the side cut for the jack rafters. This point is illustrated in the sketch at the lower left hand corner of the illustrated page.

G. M. Tucker, a Building Contractor at Monroe, N. C. writes us that: "Our 2 ton GMC Truck purchased two years ago has never missed a trip and has been in continuous service carrying a minimum load of 3 tons." "That's Reliability."

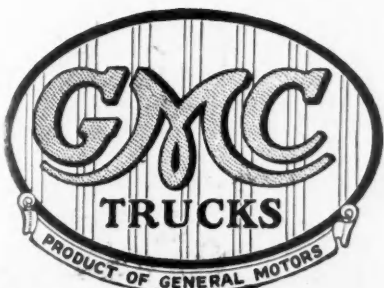


## These features insure unusual **Reliability** in GMC Trucks

The ability of GMC Trucks to haul their loads, day after day and year after year, *with a minimum loss of time* is the direct result of General Motors great engineering and manufacturing facilities, plus years of experience in truck building.

Improved wear-resisting, removable cylinder walls and positive high pressure lubrication to all bearing points in the engines; oversize transmission gears and shafts; oversize universal joints; oversize axles; pressed steel frames; springs of finer steel; electrical wires encased in wet-proof conduits;—

These are but a few of the reasons for the *unusual reliability* of General Motors Trucks.



Sold and Serviced Everywhere by Branches, Distributors and Dealers of  
**GENERAL MOTORS TRUCK COMPANY**  
**Pontiac, Michigan**

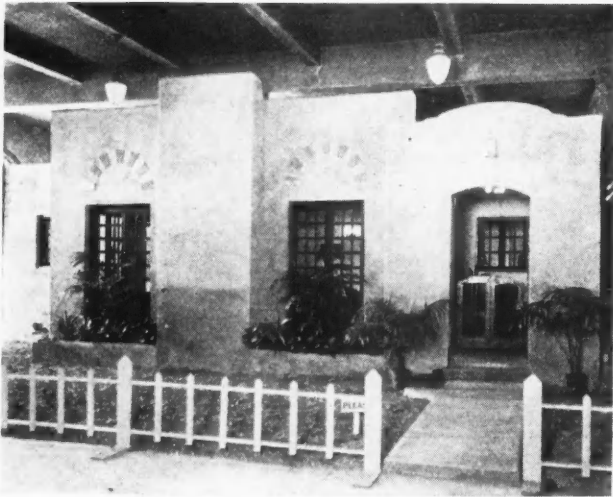
A DIVISION OF YELLOW TRUCK AND COACH MANUFACTURING COMPANY  
GMC 1, 1½ and 2½ ton trucks

GMC Big Brute 3½ and 5 ton trucks      GMC Big Brute 4 to 15 ton Tractor Trucks  
Yellow Cabs      Yellow Coaches      Yellow Light Delivery Trucks      Hertz Drivurself Cars

Co. GMT Co.—1926

### Exhibit Student Built House

ONE of the principal features of the "Annual Exhibition Night," recently held at the Carnegie Institute of Technology, Pittsburgh, was a six-room stucco bungalow built by students in the department of building construction of the institute. The house contained, in addition to the six rooms, a bathroom and sun porch. All the construction work, from the laying of the first brick to the turning on of the lights, was performed by students of either the day or night classes. These included students in masonry and brick laying, electrical construction and equipment carpentry and woodwork, plumbing, iron work and other courses connected with building construction.



This Six-Room Bungalow Was Built Complete by the Students of Carnegie Institute of Technology Department of Building Construction.

This house replaces a brick bungalow which was erected, in the same way, during the preceding year. It will probably be torn down and another similar building problem undertaken during the coming year. By actual count this house was inspected by more than 9,300 visitors during the evening of the exhibition.



### Campaign Promotes Douglas Fir

THE building industry has a new merchandising force working for a better appreciation of wood in construction, in the trade extension campaign for Douglas fir, which is directed by the West Coast Lumber Trade Extension Bureau, Seattle, Wash. The advertising campaign, in national consumer and trade publications, is already attracting comment. It is planned not only to reach the general consumer but in addition to present the story of Douglas fir to the architect, the industrial buyer, the farmer, the business man and the builder. In size and scope this will be one of the major trade extension campaigns of the country. It is supported by lumber manufacturers, logging operators and timber owners of the Pacific Northwest.

Henry Schott, manager of the West Coast Lumber Trade Extension Bureau, states: "It is not commonly realized that the Douglas fir industry has placed itself on a basis of supplying America permanently with lumber. Manufacturing economies, new methods of logging and milling, of drying and grading the product, have been perfected. Entire new cities and new harbors have been created, great docks built, fleets of vessels assembled, in order that the West Coast may efficiently supply America's lumber needs.

