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AN INVITATION TO YOU

The AMERICAN BUILDER cordially invites and urges you to enjoy the privileges and benefits of its Correspondence Department. Any phase of any building question may be profitably and instructively discussed in this department. If your problem is a knotty or technical one submit it to the Correspondence Department and secure the benefits of the opinions of other experienced builders. It's a "give" as well as a "take" department, and you are asked to relate your achievements and tell how you have conquered difficulties as well as to ask for information and advice. Rough drawings are desired, for they make clear involved points. We will gladly work over the rough drawings to meet publication requirements. The Correspondence Department is your department. Use it freely and frequently.

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FRIENDLY CHATS *with the* EDITOR



The Great Illusion

THIS is a plea for the rights of the spectator. A building is put up as much to be looked at as lived in.

But architects have been too busy "putting up a front," to use an everyday but apt phrase. Architects of the business type of building are the chief offenders. Give them a whole city block and they will devote some attention to more than one facade; give them an inside lot and all the walls suffer except the one facing the street.

It is an ostrich trick to assume that, because the side walls do not front the street, they are necessarily invisible. On the contrary, they are very visible, and as a general rule attract more looks because of their bare, ugly, make-shift barrenness than the highly decorated, pretentious street facade does. It is too sanguine to expect that because one skyscraper or high building goes up on a street all other buildings will follow, presenting a mass face to the street and spectators. We know that even in ever-changing and growing Chicago this is not so, no more than elsewhere. So why not devote some genuine artistic architectural thought to the neglected side wall? Why compete with billboards?

Pent houses are another class of sky-line offender. Recently we passed a fine studio skyscraper done in a happy combination of Romanesque and Italian Gothic, with finials atop that made the mind soar with memories of battlements and old lace. And then—a square box of a pent house over all spoiled the illusion, and made us think of the building and the architect in terms of Thirty Cents.

Japan's Opportunity

SEVENTY-ONE per cent of Tokyo's buildings were destroyed in the recent succession of earthquakes and conflagrations. Only 18 per cent of the buildings that made up Yokohama are left intact. Japan faces the greatest reconstruction opportunity of her history, and she naturally will draw upon America for a considerable quantity of lumber, concrete and steel required.

But how will she build?

The writer once stood upon the Yokohama Bund marveling at the architectural monstrosities the Germans and English and Americans had perpetrated, aided and abetted by the ambitious Japanese, to produce a so-called "modern" port city. We say "monstrosities" advisedly, for however well the buildings would look in an Occidental country they do not belong in Japan.

Japan was faced with the opportunity to make itself a modern nation almost overnight, and lost its head. Its own architectural traditions are august and dignified; by throwing them overboard, without considering how they might be adapted to the newer day, the whole country suffered. Even by discarding its distinctive national costume for the ugly, if more convenient, habiliments of the West, it suffered; a costume compromise were better.

When Frank Lloyd Wright went to Japan he built the Imperial Hotel in Tokyo in his original unique manner. It was hotly criticized from every angle. But the earthquakes are over, and it still stands, the main gathering point of reconstruction forces.

We recommend a variant of Architect Wright's designs to the Japanese in the reconstruction problem which faces them. It is a chance to build wisely in a type of architecture that is modern and suits the peculiar conditions of their country.

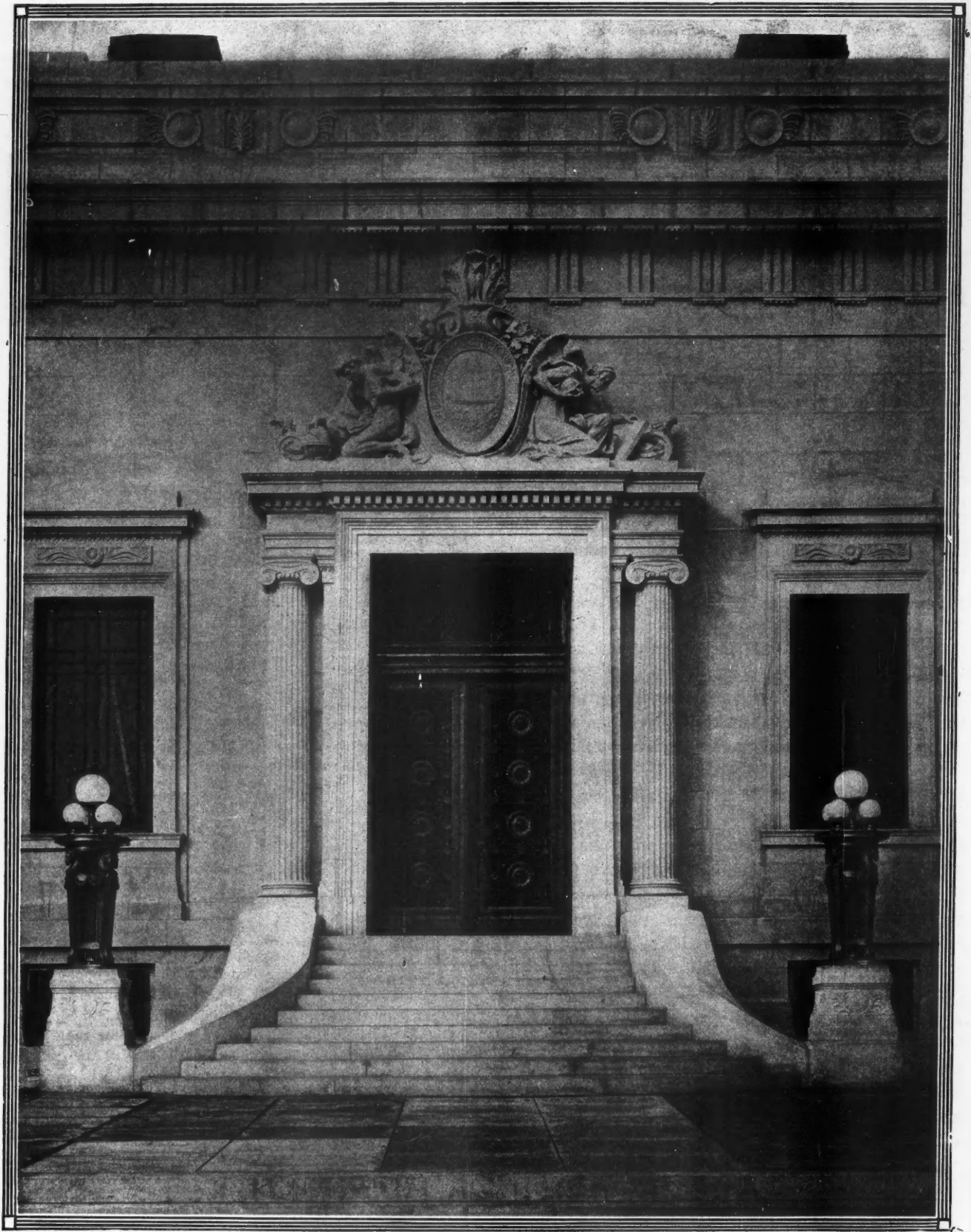


America Needs Industrial Art School

THERE can be no divided opinion about the need of an industrial art school in America. Such a school must not be limited to nor dependent upon the traditions of Europe, and yet it must be built upon the experience and success of those very schools that have been responsible for the development and beauty and harmony of design in all the buildings and the great variety of manufactured products which the Europeans have as yet been able to produce so exquisitely.

Such an industrial art school for America must be of great proportions; first, because it must serve a gigantic country, and, secondly, because it will need to run the whole gamut of the luxuries and necessities of our complex American life. AMERICAN BUILDER would like to see such established in Chicago, the center of the country, and it is gratifying to note that a great number of influential Chicagoans have combined to lend their influence to such a hope.

AMERICAN BUILDER likes to feel that it has been one factor in creating a better appreciation of industrial art as related to architecture. We have seen the ugly and commonplace dwellings of a few years ago give way to the architecturally pleasing Blue Ribbon residence; the squat-roofed, heavily false-worked and corniced office building give way to the graceful flowing lines of the American skyscraper. Art belongs with the people and we would like to see them have it.



AN EXAMPLE OF GOOD ARCHITECTURE

*The Main Entrance
NEW HAMPSHIRE HISTORICAL SOCIETY LIBRARY
Guy Lowell, Architect
Chester French, Sculptor*



Taking Advantage of the Gratuitous "Home Beautiful Service" in the Great Chicago Establishment of Carson Pirie Scott & Co. Here from nine until five every business day may be found a wide range of seekers for home decorating and furnishing advice and suggestions.

Store Helps the Home-Maker

"Home Beautiful Service" of Prominent Chicago Establishment Gives Patrons Benefit of Best Home Decorating and Furnishing Advice

By TERRY O'DONNELL

THE great modern stores of our cities are more than buying and selling establishments. Through their highly specialized purchasing organizations they scour the globe for the pick of the world's markets. As with the architect and builder, so does the modern merchandising establishment create specifications, and set up standards of high quality for the luxuries and commodities it offers its customers. It assembles all this diverse merchandise from many quarters, confident in its ability to serve the needs and satisfy the expectations of very differing classes of users.

But it goes farther. It interprets to its customers the proper use of the merchandise, in order that patrons may gain the maximum of value and comfort and usefulness for the money they spend.

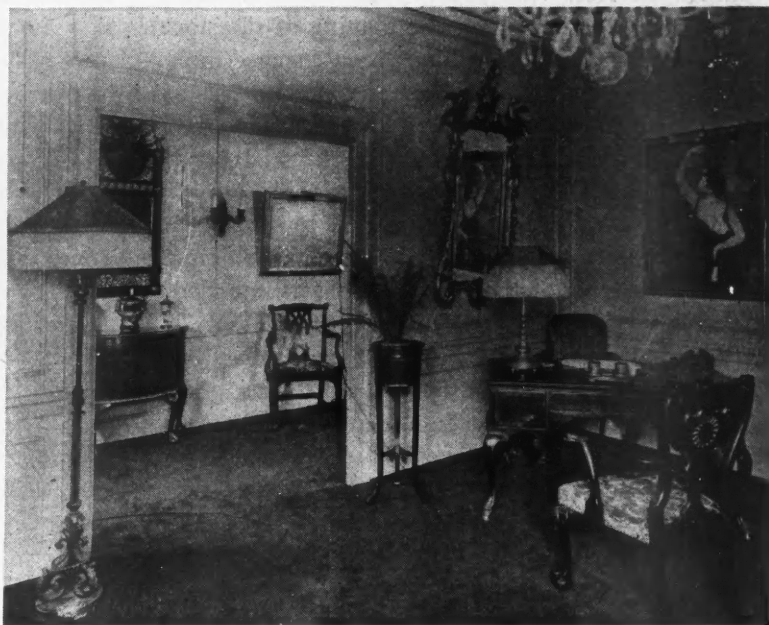
This interpretation, demonstration—education, if you will—has been done with many things: with electrical home conveniences, with toilet accessories, with food preparations; even to the supplying of living models which display to Madame the beauty of an exclusive hat or gown.

Why not, reasoned Carson Pirie Scott & Co., the great Chicago merchandising establishment—why not apply this art of interpretation to the decorating and furnishing of the home? Why not co-operate with the earnest architect and builder, by

beginning where these leave off?

This store is one of the oldest in Chicago, with an enviable reputation. Its customers offer a healthy range, from the wealthy with unlimited purchasing power to the ones who must shop carefully with a view to securing the maximum value for their more limited incomes.

Yet, regardless of their varying incomes, these people possess one thing in common—home; and a com-



A Corner of One of the Suggestion Rooms.



This Jacobean Living Room Offers a Wealth of Suggestion to the Visitor. Nor is the person of limited income subject to pique on account of its being apparently beyond his pocketbook. It demonstrates how few well-chosen details are really necessary to the tout ensemble of a perfect room.

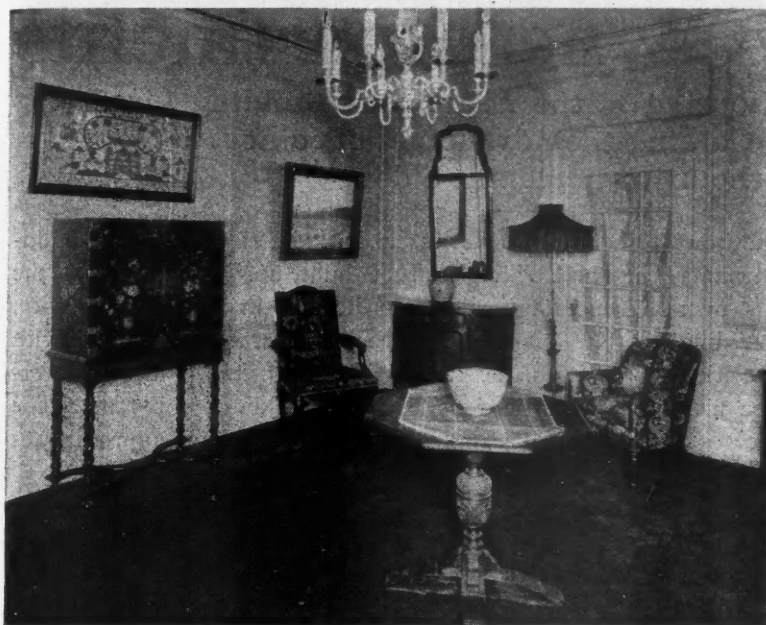
mon ideal—to make it the most attractive and comfortable place possible.

The result was that after its survey this progressive store inaugurated what it termed a "Home Beautiful Service." In charge was placed a woman unusually well equipped for the piloting of the store's new venture, in that she had long been engaged in furthering similar activities as the Manager of the Extension Department of the Chicago Art Institute.

A suitable announcement was made in its advertising that its "Home Beautiful Service" offered gratuitous assistance to home-makers, with a view toward helping them secure the maximum of good taste in the decorating and furnishing of their homes. It was intended to be service of the most helpful and personal sort. A portion of the ninth floor became a consulting room; its art galleries were adjacent, and utilizing a portion of the space occupied by these, demonstration rooms were fitted and furnished, in which every detail represented the authoritativeness of the best home decorative thought. Through these customers could roam at leisure, in search of ideas for similar rooms in their homes, or purely for observation and enjoyment. In the consulting office the director and her assistants undertook to give each inquirer individual and courte-

ous attention and, after ascertaining their particular problems or requirements, help them to meet these through personally advised and conducted visits to those departments in the store where the required material was to be had. It was an unselfish service, in that if occasion required the "Home Beautiful Service" gave assistance regardless of whether the store was to be benefitted or not.

Imagine Mrs. Newlywed, bewildered with the problem of making her two-room kitchenette truly homelike and attractive, and yet keeping within a husband's modest (at present) income; imagine Mrs. Twombly-Jones, busied with her countless social affairs and yet faced with the problem of fittingly decorating and furnishing her new residence in an exclusive North Shore suburb. Imagine plain Mrs. Doe, able after years of struggle to visualize a real home of her own in an excellent locality, only to find herself despairing of ever equalling the innate good taste and decorative instinct of her new neighbors. Imagine the Bachelor Girl, committed to a business career, yet desiring with all her woman's heart a really cosy apartment whose well-chosen furnishings made it a delight to return to after a hard day's work; imagine all these and you have but a small composite of the type of people who



Notice the Simple But Pleasing Wall Treatment in These Suggestion Rooms. A fitting background for the well-chosen furnishings.

daily come to the "Home Beautiful Service" for the helpful advice and aid so cheerfully proffered.

