





# AROUND THE FAMILY TABLE



## The Great Reference Edition for 1925

THE American Builder ANNUAL REFERENCE NUMBER FOR 1925 will be issued April 1st. Special editorial features of very great current interest and real reference value are now being prepared and printed.

Advertising forms close March 15th.

This great Annual Number for 1925 will be book of 600 pages or more, bound in Special Strength Covers for long life, and beautifully lithographed in four colors and gold.

The circulation of this great Annual Number for 1925 will be in excess of eighty-five thousand (85,000) copies.

The Annual Reference Number of the AMERICAN BUILDER is the reconized reference authority, Buyers' Guide and Annual Cooperative Catalog of the big general building field.

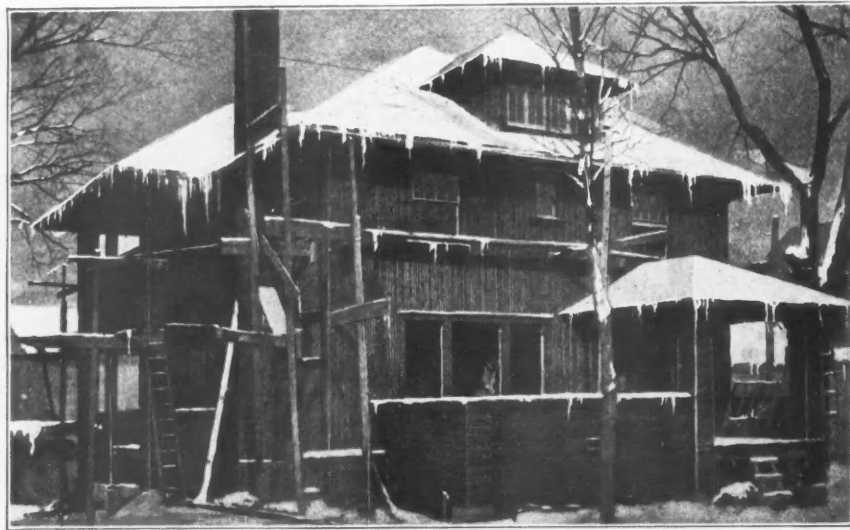
Double size advertising space and the use of colors is recommended to all manufacturers of dependable goods for this 1925 Reference Number.

To our subscribers and readers we recommend you check up to make sure your subscription is paid up to include this great April issue; also tell your friends and fellow builders about this great value.

Place your order now so as not to miss this 1925 Annual Reference Number.

*Editor, AMERICAN BUILDER*

# Make Instead of Losing Money Build in Winter



Residence—Wm. Mills, Cedar Rapids, Iowa. Architect—Wm. J. Brown. Stucco Contractor—Chas. R. Carpenter. Bishopric Base applied and left standing during winter. Stucco applied in Spring.

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and  
the  
Drum!

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*Mr. Contractor, keep your good men busy.*

*Make, instead of losing, money during the winter season.*

*It means an all-year business for you.*

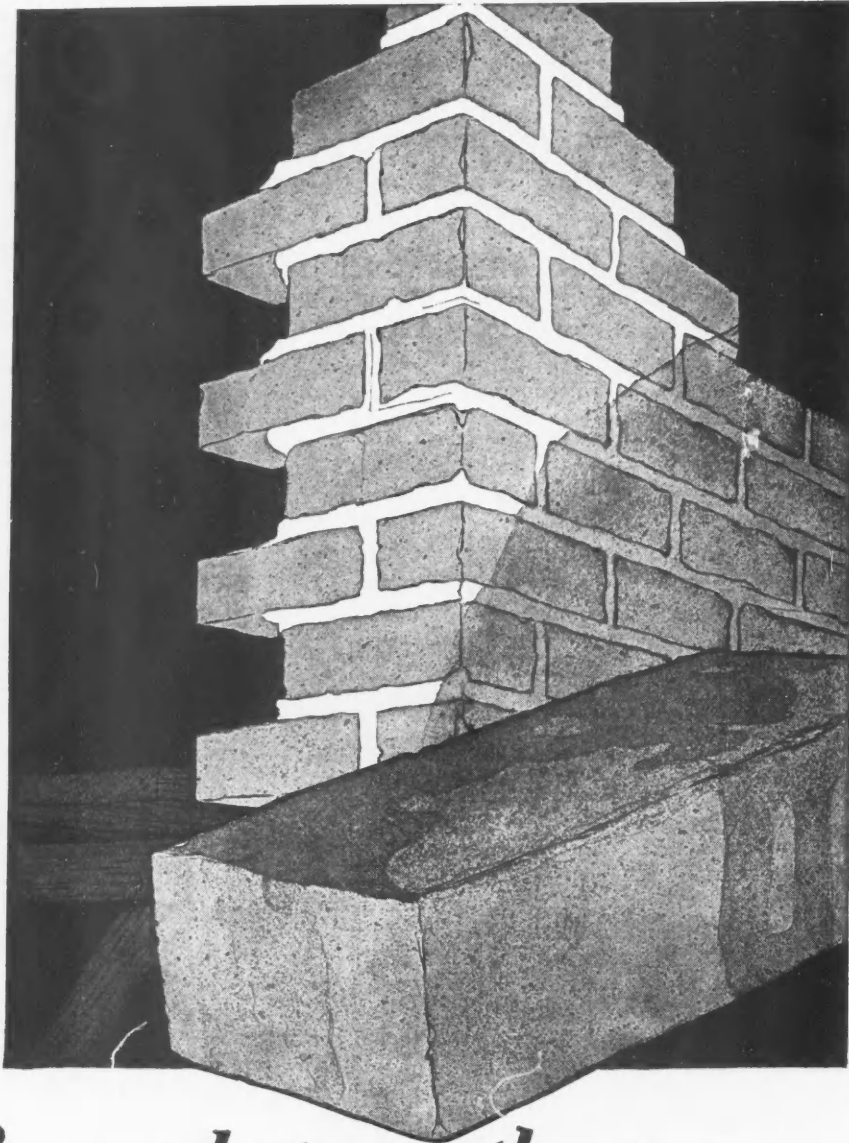
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# He Has Americanized His Beautiful "Castles in Spain"

Coral Gables, Miami's Master Suburb, Is Something Strange and Different from Most Realty Developments for It Is the Handiwork of an Extraordinary Builder

By GEORGE H. DACY



A Style in Houses Which Blends with Florida's Verdure, Soil and Sky. L. D. Brumm, Architect, Miami.

**F**IFTEEN years ago there was a man, then a student at a New York law school, the son of a Cape Cod minister, who dreamed a dream so ethereal and fanciful that he was even afraid to tell his closest friends about it, for it was a dream of castles in Spain come to life as naturalized American citizens.

Today an eleven-million-dollar real estate development upon which ten million additional dollars will be expended during the next decade is the visible representation of this dream come true. It is the dream of George E. Merrick of Miami, Fla., the creator and builder of Coral Gables, Dixie's most remarkable suburb.

This man Merrick is one of the really remarkable builders of America. He puts across big ideas and ideals. He does it all himself. He has never had any partners. He has never incorporated. He has rowed the race alone—and won. Today Coral Gables is a suburb that covers 3,000 acres. It consists of more than 400 homes of native coral rock or stucco which range in value from \$9,000 to \$75,000. There are 60 miles of paved roads from 60 to 200 feet in width, 75 miles of sidewalks, 28 miles of water mains and its own water system, clubs and clubhouses for every outdoor sport, a beautiful Venetian pool for bathing, three extraordinary gateway entrances, a half dozen picturesque plazas—all built during the last three years at a total outlay of \$11,000,000.

When George Merrick conceived the idea of Coral Gables, his "castles in Spain" come to life, he decided to make it

a place where men would like to live. His development as a result has all the advantages and none of the disadvantages found in the average American suburban section. What the Merrick scheme had to offer Americans have wanted to buy. The first year the property was open \$1,500,000 worth of lots were sold, last year the lot sales aggregated more than \$4,000,000. For the first nine months of the year the 1924 sales totaled \$10,000,000.

Coral Gables is the boyhood home of George Merrick. His father, a Cape Cod minister, migrated to Florida in 1898 to escape the rigorous winter climate of his home on the New England coast. Miami was then nothing more than a village with a population of 500. Parson Merrick with the one thousand dollars which represented his lifetime savings purchased a 160-acre tract of land eight miles from the village of Miami in a neighborhood which was high, dry and cool. There the Merrick family carved a picturesque home from the tropical jungle, developing a large citrus orchard. In time, Parson Merrick became the largest shipper of grapefruit in southeastern Florida.

As a boy, George Merrick drove a cart and mule to town daily. He carried produce to market and brought home the daily mail and newspaper. His salary was one cream soda a day. When the boy grew up, Rev. Merrick sent him to Rollins College, Florida, where George developed into a remarkable student. Thereafter he went to New York to study law. It was really a trip to Mexico and South America



One of the Artistic Nooks Which Make Coral Gables Attractive.

time, however, he was not able to dream over the project for any time, for his father died unexpectedly and George was called home to take charge of the extensive orange and grapefruit grove.

Ultimately as he noted Miami's speedy growth and outstanding realty opportunities, George Merrick embarked in the real estate business. In rapid succession, he developed and sold four subdivisions—and large acreages at that. The "magic city," as Miami is called, was growing faster than Jack's mythical beanstalk. It was spreading more rapidly than a spider's web in every possible direction. Thinking in terms of what conditions would be a decade in the future, Mr. Merrick finally determined to buy up adjoining land and develop his father's homestead which the minister had appropriately named Coral Gables into a super-suburb—the like of which had never before appeared upon the American market.

To finance the proposition, George Merrick raised all the money he could assemble. Then he went out and insured his life for \$1,000,000 in order that he could borrow large sums on the probability that he would die. His competitors laughed when they heard what Merrick was doing. They said it would be years and years before he could sell his property at Coral Gables. But Merrick, thinking in the terms of the future only, labored the harder at his gigantic task of transforming a piney woods jungle into one of America's most original and beautiful suburbs.

The Spanish type of architecture is ideally adapted to the



One of the Three Gateways to Coral Gables' 3,000 Acres; Designed by Denman Fink, Landscape Architect, Miami.

which gave young Merrick his first ideas about Spanish architecture as adapted to American needs. At that

geography, indigenous plants and trees and sunny sands of Florida. Coral Gables' architecture, however, includes not only the Spanish but it also features beautiful buildings of Italian and Moorish design as well as many others that are blends of these three fashions of houses in a type known around Miami as the Mediterranean. Mr. Merrick hired the best talent he could find to roam the old cities of Spain, to study styles in houses and castles, to make thousands of photographs and drawings and then to return to Miami and reproduce the best of what they saw abroad at Coral Gables.

Tiled roofs on the Spanish houses were demanded. The red and green glazed tile of American commerce did not provide the desired effect. So Mr. Merrick sent to Havana and secured several shiploads of mellowed and aged tile salvaged from the roofs of old houses, crumbling convents, prisons and barracks. You can not appreciate the outstanding effect which these ancient tile lend to complete the picture of the homes built at Coral Gables.

This is why the homes at Coral Gables are built of the native rock—the gray and brown coral rock of Florida which gives an ageworn appearance to the houses and makes them fit well into the natural surroundings. The stucco and cement are tinted cream and amber colors, the window casings are painted dull blue or sage green, any timbers that show are touched with chrome yellow, Chinese red, vermilion and sienna; the gable ends are emerald. The purple color of fresh grapes and the orange of Florida's citrus fruit also are common. Awnings striped with dull red and brown on a cream colored house add their brilliancy to the tropical setting. The awnings of the next house will be dull blue and lemon yellow while its neighbor will have sunshades of sage green striped with black.

The pines and palms and citrus trees are the natural plantings of Coral Gables. Many tropical plantings have also been



George E. Merrick, Whose Genius Has Materialized His Dreams in the Building of Coral Gables, the Beautiful Suburb of Miami, Florida.

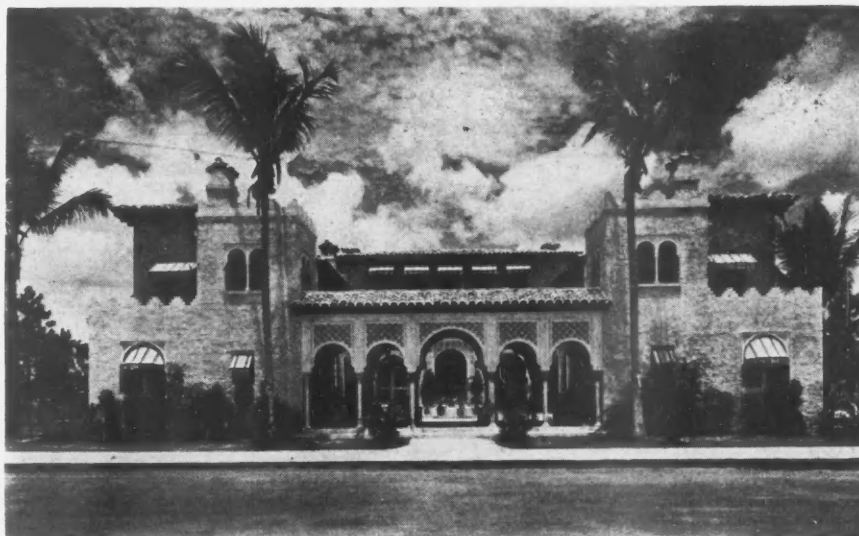


introduced, most of them bright and gay in color—and new to northerners. Great open plazas attractively ornamented have been laid out at the intersection of the main boulevards. Every street and avenue bears a Spanish name. Three great gateways made of coral—Spanish masons were imported from Cuba to build them—have been worth their weight in gold in advertising value.

Thousands and thousands of pictures have been taken of all the homes at Miami's greatest suburb. The cameras have been pointed from every conceivable angle. A careful study of this pictorial history of the suburb sometimes shows defects. George Merrick in the privacy of his home or office does the studying, makes the discoveries—and sees that they are corrected. His salesmen say that he could be the best salesman on the force. His publicity experts admire Merrick because he can out-clever them at advertisement writing. His architects report he is full of splendid original ideas about building. His engineers marvel at his proficiency at figures and formulas. Yet this master-builder is self-effacing. He keeps in retirement. A poet by nature, he is a student and poet at heart. Yet he has written many poems—and good ones. A privately published volume of his poems shows skill, art and all around ability.

Most builders would be content to call it a job well done and take a rest. Not so George Merrick. Right today he is planning a campaign which will mature in six to ten years. Now that the permanent success of Coral Gables is assured, he is busily conjuring up plans to make it even more successful. He is starting a \$3,000,000 hotel, a great outdoor theater, an open air college for men, a finishing school for girls, an arts and crafts center. In fact, it is hard to keep tab on this man.

Latterly, the city officials of Granada, Spain, have presented a handsome stone tablet to George Merrick in appreciation of his efforts to popularize Spanish architecture in Florida and to bring to Miami the breath of Barcelona and old Seville. They appreciate that in adapting Spanish architecture to his local needs, this man Merrick has added features which are not copyrighted which, in time, will be



Coral Gables Inn Built by George Merrick; M. L. Hampton, Architect, Miami.

also incorporated into potential buildings in Spain.

It sounds rather bombastic, perhaps, this attempt at describing what Merrick has accomplished at Coral Gables. You have to see it all and even then you will hardly believe your eyes. This writer went to Coral Gables skeptical. He came away convinced and converted. Up north, it would not be possible to play in league with climate, verdure, smiling skies and the class of buyers to whom you must cater as this man Merrick has done. What he has accomplished is really "castles in Spain" come true. He has made a blend of building and buildings. He has standardized construction without soiling its beauty in architectural expressions. From a chaos of colors he has painted a perfect picture and then made it permanent in coral rock.



Four Hundred Homes of Coral Rock and Stucco Are Now Completed and Occupied. This house designed by H. George Fink, Architect.



The Avenues Are Spacious; the Circles Are Attractive. Every Street Has a Spanish Name.

# Fine Architecture an Investment Profitable to Owners

Four Fine Perspectives Shown in Duotone This Month

By **BERNARD L. JOHNSON**

*Editor, American Builder*

**O**WNERS, today, realize better than ever before that fine architecture is worth while, not only for its own sake, but because it is profitable, as well. Sometimes there is no extra cost involved in a beautiful design; sometimes interior space must be sacrificed. Then again, there are architectural features that add considerably to the cost and yet prove profitable in the long run because of the outstanding beauty of the building. Such a building as the Wrigley Building is a standing advertisement of great permanence and beauty.

This is true of business buildings. In a church, on the other hand, the gain is purely inspirational. One of the perspectives in this month's Art Supplement shows architectural beauty in a fine tower which, at the same time, has a most useful purpose in housing fire protection tanks which are thus placed at the height necessary to serve a large manufacturing district. The church design in this month's group of plates well illustrates the inspirational phase of architectural design.

AMERICAN BUILDER numbers among its subscribers literally thousands of architects and their attention is again directed to the invitation to submit perspective drawings for illustration in AMERICAN BUILDER Art Duotone section.

## Liggett Building New York City

This fine building, designed by Carrere & Hastings, Shreve & Lamb, stands at Madison Avenue and 42nd Street. It was completed in 1921 and presents an exceptionally fine appearance.

Black ornamental spandrels are employed in the vertical pier treatment at each floor level and are extremely effective. Red Whippany bricks, laid in Flemish bond, form the exterior walls above the third floor level, relieved by limestone window sills, terra cotta trimmings and cornices. The third floor has gray limestone ashlar treatment on all elevations. The first and second floors have a cast iron pilaster and spandrel treatment surmounted by a cast iron cornice and cresting motive. All cast iron work is treated in black, with gilt relief ornament. The show windows at the street level have a black marble base and all doors are bronze covered. The main entrance portico is framed in black marble. The cube of the building is 5,963,000 cubic feet on a site with a ground area of 22,489 square feet. The building is 22 stories high and has a gross rentable area of 322,422 square feet.

## First Church of Christ, Scientist Racine, Wisconsin

Mr. S. S. Beman, the architect who designed this fine edifice, is well known for his beautiful church and house designs. The architecture of this church, of course, is after the manner of the ancient Greek temple with its many columns and classic beauty.

The interior is well daylighted; there are no dusky, dim, cathedral effects but rather a cheerful atmosphere. It seats about 600 people and has two balconies, one on each side. The entrances, aisles, halls and check rooms are commodious and convenient. The decoration is in light tones and classical simplicity predominates.

## Jefferson Standard Life Building Greensboro, North Carolina

This building, designed by Mr. Charles C. Hartmann, architect, is a handsome structure, worthy to house an enterprise which has won a distinctive place among southern institutions and is said to be the largest insurance company in the South. It is of the latest, steel-frame, fire-proof construction, 17 stories high and the insurance company occupies the six top floors.

The arched main entrance on North Elm Street is of gray Knoxville marble, handsomely ornamented with carving. The main lobby is finished in black and gold Tavernelle, Belgian black and Alabama cream marbles, the two latter set in checkerboard pattern to form the floor. Curiously enough, in the Alabama marble used in the soffit of the stairway to the mezzanine floor was found a coiled, petrified snake.

The Atlantic Bank and Trust Company occupies the ground floor, mezzanine and basement portions of the building. The floor of the main banking room is of marble tile. The wall lining is composed of coigned blocks of selected Tavernelle Claire marble. The carved caps, the offices,

the counters, rail, as well as banking cages, cornices, pilasters and crestings are all of selected Tavernelle Claire marble of polished and honed finish, designed in the style of the Italian Renaissance.

The exterior style is mostly free Romanesque, with a Gothic influence and a classic lower story treatment. Granite, marble and terra cotta in combination were used for the full height of the building. This handsome building was erected by the George A. Fuller Company, builders.

## Central Manufacturing District Building Chicago, Illinois

A Gothic tower 125 feet high is one of the distinctive features of this building, which is a fine example of the best industrial architecture. The building stands at West 47th Street and South Turner Avenue, on a lot 160 feet by 100 feet and contains 16,000 square feet of floor space, to be leased. In addition, the tower contains large sprinkler tanks, to serve neighboring industries.

The building is of mill construction, faced with pressed brick and terra cotta and the floors will sustain a load of 150 pounds to the square foot. A. Epstein is the structural engineer. Chicago has an increasing number of handsome industrial buildings, many of them fronting boulevards.

**INVITATION TO ARCHITECTS**—We particularly request the architects who are numbered among our Big Family of readers to submit perspective sketches of their best recent or projected work for reproduction in the American Builder Art Supplement of Notable Architecture. Sketches in pen and ink, pencil or crayon are preferred. A photographic print of the sketch, not smaller than 7 by 10 inches may be submitted if desired.

We will appreciate your co-operation in making this duo-tone lithographed supplement of American Builder the most notable in the architectural and building field.—  
Editor.

# ART SUPPLEMENT *of* NOTABLE ARCHITECTURE



PLATE XVII

*The* LIGGETT BUILDING, New York City; Carrere & Hastings and Shreve & Lamb, Architects, one of the most beautiful structures built in recent years in the Grand Central Terminal District.

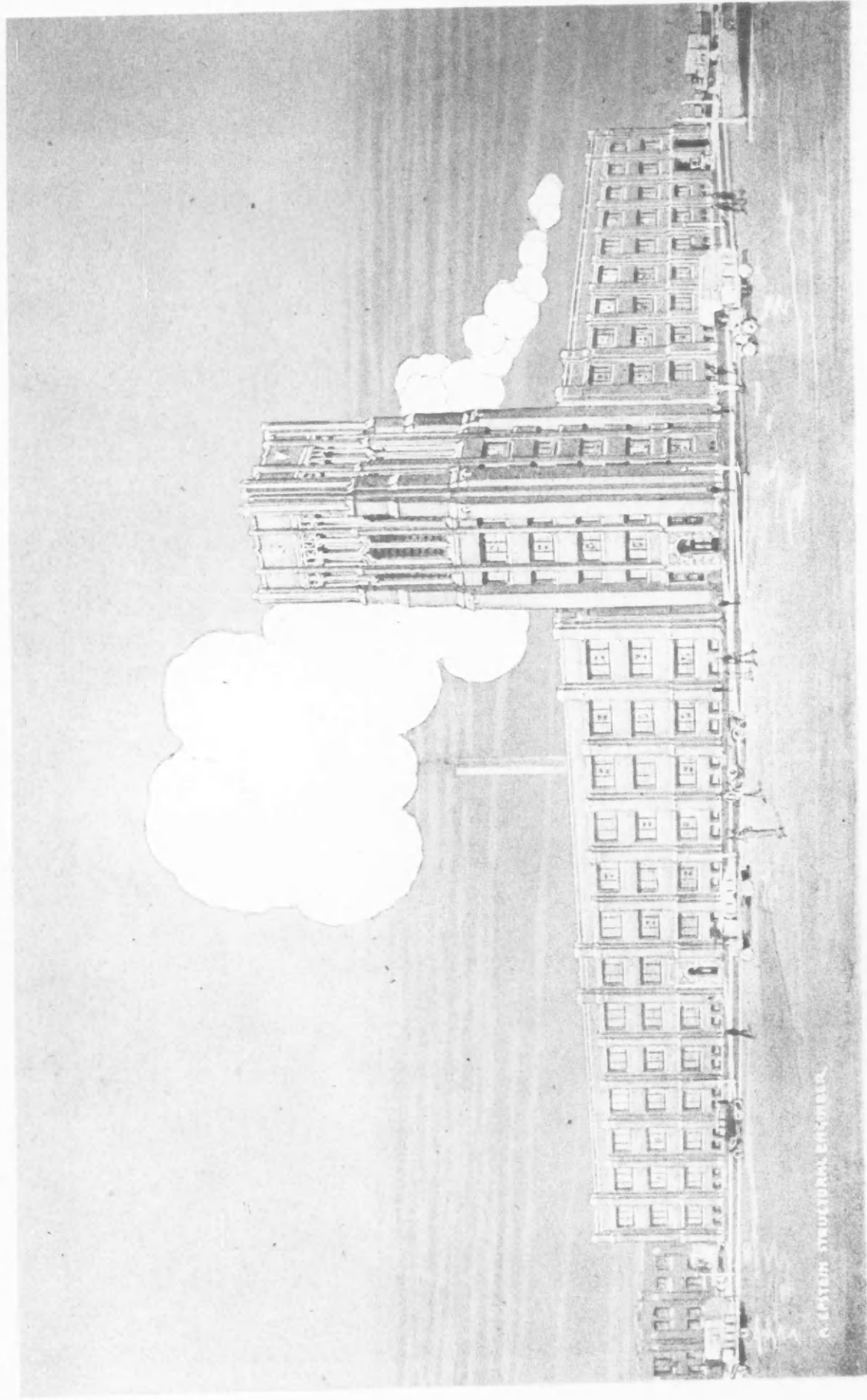


*The First Church of Christ Scientist, Racine, Wisconsin, S. S. Beman, Chicago, Architect. An interesting example of classical architecture in a modern church.*



PLATE XIX

The JEFFERSON STANDARD LIFE INSURANCE BUILDING, Greensboro, N. C.; Charles C. Hartmann, Greensboro, Architect; a building that represents the Spirit of the New South.



*The Tower Building, Central Manufacturing District, Chicago; A. Epstein, Structural Engineer; typical of the modern industrial building, which combines efficiency with a good architectural appearance.*

# Roof Tent Aids City Planning

Omaha Chapter of the American Institute of Architects Surveys City from Shelter Erected on Top of Aquila Court Building

By NATHAN E. JACOBS

**B**UILDERS in the central downtown business districts of Omaha are expecting to be greatly influenced in future building by the study of that district which is now being made by the Nebraska chapter of the American Institute of Architects, part of the study being made from a tent on the west mansard roof the new Aquila Court Building, described in the September AMERICAN BUILDER.

The tent is being used by the architects for observation purposes and the making of preliminary notes and sketches on the St. Mary's Avenue district upon which the architects are centering their first efforts.

The chapter has had design, engineering and survey committees appointed, each with a separate chairman to study the district from the different angles. The best plan will be chosen through an elimination contest, nearly every one of the twenty-five active architects in the chapter submitting a rough sketch to the chapter, sitting as a jury. The chapter will eliminate all except one plan and this plan will be developed in detail by the entire chapter.

The traffic at the intersection of Seventeenth Street and St. Mary's Avenue is difficult to handle and a memorial or some structure set in the center of the intersection to divert traffic is favored.



Practical Information and a Real Grasp of the Problem to Be Solved Is Obtained by the Omaha Chapter of the American Institute of Architects Who Use a Tent Perched on the Roof of the Aquila Court Building as a Vantage Point from Which to Plan the Needs of Their City. Above is shown the observation tent; below the view from the tent, showing the streets involved in the city planning problem.

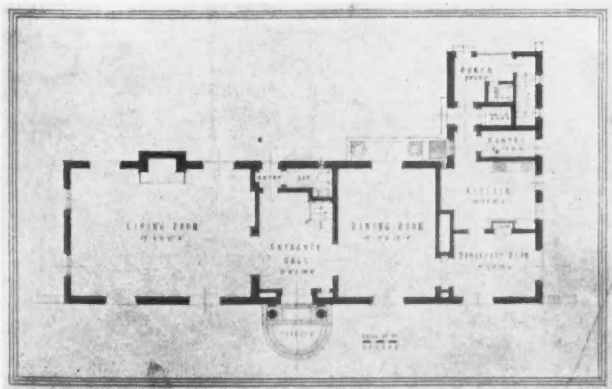
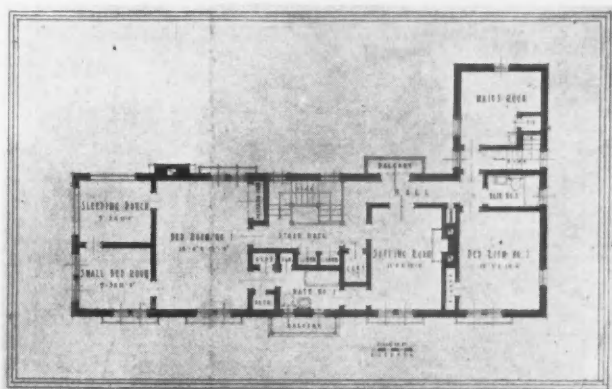
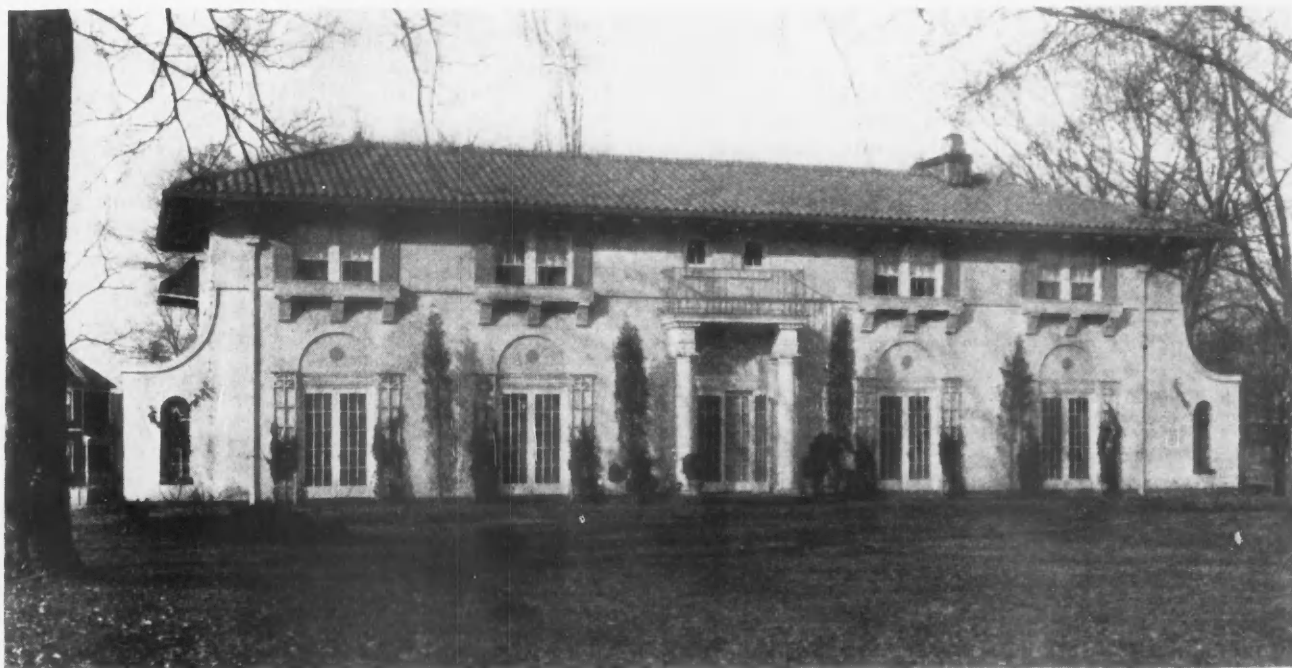


Here Is a Terrace, at the Rear of Mr. Munger's Arlington Place, Which Invites the Observer to Pause and Enjoy the Beauty Which Is Characteristic of Every Detail of the Building. The perfection of line in the small roofed doorway and the grace of the wrought iron balcony show the influence of a growing interest in the adaptation of the old-time craft work to the enrichment of modern building decoration.



# Arlington Place, an Italian Villa

The Beautiful Residence of Mr. Eugene Munger, in Birmingham, Alabama, in Which Spaciousness and Beauty of Detail Are Perfectly Blended,  
Warren, Knight & Davis, Architects



Above is shown the front of the Eugene Munger Residence in Birmingham, Alabama; Warren, Knight & Davis, Architects. Below is a closer view, showing in more detail the window balconies and French doors, with ornamental trellises. The floor plans give an idea of the simplicity and spaciousness of the arrangement of rooms. The living room is 19 by 27½ feet with a large fireplace at one side.

# "The Prettiest House in Galesburg"

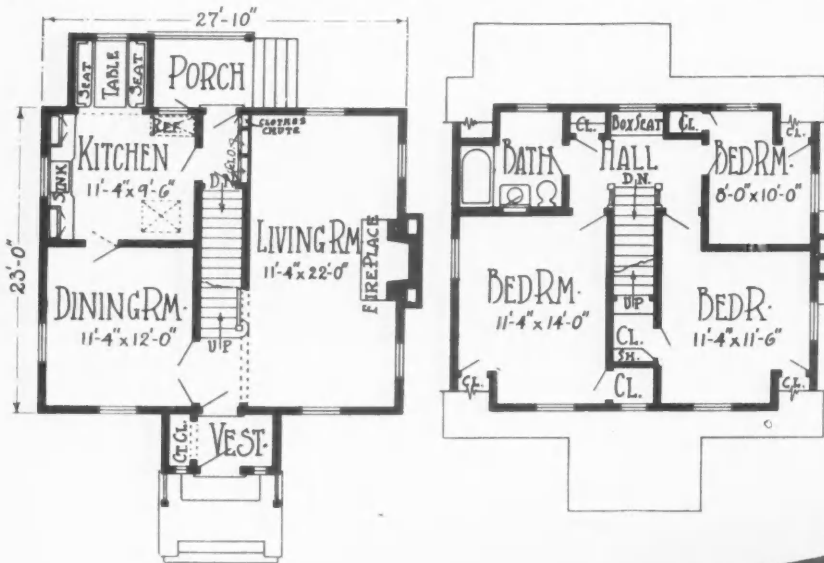
Dutch Colonial Demonstration House Which Showed People "How to Get the Most for Their Money"

"THE Prettiest House in Galesburg" was erected by Mr. E. E. Hinchliff, of the Hinchliff Lumber Company, Galesburg, Ill., to show people how to build and get the most for their money. The style is pure Dutch Colonial. The nearly square shape takes advantage of every foot of space. The house is quite roomy and yet can be built on a 40-foot lot. It includes six rooms, breakfast nook and bath, ten good closets, a full basement and an attic. The complete built-in equipment of the kitchen

won unlimited praise from all the women who inspected it. It would be hard to improve on the plan for the purpose for which it was intended. There is not an inch of waste space anywhere. The house is commodious, compact and yet inexpensive to build.

It was built of frame construction, insulated throughout, with wide siding, shingle roof, brick base, chimney and steps. It was painted white, with green blinds to contrast with the white side walls.

Furnishings, even to phonograph and radio set, were supplied for the demonstration by local merchants who welcomed the opportunity to co-operate in such an exhibition. Cards were placed throughout the house showing the names of the merchants who had furnished the various pieces of equipment and this proved to be a valuable advertisement for these merchants. A beautiful phonograph, with a large assortment of records, was included among the furnishings. A radio set was installed and, on the opening night a radio concert was given for



A Combination of White Paint, Green Blinds and Red Brick in This Dutch Colonial House Won the Approval of the People of Galesburg, Ill., Where It Was Built as a Demonstration House. The floor plans show the economical use of floor space in this style of building.



Above: The Long Narrow Living Room Is an Inviting Place with Its Comfortable Furnishings, Big Windows, and Fireplace, While the Ample Windows Afford Plenty of Light and Ventilation.  
Below: The Kitchen, with a Built-in Breakfast Room Off of It, Is Thoroughly Modern in Every Detail, Light and Airy and Well Equipped, with Modern Conveniences, Many of Which Are of the Latest Built-in Type.

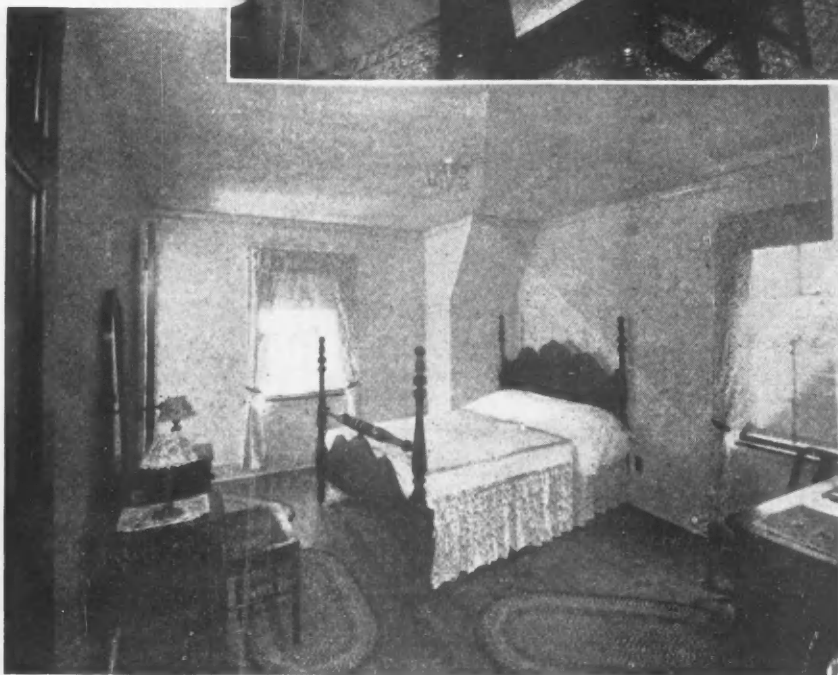
the visitors. Nothing was left undone which might help to make the opening a success.

On the first night Mrs. Hinchliff and three other ladies, dressed in attractive Colonial costumes, sang at regular intervals throughout the evening and this entertainment was received with enthusiasm.

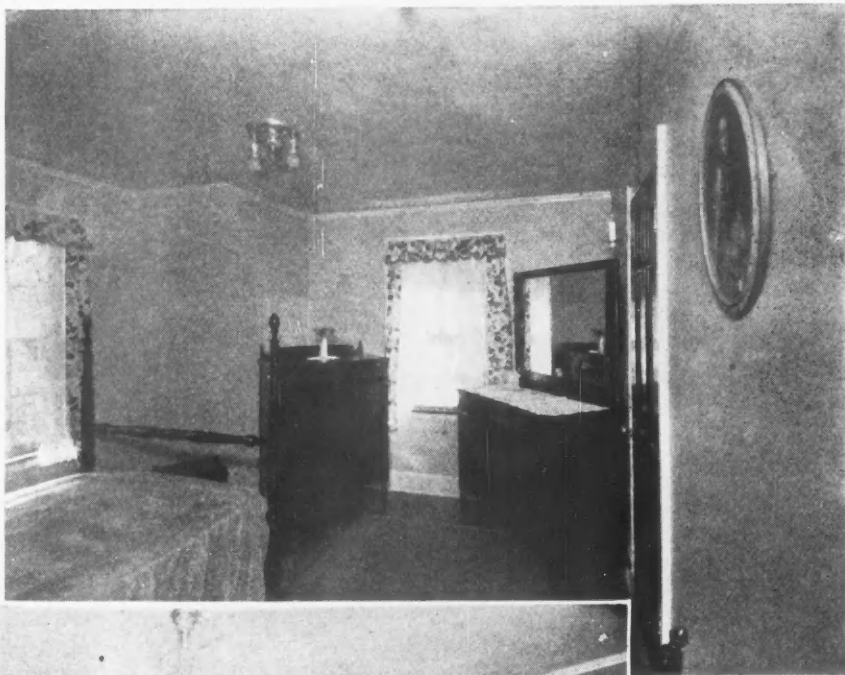
Advertising was used, from the time the ground was broken, to get people interested in the coming demonstration. Two advertisements a week were run, in the local papers, telling how "The Prettiest House in Galesburg" was being built at 712 North Broad Street and would be opened for public inspection as soon as it was completed. Everyone was invited to come. The result of this consistent campaign was that everyone was talking about the model house and between 800 and 900 persons went through the house on the opening night and many others were unable to gain admittance.

After the opening night visitors were admitted at regular hours and

**Right: The Dining Room Can Be Shut Off from the Hall and Living Room by the French Doors Seen at the Right.**



**The Entire House Was Furnished in Perfect Harmony with Its Character Even to the Four-Poster Beds and Rag Rugs in the Bed Rooms.**



**Above: One of the Bedrooms. The door at the right opens into one of the ten closets which are included in the house plans.**

large numbers of people were attracted, including many from out of town.

On the following Wednesday afternoon the Home Economics Department of the Galesburg Woman's Club gave an afternoon tea in the house.

This was largely attended and was one of the best possible bits of advertising that could have been devised. A discussion of the Better Homes Movement took place and Mr. Hinchliff was warmly praised by the women for his efforts to promote better homes.

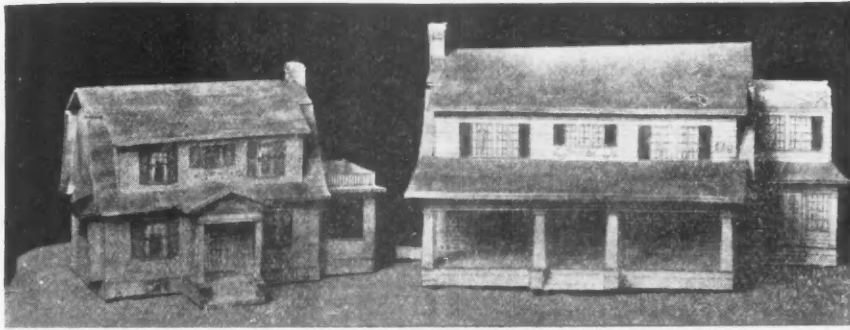
The building of "The Prettiest Home in Galesburg" and the entire program of bringing it before the public is an example of progressive merchandising which could be applied in any community. The results in Galesburg demonstrate the farsightedness of such work. They have already been felt in orders for the duplication of the demonstration house. Two prices were quoted on the original building, one on the house with all furnishings, and the other on the house alone, without furnishings. After the demonstration was concluded the house was sold for \$8,700. The lot was valued at \$1,500, placing the house itself at \$7,200.

# Print Models Help to Visualize New Homes

By A. I. HARRIS

**M**ISS ETHEL BARTHOLOMEW, Minneapolis architect, has hit upon the scheme of showing her clients models of homes constructed from the blue prints—or black prints—instead of merely the flat drawings. The scheme,

going to look like, the exact position of the closets, stairs and other things. These difficulties are removed by the use of models. The benefits are greater than the extra work involved." ❖



Some of the Model Houses Displayed to Her Clients by Miss Ethel Bartholomew, a Minneapolis Architect.

she maintains, eliminates all causes for future misunderstandings.

The model includes the roof, dormers, gables, porches, and in some cases even shows the landscape gardening. The roof, which is made of slightly heavier paper than the blue or black print, can be lifted, revealing the upper floor plans. The upper floor also can be lifted, showing the main floor plans. The models, she says, enable her clients to better visualize their future homes.

"My experience with these models has been very encouraging," Miss Bartholomew explained. "Many people are unable, through the flat drawings, to visualize what the home is really

existing regulating bodies, that adequate revenue is necessary to adequate railroad service; approval of the public program for vocational education; encouragement of efforts to eliminate fluctuations in construction; disapproval of the

use of separate contracts and of any legislation to establish their use; opposition to lien laws which may be used as an extension of credit to purchasers.

Other resolutions had to do with the handling of construction of public buildings.



The Models Are Accurately Made from Blue Prints So That the Client May Gain a True Idea of How the Completed House Will Appear. In some cases even the landscape gardening is shown.

## Meeting of Contractors

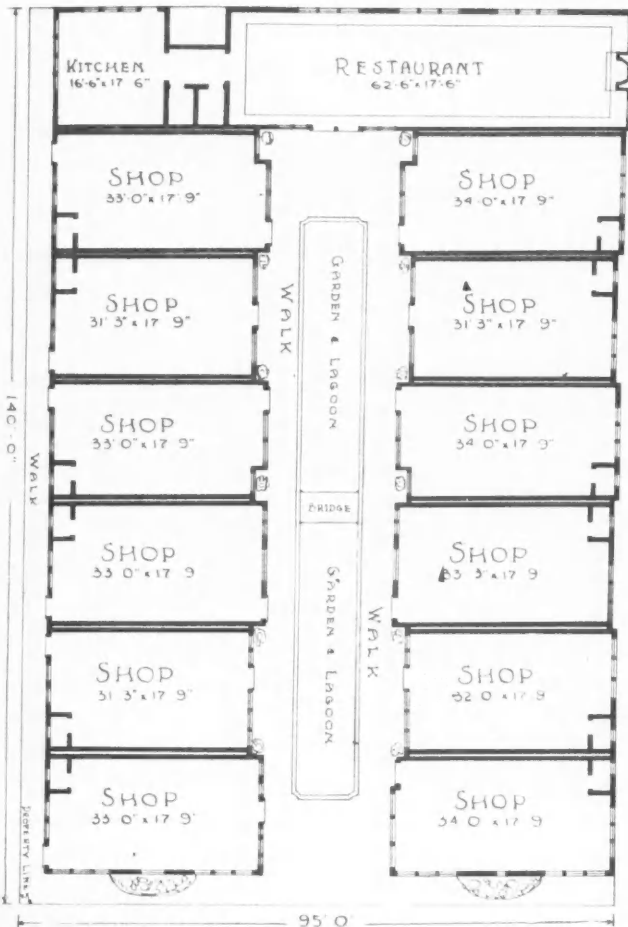
**A**T the sixth annual meeting of the Associated General Contractors of America, held in Washington, D. C., on Jan. 12, 13 and 14, a number of resolutions were passed expressing the attitude of the organization on various public measures and policies relating to building construction. These included:

Approval of proposed revision and codification of laws relating to public contracts; insistence that railroad problems be divorced from politics, that there is no urgent need for railroad legislation, that rates, etc., be left to

# An Attractive Small Shop Group

Bungalow Court Building Idea Is Adapted to a Number of Pleasing Specialty Shops in Los Angeles

By CHARLES ALMA BYERS



ILLUSTRATED herewith is an idea in small shop planning that is exceptionally interesting. The arrangement, as will be observed, is patterned after that of California's popular bungalow court. This means that the shops, instead of fronting upon the street in the customary way, are grouped about and faced towards a sort of community courtyard. Even the shops themselves are, in architectural style, quite suggestive of the California bungalow.

The courtyard of this group of small shops is handled in a particularly attractive manner. Running at right angle to the street, it has a minimum width of 20 feet and a total depth, from the front property line, of 122 feet. It is planned with a wide cement-paved walk on either side, in front of each row of shops, and with a sort of water garden running lengthwise through the center. A unique feature of the latter is a small stream or lagoon of constantly refreshed water that, with its banks edged with rough boulders of various sizes and with its basin consisting of concrete, meanderingly traverses the garden plot's entire length. It is stocked with gold-fish and contains an assortment of water lilies, while about its boulder-edged shores is a miscellaneous planting of flowers and shrubbery. Even two or three fair-sized trees are included in the garden work, and crossing the lagoon near the middle, to connect



Here Is an Unusual Adaptation of the California Bungalow Court Plan to a Group of Specialty Shops. The arrangement of the shops is shown in the floor plan above.

the two cement walks, is a little, slightly arched foot bridge of rustic design. The space is further provided with some three or four rough benches, invitingly offering the "tired shopper" a resting place, and also with two electric lights, one near the front and the other at the rear, of lantern-like type. The general appearance of rusticity that is so effectively attained in the whole designing of this courtyard is even extended to the walks, the cement paving of which is marked off in such fashion as to suggest irregular-shaped flagstones.

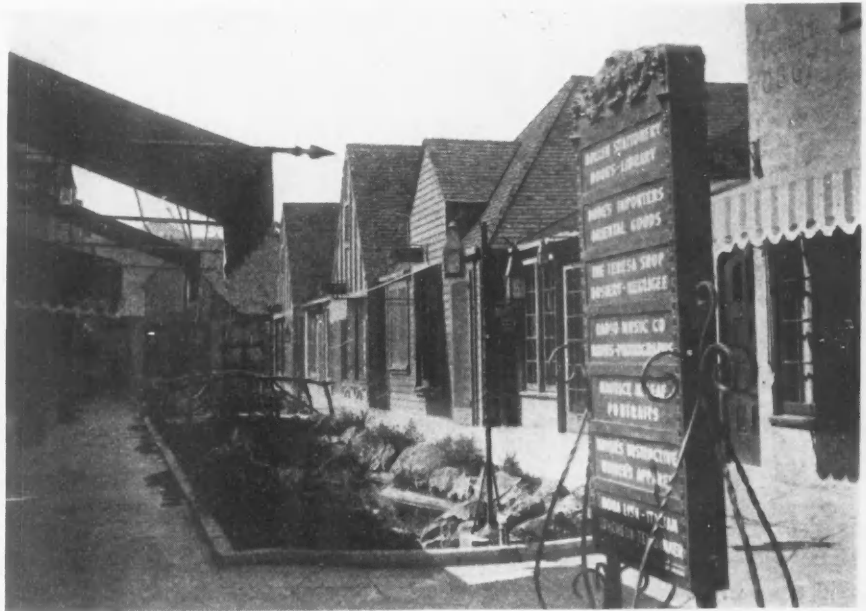
The lot utilized for this court of shops is situated on a corner and is 95 feet wide on the fronting or principal street, by 140 feet in depth, to an alley. The buildings, however, are set back 4 feet 6 inches from the front property line, or sidewalk, and there is also a walk of 3 feet 9 inches, paved with cement, along the rear of the inside row of shops, to provide a means for reaching their back entrances. The other row of stores naturally have their rear entrances upon the side street.

The group is comprised of a total of thirteen units. Each of the two side rows of units contains six shops, and the thirteenth unit, consisting of a restaurant and its kitchen, is located across the rear, with its front facing lengthwise of the courtyard and with its back outlook upon the alley. Each unit has its own separate front entrance which, incidentally, is provided with an individual electric light of the bracketed lantern type.



The Benches and the Rustic Bridges Across the Lagoon in the Court Give an Air to the Shops Which Cannot But Delight the Woman Shopper.

The shops on the sides are of slightly different sizes. Each, however, is 17 feet 9 inches wide but they vary in depth from 31 feet 3 inches to 34 feet in inside dimensions. The service room of the restaurant is 17 feet 6 inches wide by 62 feet 6 inches in length, while the kitchen is 16 feet 6 inches by



A Sign Board, Listing the Shops, Is Directly in Front of the Shop Court. The buildings on each side of the court are kept individual, through a variety of roof designs.

17 feet 6 inches. Each shop has an individual lavatory and the restaurant has two. It is thus seen that each unit is entirely complete within itself. The restaurant service room also possesses a fireplace.

The units are all attached, forming one continuous U-shaped building. However, the walls separating them are doubled, with an air space between for rendering them soundproof. The units are also somewhat variously designed, especially as regards their roofs, causing them to appear as several separate or detached buildings. In fact, each has a roof that seemingly, at least, is individually its own, due to its being differently pitched from those of its neighbors.

All of the shops are of frame construction and all, with the exception of two, which are weather-boarded, have their outside walls finished with cement-stucco on metal lath. The stucco is, in all cases, troweled to a rather rough surface, but that of each unit is differently tinted, the colors consisting of russet orange, buff and various shades of brown. The exterior trim, which in some instances includes half-timbering strips for the stucco walls,



The Restaurant Is Placed in the Rear of the Court, with the Attractive Entrance Shown Here.