"But that is not all—a greater and more important factor commends the attention of every buyer and user of lumber. It is the fact that Douglas fir and other West Coast woods represent a lumber supply for all time to come. This is

established not only by the vastness of the timber stands in the Douglas fir region but also because the Douglas fir takes care of its reproduction so abundantly and completely restores cutover land to mature tree bearing. Climatic conditions, fertility of soil, abundant moisture, all combine to make possible a maximum reproduction in quantity and quality of timber in a minimum time.

In addition to a complete magazine and business paper campaign there will be a complete line of dealer sales-helpers and organized plans for local home-building campaigns. There will also be a plan to develop new business in mill-work products.



### Lehigh Builds from Prize Plans

THE Lehigh Portland Cement Company, Allentown, Pa., is demonstrating the merits of concrete masonry by building homes from prize designs, received from an architectural competition, and opening them to the public for inspection. Recently homes were opened in Birmingham, Ala.; Kansas City, Mo.; and Bronxville, N. Y., and a fourth will soon be ready in Winnetka, Ill., near Chicago. It is reported that this experiment is proving highly successful and is serving to carry people over the gap between the desire for a home and the actual building of a home by giving them an opportunity to visualize the possibilities of masonry construction.



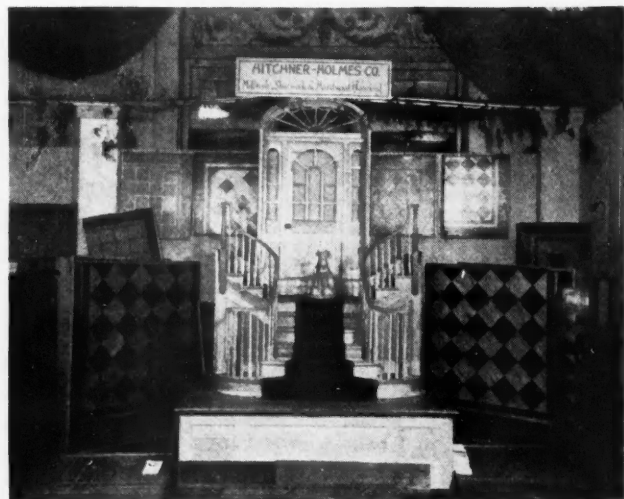
### Company Name Changed

AN announcement has been made that, in order that its corporate title may conform to the trade name of its product, the Standard Heater Company will hereafter be known as the Spencer Heater Company. The headquarters of the company at Williamsport, Pa., remain unchanged and it will continue under the same ownership and management control as in the past.



### Attractive Exhibit Booth

ONE of the most attractive booths at the recent exhibition held by the Camden Society of Architects, of Camden, N. J., was that of the Hitchner-Holmes Company. A number of nationally known products handled by this company, such as the Wood Mosaic Company's hardwood flooring, were featured and in addition the products of the Hitchner-Holmes mill. The latter were shown one-half actual size and included Colonial stairways and outside doors made up according to the company's own special designs.



The Hitchner-Holmes Company Booth Was an Attractive Feature of the Camden Society of Architects Exhibition.

for Economical Transportation



*Only*  
**Chevrolet gives you**  
*for* \$ **550**  
*Chassis only...fob. Flint. Mich*

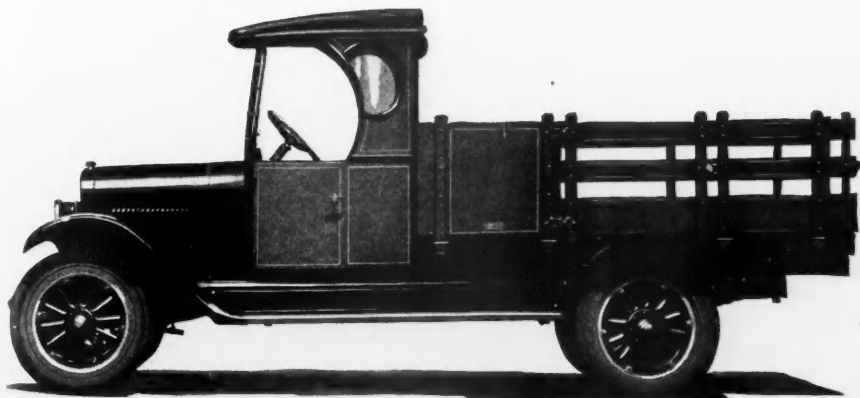
*this*

Quality Features  
 found only in Chevrolet at  
 these Low Prices

No other truck offers so many quality features at such a remarkably low price. Its modern design and sturdy, special truck-type construction give definite assurance of low up-keep and economical operation.