Such related subjects as the kind and color of the wall covering; the shade and quality and material of the window drapes; the proper rugs and furniture; the picture over the mantelpiece—the "key" often, which gives each bit of furnishing its proper value and setting—all these are the day's work of the "Home Beautiful Service" of the store.

There is no one thing so universally appreciated as beauty. Though all instinctively know this, not all know how to attain it. Perhaps, in endeavoring to assure beauty for the homes of its patrons, Carson Pirie Scott & Co. is helping greatly to bring back renewed interest in the American home. It would be fitting if such a typically American institution as this great store were to be the factor which stirred renewed pride in what



The Hall Deserves Intelligent Treatment. It is the keynote to the "Home Beautiful" and should be neat, inviting and cheerfully lighted.

should be a typical American heritage—pride of ownership, and pride in one's home.



Curtaining Suggestions

By GRACE FOERTH HUNGER

TO my mind there is nothing more charmingly appropriate for bedroom windows than simple cream colored fine scrim or marquisette or cheese cloth, hand hemstitched, hung with a box-pleated valance or chintz and held back with rosettes of the chintz. This arrangement allows one the maximum of air and light, is more economical than side draperies, and is essentially decorative. If the walls are plain, a narrow strip of the chintz pasted on the wall where it joins the ceiling, emulating moulding, lends an altogether charming effect. Or inserting strips of the chintz in the panels of the bedroom doors, is another expedient which carries a room out of the commonplace.

This curtain arrangement is thoroughly practicable, also, in the average dining room. Simple toned English casement cloth, a mixture of silk and wool, which is at last coming into its own, with a valance of figured linen of good design, may be employed here. These printed linens may be found in the loveliest old-fashioned eighteenth century designs, and as furniture coverings cannot be excelled. Monk's cloth combines well, also, with casement cloth as the glass curtain. This is another fabric which carries off a shaped valance very well when it is mounted on stiff buckram. A small stenciled border is appropriate here, or oval medallions of vari-colored flowers.

Heavy beige linen, with a block pattern done in wool or stenciled in colors to harmonize with the furnishings, with a box-plaited valance, is admirable for use at windows where a sash curtain is not desired.

Another economical method of securing color for the bedroom window at the least possible expense is to applique broad bands of cretonne on cream or white scrim or net. In this case one must be very sure to get hold of a cretonne that is guaranteed to wash well.

When colored overdrapes are used over lighter glass curtains, and a valance is either not required or desired, a line of color across the top having the same value as a valance can be established by covering the curtain pole with some of the drapery fabric.

A good quality heavy satine makes an inexpensive drape for a bedroom, but some of it does not withstand the action of the sun very well. One girl bordered her canary yellow satine overdrapes with a flower basket motif from a piece of chintz in gray, green, black, yellow and sapphire.

Co-operatively Owned Apartments

A New Development in City Housing Is the Apartment Building Lived in by Many Owners, Gaining the Advantages of Joint Tenantry Without Its Unpleasant Side

A TYPICAL development in modern city housing is the apartment building in which the tenants are likewise owners. It has created its own peculiar problems, for building an apartment building for co-operative sale is a very different proposition from the building of apartments for rent to be ultimately sold to an investor.

Location is the first essential. The successful co-operative building must be in a restricted residential district, and yet upon the most reasonably priced land that can be found. It must not be too far removed from the city's business center, and there must be adequate provision for transportation to and from the city. The question of location is vital in the case of the co-operative building; it differs from the case of the ordinary rental building which tenants expect to occupy but a limited time.

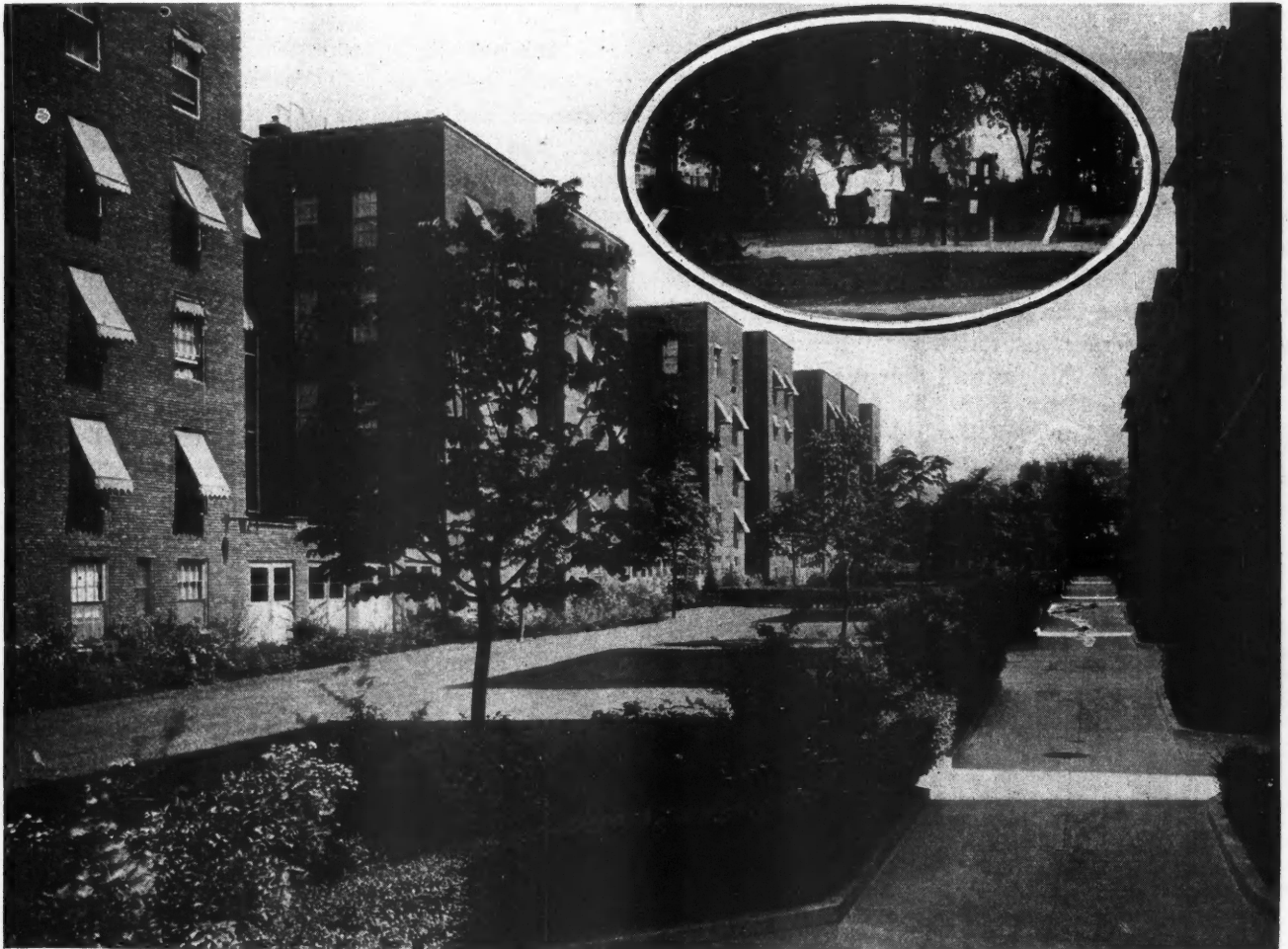
The successful co-operative building must be constructed of good materials and good workmanship,

otherwise no successful business in co-operative building and selling can be built up. Good will is the essence of the business here as in any other activity.

The planning of the co-operative building with respect to the size of the apartments is also a different problem from that of buildings for rent. The apartments should be of a size which approximates the average one-family house.

The Queensboro Corporation at Jackson Heights, N. Y., has conducted perhaps the largest program of building and selling co-operative apartments. The corporation has satisfied the first condition or requirement—economical land—by erecting these buildings on land costing less than one-half of what it would in other locations as near the business centers as is Jackson Heights. By doing so any depreciation in the value of the buildings can be offset against an appreciation in the value of the land.

The buildings themselves are erected in large



A Co-operatively Owned Group of Apartment Buildings at Jackson Heights, New York, and Lived in by Tenant-Owners. How different this backyard, with its garden, from most rear-apartment eyesores? Tennis courts and golf course are close by, for exclusive use of tenants, and yet the city proper is only about twenty-five minutes away.



Typical Dining Room and Interior Arrangement of the Jackson Heights Co-operative Tenant-Owned Apartments. Each apartment is of a size approximating the average one-family house; the occupants are business and professional men's families.

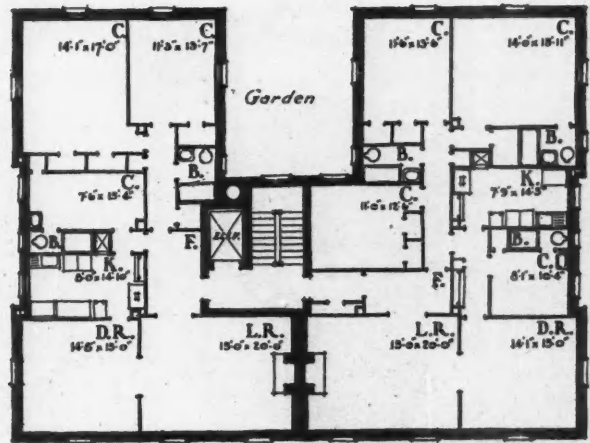
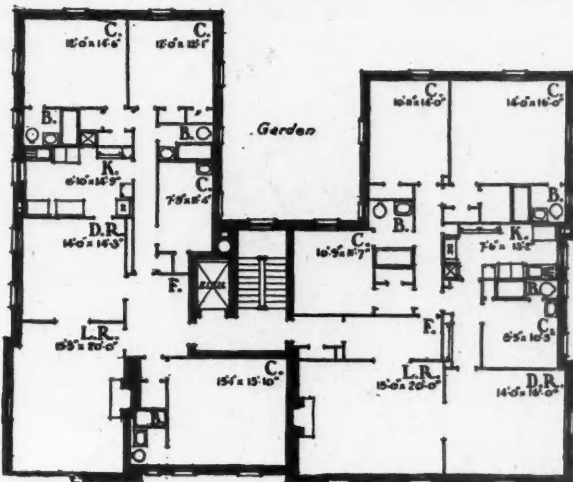
units occupying an entire city block. The use of large engineering and building organizations makes possible the purchase of the most economical materials from all parts of the United States.

The labor factor is handled by building off the peak of the market. For instance, the brick buildings are built in the late fall and perhaps in winter if climatic conditions permit, at a time when bricklayers are less employed on other work. Plastering is done in the early spring, instead of in August and September—the time of greatest employment.

The tenant-owner gains by securing first-class construction and low maintenance cost; a carefully restricted neighborhood; and the lowest priced site available within easy access of business centers. Then

there is the aesthetic benefit inherent in comprehensive block development rather than the unsymmetrical and irregular height and type of building which might otherwise prevail; the maximum of sunlight and ventilation insured by the erection of buildings two rooms deep on the four sides of the block, and an interior garden planned by landscape architects.

The rent paid by a tenant owner is divided between maintenance charges, interest and payment on the mortgage, a contingent reserve fund, and the usual commission to the corporation for its services as agent. As the payments are made, the surplus in all cases is returned to the tenant owner in the form of dividends. The Jackson Heights community now houses 700 families.



Typical Floor Plans of the Jackson Heights Co-operative Apartments. Each room has outside lighting and good proportions. L. R., Living room; D. R., dining room; C., chamber; K., kitchen; F., Hall; B., bathroom.

Dignifying The Town Hall

Dignity, Beauty and Serviceability Obtainable in the Town Hall at Reasonable Outlay, as Was Proved at Littleton, Colorado

By E. A. FRANCIS

THE United States has its capitol; the several states have their capitol buildings; there are impressive and beautiful buildings in the majority of country seats. Why should the town itself be neglected in its Town Hall? The town is the unit from which all the others derive.

Littleton, Colo., is a village of 1600 population. It recently felt the need of a Town Hall more typical of its forty years' existence than the old building which had served in that capacity over-long. The charter limited the amount of the appropriation available for the Town Hall. In fact, our limit of cost was \$25,000—not a great deal for a village of 1600 souls under the conditions which obtained then.

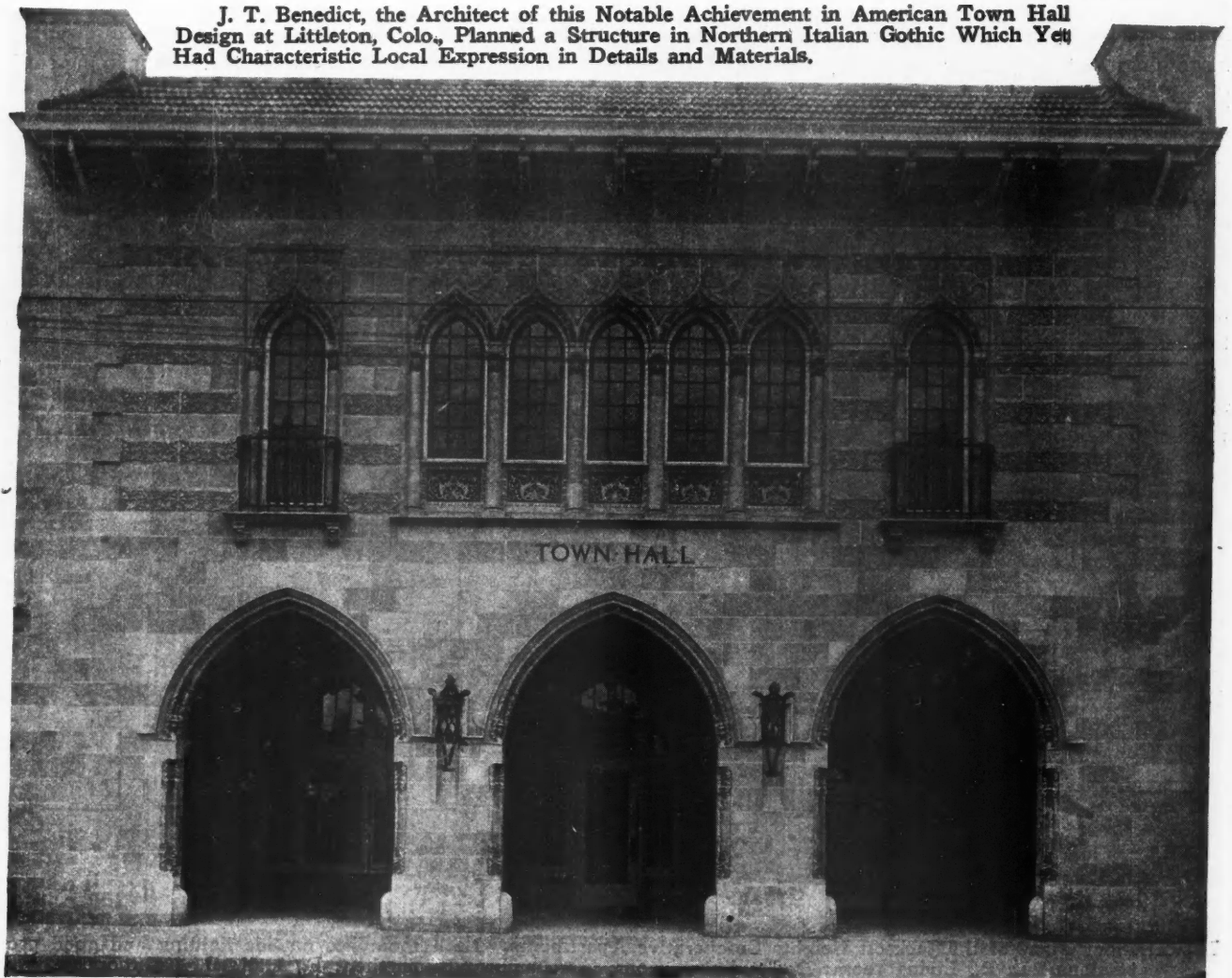
The site of the old building was owned by the town, and this site could not be sold except by special vote of the people. Taking into consideration the limitations of money and delays of building if a new site were obtained, it was decided to build on our old site and thus have our Town Hall on Main Street in line