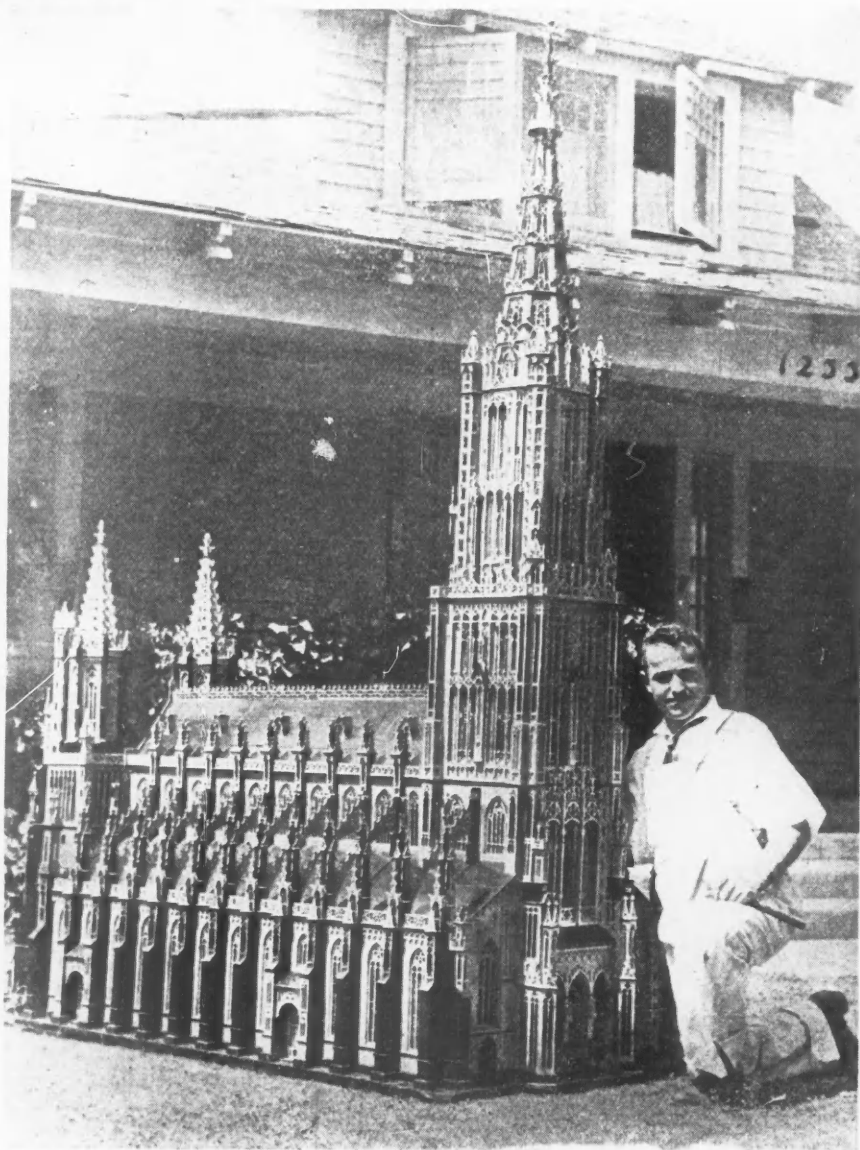
is also in a different color for each shop, some of the shops being trimmed in brown, some in brick red, others in dull green, and still others in gray, yellow, tan, and so forth. All roofs are shingled and stained in dark brown, and the foundations throughout consist of concrete.

The shops also have different color schemes. The woodwork is comprised exclusively of pine, and all walls are plastered. The floors of several of them are of cement, while those of the remaining shops consist of pine. Each shop is very liberally supplied with windows, variously designed, but almost universally possessing small panes, like the windows common to small cottages.

The shop arrangement of this kind has especially interesting possibilities. For one thing, it represents a very economical plan for improving business property in outlying business districts, for it permits an inexpensive form of construction, and yet enables the building of a quite surprising number of shops on a comparatively small area. In fact, as is demonstrated in this case, two city lots of ordinary size, that ordinarily would be used for only two or three stores, can, by this plan, be made to accommodate all the way from ten

to fourteen enterprises. All the shops, moreover, are naturally on the ground floor. It is an arrangement that, when carried out attractively, particularly appeals to the business man or woman, such as real estate dealers, barbers, manicurists, confectioners, modistes, art dealers, stationers and so forth, who require comparatively little room.

This group of shops, known as the Westlake Shopping Arcade, is located in Los Angeles, California, at the corner of West Seventh and Coronado Streets. The architects were Messrs. Monaco and Bordeaux of that city.



**CARVES MODEL OF NEW ULM CATHEDRAL.** This marvelous carving, the result of years of painstaking effort on the part of Michael Molz, of Los Angeles, has just been completed. It is a reproduction of the famous Ulm Cathedral on the border between Bavaria and Wurtemberg, which is the highest towered church edifice in the world. Molz' carving was wrought entirely with a small hand scroll saw. It is nine feet high and is built in proportion to the dimensions of the original. Molz is shown with his work.



# Builders' Magic Applied to Dilapidated Buildings

By ROBERT F. SALADE

**I**N EVERY town and city throughout the country are numerous dilapidated buildings which may be reconstructed into beautiful, useful structures by means of the builder's art. A great deal of this class of work has already been accomplished in recent years, but as time advances architects and builders in general will no doubt devote closer attention to it, and along even more artistic lines than in the past.

The many remarkable improvements now being made in old buildings located in various large cities of the United States include handsome new stone fronts for banks, beautiful new brick or stucco fronts for rows of houses, and artistic fronts of stone, brick, or stucco for a great variety of old business buildings. These improvements in every instance where they have been made have been the means of converting an old building into a modern structure of pleasing appearance, worth many times its former value in the real estate market.

In several cases recently large office buildings have been completely remodeled to provide for the needs of high-class business firms. One old office building which was losing prestige because of its "seedy" appearance has been made over into a fine apartment-hotel with an imposing stone front done in the Gothic style of architecture. As a contrast to this, what was once a famous hotel is today a modern, fire-proof office building.

Having recognized the vast new fields for business represented by the hundreds of dilapidated buildings which are to be found in every large city, a number of architects are now specializing in plans for remodeling such buildings. These architects are paying particular attention to the beautiful side of building but at the same time they are not overlooking the importance of utility. For example, one of these architects recently perfected plans for converting an old four-story house into a handsome club house for women. The improvements included hardwood floors, a spacious dining-room, an auditorium, lobby and an attractive new front for the building constructed of tapestry brick. The special features of this front consisted of balconies at the second and fourth floors and long flower boxes at the windows of the first and third floors and long flower boxes at the windows of the first and third floors. The entrance was remodeled in white marble.

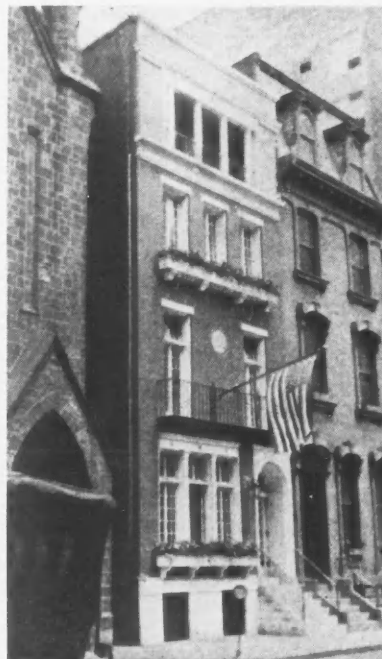
The architects referred to are working both for owners and building contractors. The orders for the reconstruction work are always given to regular building firms. In many instances the architects are creating new business by the method of suggesting improvements to owners of property. Here is one interesting case. For a long time two three-story brick houses on a main street had been standing vacant, principally for the reason that they were too large for the average family. A progressive architect happened to notice these empty homes, and after having studied their possibilities called upon the owner sug-

gesting a plan whereby each building could be changed over into apartments and a store. The comparatively low cost of the proposed improvement appealed to the owner to such an extent that he quickly decided to take advantage of it. See photos at top of page 136.

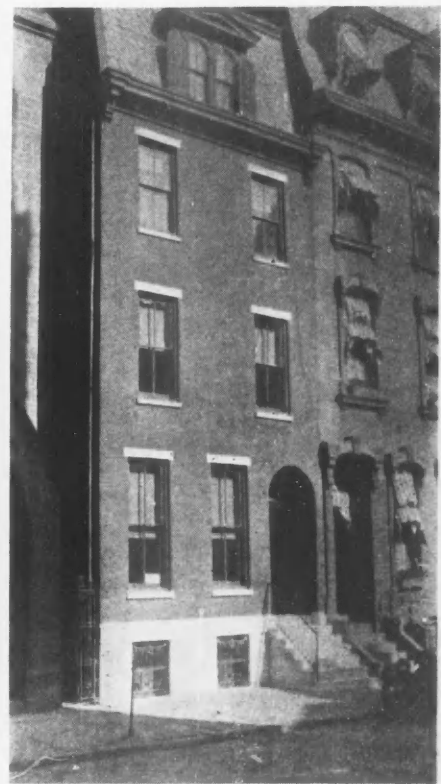
These houses were in good physical condition so that few repairs were essential, but the fronts were cleverly reconstructed to provide for two show windows, a double entrance at the center of the two buildings leading to both stores and apartments, and French windows at the second story. The remaining brick front was given an artistic stucco finish with tapestry brick trims. The French windows were provided with flower boxes and the third story windows were equipped with Colonial shutters. One of the stores is now used as a first-class restaurant while the other is occupied as a specialty shop. The six apartments—three in each house—were immediately rented to desirable tenants.

The architect who was responsible for this transformation has worked out many similar improvements in various cities, some of the most successful of which will be described as follows:

In a suburban section of a large city stood a fine, old three-story residence surrounded by ground on all sides. This house had been up for sale over a period of several years, but upon the advice of the architect the owner decided to have it remodeled for stores and apartments. To carry out this plan it was necessary to build a one-story addition at the front, but this was done at moderate cost, considering the improvement effected, and today the owner has a piece of property that is netting him a substantial income from



This Attractive Building, Occupied by a Women's Club, Was Reconstructed from the Old House to Right.



Inside Improvements and a Remodeled Front Changed This Old House Into a Desirable Club Property.



These Two Old Houses Had Stood Vacant for a Long Time Because They Were Unattractive Looking and Too Large for the Average Family.

six apartments and four stores. See photos below.

Not a great deal of building work was essential in converting the old dwelling into six apartments of five rooms and bath each. The addition for the stores was erected of brick on the ground in front of the house which had been a terrace. An arcade, with two stores on either side of it, leads to the apartments. At the top of the front wall of the new addition are flower boxes which add greatly to the appearance of the place. Colonial lanterns at the front of the apartment house supply just the right finishing touches.

The success of this venture soon led up to another improvement of the same character and in the same neighborhood. Here was an old "twin" three-story house that was sadly in need of repairs. At the front and on one



When Given a New Front and Made Into Two Stores and Six Apartments, the Houses Shown at the Left Were Quickly Rented.

side of this was considerable ground and the architect saw the advantages of utilizing this ground for the purpose of a new building. The existing brick walls of the old home, with the exception of the front, were used in the reconstruction. A brief description of this improvement, as it now stands, will give some idea of the wonderful change: The new three-story structure at the front of the old building is exceedingly beautiful, consisting of two stores with display windows and two apartments, one on the second floor, the other on the third. Both the second and third floor have French windows, but the two French windows at the second have balconies. Between each two windows there is a smaller window with a flower box. The entrance to the stores and apartments is between the two show-windows, and on either side of the entrance is a lantern.



The Suburban Residence as It Appeared Before Being Converted.



Six Five-Room Apartments and Four Stores Now Occupy This Suburban Property Which Had Been a Well-Built but Old-Fashioned Residence.

The new building is constructed of brick and the front and sides are finished with cement stucco, with red brick trim over the windows. The woodwork is painted Dutch blue, and this color, along with the red brick trims and the gray color of the stucco, together forms a color scheme that is really delightful. The main side wall is exceptionally interesting by reason of its large panel of cement stucco with two "checkerboards" of blue and white tile at the upper corners of this panel. The old remodeled house at the back of new building has three apartments. The two stores at the present time are occupied by automobile concerns.

Another notable work of this architect is that of a row of old two-story houses which have been rebuilt into three-story modern homes of beautiful designs. An additional story was put on the old brick walls of these houses, and then the front and sides were finished with cement stucco. New doorways and windows of the Colonial style were con-

the builder to treat both the main front and the side of it to advantage. The side, in fact, is now the most attractive part of the house, having been finished with stucco in a most artistic manner, and possessing such features as a Colonial entrance, French windows with balconies, lanterns on either side of the door, and flower boxes at most of the windows.

In many other instances the architect referred to has taken old houses of various sizes and styles, and with the magic of the builder's art has turned them into business and professional buildings of the highest class. His method of treating the front of the building is different in every case, and this, of course, breaks monotony. In some cases the front is decorated with colored tile, in other cases bricks of various colors and textures are used as decorative elements. Some of the fronts are torn out and rebuilt of face brick. The cement stucco fronts are of different tints and styles of finish, including the smooth and rough finish. The



**An Old Three-Story House in the Process of Being Made Over Into Stores and Apartments.**

structed and the steps were built of red tapestry brick. The first-floor windows were equipped with old-fashioned wood shutters and with flower boxes. Immediately upon their completion this entire row of homes was purchased by families of the better class.

Located in a small side street was an old red-brick stable which was in a dilapidated state. The "For Rent" sign had been hung upon it for many months, but no such placard was needed after our friend, the architect, had "operated" upon it. This former stable is now a handsome building with Colonial windows and an artistic stucco front. On the first floor is a well-stocked bookshop, and on the second is a neat real estate office. The old walls of the stable had been used in making this splendid change, but to those not familiar with the facts appears like an entirely new structure.

Still another unique piece of work is a four-story house that is situated in the business district of a large city and which today is a combined business and apartment building of pleasing design. Previous to its transformation this had been merely a plain brick residence of the old-style type. Today it consists of two spacious stores, one on the main floor and the other on the second, and high-class apartments on the third and fourth floors. This building is located at the corner of two streets, a position which enabled



**As It Now Stands, with an Addition at the Front, the Finished Job Makes a Highly Rentable Piece of Property.**

style of architecture may be Old English, French, Dutch, American Colonial, Spanish or Oriental. Often by the use of such features as English lanterns, Colonial lanterns, ornamental iron balconies, quaint shutters and flower boxes of original design, a most interesting effect is produced. Special attention is devoted to the color scheme which always is in keeping with the general style of the improvement.

This architect does not wait for business to come to him but instead he goes "out on the street" and promotes new business both for himself and the builders by the plan of suggesting property improvements to owners of old buildings.

# Plumbing Accessories Can "Make" the Bath Room

By KARL WILLIAM ZOELLER

*Author of "Merchandising the Plumbing Business."*

**T**HE finest plumbing equipment can be marred by the wrong accessories. And on the other hand with carefully selected accessories, you can make a medium priced bath room look like a de luxe outfit.

It is only recently that this question of bath room accessories has been brought to public notice and even now a good percentage of the better grades are only installed because of direct selling efforts on the part of manufacturers.

These articles are prepared from the building contractor's point of view; it is our firm belief that if this subject receives as much consideration as it deserves, builders generally will profit much by the information.

Recently it was the writer's privilege to visit several of New York's newest and finest apartment houses. They had every one of the latest ideas in home comfort; the plumbing fixtures in particular were of the best, and big substantial tub, lavatory, built-in dressing table, shower-stall, all gleaming white

and nickel, individually presented a beautiful picture. But their value and appearance as a whole was ruined by cheap, thin, poorly made towel bars, soap dishes, tooth brush holders and so on. It was a pathetic picture. The contractor did not even notice the effect himself until it was pointed out to him; he was so pleased with the beautiful tile floors and walls and the good grade of plumbing fixtures he had selected, he did not consider the accessories important at all.

On another occasion while visiting some new bungalows, where only a moderately good grade of plumbing fixtures were installed the happy selection of accessories somehow made the bath rooms look like they might cost two or three times the price paid.

With the present demand for the maximum in beauty and utility, manufacturers have developed accessories for every kind of bath room. Solid china accessories, nickel plated brass and enameled iron represent the best grades.

Solid china accessories that match the whiteness of the plumbing fixtures are usually built in the wall at the time the tile is laid. Recessed soap dishes and sponge holders, paper holders in this material give a fine effect of substantiality and luxury. Also of china are towel bars and hooks for wash cloths, hot water bottle and clothes. These are also built-in the wall when the tile is set.

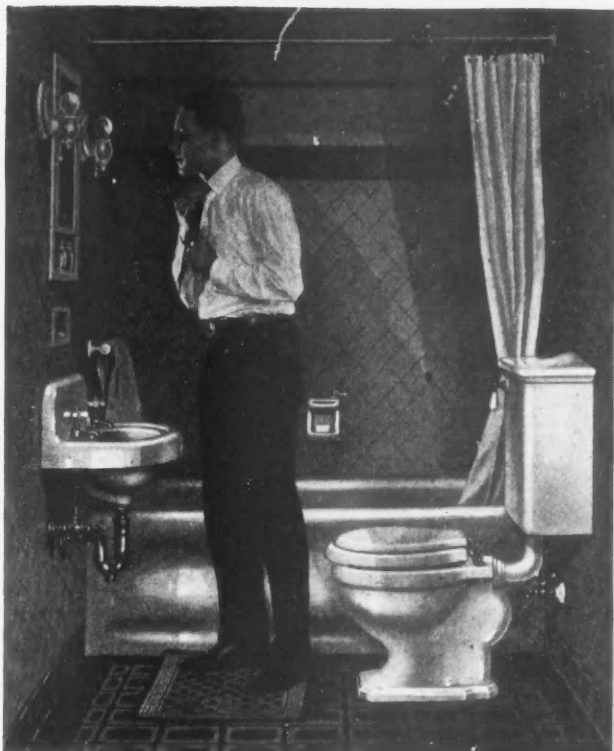
There are also white china accessories that may be installed after the bath room is completed. These are as substantial and as attractive as the built-in ones and offer the builder a wide range from which to choose. They are of the same fine china as are the built-in fixtures; their chief advantage is the smaller cost, both in labor and installation, and they may be set after tile work is completed. Some of these exposed china fixtures have special seals to fasten them to the walls permanently.

The nickeled brass fixtures make a beautiful effect. The better grades come with glass toyel bars and when the contractor decides upon these fixtures care should be taken to select only those made by high grade concerns, otherwise the nickel plate will peel off and tarnish and nothing looks quite so bad as tarnished and peeled nickel fixtures. Several good brass accessories manufacturers have achieved a new process of white enameling their fixtures which is very practical and finds favor among builders who have limited equipment budgets.

Several manufacturers produce enameled iron accessories which are beautiful in design and may be used in any type of bath room. This process of enamel-



Built-in Bathroom Accessories, Recessed Soap Dishes, Paper Holders and Medicine Cabinets Give an Effect of Substantiality and Luxury and Are Usually Built Into the Walls at the Time the Tile Is Laid.



The Neat Effect of Built-in Soap Dishes and Medicine Cabinet Is Evident Here and the Well-Placed Lights Will Appeal Especially to Men.

ing is exactly the same as that used in making enameled iron bath tubs, sinks and so forth. These may be had in either the built-in or exposed type. They are, of course, very durable and not too expensive.

### Toilet Seats

We have been speaking of accessories and describing towel-bars, soap dishes and so forth, but there is one item that, although not mentioned until now, should have a chapter all its own.

Toilet seats should receive a considerable amount of attention. The market is flooded with them at any price you want to pay. But if there is one place where the price indicates quality it is in the toilet seat. A good one costs money, but it is absolutely worth it.

The constant use, and the scrubbing and cleaning that toilet seats receive is reason enough for selecting the strongest and best. Then, too, the seat should harmonize with the balance of the bath room equipment.

Several of the better manufacturers are now advertising their seats to the public and the results are very satisfying, but there is a very important lesson to the builder in these results. It demonstrates that the home owner wants good toilet seats that are dependable and will stand up under much use.

### Medicine Cabinets and Mirrors

All steel medicine cabinets built into the wall not only are decorative but are practical as well. Every household requires lots of space in the medicine cabinet; clean bath rooms require ample storage space so that every article is out of sight; therefore the larger the cabinet the more pleasing it will be to your prospective customer. Wood cabinets, enameled white, are obtainable and many of them are substantial and practical for use when it is not possible to use the built-in models.

The bath room should have at least two mirrors. There is, of course, one in the medicine cabinet, but there should be another. A happy arrangement is a pier glass built the whole length of the door, but if this is not practical then some mirror should be placed in the bath room, preferably opposite the cabinet mirror.

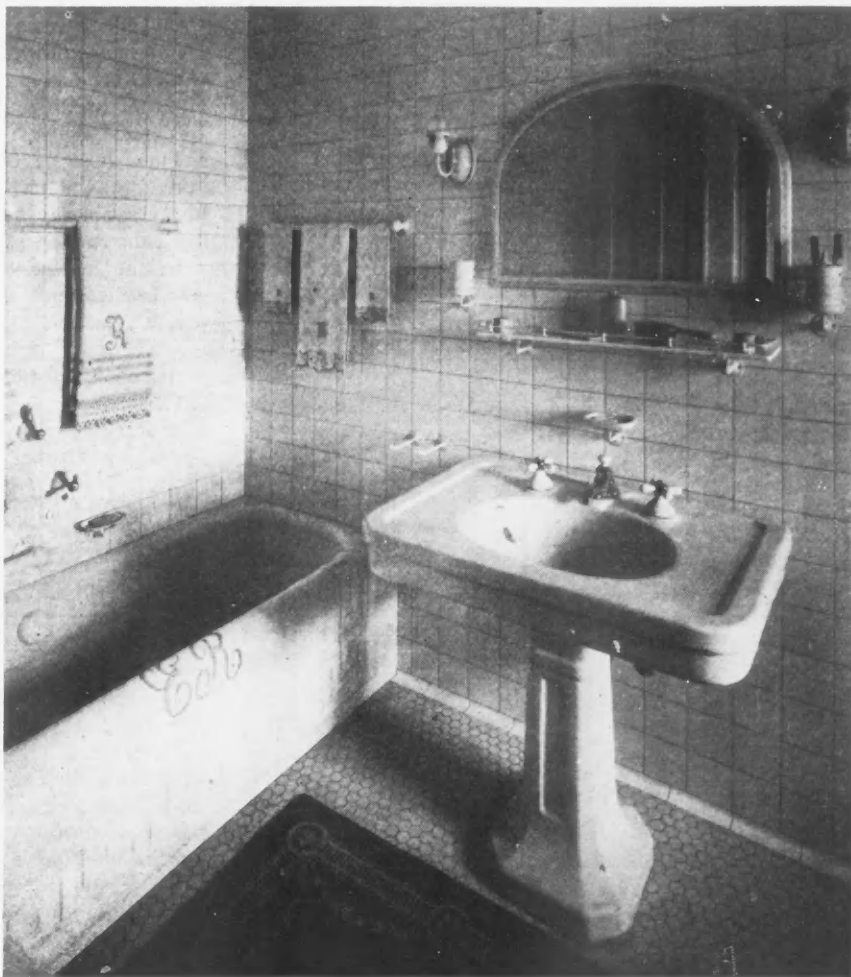
Your plumbing supply dealer and the plumbing contractor are fully alive to the necessity for better accessories and will co-operate with you in making the correct selection.

You'll find it pays big dividends to put in the best accessories. And the more you put in, the better appointed will be your finished job; and just as women appreciate extra closet space just so will an extra towel-bar or clothes hook often get your job a consideration that may help close a sale.



### 1924 Is Record Cement Year

U. S. Geological Survey data shows that the portland cement production for 1924 exceeded that for 1923, previously the record year, by 8.3 per cent, setting a new record of 148,859,000 barrels.



Accessories Which Are Installed After the Bathroom Is Completed Can Be Obtained and Are Quite as Substantial and Attractive as the Built-in Type While Having the Advantage of Lower Cost.



# HOMES in COLORS

## Home Building Is Still the Big, Worth-while Job

By WILLIAM A. RADFORD

President and Editor-in-Chief of American Builder

“OUGHT we to build this year?—or shall we wait and see if prices will go down?” This is the question we are asked every day at this season of the year by some client who has come to us to prepare working plans and specifications for his dream house, his hoped-for home. The rent is terribly high, he explains, and the children and all the family badly need the comforts and accommodations of the proposed new home; but—building costs seem so high! Will they be any lower soon? and can we afford to build now?

All of which is proper to ask; in fact, the entire building and real estate field is asking just these questions. Surveys are being made to learn whether rents are going up or down, and to what extent a shortage of homes still exists.

### Semi-Annual Real Estate Survey

The semi-annual survey of the real estate market which has just been issued by the National Association of Real Estate boards shows that the building shortage is still with us, though it is not so pressing as during the past three

years. This survey is based on reports from the real estate boards of 259 cities in the United States and Canada.

The accompanying chart shows graphically the percentage of cities reporting shortages in single family dwellings, apartment houses and business buildings for the last three surveys.

The survey brings out the fact that the greatest unsupplied demand is for small one-family buildings which seems to indicate that the future market will show the greatest increase in activity in this type of property. Many of the small cities report a shortage of apartment buildings and the ratio of demand to supply here is very high.

For the country as a whole the survey indicates that there is an enormous shortage of farm structures as construction of farm dwellings and other buildings has been practically suspended the last three years.

This shortage may be expected to translate itself into building demand as the economic recovery of American farmers, already measurably on its way, makes farm building construction possible.

In the matter of rents, the report shows a decreasing stabilization with the most marked fluctuations appearing in the smaller cities and in business properties. This relatively greater instability in business property rents has been characteristic of all previous survey findings.

This survey clearly shows that rents are still high and that it is hopeless to delay home building, thinking that building costs or rents will come down in the immediate future. Those who need new homes should build now, and they should make them just as modern and completely equipped with modern conveniences as they possibly can.

The home designs in colors—eighteen of them—which we present on the lithographed pages following, show authentic designs for modern homes, in sizes that will appeal to all purses. They are all designed in good taste both within and without. Ample provision has been cleverly made by our draftsmen for many of the little conveniences and niceties that put the stamp of approval onto the really modern home.

In connection with your study of these home designs we suggest that you turn also to the well illustrated pages of this magazine where the most reliable manufacturers serving the building industry are presenting the details of their materials and equipment. There are many important questions to be worked out in connection with the new house before the work can proceed, and a study of these pages will do much to clear up many of these questions.

Put good construction into your new homes and make them modern and complete in their appointments, and you need not fear decreasing prices, because the real value and permanent satisfaction will be built into your work.

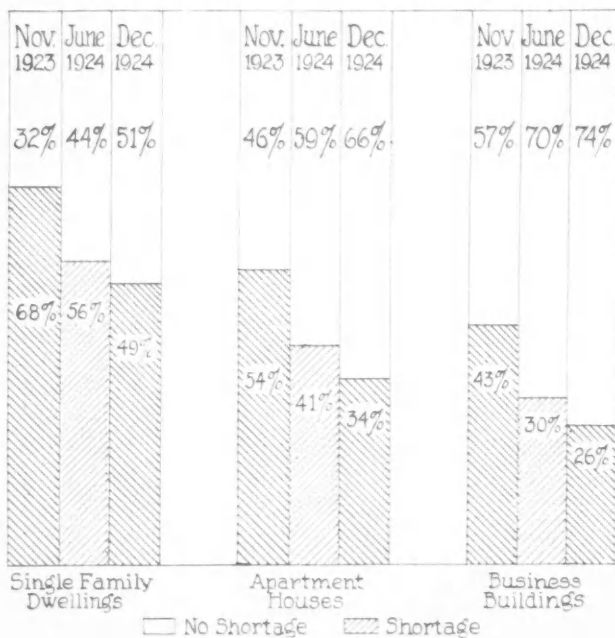
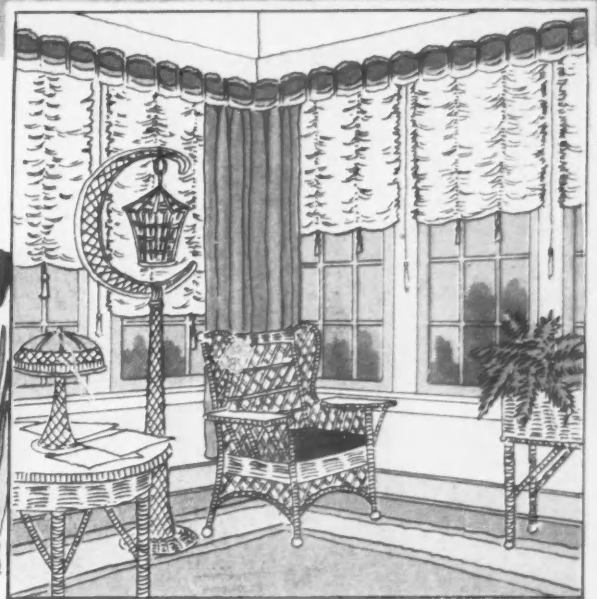
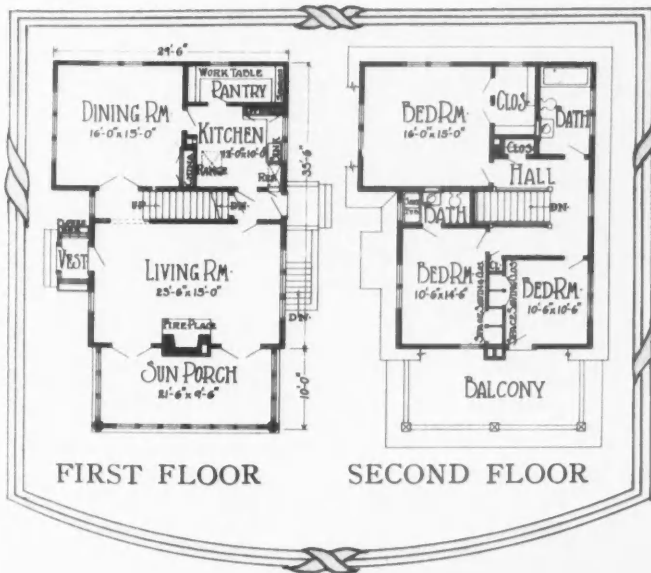


Figure Shows Percentage of Cities Reporting Shortage of Residential and Business Buildings in December, 1924, Compared with Percentage in June, 1924, and in the Fall of 1923. It will be noted that although the shortage is gradually disappearing, there is still a great amount of building to be done.



## The ELGIN

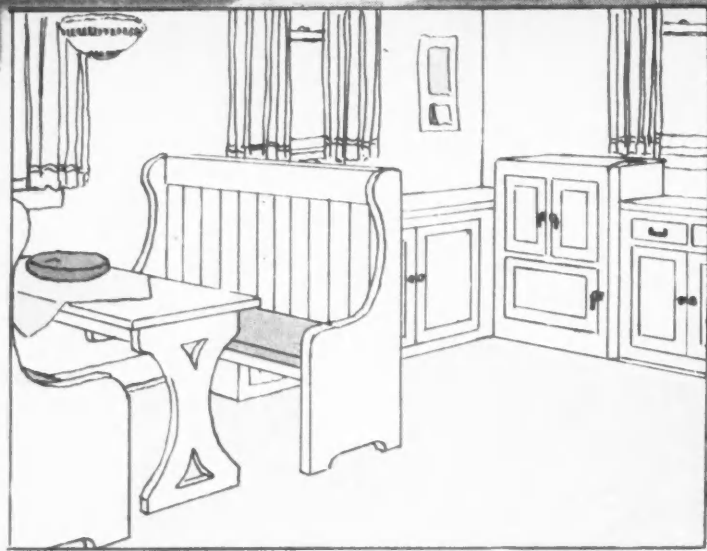
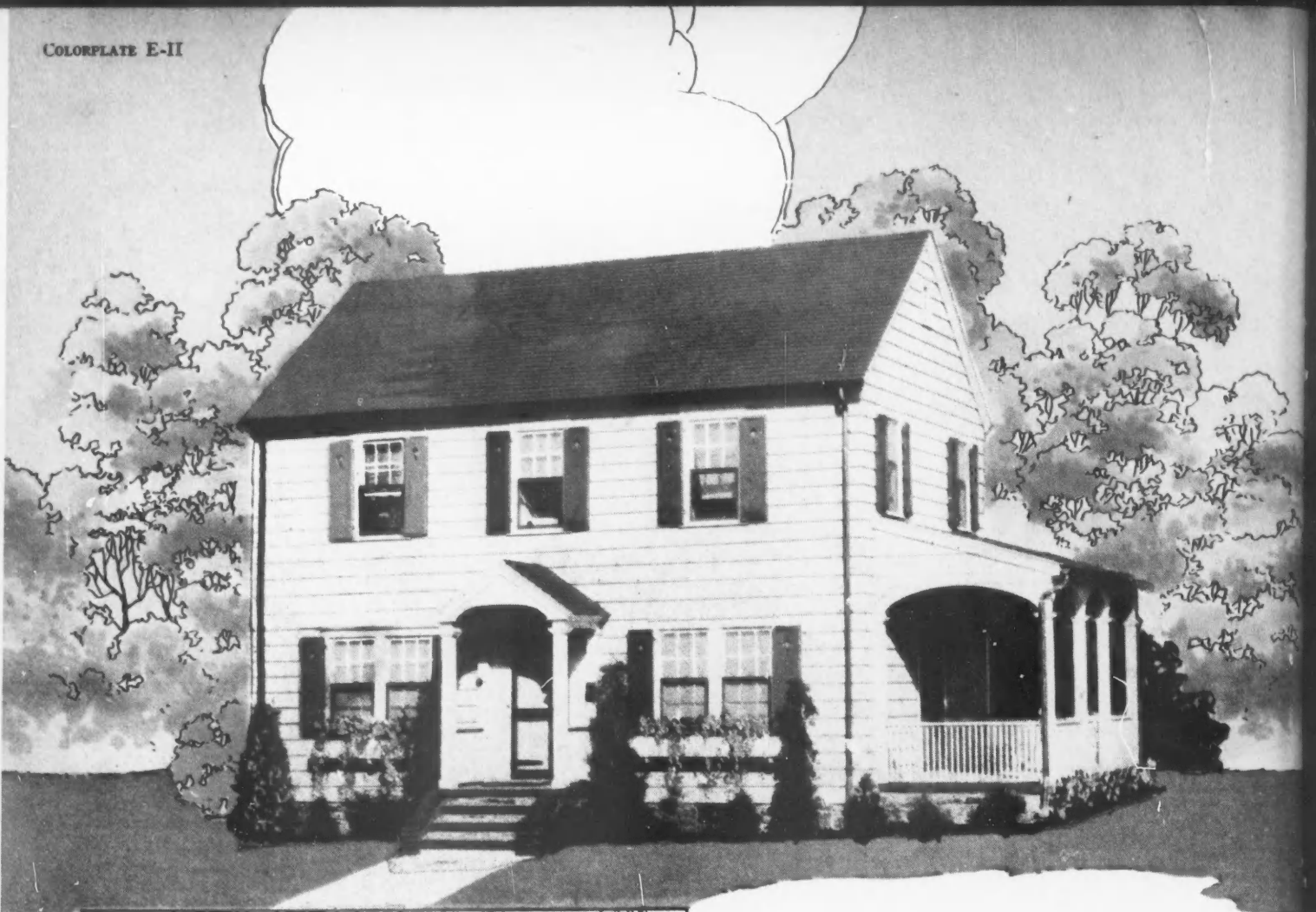
A COLONIAL home of unusual L shape containing six rooms besides the big sun porch. The L at the rear gives the extra width needed for dining room and kitchen on the first floor, and a large bedroom, clothes closet and bathroom on the second floor. Color sketch gives a glimpse of a corner of the sun porch.



Pat. March 15, 1921 and Sept. 30, 1924. Copyright, 1925, Wm. A. Radford, Chicago

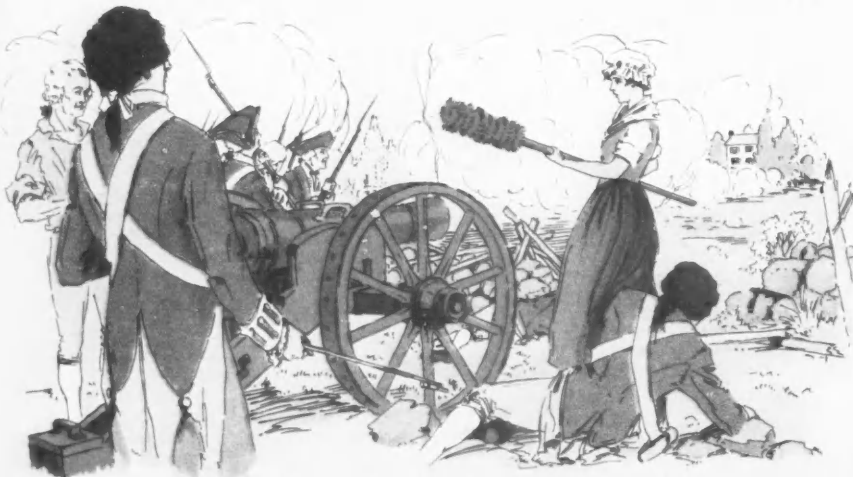
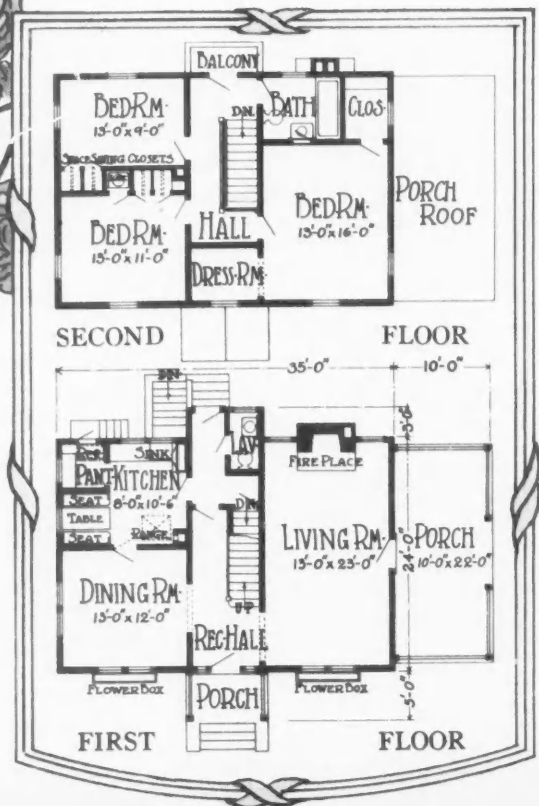


Perry's Victory on Lake Erie, Sept. 10, 1813



## The ESSEX

A STRAIGHT gable Colonial in excellent taste. 34 by 25 feet (not counting the porches) and containing six rooms. Color sketch shows view of breakfast alcove in kitchen.



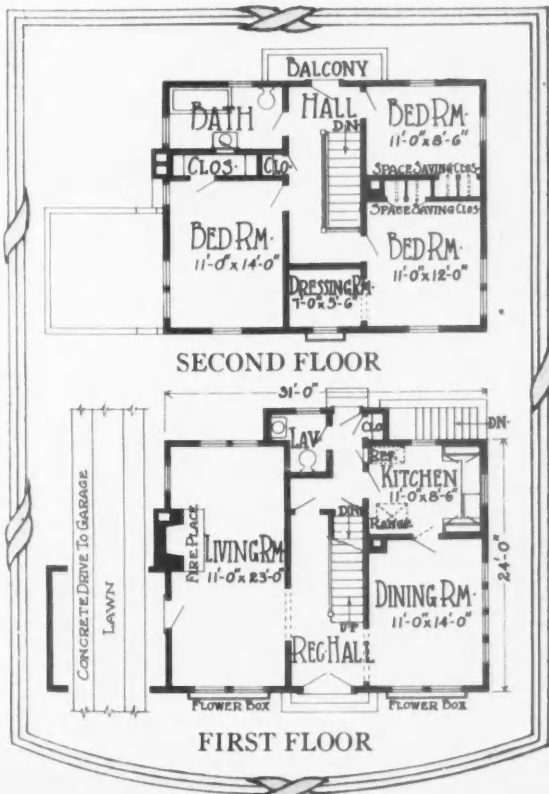
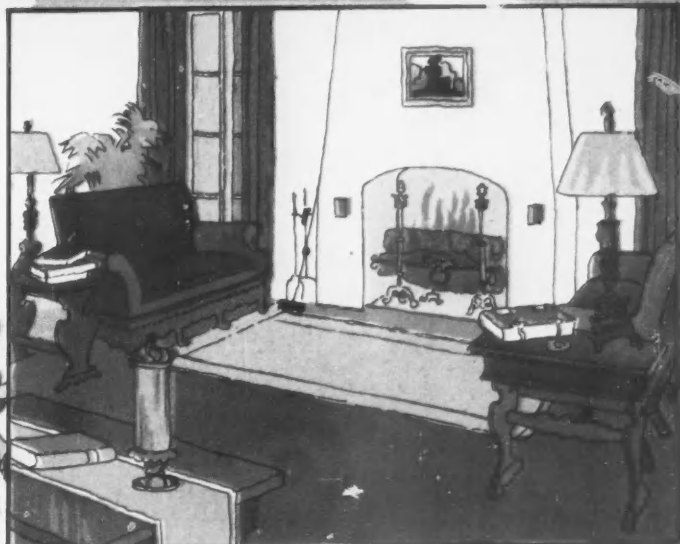
"Molly Pitcher" at Monmouth, July 4, 1776



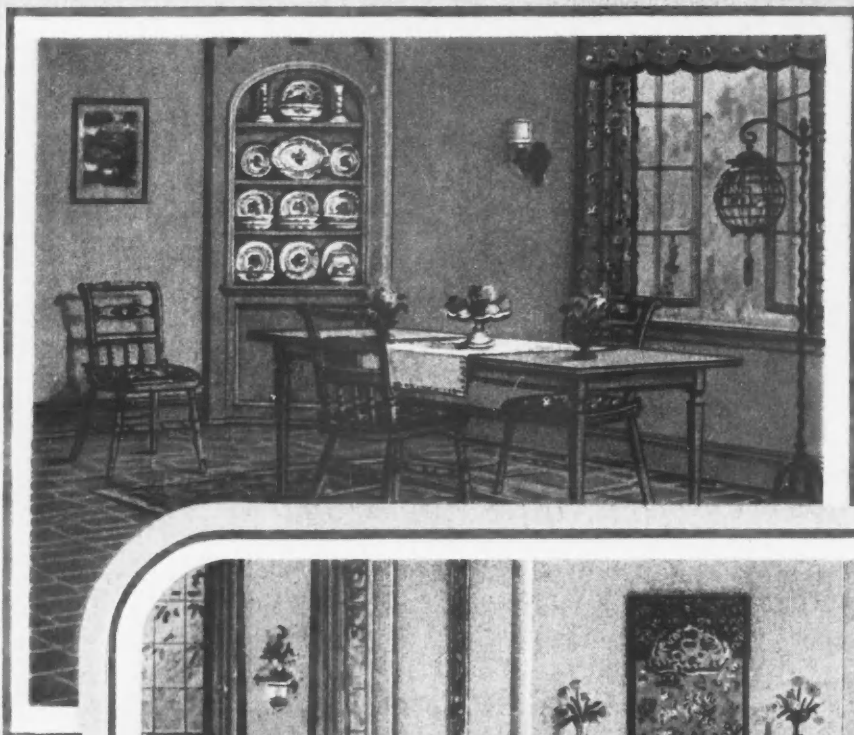
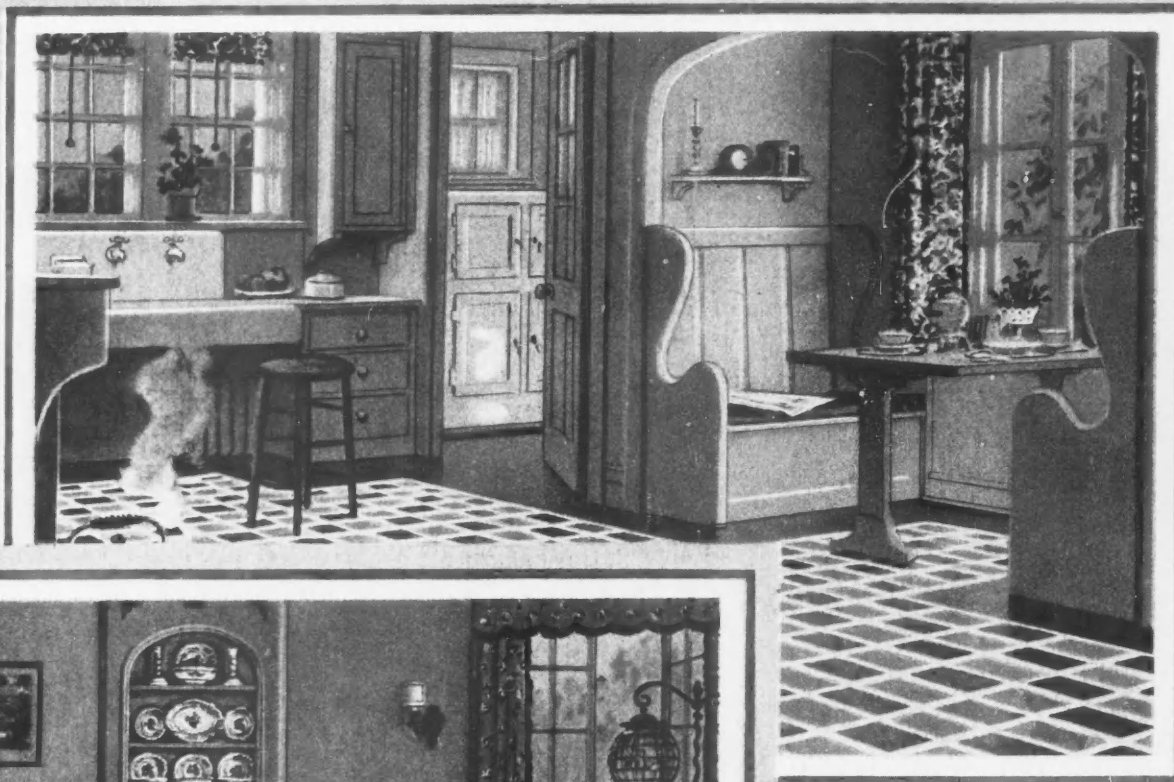


## The EL PASO

SPANISH design in the modern style applied to the square type home which always gives the most in livable space and convenience for the money invested. Color sketch suggests furnishings for the large living room.



Annexation of Texas, Dec. 29, 1845



ABOVE: This spotless kitchen, with its shiny, waxed and polished linoleum floor, and near-at-hand intriguing breakfast nook, is vibrant with color—and the color scheme all grew out of the pretty blue, gray, and cream of the floor.

TO left: A red Dutch tile linoleum floor lifted this little breakfast room completely out of the realm of the usual, and gave it distinction



THE charm of this soul-satisfying living-room depends almost entirely upon the floor of gray jaspé—not too light in value, not too insistent, but taking its rightful responsibility in making the whole scheme quiet and restful.

## Decorative Possibilities of Colored Floors

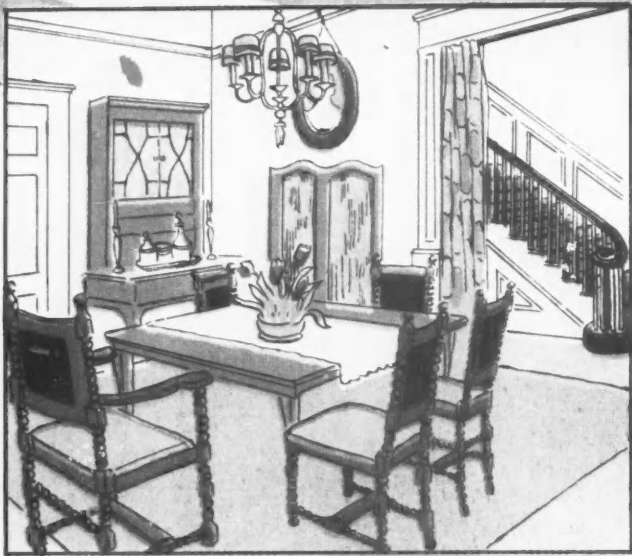
**T**O left: There's many a dowdy little entrance hall that could be transformed by a pretty floor; and there are so many new and stunning tile linoleum designs to choose—quaint Dutch tiles in gray stone color, brick red, or warm tan, the soft mossy green inset tile, and the new marble block effects.



**A**BOVE: Think of the thousands of American homes furnished conventionally, and often wearisomely, in the prevailing monotone of brown! The blue linoleum floor has lifted this room out of the dull and commonplace.

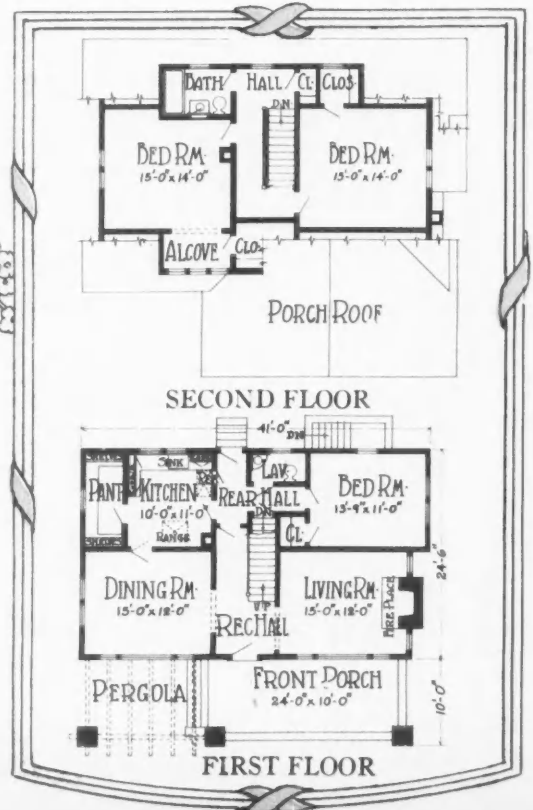


**W**HAT could be smarter or more suitable for the sun porch than this marble tile linoleum floor with a surrounding border of plain black—giving double warmth and comfort.



## The ELKHORN

A FAVORITE bungalow design of six rooms, broad and inviting across the front. Color sketch suggests appropriate furnishing and decoration of the dining room.