If your business requires a rugged, dependable, thrifty one-ton truck, see your nearest Chevrolet dealer. He will gladly show you why Chevrolet trucks cost less to own and to operate.

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



Easy gear shifting, with 3-speed control. Disc-clutch of latest improved design.

Valve-in-head motor that delivers more power and miles per gallon than any other truck engine of equal size.

Positive motor lubrication by a combined pump and splash system.

Positive cooling in all weather by a water pump and extra-large Harrison radiator.

Positive, reliable, semi-reversible steering control.

Extra-large, equalized brakes—12½-inch diameter drums.

Big, oversize rear axle with spiral-cut, bevel gears.

Semi-elliptic steel springs—88% of wheelbase.

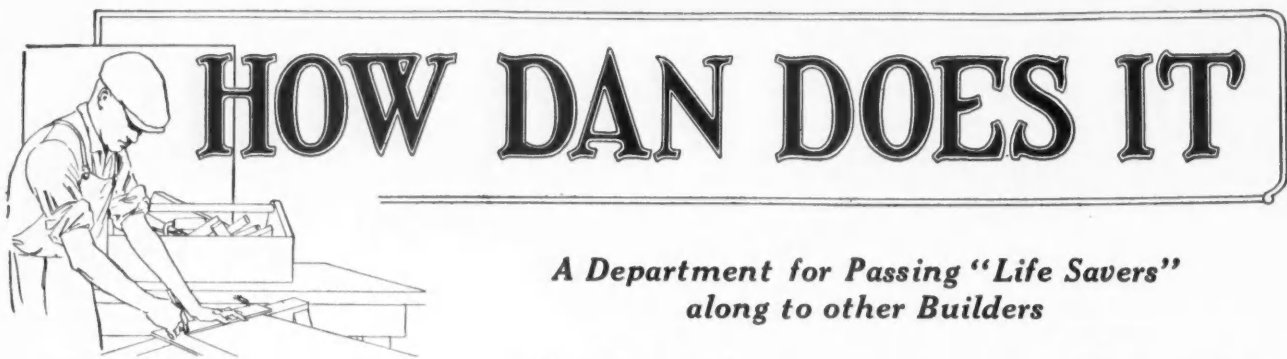
Full length, 177-inch, deep channel steel frame, rigidly braced.

Alemite lubrication.

½-ton chassis, \$395  
 f. o. b. Flint, Michigan

**CHEVROLET**  
**ONE TON TRUCKS HALF TON**

**World's Largest Builder of Gear-shift Cars**



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

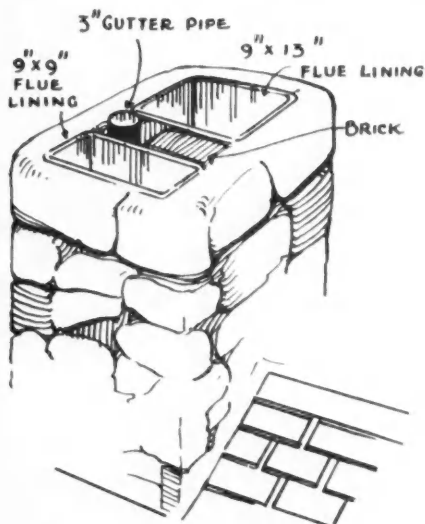
**\$2 for an Idea**

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.

### Ventilator Pipe in Flue

I RECENTLY constructed a flue, in a new dwelling, which contained two flue linings with a single brick



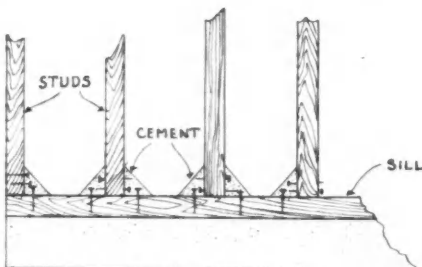
A 3-Inch Gutter Pipe Placed with the Chimney Flue Makes a Most Effective Ventilator When Connected with an Apron Over the Kitchen Range.

brick occurred to me that this could also be used for ventilating the kitchen and I found room to place a 3-inch gutter pipe between the flue linings. This gutter pipe is connected with an apron over the cook stove and effectively carries off all gases and odors from the cooking. The sketch shows just how the pipe was placed in relation to the flue lining.

—J. C. CONNER, Straight Creek, Kan.