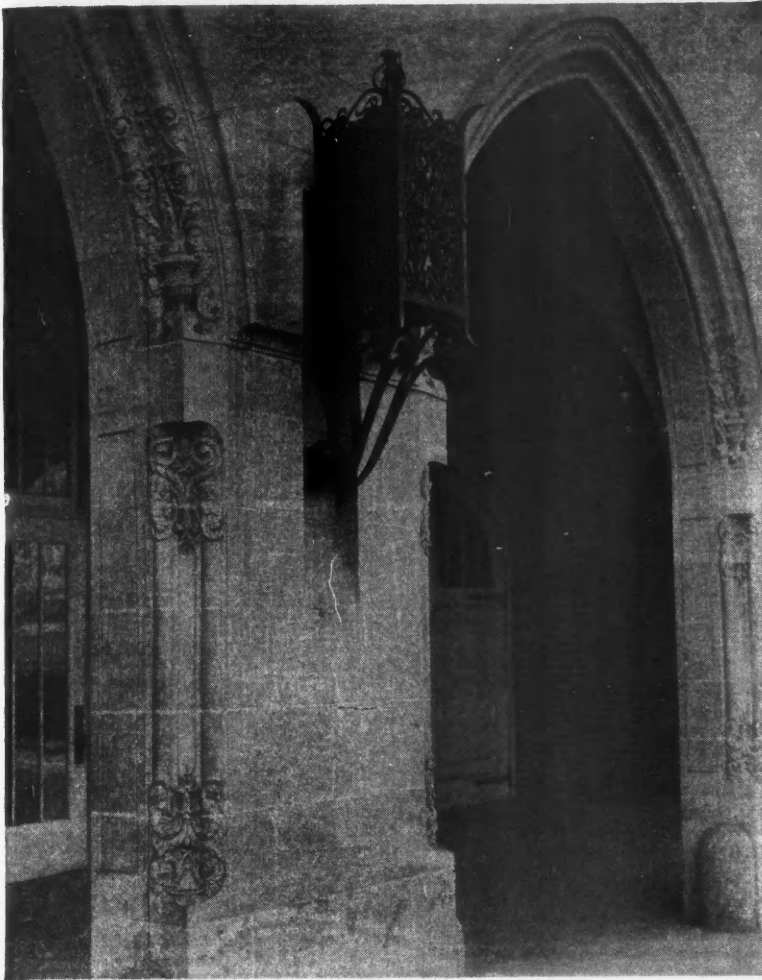
with stores and other buildings. This brought forth objections from certain quarters, especially from citizens who demanded that the Town Hall should be an outstanding building in design and bear an aspect of distinction that would imply its purpose. This phase of the matter we decided to leave to our architect, whoever he might be, and include in our instructions a request that among other primary considerations a facade of Town Hall character should dominate the design.

Our next step was to select an architect. We had expected to have an open meeting where architects might state their ideas and claims in person. This was found inadvisable, and the Town Council was requested by the architects to accept one of their number as architect. J. T. Benedict, who had been our architect for the Carnegie Library, was given the commission.

Influenced by the fact that Littleton is the seat of the University of Colorado, and that for the university buildings a style of northern Italian Gothic had

J. T. Benedict, the Architect of this Notable Achievement in American Town Hall Design at Littleton, Colo., Planned a Structure in Northern Italian Gothic Which Yet Had Characteristic Local Expression in Details and Materials.





The Pointed Arches of the Ground Floor Arcade, the Wrought Iron Lamps and the Conventionalizing of the Columbine, the State Flower in the Ornament—All Combine to Perfect the Whole.

been determined upon, our architect planned for us a Town Hall which gained its inspiration from northern Italian examples, and yet had a characteristic local expression in details and materials. The facade is dignified and pleasing, and the pointed arches of the ground floor arcade, the balcony grilles, the second story windows, the lamps, the double bracketing of the cornice all combine to make a thoroughly attractive and well-handled whole.

Our Colorado state flower, the columbine, has been conventionalized into the seven horizontal bands of incised ornament of the second story. The Rocky Mountain eagle has also been introduced in the lunettes over the second story windows. The lamps, it is worth noting, were made by our architect as a spare time hobby, and were fabricated by him from the remains of some iron balconies. That they key in admirably with the general design of the facade will be admitted.

We now have a very satisfactory Town Hall, whose appearance in our nearly Tuscan climate is not foreign; one in which we all take pride. The first floor houses a council chamber and the city treasurer's office, a public rest room and, on the other side, the fire truck room, the hose room and lockers. Upstairs we have a spacious auditorium for community gatherings. The exterior is light gray terra cotta, with roof of tile.



Diagonal Reinforcement Sometimes Desirable in Concrete Slabs

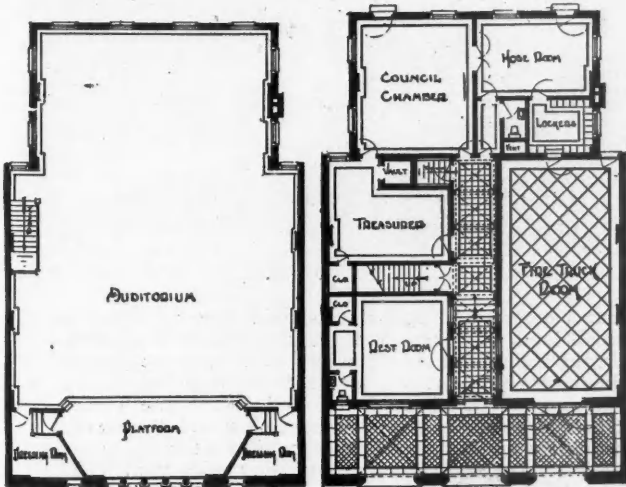
IT would be natural to suppose that the most effective way of using steel for reinforcing concrete floors and other slabs would be to place it in the direction in which the stress was applied, and at right angles to the direction of probable cracks. Mathematical analysis of the problem confirms this assumption.

In the design of concrete ships, however, there were other considerations which made it seem desirable to place the steel diagonally with respect to the direction in which the cracks were expected. Accordingly tests were made at the Bureau of Standards on slabs in which different types of reinforcement were used. These tests confirm, in a general way, the correctness of the mathematical analysis and show that the reinforcement should be laid parallel with the span and not at an angle with it; unless there are other factors, such as shrinkage in setting or expansion and contraction with change in temperature, which tend to produce cracks at right angles to those due to load stress.

But shrinkage and expansion occur in all concrete structures and frequently transverse reinforcement is required. Cracks from such causes may be prevented by the use of bars laid at an angle with the span, or by mat reinforcement.

In these tests it was found that the use of reinforcement having diamond shaped meshes distributed the cracks effectively and kept them smaller than was the case with the other types of reinforcement tested. About a 12-inch lap where the ends of these sheets of expanded metal joined was found necessary to prevent slipping of these splices.

The early close of the war rendered it unnecessary to apply the results of these tests to concrete ships; but the information acquired is likely to be of value in the design of buildings.

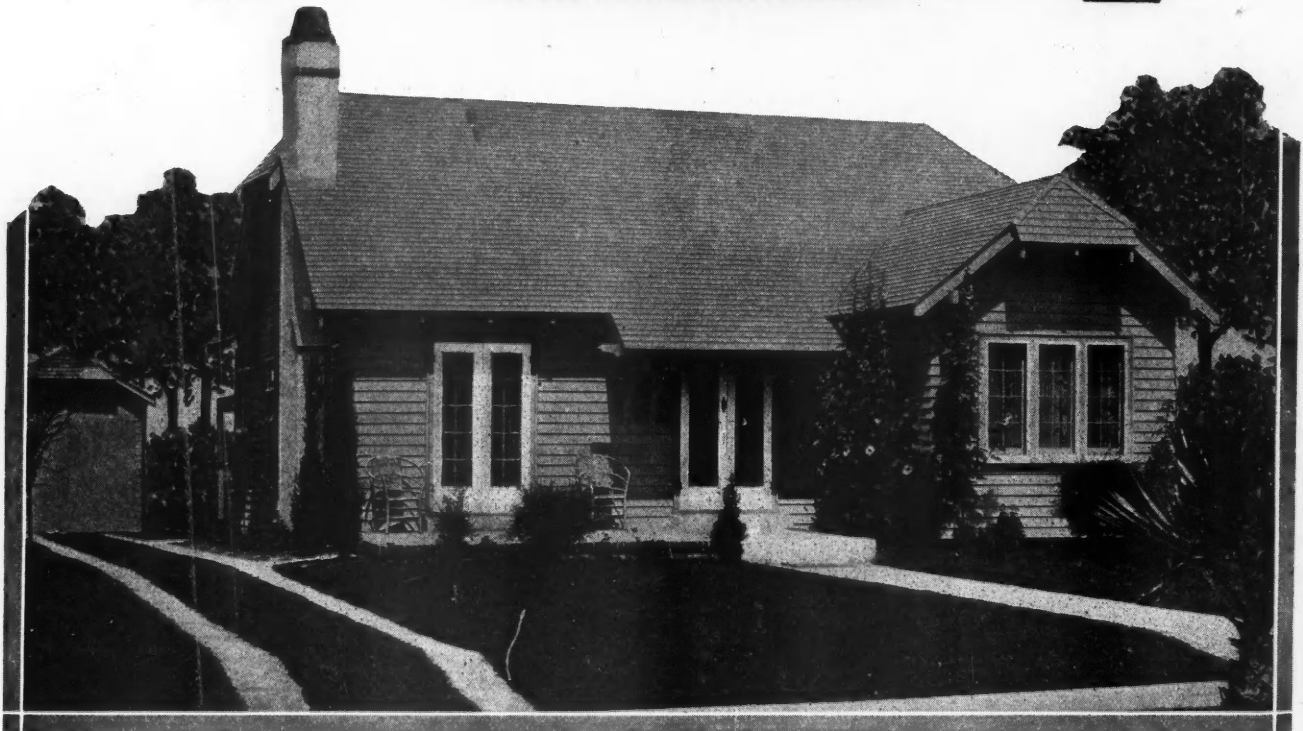
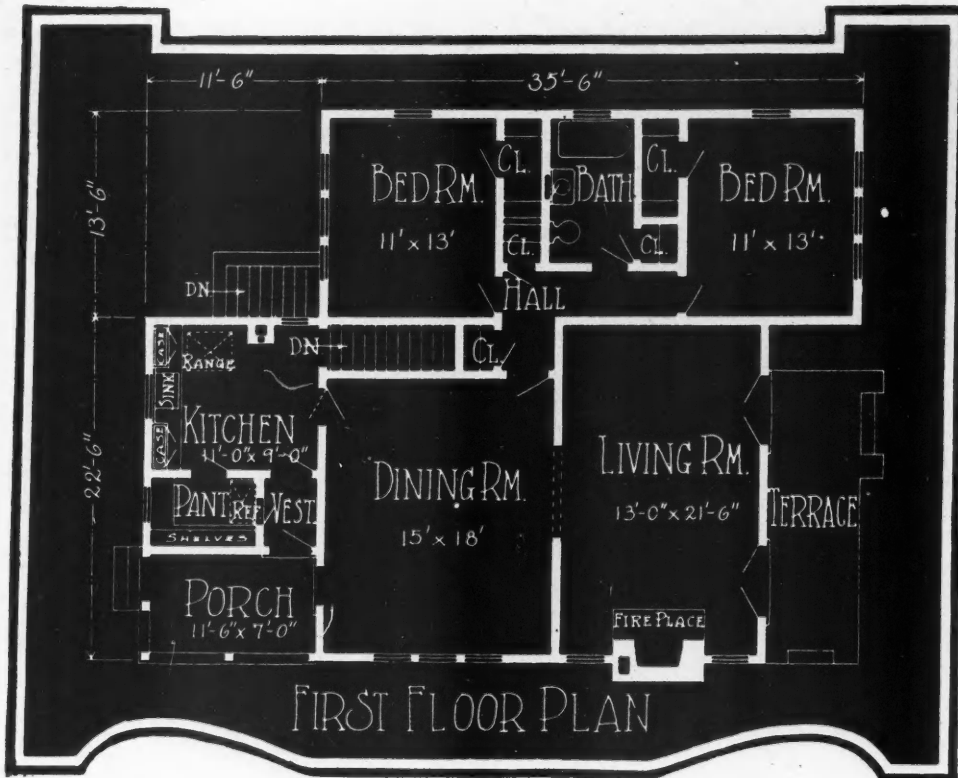


Second Floor Plan

First Floor Plan

PRACTICAL
&
ARTISTIC

BLUE RIBBON HOMES



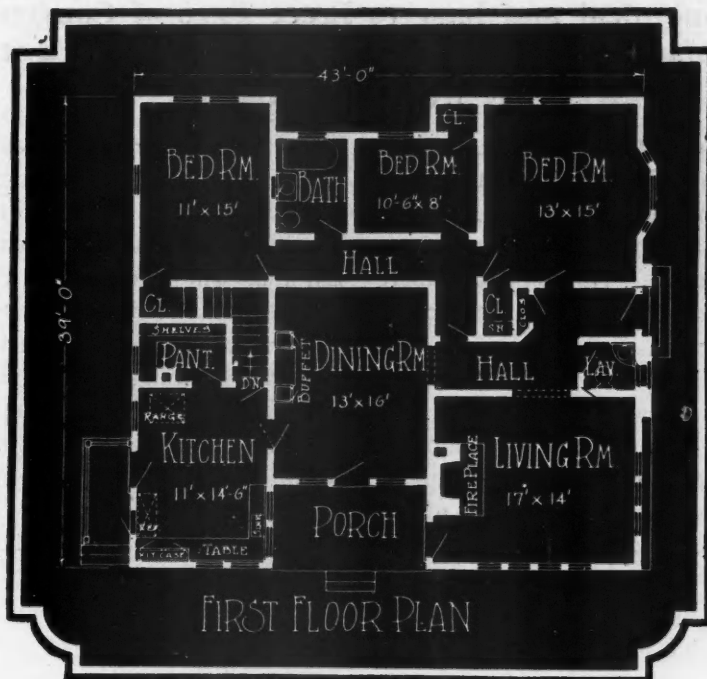
GOOD BUNGALOW FOR SOUTH AND WEST. One will find many bungalows in California and throughout the South to Florida which are variants of this very attractive Blue Ribbon Bungalow. It is ideally suited for sunny climates, with its deep overhanging roof, and the snubbed gables deflect any high winds which might otherwise be destructive. The roof extension makes a small porch over the front door, and both doors are really French windows. The living room is nicely proportioned, being 13 feet by 21

feet 6 inches, and opens onto a side porch. The kitchen is small and compact, and connects with the same porch through a vestibule. The two bedrooms are isolated from the house proper, and are reached from the dining room. They connect through a hall with the bath room. Observe that the wide siding helps add to the generally attractive appearance of the bungalow; it is stained a weathered brown, with window and door trim white. The roof is stained green.