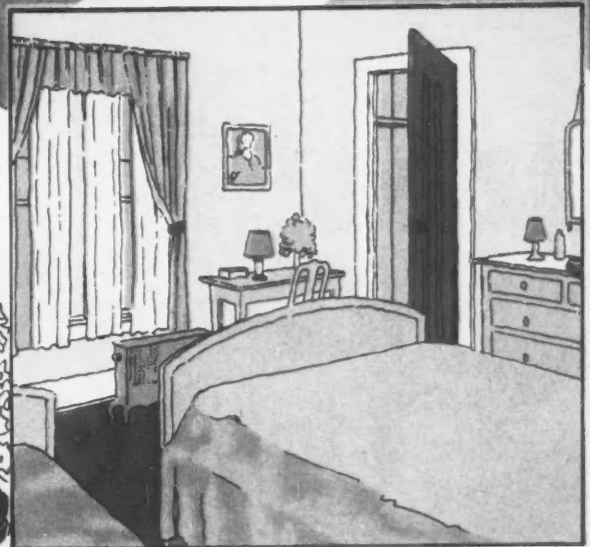
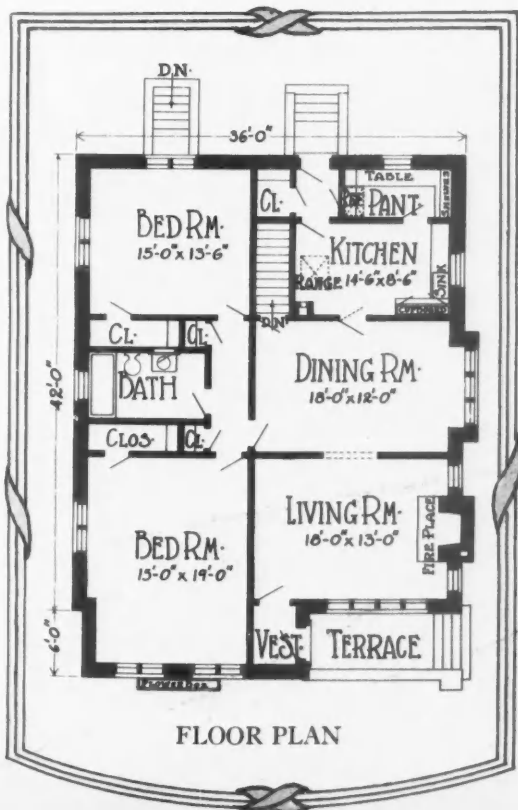


Winter Quarters at Valley Forge

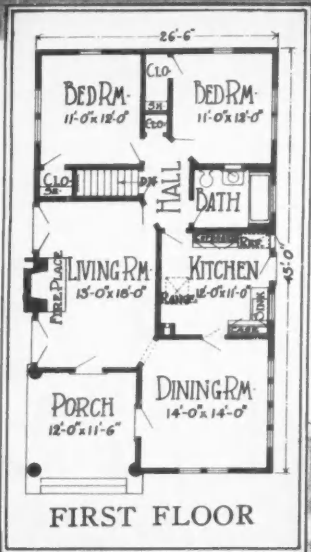


## The ENGLEWOOD

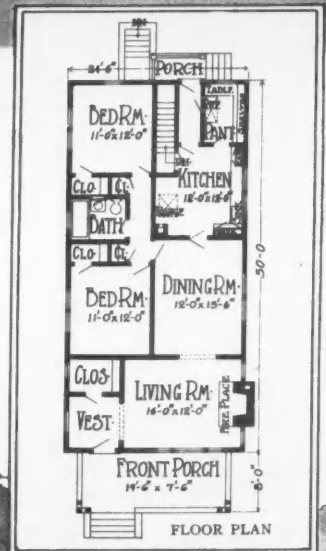
A SUBSTANTIAL bungalow home of brick and stucco construction with tile roof containing five large rooms conveniently arranged. To the right is shown color sketch suggestion of one of the bedrooms.



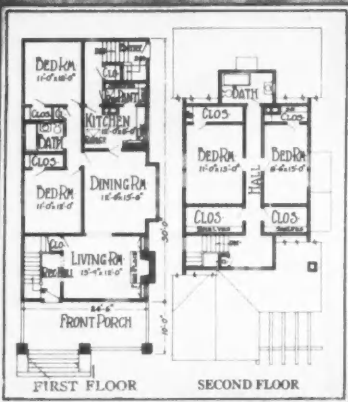
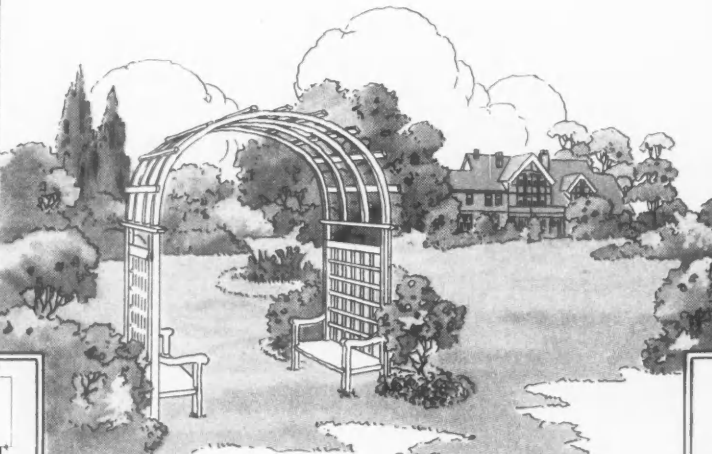
Chief Pontiac Besieges Fort Detroit, 1763



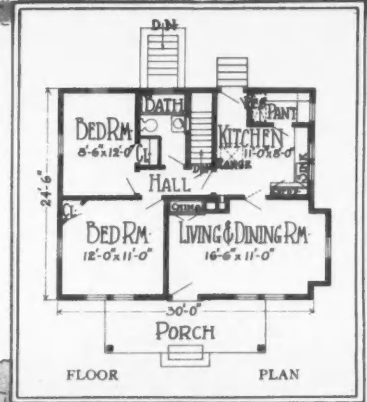
**The ECHO**  
 Five rooms and convenience; size 26 ft. 6 in. by 45 ft.



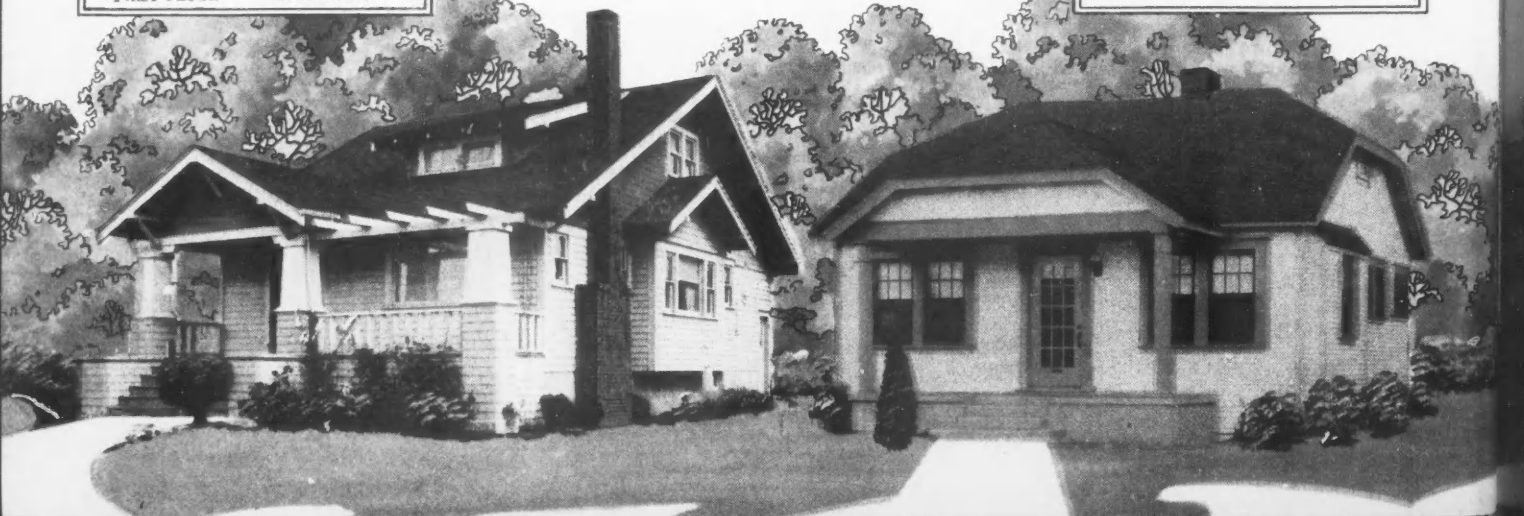
**The EATON**  
 Five rooms for a narrow lot; size 24 ft. 6 in. by 50 ft.

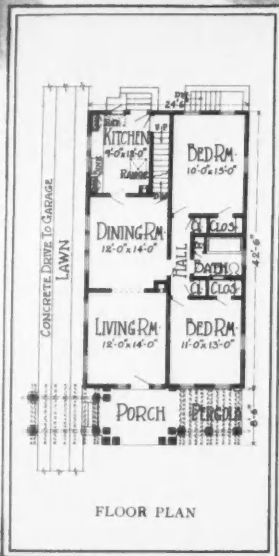
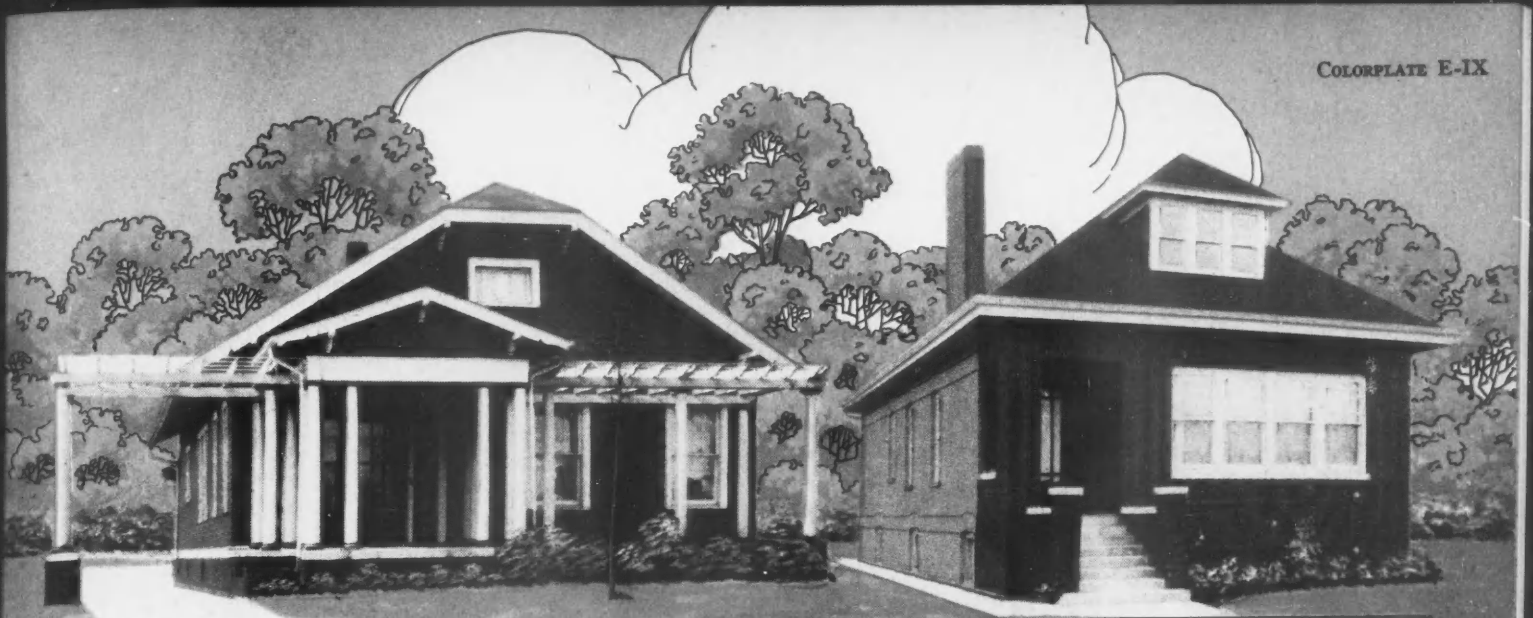


**The EDEN**  
 Seven room story and a half; size 24 ft. 6 in. by 50 ft.

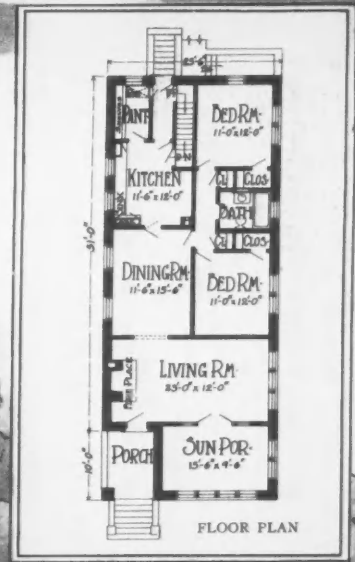


**The ELBA**  
 Four rooms and comfort; size 24 ft. 6 in. by 30 ft.

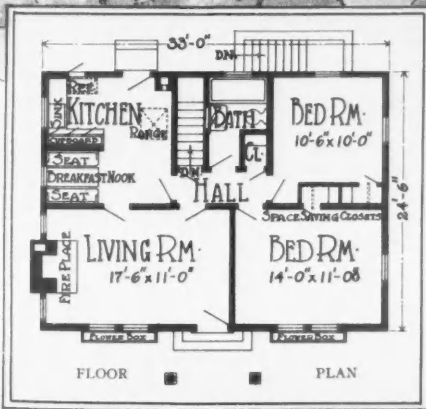
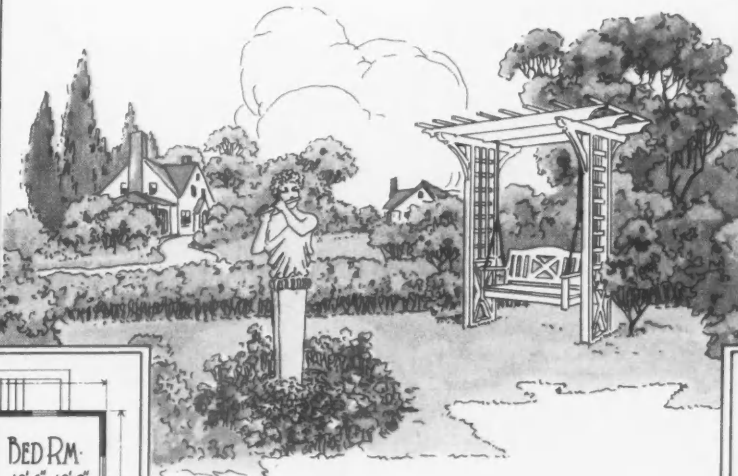




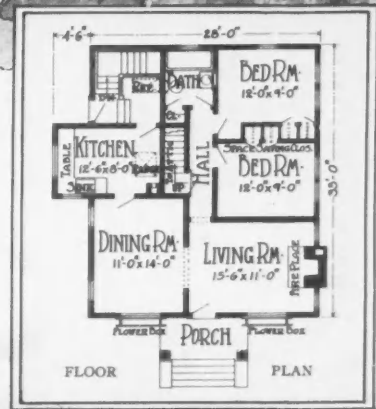
**The ELKTON**  
 Five rooms in a de luxe wrapper. Size 24 ft. 6 in. by 42 ft. 6 in.



**The ELWOOD**  
 Five rooms and sun parlor cottage. Size 25 ft. 6 in. by 51 ft.

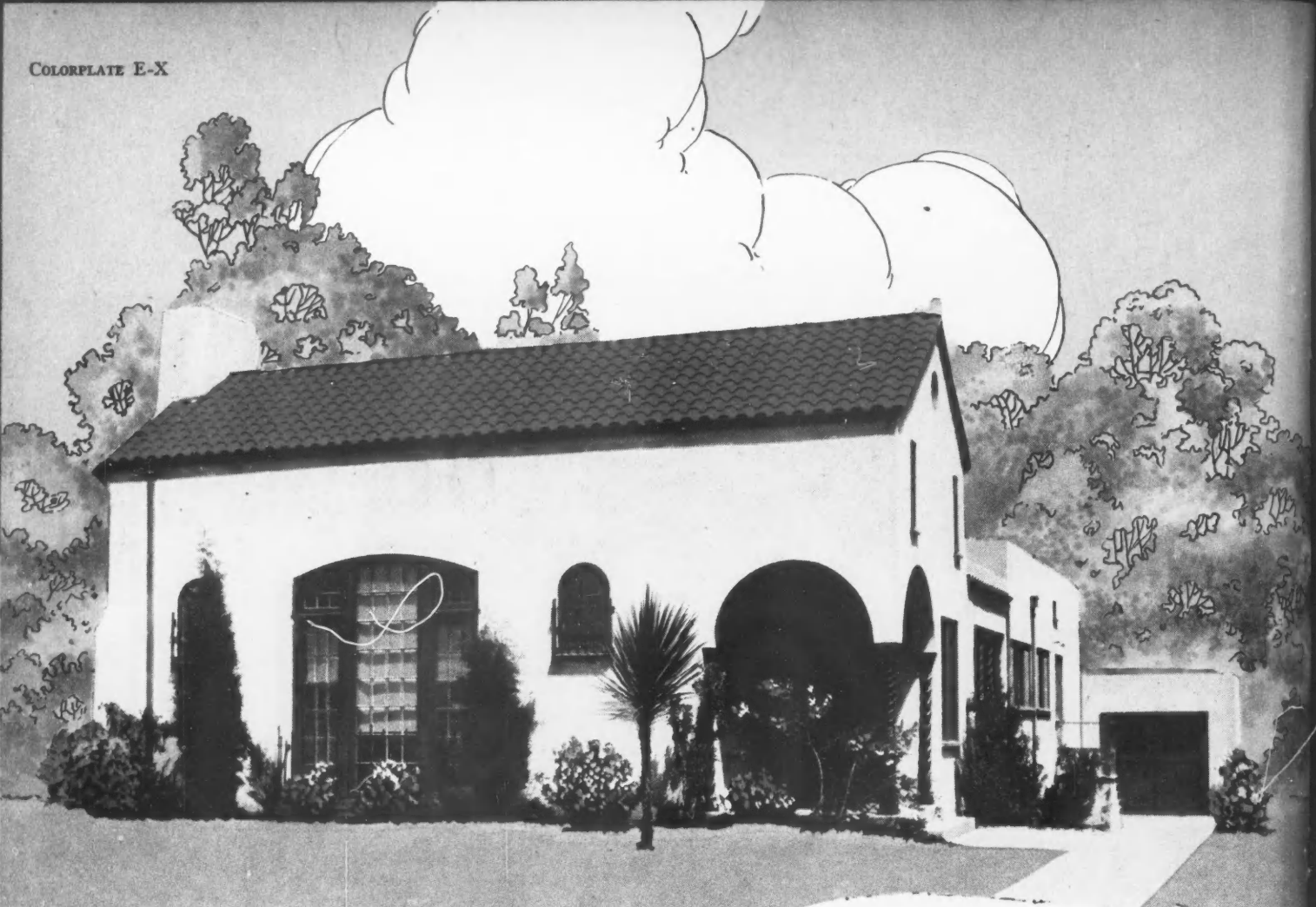


**The ELMDALE**  
 Four room gem; size 24 ft. 6 in. by 33 ft.



**The ENFIELD**  
 Five rooms. Size 28 ft. by 33 ft.





## The ELDORADO

A SPANISH home design of distinction, with high ceiling studio-type living room and five other good rooms. To the left is a color sketch suggesting furnishing and decorating scheme for this living room.



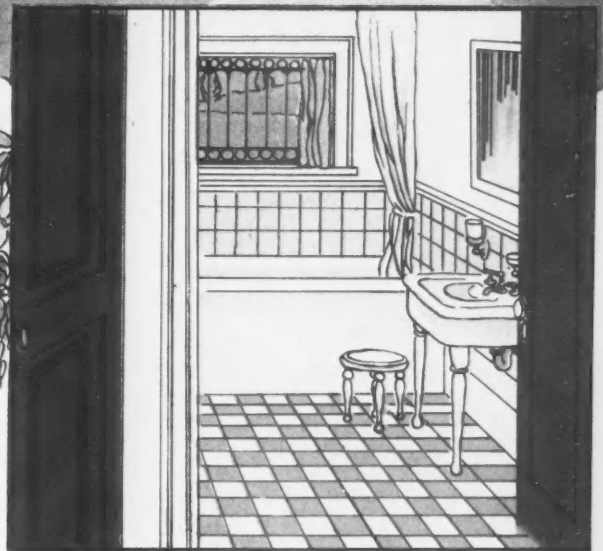
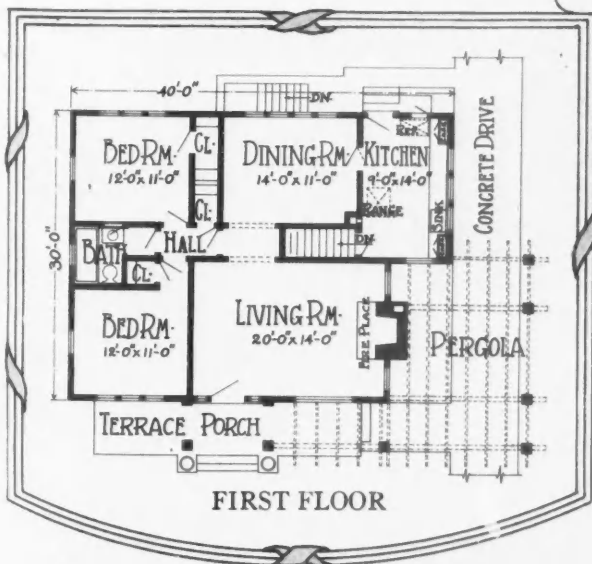
Ponce de Leon Seeks The Fountain of Youth in Florida, 1513





## The EUREKA

"I HAVE found it," will be the glad cry of the home seeker when he discovers this clever little house plan. It is a white Colonial bungalow measuring 30 by 40 feet. The pergola invitingly shelters the drive to the garage. Color sketch shows glimpse of tiled bathroom.



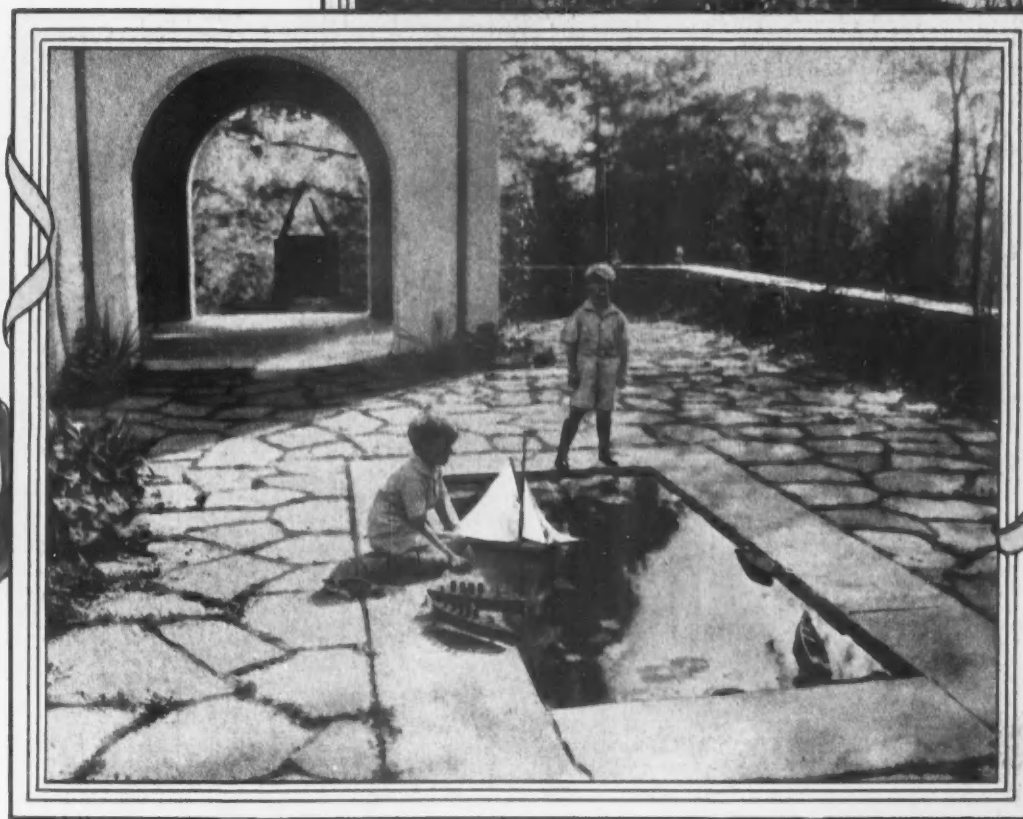
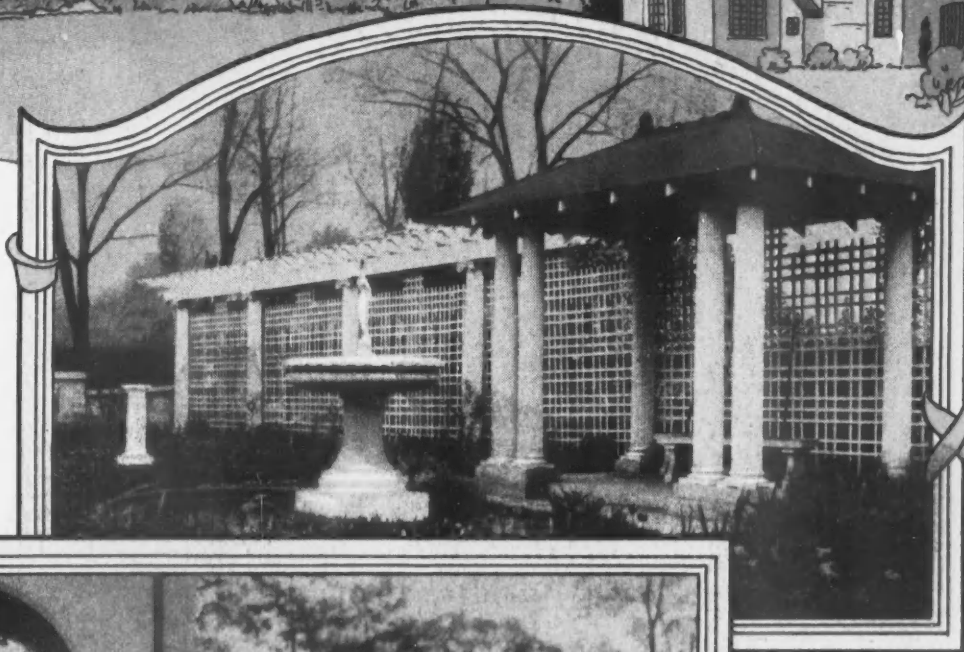
"Give me Liberty, or give me Death,"  
Patrick Henry, Richmond, Va., March 1775



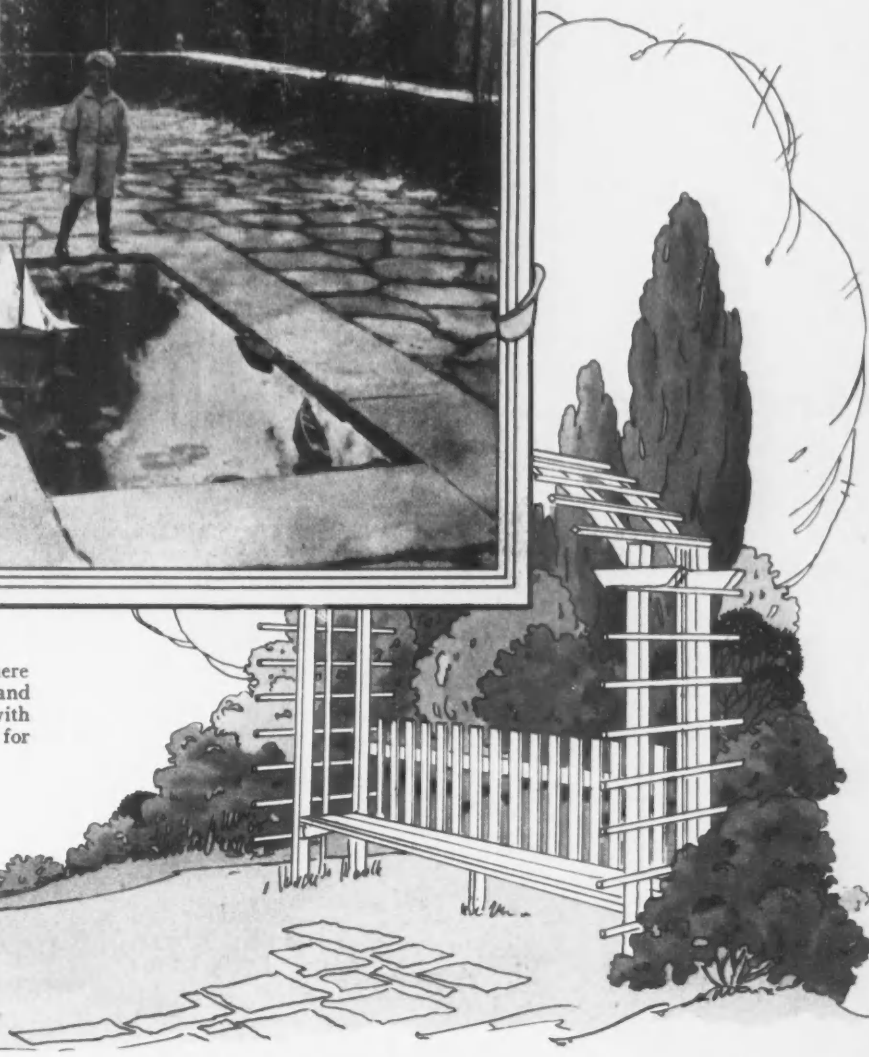
A SPECIMEN cedar marks the entrance and contrasts vividly its blue-green against the cream of the stucco and the pure white trim of the doorway.



**F**ORTUNATE indeed are the home grounds, ample enough for a pergola shelter, lattice background and flower bordered fountain pool.



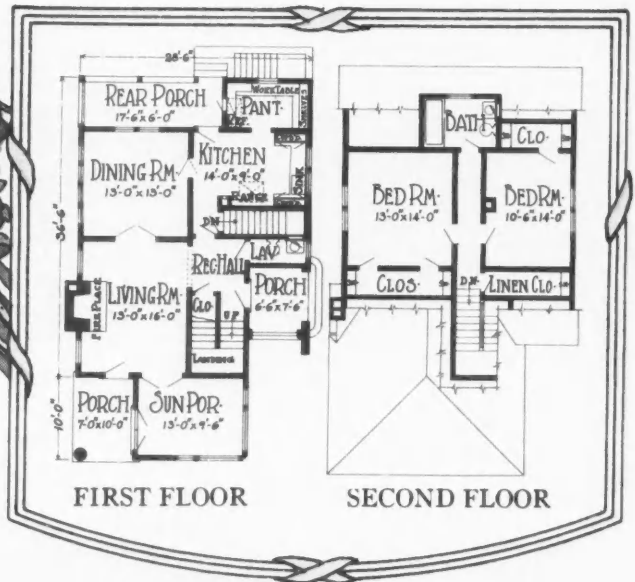
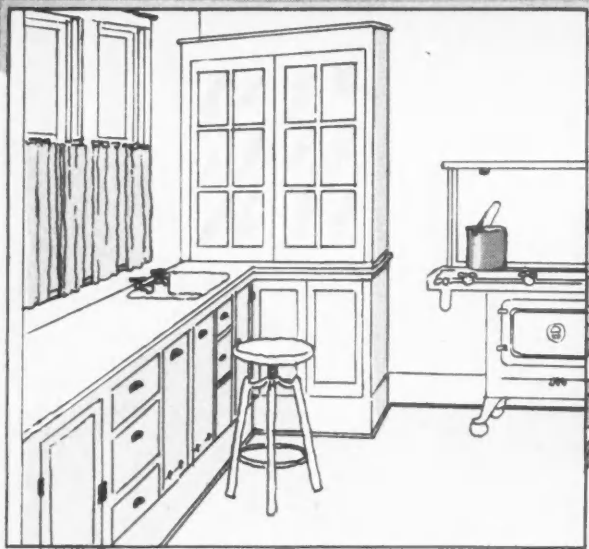
**H**OME is where the heart is and where children can play in freedom and safety. This flag stone covered terrace with its wading pool is a favorite place for boating.





## The EDGERTON

A SUBSTANTIAL home of stucco construction in the French cottage manner; four fine rooms provided on the first floor and two upstairs. Color sketch to left gives a glimpse of the kitchen with its convenient work-shelf and built-in cases.

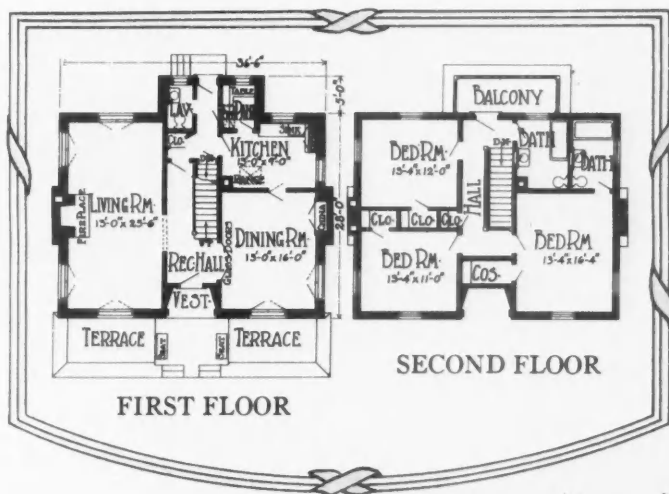


Young America Subdues the Barbary Coast Pirates, 1805



## The ELLSWORTH

THE last word in shaggy rough texture brick architecture—a daring and distinctive design, dominated by the high arched vestibule. The plans show the generous, well-arranged interior of this individual home. Color sketch to right gives suggestion for dining room with built-in china cupboard.

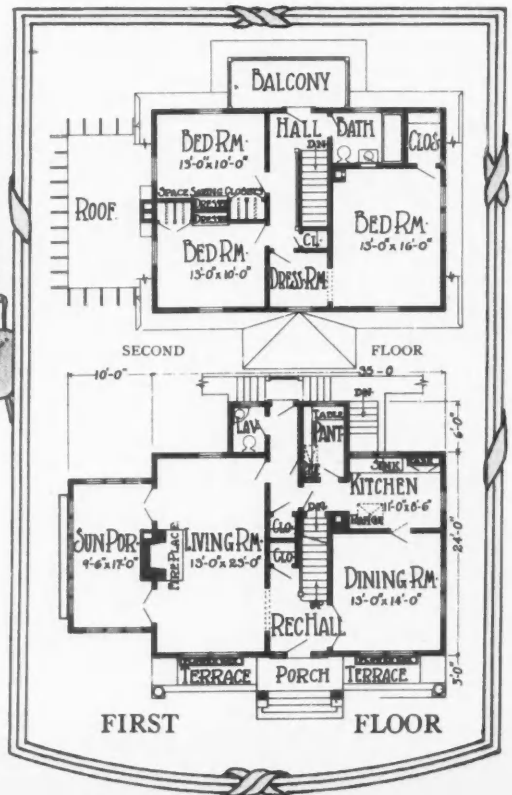
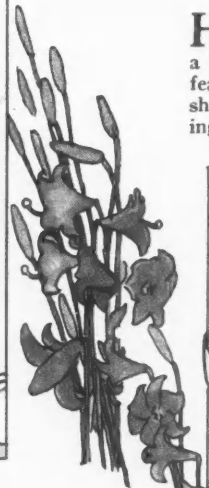
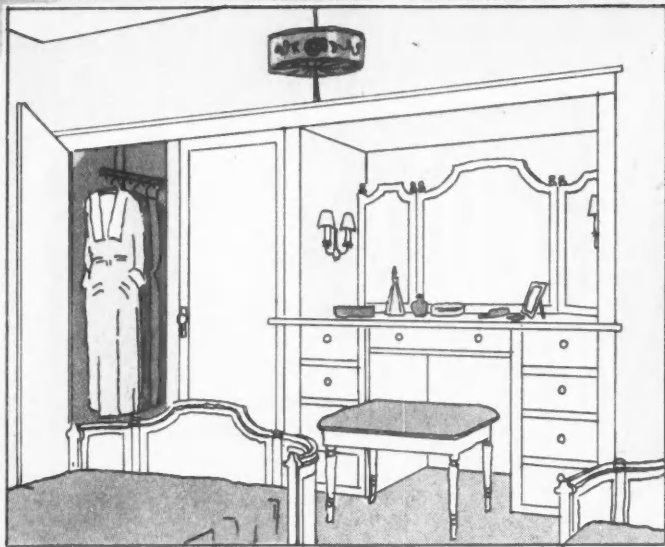


Norsemen Explore New England, 1000 to 1590

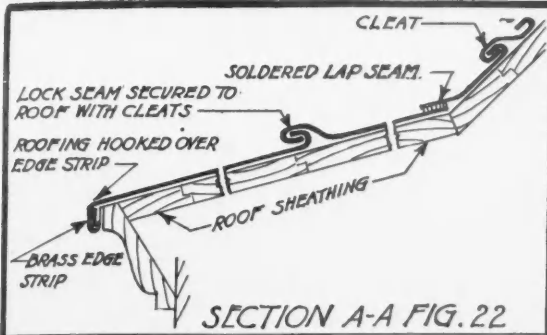


## The EXETER

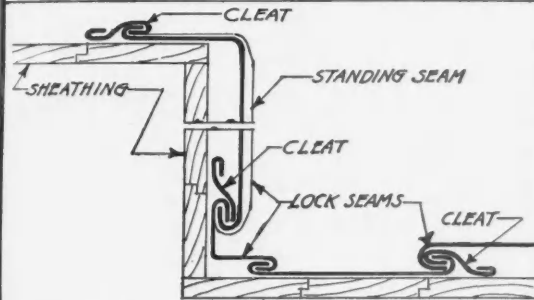
HERE is a Dutch Colonial gem of medium size, 24 by 35 feet, containing six fine rooms besides a big sun porch. An abundance of closet space is a feature of this design. To the left the color sketch shows arrangement of built-in dresser and space-saving wardrobes in the bedrooms.



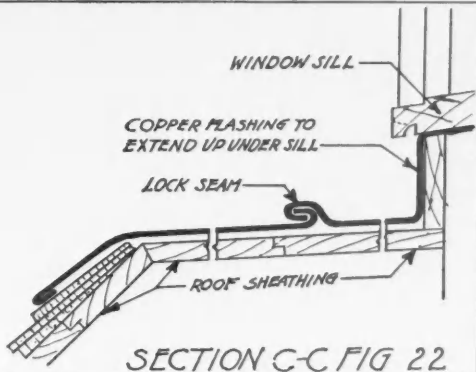
Birth of "Old Glory," June 14, 1777



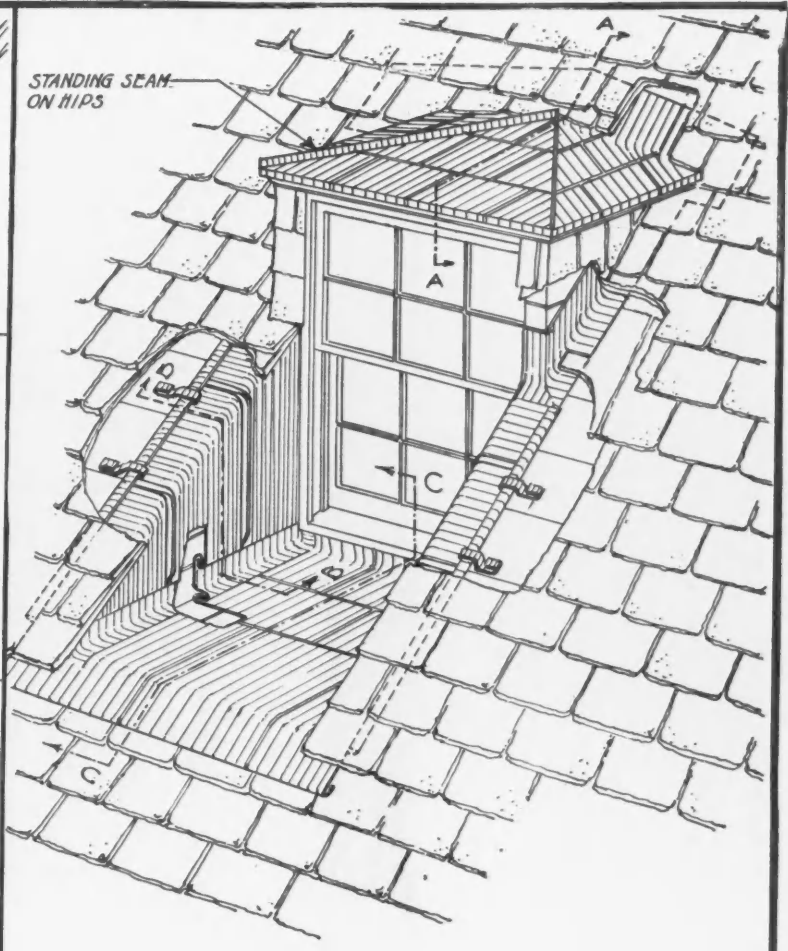
SECTION A-A FIG. 22



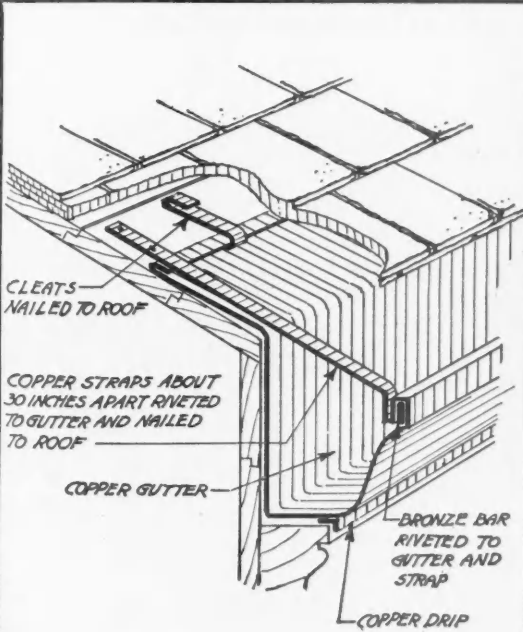
SECTION B-B FIG. 22



SECTION C-C FIG. 22

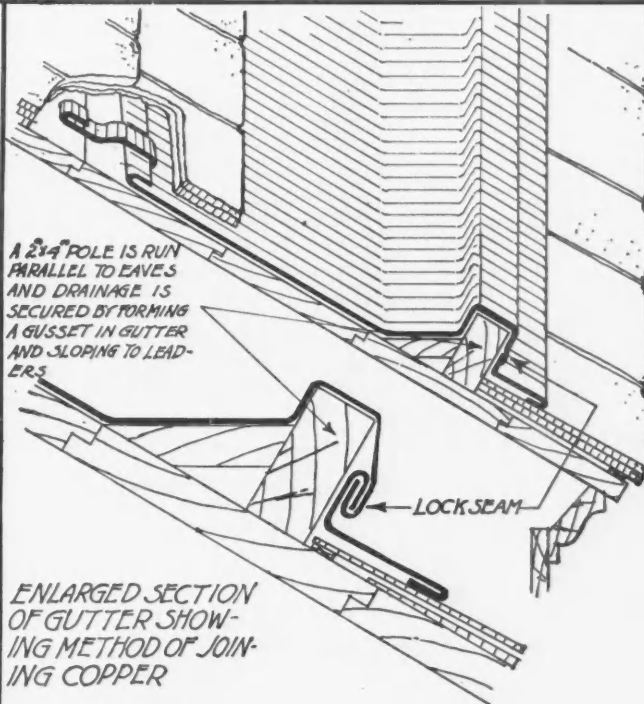


FLASHING FOR A RECESSED DORMER WINDOW (22)



HUNG GUTTER

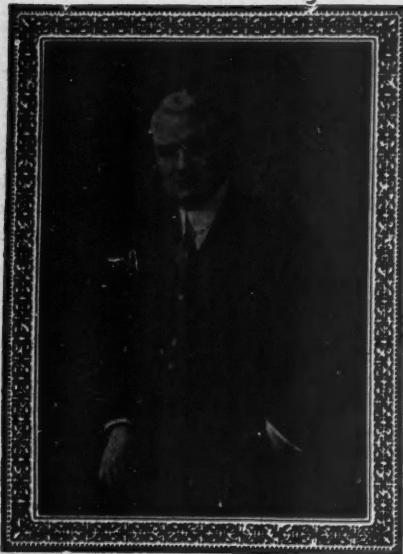
(23)



ENLARGED SECTION OF GUTTER SHOWING METHOD OF JOINING COPPER

POLE GUTTER

(24)



# HOMES in COLORS

## Home Building Is Still the Big, Worth-while Job

By WILLIAM A. RADFORD

President and Editor-in-Chief of American Builder

“OUGHT we to build this year?—or shall we wait and see if prices will go down?” This is the question we are asked every day at this season of the year by some client who has come to us to prepare working plans and specifications for his dream house, his hoped-for home. The rent is terribly high, he explains, and the children and all the family badly need the comforts and accommodations of the proposed new home; but—building costs seem so high! Will they be any lower soon? and can we afford to build now?

All of which is proper to ask; in fact, the entire building and real estate field is asking just these questions. Surveys are being made to learn whether rents are going up or down, and to what extent a shortage of homes still exists.

### Semi-Annual Real Estate Survey

The semi-annual survey of the real estate market which has just been issued by the National Association of Real Estate boards shows that the building shortage is still with us, though it is not so pressing as during the past three

years. This survey is based on reports from the real estate boards of 259 cities in the United States and Canada.

The accompanying chart shows graphically the percentage of cities reporting shortages in single family dwellings, apartment houses and business buildings for the last three surveys.

The survey brings out the fact that the greatest unsupplied demand is for small one-family buildings which seems to indicate that the future market will show the greatest increase in activity in this type of property. Many of the small cities report a shortage of apartment buildings and the ratio of demand to supply here is very high.

For the country as a whole the survey indicates that there is an enormous shortage of farm structures as construction of farm dwellings and other buildings has been practically suspended the last three years.

This shortage may be expected to translate itself into building demand as the economic recovery of American farmers, already measurably on its way, makes farm building construction possible.

In the matter of rents, the report shows a decreasing stabilization with the most marked fluctuations appearing in the smaller cities and in business properties. This relatively greater instability in business property rents has been characteristic of all previous survey findings.

This survey clearly shows that rents are still high and that it is hopeless to delay home building, thinking that building costs or rents will come down in the immediate future. Those who need new homes should build now, and they should make them just as modern and completely equipped with modern conveniences as they possibly can.

The home designs in colors—eighteen of them—which we present on the lithographed pages following, show authentic designs for modern homes, in sizes that will appeal to all purses. They are all designed in good taste both within and without. Ample provision has been cleverly made by our draftsmen for many of the little conveniences and niceties that put the stamp of approval onto the really modern home.

In connection with your study of these home designs we suggest that you turn also to the well illustrated pages of this magazine where the most reliable manufacturers serving the building industry are presenting the details of their materials and equipment. There are many important questions to be worked out in connection with the new house before the work can proceed, and a study of these pages will do much to clear up many of these questions.

Put good construction into your new homes and make them modern and complete in their appointments, and you need not fear decreasing prices, because the real value and permanent satisfaction will be built into your work.

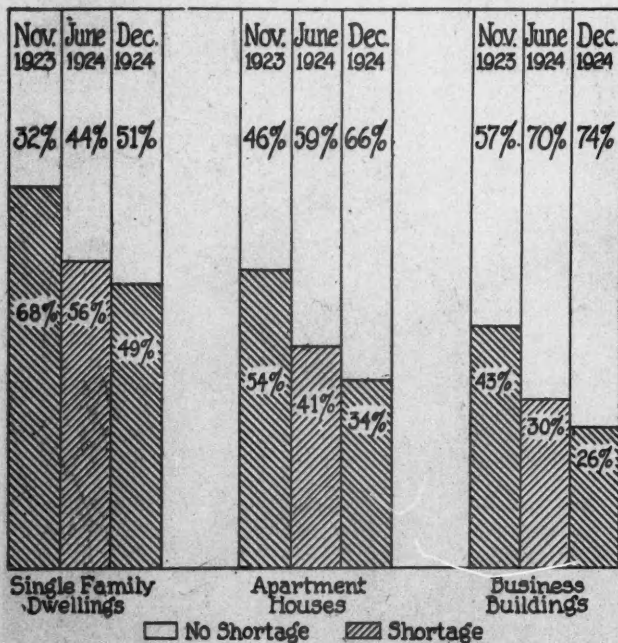


Figure Shows Percentage of Cities Reporting Shortage of Residential and Business Buildings in December, 1924, Compared with Percentage in June, 1924, and in the Fall of 1923. It will be noted that although the shortage is gradually disappearing, there is still a great amount of building to be done.



# OUR FRONT COVER HOME



## *This Five Room House Follows the Spanish Style with High Arched Ceilings and Arched Doorways*

**O**UR Front Cover Home is a five-room house with the rooms well grouped for comfort and convenience. The general style of the building is Spanish, this effect being most apparent in the high arched ceilings of the living room and dining room and the arched doorways.

Externally it presents a most pleasing appearance with its stucco walls, tiled roof, French windows and striped awnings. The awning on the front of the house is especially valuable in balancing the larger French doors at the other end of the house. These doors are ornamental as well as supplying ample light for the dining room from which they open.

The small porch, over which the main roof extends, has two openings in which the arched effect has been used and this same arching is seen at the tops of the windows. The porch gives access directly into the living room. This is a large room, 19 feet by 26 feet 4 inches, with a fireplace at one side. The arched ceiling of this room, as well as of the dining room, is 14 feet 2 inches above the floor. From the living room arched doorways open into a hall at the rear and the dining room at the right.

The dining room is also large and well lighted by the French doors at the front and two windows at the side.

Like all the rooms it is equipped with numerous light fixtures and a floor receptacle. Directly behind it is a small but well-arranged kitchen. This kitchen is equipped with built-in cases and fixtures. Off of the kitchen opens a grade entry and a third door leads into the hall.

This hall also gives entry to the two bed rooms and bath room as well as by the arched doorway to the living room. It is provided with a linen closet and each of the bed rooms also has its closet. The ceilings in this part of the house are 9 feet from the floor.

On the pages following this are shown complete floor plan, basement plan, front and side elevations and details.

The sections give details of construction and here special attention is called to the construction of the arched ceilings which are such an important feature of this house. It will be noticed that these arches are plastered over metal lath and, rise from a plaster cornice and metal picture mould. Above the ceiling is an ample air space for insulation.

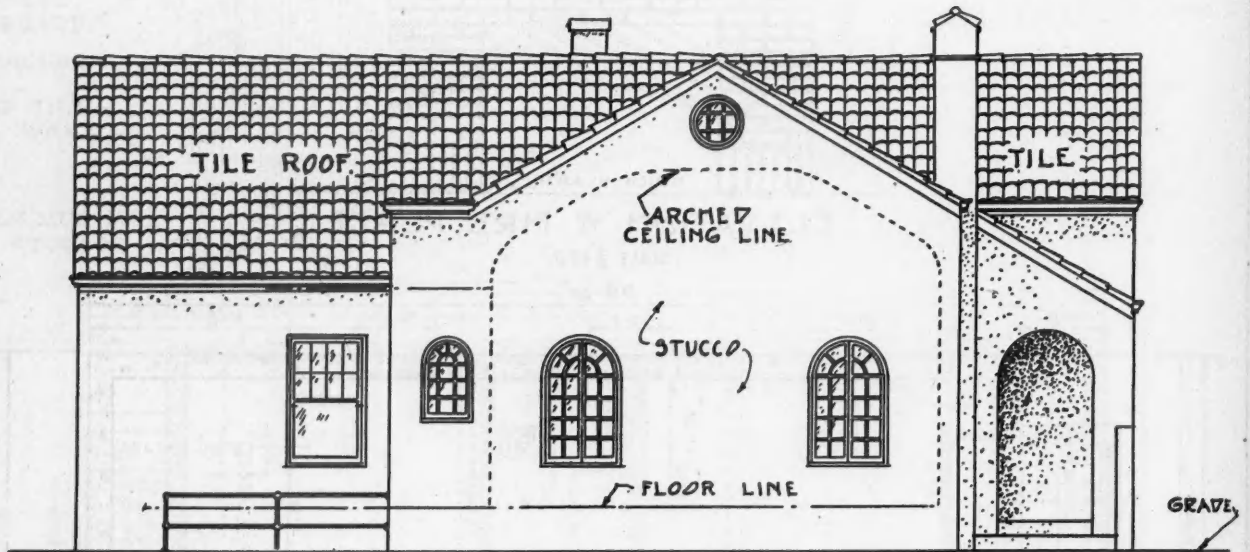
An interesting detail is the rather unusual manner in which the top of the chimney is finished, which is shown most clearly in the photograph below. This novel idea is handled in a way which makes it harmonize perfectly with the rest of the building while adding an individual decorative touch.