### Holding Studs to Sill

WITH yellow pine or fir dimension lumber it is difficult to toenail a stud to a sill without splitting the end of the stud. Spikes do not hold much when these splits occur and smaller nails do not reach far enough to well support the stud. In the construction of garages which, have no joist or floor to brace the studs, I have used cement corner casts to good advantage to hold the studs to the sills as well as to give the building better bracing against wracking.



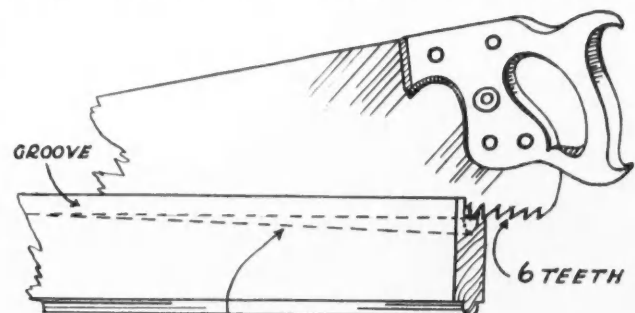
Where Toe-Nailing Splits the Studs This Use of Nails and Cement Will Hold Them Securely to the Sills.

The studs are set and toenailed with eight penny nails to hold them in place until the bottom weatherboard is put on. Spikes are then driven through the studs about 4 inches from the foot and spikes are likewise driven in the sill at the sides of the stud, but the heads of the latter spikes are left sticking up 2 inches or more. A board is tacked temporarily along the inner side of the studs and cement is then filled in the corners formed by the stud and sill. This is troweled off to about 45-degree slope.—GEORGE C. MCVICKER, North Bend, Neb.



### To Straighten Flooring

A FEW weeks ago, while laying a  $\frac{3}{8}$ -inch oak floor, I discovered, after laying several feet, that the boards were not running straight as they were when I started. This was caused by one end of the bundle being slightly damp, therefore wider, or by poor machine work in the



REMOVE WOOD TO DOTTED LINE

A Saw with Six Teeth Set to the Width of the Groove in Flooring Can Be Used to Deepen the Groove When a Matching Plane Is Not at Hand.

matching. I wanted to straighten it up as I had almost reached the hall door and crooked boards would show badly from the end of the hall.

I had no small matching plane on the job so I took my coarse rip saw and set six teeth, next to the saw handle, so that they would cut just the width of the groove in the flooring. With this part of the saw I cut the groove deeper wherever it was needed then planed off the edge. By taking a little off of each of two or three boards the floor was made straight again.

These six teeth, being so near to the handle, do not interfere with the regular use of the rip saw and are also a great convenience in straightening up thin wainscoting if it does not stand just plumb as you get near to the corner.—EDWARD POSTE, Perry, N. Y.

# Designed Precisely for Your Needs

The designers of Graham Brothers Trucks are alive to the fact that every business has its individual haulage problems.

An intensive study has therefore been made of the particular requirements of various industries—including your own—and truck bodies designed to fit the needs of more than 450 different kinds of business.

Ready adaptability to the job and lower initial cost due to mass production account for the steady increase in sales of Graham Brothers Trucks for the haulage of Building Materials.

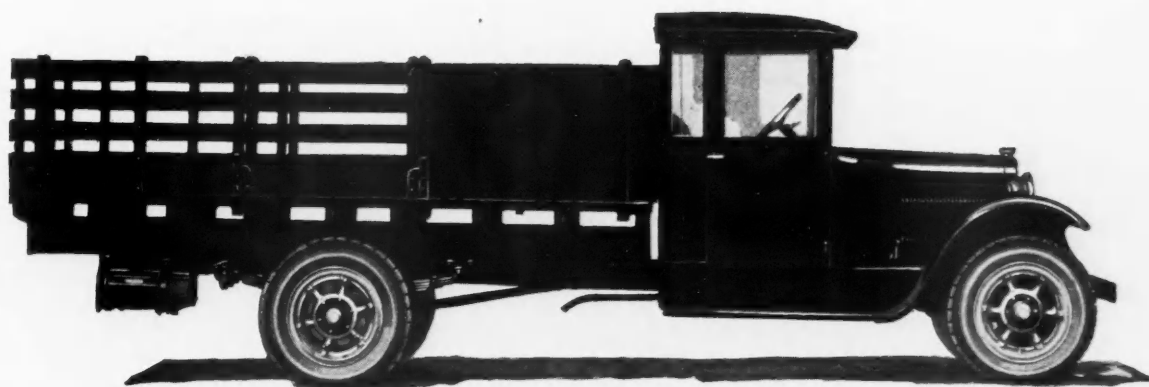
We have valuable information concerning your haulage problems. It is yours on request.