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BLUE RIBBON HOMES

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TIMBERED BUNGALOW, ENGLISH STYLE. This seems to be a general favorite, as to style of construction, judging from the number of inquiries which have reached us since beginning showing buildings of this description in American Builder. The appeal is undeniable. It does not merely bring back to many beloved memories of the old country, but to those who have always lived in America it suggests substantial building, comfortable living and a picturesqueness which is real, because it is based upon sound construction and good taste. The combination of

brick with timbered stucco, the quaint chimney with its old-fashioned chimney pots, and the distinctive windows lead us to look for similar quaintness in the interior. This is altogether a matter of individual taste. The floor plan is up to date and spacious, containing not less than three bedrooms, besides the kitchen, dining room and living room, with fireplace. Overall dimensions are 39 feet by 43 feet. If you build this, by all means give it trees and shrubbery and English ivy.

Structural Steel Frame and Steel Lumber Construction

A Simple, Economical and Easy to Erect Type of Construction Which Holds Many Possibilities for the Builder and Contractor

By RUFUS CARNES

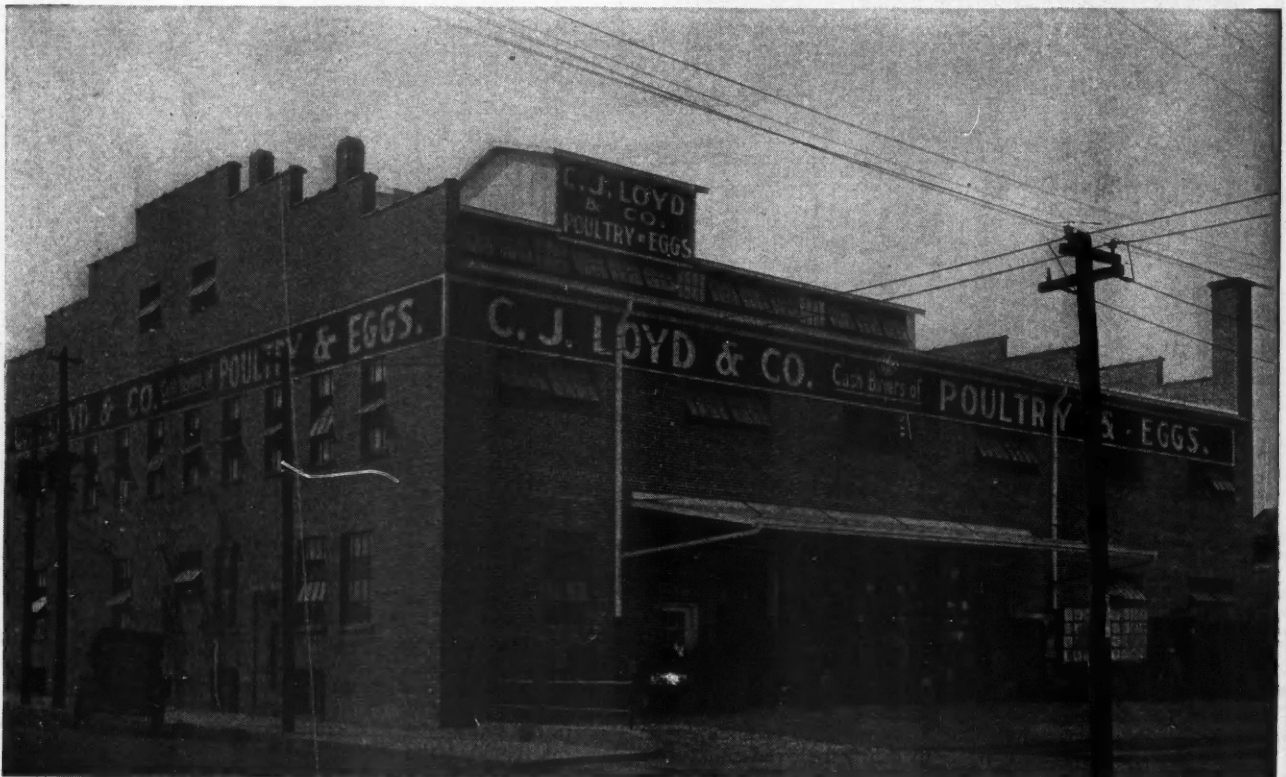
THE builder and contractor operating in cities of 10,000 population and less finds himself confronted with the same problems and opportunities as his brother builder and contractor operating on a bigger scale in larger cities. Not only are there garages, store buildings, small factories, warehouses and other buildings to erect, but the builder and contractor is asked to add the function of architect to his other duties, for there is a type of owner who feels that, since a proposed building has not a large amount of detail connected with it, he can very well dispense with the architect as a factor in the erection of the building. The architect may likewise welcome such a condition as giving him time for larger projects.

Yet the proposed building must be architecturally correct, as to design, construction and usefulness for the purpose for which it is intended. And the contractor and builder, in addition to supervision of the practical details of his work, will find himself laden down with a mass of detail work which can easily become profitless and burdensome.

What is more natural, then, than to make use of the plan and consultation service which manufacturers

of structural steel frame and steel lumber place at the disposal of the contractor and builder? It is a service of distinct benefit to the client as well, for the contractor and builder is enabled to purchase material that will safely fulfill the requirements of each building, at a reasonable price, and have a thoroughly modern and up-to-date structure as well.

I have in mind a town in Indiana of about 7,000 inhabitants. There was no local architect, but two contracting builders. A wholesale poultry dealer planned to erect a wholesale poultry house, and wished to have it about 80 feet by 100 feet, two stories and basement. When he broached his plan to one of the contracting builders the latter suggested the employment of an architect. Securing of an architect's services seemed an uncertain possibility, and besides the owner felt that this would entail an additional expense of from \$1,500 to \$2,000 which he thought the contracting builder ought to bear; or if not, to absorb in his own construction cost. So the perturbed building contractor wrote about his difficulty to a firm with which he had some previous dealings, and was relieved when the firm suggested that he submit plans from



This Wholesale Poultry and Egg Storage House Was Built by a Local Builder, Using Plans and Material Supplied by a Manufacturer of Structural Steel Frame and Steel Lumber. The builder was able to finish it complete with local labor, making good profit, and advancing his reputation.

them to the wholesale poultry dealer, without charge, and make a total bid upon the work.

The owner felt that it was unusual luck to find the building contractor capable of designing a building of the proposed size, where heavy loadings would have to be taken care of. Yet he was rather chary of going ahead. But when he found that a responsible concern, with capable engineers, would have charge of the plans he felt safe in having the contracting builder proceed.

The steel manufacturing firm made the plans, using fire-safe construction in the first and second floors. In order to assist the contracting builder steel lumber and structural steel frame was used. The building contractor had feared that, if the job was to be a poured

concrete job, he would have to sublet the contract in an adjoining large city, lessening his profit and bringing in outside labor. The steel lumber construction, however, appealed to the contracting builder, and eliminating this difficulty. Besides, it was simple, economical and easy to erect, and he did not hesitate in any way in placing the contract and standing behind it with his money and reputation. The result was that he gave the owner a construction that brought him a low insurance rate at a reasonable price and did all of the work with home labor.

Later on his competitor, the other contracting builder in the same town, had a chance to figure on a hospital which ran to \$100,000. The contract price of the poultry warehouse was \$70,000. They had a chance to compare notes later, and the builder of the latter found he had made more money on the lesser-priced contract than he could have made on the hospital contract. In addition, he was not under the supervising architect, nor did he have the trouble necessary with all the small details which attend hospital construction.

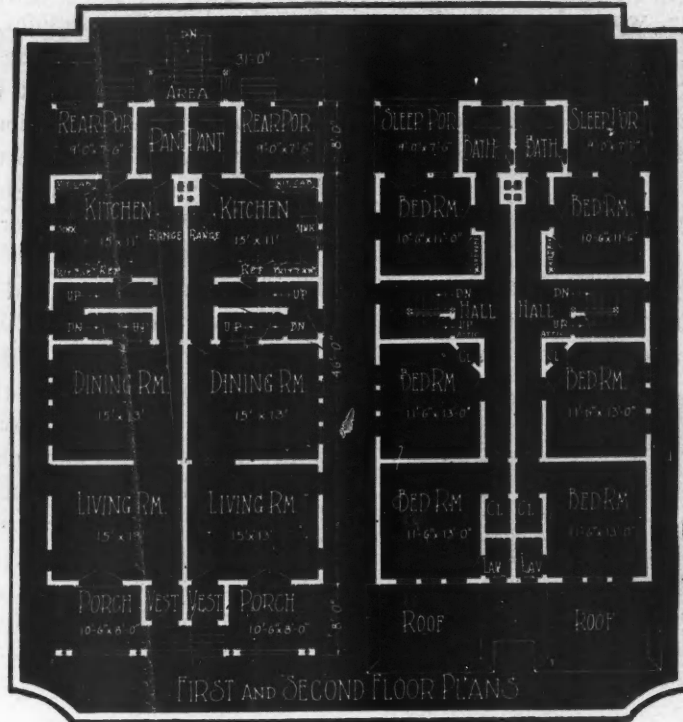
This was about four years ago, and the contracting builder on the poultry warehouse has done from \$50,000 to \$100,000 worth of work each year. He has worked up a reputation, and when any owner desiring to erect a public garage, store building, factory or other kind of building gets ready to build, they call on him to submit plans and figures.



The Wholesale Poultry and Egg Storage Plant as It Appeared Under Construction. The builder was able to go ahead with absolute certainty of his work and without delay, being helped by plans furnished him from the maker of structural steel frame and lumber. It made a fine job and brought him many others.

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BLUE RIBBON HOMES



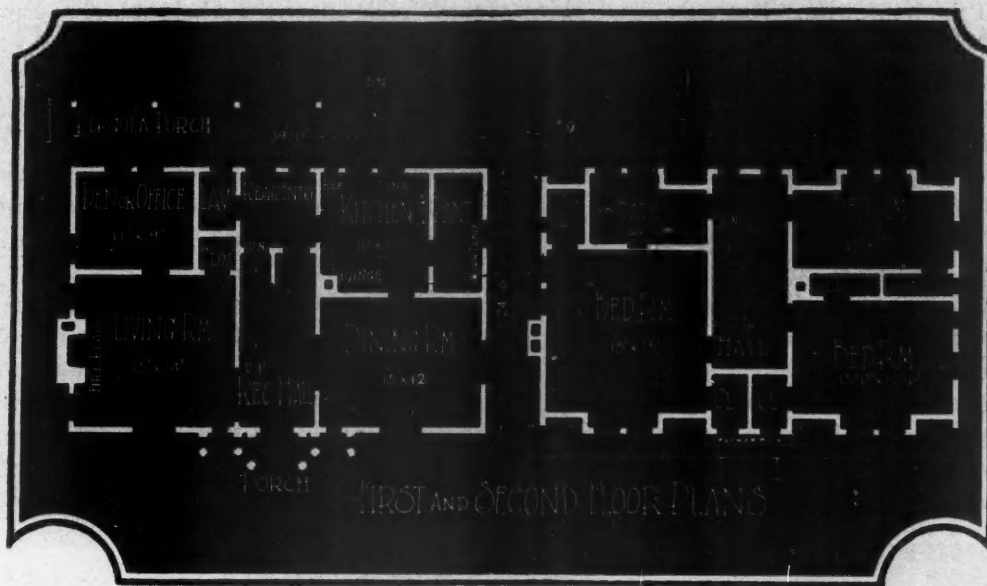
A DUPLEX DWELLING. This is not a residence converted to duplex use, but was designed to serve the residential requirements of two families. Its location is in a rather thickly populated suburban section near a large city, but there is no reason why it would not be as desirable even where this condition did not exist. The entrance is kept private, since there is not one vestibule, but two. The staircase is not in the front of the dwelling but two-thirds

of the way back, opening off the dining room. We have a living room, dining room and kitchen with pantry downstairs, and a rear porch. Upstairs are three bedrooms, bathroom and sleeping porch. There is good storage space upstairs, and the basement is divided to give each tenant satisfactory storage room here also. The duplex dwelling has a frontage of 31 feet over all, and is 46 feet deep.

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PRACTICAL & ARTISTIC



A RATHER UNUSUAL DUTCH COLONIAL. The charm of this style of architecture is undeniable, and in this case the designer of our Dutch Colonial Blue Ribbon residence has taken some liberties with the accepted form of window treatment and arranged for curved ones instead on the first floor. The curving portico over the entrance helps to justify an architectural handling which might otherwise be questioned on the score of fitness, and the result is

very pleasing. Observe how this style lends itself to ample spacing upstairs. We could have four bedrooms instead of the three shown, if occasion demanded. This exterior is stucco; the roof was stained a dark green, and the generous dormers make effective contrast. The house dimensions over all are 24 feet 6 inches by 39 feet, and either the side or the end could front the street.

Radiator Camouflage

Builders and Decorators Have Exercised Considerable Ingenuity in Making the Utilitarian Radiator Serve an Artistic Purpose

By ESTELLE H. RIES

THE exposed radiator is "the bull in the china shop" to the housewife. Not only itself objectionable because of its clumsiness of line, its blatant color and non-conformity in the scheme of the room, but it brings with it such familiar ills as the warping of adjacent woodwork and the faded or streaky spots on the walls above. And yet the comfort of a good radiator makes it almost indispensable every winter.

Builders and decorators are therefore exercising ingenuity to conceal this offending Cinderella, or rather to dress her sufficiently well to let her mingle in the society of the other furnishings.

Yes, the radiator should be covered, and there are several ways of doing it. Portable radiator covers are available that fit tight over the radiator. They are three-sided affairs with a top, shaped like the radiator

itself. The back is entirely open so that the cover easily slides over the whole thing, and may be readily taken off for cleaning.

These portable radiator covers are really like furniture, and may be finished to match mahogany, oak, walnut or white and tinted enamel. In addition to protecting the walls, these covers provide an appropriate place for books, statuary or flowers, and contribute another decorative touch to the intimacy and personality of the home.