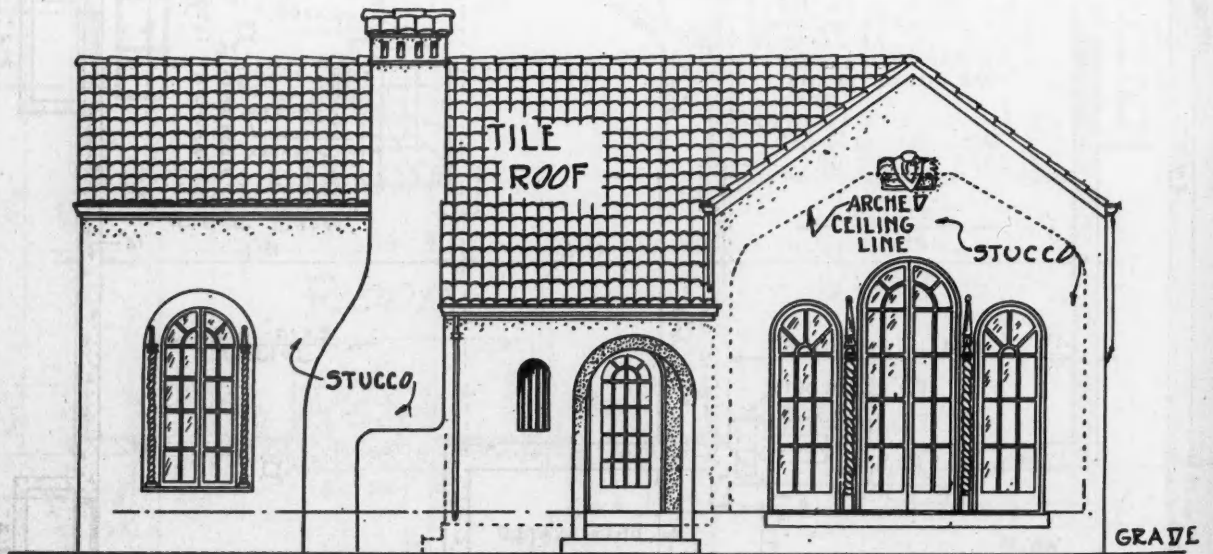
Our Front Cover Is a Five-Room House of Spanish Style, Finished in Stucco and with Tile Roof, Ornamental French Windows and Striped Awnings. On the next four pages working plans for this house are shown.







LEFT ~ SIDE ~ ELEVATION



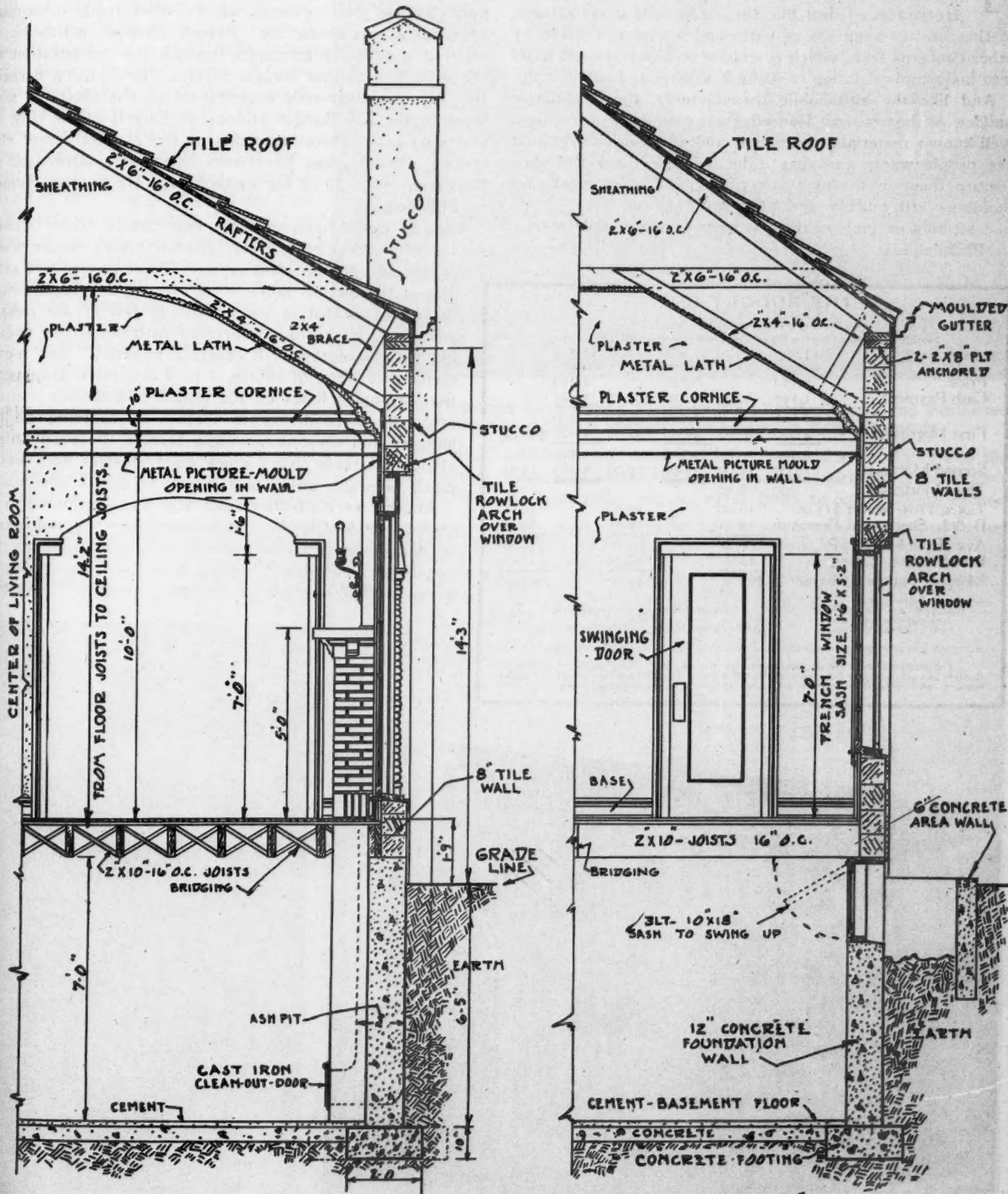
FRONT ~ ELEVATION

SHEET NO 3

ELEVATIONS

SCALE  $\frac{1}{8} = 1'-0''$

Front and Left Side Elevations of Our Front Cover Home Show, Besides the Placement of Windows and Doors, the Relative Lines of Grade, Floor and the Arched Ceilings Which Are Features of the Living Room and Dining Room. For section details see the next page.



HALF-CROSS-SECTION AT "A-A"

HALF-CROSS-SECTION AT "B-B"

SHEET NO. 4.

SECTION - DETAILS

SCALE  $\frac{1}{4} = 1'-0"$

Construction Details Are Shown on These Two Sectional Views of Our Front Cover Home. Particular attention is called to method of construction of the arched ceilings.

# Featuring Nationally Advertised Goods Helps to Sell Homes

**T**HE successful operator today who is building to sell has to be both a manufacturer and a merchandiser. He is a good deal like the automobile manufacturer, in that he has hundreds of parts and accessories made by other concerns from which to choose to assemble and build into his complete design to make it salable and satisfactory.

And like the automobile manufacturer, the speculative builder of homes has learned that nationally advertised, well-known materials, equipment and accessories are what the people want; and that if he will use them and then feature them in his own advertising and sales work, his buildings sell quickly and at a good figure.

A striking example of this has been demonstrated recently in Philadelphia.

Walter A. McClatchy, one of the largest and most progressive of Philadelphia real estate operators, has seized upon Sanitas wall covering as the short road to popular approval in marketing his "Budget Homes" which he is offering completely furnished through the co-operation of the John Wanamaker Budget Service. He is using decorative Sanitas fabric wall covering on all the plastered surfaces in the 238 Budget Homes at Carroll-on-the-Hill, at the Sixty-ninth Street terminus of the Market Street elevated. These homes have been extensively advertised in the newspapers and on big signboards as the Sanitas Homes of Philadelphia.

Then in every room of these new homes, when opened for inspection, was hung a very attractive wall hanger made up specially for Mr. McClatchy. These carried two samples of the Sanitas fabric—and every one going through the rooms yielded to the impulse to feel of the sample, and so were forcefully impressed with the strong enduring texture of this wall covering material. The rooms themselves were, of course, a very attractive demonstration of how it looks on the walls. The women visitors especially were drawn to these wall covering display hangers and the Sanitas walls became the keen selling angle that made many quick sales, besides occasioning much favorable gossip and mouth to mouth advertising.

Another very effective sales help was distributed to all visitors by McClatchy and his men—a neat card giving in detail the financial plan of monthly payments for acquiring a "Budget" home. This card is reproduced herewith, and a study of its figures will be interesting

THE BUDGET HOME				
"CARROLL-ON-THE-HILL"				
Seventy-Fifth and Market Streets				
Monthly Carrying Charges Figured on the Following Cash Payments:				
	\$1,250	\$1,750	\$2,250	
Price	8,750	8,750	8,750	
Cash Payment	1,250	1,750	2,250	
	7,500	7,000	6,500	
First Mortgage	4,000	4,000	4,000	\$20.00
	3,500	3,000	2,500	
Second Mortgage	3,000	3,000	2,500	12.50
Third Mortgage	500	2.50		
Taxes, \$105, Water \$13.00	10.00	10.00	10.00	10.00
B & L Shares and Premium	18.75	18.75	15.00	
Ave. Total Monthly Payment	66.25	63.75	57.50	
Less Monthly Saving	18.75	18.75	15.00	
Monthly Carrying Charge	\$47.50	\$45.50	\$42.50	

Introduced by  
**WALTER A. McCLATCHY**  
 70th and Market Streets  
 ALLEGHANY 3777

Offered through the co-operation  
 of the  
**JOHN WANAMAKER BUDGET SERVICE**

The Budget Homes are the first to display the decorative and sanitary effects of Sanitas as wall coverings in every room in the house. The Sanitas Homes are a striking feature. Sanitas used throughout all Budget Homes at no extra cost or increase in price.



One of the McClatchy Double Houses at Carroll-on-the-Hill, Philadelphia. These were featured and sold as "Budget" Homes and "Sanitas" Homes. The schedule of easy payments is given on card above.



These Wall Hangers, Size About 16 by 24 Inches and Carrying Two Samples of Sanitas Fabric Wall Covering, Hung in Every Room and Attracted Much Favorable Attention.

and helpful. Building costs are high in Philadelphia, but nevertheless Mr. McClatchy is able to offer these substantial modern homes at \$8,750 each.

In explaining how he happened upon Sanitas walls as a key proposition for merchandising his new homes, Builder McClatchy said:

"I am sold thoroughly on Sanitas as the new serviceable and modern wall covering. In my own home it has been subject to the abuse of four youngsters and there has been no mark or stain made on it that has not been easily removed. As I solicit suggestions from the housewife on the construction of any new homes, on the advice of my wife I decided to give purchasers of my Budget Homes the benefit of my experience by using Sanitas in every room of my Budget Homes. The many styles and patterns assist in making this possible.

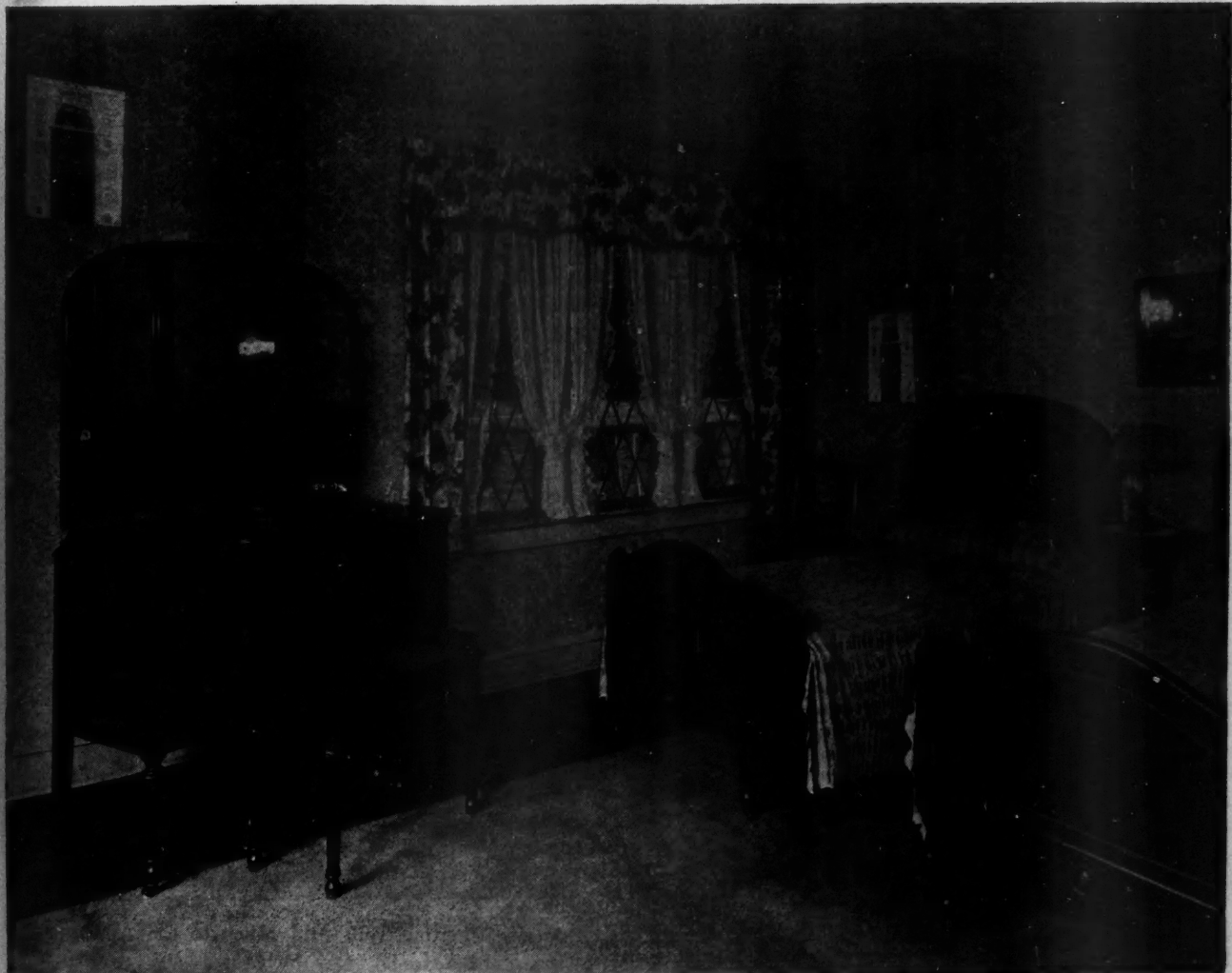
"I am convinced that featuring this well advertised and favorably known wall covering has been the cause of my effecting quite a few sales which I would otherwise have lost."

Sanitas is in a great many homes today as a bathroom and kitchen wall covering, but this up-to-date builder sees its value for every wall in the house. The decorative patterns for all living rooms, dining rooms

and bedrooms are beautifully designed and colored and the same reasons for the use of Sanitas which appeal to Walter A. McClatchy are of equal force to every home owner.



View of the Generous Sized Living Room as Built by McClatchy and Furnished by Wanamaker's Under Their Budget System of Easy Payments.



The Bedrooms in the McClatchy Budget Homes Were Especially Attractive. Notice the wall hangers prominently displayed to make all possible sales capital out of the well advertised Sanitas walls.

# Make the Garage Attractive

By A. J. R. CURTIS



Harmonious Surroundings Add to the Attractiveness of a Garage That Has Plain But Neat Lines.

**T**OO often only slight attention is given to making the residential garage attractive. Located on the rear of the lot, the garage frequently constitutes a decided blemish to the property, although it usually could and should add materially to the appearance of the surroundings. From a strictly utilitarian point of view, the private garage is admittedly a homely affair—merely a container for an automobile; but when considered as a part of the modern residential establishment, entitled to as much architectural and landscaping attention as the dwelling, possibilities loom up. The garage may be made so attractive that it actually will beautify its surroundings, creating a harmonious atmosphere and adding to a pretty home picture.

The small garage has been unattractive because it has been

thought of as a necessary evil—one of these unavoidable expenses which a property owner has to put up with if he must have the comforts and pleasures of a car. Consequently, garages have been built very plain, with the wall materials conforming to those used in the house, or, perhaps, stucco; as a foregone conclusion there has been a door large enough to let the car in and out, a smaller door, two or three windows and a simply framed roof. The desire usually has been to build the garage as inexpensively as possible.

Builders may at least be partly to blame for many of the unattractive garages which so often adjoin good residences, for they have willingly put up such garages without raising



A Plain But Well Built Garage Is Made More Attractive and Substantial Looking by a Heavy Roof Conforming to That of the Residence.



A Pretty Planting Will Add Much to the Appearance of Any Garage.



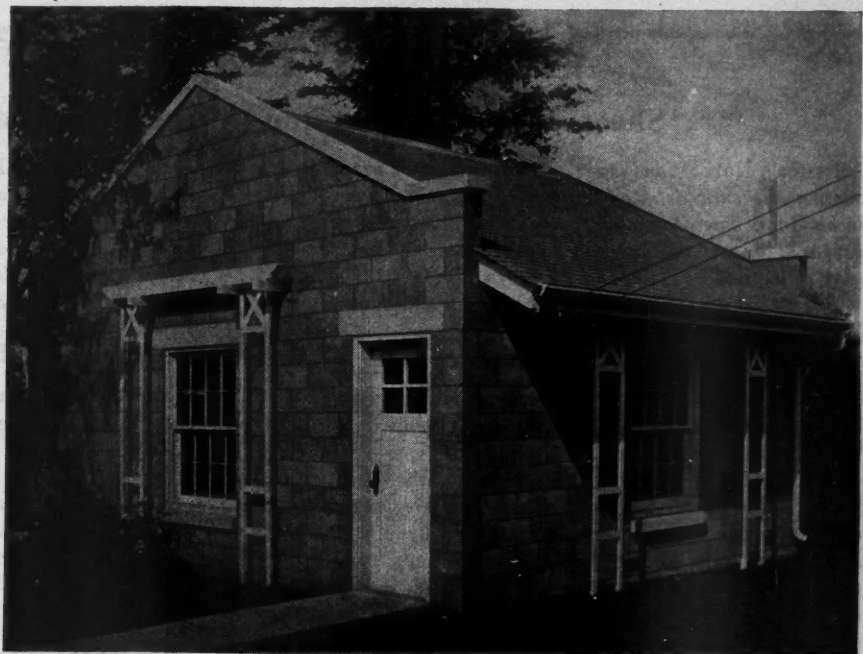
an argument for something more appropriate and refined in appearance. This is a very serious mistake from the builder's own point of view. It frequently costs very little more to build in the attractive features and these are sure to retain the good will of the purchaser and induce him to recommend his builder to others.

In designing a garage that will have an attractive exterior and advantageous location, one must start it with consideration of the floor plan. Plenty of space within the garage is a very desirable feature which is usually inexpensive and often saves money eventually. Many car owners have built the garage so small that when disposing of the old car for a larger one they find the space inadequate. Where a single car is to be stored, a width of 12 feet or more is satisfactory, and for a two-car garage the corresponding dimension should be 20 or 22 feet. The length may vary from 20 to 24 feet. These figures are for clear space within.

The best time to build the garage is when the house is built, making architecture and color scheme conform, or, at least, harmonize. In building the garage in connection with a house already built, a good "match" as to architecture and construction details is very desirable, but perhaps less important than to give the garage proper setting.

If the garage is an outstanding, massive or ponderous appearing structure it will make the lines of the adjoining residence look weak, and the garage, rather than the residence, becomes the conspicuous structure on the property. Therefore, it is wise to give the garage easy lines and to break these up by attractive plantings of trees, shrubs, vines and flowers. Some of the accompanying illustrations show how this has been fairly well done.

Similarly, light trellises break down harsh structural lines and lend an air of artistry and distinction. Windows must be placed so that they will provide light where it is wanted within; even if such an arrangement is not architecturally good, the windows may be made to appear artistic by the judicious use of trellises and window boxes. Unusual but handy features of design often add to the garage—such as



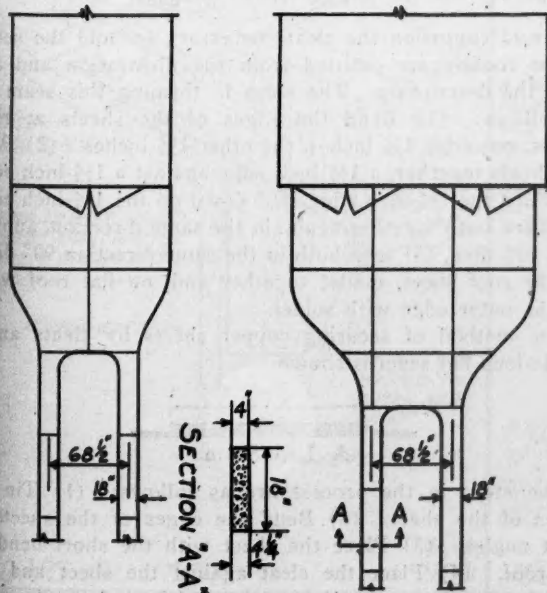
Windows Placed to Provide the Best Possible Light May Be Made to Appear Artistic by Judicious Use of Trellises or Window Boxes.

combining it with a summer house, screened porch, dove cote or room for garden tools.

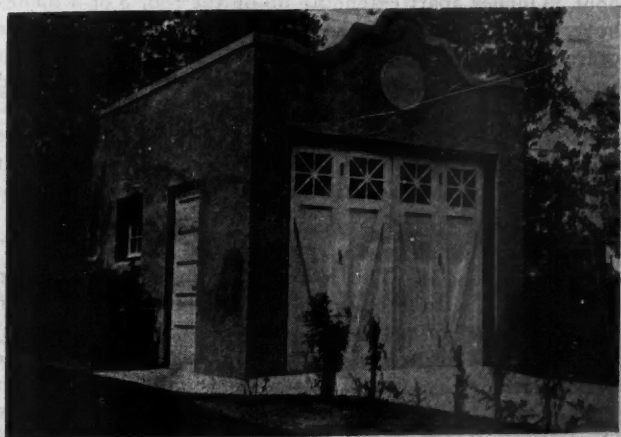
If there is any choice as to location of the garage on the property it should be exercised carefully. The garage should be placed with cautious regard for appearances, but not without keeping in mind protection against burglars and fire; convenience and accessibility; possible limitations of the driveway, such as curves and grades and provision for heating from the house, if any is desired. The garage should be in view of the house.

The location selected must allow plenty of room for a paved area sufficiently large for use as a washing floor, and in the case of a double or multiple car garage, to permit moving cars easily one stall to another. If it is not desired to build a full width driveway, tracks should be constructed as shown in the accompanying sketch. A low curb, frequently 4 inches to 6 inches high, may be placed along the outer edge of the tracks should there be a dangerous incline near, or the possibility of colliding with nearby structures or objects.

If possible, place the garage so that there may be flower beds or other plantings on two or three sides. Since the appearance of any garage can be improved by surrounding it with foliage and flowers, builders should encourage owners to use these very effective but inexpensive measures.



The Concrete Driveways and Paved Areas Must Be Properly Laid Out for Convenience and Maximum Efficiency. Each slab should be laid independently, the arrangement being about as shown.



The Architecture of the Garage Should Conform to that of the House—Here Is a Pleasing Structure Showing the Spanish Influence.

# Sheet Metal Details

## Sheet 4—Flashing Around Dormers—Gutter Construction

**EDITOR'S NOTE:** This is the fourth of a series of articles, presenting authentic details for flashing and metal work problems in building. The drawings, presented on the opposite page, were prepared by the Copper and Brass Research Association, and may be applied in the use of all roofing metals.

The first of this series was published in the November issue

of the AMERICAN BUILDER. Readers will remember that the drawings are intended to show the details of construction for every trade involved and are suitable for use by the drafting room in designing details. The distortion of the drawings will be apparent at a glance, but this purposely has been done that the methods may be made more clear.

### NOTES FOR DRAWINGS ON OPPOSITE PAGE

**FIG. 22.** Where the design calls for a recessed dormer window the method of flashing shown in Fig. 22 and detailed at the left in Sections A-A, B-B and C-C is recommended. Attention is called to the various seams which, as well as the copper roofing, are exaggerated in order to show clearly the methods employed. The sheathing of the sides of the recess and the hips of the dormer roofing are formed with standing locked seams. All the other seams are flat locked. The method of forming the seams is explained in detail in the text below. The apron extending down the slope of the roof in front of the recess, deck should lap the shingles at least 4 inches and the lower edge of the copper should be turned back on itself about  $\frac{1}{2}$  inch for stiffness. The upper part of the deck roofing should be carried up under the wood window sill as far as possible and nailed. The metal at the sides of the recess should lap the main roof under the shingles at least 3 inches and be secured by copper cleats to the wood sheathing. The shingles may extend out over this if the design requires it, but care must be taken in nailing the shingles not to puncture the copper. The roof copper of the dormer window is hooked over a brass edge-strip and extended up the slopes of the roof with flat seams between the sheets secured by copper cleats nailed to the sheathing, and with standing seams at the hips and ridges. If the roof and deck are quite flat the standing seams must be soldered. The roofing should extend far enough up on the main roof so that the roof shingles will cover the copper at least 4 inches. In any event, it is necessary that the copper be covered by at least two thicknesses of shingles with broken joints.

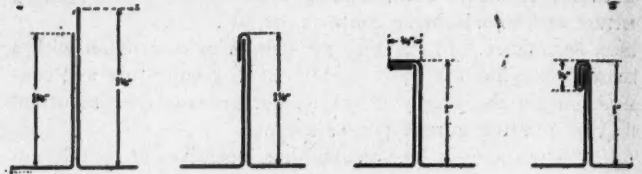
**Fig. 23.** One method of forming a hanging gutter and securing it to a wood roof covered with shingles is shown in Fig. 23. The upper or roof edge is turned back on itself  $\frac{1}{2}$  inch to engage copper cleats about 12 inches apart, which are nailed to the roof by copper nails. The outer edge or roll of the gutter contains a bronze or brass bar. To this are riveted long copper straps of 1/16-inch metal about 30 inches apart extending up on the roof 3 or 4 inches above the upper edge of the copper gutter. Each strap is secured to the roof by two brass wood screws. While it is a desirable feature for this form of gutter to be supported from below as well as from above, and a copper drip provided as shown, these features are not vital and may be omitted. Gutter-lining is sometimes used in long runs, but it is not shown in this detail as it does not affect the support of the gutter.

**Fig. 24.** Another type of gutter called a "Pole Gutter," is shown in Fig. 24. This is known in some localities as a "Gutter-Strip." In this instance the gutter is placed on the roof instead of suspended from it. The upper edge of the flashing is turned back on itself and secured to the roof sheathing by copper cleats and nails. The lower edge is also turned back on itself  $\frac{1}{2}$  inch for stiffness. The copper should cover the shingles at least 4 inches. The shingles along the upper edge should lap the copper at least 4 inches and the copper should be covered by at least two thicknesses of shingle. The flashing is secured at the

lower end by cleats fastened to the pole. For clearness these have not been shown in the detail of the seam.

### Sizes of Seams

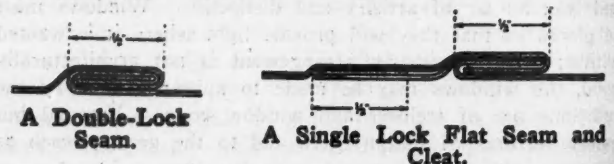
The development of a standing seam is shown in the diagram herewith. When forming a standing seam the sheets are prepared by turning the edges of the sheets at right angles,  $1\frac{1}{4}$  inches on one edge and  $1\frac{1}{2}$  inches on the other edge. The (1), two sheets are placed together on the roof with the  $1\frac{1}{4}$ -inch face of one against the  $1\frac{1}{2}$ -inch face of the other. (2) The projecting  $\frac{1}{4}$ -inch of the  $1\frac{1}{2}$ -inch face is turned completely back ( $180^\circ$ ) on the  $1\frac{1}{4}$ -inch face



Steps in Making the Standing Seam.

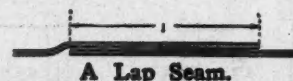
of the other. (3) The two sheets together are then turned again  $90^\circ$  and, (4) then again  $90^\circ$ , and the folds pressed tightly together. The seam thus formed finishes 1 inch high. A  $\frac{3}{4}$ -inch finished standing seam is made by turning the edges 1, and  $1\frac{1}{4}$ , inches.

A double-lock flat seam or copper-lock is also shown.

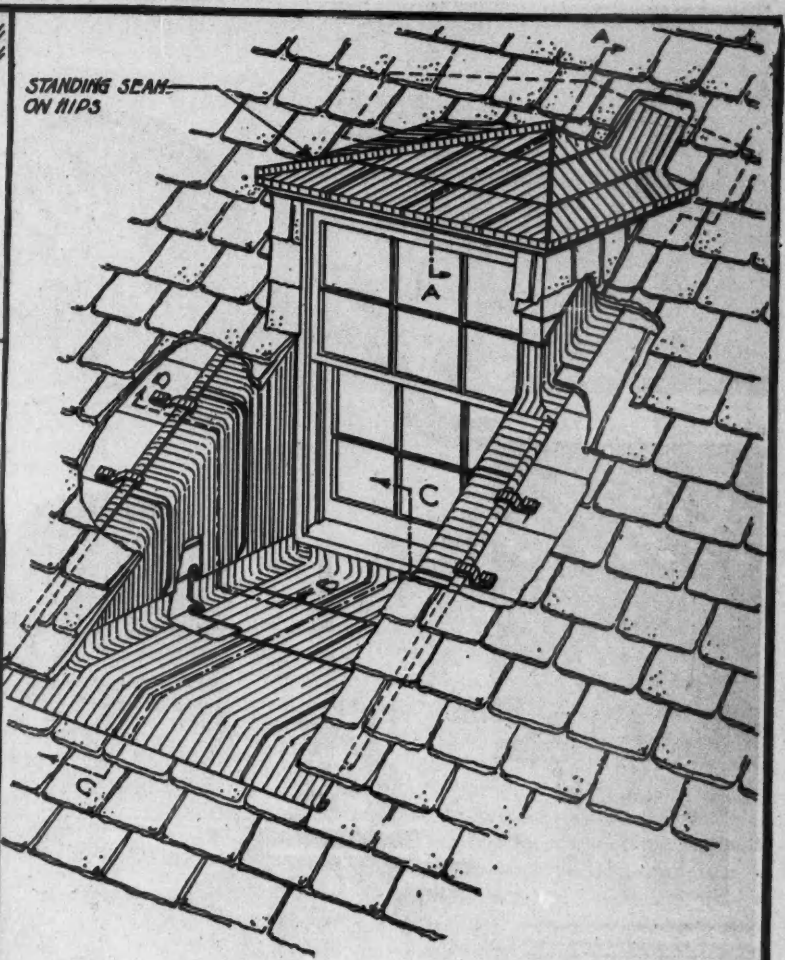
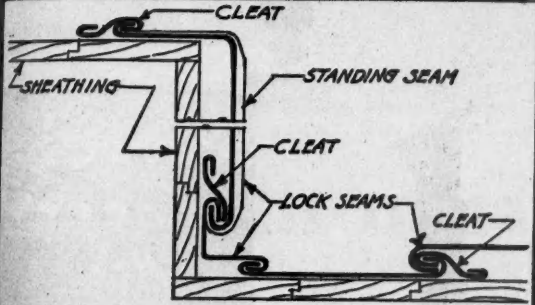
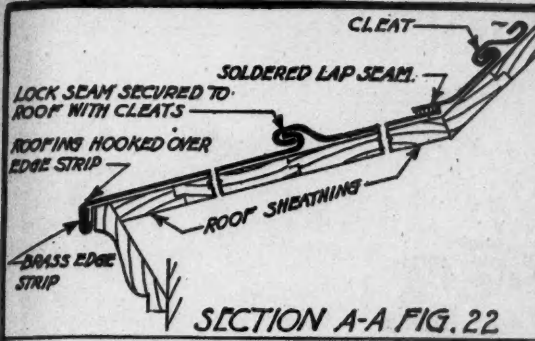


To avoid confusion the cleats necessary to hold the seams to the roofing are omitted from the illustration and also from the description. The steps in forming this seam are as follows: (1) Bend the edges of the sheets at right angles, one edge  $1\frac{1}{4}$  inches, the other  $1\frac{1}{2}$  inches. (2) Place the sheets together, a  $1\frac{1}{4}$ -inch edge against a  $1\frac{1}{2}$ -inch edge. (3) Turn the  $1\frac{1}{2}$ -inch edge  $180^\circ$  down on the  $1\frac{1}{4}$ -inch edge. (4) Turn both together again, in the same direction, another  $180^\circ$  and then, (5) turn both in the same direction  $90^\circ$  down on the roof sheet, mallet together and, on flat roof work, tip the outer edge with solder.

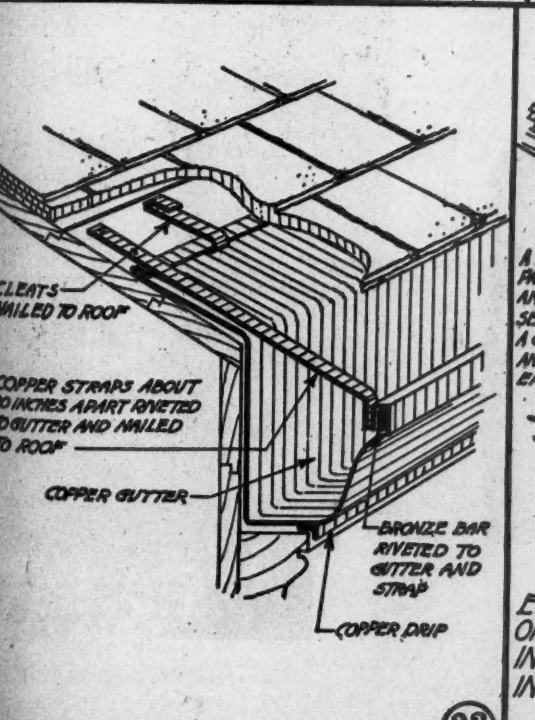
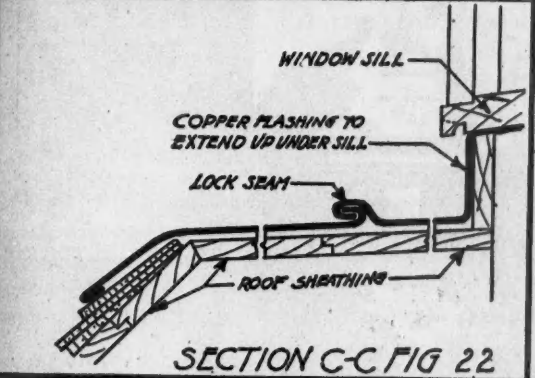
The method of securing copper sheets by cleats and a single-lock flat seam is shown.



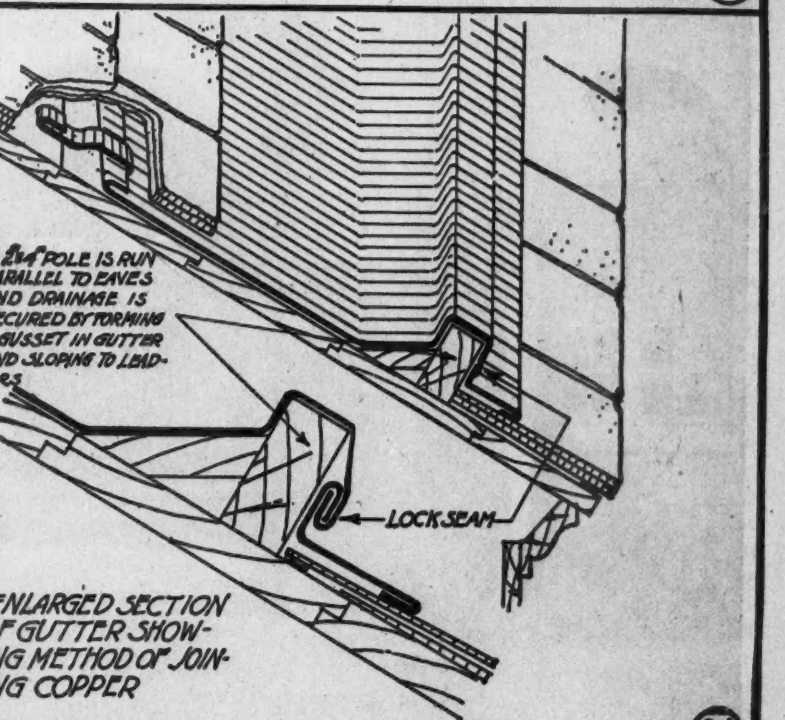
The steps in the process are as follows: (1) Tin the edges of the sheet. (2) Bend the edges of the sheets at right angles. (3) Place the sheet with the short bend on the roof. (4) Place the cleat against the sheet and nail the cleat to the roof and turn the end back over the nails. (5) Place the second sheet in position and (6) turn the edge of the second sheet and the cleat  $180^\circ$  down over first sheet. Then, (7) turn all together, flatten and solder.



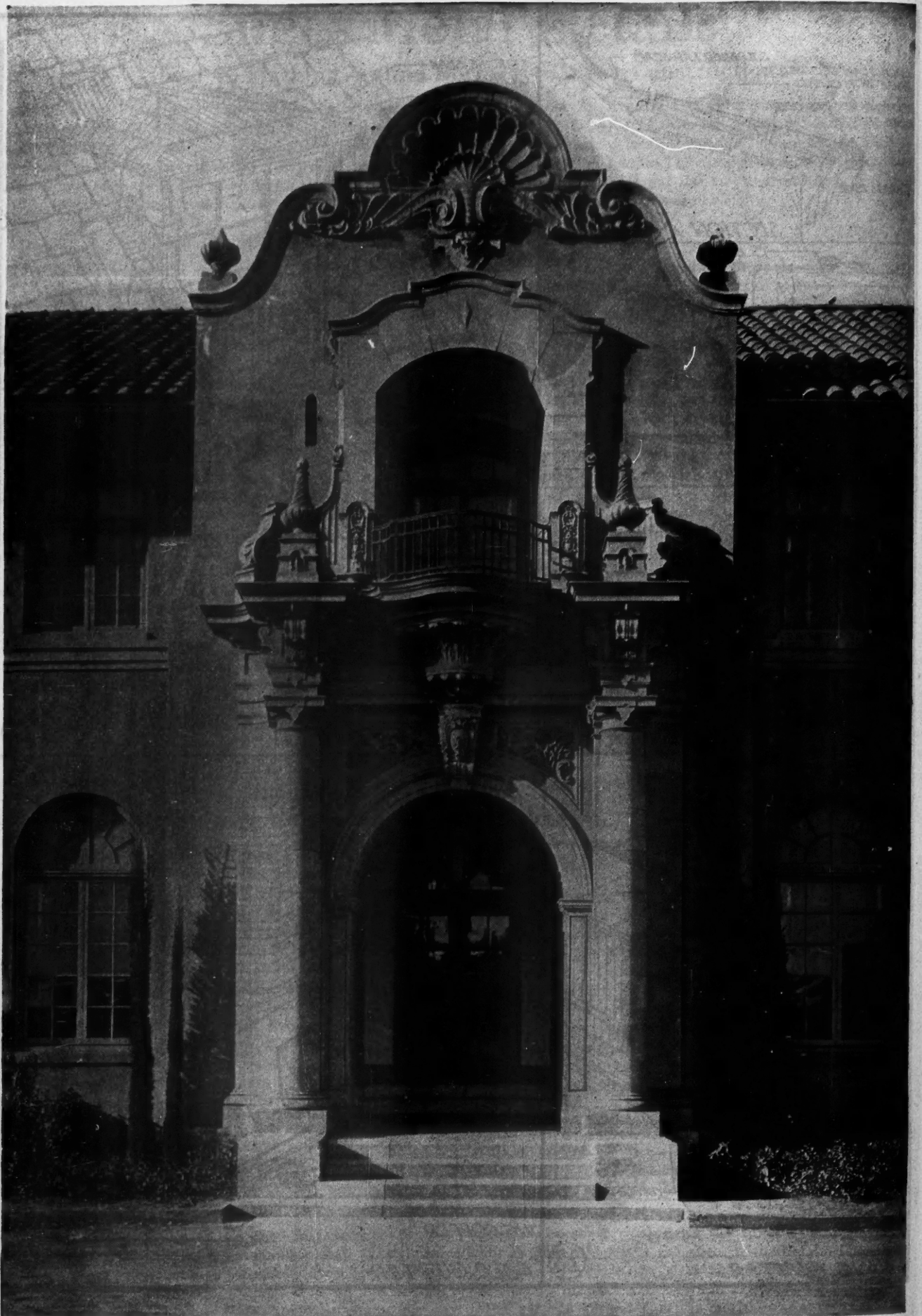
FLASHING FOR A RECESSED DORMER WINDOW (22)



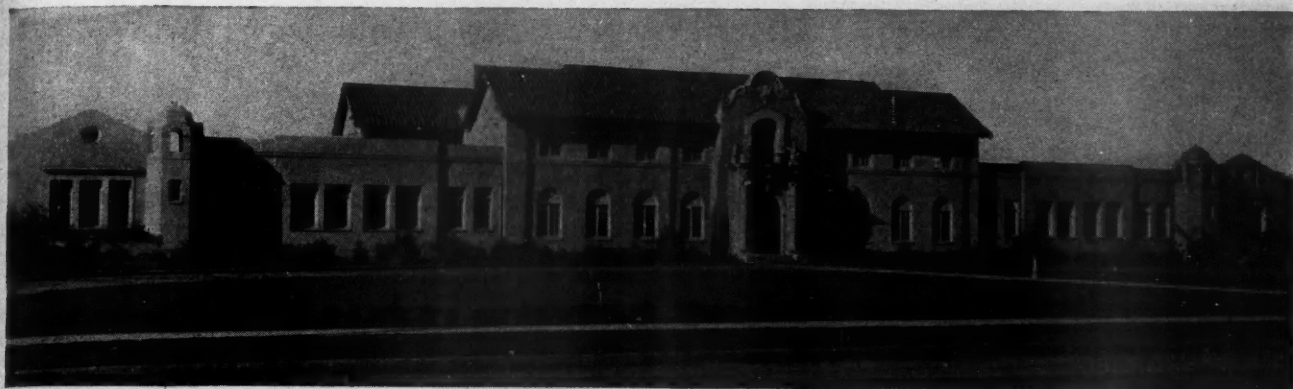
HUNG GUTTER (23)



POLE GUTTER (24)



The Impressive Entrance of the Sweetwater Union High School Is Done in Pressed Stone and Its Artistic Symmetry Alone Makes the Building Distinctive and an Architectural Addition to the Community. T. C. Kistner, San Diego, California, architect.



Built in Spanish Style, with Adobe-Brown Stucco Walls, Relieved by Vari-Colored Tile Roof and Domes, the Sweetwater Union High School, National City, California, Presents an Appearance Which at Once Attracts and Pleases All Who See it. T. C. Kistner, San Diego, California, Architect.

# California's Idea of School Building

An Inexpensive School Building That Made Good

By J. HAROLD HAWKINS.

**A**BOUT 15 miles from Mexico and a few less from the Pacific Ocean there has recently been constructed the Sweetwater Union High School at National City, California. Before it I stopped, looked, listened—then I opened the front door and boldly walked in. Directly opposite the front doors I found an auditorium. I could see no difference between it and a modern theatre, except, perhaps, the lack of upholstered seats and carpets. In the orchestra pit were 30 boys and girls rendering music to which I was delighted to slip into a chair and lend my ear.

The entertainment over, I sought the school's principal. Like the spirit of this newer section of California, he was young, alert. Also, he was eager to show me around, proud of his work, and of his attractive "principality." As Mr. Guy Hudgins took me through his school I walked my fastest to keep up with his active stride, and all the while I made notes of the amazing things that I saw and heard.

The floor plan of the school shows the unusual manner in which the architects, T. C. Kistner & Co., of San Diego, laid this piece of work out. The general style of the building's exterior is Spanish. An adobe-brown stucco covers everything, lending itself well to both the architectural scheme and the location. The roofs that show are done in vari-colored tiles. The domes of the two towers are inlaid with triangular pieces of green, blue and yellow glazed tiles which supply enough vividness to relieve the

otherwise tiresome expanse of brown stucco.

The impressive entrance is done in pressed stone, and its artistic features and general symmetry alone make the building distinctive and an architectural addition to the community. And this is true of the building entire despite the fact that an almost unbelievably small amount of money was expended.

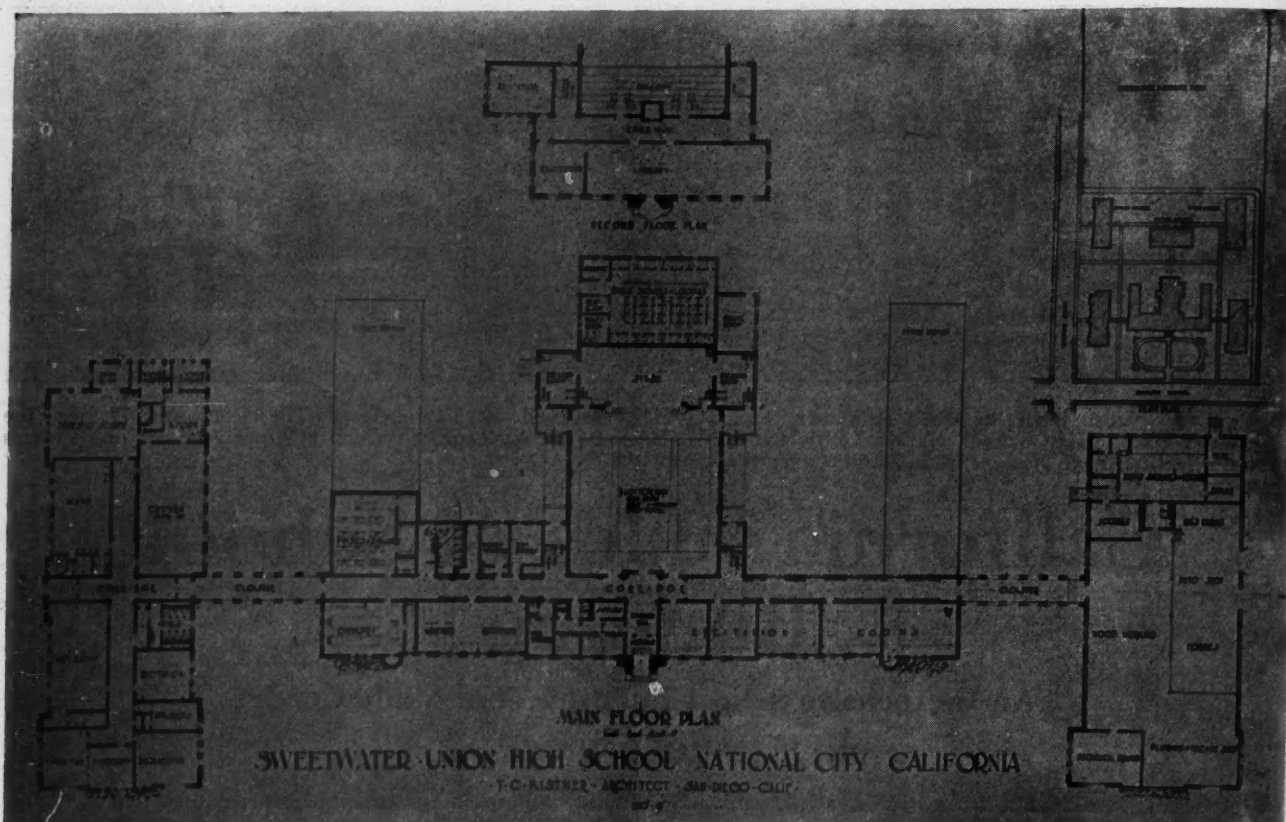
The building was completed two and a half years ago. The district then afforded the small total of 238 students, and, according to California's unusual booming statistics, it was figured that the building would be crowded in the short time of five years. However, after only two and a half years there are now enrolled 629 students! As a result the building is already taxed to its limit. What will it be in another two and a half years?

This rapid increase in enrollment in this developing section of the country explains the reasons for certain methods and materials used in constructing this particular school.

The amount of money available—in order that facilities be realized with which to handle the 600 students in all the various subjects that any modern high school affords—dictated rigid economy in construction. The necessary floor space had to be secured for the limited amount of money. For an original outlay of \$172,000 the task was quite satisfactorily done, and there is almost exactly one acre of floor space. Nor has beauty been omitted in favor of the practical. Rather, the two are combined.



Wings, at Each End of the Structure, Are Connected with the Main Building by Cloister Passages.



The Floor Plan Shows the Successful Attempt to Secure Maximum Space, Light and Ventilation at Minimum Cost, Without Sacrificing Beauty.

The construction of the building is frame, veneered with hollow tile and then stuccoed. Fire, of course, is the first thing one thinks of. But one must consider that the structure is almost entirely one-story. Large swinging casement windows and any number of French doors give quick access to the outdoors from all parts of the building. Fire, therefore, is hardly a hazard to the occupants. And only in this less expensive type of construction could there be gotten the required floor space to accommodate the expected growth to 600 students.

The future growth, beyond the 600 point, will be easily cared for because of the one-story manner of building. Instead of buying an acre of land and putting all their money into a several story building that couldn't be added to, these people of the Sweetwater district bought twenty acres. As their particular section of the country is settled and more taxes are available they will be able to afford, not only additions, but entirely new buildings to take care of their needs. They have the land, and at a price favorable indeed to what it will be in five or ten years!

The twenty acres are now divided into useful units that, when the time comes, can easily be converted into building sites. Three acres are used in the decorative front of the main building. A playground covers five acres, part of which, adjoining the immediate rear of the building, is allocated to automobile parking. This latter feature is one that few such public buildings enjoy, and one that keeps the front curb clear of an unsightly line of vehicles.

An athletic field takes up six acres. The remaining five acres are devoted to a four-hole golf course, which, in itself, is a far cry for the public school even of today. You can't beat 'em!

The business office and principal's office are thoroughly modern. There is a built-in, fireproof vault, a toilet, and a lavatory. A store-room provides ample space for its purpose and acts as well in the capacity of a box-office when there is an entertainment in the auditorium. At such times the main hall serves as an adequate and satisfactory foyer.

Keeping up with the original idea of teaching every-



The Business Office and Principal's Room Beyond Are Thoroughly Modern, with Built-in Fireproof Vault, Toilet and Lavatory.

thing that the building provides space for is being successfully accomplished by the faculty. A few of the newer subjects are hand and machine sewing, nursing, sanitation, infant care and layette making, millinery, house-wifery, music theory and harmony, library craft and technique, domestic science, applied art, short-hand, typewriting, bookkeeping, office management and the running of its appliances, gas engines, electric installation, automobile and farm machinery, and the crafts of the machinist and the wood-worker.