[Graham Brothers Trucks, with Dodge Brothers 3/4-Ton Commercial Cars, meet 90% of all haulage requirements.]

1-Ton Chassis (G-BOY)	\$ 885
1½-Ton Chassis	- - - 1245
MBM Low Chassis	- - - 1295

*f. o. b. Detroit*

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

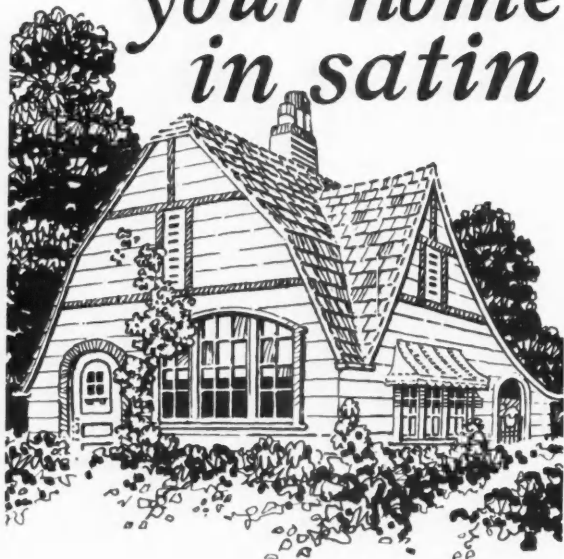


# GRAHAM BROTHERS TRUCKS

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DEALERS EVERYWHERE

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## Dress your home in satin



Give it the outward appearance that will express the comfort and happiness offered within by making its sidewalls of silky Keystone Red Cedar Siding—“smooth as a kitten’s ear.”

These wonderful boards, light and enduring, cut skillfully from giant trees of Western Red Cedar will provide a distinctive charm and will endure for generations.

Builders can be sure of producing a fine, workmanlike job where this clean, easily worked material is used.

Write today for valuable information about this labor saving lumber.

HAMMOND CEDAR CO., Ltd.  
New Westminster, B. C., Canada

*Western*  
**Red Cedar**

is exceptionally easy to work, being soft and light. It will not shrink, swell, warp or buckle and is free from pitch, so that close joints can be made and it takes paint or stain beautifully. It is also noted for its resistance to rot.

**KEYSTONE**  
**RED CEDAR SIDING**

### Gas Association Awards

THE winners in the prize architectural competition of the American Gas Association have been announced. The awards were made as follows: First prize, \$1,000 to Russell S. Simpson, Cleveland Heights, Ohio; second prize, \$500 to F. S. Hopkins and P. C. Bohanon, Cleveland, Ohio; third prize, \$250, to Antonio di Nardo, Cleveland, Ohio; fourth prize, \$250, to Harold A. Rich, Auburndale, Mass.; five other prizes of \$100 each were also awarded.

The judges of the competition, Aymer Embury II and Dwight James Baum, of the American Institute of Architects, and Alexander Forward, secretary-manager of the American Gas Association, and the architectural advisor of the competition, William Adams Delano, of New York, stated that for the most part the plans showed genuine merit and originality of thought.



### Establish Western Branch

THE Massillon Steel Joist Company, of the Pacific Coast, has just been organized and headquarters established at 309 Rialto Bldg., San Francisco, Calif. This company will handle the complete line of steel building materials produced by the Massillon Steel Joist Company, of Canton, Ohio. A complete stock will be carried to insure satisfactory delivery service and, as soon as a dependable and adequate volume of business has been developed, a manufacturing plant will be established. J. L. Clymer, who is vice-president and general manager of the new company has been identified for many years with the California Institute of Steel Construction as executive director.



### Trade Marked Construction

THE Wheeler, Osgood Company, of Tacoma, Washington, is supplying, through its retail distributors and representatives, a series of identifying signs to help real estate men and builders sell property which is equipped with the Laminex doors which this company manufactures. Because of its extensive national advertising this company's doors are well known to the public and are, therefore, considered a valuable talking point in the sale of buildings. The signs are designed to furnish the necessary advertising tie-up.



### To Build Western Factory

FIFTEEN acres of land at St. Louis, Mo., have just been purchased by the Asbestos Shingle, Slate & Sheathing Company, of Ambler, Pa., as a site for a western factory. The new factory will manufacture asbestos shingles, corrugated roofing, asbestos lumber and other asbestos products. It will be located on the city line to the north of St. Louis and will extend along the Chicago, Burlington & Quincy Railroad. The site is especially well adapted to the purpose because of its proximity to a large cement plant which will supply the large quantities of cement used in the manufacture of the asbestos products. Building operations will be started immediately.