Radiators are ordinarily seen under the window, and in this location a window seat is effective to cover it out of sight. Deflecting lining should be used to direct the heat into the room and not let it go unguided up the window seat. Instead of the window seat, it is also satisfactory to have a taller arrangement which amounts to a wide window sill that forms a shelf on which flower pots or other things may be placed.

Whenever the radiator, covered, is flush with a wall or window seat so that the air cannot be emitted from a grill at the top, a curved lining of tin or asbestos will lead it out through the front. The matter of circulation of the heated air cannot be over-stated. If the heat is closeted within the radiator cover so that it cannot come out into the room, the decorative value has overstepped its proper bounds.

We sometimes see the lower part of a built-in book-case that hides the radiator, in which instance the books are protected from heat by asbestos or other heat-resisting material, and again a front grill is the outlet for the ejected warm air.

In some form or other the grill is part of every radiator cover or screen, else the heat would have no egress into the room and the purpose of the radiator would be defeated. These grills are of wood or of metal, and of a style and scale to be appropriate to the rest of the furnishings. Interesting designs of considerable variety may be had, and others are available that are so unobtrusive as to be noticed only if some one points them out to you.

When planning radiator covers.



A Logical Treatment for a Hall Radiator. While the lines of a radiator are not unpleasing, it is natural for the decorative sense to wish maximum harmony in its relation to other furnishings.



The Proper Camouflage of This Radiator Has Made a Place of Beauty of This Small Conservatory.

An Odd, But Thoroughly Utilitarian Use of Radiator Space Is Gained by Treating This Corner as Though It Were a Built-In Seat by a Window.

complete facility for easy circulation must always be provided. Air must be free to enter below the radiator, pass up around it and re-enter the room without undue obstruction. The hiding of the radiator behind covers results in a slight loss of efficiency, but this is usually counteracted by the fact that a surplus allowance of heat is generally supplied in rightly installed systems, and any difference will be corrected by adequate provision for circulation.

Radiators are occasionally placed in a niche in a wall, and here they may be fitted with a decorative screen. Built-in cupboards also provide opportunity for concealing a radiator in the lower part and good effects have been worked out in this manner.

It frequently happens that the homeowner has some old pieces of furniture such as chests, benches, cabinets and others that may be converted into radiator covers, and these lend a fine air of dignity to the room and mystery as to the source of heat. Those

selected should be able to withstand the tendency to shrink, and may be lined with non-combustible material to safeguard them on this score.

Do not attempt uniformity in the disguise of radiators throughout the entire house. As a matter of fact, the camouflage will be more complete if they are unlike. It stands to reason that the location, size and shape of the radiator will largely determine the type of cover that will be desirable. The one that is hidden in an old chest in the living room can have little in common with another under a bedroom window seat. The wood trim in each case should conform with the wood trim of the room in which it finds itself, and the shape too, must be a deciding factor in the type of cover chosen.

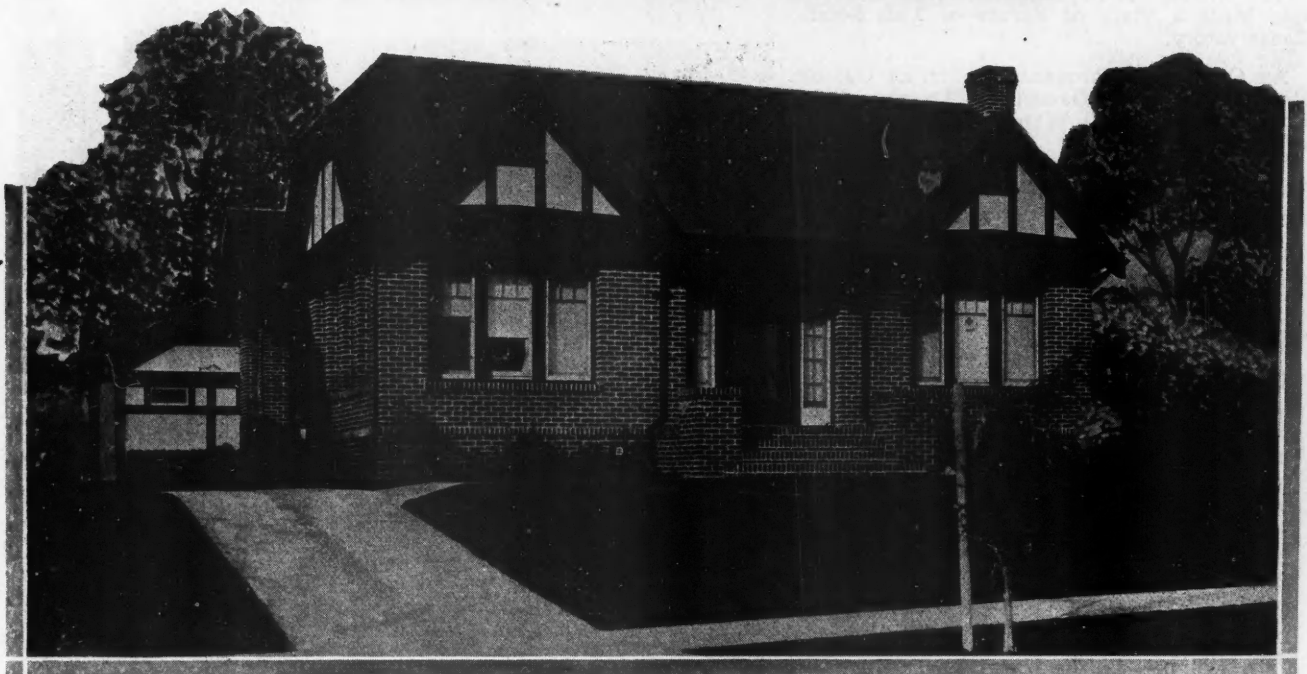
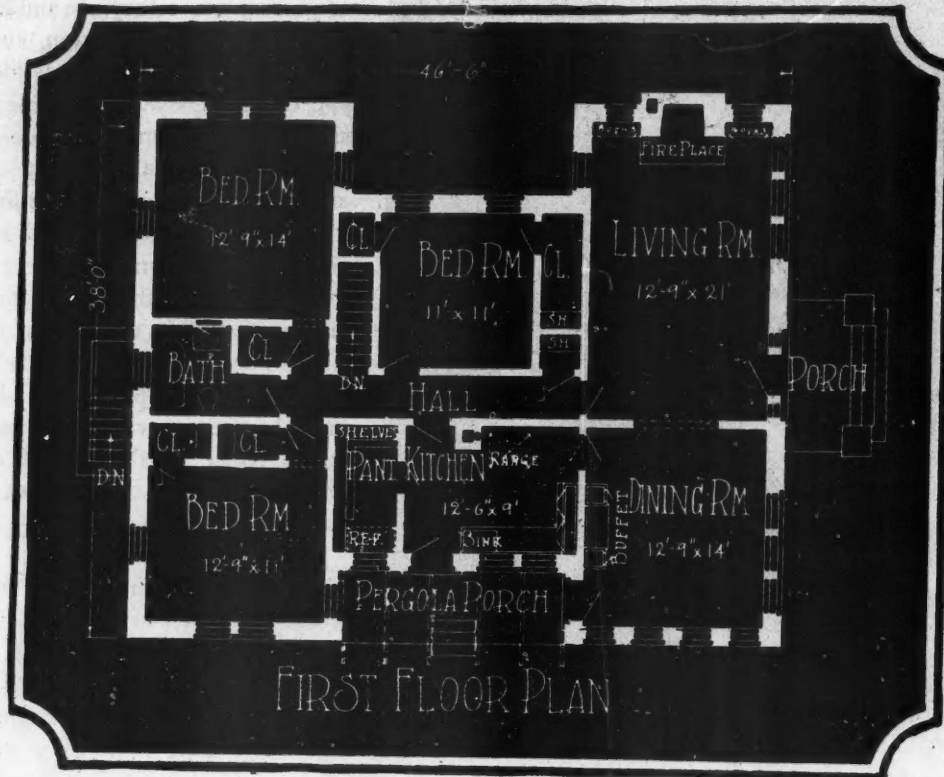
It is needless to say that the architectural niceties should be preserved. Do not design an elaborate cover for the radiator in the simple room, as this would only make it more conspicuous than it was and would defeat the purpose.

But it is unquestionably true that a home will find far greater favor in the eyes of the prospective owners if they know that they may be masters of their radiators and not the victims of warped wood, stained walls and ugly fixtures. This is one of the lesser things that give a permanent pleasure far in excess of the initial expenditure.



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BLUE RIBBON HOMES



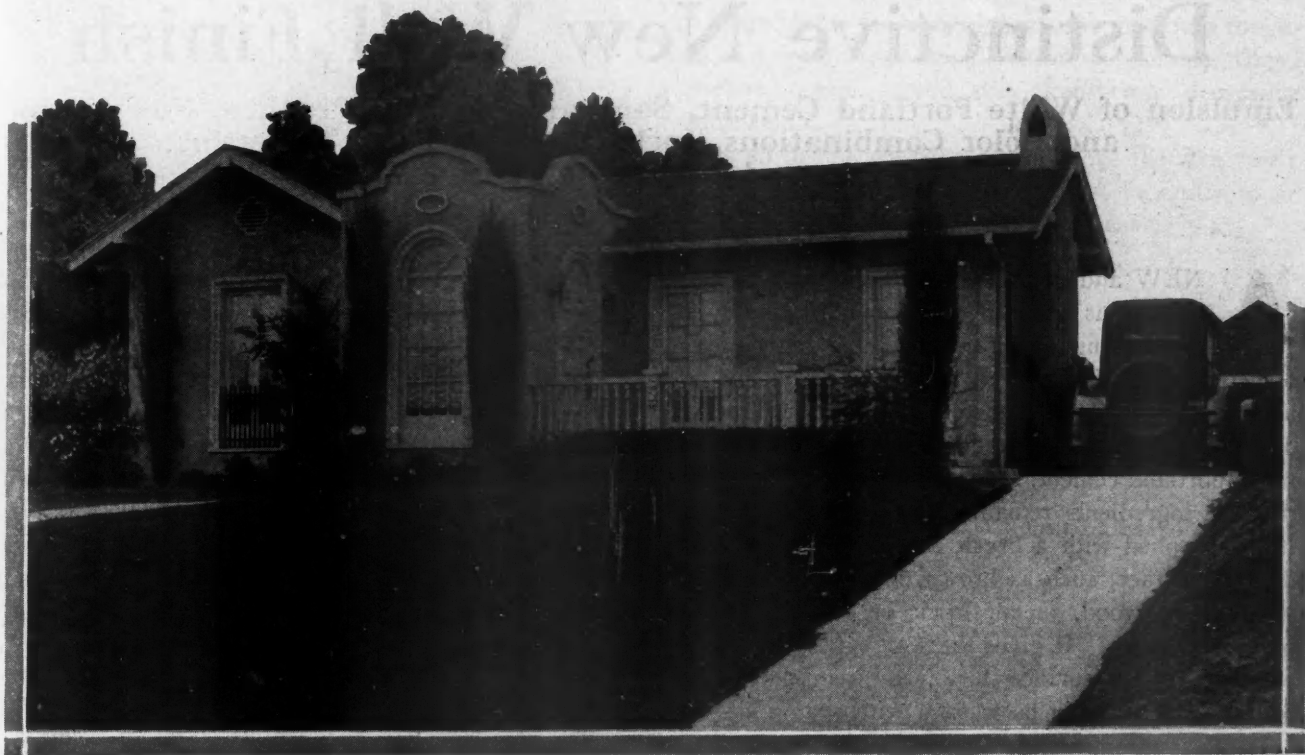
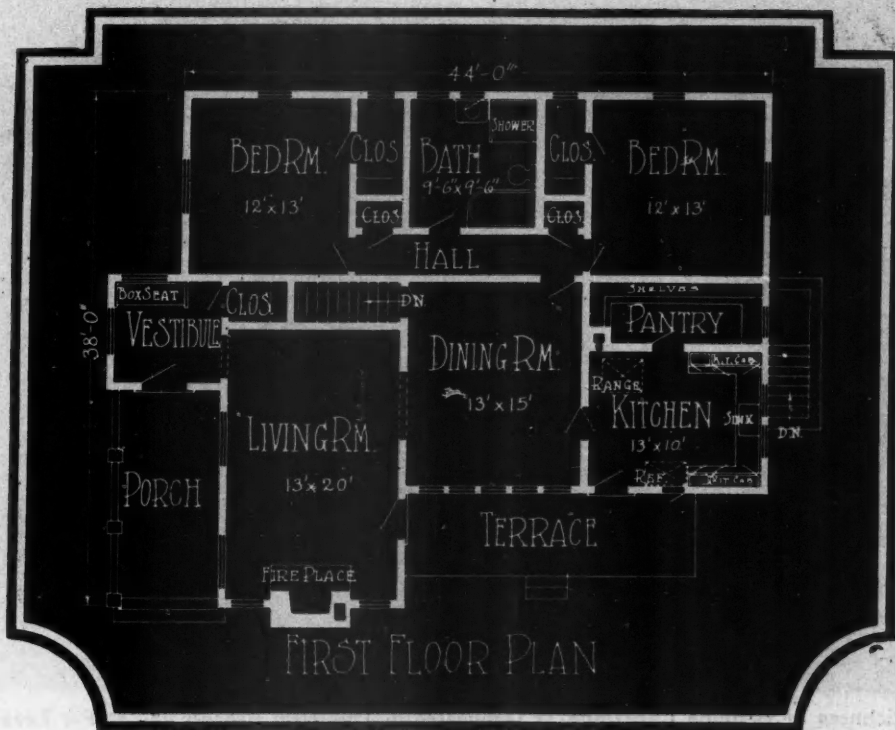
A COMMODIOUS BRICK BUNGALOW. This should appeal to the prospective home builder, anxious to invest in a type of home which will wear well, and require a minimum amount of attention over a period of years. We would like to see red brick used here, with white mortar; or a dark maroon, with cream mortar. Whatever color of mortar is used should be repeated in the stucco. The timbering might be dark brown, stained; likewise the cornice, and a stained dark green shingle used for contrast on the roof. Note how the garage at the rear carries out the feel-

ing of the stucco pattern of the bungalow; if you have a car, this is a good scheme to follow. The bungalow is a very well-arranged one. The ample entrance porch leads us through a side-lighted door into the living room, with fireplace, and connected with French doors with the dining room. The kitchen has a pergola porch any woman will appreciate. The three bedrooms have full privacy, and very ample closet space. Shrubbery and trees will do wonders toward making this home more attractive.