Shower baths are provided for the girls as well as for the boys. A steam heating plant furnishes them with warm water as well as heat for the entire building. There is a rest room for the women teachers and one for the girl students. There is a store-room expressly for text books. Quarters are provided for a teacher-nurse who administers first-aid when needed. Instead of the regulation four-foot blackboards they have cut six inches off

the top of them and devoted it to a cork strip upon which are posted, with thumb tacks, various things relevant to the work in hand. Inter-room telephones make communication swift and easy. A sizable library is well stocked with both reference and circulating books. Each student has his own steel locker, and instead of sticking out into the hall they are set in the wall with their doors flush with the plaster.

Standing across the boulevard and viewing the building (there is no row of automobiles to mar the picture), from the gracious perspective given by the wide street and deep lawn, one's admiration of the way in which beauty and practicability have been combined is commanded. School buildings of this character are well in keeping with American educational ideals.



### New National Museum of Engineering and Industry Planned

PLANS have been completed for the erection of a National Museum of Engineering and Industry on the Smithsonian Institute grounds, Washington, D. C. This structure, which will cost \$5,000,000, will be a companion building to the natural history museum and gallery of fine arts, the new buildings erected in harmony with the plans of the Fine Arts Commission which plans to make Washington the world's most beautiful capital city.

The new museum will house exhibits depicting the evolution of engineering and industries and will be the first national institution devoted exclusively to recording industrial progress. The central rotunda will also contain a



A Well Lighted and Ventilated Cafeteria in the Sweetwater Union High School Furnishes Meals for the Students at Noon.

Hall of Fame for eminent engineers, inventors and industrialists. A founder's room will be included to commemorate those who have contributed their time, money and effort to the museum.

The building will be 1,150 feet long, 250 feet deep, will contain 27 acres of floor space, and will be located on The Mall. A public building and endowment fund of \$10,000,000 is being raised for the purpose from the present headquarters of the National Museum of Engineering and Industry in the Engineering Societies Building, 29 West 39th Street, New York City.



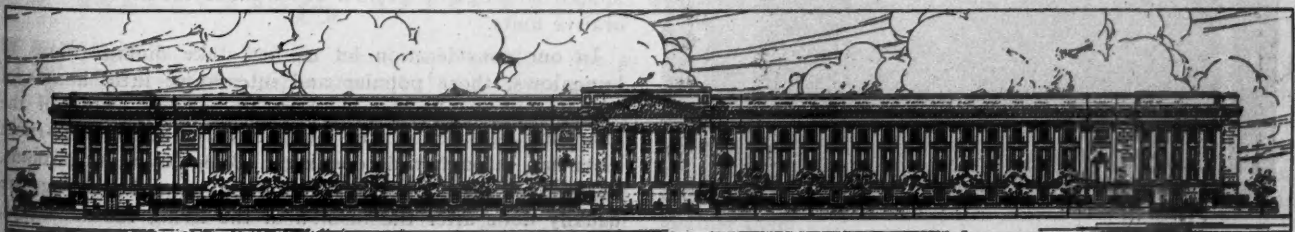
### Propose General Tax Revision

AT the recent annual meeting of the National Association of Real Estate Boards, at Dallas, Texas, a report was adopted covering a comprehensive plan for tax revision, intended to coordinate state, federal and municipal or county taxes and relieve the burden of overlapping taxation while providing ample revenue for governmental purposes.

A movement was also started for cleaning the "front doors" of cities throughout the country. The purpose is to make railroad rights of way attractive city entrances, eliminating the ugly unkempt conditions that make such an unfavorable impression on persons entering or passing through.

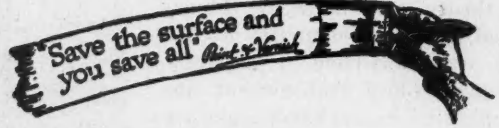
Action was taken to oppose control of residential rents, as proposed in a bill now before Congress and applying to the District of Columbia, on the grounds that it is an invasion of the rights of private contract and would operate to check building activity.

Charles G. Edwards, of New York, was installed as the new president of the association.



Architect's Drawing of the New National Museum of Engineering and Industry, Plans for Which Are Now Being Perfected in Harmony with the Fine Arts Commission Plans for Making Washington, D. C., the World's Most Beautiful Capital City. The building will be erected on the Smithsonian Institute Grounds.

# SAVE THE SURFACE DEPARTMENT



Written, Illustrated and Edited by the Headquarters Staff, SAVE THE SURFACE CAMPAIGN

## Dining Room Decoration

**T**HERE is a very smart man in New York who builds apartment houses. They are not just ordinary apartment houses—no apartment that rents for \$15,000 is exactly ordinary. Dr. Paterno's great success came because he found out that women wanted certain things, and he put them in his apartments before the women themselves realized their own wants!

For instance, he discovered the marketable value of a larger living room and dining room—show places where one might entertain guests and make an imposing impression, shutting off the other smaller rooms.

Women didn't tell him they wanted this and ask him to build it. But he studied them; their habits of living and thinking. He anticipated their wants. And "270 Park Avenue," one of the largest and most expensive apartment houses in the world, has made its builder rich.

The finish—the appearance—of a house or of a room is

of the utmost importance not only from the builder's standpoint and the salability of the house, but also from the owner's standpoint. We are all of us prone to judge by appearances. The best construction in the world will have difficulty in overcoming a dislike created by unattractive finishes.

The dining room is one of the most important rooms in the house and particular attention should be given to its decoration.

Perhaps the first consideration in dining room decoration is the aspect from the windows. Lawns, trees, bushes and flowers should be seen rather than chicken houses, sheds or other objectionable features. A little, simple landscaping will usually take care of this matter, but if this is not practical screening by means of curtains should be provided.

The next feature, as in all rooms, is wall treatment. In most cases dining rooms can be decorated in stronger colors than are used in other rooms. Bright colors are stimulating and we do not spend so much time in the dining room that brilliant decoration would become irritating. Then, because a certain amount of ritual or ceremony attends the service of meals, the decoration may be a trifle more formal in the dining room than in other rooms.

Dinner, chief function of the day, is usually served in subdued daylight or artificial light. For this reason the amount of natural light entering the room does not hold such an important place with regard to decoration as it does in other rooms. Artificial light, usually of a yellow cast, tends to modify a bright color scheme; this, taken with the fact that there are several large pieces of furniture in the room, also suggests that decoration may be pronounced in character.

A pronounced decorative scheme may be undesirable, however, when architecture is such that the dining room is viewed from the living room through double doors or a wide arched opening. In such a case there should be little contrast between the color schemes of the two rooms, unless hangings or French doors make them separate decorative units.

In our consideration let us first take dining rooms of bungalows, those popular and interesting little homes of which our grandparents had no knowledge. One of the charming features of the bungalow is the room-to-room vista had through wide openings. Bungalow dining rooms, because of these openings and good natural lighting, are usually done after the fashion of the living room. Grays, being neutral, are excellent bases on which to start.

Such a room, with white enameled trim, mahogany furniture and blue rug and hangings, would look well with a



Dining Room Wall Paneling Finished in a Two-tone Effect Produced with Crumpled Paper. Note the manner of painting the moulding and the contrast between field and stiles.



cream ceiling and walls of buff ground with yellow-orange glaze, stippled over it. Another treatment, if the room has a southern aspect, might be shaded or blended walls of gray finished by a stipple brush, the stippling being done from ceiling downward.

In a room where the trim is finished with clear varnish or clear varnish over a stain, and furniture is oak, let the ceiling be cream and walls of light green with a two-tone finish of darker green. Much interest would be added by the application of burnt sienna, giving a three-tone color scheme.

Where the dining room is isolated, as in larger houses, any one of several handsome finishes is appropriate. These include panel, diaper and all-over stencil, Tiffany, two-tone and mottle effects, all examples of the newer treatments for walls.

Imagine a fairly large dining room, with mantel and walnut furniture. Such a room lends itself to a paneled treatment. The ceiling is deep ivory; walls a dull green in panels, with fields a lighter shade of green; mouldings are a bright yellow-tan. The panels might be given a Tiffany finish using a light buff ground with dull green and raw sienna glaze colors.

A similar room with mahogany furnishings might well have walls in mottled finish, using blue and gray. Mottling is best done with a damp sponge, although a handful of cheesecloth will work nicely. The decorator should not be afraid of having large areas in gray tone and equally large areas of blue. Pale orange might be included if three tones are desired.

Mayhap you have a Colonial dining room of medium size. Nothing could be more interesting than a cream ceiling, with two-toned walls. The two-tone effect is produced by rolling paper down the wall while the buff paint is wet. The trim would be done in ivory.

A new and very beautiful finish for dining room walls is a modification of stippling. The walls are painted a solid ground color, which is preferably gray. In the preparation of the finish color, which is the same as the ground color, several bright tints, such as vermillions, Prussian blue, and chrome yellow, are added, but only partially mixed. The finish coat is brushed on in the usual way and through it delicate touches of bright color are vaguely noticeable.

One may secure a rich, old Dutch Colonial dining room effect by having false beams erected at regular intervals; these are finished in an antique smoked effect produced by a stain and flat varnish. Spaces between beams look well done in cream. Buff walls are dressed with a mahogany chair rail. Woodwork is ivory with mahogany doors; the floor is painted gray. Mahogany furniture and blue rug and hanging complete the room.

In many dining rooms, family oil portraits adorn the walls, providing a dominating color note which must be considered. An effective treatment for woodwork in such a room is secured by finishing it in dull rubbed effect to



The Span Above the Dining Room Mantel Is Two-toned by the Sponge Method. A panel, formed with a border stencil, is applied in a strongly contrasting color and the whole is finished with the caduceus, applied by means of a stencil. It would be hard to develop a richer treatment.

represent ebony. A figured velvet carpet with red predominating should cover the golden oak parquet floor. Hangings for this room should be velvet, gray toward the room and red toward the windows.

If you are lucky enough to have hard wood trim, an unusually attractive weathered or silvered finish is to be obtained by coating the wood with a light brown stain that has been grayed slightly by coating the wood with a black stain. This dries very quickly and is then treated to a coat of paste filler which has had either white or aluminum paint added to it in generous quantity. After this has set for 30 minutes, the wood is wiped across the grain. After 12 hours the surface may be varnished or waxed and rubbed.

From the foregoing it will be seen that for dining room decoration, no matter the size or location of the room, regardless of the type or color of woodwork and furnishings, there is a series of new, original and charming treatments that will delight the most particular person.

## Painting on the Installment Plan

WHEN man builds his home, he digs deep for a solid foundation, studs the cellar with sturdy stone, sets thereon a framework of steel or pine, fills in this skeleton with brick, or wood, and casts over all a covering of tin or slag.

But he does not stop here. No; experience has taught him that those steel girders will corrode, those wooden beams and cornices will decay, that tin will rust and deteriorate if left open to the elements.

After producing his house he preserves it with paint.

Against the elements he throws a wall that casts off the rain and the snow, battles with the burning sun and repels the attacks of rust and rot. He throws, as it were, a coat of armor about his home, knowing full well how vulnerable are those heavy girders of steel, how powerless that wooden structure when time and the elements wage war against them.

The economic value of paint is accepted universally by the building trade, and rather generally by the public. Most home-owners, it would seem, realize the potency of

paint in protecting their property. They know that it not only beautifies their homes, but also saves them from deterioration, and consequent costly repairs.

It does seem that anything so necessary to the upkeep of the home as painting should be made as available to the public as most of the household commodities. There is no reason why a man should not be able to have his painting done on the same basis as that on which he bought his home, his furniture and the like.

Heretofore, such a plan has not been available to any extent. Today, there is a practical partial payment plan within reach of the home-owner who wants to paint. This plan which has received the endorsement of the paint manufacturers' associations, provides the capital necessary for painting on the time payment plant without burdening the home-owner.

The plan is unique in the fact that it does not require the endorsement of the painter, the dealer or any other marketing agent of the paint and varnish industry. The contract is direct between the home-owner and the finance company. The only obligation on the part of the painter is to do a good job, an obligation that exists regardless of the terms of payment on which the job is taken.

The partial payment plan, in short, makes it possible for the home-owner to have his painting done on a basis of one-fifth down and the balance over a period of 10 months.

It enables the home-owner to paint now when his property needs it rather than a year hence when deterioration will have taken its toll and the cost of repairs will probably be considerable. It puts in that home-owner's hands the means of protecting his investment in his home.

This plan cannot fail to have a good effect on the building trade in general. The sight of so many painters at work—so many homes being painted—will subconsciously direct attention of the public towards home embellishment. The passer-by, on seeing the painter at work, will immediately think of his own home. He will remember the new addition he thought about last year; he will recall that his home needs new front steps; or he may realize that he should have a house like his friend Smith.

We can't get away from the fact that paint enhances any home—makes it a better place to live in—saves it from deterioration—adds much to its resale value. And, anything so calculated to increase painting as is the partial payment plan should be pretty close to the heart, not only of the painting trade, but of all trade allied to building. The partial payment plan, by increasing the number of houses painted, advertises homes continually. The plan is a wonderful convenience to the home-owner; it increases the painter's revenue; it showers benefits upon the community, and, in no small measure, is a boon to building in general.

## A Responsibility Not Covered by the Specifications

Some Well Chosen Suggestions May Save the Buyer from Trouble and Add to the Builder's Stock of Good Will

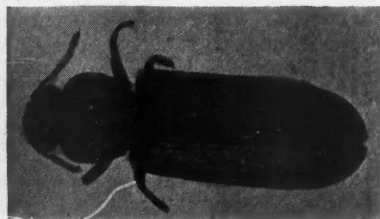
**A**RCHITECTS, builders and building supply dealers occupy a place of extraordinary importance in economics. They are responsible for home planning and home building. When they give a family the idea of building a home, building anew or rebuilding, they are really giving a bigger and broader life to the family and at the same time making a contribution to our growth as a nation.

If you are an architect, a builder or a dealer perhaps you have not looked at your job in this way—not fully realized the privilege and the responsibility which are yours. If you are the home owner, perhaps this view puts your builder in a new light.

Builders are practical men, but their work is not altogether finished when the new home is completed. Let us get the point of view of the family who will own and occupy the house you have built—who will make of it a new home. Should you not do more than receipt your bill and turn over the keys?

The chances are the owners are entering on a new experience. They must learn a great deal before they can properly use the house. Ignorance may cause much dissatisfaction. You can teach them easily and perhaps save them many trying experiences. Take, for instance, the matter of maintenance, the biggest single problem the family will face and paint.

Let us look at the maintenance problem from the stand-



**Insects Destroy \$1,554,869,000 Worth of Property Each Year. Rot and rust destroy more than \$1,800,000,000 worth of standing property every 12 months.**

point of a comparison of the wealth destroyed by various causes.

What is the greatest destroyer of wealth, and how much does it take from us during a year?

If you were asked to answer this question you would probably say fire was our worst enemy, but you would be wrong.

If you were a farmer you would say insects eat up more profit than any other single property destroyer. Wrong again. Insects and fires stand second and fourth on the list.

If you were a housewife in Pittsburgh or Cleveland you would unhesitatingly

declare smoke to be worst destroyer. But smoke is fifth on the list.

That which causes the largest annual property loss is the same thing that causes the largest number of deaths—namely, neglect and carelessness.

Failure to give buildings, machinery and equipment proper care leads to depreciation and loss in excess of \$1,573,125,000 a year. This is the sum of the neglect taxes we pay for the privilege of letting the standing property in which we have invested nearly \$90,000,000,000 decay and fall to pieces.

According to the Biological Survey of the U. S. Department of Agriculture, insects cause an annual loss in excess of \$1,554,869,000.

Stock killers, such as the wolf and mountain lion, and

rodent pests, like the common brown rat, cause a loss of about \$600,000,000 a year.

Fires come next, and last year \$500,000,000 was added to the nation's ash heaps. Smoke according to data available, costs us about \$250,000,000.

Losses from other causes seem insignificant when contrasted with the foregoing. For instance, flood losses in 1921 were \$52,000,000. Late spring frosts sometimes cause a loss of \$10,000,000; lightning, \$2,500,000; hurricanes, hail storms and droughts, \$20,000,000.

Boiler and fly-wheel explosions cost approximately \$20,000,000 a year. During 1922 the loss in American ships and cargoes was \$17,298,000. The 21,251 railroad accidents, excluding loss of livestock, freight and express, amounted to \$22,753,000 in 1921. Mine disasters probably less than \$1,000,000 a year.

The most surprising fact about these losses is that the largest—neglect taxes—is the easiest of all to reduce and might be eliminated altogether. Further, it is about the only one we can hope to reduce. It is absolutely the only one for which we can buy a preventive form of insurance. Fire, marine, crop or fly-wheel insurance offer no guaranty that the property insured will not be lost. Not so with decay losses. Paint and varnish will prevent the destructive action of rot and rust entirely.

There is another interesting thing about these neglect taxes: decay always starts in just one place—on the surface; this is why it is so easily prevented. Fire may start at any time, in any place and from any one of a dozen causes. Insects, animals, storms, wrecks—there is no telling when or from which quarter they will come. But there is nothing uncertain about decay—rot and rust go on



This Photograph Shows a Piece of Tin Roofing That Has Been Exposed to the Elements for Three Years. The lower, unprotected portion has become a very thin skeleton of rust. The upper painted portion is in sound condition.

constantly, relentlessly, everywhere, until their sworn enemy, the paint brush, stops them.

Is it not the duty of the men who builds the house to tell the man who buys it that it must be cared for if it is to endure? Of course, paint in its relation to maintenance charges is only one item upon which the owner should be informed. It is, nevertheless, an important one and illustrates the contention set forth in the beginning of this article. Think it over.

## Preparing Plaster Walls for Paint

IN times past it has been thought that new plaster should not be painted because it would show cracks caused by shrinkage of lath or shrinkage and warping of structural lumber behind it. That this conception is bound to be superseded by a newer one, because of the adoption of more substantial plastering bases, is the opinion of many experienced architects and builders. The construction of numerous beautiful homes, both modest dwellings and palatial residences, in which metal lath has been used as a plastering base, is a positive proof that a new era in decorating has arrived.

The reinforced nature of metal lath walls and ceilings, and the knowledge which the owner, architect and contractor have that plaster cracks will not make their appearance, give the decorator assurance that his work can go ahead. This is a very important point, because the painting of walls and ceilings, when metal lath is used, may be done as soon as the plaster is completely dry. To make doubly sure against moisture, an undercoater may be used.

There is hardly one factor of interior decoration that is fundamentally more important than the preparation of plaster walls for paint. In the first place nearly all houses have plaster walls. In the second, most people prefer paint because of its sanitation and durability, and the number and beauty of effects it makes possible. In the third, if plaster is improperly prepared for painting disappointment may result. And finally, as walls are the most conspicuous feature in the decoration of any room, it is very necessary that the finish be successful in all respects.

Plaster must be dry before decoration is started. When dry, the first step is to treat the wall with a solution of zinc sulphate, about 2½ pounds to a gallon of water, which is applied with a brush. This "kills" any free lime in the plaster which, if untreated, will cause spots or "burns" in the final finish.

Next, the wall is sandpapered and any cracks or small holes are filled with plaster of paris. The surface is now smooth, clean and dry, ready to be primed. Priming is done to overcome "suction." The plaster is very porous and were paint applied to it the oil would be quickly absorbed, leaving the pigment on the surface in such a way it would soon dust off. Should a second or even a third coat be applied, the finish would not be durable or even. Boiled linseed oil or a good varnish are the best primers for overcoming suction; under no condition should a cheap so-called "sizing varnish" be used.

The wall is now ready for the first undercoat. This should be fairly "sharp"; that is, long in turpentine and short in oil; such a coat has "teeth" and grips the surface securely. This is followed with a second undercoat, which is more oily. These coats will provide a solid ground on which to apply the finish. It is false economy to "get along" with only one undercoat. Each coat should be given three days to harden. If the finish coat dries to a half gloss, the finest effect will be had by stippling. The finish coat should dry flat if a stencil, two-tone, shaded or blended decorative finish is to be applied.



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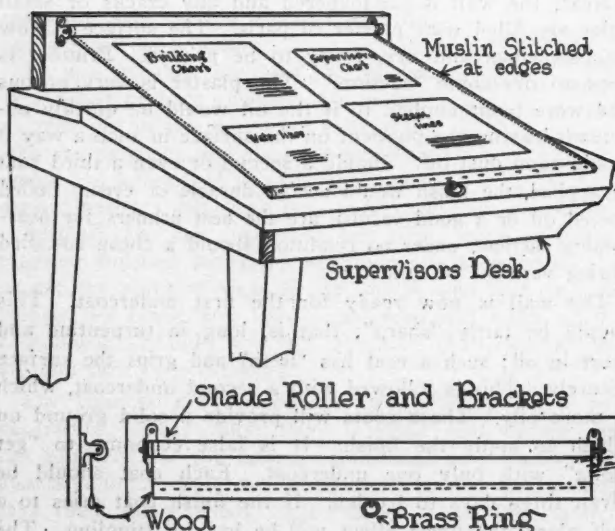
Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

### Ready Reference Desk Chart

IN any large plant, various diagrammatic charts are made of the shops, equipment and the supervisory force. These charts are subject to frequent reference and some plants have these in frames for use by the various department heads.

A simpler and more serviceable method which is used by one plant is a desk installation, in which these charts are mounted by pasting them to muslin. The muslin is rolled on an ordinary shade roller, which is bracketed to the forward edge of the desks.

The method is depicted in the attached sketch, and will appeal to the supervisor who appreciates the delay of looking for information on a wall chart. This method also permits of renewal of the chart or replacement by simply gluing it to the muslin without need of work as in changing a framed chart of the glass frame type. It is only necessary to glue the edges of the chart to the muslin.—G. H. LUERS, Washington, D. C.



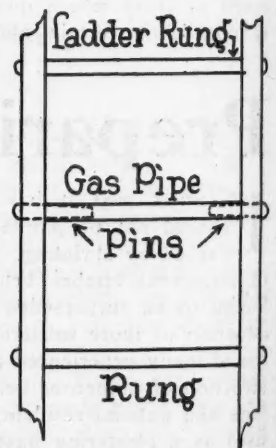
A Ready Reference Desk for Charts, Plans and Diagrams Which Are Frequently Consulted Is Easily Built.

### Repairing a Broken Ladder

IT often happens that one or more rungs are broken out of a ladder, leaving it otherwise in good condition. Make-shift repairing by nailing a board across the stiles of the ladder is hardly a workmanlike proceeding and the insertion of a round cross-piece in the regular way means tearing down the entire ladder.

Here is a method of making such a repair with a piece of gaspipe which gives neat and satisfactory results if carefully done.

A piece of gaspipe, the inside diameter of which is equal to the diameter of the holes in the ladder stiles, is cut to the width of the distance between the stiles. Two hardwood plugs, the size of the interior diameter of the pipe, are made at least three inches long. The pipe is put in place and the plugs driven home as shown in the diagram. If care is taken in making the repair the job will be satisfactory, I have found.—OTTO O. KERCHUER, Walnut, Ill.



The Gas Pipe Ladder Rung Is Held in Place by a Wooden Pin at Each End.

### Hiding the Putty Holes

I WAS watching a cabinet maker the other day while he was carefully removing putty that his helper had put in some counter sunk screw holes on a nice kitchen cabinet.

Seeing that I was curious he explained to me that it was useless to use ordinary putty in holes and expect your stain to color it the same as the woodwork. It just doesn't work. He then explained how he could take gray, red and black putty and mix it to a shade that would match the finish and fill the holes with this mixture. He then showed me a job he had finished this way and it was hard to find the puttied holes under the wax finish.—C. L. SMITH, Jackson, Miss.



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**The Proof of the Pudding**

The old saying: "The Proof of the Pudding Is in the Eating" is probably more applicable to wood finishes than anything else. Formulas, claims and promises mean nothing until a real painter tries the product out on his own paint brush, under average conditions, on a regular job.

Here is a typical fine modern building, the 36-apartment Franklin Arms of Milwaukee. Schmidt & Seitz, painting contractors, used on this job 795 gallons of Johnson's Varnishes, Enamels and Flat Wall Finish.

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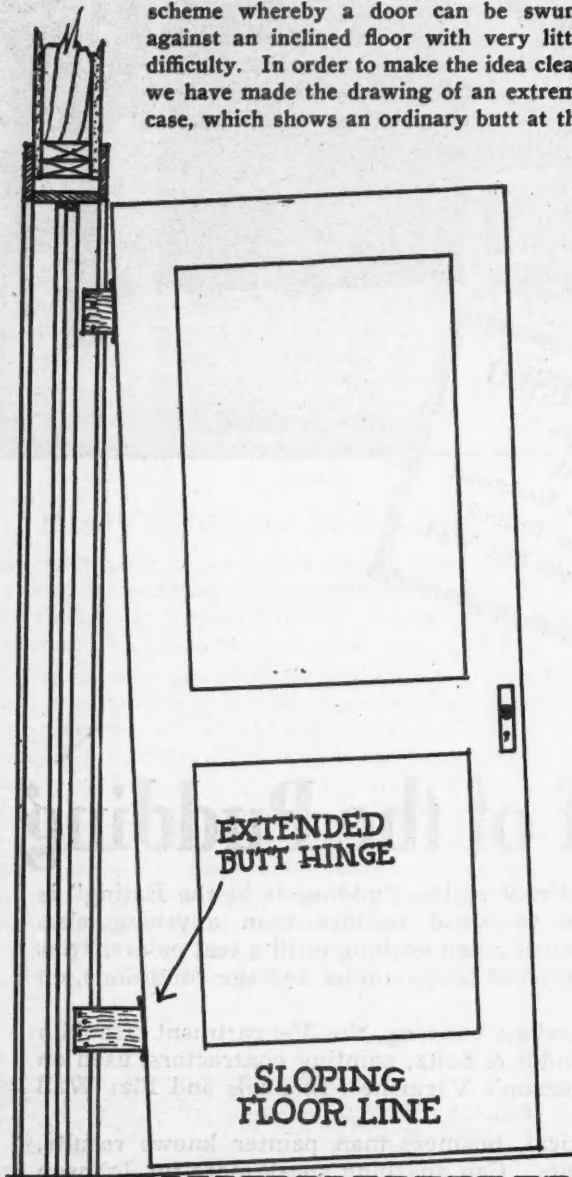
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### Swinging a Door Against an Inclined Floor

IT is not an uncommon thing for a mechanic to be called upon to hang a door in such a manner that it will swing against an inclined floor—particularly is this true in basements that have cement floor sloping enough so they will readily drain.

The accompanying illustration shows a scheme whereby a door can be swung against an inclined floor with very little difficulty. In order to make the idea clear, we have made the drawing of an extreme case, which shows an ordinary butt at the



In Such an Extreme Case as the One Shown Above, a Special Butt Must Be Made to Hang a Door at the Necessary Pitch.

top and a special butt at the bottom. Where the incline is small an ordinary pair of butts will do by setting the upper one in as far as the circumstances will permit, and the bottom one out as far as it can be, and at the same time retain a serviceable job. If this will not clear the door, put a small butt at the top, and a butt of a larger size at the bottom. In extreme cases, such as we are showing by the drawing, the bottom butt must be made to order—perhaps the easiest way would be to have a blacksmith extend the two wings of the butt as far as the conditions require, by welding extensions to them. The extreme cases, however, should be avoided as much as possible.—H. H. SIEGLE, Emporia, Kan.

### Preventing Loose Panes

MANY persons who have secured the panes of their windows to the sash during the fall months wonder why when inspecting in the spring, they find the putty cracked away from the sash and the panes again loosened. Defective putty and other reasons are given but the real defect has been in the manner of setting them.

The loosening is caused by freezing and the moisture which freezes is the vapor which collects on the inside of the pane during the winter months and runs down between the glass and the sash.

To prevent this, the putty must not only be placed on the outside of the glass but on the inside as well. Or the sash may be painted about the edges where the glass sits with a thick paint just before the glass is set. This prevents the water from entering and the loosening is delayed.—Geo. G. McVICKER.



Putty or Paint at the Point "B" Will Exclude the Moisture Which Causes Loosened Panes.

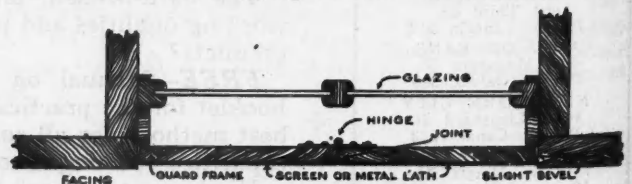
### To Clear the Floor

MUCH time can be saved on small jobs by leaving two or three sub-floor boards loose, for about two joists length, on the first floor. Many times the floors have to be cleaned for different work and many times it is inconvenient to sweep waste down the staircase as ladders or planks are in the way. As most of the work is done on the first floor, it is not necessary to do this on any others.—L. C. SKINNER, Watertown, N. Y.

### Removable Window Guard

IF for any reason the glazing of a window is at times to be guarded against breakage, here is an idea which, put in operation, provides a screen that is quickly put in place, as quickly removed, and holds itself in place.

Hinge two frames of the required height together so that when they are placed side by side they will be a trifle too full to allow of slipping into the window frame. Place

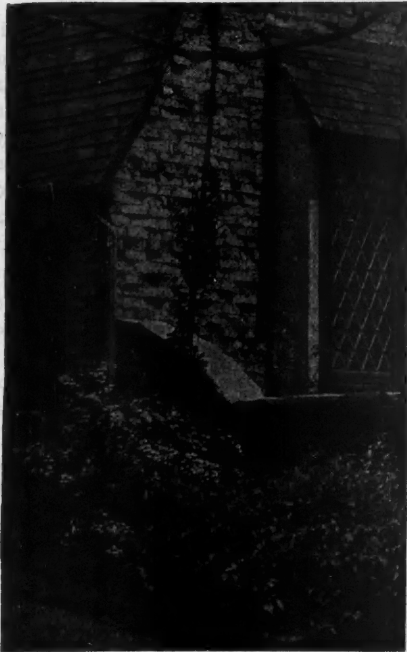


How the Removable Window Guard Is Fitted Into a Window Frame.

the hinge on the side next to the glass. Cover the opposite side with either heavy screen or expanded metal lath.

To place in position, fold slightly, hinge side in, set in window frame, and push. The hinge pintle being pushed past the center line of the positioned frames, the stress exerted will hold them in place. To remove, pull the frame outwardly. To secure greater tension for the positioned guard, plane away the inner edge of the frame where it engages with the window framing.—LOUIS SCHNEIDER, Clinton, Mo.

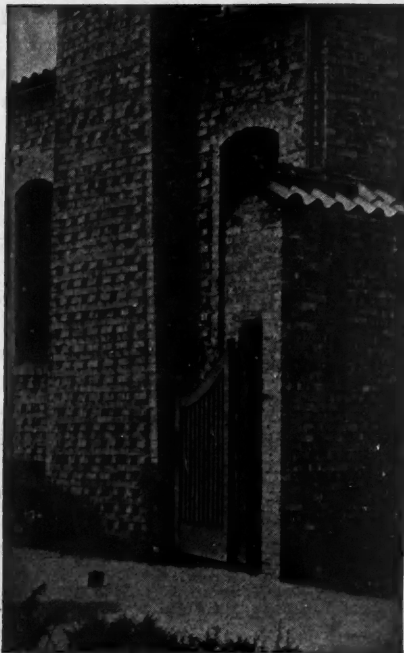
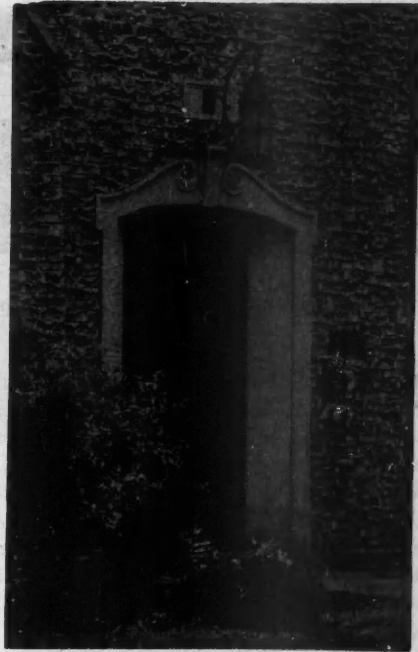
# SKINTLED BRICK WORK



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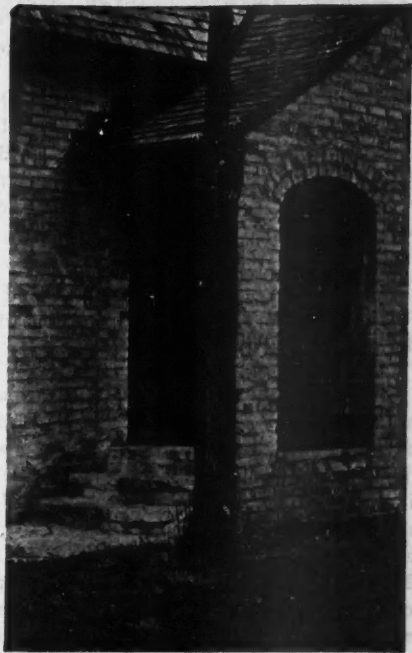
*You would never guess that the wall to the left is Common Brick. The irregular surface secured by the skillfully worked out pattern gives a unique antiqueness quite in keeping with the design of the home.*

*Mortar is used in the wall illustrated at the right in a quite out of the ordinary way. This home is in one of Chicago's most exclusive residential districts. In this instance Common Brick was used for its beauty alone.*



*The illustration at the left shows a corner of an attractive bungalow in which the brick project at various angles. The effect is far from ordinary, yet low-priced Common Brick is used for this wall.*

*The porch at the right illustrates a more conservative variation. These illustrate only four of the many new, novel and antique effects that have been produced by leading architects in Common Brick work.*



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### Fairbanks Morse Executives Inspect Factories

**N**EW products, sales plans and production methods of Fairbanks, Morse & Co. were studied during a sales convention and inspection trip of the twenty-eight branch house managers and factory and general office executives which was held the week of December 1st.

The conference was called at the executive offices at Chicago and the party proceeded by special cars to the factories at Indianapolis, Three Rivers, Mich., Beloit, Wis. At the meeting held at the various plants talks on products made in those plants were given by the officials and the sales managers of the different divisions.

Among those comprising the party were Mr. W. S. Hovey, vice-president and general manager, Chicago; J. F. Ahern, Jacksonville; A. E. Ashcraft, St. Johnsbury; J. E. Bachelder, St. Louis; R. H. Bacon, Chicago; Henry J. Barbour, Beloit; E. C. Berry, Minneapolis; D. G. Bolton, Dallas, F. M. Boughhey, Chicago; P. C. Brooks, St. Johnsbury; C. Bronnes, Denver; W. J. Burchill, Beloit; L. H. Carr, Kansas City; C. E. Carriger, Indianapolis; H. E. Chickering, Chicago; A. J. Chubb, Chicago; W. W. Cullen, Cleveland; A. C. Dodge, St. Paul; W. R. Enyart, Chicago; H. W. Finnell, Chicago; E. M. Fisher, Chicago; S. F. Forbes, Los Angeles; Stan. E. Forbes, Los Angeles; C. T. Fugitt, Atlanta; P. H. Gilleland, Chicago; R. E. Hall, Three Rivers; O. E. Harkness, Portland; J. D. Harper, Chicago; W. C. Heath, Beloit; W. B. Henri, Chicago; G. H. Jernberg, New York; J. G. Jones, New Orleans; K. W. Jones, Omaha; R. F. Koops, Boston; J. L. Lambin, Chicago; J. M. Manley, Chicago; C. R. Miller, Seattle; C. B. Murphy, Chicago; B. J. O'Connell, Chicago; L. J. Osborn, Indianapolis; Dale Perrill, Chicago; R. E. Post, Baltimore; A. R. Rea, New York; F. V. Roy, Chicago; G. K. Sage, Chicago; S. T. Scofield, Chicago; J. F. Snarenberger, Louisville; A. C. Thompson, St. Paul; A. W. Thompson, Indianapolis; H. E. Vergosen, Detroit; H. W. Vine, Cincinnati; B. R. Wells, Chicago; E. D. West, Beloit; Gordon Wilson, Chicago;

W. L. Woodward, Three Rivers; L. Yost, Chicago; F. G. Hobart, Beloit.



### Study Hollow Building Units

**T**HE Building Officials' Conference, which will hold its eleventh annual meeting in Madison, Wis., within a few months, has appointed a Committee on Hollow Building Units to prepare a model building code section covering these materials. The committee's report is to be ready in advance of the forthcoming annual meeting. It will be in a form that may be incorporated bodily as a section of a general city building code for the regulation of the manufacture and use of building units such as hollow concrete block and tile and hollow clay tile.

The chairman of the committee is W. C. Muehlstein, building engineer of the Industrial Commission of Wisconsin, Madison, Wis. Other members of the committee are Wm. C. E. Becker, building commissioner of St. Louis; Robert Knight, deputy building commissioner of Chicago; W. L. Harrison, building commissioner of Richmond, Va.; Norman M. Stineman, structural engineer, Portland Cement Association, Chicago, and F. J. Huse, chief engineer, Hollow Building Tile Association, Chicago.



### Window and Door Calking Paste

**A** PRODUCT is now being offered for sale by the Weatherproof Calking Co., Minneapolis, Minn., under the trade name "Hennen's Elastic Calking Paste." This product is designed to seal all joints around windows and doors making them air, dust and waterproof, thus saving fuel, preventing the discoloration of decorations, decay of sills and deterioration of masonry under windows.



### Sixty Years of Success

**S**IXTY years of business life is the record of the Ford Roofing Products Company, Chicago, which has just celebrated the anniversary of its establishment. The company started in a small way but with big ideas and has maintained a progressive policy which has made it one of the leaders in its field.

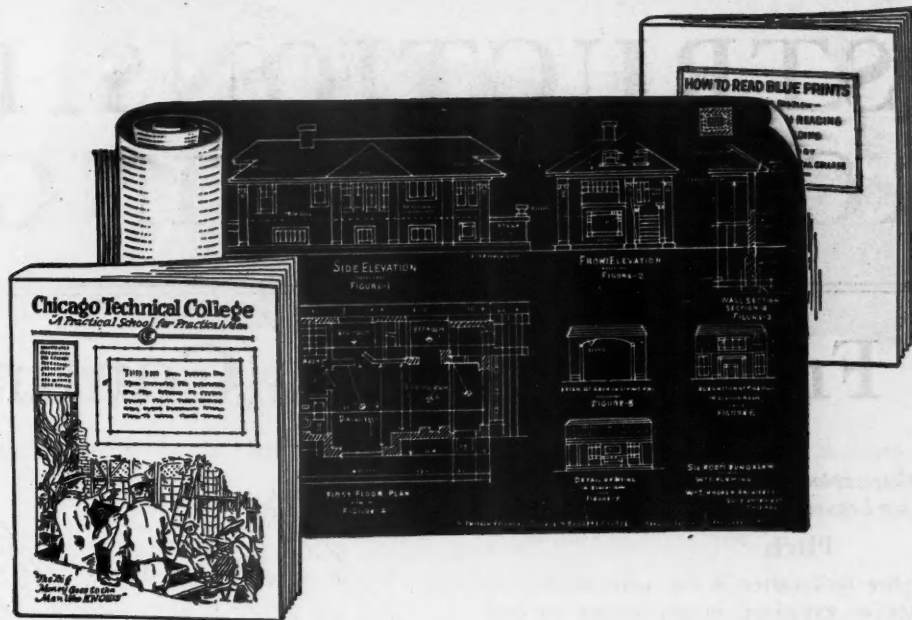
The material progress of the company is attested by a recent announcement which may also be taken as evidence of the prosperity of the country in general. In one day the company received orders from B. E. Talor, Detroit, owner of one of the largest building and lumber companies in the country, which totaled more than 5,000 squares of Cyclone Shingles.

This order represents enough material to roof more than 500 houses and required 25 cars for shipment. A notable feature of the order was that it was marked "ship at once."



Branch House Managers, Factory and General Office Executives of Fairbanks Morse & Co., Who Took Part in the Convention and Inspection Trip of the Company's Factories to Study New Products, Production Methods and Sales Plans.





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You may be as good a man as there is in the use of tools but as long as you remain a workman you won't earn more than the wage scale. It isn't manual skill that puts a man in big pay class—it's the ability to use his head that brings the fat pay check or enables him to "go in for himself." That has been proved over and over again by workmen who took the Chicago Tech. training in the higher branches of building and are now foremen, superintendents and contractors.

J. B. Woodside of Oklahoma was a carpenter working for \$6 a day when he took a course in training by mail at Chicago Technical College and was advanced to a foremanship in 2 months, became a superintendent 5 months later and then went into contracting.

Carl Testroat of Iowa is another man who got into a successful contracting business through his training, as did J. G. Hart of West Virginia, and C. W. Busch of Kansas.

Not only workmen have got ahead through this instruction but also contractors who were taking on small jobs because their experience was limited. Chicago Tech. has taught them how to handle the big jobs that pay the most money.

### Train by Mail

Never before have there been such opportunities as there are right now for men with expert knowledge of building. You can get ready for these big opportunities if you will use some of your spare time to study at home under the direction of the Chicago Tech. experts. No time taken from your present work. All this will be explained when we send you the free books and 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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Please send me your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below.  
(Write or print name plainly.)

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Address .....

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## CHICAGO TECHNICAL COLLEGE

Dept. 236, Chicago Tech. Building, 118 East 26th Street, Chicago, Ill.

# INSTRUCTIONS IN ROOF FRAMING

## Roof Framing Table (Continued)

By JOHN T. NEUFELD

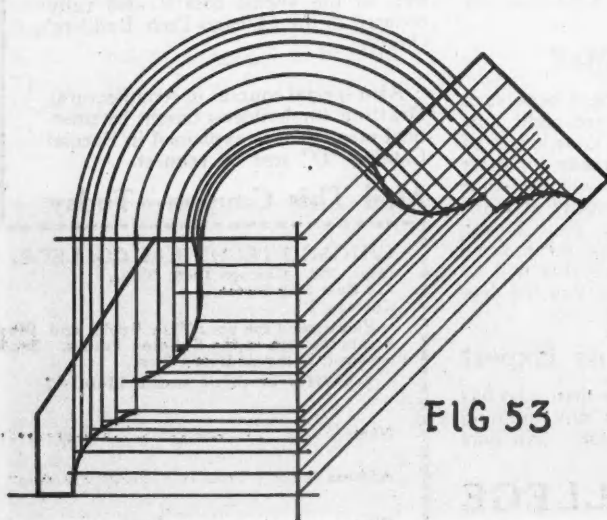
NOTE—For a complete explanation of the cutting and framing of the Jack Rafters, see Lesson 8 in the October number.

### Pitch

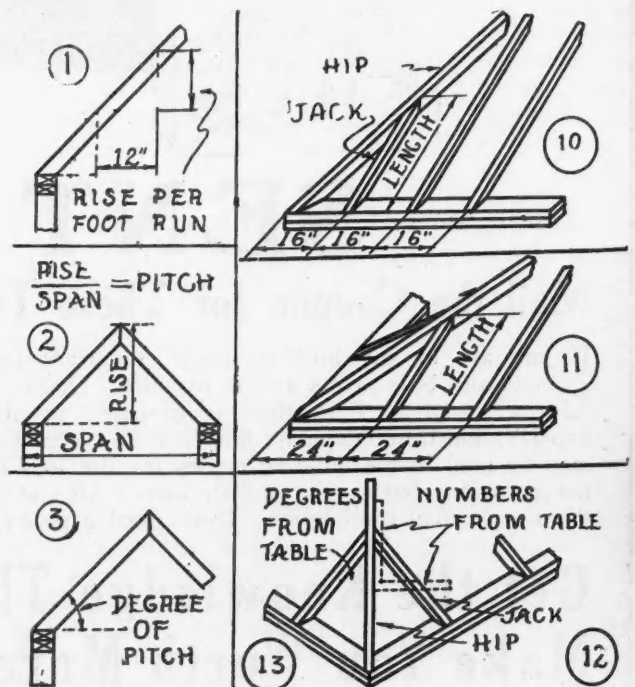
THE pitch of the jack rafter is the same as for the common rafter as explained in the lesson on jack rafters. The jack rafters have the same direction, or slope as the common rafters, they are only cut short. This table should be used in connection with the table in the previous lessons.

**Length of First Jack 16 Inches on Centers.** Jack rafters are generally spaced 16 or 24 inches on centers. The same as the other rafters. To find the length of the first jack rafter spaced 16 inches on centers, we multiply the length per foot run by  $1\frac{1}{3}$ , because a jack rafter that is 16 inches or  $1\frac{1}{3}$  feet from the corner will also have a run of  $1\frac{1}{3}$  feet. Example: A hip roof has a one-quarter pitch or 6-inch rise per foot run. The length of first jack would be  $1\frac{1}{3} \times 13.42 = 17.89$  inches. To find the length of all other jack rafters, multiply this by the number of spaces from the corner. For example, the second jack rafter will be  $2 \times 17.89$  inches = 35.78 inches. The length of the third jack would be  $3 \times 17.89 = 53.67$  inches.

The table column 10, gives the length of the first jack rafter or the difference in length between the succeeding jack rafters if spaced 16 inches on centers. If we wish to find the lengths of the jack rafters for a hip roof eleven-twenty-fourths pitch or with a rise of 11 inches per foot run, we look in column 10 to the right of this given pitch. The length of the first jack rafter is  $21\frac{1}{4}$  inches. The



Proper Method of Laying Out the Raking Moulding. The slanting lines must be the same as the slope of the roof.



Explaining the Various Rafter Cuts and Lengths Listed in the Diagrammatic Chart on Page 184.

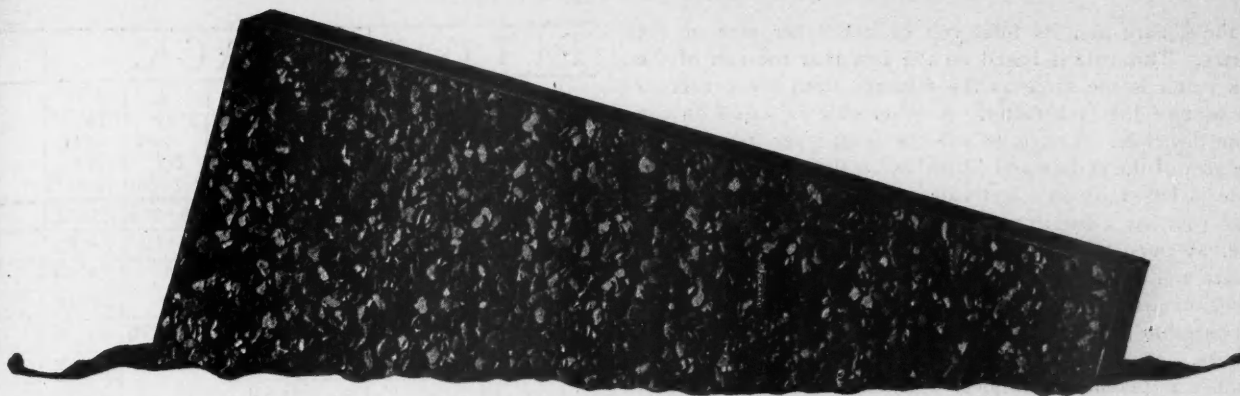
length of the second from the corner is  $2 \times 21\frac{1}{4} = 43\frac{1}{2}$  inches or 3 feet  $7\frac{1}{2}$  inches. The length of the third is  $3 \times 21\frac{1}{4} = 65\frac{1}{4}$ . The length of the fourth is  $4 \times 21\frac{1}{4} = 87$  inches or 7 feet 5 inches.

**Length of First Jack 24 Inches on Centers.** If jack rafters are spaced 24 inches on centers, the first jack will be 24 inches from the corner and the run will also be 24 inches or 2 feet 0 inches. Therefore, the length of the first jack would be two times the length per foot run. Example: In a three-eighths pitch roof length per foot run is 15 inches and the length of the first jack would be  $2 \times 15 = 30$  inches. The second jack rafter would be two times as long and the third three times as long.

The table column 11 gives the lengths of the first jack rafter and the difference in length of each succeeding jack rafter. Example: Find the length of the jack rafters for a hip roof with one-half pitch if the jack rafters are spaced 24 inches on centers.

The length of the first jack rafter is 34 inches. See Column 11. The length of the second jack rafter is  $2 \times 34 = 68$  inches. The length of the third jack rafter is  $3 \times 34 = 102$  inches or 8 feet 6 inches.

**Side Cut of Jack Using Square.** For the side cut of jack rafters, we use the length of any one jack rafter on one arm



## Here's a Wonderful New Shingle!

Have you seen the new improved Barrett Giant Shingles?

They're extra large (12 x 14 inches). Far thicker than the ordinary asphalt shingle, they're handsomer, more rugged in appearance—give a good shadow line.

Giant Shingles can be laid quickly. With their 12-inch width—the maximum width that can be satisfactorily fastened with two nails—fewer shingles are needed per square.

While Giants are ideal for new construction, they are especially adapted for re-roofing jobs.

Because of their extra weight and rigidity they can be nailed down right over the old worn-out roof. This saves time, trouble and money.

Giants give a permanent roof. They never rot or rust—never need painting or staining. Moreover, they're fire-safe—proof against flying sparks and embers.

They come in soft red, moss green and blue-black. Any man who takes pride in his work—who wants to give his customers a handsome permanent maintenance-free roof—should see Barrett Giant Shingles.



*Particularly adapted for laying over old roofs—the new Barrett Giant Shingle, 12" x 14" in size, is laid with 5" exposure.*



### A Valuable Free Book

"Better Homes from Old Houses" gives ideas for remodeling old-fashioned houses into handsome modern homes. Thousands of carpenter-contractors are putting this practical book into the hands of owners of old houses—and supplying the labor needed when the alterations start. Send for your sample copy of this business-building book.

MAIL THIS COUPON TODAY

**THE BARRETT COMPANY**  
40 Rector St., New York

Please send me free sample copy of your business-building book—"Better Homes from Old Houses." The address of my building supply dealer is given below.

Your Name .....

Street Address .....

Town..... State.....

Your Dealer's Name .....

Dealer's Address .....

# Barrett

## ROOFINGS

THE BARRETT COMPANY, 40 RECTOR ST., NEW YORK

In Canada: The Barrett Company, Limited  
2021 St. Hubert Street, Montreal, Que., Canada

of the square and its total run on the other arm of the square. This rule is based on the fact that the run of the jack rafter is the same as the distance from the corner to the foot of the jack rafter. Another rule is based on the same principle. This is to use the length per foot run on one arm of the square and 12 inches on the other arm. Our table is based on this last rule. For example, a one-half pitch roof has a length per foot run of 16.97 inches. Therefore, we must take 16.97 (or 17 inches) on one arm of the square and 12 inches on the other arm of the square. Mark along the arm on which the 17 inches is taken.

The table gives the numbers to be used for 48 different pitches. Always mark along the arm on which the largest number is taken. Example: For the side cut for a jack rafter of a one-third pitch roof, we take 12 on the tongue and 14 on the blade of the square and mark along the blade. Apply the square on the back of the jack rafter.

For the side cut for a jack rafter of a one-half pitch roof we take 12 on one arm of the square and 17 on the other and apply this to the back or upper edge of the jack rafter, marking along the arm on which the 17 is taken.

**Side Cut of Jack by Degrees.** This column gives the bevel of the side cut expressed in degrees and inches. This must be laid out on the back of the rafter.

A question that is often asked is: "How can I obtain the miter cut for the raking mould where a gable cornice meets a horizontal cornice?"