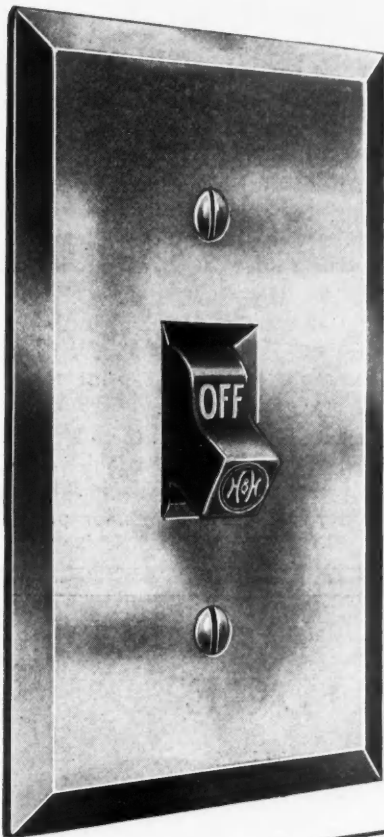
### Waste Prevention Prizes

IN recognition of his invention of log carriage devices, described as “one of the most radical changes that has been made in sawmill machinery in 20 years,” E. H. Percy, chief engineer of the Union Lumber Company, Fort Bragg, Calif., has been awarded the \$1,000 first prize in the National Lumber Manufacturers' Association Waste Prevention Contest. W. H. Ferguson, of the Coos Bay Lumber Company, Mashfield, Ore., took the second prize of \$500.



H&H H&H H&H H&H H&H H&H H&H

# FLUSH H & H SWITCHES



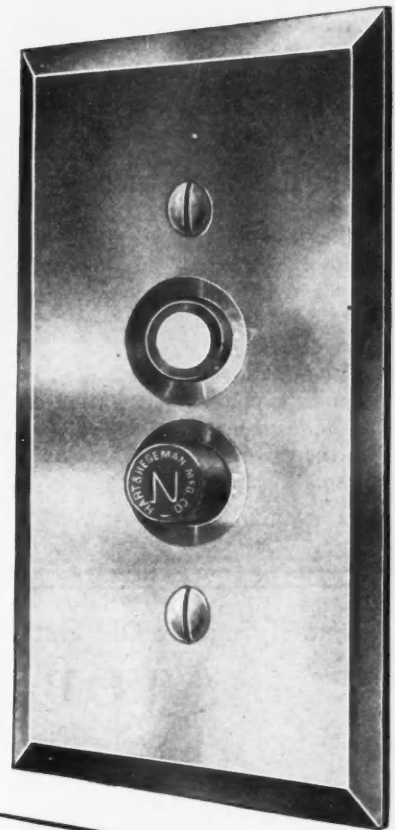
NUTMEG

*"4401" Shallow Push*

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Competitive  
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## Their Long Life Saves the Life of Competitive-price Wiring Jobs

Old friends of your Electrical Contractor, they back him up when he's up against competitive bids. Help him in keeping down to a price without cutting down the permanence of your wiring.

NUTMEG "Push" you know of old; its low price has never denied you dependable service. Its sturdiness, through the years, has been priceless.

For your newer needs in a Tumbler:—8601 Square; sister switch to NUTMEG. Like NUTMEG it stands at the head of its price-class, because it stands out from that class mechanically.

These switches couldn't help but share the craftsmanship in the H&H higher-priced jobs. So share it all you can in your own jobs. . . Catalogue?

**THE HART & HEGEMAN MFG. CO. HARTFORD, CONN.**  
*Makers of Electric Switches since 1891*

### Books, Bulletins and Catalogs for You

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

The Massillon Steel Joist Company, Canton, Ohio, offers, in A. I. A. filing form, a pamphlet on "Economical Construction with Massillon Roof Trusses," giving drawings and full information on the application of its curved roof trusses.

"Home Fixtures" is a very handsome booklet in colors and duotone, published by the Copper and Brass Research Association, 25 Broadway, New York City, picturing lamps, light fixtures and other hardware of brass, bronze and copper.

The Indiana Flooring Co., 234 Rider Ave., New York City, has issued two additional pages for its folder catalog covering new styles of floors.

The Invisibowl Manufacturing Corporation, 38 S. Dearborn St., Chicago, has published a new booklet on the use of its lavatories in homes, apartments and hotels, showing the space saving which they make possible.