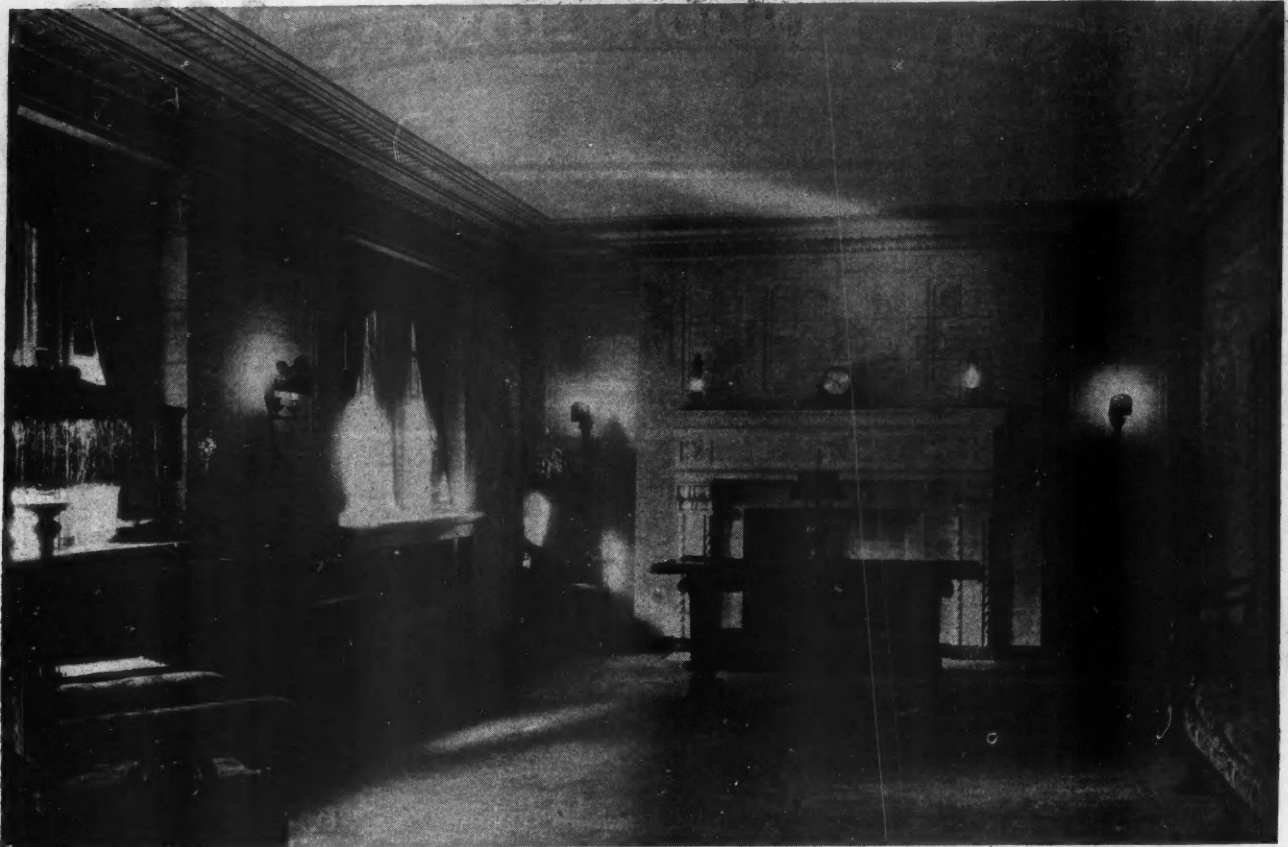
BLUE RIBBON HOMES

PRACTICAL & ARTISTIC



SPANISH STYLE BUNGALOW. Our friends in the South and West are responsible for the renaissance of the Spanish type of architecture as applied to home building, and as the adaptation has always been accompanied by improvement we now have some excellent buildings, like this one, which are making an appeal to other home builders in even the colder sections of the country. This exterior is naturally stucco, and it will be tinted a warm buff, pink, blue or brown. We have a terrace leading to a high arched

vestibule, and thence into a high arched living room with fireplace. This fireplace could be ornamental cast stone with high mantel, and the room furnishings would be best in Jacobean or Spanish type furniture. The walls, too, could be in the new sanded finish now so popular. The dining room has a high arched ceiling, which wooden beaming would make more effective. The bedrooms are of ordinary height, and are two in number, with adjoining bathroom.



All the Soft Richness of Genuine Caenstone Is Duplicated in This New Process and at Far Less Expense. Observe moulded cornice and the moulding of the door jambs and the fireplace—all of the same material and possible because of its excellent plasticity.

Distinctive New Wall Finish

Emulsion of White Portland Cement, Sand and Asbestos Produces New Texture and Color Combinations, Including Caenstone, Travertine, Limestone and Unpolished Marble Effects

By LOUIS G. MAURER

A NEW and permanent medium for wall decoration has attained wide popularity with discriminating architects, builders and building owners. It can be used on the inside or outside of a building, to simulate Caenstone, Travertine, limestone or unpolished marble surfaces. It is an emulsion of white portland cement, sand and asbestos, so combined that the ingredients remain in suspension. The mixture is applied with a brush or pallet knife over any desired surface, such as brown or white coat plaster, wall board, wood, metal, brick or concrete, or old painted surfaces. It gives the wall a true concrete or portland cement surface, in any desired color or pattern, and which may be washed with soap and water.

It offers unlimited possibilities for the obtaining of wall finishes that are artistic, effective, efficient and economically produced, since the user is able to use any number of color combinations at the same time, working them into artistic textures. The soft, agreeably stippled surface of a wall upon which it has been merely brushed on creates an illusion of costliness which its

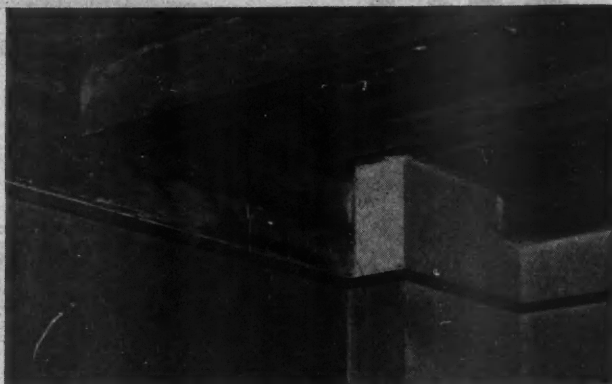
reasonable cost belies. It comes in one and five gallon cans and barrels of twenty-five to fifty gallon capacity, so there is no question about the mixture being properly proportioned when it is required for the job.

Many buildings have used this wall covering on the exterior, and it has met with decided favor in sections of the West and South where outside wall color effects are desired that will match the beautiful sky colorings so noticeable in California and Florida, and will withstand the strong sunlight and the general atmospheric conditions. In such cases it forms a covering for the exterior stucco walls characteristic of the Spanish style of residence, and in one of its many attractive finishes appears on the interiors as well, giving a mellow one-colored wall or stippling of several colors that remain unfading and in their original beauty.

One of the first places using this new wall covering was the White House, Washington. St. Mark's Church, New York City, one of the most beautiful and the second oldest church in that metropolis, has

arranged to have its interior and exterior decorated with the new wall finish. Many prominent stores now have it on their exteriors, realizing the customer-attraction value of an up-to-date appearance. A favorite way of using it exteriorly is to apply a light first coat, and a heavy second coat, stippling it irregularly with the flat side of the brush. A fine dark sand is then blown unevenly on the surface. After an hour or two the surface is flattened with a dry brush or pallet knife, showing dark veins and weathered textures. When partly set it is lined off with sunken joints, which give it the appearance of sawn stone or marble. When one considers the possibility of its use over old store fronts which have grown shabby and decrepit it will be apparent that it contains many elements which make it a favorite with the architect and builder as well as the ultimate user. It fills the low places of mortar joints and the unevenness of very old brick surfaces, and can be carried right up around doors and windows, over metal bays and cornices, to give a uniform appearance to the whole building.

One very attractive feature of its use is for mural decoration. Under the skillful handling of an artist it can be formed into pictures of any subject, no light reflections marring the vision of the spectator at what-



Above the Moulding, the Uncoated Wall; and Below the Moulding, the New Wall Coating Already Applied.

ever angle he views the picture. Many times wall frescoes finished in oil color lose their effectiveness for this very reason, and the new wall finish material is sure to meet with favor among artists generally, since it absorbs and yields the strongest or most delicate shades of color, and their tone is made so mellow that the combined result is pleasing in the extreme.

However, its many possibilities lie altogether along the directions the individual may wish to make use of it. Suppose one wished it for one of the high interiors now coming back in vogue, an echo of Spanish times with the roof timbers showing and a wall which emphasized the rugged substructure upon which one would expect them naturally to rest. A Caenstone finish, with flush joint effect, would be ideal in a large room; for a smaller one the moderate roughness of a dry brushed or pallet knife spread coat, tinted a mellow cream, would suit almost any decorative requirement.

It is all in line with the modern idea that the really effective interior or exterior need not be costly to be architecturally good and artistically pleasing.



October Hints

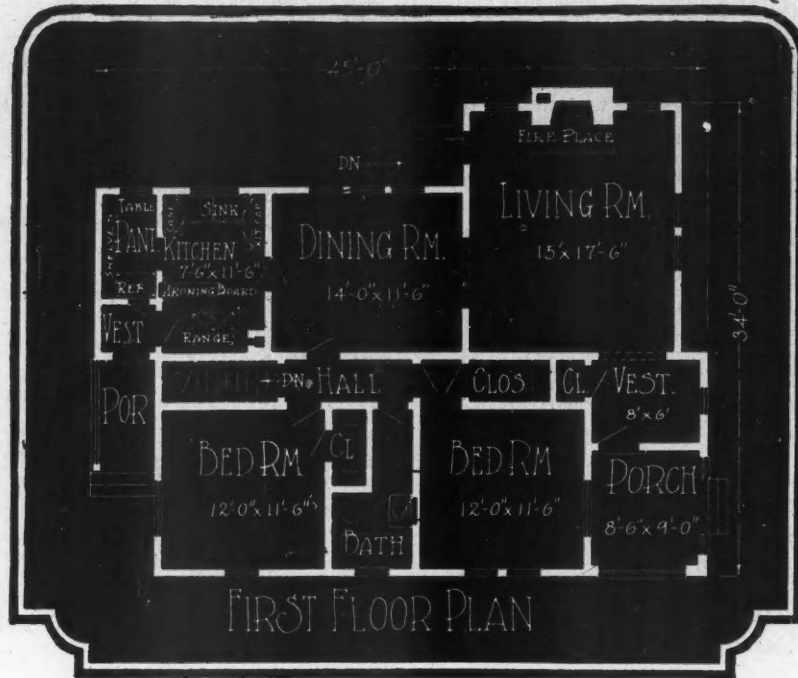
- F**IX up that back fence.
- Build a sleeping porch.
- Cover your splintery floors with hardwood or linoleum.
- Tile the bathroom.
- Wall off a play-room in the attic.
- Do your plastering and cementing this winter—not next spring.
- Take out ashes from the chimney.
- Clean the basement.
- Whitewash the cellar.
- Wax hardwood floors.
- Repair the steps.
- Kalsomine, paint, or paper rooms.
- Plant bulbs, roots, tubers and deciduous shrubs.
- Wash the windows.
- Have your clothes pressed.
- Tidy up the yard.
- Saw wood into kindling.
- Paint the auto.



A Light First Coat, a Heavy Second Coat, a Blowing on of Sand, a Lining Off with Sunken Joints, and This Handsome Corner Resulted.

BLUE RIBBON HOMES

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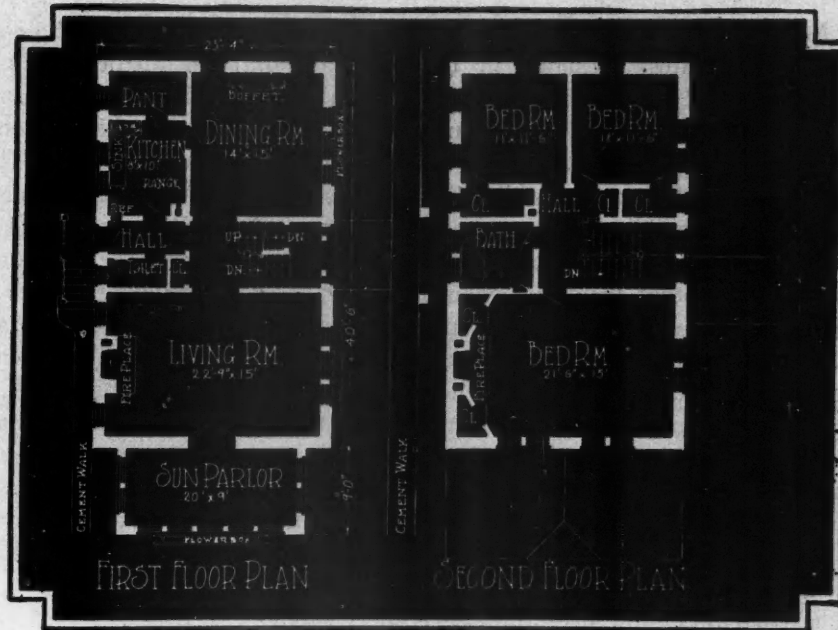


BUNGALOW WITH PIQUANT, FOREIGN AIR. Here is such a little home as you will find, wandering down highways and by-ways in foreign places, but with interior room and arrangement possible only by reason of superior American conveniences. It has a very well handled stucco exterior and pleasing roof line. The recessed porch gives into a vestibule with clothes closet, and thence into the living room. This latter has a fireplace and opens into the dining room, with ample spacing for its furniture

and lighted by a triple-window. The kitchen is small and compact, with shelves lessening the floor space required. Off the dining room we reach a hall which connects with bedrooms and bath room. The closet space is ample, and one might remove one bedroom closet from its jutting-out position into the hall and place it over the space now occupied by stairway to basement. The landscaping of the lot did not require much labor, but is effective.

BLUE RIBBON HOMES

PRactical & ARTISTIC



MODERN BRICK RESIDENCE. This is pretentious without frills, and indicates sound construction throughout. The tile roof goes very well with the general design, and very wide choice of face brick patterns permits the exercise of the individual style predilections one may have for a certain color of wall. The entrance is at the side, leaving space for a capacious sun porch across the front of the house. Suppose we enter. We are in a hall, with guest closet and lavatory. Ahead of us is an extension of the hall, leading down a short set of stairs to an

entrance on the other side of the house. Through this we enter the living room, a very finely proportioned room, 22 feet 2 inches by 15 feet, and thence we go into the sun parlor, 20 feet by 9 feet. Back in the dining room we find more ample space, for the room is 14 feet by 15 feet. The kitchen is small, but compact, has a window-lit sink, an outside icing door for the refrigerator, and windowed pantry. There is a fireplace in the master's bedroom, and two more bedrooms upstairs—all served by a hall bathroom.

Solves Winter Building Problem

Lake Placid, N. Y. Country Club Builds an Overcoat for Its New Club House and Work Proceeds Within It

By THOMAS F. MOFFETT

LAKE PLACID, NEW YORK, is one of the coldest spots in the United States. Situated in the Adirondack Mountains at an elevation of 2,000 feet, the winters are long and hard and the temperature frequently drops to 50 below zero or lower.

Yet Lake Placid, like many other communities, has its economic difficulties with building. Journeymen are scarce and materials slow, so that the loss of the winter months in addition to other handicaps would mean a most serious situation. There would be the loss of time and the slowness of financial turnover. Local conditions would be affected adversely too when several hundred men were thrown out of employment. And not forgetting the additional loss of revenue from a high-class building whose business is largely seasonal.