If both mouldings are set vertical as in Fig. 51 they will not fit together in any case. The illustration will show this. The raking mould, because of its slanting position, is too wide.

One way to solve this problem is to set the horizontal mould at an angle as shown in Fig. 52. Then the horizontal mould lies in the same sloping plane as the raking mould. A 45 degree miter cut on each one will make them fit properly.

Another way is to have a special mould cut for the rake so that it will fit the horizontal mould. In this case both mouldings can be set in a vertical position as in Fig. 51. The raking mould will then be narrower.

Fig. 53 shows how to lay out this special moulding. The slanting lines shown must be the same slope as the slope of the roof.

The cut on the horizontal mould is 45 degrees. The cut on the lower end of the raking mould is the same as the cut on the lower end of a valley jack rafter.

To lay out the vertical line on this cut use the same figures as for the plumb cut on a common rafter. The side cut is the same as the side cut for a jack, as explained above.

**Problems**

(1) What is the length of the shortest jack rafter for a hip roof if the "rise per foot run" is 11½ inches and the rafters are spaced 16 inches on centers?

(2) A hip roof has four sets of jack rafters spaced 24 inches on centers. The pitch is one-third. What is the length of each jack rafter?

(3) Express the side cut of a jack rafter, comparing to a 12 and 15 cut by the square, in degrees.

(4) What numbers on the square compare to a bevel of 35 degrees 20 minutes?

The answers to these problems will be found below.

**Answers to Problems**

(1) The length of the shortest jack rafter of a hip roof with a "rise per foot run" of 11½ inches and rafters spaced 16 inches on centers is 22½ inches.

(2) The length of the first or shortest jack rafter for a one-third pitch roof with rafters spaced 24 inches on centers is 28¾ inches

PITCH			JACK			
1 RISE PER FOOT RUN	2 RISE OVER SPAN	3 DE - GREES	10 LENGTH FIRST JACK 16" O.C.	11 LENGTH FIRST JACK 24" O.C.	12 SIDE CUT BY SQUARE	13 SIDE CUT BY DEGREES
24	1	63° 26'	35 3/4	53 11/16	6-13 1/2	24° 20'
23 1/2	47/48	63° 00'	35 3/16	52 3/4	6-13	24° 30'
23	23/24	62° 27'	34 9/16	51 7/8	"	24° 50'
22 1/2	15/16	61° 55'	33 -	51 -	"	25° 10'
22	11/12	61° 23'	33 7/16	50 1/8	6-12 1/2	25° 30'
21 1/2	43/48	60° 50'	32 15/16	49 1/4	"	26° 00'
21	7/8	60° 15'	32 1/4	48 3/8	12-24	26° 20'
20 1/2	1/4	59° 40'	31 11/16	47 1/2	"	26° 45'
20	5/6	59° 02'	31 1/16	46 5/8	12-23 1/2	27° 10'
19 1/2	13/16	58° 20'	30 1/2	45 13/16	12-23	27° 40'
19	19/24	57° 44'	29 15/16	44 5/16	12-22 1/2	28° 10'
18 1/2	37/48	57° 05'	29 3/8	44 1/8	12-22	28° 30'
18	3/4	56° 19'	28 3/8	43 1/4	12-21 1/2	29° 00'
17 1/2	35/48	55° 30'	28 5/16	42 7/16	12-21	29° 30'
17	17/24	54° 47'	27 3/4	41 1/4	"	30° 00'
16 1/2	11/16	54° 00'	27 3/16	40 13/16	12-20 1/2	30° 30'
16	2/3	53° 08'	26 3/4	40 -	12-20	31° 00'
15 1/2	31/48	52° 15'	26 3/16	39 1/4	12-19 1/2	31° 30'
15	5/8	51° 20'	25 5/8	38 1/2	12-19	32° 10'
14 1/2	29/48	50° 20'	25 1/8	37 11/16	"	32° 30'
14	7/12	49° 24'	24 5/8	36 7/8	12-18 1/2	33° 00'
13 1/2	9/16	48° 20'	24 1/8	36 1/8	12-18	33° 40'
13	13/24	47° 17'	23 5/8	35 3/8	12-17 1/2	34° 10'
12 1/2	25/48	46° 10'	23 1/8	34 11/16	"	34° 40'
12	1/2	45° 00'	22 5/8	34 -	12-17	35° 20'
11 1/2	23/48	43° 50'	22 1/8	33 1/4	12-16 1/2	35° 50'
11	11/24	42° 31'	21 3/4	32 1/2	12-16 1/2	36° 20'
10 1/2	7/16	41° 10'	21 1/4	31 7/8	12-16	37° 00'
10	5/12	39° 48'	20 7/8	31 1/4	12-15 1/2	37° 30'
9 1/2	19/48	38° 20'	20 3/8	30 5/8	"	38° 10'
9	3/8	36° 52'	20 -	30 -	12-15	38° 40'
8 1/2	17/48	35° 20'	19 5/8	29 3/8	12-14 1/2	39° 10'
8	1/3	33° 41'	19 1/4	28 7/8	"	39° 50'
7 1/2	5/16	32° 00'	18 7/8	28 5/16	12-14	40° 20'
7	7/24	30° 15'	18 1/2	27 3/4	"	41° 50'
6 1/2	13/16	28° 30'	18 3/16	27 15/16	12-13 1/2	41° 20'
6	1/4	26° 34'	17 7/8	26 7/8	"	41° 50'
5 1/2	11/48	24° 40'	17 5/8	26 3/8	12-13	42° 15'
5	5/24	22° 37'	17 3/8	26 -	"	42° 40'
4 1/2	3/16	20° 35'	17 1/8	25 5/8	"	43° 10'
4	1/6	18° 26'	16 7/8	25 1/4	12-12	43° 30'
3 1/2	7/48	16° 20'	16 1/16	25 -	"	43° 50'
3	1/8	14° 02'	16 1/2	24 3/4	"	44° 10'
2 1/2	5/48	11° 50'	16 3/8	24 1/2	"	44° 20'
2	1/12	9° 28'	16 3/16	24 1/4	12-12	44° 30'
1 1/2	1/16	7° 10'	16 1/8	24 3/16	"	44° 40'
1	1/24	4° 48'	16 1/16	24 1/16	"	44° 50'
0 1/2	1/48	2° 25'	16 -	24 -	"	45° 00'

Chart Giving Information in Condensed Form Pertaining to the Rafter Framing.

The length of the second jack rafter is 2 × 28¾ = 57¾ inches.

The length of the third is 3 × 28¾ = 86½ inches.

The length of the fourth is 4 × 28¾ = 115½ inches.

(3) The degree cut that compares to a cut obtained by using 12 and 15 on the square is 38 degrees 40 minutes.

(4) The bevel obtained by 12 and 17 on the square is the same as a bevel of 35 degrees 20 minutes.



Reg. U. S. Pat. Off.



## Don't Wait for Spring! Get re-roofing business now.

ANYTIME is re-roofing time—the weather doesn't matter—when you lay Genasco Latite Shingles. You apply them right over the old roof—without disturbing the old wood shingles.

The "Genasco Way" has other big advantages. You save the cost of tearing off the old roof. You avoid the clutter of broken shingles and old nails. And, what is more important, you get a strong, storm-tight, FIRE-SAFE roof.

Genasco Latite Shingles are storm-tight because a patented locking device—invisible on the completed roof—clamps each shingle to those underneath. They are fire-safe because their exposed surface is granulated slate.

Genasco Latite Shingles last for years. Their great durability is due to their foundation of tough, rag felt which is saturated and then heavily waterproofed with Trinidad Lake Asphalt Cement.

Genasco Latite Shingles are just as suitable for a garage, stable or barn as for the finest home. Where a roofing less ornamental than Genasco Latite Shingles is desired, Genasco Roll Roofing is recommended. Write for illustrated folders.

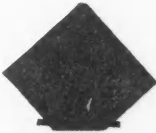
**The Barber Asphalt Company**  
PHILADELPHIA

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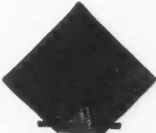
# Genasco Latite Shingles

Reg. U. S. Pat. Off.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Front view of a Genasco Latite Shingle. In three natural unfading colors—red, green and blue—black.



Back view of a Genasco Latite Shingle showing the "Key" that locks them firmly and flatly to the roof deck. This "Key" is invisible on the completed roof.

# Will Your New Home Have a Water Softener?

Now Cheaper and Better Than a Cistern

**L**AST month we had something to say about water softeners and predicted that in all hardwater territories there would soon be staged a battle to the death between the modern water softener and the old-time expensive and insanitary cistern.

We told a little about how these modern water softeners operate and what they will accomplish in the home. But the half has not yet been told. Every architect and home builder should get the latest information on these water softeners and plan them into every new home.

In the kitchen where ordinarily both hard and cistern water are used softened water is a vast improvement over both.

Vegetables, such as peas, beans, etc., when cooked in soft water, are much more savory than when hard water is used. It is not necessary to cook them so long and this results in retaining the flavor. Coffee and tea are much improved and but half the quantity is needed.

And when washed in softened water, glassware is clear, shining and free from filmy dullness; silverware and kitchen utensils preserve all their original brightness.

Strong cleansing soaps, washing powders, sodas and lye, so injurious to the hands, are all done away with. The work of dish-washing is cut in half. And no greasy water clogs up the drains.

For every cleaning purpose such as scrubbing and washing windows, softened water is ideal; cleans quickly with half the labor and half the soap and dries without streaks.

### In the Home Laundry

Very little rubbing is required when the family wash is done in softened water. One cannot overestimate the part it plays in preserving the life of linens, flannels, lingerie, etc. It is the only safe way to launder silks or woollens if shrinking is to be avoided and the natural delicacy and smoothness of texture retained. Fine laces, lawns, linens, all preserve their snowy whiteness and colored materials keep their freshness and brilliancy after repeated washings.

Not only is the washing easier and safer when softened water is used—it is done in much less time. With soft water only about half the soap is needed as when hard water is used. Rinsing is perfect—no soap is left in the fabric to cause discoloring when ironed. The laundry, when laid away, remains fresh and clean-smelling.

### Softened Water for Bathing

For the bath softened water is a genuine delight. It thoroughly cleanses the skin because no soap scum is formed to clog the pores. While absolutely soft, it is

entirely free from chemicals that might irritate the most delicate skin.

A softened water bath does more than cleanse the skin; it refreshes and invigorates the body. A soft-water bath is a new delight.

Certain proof of the absolute softness of softened water is evidenced by the absence of soap scum or "ring" around tubs and lavatories.

A remarkably small amount of soap added to softened water results in a rich, creamy lather. For the shampoo it is perfect. The hair, thoroughly cleansed, rinses perfectly, bringing out the natural gloss and sheen. After rinsing there is no stickiness to cause discomfort or a feeling of uncleanness.

Realizing these benefits in caring for the hair and scalp, most beauty parlors now use only softened water, reporting greatly improved results as well as increased economy in the amount of water and soap required to properly treat the hair. You will never know the luxury of a real shampoo until you have tried softened water.

The usually irksome task of shaving becomes a pleasure when softened water is used. Regardless of the kind of soap used an abundant lather is instantly produced and the beard thoroughly softened for an easy, quick and grateful shave.

The man who is bothered with a sensitive skin is invited to try this softened water. He will find that the mineral-free lather soothes and cools the face and that he can go over the second time without discomfort.



Softened Water is Appreciated in the Laundry, the Kitchen and the Bath.

### COST OF WATER SOFTENER FOR AVERAGE FAMILY OF FOUR PERSONS

Average water softener .....	\$175.00
Freight and drayage..	5.00
Installation .....	15.00

Total cost .....\$195.00

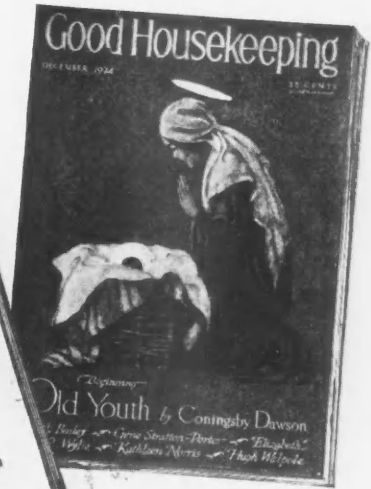
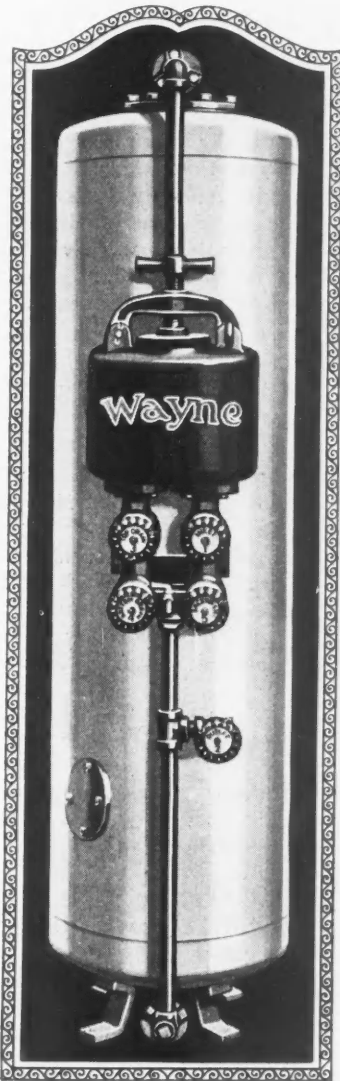
### COST PER YEAR

Life of softener, minimum 10 years, annual depreciation .....	\$19.50
Interest on investment at 6 per cent.....	11.70
Cost of salt used.....	5.00
Cost of water in backwashing.....	1.00
Gasket (not more than 1 per year).....	.15
Painting from time to time, average.....	2.00
Maximum cost per year.....	\$39.35

### COST OF CISTERN AND ELECTRIC MOTOR PLUMBING

80-barrel cistern .....	\$80.00
Electric pump .....	130.00
Additional spouting and roofing required.....	7.50
Total cost .....	\$217.50

# As Cheap, or Cheaper Than A Cistern—And Far Better



## National Advertising Campaign Creating Public Demand For Wayne Water Softeners

Here is a new source of profit for builders and contractors—a chance to make the merchandising profit in the sale of a Wayne Water Softener, and at the same time increase the salability of the houses you build.

The dominating Wayne national advertising campaign in Collier's and Good Housekeeping is creating public demand for this new and sanitary home convenience.

The Wayne Softener eliminates

the dirty, unsanitary cistern from the American home by providing a constant supply of clean, fresh Wayne-soft Water that is far softer and cleaner than cistern water. Wayne-soft Water is not only ideal for bathing, shampooing, shaving and for the laundry, but is also suitable for drinking and cooking. Wayne-soft Water eliminates hard water scale and so saves coal, saves plumbing and water heaters.

**Wayne Tank and Pump Company, 808 Canal Street  
Fort Wayne, Indiana**

*Branch Offices: Atlanta, Boston, Buffalo, Chicago, Cleveland, Columbus, Dallas, Detroit, Kansas City, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh, San Francisco and St. Louis. Warehouses: San Francisco, Philadelphia, London, Eng. and Paris, France. Foreign Offices: London, Paris, Toronto.*

*An International Organization with Sales and Service Offices Everywhere*

### Special Terms To Builders

Write for complete details and descriptive booklets about this money-making proposition.

REG. U.S. TRADE MARK  
**Wayne**  
ORIGINAL RAPID-RATE  
(Berriman Patent)  
**Water Softeners**

COST PER YEAR

Interest on investment at 6 per cent.....	\$13.05
Life of pump (unusual) 10 years, annual depreciation	13.00
Electric current for running pump.....	5.00
Average annual cost of repairs on pump, packing, belts, fuses, parts and labor.....	5.00
Annual cost of soap for family, including laundry, toilet, dishwashing, shaving, shampooing, scouring powders, etc., \$24.00. Saving effected by softener over cistern water in soap about 40%, but we'll be conservative and place it at 20%.....	4.80



What Hard Water Does in a Few Years to the Water-back in the Furnace. This photo, actual size, was taken of a pipe removed in Indiana.

The family would require the expenditure of about \$90 (very low) per year to keep up constant supply of sheets, pillow cases, table cloths, napkins, towels, underwear, shirts, etc. Hotel records show that soft water prolongs their life over water of cistern hardness from 35% to 50%, but we'll be conservative and say 20%.....	18.00
This family would use about 1 pound of 40c coffee in ten days or about \$14.50 a year. Soft water saves 35% of the coffee, say 20%.....	2.90
The time required for removing high water mark from bath tub and additional work caused by soap curd, etc., is at least 15 minutes a day, or 90 hours a year, at 40c per hour, making \$36.00. We'll ignore this entirely.	
Annual cost of cleaning cistern.....	5.00
Annual cost of cistern.....	\$66.75
Annual cost of softener.....	39.35

Profit for being sanitary..... \$27.40  
 In ten years a family of four would save more than enough to buy a new softener.

COMPARATIVE COST OF USE OF HARD WATER

Life of coil in hot water heater varies, but there is hardly any hard-water district that would not have an annual cost over a period of years for replacing coils (labor and materials) of from \$5 to \$25. Using the minimum.....	\$5.00
Life of linens, etc., would be same as in case of cistern, except depreciation would be greater, say 30% .....	27.00
Cost of excess soap made necessary by use of hard water (40% greater).....	9.60

Average gas bill for this family for cooking and heating water would be about \$3 per month or \$36 per year. Use of soft water eliminates scale and reduces gas consumption, thereby saving 15% to 30%, say 10%.....	\$ 3.60
Coffee savings would be same as cistern case; for hard water would be used although there might be a cistern.....	2.90
Minimum excess cost for using hard water.....	\$48.10
Cost of softener.....	39.35
Profit .....	\$ 8.75

A True Incident

In a small town there is usually much less smoke and dirt than in the larger cities and for this reason cistern water in the small towns is generally believed to be cleaner than that contained in cisterns in large cities.

However, the incident of the Ohio man, a village resident who took upon himself the annual duty of cleaning his cistern, reveals the answer to a little poem we read not long ago:

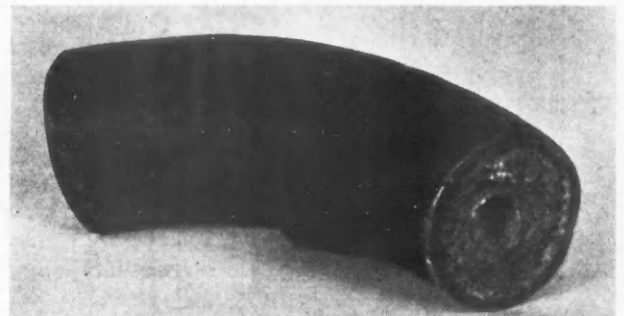
"I hear the patter of the rain  
 Upon the roof and down the drain.  
 What will the cistern now contain?  
 I wonder."

He put on his overalls and after bailing out the few remaining pails of dirty, filthy water climbed down to investigate.

What he found included two live frogs, innumerable pollywogs and tadpoles, a dead toad and a dead sparrow, to say nothing of over a basketful of rotten leaves, shingle splinters, soot and dirt.

The cistern today serves only as the storage tank for his oil burner fuel.

A water softener is installed in his home as well as in those of several of his neighbors.



Section of Copper Pipe Out of a Gas Water Heater Showing Deposit of Limey Scale Cutting Down the Flow to .10 Per Cent and Completely Insulating the Heat.



Shingles Swell and Shrink

IF shingles are extremely dry they should be laid so the joints will be at least 1/8 inch open, but if wet and water-soaked shingles are used, they should be laid tight. Training the judgment along this line will enable the mechanic to prevent buckling after the first rain as well as to prevent wide joints after the shingles have dried out.—  
 H. H. SEIGLE.



THE death of Mr. Wilbur Fisk Randall occurred on December 13, 1924. Mr. Randall, who was vice-president and treasurer of John Boyle & Co., Inc., at the time of his death, had been connected with that organization since 1883.



"*WHY* is This Water Softener Better?"



as low  
as  
**\$165**  
F.O.B.  
DAYTON

**B**ECAUSE Duro has brushed aside out-worn traditions and designed a softener that meets the requirements of the non-technical user.

The new Duro Softener has only one operating lever—the confusion and complication of valves and valve manifolds have been eliminated.

There are only three positions to the control lever, “soften,” “off,” and “regenerate”—each unmistakably marked on the dial.

It is supplied for either internal or external salting—with “yard stick high” salt pot.

It employs the upward flow principle. The upward filtering water eliminates packing and “channelling” of mineral.

Salt pot lid is faced by two rubber gaskets—it cannot leak or stick.

Rustproofed, with two coats of special baked enamel, inside and outside. It will last longer than the plumbing.

Built and guaranteed by Duro. Backed by Duro’s written guarantee of satisfaction.

*Demand Duro  
Further Information Upon Request*

**The Duro Pump & Mfg. Co.**  
102 Monument Ave. Dayton, Ohio

**DURO Water Softener**

*Duro Guarantees Satisfactory Water Service*



*This Symbol means What it Says*



# CORRESPONDENCE

*Questions Answered—Ideas Exchanged*

## 145 Foot Trusses

To the Editor:

Duluth, Minn.

Here is an interesting view of Duluth's new amphitheater in the course of construction.

The trusses are the longest "Tregillus" trusses ever made, the clear span being 145 feet, which is 20 feet longer than any former truss of its kind.

The contractor on the steel work attempted to raise a completely assembled truss by means of a "gin" pole, but failed on account of the flexibility of the truss members. He then resorted to the method of putting them up in three sections as shown in the photograph. Note the four end sections in place and steel workers bolting together the center sections. All sections fit perfectly, which is considered remarkable because the supporting columns were already in place and bricked in the walls. Any slight variation in the width of the building or the plumbness of the columns would have caused great difficulties.

The building is to be used as a hockey and skating rink in the winter and a general entertainment and dance hall building in the summer. There are ten miles of brine pipes under the skating ice, and these will be removed each spring and relaid each fall. This is a new procedure never before attempted. Next fall the pipes will be placed on a fine permanent maple floor.

The building is 140 by 310 feet and has a seating capacity of 5,000 around the ice.

The general contractor started the work on September 25, and the rink was to be opened on Thanksgiving Day, a record for the construction of such a building.

F. G. German is the architect and Jacobson Bros. the contractors.

G. B. GERMAN.

## Another Brain Teaser

To the Editor:

Detroit, Mich.

I am submitting the following problem to you in the hope that you will be able to help me in solving it.

A pole standing in the center of a pond with its end five feet above water level, on being swayed by the wind becomes submerged at a point fifteen feet from the center. What is the depth of the pond or with what radius was that imaginary circle drawn?

Of course, the best and easiest way would be to take the pole out and measure from the water mark down, but I would like to know how to go about it mathematically.

WILLIAM H. DUKE.



## Wants Simpler Replies

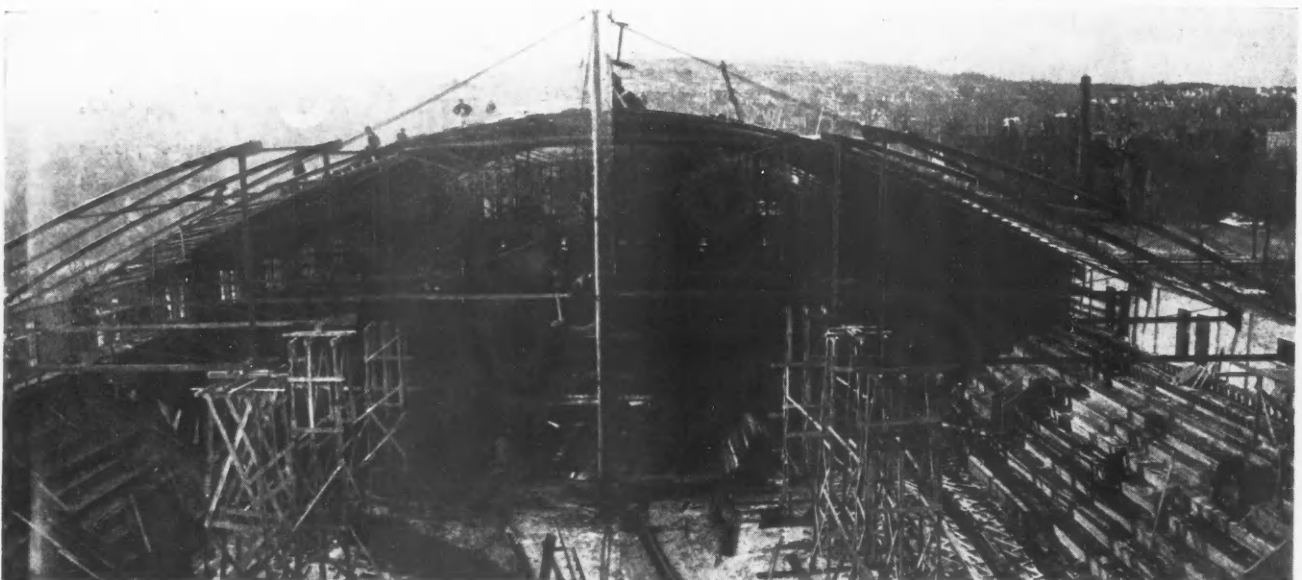
To the Editor:

Remington, Ind.

I like the AMERICAN BUILDER very much. However, I feel that in the Correspondence Department, if the explanations of problems were given in simpler language, less technical, it would be quite an improvement. To one not familiar with algebra problems solved in algebraic terms are all Greek and one knows, if anything, less about the solution than he does before it was started. So I think if these solutions were given in common everyday terms and language, also the diagrams, they would be more interesting and intelligible to the average person than as is too often the case.

I would also like information as to what figures on the square will give the mitre cuts both across the face and across the edge of plancier to fit in the valley connections on a one-half, one-third and one-fourth pitch roof. Also, on which figure is the cut?

C. W. HARNER.



The 145-Foot Steel Trusses in Duluth's New Amphitheatre Were Put Up in Three Sections as the Completely Assembled Trusses Could Not Be Raised by Means of a Gin Pole Because of the Flexibility of the Truss Members.

# Are You Still Carrying a Tool Box?

*And is it getting  
you anywhere*



Why not lay down the tool box and get into something for yourself, where you can be your own boss and take all of the profits?

Become an "American Universal" floor surfacing contractor. The "American Universal" electrically driven floor surfacing machine does the work of six hand scrapers and earns you six men's pay.

## Keep Busy During the Winter Months

Right now, during the winter months, the opportunity of a lifetime stares you in the face. Floor surfacing is all indoor work. Hundreds of old floors in every locality are waiting right now to be resurfaced at big profits to men equipped to do the work, and will keep you busy in winter as well as the summer.

**Make \$25.00 to \$40.00 a Day**  
with an

### **American Universal** FLOOR SURFACING MACHINE

Every day in the year, winter and summer, month in and month out. You need no special training. Anyone, old or young, can handle the "American Universal" floor surfacing machine. A small amount starts you in business for yourself.

Contractors and builders find the "American Universal" method of floor surfacing a profitable side line to keep the money rolling in during the winter and dull periods between their jobs, besides saving wages of six men on all of their own work.

Write or fill out the coupon today and ask for particulars and other valuable and interesting information which we will furnish you without any obligation on your part whatever.

### **The American Floor Surfacing Machine Co.**

515 South Saint Clair St., TOLEDO, OHIO

#### MAIL COUPON TODAY

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

Please send me without any obligation on my part full information as to how I can become an "American Universal" Floor Surfacing Machine Contractor.

Name.....

Street.....

City.....

State.....

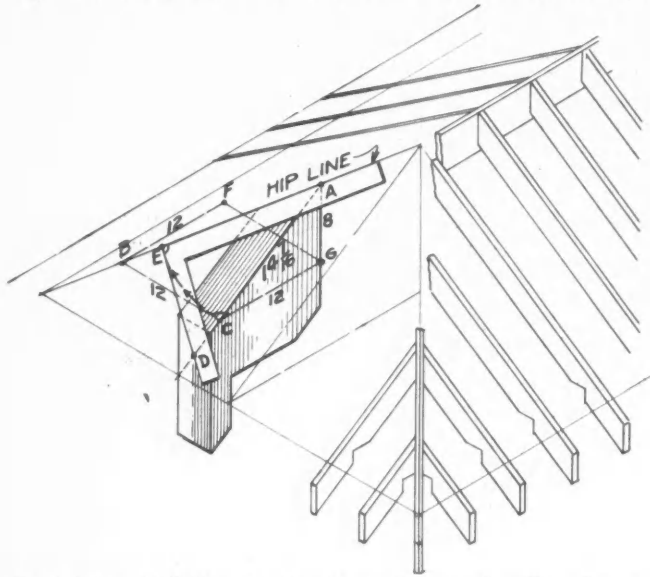


Side Cuts on Hip Roofs

To the Editor:

Chicago, Ill.

"I teach mathematics in a trade school. Once in a while the carpentry instructor brings in a problem which might be classed as solid geometry, but more or less strange to me. To a teacher of mathematics they are more interesting than crossword puzzles. A while ago we talked about jack rafters, and hip rafters, and so on. He showed me how a carpenter lays

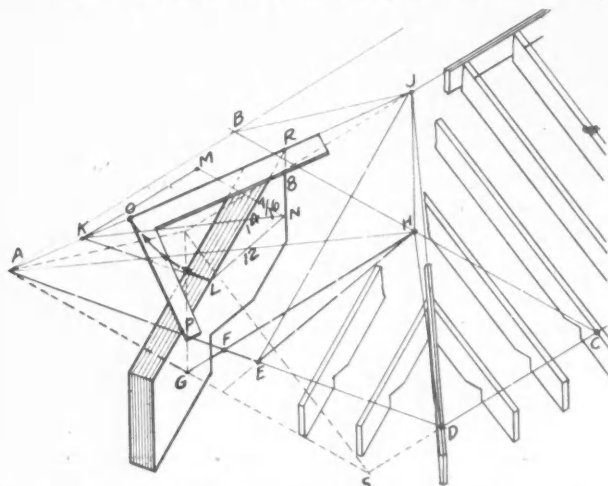


Explaining the Use of the Steel Square for Framing a Hip Roof.

off the cuts. The plumb cut was fairly easy for me, as I could see that the cut was straight up and down. But the side cuts had me going for a while.

"The sketches are for the two solutions as I worked them out to submit to you. They are for any reader's benefit or amusement after he reads the explanation. The first or 'even hip' is shown for a 'one-third pitch' roof. The plumb cut is 12 inches and 8 inches, giving a diagonal of very nearly 14 7/16 inches. Now, since C-B-F-G is a square, B-C would be 12 inches, as is C-G. And since the angle G-C-B is a right angle (the angle of the rafter with the plate), we have a right angle triangle, A-C-B, 12-inch base and 14 7/16-inch altitude. To use the square more satisfactorily we reverse the triangle. Thus A-C becomes A-E, and C-B becomes E-D. Am I right?"

"With the 'uneven hip' of the same pitch as the first there is a difference of S-D between the two sides of the roof. The common rafter on the hip end must meet the plate at right angles, as J-E, and in doing so makes the length A-E greater than E-D. The line of the shorter hip must bisect the angle



V. L. Sherman Explains Hip Roof Steel Square Work.

E-D-C. Now, since H-D is a line common to both triangles, H-E-D and H-C-D, and since H-E-D and H-C-D are both right angles, it follows that both triangles are exactly alike. The same method will prove triangles H-B-A and H-G-A exactly alike. Now take triangles A-G-F and F-E-H. Angles H-F-E and A-F-G are opposite and therefore equal. Angles A-G-F and F-E-H are both right angles by construction. The side A-G is one-half the span by construction and therefore equal to H-C. Now, since we proved H-E equal we know that H-E equals A-G and that the two triangles, A-G-F and H-F-E, are equal. So the line F-E equals G-F or one-half the difference of the roof lengths.

"The plumb cuts on the jacks are still 8 inches and 12 inches, giving a diagonal of 14 7/16 inches. But the line L-K is longer than 12 inches this time. (If it were on the short hip side it would be shorter). To get it you add half the difference of the lengths—that is, F-E—to the diagonal on the square between half the span and half the difference—that is, A-F—and substitute it for the line O-P on the steel square for the 12 inches in the even hip. Suppose the span of a roof was 30 feet and the difference was 13 feet. Then A-G would be 12 inches, G-F would be 5 1/4 inches and the diagonal 13 1/16 inches. Adding the 5 1/4 inches to this would make O-P 18 7/16 inches. And unless the difference was great in proportion, as it is in this case, I suppose the diagonal could be neglected altogether. Am I right?"

V. L. SHERMAN.

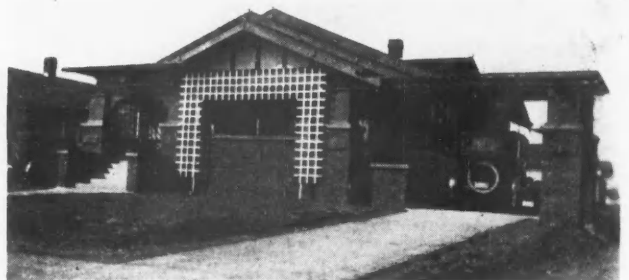


Good Bungalow Work

To the Editor:

Grand Island, Nebr.

Thinking that you and the other readers will be interested to see how we build homes in this neighborhood, I am sending



Two Bungalows Designed and Built by Walter D. Boyle, Grand Island, Neb.

you photographs of two of my recent bungalows. These are built of the best materials and equipped with all modern conveniences.

WALTER D. BOYLE.



"Creeping Soil Question," Answered

To the Editor:

Sacramento, Calif.

In answer to S. K. Fleming Home Building Company, in regard to creeping soils, I would suggest about 3 or 4 inches of dry fine sand in bottom of footings under concrete. I have used it under sidewalks in adobe soils with good results.

J. E. WESTOLY.

# lot more for 2¢

The majority of builders are more or less familiar with

## WHITCO

### CASEMENT AND TRANSOM HARDWARE

Most of them have seen our advertisements — many have been in correspondence with us.

But only those who have bought and used the 200,000 sets that have been sold and installed during 1924 really know why it is called

#### “THE EASY HARDWARE”

Hence, this offer:

If you are a builder, a contractor, a consulting engineer, or an architect, and are at all interested in better equipment for buildings — from bungalows and residences up to apartment houses, hotels, libraries, churches, schools, office buildings — even factories —

And will give us your firm name and address —  
Either on the coupon below or on your business stationery —

We will send you absolutely free of charge, except for the two-cent stamp required to mail us your request, a set of WHITCO HARDWARE, in solid brass, (the equipment for one casement sash or transom) the retail price of which is \$2.25.

This offer is absolutely free from conditions, except that you install this sample, either in your home, at your office, or on some job you have in charge.

Then you can see for yourself *How Much Simpler, How Much Easier, and How Much Better it is than any other Casement Hardware you have ever seen or used.*

There is no obligation whatever. All we desire is to have you know WHITCO as we know it. And this is the best way to introduce it to you.

Won't you meet us half way?

VITAL



You never clipped a coupon from a bond that was worth anything like this one.

Why not clip a coupon from our bond?

Date.....

**Vincent Whitney Company**  
**Massachusetts Trust Building**  
**Boston, Mass.**

We accept your offer to send us a set of Whitco Hardware, in solid brass, prepaid, as a sample, without charge.

Firm Name .....

Signed..... Position.....

Street and Number .....

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

We purchase builders hardware from the following dealers:

Dealer..... Address.....

Dealer..... Address.....

Dealer..... Address.....



## *Silence of Owner During Progress of Work as Waiver of Claim Against Contractor for Not Performing Work in Strict Accordance with Terms of the Contract*

By LESLIE CHILDS

**I**T goes without saying that it is the duty of a contractor to perform work in accordance with the agreement he has entered into. It follows that, generally speaking, if the work is not done according to the terms of the contract the contractor may subject himself to a counterclaim, or action for damages when he comes to settle.

However, if the owner intends to rely upon a claim of non-performance of the work in accordance with the terms of the contract to defeat payment, he must call the contractor's attention to the alleged faulty work within a reasonable time after he has notice of it. In other words the owner cannot, with knowledge of the fact that the work is not being done according to the terms of the contract, remain silent until long after the work is completed, and then come forward with a counterclaim for damages on account of the way the work was performed.

The application of this rule of the law of building contracts is illustrated in a number of well considered cases among them Morgan vs. Plotkin, a Michigan case reported in 189 N. W. 63. The facts out of which the action grew were, considerably abbreviated, as follows:

### **Contract for Pipe Covering Entered Into**

Morgan entered into a contract with Plotkin, the owner, to do certain pipe covering work in a building that the latter was having erected. The consideration for the work was \$1,325. The contract was in writing and contained among other things, the following specifications relative to what was to be done and the manner in which it was to be performed.

"Provide all the materials and perform all the work for the pipe coverings for the following: All steam risers in outside walls, all return risers in outside walls, all hot and cold water piping throughout, all steam piping in attic and basement, all underground returns to be encased in crock. \* \* \*" (Vitrified tile.)

Morgan commenced the work promptly and com-

pleted sufficient work to obtain the architect's certificate for \$800. He, it appears, had some difficulty in getting payment and only succeeded in obtaining \$600 on this certificate from Plotkin, the owner. He, however, thereafter completed the work insofar as possible with reference to the conditions in the erection of the building, and filed a mechanic's lien upon the premises.

The instant action was thereafter brought to enforce this lien, and resulted in a judgment in favor of Morgan, the contractor, for \$715 with \$78.50 interest. The owner thereupon carried the case to the Supreme Court of Michigan upon appeal, where in reviewing the record the following facts were brought out.

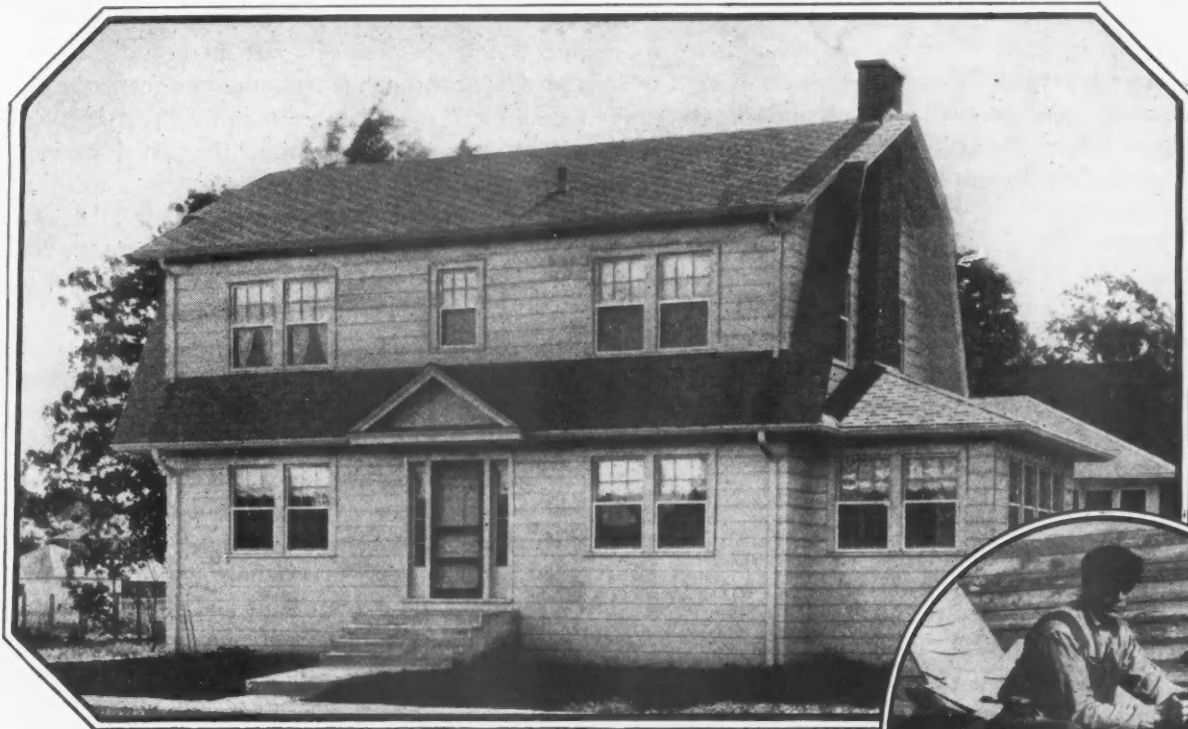
### **Owner Contended Work Not According to Contract**

Plotkin, the owner, in the lower court, contended, among other things, that Morgan had not complied with the terms of the contract in that he had failed to encase the underground returns in crock. The contention being that as Morgan had done this work otherwise than the way the contract called for the life of the pipes was shortened and the value of the building diminished.

In reply to this Morgan contended that the work as done was really better than the method called for by the terms of the contract. In addition it was shown that Morgan performed the work with the approval of one Applebaum, who was the only agent of Plotkin,



**It Appeared that Plotkin Had His Attention Called to the Manner in Which the Work Was Being Put In, and Made No Objection.**



## Increase the Value of the Homes You Build

Nothing gives a home greater individuality and distinctiveness than the roof. The type of roof, its attractiveness and substantiality frequently determine a home's sale and resale value.

Prospective home owners have come to realize this. They know the roof protects their *entire* investment.

The builder who senses this can get more for the homes he builds—just as breakfast nooks, disappearing ironing boards, built-in closets, book cases and window seats make a home more saleable.

When you roof with Ruberoid Giant Tee-Loks, you get this extra sale value and at no greater cost. Here are the reasons:

Ruberoid Giant Tee-Loks give you a roof of tile-like appearance. They offer greater headlap protection, are safer and more durable as the shingles can't lift with the wind. They are locked down.

Ruberoid Giant Tee-Loks can be applied at the cost of the ordinary four-in-one strip, for each shingle is self-spacing and self-aligning. There are 272 less nails to buy and drive.

Let us send you a sample of Ruberoid Giant Tee-Loks and pictures of attractive homes whose sale values have been increased through their use. The coupon will bring them and *without* obligation.

The RUBEROID Co.  
95 Madison Avenue, New York

Chicago

Boston

# RUBER-OID

## TEE-LOK SHINGLES

*The large photograph above shows a home roofed with Ruberoid Giant Tee-Loks. Note the heavy shadows of the double butts which give a tile-like appearance.*

*The photograph in the circle shows how they are laid. Note the 6 7/16 inch headlap.*



*There is but one Ruberoid.  
Look for the Man on the Label*

The RUBEROID Co., Dept. 1  
95 Madison Ave., New York

Gentlemen: I am interested in Ruberoid Giant Tee-Loks. Please send me samples and pictures of attractive homes whose sale values have been increased through their use.

Name.....

Address.....

the owner, on the ground. It also appeared that Plotkin had the manner in which the work was being done called to his attention when it was being put in, and that he made no objection. In fact the first Morgan appears to have known of Plotkin's dissatisfaction with the work was when the suit to enforce the lien was started by Morgan.

Plotkin, it appears, had in addition taken possession of the building and sold it, and during all this time he had not complained about the manner in which Morgan had done the work. In passing upon the effect of this silence of Plotkin, in respect to his right to bring forward this claim when the lien action was up for trial, the Supreme Court quoted, in part, as follows from the opinion of the trial court.

#### What the Court Decided

"It appears that the omission of the crock from the pipe in the basement was called to the attention of the owner during the progress of the work, and by the owner in turn called to the attention of the owner's architect. If the owner was not satisfied with the work as it was being done, this would have been the proper time for the architect to have compelled the contractor to tear out the work and do it properly. There is no evidence that either the architect or owner ever called this to the attention of the contractor, but permitted the work to continue, and, in my judgment, it is too late, on the trial of this lien action, to now complain of this omission."

In approving the foregoing conclusion of the trial court, relative to the legal effect of the silence of Plotkin, the owner, when the work was being done, the Supreme Court, among other things, said.

"Defendant [Plotkin, the owner] by his then silence and apparent acquiescence with full knowledge of how the work was being done, followed by taking possession of and selling the property, in effect ratified and accepted the job, and cannot at a later time under changed conditions to plaintiff's [Morgan, the contractor] disadvantage be heard to complain."

In conclusion the Supreme Court affirmed the judgment of the trial court in favor of the contractor. Holding, as outlined in the opinion, that the owner could not stand by, see work done in a different manner than was provided in the contract, not protest or object, and then long after, when the contractor was attempting to enforce his lien, came forward with the objection that the work was not done in accordance with the terms of the contract.



#### Handy Definitions

**H**ERE are some of the more important terms often used by home builders, real estate men, etc. They will be useful for reference.

"**FEE SIMPLE**" means absolute ownership of real estate. To hold land in fee simple means holding it free of all limitations and indebtedness. The usual manner is through purchase, as of a house or farm.

One may come by an estate in fee simple also through inheritance; or by process of court in the satisfaction of a judgment; or through foreclosure of a mortgage.

A "**LEASEHOLD**" describes a piece of property let for a long term period; 99 years is the usual period, though it may be less. The owner receives a definite income from the property, the tenant paying all taxes and assessments of every nature, and carrying the insurance expense.

An "**ABSTRACT OF TITLE**" is a greatly abbreviated copy of the record of all matters which have to do with a parcel of property. It should show all conveyances by way of sale, encumbrance, lease and release; all matters relating to taxes, unpaid or delinquent, and tax deeds; special assessments for public improvements; judgments in all courts of record and transcripts of judgments rendered by Justices of the Peace; probate court records; chancery proceedings, such as foreclosures, partition and divorce suits and all suits affecting wills; insanity—i. e., incapacity judgments; notices of mechanics lien claims. *An abstract of title is no guarantee or assurance that the title is clear.* It is useful in helping clear up defects or flaws in the title.

A "**FIRST MORTGAGE**" is a loan of money on land, and does not ordinarily exceed 50 to 60% of the value of the real estate given as security. When in a larger amount than can be usually handled by a single investor it is usually divided into First Mortgage Bonds, of different denominations, and among different holders. The unmortgaged portion of the land value creates the "Equity" the mortgage holder has in a piece of property. Thus a \$6,000 piece of property first-mortgaged with a 60% loan, or \$3,600, would possess the difference, or \$2,400, as equity; i. e., it would have that much added security.

A "**SECOND MORTGAGE**" is the same as a First Mortgage as to kind, but is "second" or subordinate to the First Mortgage. If the Equity justifies, the Second Mortgage can be negotiated. Since the security is not as great as a First Mortgage they are necessarily more expensive, though many property holders utilize them as a means of raising money in emergencies.

"**COMMISSIONS**" are lawful considerations provided for the licensed broker of a parcel of property, in return for his services in advertising and selling the property, in attending to bringing down the title and drawing all necessary papers for the transfer of the property.

"**GENERAL TAXES**" are levied upon all real estate, which owners are considered to have improved in a fair proportion to its value. General Taxes become a lien on the property assessed, and if they become delinquent the property owner is penalized. In most states, if the penalty rises as high as 12%—figuring at the rate of 1% a month—judgment and order of sale is entered and the county collector starts to sell the property for the unpaid taxes. Redemption of property on which the taxes have been permitted to lapse is an expensive, involved process.



# OF A BASEMENT

## Heatrola way

The Saturday Evening Post. Since then, double-page advertisements have been appearing in this magazine, stressing the advantages of this modern method of economical small house construction. The idea has been taken up by architects and builders everywhere—it is the outstanding modern development in small house design. On February 21, another double-page advertisement will appear in The Saturday Evening Post, giving builders and contractors another opportunity to tie up with this national appeal by featuring cellarless house construction in their own communities.

### What successful builders say

Frank F. Woolling, a prominent realtor and builder of Indianapolis, has applied the Heatrola cellarless house idea to the new North Brookside Park Addition in that city. He is building 200 "Baby Grand" apartment houses—each one a cellarless house, heated by Heatrola.

"This plan I consider the biggest step forward in building economy in a decade," writes Mr. Woolling. "I give Heatrola credit for making possible my 'Baby Grands.' I recommend the Heatrola building plan to anyone interested in small house construction."

In Mobile, Ala., Jacob Vander Sys, prominent contractor and builder, has definitely specified Heatrola as one of the major items of his house plans.

"In the total of our last twenty operations," writes Mr. Vander Sys, "Heatrola has been specified and placed. We anticipate its being used in at least 90 per cent of our future home building."

In Chicago, the A. T. McIntosh Company, the largest builders of small houses in the city, is using the Estate Heatrola as standardized equipment in their 1925 operations.

### Write for further information

Full details describing the Heatrola Cellarless House Plan will be mailed upon receipt of the attached coupon. Mail it today.

## THE ESTATE STOVE CO.

Hamilton, Ohio

Pacific Coast Office and Display Room  
366 Post Street at Powell, San Francisco, Calif.

Builders since 1845 of the famous Estates. A stove, furnace and range for every requirement—for cooking and heating with coal, wood, gas and electricity.

Permanent display in American Furniture Mart, Chicago, Ill.

## LAST CALL!

### Heatrola Cellarless House Contest Closes February 16th

Only a few more days and your last chance to share in the \$1,000 of prize money in The Heatrola Cellarless House Contest will be gone. For the contest closes on February 16th, and no plans bearing a postmark later than that date will be accepted.

The contest is for the best ideas for Heatrola-heated cellarless houses. Nine prizes will be awarded for the best ideas for one-story cellarless houses, Heatrola-heated, of four or five rooms. And nine other prizes will be given for the best ideas for two-story cellarless houses, Heatrola-heated, of five or six rooms.

Anyone can enter the contest. Draftsmanship will not be considered in making the awards. The ideas will be judged solely as ideas.

Remember—your plan must be received by February 16th, or bear the postmark of that date. You'll have to hurry!

## MAIL THIS COUPON!

The Estate Stove Company  
Hamilton, Ohio

Please send complete information about Heatrola and the Cellarless House Idea. ( )

Please send layout sheets for Cellarless House Contest. ( )

Name \_\_\_\_\_

Address \_\_\_\_\_

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

# HEATROLA

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

## New \$100,000 Upson Service to Solve All Wall Board Problems

By F. R. OTTE

**G**OOD wallboard has many points of merit. It is comparatively easy to apply. It possesses splendid decorative possibilities. But wallboard is a comparatively new product. While its sales have been increasing rapidly in the twenty years it has been on the market, the increase has not been nearly as rapid as it should have been—even though sales have increased something like 1,200 times in a decade—a remarkable increase.

Investigation shows, however, that the growth has not been even more rapid because wallboard, being a comparatively new product, carpenters have not known how to properly apply it in order to get attractive installations. They have used cheap, narrow lattice strips which have been stained in a contrastive color. They have not appreciated the possibilities of attractive panel schemes. They have not used interesting trim. Ugly nail holes, too, dotted all over the ceiling, have been another bone of contention. Many wallboard interiors have therefore looked cheap and unattractive; and in many cases the contractor has not been able to assign the real reason for prejudice caused by such installations.

I know from experience, however, that nothing is more beautiful than attractive and well-designed paneling. It is a scheme of decoration as old as Art itself, dating back to Greek and Roman times and used in every period of decoration from the early centuries down to the present time—whether the material used was marble, plaster, steel, wood or wallboard.

The paneled room, in fact, is restful and satisfying. But the paneling of wallboard has not been as well done as the paneling wherein plaster or other materials was used for the walls and ceilings.

In an effort to correct this condition, The Upson Company, manufacturers of Upson Board, Lockport, N. Y., sent investigators to many states. Hundreds of wallboard installations were personally investigated and checked as to workmanship, design and general satisfaction. The results of this trade investigation were finally summarized into two simple causes:

(a) Poorly designed panel schemes; (b) Improper application.