The Bogert & Carlough Co., Paterson, N. J., has just published a 16-page catalog, No. G-26, entitled, "Boca Top and Bottom Sliding Ventilator Windows with Bronze Guides," describing the architectural and industrial types of projected windows and illustrating in color the Boca bronze guide feature.

The Kalamazoo Tank & Silo Co., Dept. 108, Kalamazoo, Mich., offers a new catalog, "Modern Houses and Other Buildings of Kalamazoo Vitrified Glazed Tile," illustrating in colors the use of these building units.

Merchant & Evans Co., Philadelphia, Pa., has a new catalog, No. 26, covering its complete line of tools, machinery, metal products, etc.

An "Oak Flooring Specification Manual" has been prepared by the E. L. Bruce Company, Memphis, Tenn., containing complete specification data and gotten up in form for filing under the A. I. A. system.

"The Master Woodworker" is the title of a handsome and completely illustrated catalog booklet describing the Master woodworker and Master floor sander manufactured by the Master Woodworker Manufacturing Co., Dept. A., 612 Brush St., Detroit, Mich.

"Modern Modes in Better Plastering" is a very handsome booklet published by the Milwaukee Corrugating Company, Milwaukee, Wis., describing and illustrating the modern styles of textured plastering.

The Warford Corporation, 444 Whitehall St., New York City, offers three pamphlets describing the Warford four and six-speed auxiliary transmissions and power take-offs for Ford cars and trucks.

"Why Grade Marking" is the title of a small pamphlet published by the Southern Pine Association, New Orleans, La., replying to the typical objections to grade marking which were raised by one retailer.

The Fulton Company, Knoxville, Tenn., has a new catalog of "Silphon Heating Specialties" which is catalog No. 200. It is a very well prepared and well bound, pocket size book, containing complete information on this line and also much useful engineering data.

"Painting Stucco and Cement Successfully" is the title of a new pamphlet from The Reardon Company, 203 Clinton St., St. Louis, Mo., describing its special paint for use on stucco and cement.

The Weatherbest Stained Shingle Co., Inc., 113 Main St., North Tonawanda, N. Y., has prepared a folder of very handsome color photogravures picturing houses with walls and roofs of stained shingles, and showing floor plans of each.

Beautifying the Old Battle Line

## ATOP-MISSIONARY-RIDGE



COST IS SOON FORGOTTEN—QUALITY NEVER!

Architect—LOUIS BULL  
Brick—CARLYSLE-LABOLD  
DARK CHOCOLATE  
Mortar Color—  
PARAMOUNT CHOCOLATE 536

### PARAMOUNT COLORS

in shades to harmonize with every make of brick.

Used by exclusive dealers thruout U. S. A.

**THE LOOKOUT PAINT MFG. CO., Chattanooga, Tenn.**

# Build and Sell Homes in the Suburbs Now —Don't Wait for Sewers

"Out to the suburbs," is now the nation-wide cry. The city dwellers want plenty of lawn, green grass, garden, orchard, sunshine and blue sky. Folks are tired of living where they daily toil for their bread and butter.

People realize that it is not necessary to live in the city nowadays just for the sake of city comforts and conveniences. Modern homes with sanitary plumbing are now easily procured anywhere.

The problem of sewage disposal is perfectly solved with the safe, modern, economical

## *San-Equip* Septic Tanks

for all unsewered districts. Don't let lack of sewers worry you.

San-Equip Septic Tanks follow U. S. Public Health Service design. Thousands are in use. No failures. Fully guaranteed. Easily installed.



### Write for Our Free Plan Sheets

Sell San-Equip Septics with the lot or use our free plan sheets to help you sell. Our advertising is telling more than half your prospective home buyers about the San-Equip idea of sewage disposal.

San-Equip Septic Tanks are rust-proofed copperoid iron tanks—correct design—water tight—unbreakable—ready to connect.

Look one over at our risk. Prompt shipment from warehouse near you.

## CHEMICAL TOILET CORPORATION

911 FREE STREET, SYRACUSE, N. Y.



## Your Profits Increased painting the improved DeVilbiss way

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

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

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

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

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**DeVilbiss**  
*Spray-painting System*

Indianapolis  
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Minneapolis  
Windsor, Ontario

## Comparing Quality of Brush-painting and DeVilbiss Spray-painting

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



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



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

### Books, Bulletins and Catalogs for You

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

"More Bath Rooms for Better Health" is the booklet prepared by the Weil-McLain Company, Chicago, showing the advantages of more and better bath room equipment for the home.

The Flintrock Stucco Co., Dayton, Ohio, has sent out a circular describing a new type of stucco and plaster base known as Keylock and including a small sample of this base in the circular.