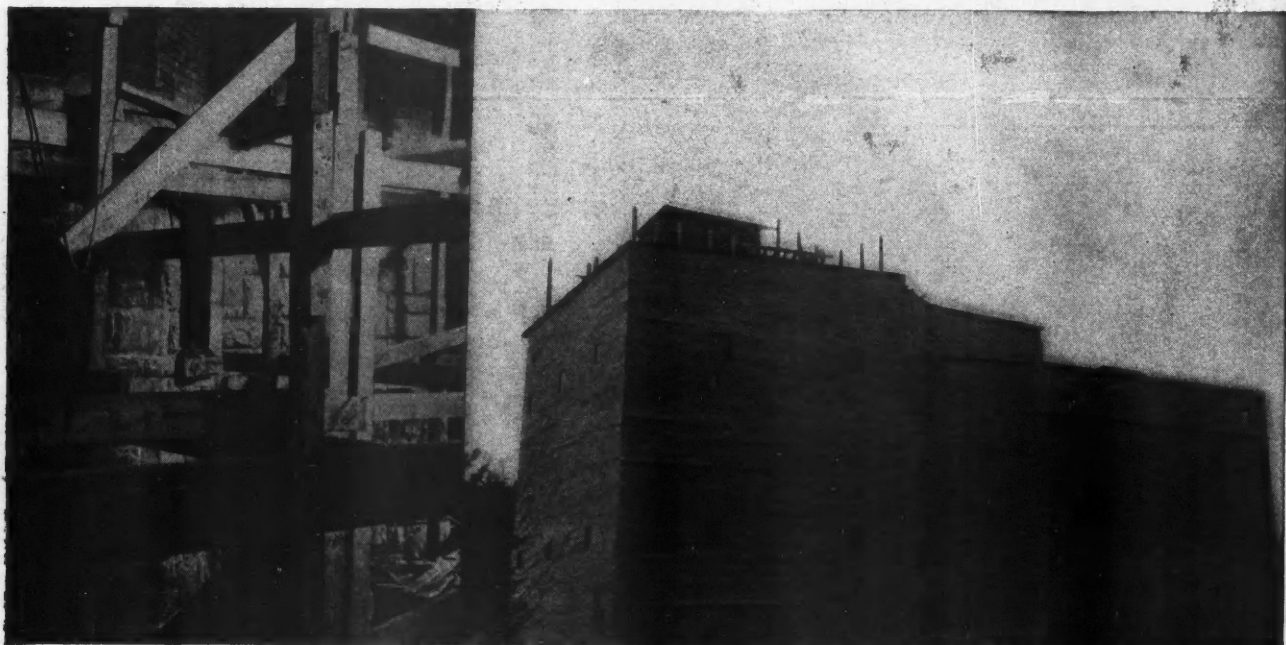
Thus when the directors of the Lake Placid Club, one of the most fashionable resorts in America, decided last year to construct their new fire-proof club house, it was resolved at the same time that the construction must continue through the winter. The construction firm agreed that it could be done if a winter overcoat were built around the new structure.

The new club house is five or six stories high and covers considerable ground area. It includes, for example, a ball room which will hold at least 1,500 people, and also a good sized theatre. The structure is of steel and concrete. Some six or eight feet outside of the walls the frame "overcoat" was erected.

It was roofed in, and then the entire enclosure heated by a temporary installation using high pressure steam, and also a large blower to improve circulation.

The accompanying illustration shows an outside view of the frame enclosure. The second illustration shows a view taken inside. This reveals some of the timbers and shoring constructed to support the outside frame. In a large measure these rest against the walls of the building inside. The joists are seen running up and down and the bracing timbers holding them. The outside was sheathed over two layers of tar paper. All entering doors, of course, carried weights to keep them closed as much as possible. A force of over three hundred men was kept busy on this operation throughout the entire winter, and now when the frame is taken down the local community will see its new club house with the greater part of its construction completed.

A similar "jacket" was used in connection with the re-stuccoing of the Fine Arts Building, Jackson Park, Chicago. This, one of the most celebrated buildings of the World's Fair, had gradually become weather-beaten through neglect. Its walls were sound, and the old stucco was chipped off, being replaced with a new coat consisting of cement, sand, marble dust and chipped marble. The work was carried on through the winter, inside the protecting "jacket," and the finished section of the building thus projected against the weather until a perfect set was obtained.



A Temperature of 50 Degrees Below Zero—and Lower—Was Effectually Circumvented by the Contractor Engaged in Constructing the New Fireproof Home of the Lake Placid, N. Y., Country Club. He built a jacket around the building, and work proceeded "as usual."



Some Hoist! Some Lift! Easing one of the 25-ton granite columns into place for the new court house, New York City.

A Difficult and Pains-taking Job

PLACING the 25-ton sections of the huge granite columns of New York City's new court house was a difficult and pains-taking job. Each section requires a half day's work, and worth noting is the way the slings are anchored into the sections through bored holes which facilitate placing, and leave the flutes free of any frictional damage, such as might otherwise be caused.

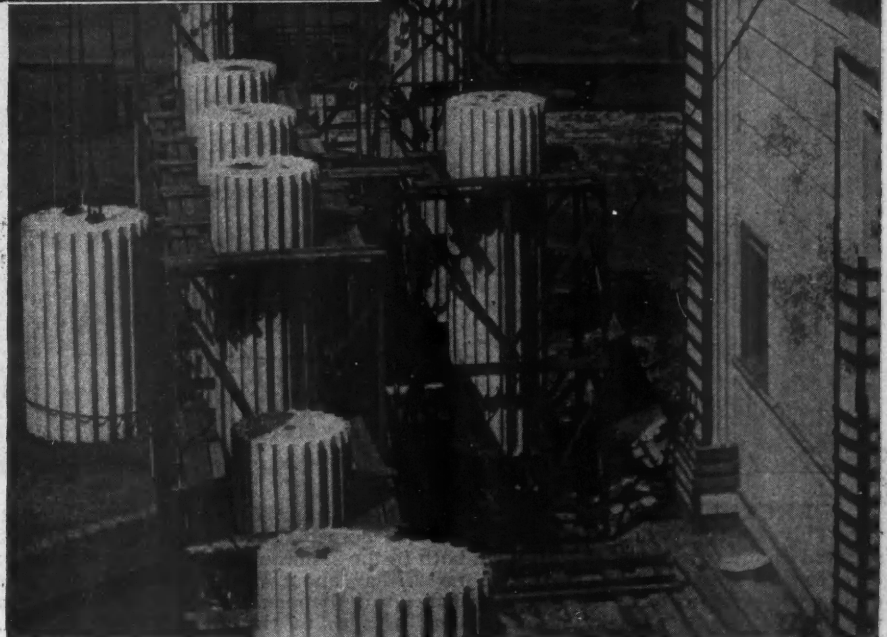
These two rows of columns

are of granite from the Rogers Quarries, Deer Island, Maine, and when finished will rival the finest in the world. Just now they look like the ruins of a Greek temple in a modern setting.

Guy Lowell is the architect of the court house. When completed it will take rank with other handsome structures which help go to make New York one of the most beautiful cities in the world. The combination of granite facing with the most modern steel structural work insures a building which will stand as long, perhaps, as any of the famed structures of Rome or Greece, for New York buildings rest on solid rock.

The scaffolding gives footing and protects the set sections.

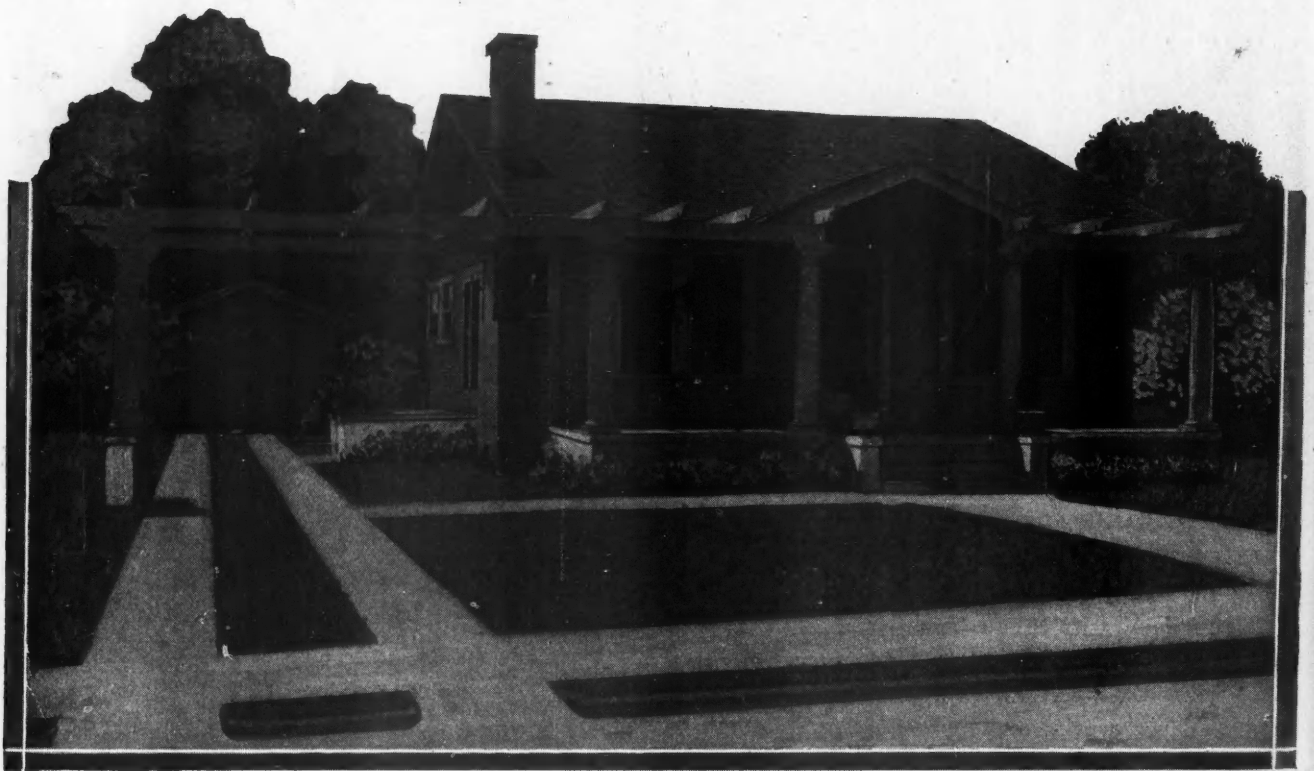
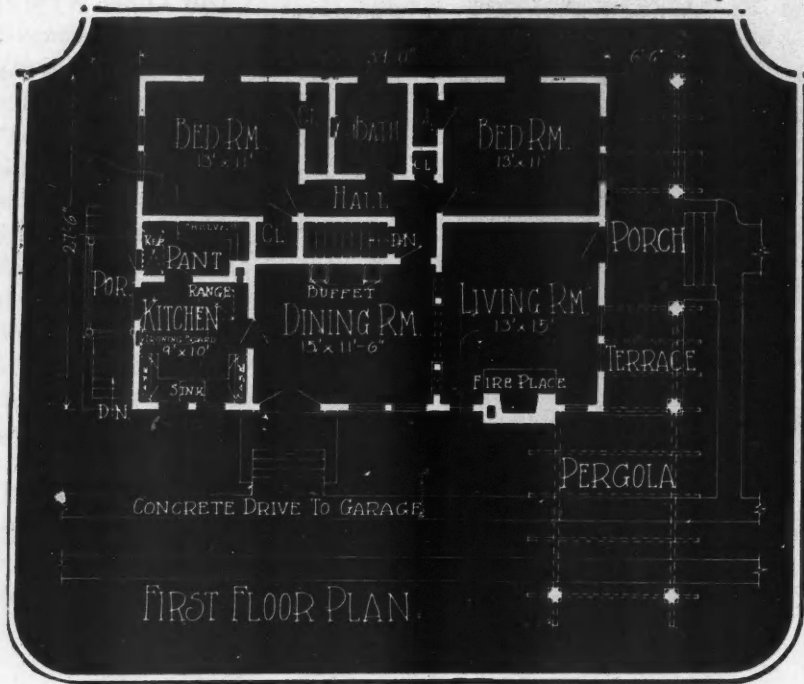
Photographs by Ewing Galloway, New York City.



The Partly Completed Facade. Guy Lowell, Architect.

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BLUE RIBBON HOMES



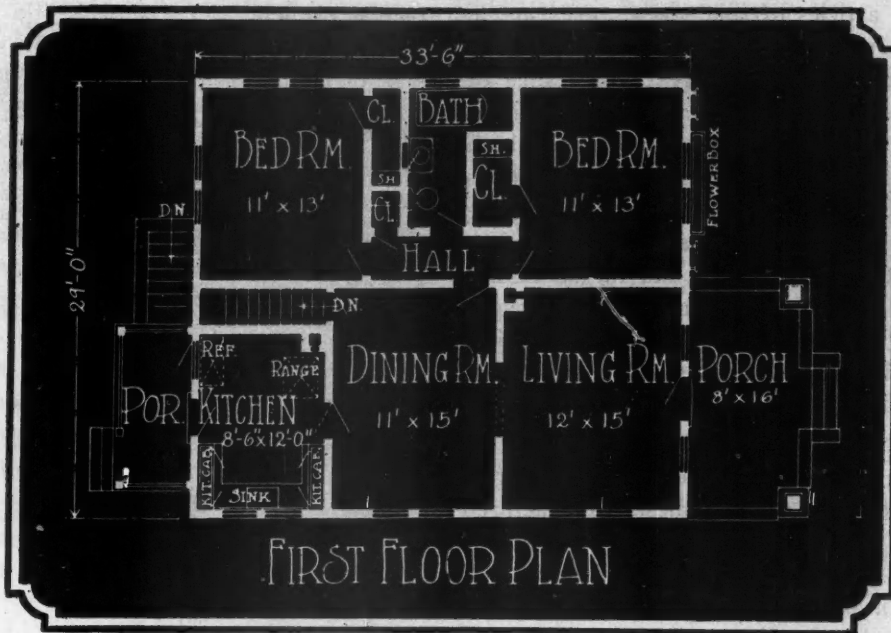
A N EXCELLENT MEDIUM-PRICED BUNGALOW. This is a type which should appeal to the homebuilder situated in any part of the country, and both to the suburban dweller and the farmer. There are no "frills" about it, unless you wish to term the pergola such. As it happens, the pergola fulfills a real purpose, giving breadth to the bungalow front, besides lending itself to picturesque treatment with vines and hanging baskets. The bungalow is 27 feet 6 inches by 39 feet and has living room, dining room,

kitchen, pantry, bathroom and two bedrooms. The porch proper in the front extends from the doorway only, and there is a side entrance giving access to the dining room. There is also a rear porch, which most housewives like to have in connection with the kitchen. With a double-window at the sink, a window-lit pantry and outside icing for the refrigerator, the advantages are obvious. The exterior is frame, and the house will appear at its best in white paint.