With these basic facts before them the course of action seemed clear. Good wallboard must be put in its proper place before dealers, contractors and consumers. They must be shown what beautiful interiors were possible with Upson Board. They must be shown just how wallboard walls and ceilings should be designed. They must be shown how a good wallboard must be applied in order to get interesting walls and ceilings of lasting beauty.

Months were spent in mapping out preliminary plans. When these tentative plans were completed, several of America's foremost architects were called in to co-operate. These architects took the rough plans as laid out by the Upsons and their associates and worked them up in detail from the architect's viewpoint.

Finally the blue prints were completed and approved. The method of presenting them was worked out. And

1925 sees the announcement of one of the greatest services to contractors and lumber dealers, I believe, that has ever yet been worked out. The work means an outlay of more than \$100,000.

"How can you justify this expenditure?" I asked Mr. W. H. Upson, secretary and treasurer of The Upson Company, in charge of sales.

"For ten years," Mr. Upson said, "we have been endeavoring to make a high-class wallboard that was fittingly adapted for use in the finest of homes. We honestly believe it is the nearest-perfect wall lining. It has not been satisfying to us, however, to have a comparatively small percentage of contractors as well as of the public believe that wallboard was a temporary lining, best adapted for attics, garages or temporary uses.

"We therefore came to the conclusion that it was our duty to clearly point out in some practical way the beauty and utility of Upson Board. The new Upson Service is simply a reflection of modern merchandising which looks to the sale of a Service along with the product.

"Every contractor knows that in using wallboard he has met with little disappointments in its proper application. A few of these points of doubt have been 'What kind of moulding should be used on an attractive job?' 'How can

the wallboard be finished when used in connection with openings made for lath and plaster?' 'How can the room be attractively paneled when the old plaster and baseboard is left on?' 'How should the ceiling angle be finished in order not to have a cheap-looking job?'

"These are just a few of the hundred questions that come up in connection with the application of wallboard. To the minds of the Upsons the answer was **education**. The craftsman must be shown **how** and the duty of demonstration was up to the manufacturer."

"In the Upson Blue Book, as we call our new service, we have tried to give a complete

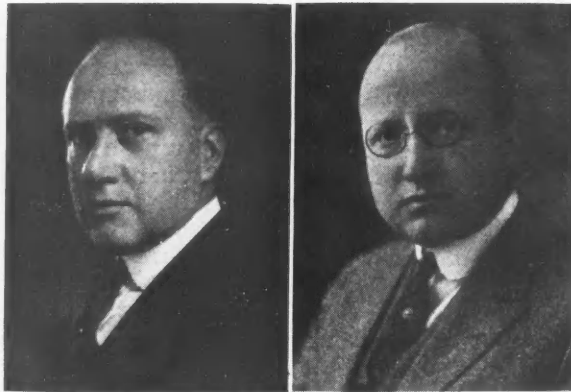
and detailed course of instruction in the design and use of wallboard. One famous architect has called it the 'encyclopedia of wallboard.' One of the largest lumber dealers of America has called it 'the most amazing service he has ever seen.' We, ourselves, are proud of our effort for we believe this new Upson Blue Book is one of the most practical helps ever offered the carpenter and contractor by a manufacturer of building material."

I opened the book and was amazed at the completeness of its contents. I found it contained 50 full-sized blue prints all drawn to scale with a wealth of detail that I knew contractors would appreciate. I found it contained every detail necessary for artistic paneling for any period—graceful friezes, proper mouldings and angle adaptations.

In addition, the blue prints were supplemented by nearly twenty pages, some in full color, showing just how a good wallboard job should look when the job is completed.

So, with an era of remodeling and repairing ahead of us, I believe every contractor in America should immediately familiarize himself with this remarkable book.

It will be placed in the offices of lumber dealers throughout the country who handle the product manufactured by The Upson Company as a reference book for builders.



C. A. Upson, President, and W. H. Upson, Secy.-Treas., The Upson Co., Lockport, N. Y., Are Placing a New \$100,000 Blue Book and Wallboard Construction Service with Their Lumber Dealers for the Use and Benefit of Contractors and Carpenters.

# MOTOR TRUCKS *and* TRAILERS



## Some Hints to Save Your Trucks

**A** PROMINENT New England building contractor recently compiled the following brief list of suggestions to the motor truck drivers in the company's employ. The list was typewritten and placed as a bulletin in the garage. Other builders will find they can use this or a similar list to a most profitable advantage.

1. For the sake of safety in driving, the steering wheel should be neither too stiff nor too free.

2. If the brakes are employed gradually when coasting to a stop, considerable wear on the tires will be saved.

3. When the motor shows a tendency to overheat, the cause should be immediately ascertained.

4. To park a car parallel with the curb in a space but a little larger than the length of the car is comparatively easy if you know just what to do. Drive into the space and then out, then cut the front wheels sharply to the left and back into the space. You can then cut close to the curb by driving the car backward and forward in the space a few times.

5. In ascending a hill don't wait until the last second to shift to a lower gear. Doing so not only loses speed and overtaxes engine but also consumes more gasoline. On one test trip the gears were shifted at a speed of 10 m. p. h. and on the other at a speed of 5 m. p. h. In the two trips over the same stretch of road with a truck having a total weight of a little over 4 tons, the average speed was approximately the same in both cases. In one case consumption was at the rate

of 4.2 miles per gallon and in the other 3.5. With more knowledge concerning economic driving a considerable reduction can be made in the gasoline consumed each year.

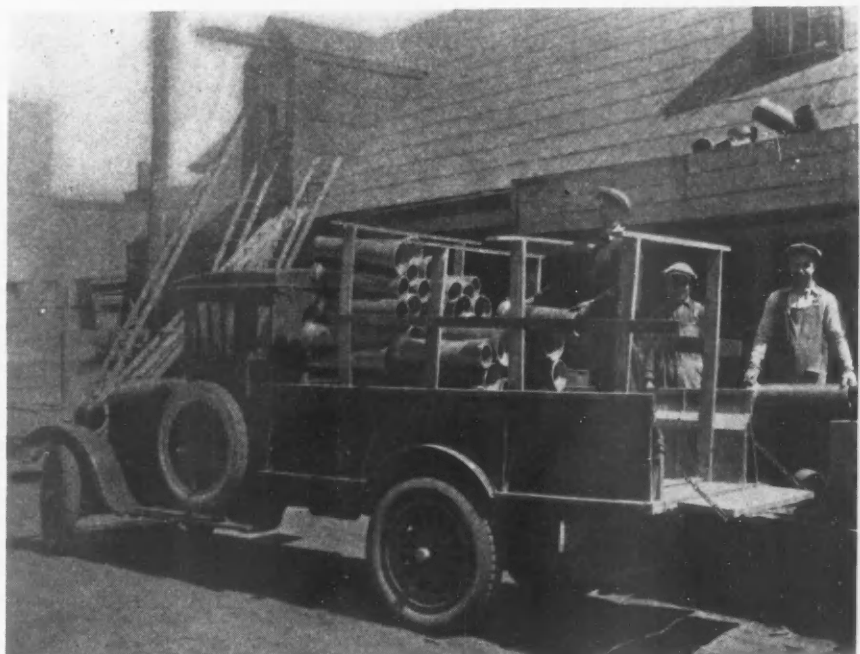
Another concern recently printed small cards with a few well chosen remarks addressed to the drivers and posted them in the cabs of the vehicles. The copy printed on these cards is reproduced herewith:

### Give Your Truck a Chance

This truck represents an investment of a considerable sum of money. It is entrusted to your care. Honesty and self-respect demand that you give it a chance.

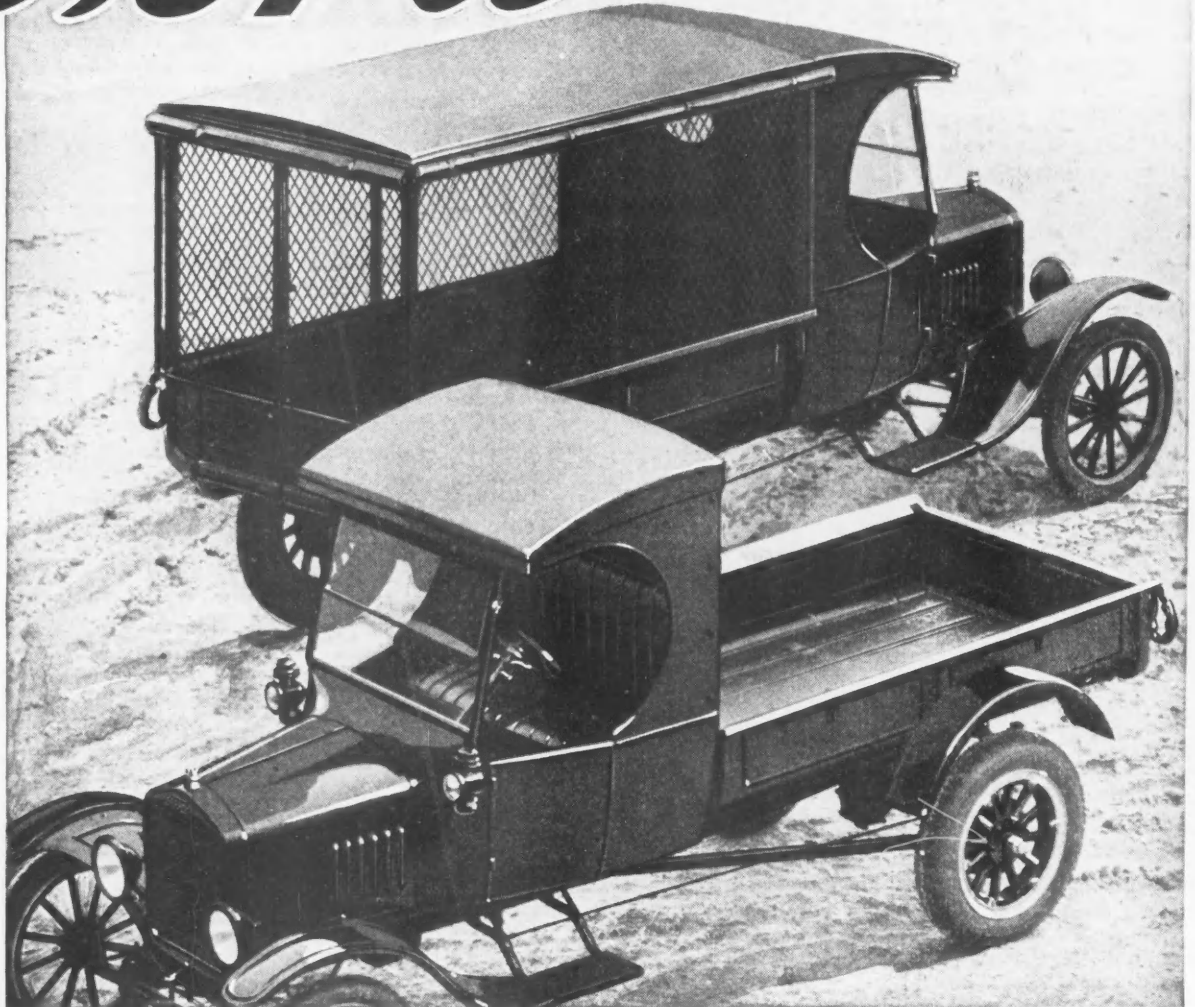
LUBRICATE IT REGULARLY AND THOROUGHLY.

Refer to Lubrication Chart daily.



For Quick, Sure Delivery of Materials on a Construction Job the Light Truck Will Usually Do the Work But for Special and Heavy Hauling a Different Type Is Needed.

# Ford



## The Biggest Value In a One Ton Truck

*Ford One Ton Truck  
With All Steel Body  
and Cab - - \$485*

*With canopy roof, side  
curtains, screens and  
end doors - - \$540*

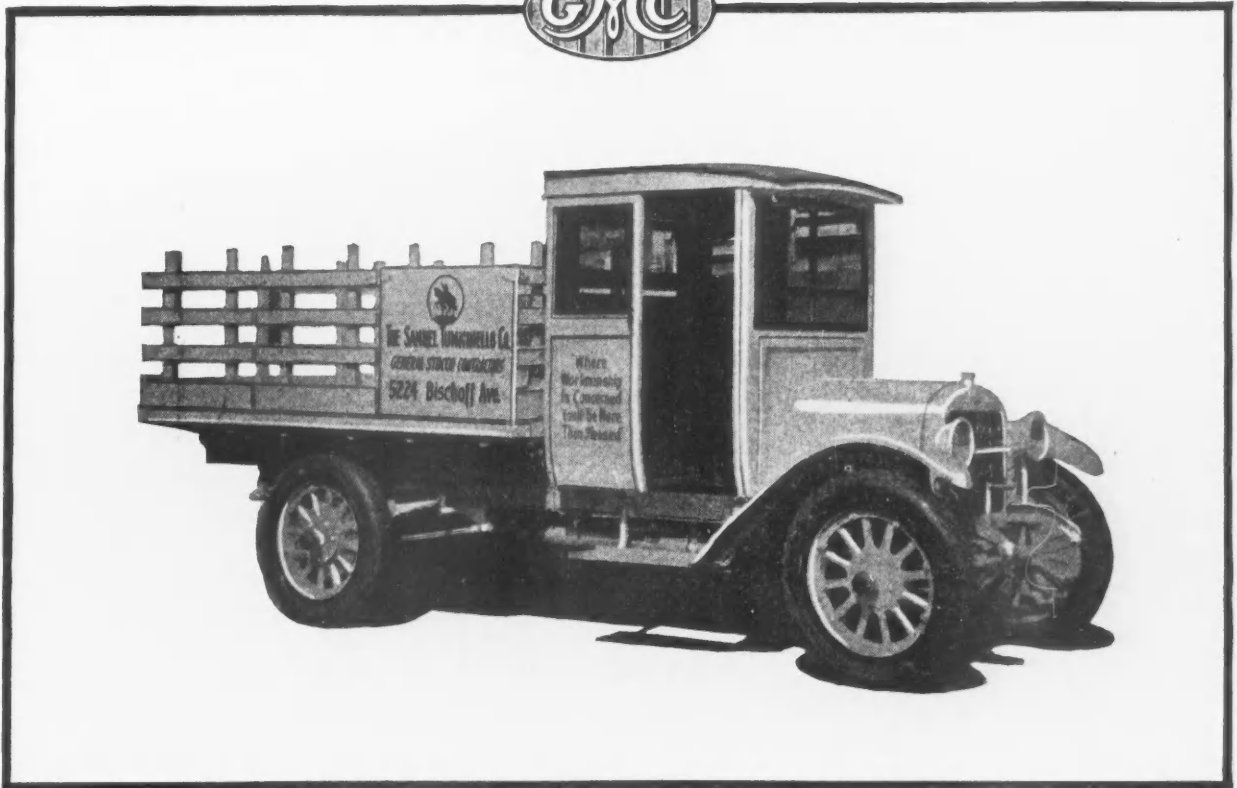
*One Ton Chassis \$365  
All prices f. o. b. Detroit*

Results obtained from actual service in lines of business where rapid transportation is required, have made the Ford One Ton Truck the Standard rapid delivery unit.

Its work is dependable under all conditions of traffic; it represents only a very small item of expense, both in operation and investment. It is easily the best value in truck transportation ever offered.

*Authorized Ford Dealers can supply data on cost of operation covering every line of business involving motor transportation.*

*Ford Motor Company*  
Detroit



## Back of GMC

An important safeguard to any truck purchase is the stability of the institution which built the truck.

The differences in truck design simply amount to this: whether a truck was merely built to sell, or whether it was built to do better work longer—like GMC.

GMC truck engineering experience goes clear back to when the truck industry began. Constant experiment and test in General Motors Research Laboratories to find and perfect overstrength materials and parts; the increased purchasing power of a General Motors Division; and finally the General Motors determination to let no one build a better truck—all these are reasons why your GMC will show you greater value and stamina for more years.

There is a valuable new GMC booklet on Motor Truck Operation and Care. Mail the coupon for your copy.

**GENERAL MOTORS TRUCK COMPANY**  
*Division of General Motors Corporation*  
 PONTIAC, MICHIGAN

## General Motors Trucks



CLIP AND MAIL

General Motors Truck Co.,  
 Department 9,  
 Pontiac, Mich.

Send me the GMC booklet.

Name .....

Business .....

Address .....



KEEP THE MOTOR CLEAN.

DO NOT NEGLECT THE VALVES.

Check them carefully whenever you notice lack of compression. If valves do not seat perfectly you cannot get full power, and there will be an increased consumption of gasoline and probably burnt valves and valve seats.

DO NOT NEGLECT MINOR REPAIRS OR ADJUSTMENTS.

CAREFULLY EXAMINE STEERING AND BRAKE RODS DAILY.

DO NOT TAMPER WITH THE GOVERNOR.

If you do, you cancel the guarantee, and, sooner or later, will get your truck into trouble.

DRAIN THE CRANK CASE AT LEAST ONCE A WEEK.

It is economy to use high-grade oil.

DO NOT RACE YOUR MOTOR.

NEVER IDLE YOUR MOTOR UNNECESSARILY.

It results in excessive carbon, trouble and expense.

DRAW UP ALL LOOSE BOLTS.

Never neglect rattle—fix it at once.

THIS TRUCK SHOULD BE INSPECTED EVERY THIRTY DAYS BY A COMPETENT MECHANIC.

TRAVEL SLOWLY OVER ROUGH ROADS.

*DO NOT OVERLOAD.*



### Save Gasoline

THE following are a few suggestions to help you in reducing the gasoline expense on your motor truck cost

account: (1) Turn the engine off when the truck is standing still; (2) See that the carburetor is adjusted to give the leanest mixture possible, and above all, see that it does not leak; (3) Be sure the spark is properly timed and always drive with the spark well advanced on the throttle; (4) Remember that a truck going at high speed uses more gasoline than one going 15 or 20 miles an hour; (5) Don't accelerate quickly, as this floods the carburetor and wastes gas; (6) On long grades, stop the engine and coast, or at least throttle down the motor; (7) Gasoline wastes rapidly if exposed to the air. Be sure to keep all containers airtight; (8) Use washing powders and kerosene to cut grease. Gasoline is too expensive; (9) Shut off your gasoline at the feed pipe when your truck is to stand for any length of time; (10) Don't have dragging brakebands and see to it that all bearings run freely.



### A Hint on Truck Economy

HAVE you ever noticed that most trouble with springs, axles, wheels, tires, etc., is on the right hand side of the truck? This is because most roads slope on the sides, and, since it is necessary to keep to the right in driving, the right wheels are caused to ride on a lower plane than the left wheels. It is well, for this reason, to take advantage of the full road in open stretches where it can be done with just consideration for others, and to give particular attention to adjustments and general care of the right hand side of the chassis.

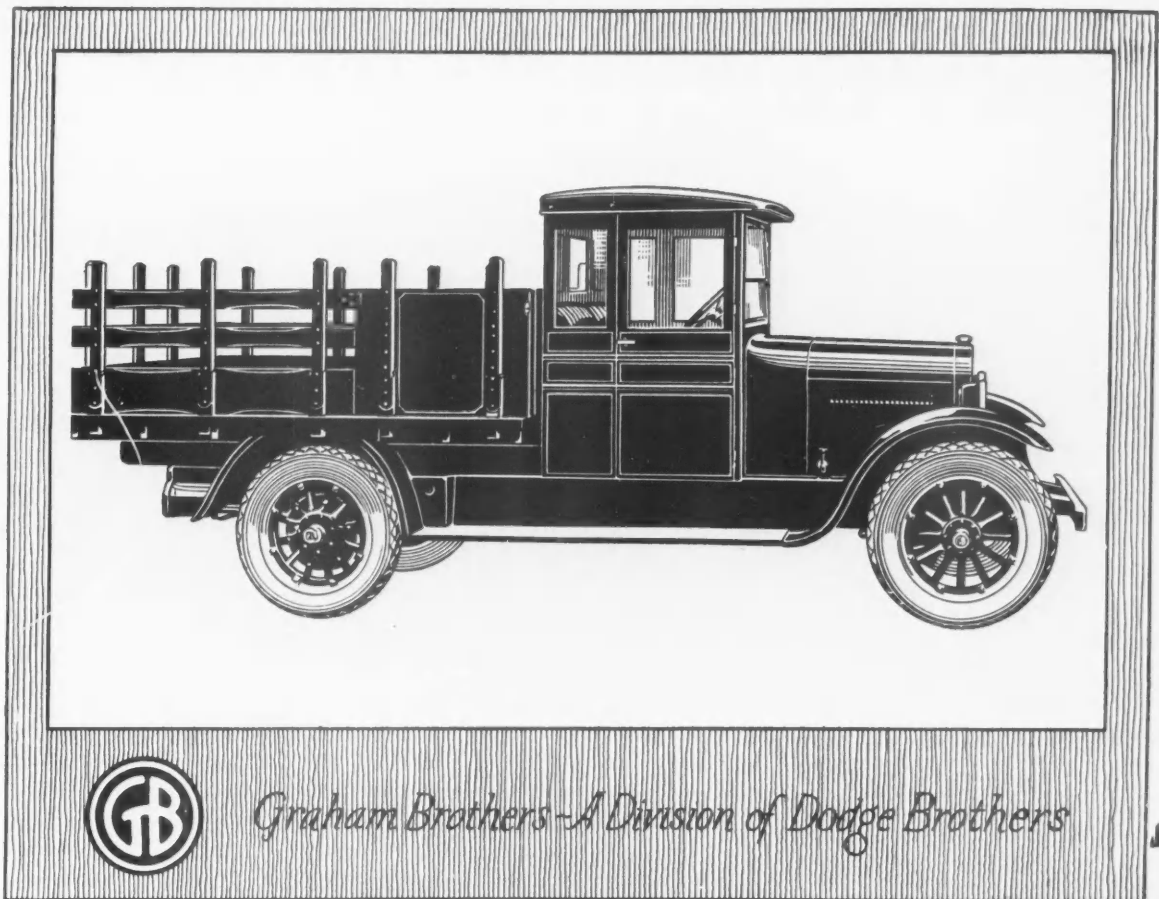


### When Loading Your Truck

MANY truck operators neglect to take care in loading, to see that the load is evenly balanced on the body. It is often a matter of habit to place the load in one particular position every time, which, of course, causes premature wear on the chassis at that point. It is always best to place the greater part of the load toward the front of the body.



Here Is a Fine Example of the Quick Transfer of Bulk Material Direct from the Railroad Car to the Job by Means of a Power Loader and Light Trucks. With such an equipment there need be no delays, no tying up of needed cars by slow unloading methods and no expensive handling.



## A Body for Every Business

When you buy a Graham Brothers Truck you have your choice of the largest line of standard bodies in the industry. Whatever your requirements may be, Graham Brothers can supply you at a minimum cost.

*1 Ton Chassis, \$1175; 1½ Ton, \$1375; f. o. b. Detroit*

**GRAHAM BROTHERS**  
Detroit & Evansville  
A DIVISION OF DODGE BROTHERS

# GRAHAM BROTHERS TRUCKS

*SOLD BY DODGE BROTHERS  
DEALERS EVERYWHERE*

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# Kinks Seen on the Job

By DALE R. VAN HORN

**D**O you remember when you climbed up on the roof of that two-story house, and in getting ready to mark that pesky finish board, bent down and just as you reached for the pencil it slipped out of your pocket and fell to the ground? I do.

But it remained for a young chap up in Dakota to solve the problem of how to keep your pencil while standing on your head. At least he was the chap that showed me this stunt. He carried his pencil in the little lean-to on the side of his watch pocket in the bib of his overalls. He'd been having the same luck. So he gets a piece of rubber tubing one quarter of an inch in diameter, splits it through the middle and bending it double with the open or concave sides together, slips it into his pocket. A few stitches of thread at the top held it in place. The halves of rubber form a sort of groove for the pencil to slide into and the friction keeps it from falling out, though it is easily removed. Makes sort of scabbard, you know.

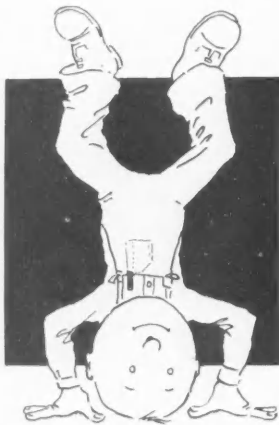
## Chalking the Steel Square

I don't remember where this idea climbed aboard. Somewhere in Kansas, I think. Anyway I stopped to chat with a carpenter one day who was building a chicken house in the edge of town. He had the earmarks of a veteran of the trade and I wish now I had pumped him for a whole armful. I know he had them.

Well, his square was all rusty, but I noticed the figures stood out plain enough. They were white. "How come," I asked. "Chalk," said he. Truth. All he had done was to smear the figures with chalk and rub off the surplus. (This wasn't very clever.)

## Small Electric Woodworker

Out in College View, Nebraska, Mr. Frank Stone, though that isn't his name, saves a lot of time and work by the use of the portable power saw he uses. The motor is a one horse, one hundred and ten volt A. C. affair that he picked up, I think, at a bargain. The table with tilting and otherwise adjustable top is an integral part of the whole saw. It is substantially built, yet light enough for two men to easily hoist it in the truck when they saunter forth for the next job. Mr. Stone specialized in interior finishing and usually the house is wired when he arrives. It is a simple matter, then, to connect up the motor with the current. This



Keep Your Pencil While Standing on Your Head.

saw is capable of doing all the ordinary work of a commercial job of the kind, and while the latter might prove the more efficient in the end, this just fills the bill when that two hundred bucks (or so) are not handy. Anyway it will save enough in a few months to buy a brand new brother.

## Making Perspective Sketches

I stepped into a lively little shop one day not long ago. A fresh coat of paint proclaimed the fact that the owner must be making a living. He (the owner) was at a big drafting table in the rear, laying out a sketch, it seems, of a prospective home.

Turning around he saw the question in my eye. "What are you wondering about," he asked. I told him I was just complimenting him on the easy way he had of throwing down perspectives.

Two straightedges were used. A small block was mortised into the outer end of each and a small hole made through the joint, in line with the edge being used. Small nails were driven into the drawing board, both upon the horizon line, and at opposite ends. One straightedge was used for one vanishing point, the other for the other.

This man found that contracts were often brought about without delay by simply showing the prospective owner how the house would look when finished. A half hour at the table enabled him to reduce the contemplated structure to three dimensions and convinced the owner in a tenth the time it would have taken to point out the details of a set of working drawings. I thought that was worth remembering.



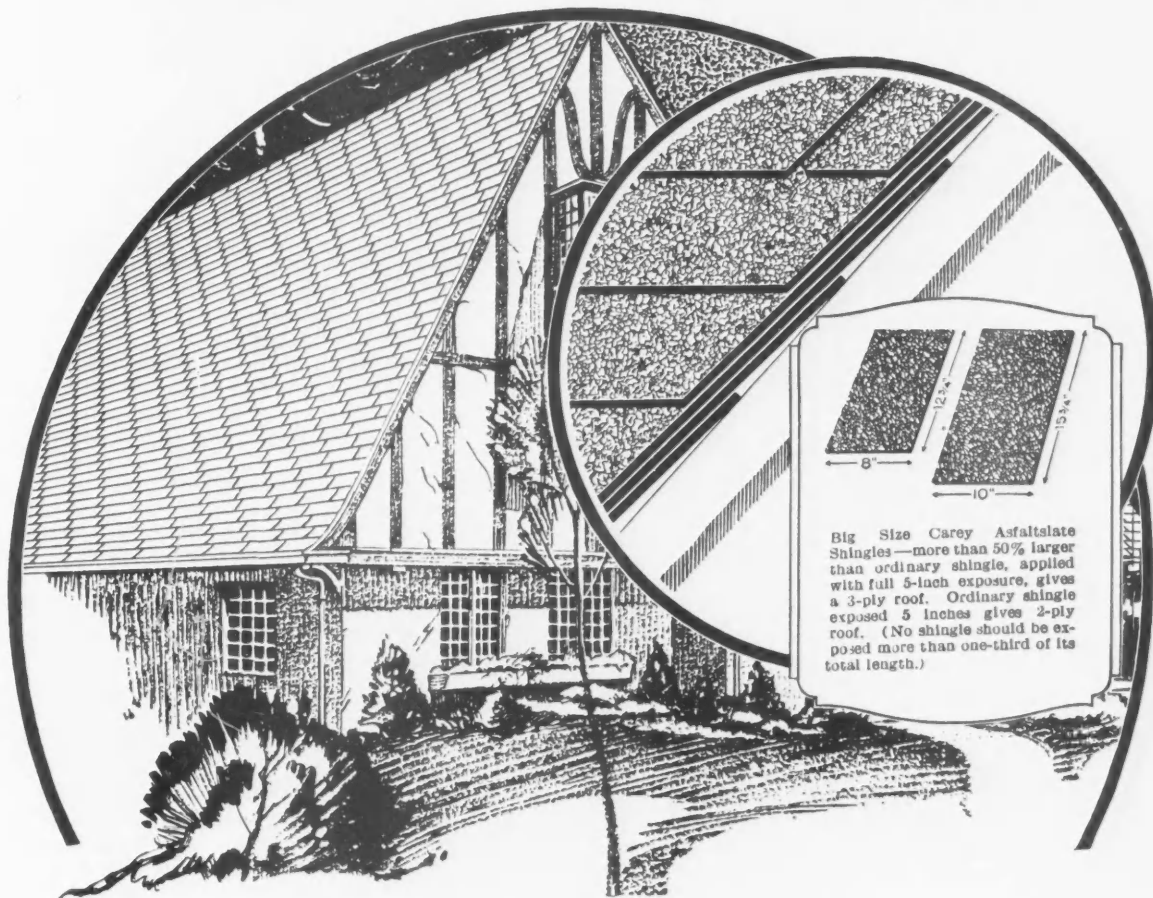
Quick Perspectives and Quick Contracts.

## A Nail Bag Kink

A fellow working on a big barn had a way to keep his nail bag from sagging. He found (who has not) that when sixteen or twenty spikes are placed in the pocket, some of them get worked around endwise and prop the opening wide. The remedy was simple. Two pieces of tin, bent to the form of the pockets, were sewed between two thicknesses of cloth, one thickness of the tin going down and the other coming up with the bend at the bottom. The cloth protected the hands from the tin. With this arrangement, the pocket could be shaped as desired and propped open when nearly empty or when small nails were being carried and nearly closed again when larger nails or spikes were being used. The device seemed to have a faculty of arranging the nails, too, in neat layers.



# The **BIG SIZE** offers the **BIGGER VALUE** you're looking for



Big Size Carey Asfaltslate Shingles—more than 50% larger than ordinary shingle, applied with full 5-inch exposure, gives a 3-ply roof. Ordinary shingle exposed 5 inches gives 2-ply roof. (No shingle should be exposed more than one-third of its total length.)

**W**HEN you use the **BIG SIZE** Carey Asfaltslate Shingle on one of your jobs you are giving more roof value for the money your client pays you. This shingle makes a better roof because it is heavier (weighing approximately 300 pounds to the square) and thicker (it makes a very deep shadow line).

This **BIG SIZE** Shingle is 10 by 15<sup>3</sup>/<sub>4</sub> inches, and allows a 5 inch exposure, yet gives a three-thickness roof. This means quick, easy, eco-

nomical application. You save time and nails—and you serve your customers better.

And, of course, you have the most valuable sales argument in the building industry—"the Shingle that Never Curls." This shingle is generally preferred.

In the new and distinctive silver green, blue-black and red—natural slate surface. Use the **BIG SIZE** Carey Asfaltslate Shingle on **ALL** your jobs. Ask your supply dealer, or write us. We'll see that you are supplied promptly. The coupon will bring the information.

## THE PHILIP CAREY COMPANY

510-530 Wayne Ave., Lockland, Cincinnati, Ohio

**Carey**  
ASFALTSLATE  
SHINGLES

**THE SHINGLE THAT NEVER CURLS**

THE PHILIP CAREY COMPANY,  
510-530 Wayne Ave., Lockland, Cincinnati, O.

Gentlemen: Please send copy of "Before You Build" booklet to

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

# ELECTRIFY ALL BUILDINGS

## A Department of Up-to-date Information for all who Plan and Build

## Portland Girl Wins Home

Prize Awarded by the Lighting Educational Committee in Contest Organized by the Electrical Industries of the United States and Canada

**C**OMPETING with over 2,000,000 school children in the United States and Canada, of which nearly 1,000,000 actually submitted fairy tales, verses and essays in the Home Lighting Contest, Julia Groo, 87 North 23rd Street, Portland, Ore., 18 years of age, was decided the winner of the \$15,000 model electric home, offered by The Lighting Educational Committee, 689 Fifth Avenue, New York City. This home will be built on a lot provided by Miss Groo anywhere she desires. Ten other boys and girls in various portions of the United State and Canada received scholarships ranging in value from \$300 to \$1,200.

The judges selected the winning essays from over 45,000 prize winners in 4,784 local communities in the United States and Canada. Each community was allowed to submit 10 to 50 local winners for the judges' consideration, according to its population.

With the use of a Home Lighting Primer containing lessons on home lighting, the contestants were obliged to do three things in the competition: First, to make an investigation of their own and two neighbors' homes and report in the primer of the lighting conditions therein. Second, to cut fixtures from a catalog in the primer and paste them in what they thought were the proper places in the "lightless" illustrations of rooms also contained in the primer. Third, to write an essay explaining how they would change the lighting equipment in their own homes to conform with present day lighting standards. Miss Groo was adjudged



Julia S. Groo, Age 18, Portland, Ore., Winner of the \$15,000 Home of the International Home Lighting Contest Conducted by The Lighting Educational Committee.

the winner because she compiled most rigidly with the rules of the contest and presented an essay which was clear, well written and adequate.

The five boys and girls who won scholarships are as follows: Two second prizes of \$1,200 scholarships in American or Canadian colleges:

Gaudencio R. Pinaroc, 451 Elwood Avenue, Oakland, Calif.

Dorothy Lathe, East Aylmer, Quebec, Canada.

Two third prizes of \$600 scholarships in American or Canadian colleges:

John Patten Crawford, 1226 West Walnut Street, Kokomo, Ind.

Lucile Brewer, Gainesville, Ga.

Two fourth prizes of \$600 scholarships in American or Canadian colleges:

Joe Kelly, 839 East Washington Street, Martinsville, Ind.

Irene Kline, 274 State Street, Lowville, N. Y.

Two fifth prizes of \$300 scholarships in American or Canadian colleges:

Roswell Edward Brett, 937 Gotham Street, Watertown, N. Y.

Mary W. Holman, Huntsville, Mo.

Two sixth prizes of \$300 scholarships in American or Canadian colleges:

Everett Ehler Wigger, 40 North Main Street, West Alexandria, O.

Eleanor Kathleen Link, 58 Aurora Street, Lancaster, N. Y.

The prize-winning essay, "A Well Lighted Home," is printed in full on page 218, just as it was submitted to the committee by Miss Groo.

# H & H SQUARE No. 8601 HANDLE

## Tumbler Switch

### *A Newly Added Style —Now Optional*

THIS style is coming to hold a place in the preference of many a builder and novelty-seeking owner.

To fill that place—to the builder's credit—the new Square Handle is *optional* in the H & H Shallow Tumbler No. 8601, made formerly with *round* handle only.

The design of the handle makes plates fit trimly, even when the switches beneath are not mounted precisely or at uniform distance from the plates.

The switches and plates are interchangeable with other makes of square handle switches and slotted plates.

To obtain this switch, specify 8601 *Square*. (It does not displace the *round* handle style which is furnished unless "square" is specified.)



### *"The Switch with the Balanced Movement"*

THE Square Handle "8601" has the selfsame mechanism as the round handle style—famous for its easy-throw, quiet action.

It works as if the up-and-down movement were *balanced*. When you start the lever you store up energy in a compression spring. At the point where you'd meet with the most resistance, this spring-energy is released—thrown back of your press—helping to throw the lever.

With a lever action the smoothest ever is a switch action the *surest* ever. And the lack of strain, the quieted impact, adds years to the life of a switch.

Such is the quality behind the H & H new Square Handle—made available for *all* your jobs in this competitive-price switch.

*With 8841 Plate*

**THE HART & HEGEMAN MFG. CO. HARTFORD, CONN.**

## Essay Which Won First Prize

(As Submitted by Miss Julia Groo)

### "A Well Lighted Home"

WE do not keep a horse and buggy simply because our father had one. Instead, we use the new and more serviceable means of travel. The man in the office, the factory manager, the contractor all continually strive to find labor saving devices. They do away with antiquated apparatus and replace it with machines for increasing output. Greater production by the individual is a demand of the times.

Yet when these same men reach their homes the thoughts of advanced methods and conveniences seem left behind. They retain lighting equipment which was probably considered the best when it was installed but which is now obsolete because of the developments in the industry and the knowledge of proper lighting learned from experience and investigation.

Careful thought was given to the lighting of our house and has resulted, I believe, in our having a well lighted home. It is well lighted since each fixture was selected to provide sufficient light where it might be needed. A center light gives general illumination, while portable lamps placed by easy chairs, for reading or sewing, bring the light directly where desired. A shade in harmony with the fixture and the room covers each bulb but all are dense enough to prevent glare or eyestrain. Some are glass, some are silk and some are parchment, each being adapted to its surroundings. The basement shades are metal.

Small bulbs are used in decorative lamps to prevent annoying bright spots; frosted bulbs, where there is a possibility of their being seen with discomfort. Portable lamps are placed on each side of the mirror on the dressing tables

Statistics on the Home Lighting Contest	
Quota of towns set to be organized.....	1,500
Number of towns actually organized....	4,784
Population of towns organized.....	48,416,069
Percentage of population organized with population served with electricity.....	74%
Number of manufacturers subscribing to campaign .....	159
Number of communities having co-operation of schools.....	3,000
Number of communities making campaign part of school curriculum.....	500
Total number of pieces of material distributed by National Committee.....	10,057,000
Total number of people taking active part in campaign.....	40,000
Primers and essays submitted by communities not organized.....	106

and brackets on each side of the bathroom mirror to illuminate the features on both sides, thus avoiding shadows. The shades prevent a bright light from being reflected into the eyes.

Each room has bulbs in excess of one watt per square foot and since the walls are light, very little light is absorbed by them, thus avoiding the necessity of larger bulbs.

The center fixture in the living room has two 150-watt bulbs. There are two floor lamps and one table lamp, each containing two 40-watt bulbs. The brackets over the man-



## I am a TORK CLOCK

I turn electric lights "on" and "off" regularly. My first cousin TORK TIMER turns 'em on and off each time you wish.

We are both standard in price and service throughout the United States.

Write for copy of Tork Manual which explains why your electrician likes TORK CLOCKS and TORK TIMERS the best for time controls.

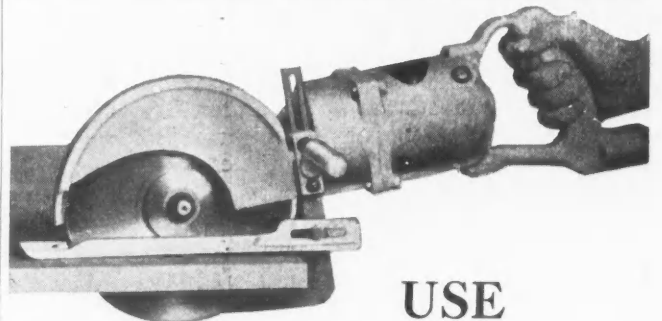
## TORK COMPANY

8 West 40th Street, New York

TORK PRODUCTS for ELECTRICAL SERVICE

P. S. A blind man can make a perfect joint with WIRE-NUTS. If you are interested in good electrical work ask for facts regarding this material.

## CUT CUTTING COSTS



## USE SKILSAW

The portable electric circular saw. Cuts on the line accurately, straight and clean and therefore eliminates costly trimming operations. *Speed and accuracy mean lower cost of production.* SKILSAW will speed up the work and cut down the cost.

Contractors, shop superintendents, and mechanics claim SKILSAW to be the most indispensable tool in their equipment.

Write us today for additional information.

**MICHEL ELECTRIC HAND SAW CO.**  
166 East Grand Avenue Chicago, Illinois  
Telephone Superior 0335



tel and two small decorative lamps each have a 15-watt bulb. Four single convenience outlets permit re-arranging the furniture.

A fixture with four 40-watt bulbs hangs 26 inches above the dining room table while 15-watt candles are at each side of the buffet. A double convenience outlet is under the table and another by the buffet.

Our kitchen is lighted by a 150-watt ceiling fixture with a 40-watt lamp over the sink. Appliances may be attached to a double convenience outlet.

Each of the two bedrooms has a 40-watt lamp at the head of the bed. The three double convenience outlets made rearrangement of the furniture easy.

The two 40-watt brackets by the bathroom mirror furnish sufficient light. The 40-watt center fixture is unnecessary because of the smallness of the room. The double convenience outlet is for appliances.

The basement has 40-watt lamps in the trunk room, in front of the furnace and at the coal pile. A 100-watt lamp is over the laundry tubs. A double convenience outlet is available for appliances. Two 40-watt lamps should be placed over the work bench to prevent shadows on the work.

Our long hall has a 40-watt ceiling fixture and a 40-watt bracket.



### Electric Fans at Circus

IT was an unusual request that came to the Fan Motor Section of the Westinghouse Electric & Manufacturing Company recently. Barnum & Bailey wished to equip the "big top," seating 22,000 people, with electric fans.

Ordinarily this would seem quite a simple affair. On the contrary, it was quite a large order.

The gyrating and ceiling fans were eliminated at once because a ceiling fan weighing 75 pounds cannot be hung from a canvas roof. Likewise the standard desk type of fans would not serve because they could not be mounted on a canvas wall. Aside from this fact, the standard 16-inch gyrating fan has an oscillating arc of only 90 degrees, whereas Mr. Francois' requirements specified 360 degrees.

It was finally decided to take two standard 110-volt, D. C., 16-inch desk fans and one 16-inch oscillating



These 16-Inch Fans on a Revolving Carriage and Spiked Pole Were Used to Ventilate "the Big Top."

fan and construct a special type of fan. The photograph shows the final results secured which the circus people unqualifiedly approved.

The three 16-inch fans are mounted on a revolving carriage with extended arms which, in turn, is mounted on a piece of 2-inch pipe that is spear pointed so as to be driven into the ground quickly. The fans shown revolve slowly at an approximate speed of twenty revolutions per minute. Current is supplied to the motor from collector rings mounted on the pipe standard and properly insulated from grounds and short circuits by micarta base.



### A Pleasant Rock-Bound Garden

THERE is an air of permanence and beauty and calm about the garden trimmed with natural rock that is impossible to secure with any other building material. Every rock has a different face and to those



Natural Stone Makes for Individuality in Any Building. Because of the Every-varying Surface Effects Which It Achieves a Natural Stone House Will Have No Duplicates.

who can read their story they present a mute history of the ages.

Witness this little scene. The walls of the garden retreat are all of natural stone unhampered by level or plumb. The gateways terminate in slightly higher posts while the fireplace flue and even the porch is a continuance of the mass of rocks.

Within the view is truly charming, though beyond the fence the imagination must lend a hand.

To you who love the unconventional I would say build of natural stone. There is a world of delight in laying out the scheme on paper and even more in carrying the plans to completion. Then, when you have finished you can say, "This is my own. There is not a single other like it!"—DALE R. VAN HORN.



### Death of Louis Delinieres

MR. LOUIS DELINIERES, vice-president and general manager of the Master Woodworker Manufacturing Co., died at his home in Detroit, Mich., on January 1st.



## Brighter Basements Are Easier to Sell

HOME buyers today are looking for bright basements. They want the extra light, air and general usefulness that Fenestra Basement Windows give. They know that a basement can be a workroom or playroom, as cheery, healthful and useful as the rooms upstairs.

At little or no extra cost, any builder can equip his houses with these sturdy, steel basement windows that everybody wants. It's a long step toward a quick sale.

Fenestra Basement Windows are easy to install in brick, hollow tile, concrete block, poured concrete or field stone. They come complete—sash and frame with hinges and lock attached. Dealers everywhere carry them in stock ready to deliver with your other foundation material. Four standard sizes: 2-light 14 x 20; 3-light 10 x 12; 3-light 12 x 18; 3-light 11 x 24.

We shall be glad to tell you more about Fenestra Basement Windows—how little they cost and how much they help in selling the houses you build.

### Fenestra Casement Windows

Fenestra Casements in the first and second floor rooms provide strong selling advantages, also. Their narrow muntins and small glass lights give an old world charm—a cozy, bright, homelike appearance to both interior and exterior. Fenestra Casements are being used today without any extra cost. You can do the same.

### Fenestra Utility Windows

In garages equipped with Fenestra Utility Windows, it is not necessary for motorists to back a car into the drive whenever they want to "tinker" with it. These steel windows admit an abundance of light down low, where it is of real use. A large, easily opened ventilator that never gets in the way provides ready escape for deadly exhaust gases.

DETROIT STEEL PRODUCTS COMPANY  
A-2260 E. Grand Boulevard Detroit, Mich.

# Fenestra

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



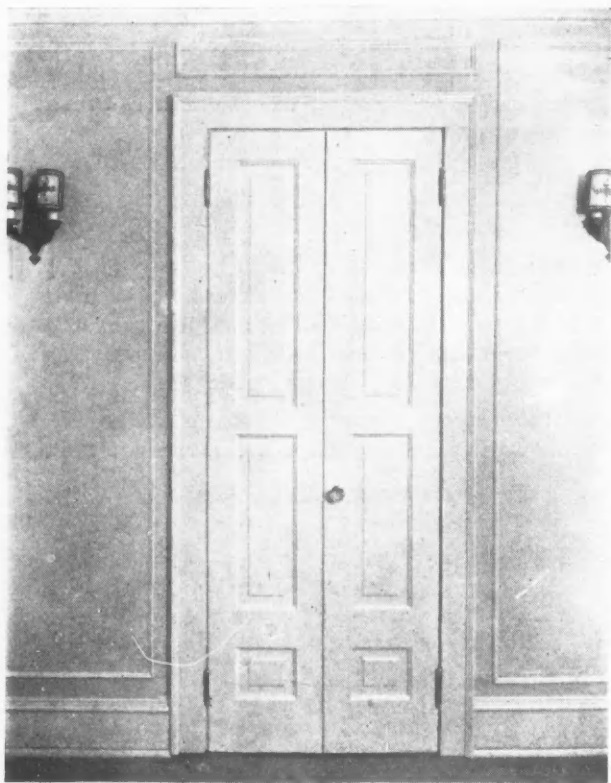
**EDITOR'S NOTE:** *The AMERICAN BUILDER does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone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

### Folding Dining Room Units'

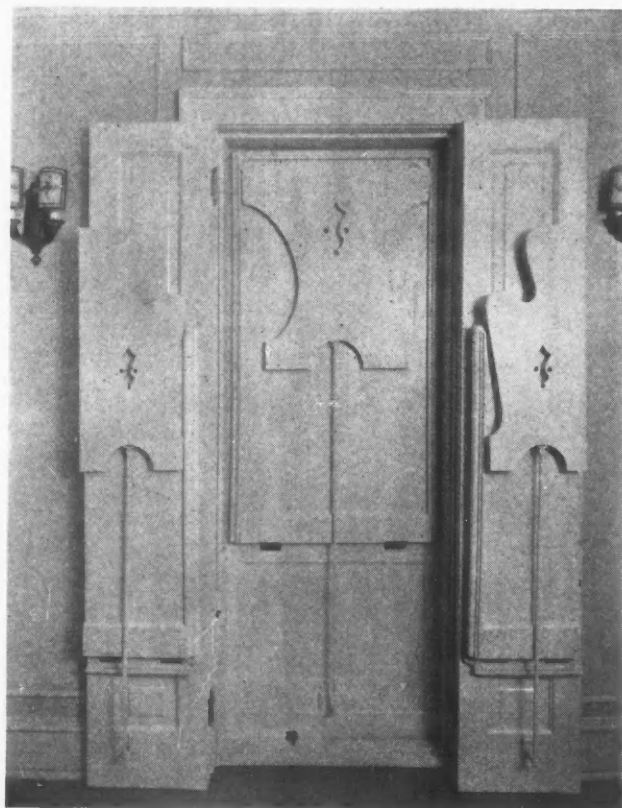
**I**N line with the development of space-saving furnishings for modern apartments and homes is the production of folding units for the dining room and breakfast room.

The dining room unit is designed for use where the living room and dining room are combined. When not in use and folded it is an ornamental feature of the room requiring only 6 inches of depth from the wall and giving the appearance of a French door entrance to another room. The space occupied is 5 feet wide and 7 feet high.

When open, a table large enough to seat four people is available and, by having the leg hinged back from the end of the table, a fifth person may be accommodated. The bench seats are furnished either with or without backs



A Folding Breakfast Room Unit with Doors Closed Looks Like the Entrance to Another Room and, When Set Into the Wall, Occupies No Room Space.



The Parts of the Folding Breakfast Room Unit Drop Automatically Into Place When Lowered and Are Held Rigid by Steel Rods.

according to preference. When the parts are lowered they open automatically by means of steel rods which hold them rigidly open.

Even less space is required by the breakfast room unit which may be installed either in the wall or against its face. When closed, this unit occupies a space 2 feet 10 inches wide, 7 feet high, and 8½ inches deep. Its operation is the same as that of the dining room unit. The doors are of the solid wood, giving the appearance of an ordinary doorway.



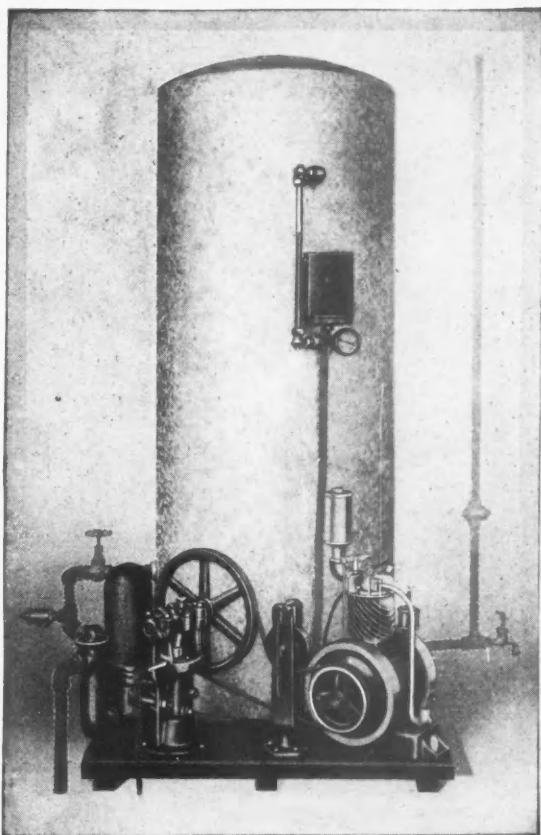
### Deferroizing Asbestos

**A** PROCESS is being perfected to deferroize asbestos which, by the removal of the iron, will adapt it to use as an improved insulation for electrical wiring which will not carbonize. It is also expected to be suitable for compounding with rubber, making vulcanization at a lower temperature possible and so preserving the nerve of the rubber. An improved insulating paper has already been produced by the application of this process.



**For the Rural Home**

**M**ANY builders who do not confine their operation to cities and towns where municipal water supplies are available are finding that their clients demand the same con-



**Comfort for Country Homes Is Assured by a Plentiful Supply of Running Water. This outfit will insure a supply even though electrical power is not available.**

veniences which are enjoyed by those who live in the more thickly populated districts. Builders of homes for such persons will find a water system for the home, driven by a gasoline engine, a valuable equipment to offer to prospective home builders.