"Planning the Small Bath Room" is a booklet published by The Crane Co., 836 S. Michigan Ave., Chicago, containing plumbing facts and suggestions for the home owner.

John W. Kiesling & Sons, Inc., 1797-81 Atlantic Ave., Brooklyn, N. Y., offers a descriptive circular on its D & E Model dumb waiters.

"Graver Zeolite Water Softener" is the title of Bulletin 59 of the Graver Corporation, East Chicago, Ind., which is completely illustrated both with views of installations and of the water softener and equipment.

The Copper and Brass Research Association, 25 Broadway, New York City, have published two booklets, "The End of Rust Troubles" and "A Real Home," the former explaining the advantages of brass pipe and the latter offering suggestions to home builders as to how copper and brass products will make better homes.

The Rocbond Company, Van Wert, Ohio, offers a series of booklets and pamphlets on Rocbond flooring and exterior stucco including specification data and information on Colortone stucco.

The Billings & Spencer Co., Hartford, Conn., has published its 1926 catalog containing its complete line of

wrenches and in addition convenient wrench index tables.

The McGill Manufacturing Co., Valparaiso, Ind., has issued a small pamphlet describing its new and improved ceiling switch which has been approved by the Underwriters Laboratories.

The Manning Abrasive Company, Inc., Troy, N. Y., offers its Nos. 6 and 7 price lists on Manning speed grits on paper and cloth and also a booklet, "The 'Difference' Book," describing the making of these products.

The Kohler Company, Kohler, Wis., published its catalog F, covering its complete line of enameled plumbing ware. This is a very handsome, cloth bound book containing full information and fully illustrated.

The National Lumber Manufacturers' Association, Washington, D. C., has issued a booklet under the title, "Facts in Relation to Lumber," which seeks to set forth in plain language facts which everyone should know in relation to home building.

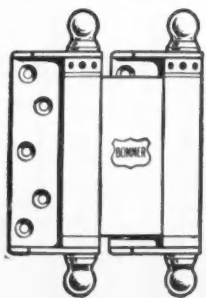
The Patent Scaffolding Company, 1550 Dayton St., Chicago, has issued a new catalog, No. 20, covering its line of Gold Medal ladders and scaffolding.

"Oil Heating—What It Means to the Architect." is the title of a booklet, in file-folder cover, recently issued by the Williams Oil-O-Matic Heating Corporation, Bloomington, Ill. It has considerable suggestive value for house designers, especially in the matter of utilizing basement space to the best advantage.

Smith & Hildebrandt, Inc., Olean, N. Y., has published its catalog, No. 2, covering Smith steel kitchen cabinets manufactured on the unit system.

"Tudor Stone Flagging" is the title of a specification pamphlet for the use of slate flagging, prepared by the Rising and Nelson Slate Company, West Pawlet, Vt.

The Miami Cabinet Company, Middletown, Ohio, offers its catalog, No. 5, covering its line of steel bath room and wall cabinets.



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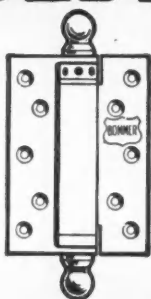
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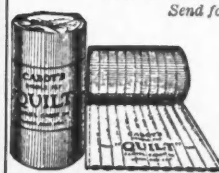
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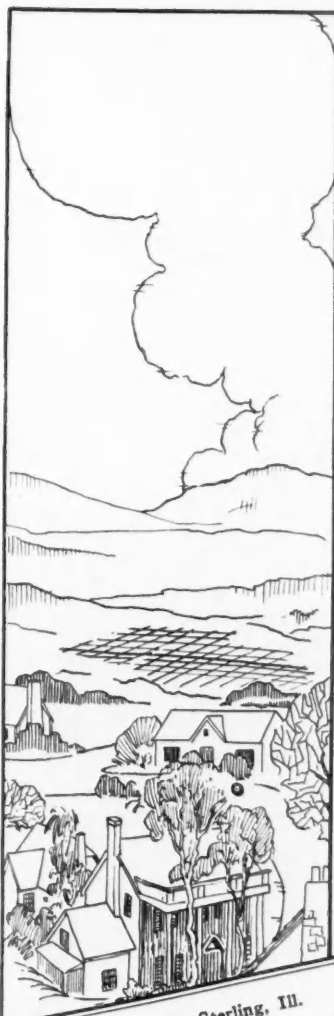
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What's back of that Frantz trademark, the guide for builders in their selection of Hardware? The Frantz factory, of course. Modern in every respect, larger and better equipped. But more important than just the building is the Reputation Frantz Hardware holds for unstinted service.

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