A number of manufacturers have placed on the market outfits which may be operated by an electric motor, but many seeking to have the conveniences of modern plumbing in the more remote locations, especially where electric power is not available for the operation of such pumping equipment as was heretofore obtainable, have been forced to devise their own systems from separate units. It was to provide for a self contained and semi-automatic unit that the outfit illustrated here was devised.

This unit is very satisfactory for suburban and rural homes where electricity is not available and where the water is supplied from a shallow well, spring, river or lake. The pneumatic tank is of sufficient size to supply all the water needed in the average home, including the kitchen, laundry and bath.

The engine is an air cooled, four cycle vertical model of standard make and is so equipped that it stops automatically when it has filled the tank to the proper point. The outfit is supplied in several capacities.

**Refractor Aids Street Lighting**

**A** NEW refractor that, it is said, will increase the effective illumination from street lighting units approximately 70 per cent as compared with the most efficient units now in service has been developed. Tests made by the Electrical Testing Laboratories of New York show that a 400 candle power lamp within the refractor enclosed within a clear rectangular glass globe will deliver 2,000 candle power up and down the street, 425 candle power across the roadway at right angles to the curb line, and 250 candle power across the sidewalk. As a result of this method of "spraying" the light, the street is evenly illuminated over its entire surface and there is no glare in the eyes of motorists or pedestrians, an important factor in safety, as well as convenience in view of the serious traffic problems existing in all of the larger cities today.

Hitherto street lighting units have been designed so as to deliver the same amount of light on a horizontal plane in all directions around the unit, with the result that most of the light does not reach the surface of the road and is wasted. With the new refractor, part of the light is bent away from the sidewalk and the roadway and is built up in the directions up and down the street between the posts where formerly dark zones existed.

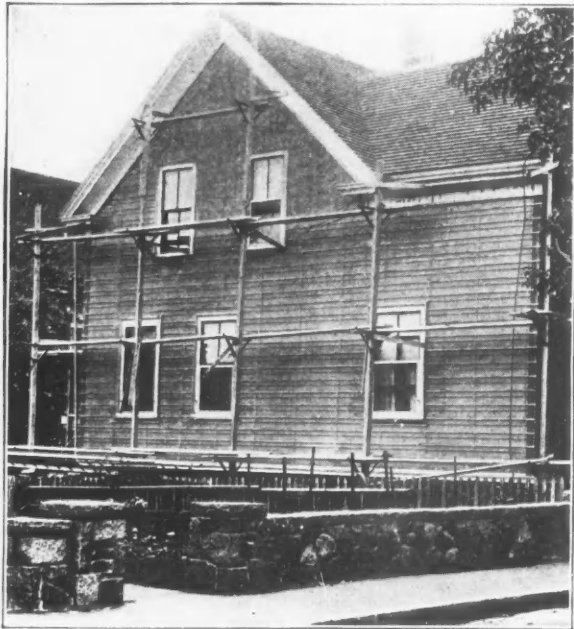
The refractor is mounted inside the globe of the lighting unit and surrounds the lamp. It consists of two cylindrical pieces of pressed crystal glass nested one within the other and clamped together so as to form a single unit, the shape of which is a frustum of a hollow cone. The inside surface of the inner element and the outside surface of the outer element are smooth so that in the assembled unit the exterior surface is easily cleaned. On the outside surface of the inner element are vertical prisms which bend the intercepted light downward. On the inner surface of the outer element are horizontal prisms which function to bend the intercepted light into two main beams which are directed up and down the street at angles 22½ degrees from the curb line. A minimum beam is deflected to strike the sidewalk at an angle of 90 degrees with the curb line, and a beam of slightly higher intensity is directed in the opposite direction across the roadway.



**Here Is the Latest Word in Street Lighting.** The problem since the inception of the idea of lighting streets has been to direct the rays of light to the right places in the proper amounts. Illumination above the level of the light is of no special advantage, for example. The special refractor shown in this picture throws the light along the street and enough across the road to illuminate it properly without causing a glare right at the lamp post. Types of ornamental lights are shown above the refractors.

### Steel Scaffold Brackets

**I**N construction work of all kinds where scaffolds are required much time is used for putting up the scaffolding and much lumber is wasted in taking it down. A steel scaffold bracket is now offered which saves a large part of



Use of Steel Scaffold Brackets Gives a Clear Working Space and Assure Safety for the Workmen.

the lost time and lumber and at the same time reduces the danger of accidents due to defective wooden scaffolding.

These brackets are light and compact for transporting, are easily and quickly installed at any height on 2 by 4 uprights and will last for many years. No tools are required for installing. The bracket is set at the right height with the spurs level, the beam at each side is pulled down, the brackets swung into place and the bolt screwed tight by hand.

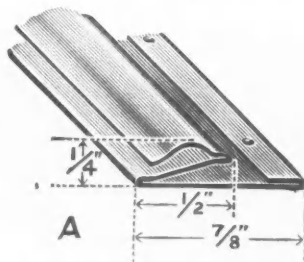
In addition to the features mentioned these brackets leave a clear working space in front which speeds up the work. For inside work of all kinds a base stand, of similar construction, is supplied which, in combination with the brackets and wooden uprights forms a complete self-supporting scaffold.



### New Metal Weatherstrip

**A** NEWLY developed type of all-metal weather strip is now on the market for which the manufacturers claim several advantages over previous styles. It is made of thin, highly tempered spring bronze. The principal feature is that the metal is folded "S" shape, giving a double fold instead of the usual single fold. It is claimed that this prevents the contact part of the strip from losing its resilience, so insuring, at all times, a tension sufficient to keep out all the wind, rain, dust and snow.

The strip is made in styles suitable for sides, tops and bottoms of both doors and windows. The only tools required for applying it are flat headed brass tacks, tack hammer and a pair of common shears. The ease of installation is one of the chief



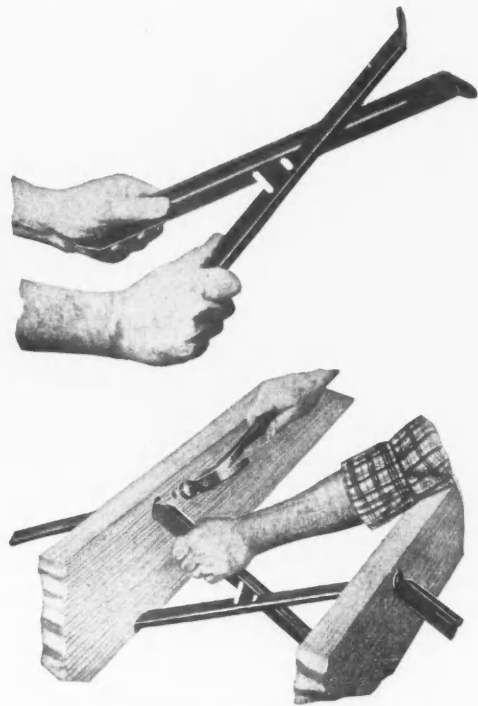
The "Z" Shaped Fold Is the Feature of This Metal Weatherstrip.

claims of the makers, all work being done from the inside of the building and not requiring special skill. It is also said that the application of this strip makes the window sash open and close more easily.



### Steel Bridging for Joists

**F**ROM time to time various devices make their appearance in the building field with the object of saving time, labor and expense in construction. One of these devices which has all the points to make it a success is a new steel bridging. This is something entirely new and archi-



For Installing It Is Only Necessary to Extend the Steel Bridging by Hand and Nail Them in Place as They Are Cut and Formed to Accurate Shape and Size.

itects and contractors who have seen it are favorably impressed with its possibilities.

It is extremely simple in construction and use and does away with the necessity of cutting bridging from wood which takes considerable time and is, therefore, said to reduce final costs. No cutting or fitting is required. Each piece is a complete cross bridging of standard size installed in one-eighth to one-tenth the time required to cut and nail wood bridging.

The bridging comes finished, ready to nail in place. Each unit is made of a single piece of steel cut and formed to accurate shape and size making a complete cross bridging. Nailing ends are bent to the proper angle and all that is necessary is to spread the two arms of the bridging apart by hand and nail to the joist. It is made from heavy gauge steel, flanged and ribbed to give extra stiffness and then painted.

This new steel bridging requires only four nails as against eight for wood bridging, and because it is all in one



Steel Cross Bridging Folded for Shipping Are Compact and Easily Transported to the Job.

There is  
satisfaction  
and profit in  
being the...  
*"Eternit Shingle Man"*

BEING the Eternit Shingle Man gives you the keen satisfaction of selling a product in which you can take honest pride.

The quality of Eternit Asbestos Shingles backs up every claim you make for them. They are built of layer upon layer of tough, interwoven asbestos fibres, reinforced with the finest cement—welded into place under enormous pressure—seasoned for three whole months. So they are even-laying, storm-tight, fire-proof and wear-free—a finer shingle to uphold your reputation as a judge of good roofing.

Profits are sure—for one Eternit roof sells another. Many of our best customers, now

buying car after car, started with a few squares for a single job. You get more business—and Eternit Shingles are priced so you make more money. They are easier and faster to lay. And their uniform quality and dependable strength give your customers better roofing jobs.

Many of our carpenter, builder and roofer friends are establishing increasingly profitable businesses by specializing on Eternit Shingles. We'll be glad to tell you of their success—show you how you can do the same thing—and then help you do it. Your territory holds just as big opportunities. Write today for details.

AMERICAN INSULATION CO.  
Roberts Avenue and Stokley Street, Philadelphia, Pa.

*Eternit*

ASBESTOS SHINGLES  
Make your first roof last

piece it is handier to use and can be placed in position in less time. Saving in freight and trucking becomes quite an appreciable item on large jobs as a thousand of the steel bridging occupy only about one-tenth the space required for an equal quantity of wood bridging.



### An Automatic Saw Filer

**T**IME saved is money and any device which will aid the builder to keep his tools in perfect condition with the minimum expenditure of time should be of interest. Under this head comes an appliance for automatic filing of saws. A saw which requires 30 minutes for filing by the hand method can be put into condition in 5 minutes time by the use of this saw filer. What is more, by means of it, anyone can turn out a perfect job equal to that done by an expert filer.

All that is necessary is to clamp the saw, whether it is of the hand, back, band or circular kind, into the clamping bars, adjust the quadrant to the right pitch and then turn the crank, or let the motor turn it, just as fast or slow as desired.



The Automatic Saw Filer Can Be Used for Filing Any Type of Saw With Quick and Accurate Results.

As an auxiliary to this filer, there is also a saw set. This tool, it is said, will set a saw perfectly in one minute and is as simple to operate as the filer.



### New Type Mail Boxes

**A** RECENT order by the U. S. Post Office Department requires that in the erection of future apartment buildings, containing three or more apartments, and where arrangement has not been made for the delivery of mail at the office or desk of the building, mail boxes must be provided which can be opened by a master key in the hands of the mail carrier.

With the publication of this order manufacturers have concerned themselves with providing boxes which meet the requirements. A box is now offered in gangs of from three to ten boxes, containing two doors each. The upper doors are connected by a half round brass rod, with concealed fastenings, forming a master door so that the entire gang can be opened by the carrier at one time, for the insertion of mail. The lower doors are entirely independent and are operated by keys in the hands of the tenants only. Each is provided with a slot for the insertion of cards, telegrams, etc.

These boxes are made of cast brass with reinforced edges giving a solid construction, and in either a satin gloss or a brush brass finish. They are designed for flush mounting. The same style box is also furnished with electrical or telephone equipment.



One of the New Mail Box Units in Which All Boxes Can Be Opened by the Carrier with a Master Key.

While three to ten box gangs are standard, they can also be furnished in larger units.



### To Preserve Building Material

**T**HE need of preserving such valuable stone work as the famous Obelisk led to the development, about 12 years ago, by the chief chemist of the Metropolitan Museum of Art, of a preservative fluid. When used, this material proved to be of value for preserving not only stone but also concrete and wood.

Because of the success of the fluid it has been placed on the market as a commercial product. It is applied to the surface with a spray or brush, a gallon being sufficient for 300 square feet the first application and for 500 square feet the second application. The material fills the crevices, excluding dampness and air, and so preventing rot or deterioration. It does not contain any acid or alkali. It will stand up in any climate and is not affected by heat or cold. When mixed with paint it hardens the paint like an elastic mass and will not oxidize thereafter. It dries in about an hour or two.

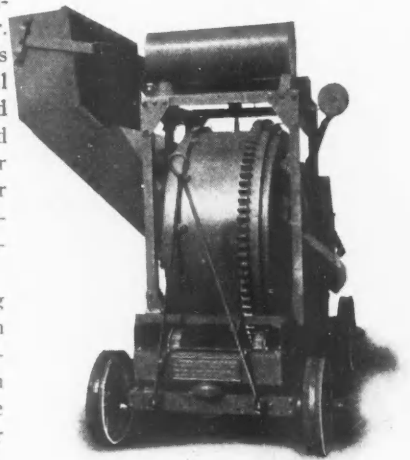


### Narrow Drum Concrete Mixer

**A** LINE of concrete mixers is being supplied to contractors which features a narrow drum. This narrow type drum gives a more thorough mix than is possible with a wider drum. An especially large opening, combined with this feature, makes a drum which is very easy for the contractor to keep clean.

This line of mixers is made in three sizes. A 4-foot size, which is light and easily transported, is satisfactory for jobs where large volume is not a factor. The 7-foot size is suitable for general contracting work and is manufactured either as a power loader or low charger and with these features interchangeable.

For jobs requiring a large capacity, such as large bridge building and foundation work, a 14-foot size may be used. Other large sized mixers, intended for special purposes, are built to order.



A Narrow Drum Which Produces a More Thorough Mix Is Featured in This New Concrete Mixer.



For many years the Garland Warm Air Furnace has been growing rapidly in popularity. In 1924, for instance, twice as many Garlands were sold as in the preceding year.

This increase in Garland's popularity was based on dependability and on the economical and efficient use of fuel.

As you consider the important improvements incorporated in the 1925 model, remember that Garland offers you all of its old superiorities along with the new ones described below.

## A New Garland Triplex Double Action Grate— A New Ash Pit

Just at the left of the shaker handle in the illustration below, you will notice an indicator or lever. Move this lever to the left, turn the shaker handle and the fire is dumped. Move the indicator to the right, and the same action of the handle shakes the fire. This gives the new Garland Grate its name "Double Action."



The top and sides of this new Garland ash pit are molded in one piece. Note the large size and the smooth walls. Neither draft nor shovel meets any obstruction here. When return air is taken in above the base rings, this construction is particularly effective as there are no corners or other obstructions to interfere with the circulation of air.

Three shaker bars give the new Garland Grate its name, "Triplex." Every part of the fire is affected uniformly by the action of the shaker.

Ashes can not accumulate around the edges of the fire pot.

A maximum amount of the lower surface of the fire is exposed to the draft and the fuel combustion is, therefore, complete and efficient.



The Michigan Stove Company  
Detroit, Michigan

# GARLAND

## HEALTHFUL HOME HEATING

### Quick Hardening Cement

**B**ECAUSE of the speed required in military operations during the recent war, much impetus was given to the development, in Europe, of cement which would attain its full strength in a short time. Such a cement has now been patented and placed on the market in this country.

This cement, which is made from a high grade of aluminum ore, is said to give full strength concrete in 24 hours as opposed to the usual 28 days. It is not, however, "quick setting" but affords the usual time for mixing, transporting and pouring into the forms. It is after setting that its strength develops with such great rapidity.

For such work as the laying of streets its advantage is obvious as it permits the least possible delay in traffic. In many other kinds of work this quickly attained strength should prove of equal advantage, allowing the progress of jobs at a much greater speed than would otherwise be possible.

The cost of material and need of careful manufacture makes the original cost of this cement higher than the cost of portland cement but in many cases this is offset by economy of time as well as the saving in forms which are quickly released for reuse. It has even been said that work can be done with ultimately less expense.

This rapid hardening cement is also an advantage where work must be done in cold weather because of hardening in a few hours to a point in curing beyond the danger of frost and because in hardening it produces considerable heat. The setting takes place first in the interior of the mass generating this heat which then works outward to the surface.

It is also noted that this cement will bond well to Portland cement concrete work which has set and is therefore useful where quick repair work is desired. It is handled in



A Portable, Electric, Circular Saw Should Prove to Be a Great Convenience to Building Contractors Because of Its Flexibility.



Obviously the Pavement in Front of the Firehouse Is One That Should Not Be Out of Service Long. This one at Somerville, N. J., was hard enough for use in 24 hours through using quick hardening cement. It was reported to have been as strong at 24 hours as Portland cement would have been at 28 days.

exactly the same manner as portland cement and is adapted to the same uses.



### Electric Hand Saw Cuts Costs

**T**O replace the slow and tiresome methods that carpenters have long practised with hand saws, a portable electric circular saw has been invented. It is being found of great value to contractors, builders, shop superintendents, mechanics and laborers, as it is accurate and durable, eliminates unnecessary and costly handling of material, speeds up work and cuts down expense and solves cutting problems. The tool is unusually efficient for use in cutting of flooring. It is also of particular value in mill work and for interior trimming. This work can be done with such accuracy, the manufacturers state, and leaves such a smooth surface, that the necessity of planing is almost entirely eliminated.

The tool is light in weight, easy to handle, and is neat in appearance. It has a cutting capacity of 2 inches in hardwood, and will accurately groove or will cut to any desired limited depth up to 2½ inches. For beveling or other purposes, special attachments are supplied. The saw is equipped with a momentary contact trigger switch which insures absolute safety, because the operator's finger must be held on the switch in order that the motor may keep running. It is equipped with combination rip and crosscut saws. Users of this tool, marketed in December, satisfactorily cut wood, wall board, plaster board, fibre, linoleum, hard rubber, insulated cables, brass light gauge metal, transite and many other materials. One user states that the portable circular saw does the sawing for 15 carpenters. This person, a builder of concrete forms, states that the invention handles all the makeups with accuracy and speed and is used for the bevel cut and for cutting pockets to clear columns. It is also used quickly to remove forms when concrete has set.—R. G. THACKWELL,

# A Complete Line of Gasoline Hoists



NOVO manufactures light and heavy duty, single and double drum hoists from 4 to 40 Horsepower. These hoists are good for every job in the hoisting field. Powered with the reliable Novo single, two and four cylinder gasoline engines.

The photograph shows two Novo hoists hard at work on a job which included nine large buildings similar to the one shown. The two Novo hoists handled all brick, cement and other materials.

This is only one of hundreds of cases where Novo reliability and service have saved money for Novo owners. If you have hoisting problems, get in touch with one of our 65 distributors or with us direct.



**NOVO ENGINE CO.**

Clarence E. Bement, Vice-Pres. & Gen. Mgr.

LANSING - MICHIGAN

Cable Address "NOVO LANSING"

Distributors Throughout the World



# NOVO POWER

Keeps Operations Moving



**ENGINES**  
Single Cylinder, 1 1/2-10 H.P. (frost proof)—two cylinder, 6-12 H.P.—four cylinder, 12-40 H.P.

**HOISTS**  
Single and double drum—one and two speed and reversible, portable heavy duty types—powered with Novo Engines



**PUMPS**  
Open and closed top diaphragm—centrifugal—deep well—single, duplex double acting and triplex pressure pumps.

**COMPRESSORS**  
Three sizes—up to 170 cubic feet—with steel housings—mounted on trucks. Combination hoists and compressors

# Apartment Building Equipment

**I**NFERIOR equipment in any part of an apartment building is likely to be taken as the standard of the building by prospective tenants and kitchen equipment

is a question of primary importance. This fact has been fully considered in the construction of the beautiful Alden Park Manor, erected in Brookline, Massachusetts, from the plans of Harold Field Kellogg, consulting architect.

Every item of equipment was carefully selected with consideration for compactness, convenience and appearance in harmony with the general tone of the building. This included the selection of a line of gas ranges which is designed with consideration for beauty as well as utility. This building required 160 of these ranges. They are made either in all white enamel or white with contrasting black enamel.



## Folding Aluminum Rules

**A**LUMINUM rules occupy a position half way between wood and steel rules, with regard to both weight and durability, and are popular on any work where wooden rules are often broken. A new line of folding aluminum rules is of special hardness and durability and holds its shape well.

These rules are 9/16 inch wide, have six inch folds and are made in three, four, five and six foot lengths. They have solid brass spring joints of the rivet type and are entirely rust proof. The surface is of natural color with sunken black markings which show up distinctly.

A feature, which is optional, is a folding end hook, similar to the kind found on spring joint wood rules. A small brass hook is fitted to one end, so attached that it readily folds up and remains flush with the edge of the rule. The zero point falls at the inside of the hook when open and at the extreme end of the rule when closed, the same as in other rules. This feature adds only a trifle to the cost and is a great convenience for taking measurements out of arm's reach as well as being handy in practically any work.



Alden Park Manor Kitchens Are a Fine Example of Compact Equipment Similar to Dining Car Kitchens. Gas range, cabinet, cupboard, ice box and sink are fitted snugly into the least possible space.

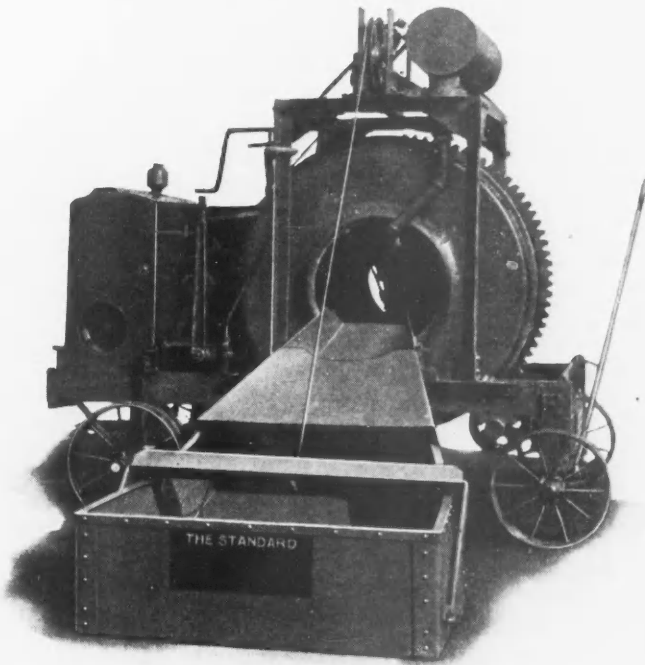


Alden Park Manor, Brookline, Massachusetts, Presents a Fine Perspective and, at the Same Time, Every Detail of Interior Finish and Equipment Is in Harmony. Above is a view of one of the kitchens, which are models of beauty as well as of modern space-saving equipment.



# "The STANDARD"

## Mixers Meet Every Requirement on Large or Small Jobs



"The Standard" does three things thoroughly and quickly. It gets the batch in—mixes it—and gets the concrete out.

Contractors and builders who realize the exceptional merits of "The Standard" mixers use them on all jobs.

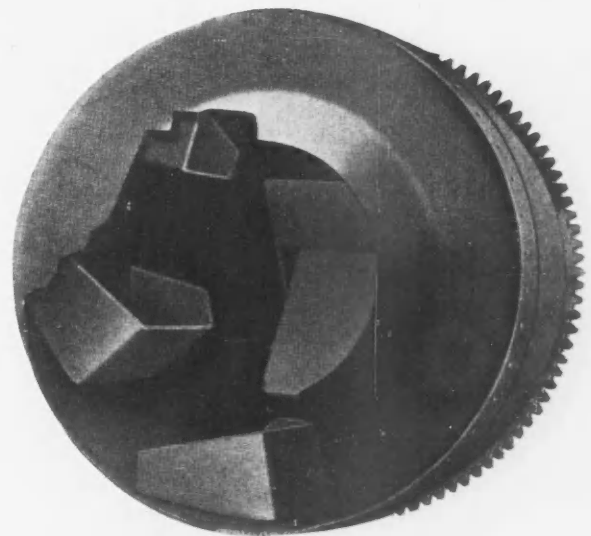
"The Standard" line comprises the lowest priced high-grade mixers on the market. They are sold with certainty of guaranteed results or money back satisfaction.

"The Standard" line of concrete mixers includes the 4-S Low Charger, 4-S Power Loader, 7-S Low Charger, 7-S Power Loader, and 14-S Power Loader.

*One of these will fill your needs.*

### STANDARD FEATURES

Narrow drum with pockets rightly placed assures a good mix.  
Light and durable.  
Chainless and beltless.  
Power loader or low charger interchangeable.  
Short wheel base.  
Front wheels turn under frame.  
Center of gravity low, minimizing the possibilities of upsetting.  
Multiple cylinder engine.  
With or without automatic water tank.  
Portable—exceptionally easy to move.  
Very efficient.  
Low maintenance.  
Few parts.  
No pulleys on the charging skip to get out of order.  
Ropes do not interfere with the dumping of barrows.  
When the skip is elevated for charging, the bottom is perpendicular, preventing the materials from sticking.  
For further information our catalog will be sent you free of charge. Send us your address.



**The Heart of "The Standard" Mixer**  
(All Steel Narrow Drum)

## THE STANDARD SCALE & SUPPLY CORPORATION

1631 Liberty Ave., Pittsburgh, Pa.

NEW YORK  
145 Chambers St.

PHILADELPHIA  
523 Arch St.

CHICAGO  
163 May St.

CLEVELAND  
721 St. Claire Ave., N. E.

### Books, Bulletins and Catalogs for You

**T**HE literature and publications listed here are available to 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.

"Howe" Scales" is illustrated Catalog No. 47, issued by the Howe Scale Co., Rutland, Vt., and is designed to help the user of a scale to buy the best type for the purpose intended. All the branch houses, the trade is informed, maintain a force of scale experts to assist in proper selection, installation and use of weighing equipment.

"Fire-Stopping in Dwelling Construction" is Volume V, Chapter 2, in the Fire Prevention Series issued by the National Lumber Manufacturers' Association, Washington, D. C., and Chicago, Ill. Adequate fire-stopping in dwelling construction is almost as rare as a well-spent life, we are informed in the preface, and construction expedients which help reduce the excessive toll of the fire loss to the country should be peculiarly worthy of study on the part of the architect, builder and carpenter.

"Analysis of Economic Conditions Affecting Lumber Consumption" is an address delivered by Charles S. Keith during the Eighth Annual Meeting of the Southern Pine Association, held in New Orleans, La., during March of the current year. It is now put into booklet shape, and distributed by the Southern Pine Association, New Orleans, La. It is worth reading as representing the lumber outlook as viewed by a broad gauged, foresighted member of that industry.

"The Strength of Ordinary Brickwork."—Ordinary brickwork laid in the ordinary way by an ordinary brick-

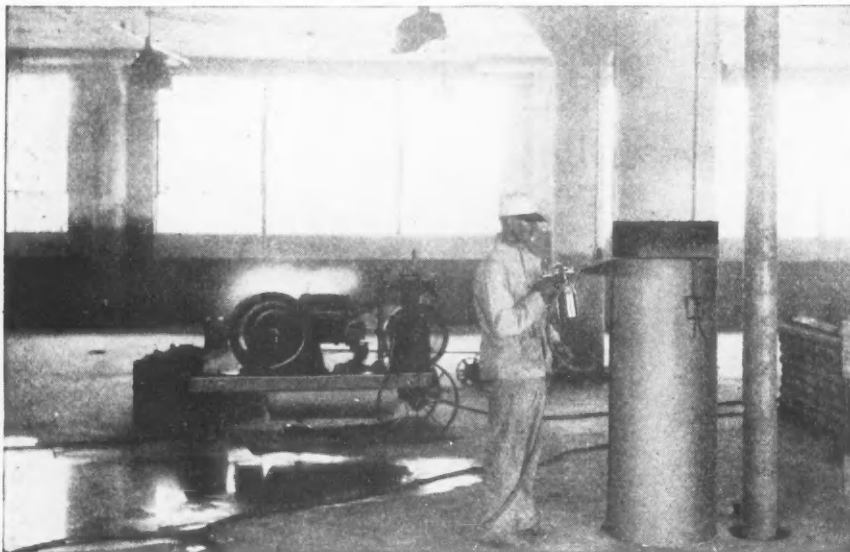
layer has just as great strength as brickwork laid specially for testing in a laboratory. This is proved in an exhaustive report by Mr. Rudolph P. Miller, the well known consulting engineer, formerly Superintendent of Buildings for the Borough of Manhattan, and just issued in a pamphlet entitled "The Strength of Ordinary Brickwork" by the Common Brick Manufacturers' Association of America, Cleveland, Ohio. Mr. Miller took some old brick piers out of a New York building being demolished, and found that the average load sustained by this old brickwork was 1,555 pounds per square inch.

"Bommer Spring Hinges" is the title of Catalog No. 47, issued by the Bommer Spring Hinge Company, 25-271 Classon Avenue, Brooklyn, N. Y., illustrating and describing their well-known line of Bommer spring hinges. It is a beautiful, comprehensive and eminently practical catalog. Embodied in it are drawings and dimension tables for the selection of the proper size spring hinges for various types of doors, and it is replete with information of value for the architect, builder and contractor.

"Utica Bricklayers' Cement" is the subject of a 16-page and cover booklet by the Utica Hydraulic Company, Utica, Ill. This illustrates in a very effective way, some recent buildings both large and small on which the Utica Bricklayers' Cement was used.

"Gypsum Plasters." The Gypsum Industries, 844 Rush Street, Chicago, Mr. H. H. MacDonald, secretary, have prepared a standard specification for Gypsum Plasters including Gypsum Neat Plaster, Gypsum Wood Fibered Plaster, Gypsum Ready Sanded Plaster, Gypsum Finish Plasters and Gypsum Plasters on Concrete Surfaces. These have been prepared by their chief engineer, Mr. Virgil G. Marani.

## You Paint to Make Money— Painting the DeVilbiss Way Will Increase Your Earnings



[Painting the dado—here the operator is using the DeVilbiss spray gun with Type I K N Pressure Feed Cup attached, which is advantageous on many kinds of work.]

# DeVilbiss Spray-painting System

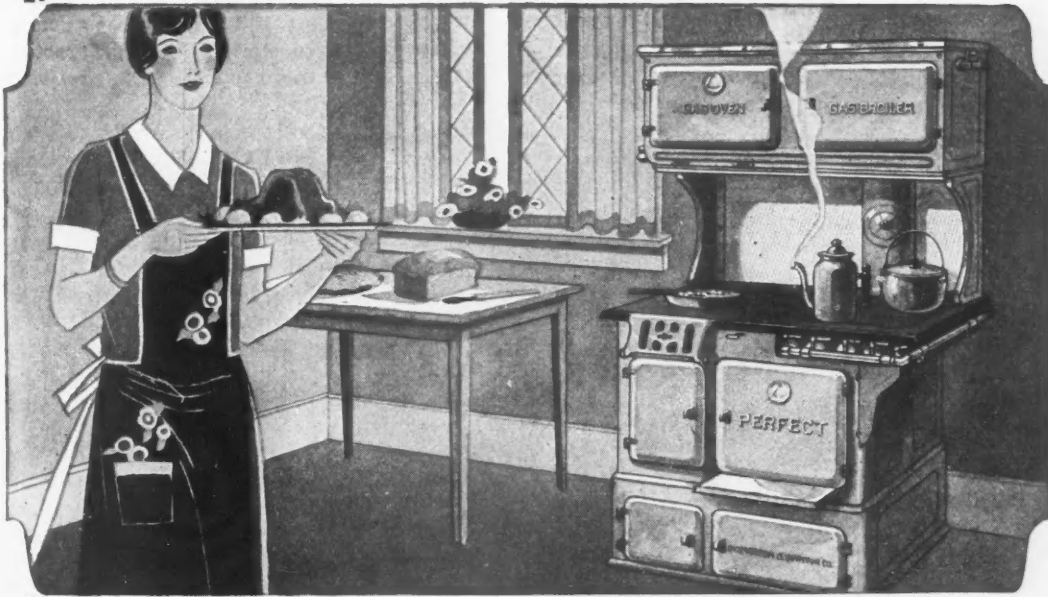
Doing at least two painting jobs in the present working time of one; doubling your profits, or better; improving your service; taking prompter and better care of your customers—these are some of the greater money-making advantages of painting with the DeVilbiss Spray-painting System.

In addition, painting the DeVilbiss way gives to your work the stamp of progressiveness and makes for a more satisfied crew of painters.

The speed of DeVilbiss spray-painting averages 4 to 5 times faster than hand-brushing. The spray-applied coating completely covers the surface, and is even and uniform regardless of character of surface painted and kind of paint used. The best possible results are produced with the DeVilbiss spray gun at the lowest practicable air pressure and without drips and spatters.

Here is opportunity for making a worthwhile increase in your earnings. Additional operation and equipment details of the DeVilbiss System will be promptly mailed to you. Address—

THE DEVILBISS MFG. CO.  
238 Phillips Ave. TOLEDO, OHIO



## A Modern Range for a modern home

The Richardson "Perfect" Combination Enamel Range is the ideal cooking apparatus for the modern home.

Perfect cooking, baking, broiling and roasting is assured with this range because the heat is so *evenly* distributed to ovens and top. It is most economical on fuel whether coal or gas is used or both fuels in combination. The beautiful gray enamel finish which will not crack nor peel makes the range

attractive in looks and very easy to keep clean. Rounded corners for beauty of finish.

Richardson "Perfect" Combination Enamel Ranges are well known for their cooking efficiency and economy. A house that has one of these ranges installed in the kitchen has a decided advantage in the eyes of the prospective home-buyer.

### RICHARDSON & BOYNTON COMPANY

NEW YORK, 260 Fifth Ave.

DETROIT, 4472 Cass Ave.

BUFFALO, Jackson Bldg., 220  
Delaware Ave.

CHICAGO, 3639 to 3645

S. Ashland Ave.

ST. LOUIS, 705 Olive St.

Manufacturers of

"Richardson" "Perfect"

Heating and Cooking Apparatus

Since 1837

SPRINGFIELD, MASS.

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NEWARK, 593 S. 21st Street

# Richardson Combination

TB-R-1

WHEN WRITING ADVERTISERS

### Books, Bulletins and Catalogs for You

**T**HE literature and publications listed here are available to 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.

"English Precedent for Modern Brickwork" is a beautiful and authoritative book of 100 pages offered by The American Face Brick Association, 130 N. Wells Street, Chicago. It presents numerous plates and measured drawings of English Tudor and Georgian brickwork with a few recent versions by American architects in the spirit of the old work. There is a frontispiece in full colors.

"Wallpaper" is the title of one of the most artistic and attractive publications that come to our desk. It is edited by Mr. C. W. Cousens, the advertising director of the Wallpaper Manufacturers' Association of the United States and published by this organization from 461 Eighth Ave., New York City. Price 10c per copy, \$1.00 per year. The subtitle states that this is a magazine for wallpaper people, but we judge it to be of interest to all architects, builders and interior decorators who are concerned with the planning of attractive modern homes.

"The Anchor Line for 1924" is a bulletin telling how the Anchor Concrete Machinery Co., 530 Dublin Ave., Columbus, O., can help the maker of concrete products produce better blocks, brick and tile through the use of Anchor machinery.

"History of the Portland Cement Industry in the United States" is a new book published by the International Trade Press, Inc., 53 W. Jackson Blvd., Chicago, Ill. Price \$3.00. This book tells the complete story of the development of the portland cement industry and its relation to the development of industry in general. The subject matter is handled in a manner adapted to interest the layman as well as those having a technical interest in the subject.

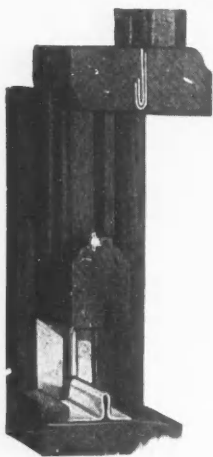
"When Science Goes to Work for Modern Industry" is a little pamphlet in which the Portland Cement Association, Chicago, Ill., tells how its research laboratory, operated in connection with Lewis Institute and called the Structural Materials Laboratory, has been working out the practical problems of concrete construction and raising the standards of the industry.

"Steel Construction" is the title of a booklet just issued by the American Institute of Steel Construction, 350 Madison Avenue, New York. It contains the Institute's Standard Specification and Code of Standard Practice, a mathematical explanation of various formulae in the Specification, set of charts for mathematical calculations and data on action of structural steel members under various conditions. This booklet may be taken as an example of what may be expected of a forthcoming steel handbook which will assemble, in usable form, data now scattered through the pages of handbooks published by the steel mills, works on engineering, technical magazines and scientific papers.

"Lead the Precious Metal" by O. C. Harn is a new book published by The Century Co., New York City. Price \$3.00. This book presents in non-technical language many interesting facts about lead and its compounds. It tells the complete story of the metal from the mine, through the refining processes to its use in metallic form or chemical compound in such industries as glass, paint, rubber, pottery, printing and building. Though presented in popular style facts are accurately stated and the book offers a comprehensive compendium of material, much of which has never been readily available to the public.

"Pressure Type Water Filters" is the subject of bulletin 501 issued by the Graver Corporation, East Chicago, Indiana. The bulletin describes filtration methods and shows the construction of the Graver filters which are furnished with a perforated strainer plate instead of a pipe manifold and strainer heads for the collection of the filtered water. Complete tables of sizes and capacities are given.

## ALL METAL WEATHERSTRIP

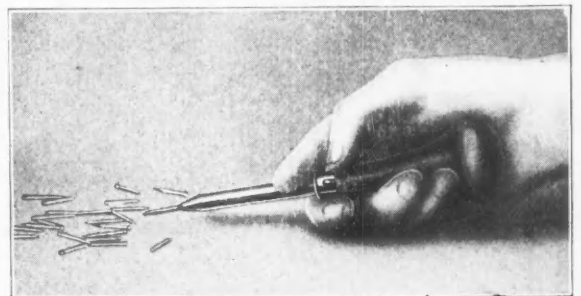


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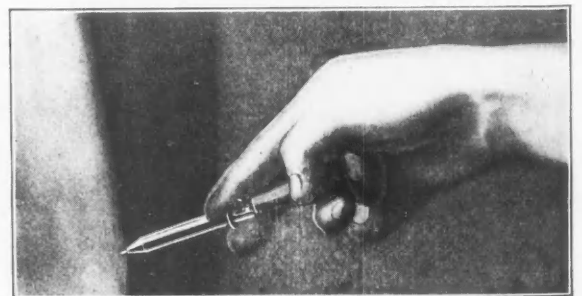
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The Magnetized Ram Picks 'Em Up in a Jiffy



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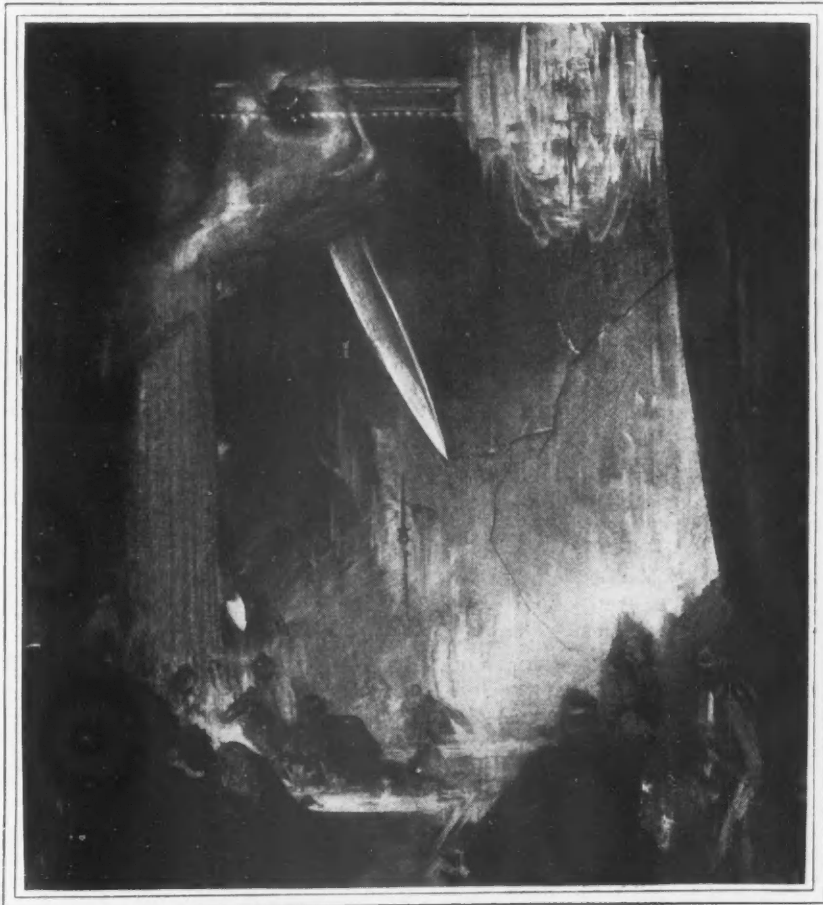
**LOU MARKWELL CO.**

174 FRANKLIN ST.  
NEW YORK

75 STEUART ST.  
SAN FRANCISCO

(See our advertisement on page 69.)

# for WALLS



## Disfigured for Life!

More treacherous than earthquakes or tornadoes—more costly than fires or vandalism—is the damage that follows carelessness in the selection of wall materials. In cottages, in mansions, in factories and in skyscrapers—everywhere walls are built—lack of interest in lath and plaster has left its ugly traces.

To you, who some day will build, these blemishes ought to be "the handwriting on the wall"—visible warnings that the beauty of your rooms, too, will be disfigured for life unless your walls are made of materials that will withstand the vibrations, the settlings, the knocks and the other abuses of time.

Look about you. There are some walls that have come through the years *undamaged*—enough to convince you that cracks, lath marks, spots, checks and other wall defects can be avoided. They are the exceptions which prove the wisdom of knowing, exactly, the quality of the plaster or any other wall materials you buy.

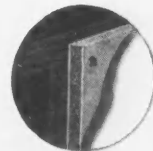
Let us send you samples and descriptions of Beaver American Plaster, Plaster Wall Board, Gypsum Lath, Beaver Tile Board or Fibre Wall Board. Compare them for price or quality. Convince yourself that Beaver Products build walls that stand unblemished through the years. Mail the coupon today.

# BEAVER

PRODUCTS



The above advertisement will appear in the February 7th issue of the *Saturday Evening Post*



### One Type of Beaver Wall Construction

Beaver Gypsum Lath under Beaver American Plaster is dependable wall construction. Beaver Gypsum Lath will not swell or buckle—shrink or crack—stain or disfigure decoration. It offers greater fire protection. Gives protection against vermin. A better sound deadener. A better insulator of heat and cold. A stronger base for the plaster—providing a perfect natural bond. Mail coupon for particulars.

### BEAVER PRODUCTS for WALLS

- Beaver American Plaster
- Beaver Gypsum Lath
- Beaver Plaster Wall Board
- Bestwall
- Gypsum Partition Block
- Beaver Fibre Wall Board
- Beaver Tile Board
- Beaver Architectural and Industrial Varnishes and Enamels

### for ROOFS

- Slate-surfaced Shingles and Slabs to meet every requirement of color and design
- Special Re-roofing Shingles
- Slate- and Smooth-surfaced Roll Roofing—in weights and finishes for every use
- Built-to-order Roofs
- Roof Paints and Cements

### FREE

samples and descriptions

THE BEAVER PRODUCTS CO., Inc.  
Buffalo, N. Y., Dept. M-72

(or) Thorold, Canada  
(or) The Beaver Board Co., Ltd.  
135-136 High Holborn, London, England

Gentlemen: Please send me samples and description of Beaver American Plaster and Gypsum Lath. I am also interested in other Beaver Products listed below:

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

### Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to 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.

"Undecorated Grey Iron Castings" is a booklet being distributed by the Albany Foundry Co., Albany, N. Y. It contains illustrations, descriptions and price lists of the ornamental castings and fixtures produced by this company. These include door stops, andirons, door knockers and others.

The Chicago Carpet Upholstery and Drapery Association has issued a folder containing samples and specifications of window shade cloths together with a pledge from member firms. This folder is part of a program to eliminate misrepresentation and failure to live up to specifications within the trade.

"24-Hour Concrete" is the title of a booklet published by the Atlas Luminite Cement Company, New York City. It is descriptive of their product, its nature, uses, and method of handling. Many illustrations are given of concrete work which was made available for use within 24 hours after laying by the use of Luminite.

"The Binder in Your Wall" presents in a compact, handy and easily read form a summary of the latest information on lime mortar. It is well illustrated and contains material of interest to all who build with brick or stone. The architect will be interested in the short form specification clauses and the contractor will welcome the handy tables as well. Copies of this bulletin may be secured without cost from the National Lime Association, 918 G Street, N. W., Washington, D. C., the division offices.

The White Pine Series of Architectural Monographs which has been distributed free by the White Pine Bureau,

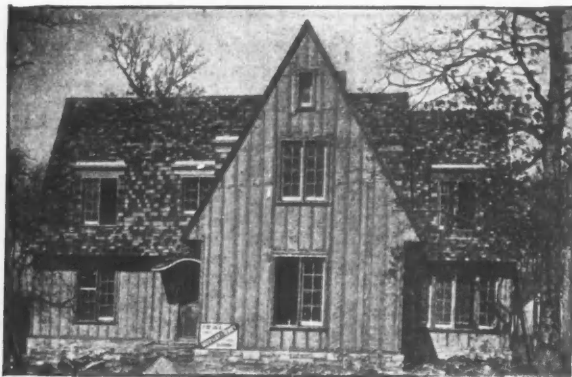
Minneapolis, Minn., will with this issue cease to be published by the Bureau, according to our announcement in the current issue. This action is prompted solely by a desire among the mills to carry on their publicity as individual organizations. The Bureau will continue to maintain all of its other service as formerly.

Starting with the next bi-monthly issue, the Monographs will be published as a private undertaking by Russell F. Whitehead, 150 E. Sixty-first Street, New York City, who has handled the publication in the past for the Bureau. Price \$2.00 a year.

"Flues and Flue Linings, with Related Data on Chimneys and Fireplaces" is the title of a booklet just published by the Eastern Clay Products Association, Colonial Trust Building, Philadelphia. It was compiled in co-operation with the Structural Service Bureau and D. Knickerbocker Boyd, consulting architect. Included are data on recently adopted standards for flue linings and on safe construction of chimneys and fireplaces, a table of flue sizes and chimney heights, and specifications. The booklet is fully illustrated. The price to the general public is 50 cents but architects, engineers, builders and others connected with building lines may obtain it without charge.

The Hess Warming and Ventilating Company of 1220 South Western Avenue, Chicago, has just issued an interesting illustrated catalog. This catalog points out the merits of the steel medicine cabinet in permanence, cleanliness and enduring beauty and illustrates the various styles in which Hess Cabinets and Mirrors are made, together with complete specifications and prices. Architects, contractors and dealers will be furnished with copies upon request.

The Markwell Manufacturing Co., Inc., 176 Franklin St., New York City, has just issued a new 32 page catalog and price list containing complete descriptions and illustrations of its complete line of equipment and supplies for screen manufacturers.



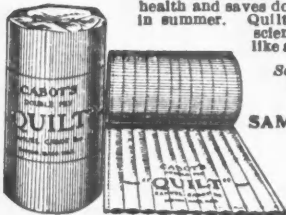
House near Chicago, showing its "underclothing" of Cabot's Quilt, with "urring strips over the Quilt, on which the outside finish is laid. Roof also insulated. Leon E. Stanhope, Architect, Chicago

### Underwear for Houses

Underclothing makes people warm because it prevents the heat of their bodies from escaping. You can make your house warm in the same way.

#### Cabot's Insulating Quilt

prevents the house heat from escaping. It insulates the whole house and saves the heat from the heater—that costly heat. It keeps the house warm on the smallest amount of coal; saves one-quarter to one-half of the coal bill. Makes the house comfortable for all time. Preserves health and saves doctor's bills. Makes the house cooler in summer. Quilt is not a mere felt or paper, but a scientific insulator that makes the house like a thermos bottle.



Sample of Quilt with full details, and references to dozens of users, sent FREE on application.

SAMUEL CABOT, Inc., Mfg. Chemist  
BOSTON, MASS.

342 Madison Ave., New York  
24 W. Kinzie St., Chicago

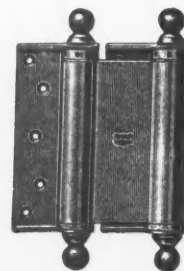
Cabot's Creosote Stains, Cassero Wood Preservative, Stucco & Brick Stains, Damp-Proofing

# STOP



# HEED

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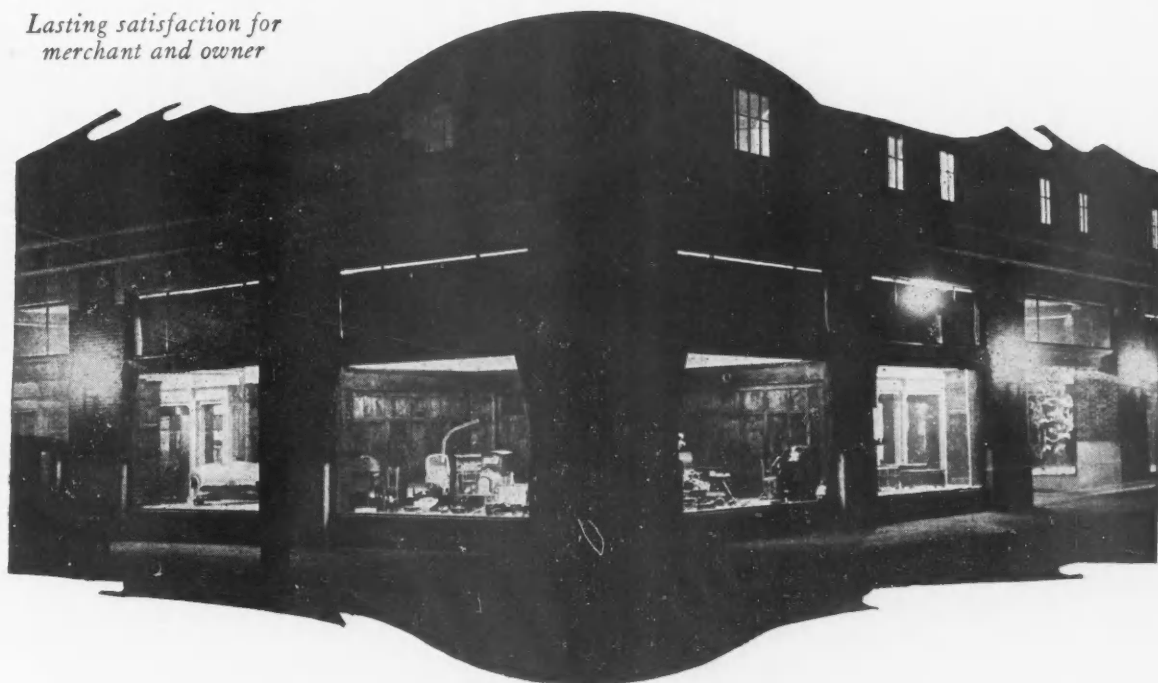
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## -Set Store Fronts

and pressures of a ton or more. Glass, held by moulding with direct-set screws at intervals, cannot be expected to withstand such stresses. But the even, all-around grip of the indirect Zouri Key-Set construction insures your profits, the owner's lasting satisfaction and the merchant's uninterrupted display space.

### Zouri Drawn Metals Company

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1608 East End Avenue, Chicago Heights, Illinois

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