A do for fea and oug you Ho

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC



A POPULAR TYPE OF BUNGALOW. This seems to be a perennially popular style of house, if our eyes do not deceive us. It is easy to understand why it appeals, for it presents no unusual construction difficulties, has many features which make for cheapness, and besides looks well and has ample space requirements for a small family. This ought to meet with favor among homesteaders as well as young married folks just essaying the great adventure of Home Ownership. Its overall dimensions are 29 feet by

33 feet 6 inches. The porch is roomy and inviting, and off it we enter a living room connecting with the dining room by a double door size opening. The kitchen has a sink right by a double window, with kitchen cabinet shelving built in on each side. There is space for a refrigerator in one corner of the kitchen, to be iced from outside. The two bedrooms are reached through the hall entered off the dining room. Each has a clothes closet and connects with the bathroom adjoining.

Know Your Product

In This Article of His Series A. J. R. Curtis Says This is Even More Important to Concrete Products Manufacturers than Keeping a Stock or Advertising

By A. J. R. CURTIS

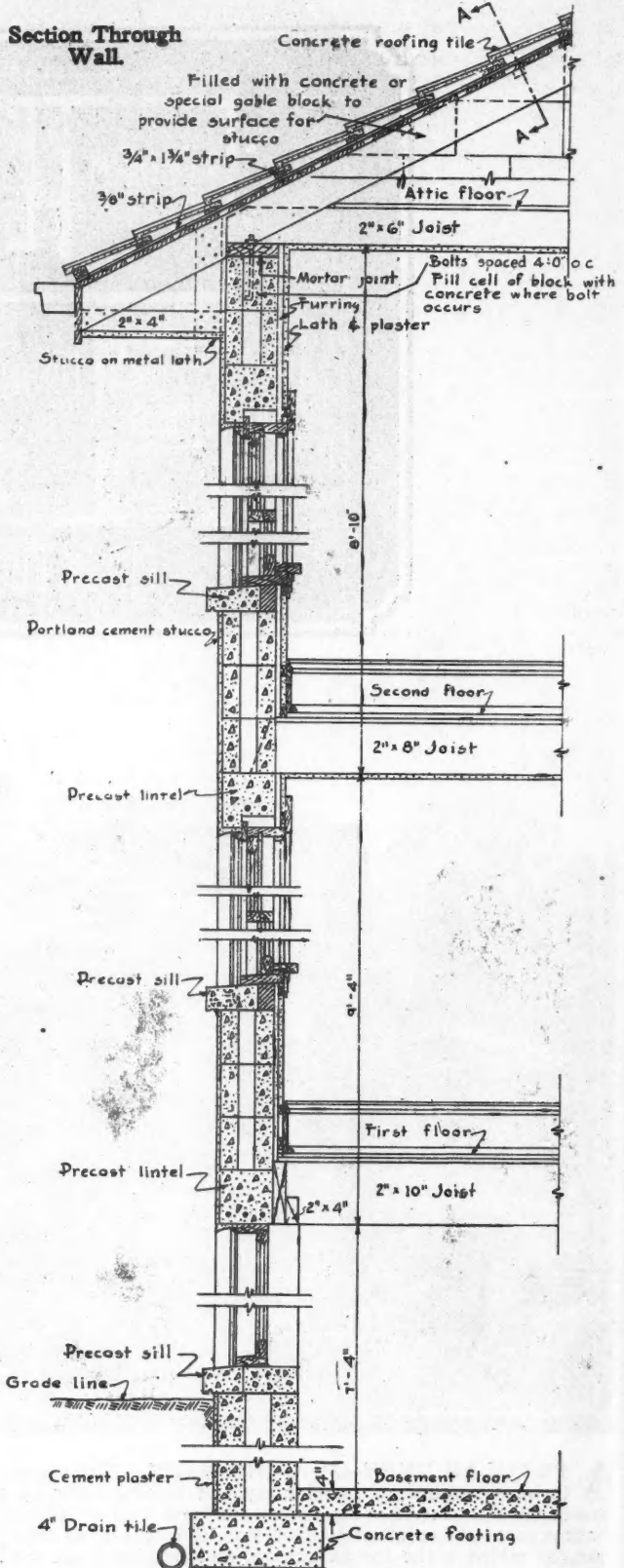
PRECEDING articles of this series, appearing in March and April numbers of the AMERICAN BUILDER, stressed the very great importance of keeping adequate stocks on hand and of advertising concrete products intelligently. As important as both of these considerations are, they must be viewed as almost superficial by comparison with the great fundamental requirement of knowing all about your product and its uses. Know your product and the successful methods of its use and you have the greatest prerequisite for success. What I have to say on this subject goes not only for the concrete block manufacturers who read the AMERICAN BUILDER, but for the building material dealers who handle block, as well.

There are over 6,000 concrete block manufacturers in the United States. If each of these manufactured the output of one small hand operated block machine working 10 hours per day the total would be around 360,000,000 block in one year, or more than the present production, although our present figures include the output of a considerable number of plants having an output of 4,000 block per day or more. So many plants are working only intermittently. Many of the intermittent ones supply block for a certain proportion of the local foundation work and when that's done they're through. In many places they can only occasionally compete with monolithic foundation builders and the picking is exceedingly poor.

Preparing for Development

Every block maker should know how good or how poor his block may be, judged by the standards applied to his own and competing materials. If he doesn't know, this first operation is to have sample block tested. The AMERICAN BUILDER will gladly supply the names of reliable local laboratories where the block maker may take or send his block for test. The AMERICAN BUILDER will also supply copies of the American Concrete Institute specification for block, so manufacturers can see just what is commonly considered the proper limits of strength and absorption. A block that will support a load of 700 pounds per square inch or more on its gross area as laid in a wall, may be considered an entirely satisfactory article for ordinary purposes.

If a concrete block is satisfactory, the manufacturer must learn next, whether he is making a block of this quality in the cheapest manner possible. Correspond with the Portland Cement Association, at Chicago, about this, in order to get the benefits of recent studies on economical mixtures, made at the Lewis Institute Structural Materials Research Laboratory.



Portland Cement Stucco Is Applied According to These Details. Leaky basement? Not if these details are followed.

Information, Confidently Given, Always Interests the Buyer

We owe our appetite for raisin bread, raisin pie and package raisins largely to the enterprise of some some intelligent growers who had an abundance of raisins on their hands and determined to teach people how to use them.

Apply the same principle to the marketing of concrete structural products. Up to the present the manufacturers haven't done much to show the public how to use concrete block. As a practical illustration, take foundations. Millions of block go into foundations every year, many of them go into basement walls which later are not entirely watertight. The fault is not usually in the block. With intelligent procedure, any concrete block foundation can be made watertight. The wise manufacturer will not only sell blocks for foundations but he will inquire and make sure that they are properly used—and of course he must know how, if he is to inform others. The illustration shows some of the important points to be observed in constructing a watertight cellar under adverse conditions.

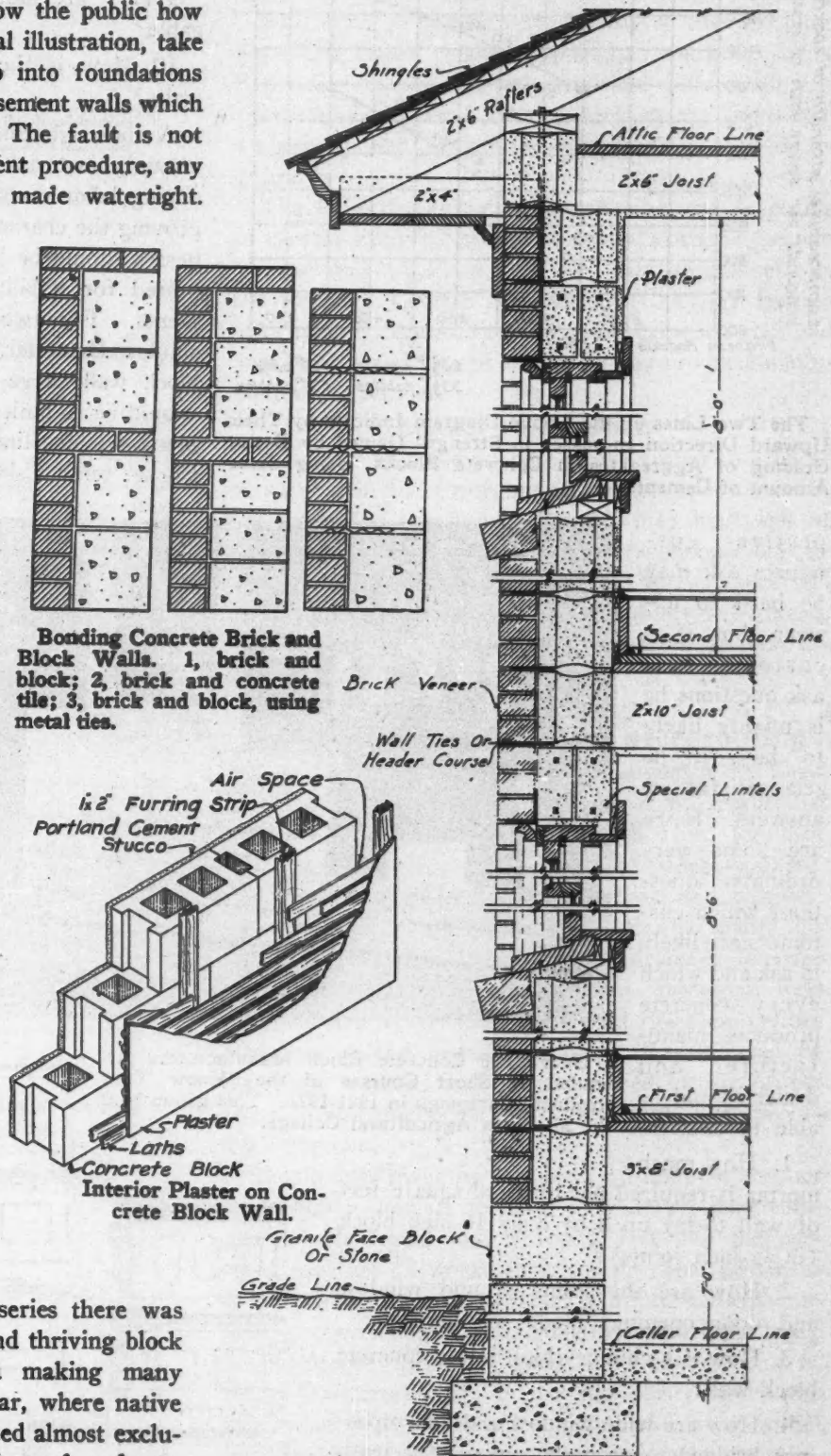
How much will concrete walls carry? How thick should the cellar wall of a residence be? What is the minimum wall thickness required for stability? What advantage have concrete block foundation walls over other kinds? What kind of a footing should foundation walls rest on? If a manufacturer of or a dealer in concrete block cannot answer these questions, or if he does not make sure that his customers understand them, his business is not on a safe basis, and of course he can hardly hope to expand.

How to Prepare for Expansion

Building foundations should not be thought of as the main use for concrete block, or as any more than one of the number of important purposes for which this product may be profitably employed. For example, in the last article of this series there was shown the advertising of two large and thriving block factories around Philadelphia, each making many hundreds of thousands of block a year, where native stone, rather than concrete block, is used almost exclusively for residence and other foundations of moderate size. For the general run of residence work, the wall area of the entire building will average at least three

times the wall areas of the foundation. In some houses the total area is six or eight times that of the foundation. What a fine market for block!

Even though the manufacturer or dealer may feel that block is the logical material to go on up with, after the foundation is nicely started, still it will be hard to interest buyers with other excellent materials to choose from—unless every question can be intelligently an-



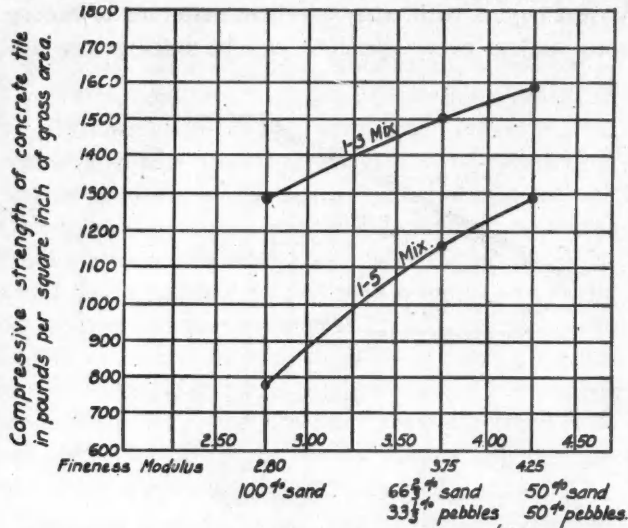
Bonding Concrete Brick and Block Walls. 1, brick and block; 2, brick and concrete tile; 3, brick and block, using metal ties.

"How Is Concrete Block Used as a Backing for Brick Veneer?" Someone Asks. This drawing shows one satisfactory way to do it.

swered and even unspoken questions sensed and answered. The successful seller of block must be familiar with construction.

Edison's List of Questions

Edison's list of questions for college graduates caught many wise ones napping. The questions pro-



The Two Lines on the Above Diagram Indicate by Their Upward Direction Increases in Strength Gained by Better Grading of Aggregates in Concrete Blocks, Using Same Amount of Cement.

pective customers ask may be hard to answer, but if a customer will ask questions he is mighty likely to buy, if he gets satisfactory answers. Here are some very ordinary questions which customers are likely to ask and which every concrete products manufacturer and dealer should be able to answer:

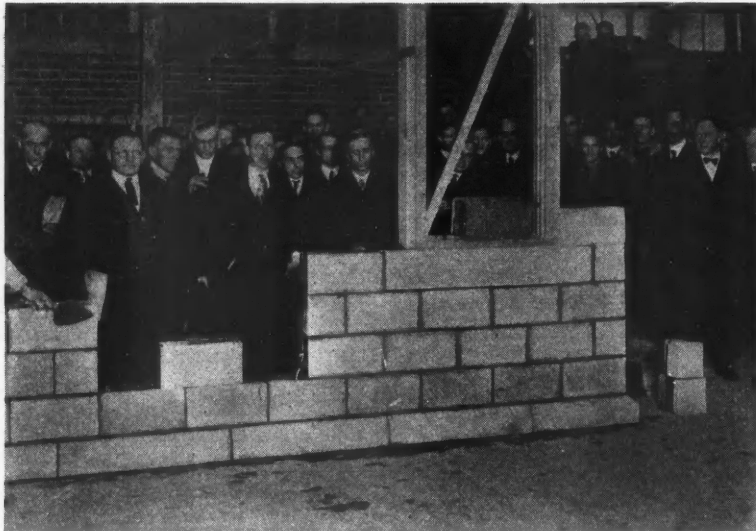
1. How much mortar is required per hundred square feet of wall to lay up 8 by 8 by 16-inch block (in 1/4-inch joints)?
2. How are the joints around window and door openings made weathertight?
3. How is a chimney built into a concrete block wall?
4. How are wide window and door openings bridged to properly support the walls above?
5. How can brackets and fixtures for

electric light and telephone wires and down spout stays be attached?

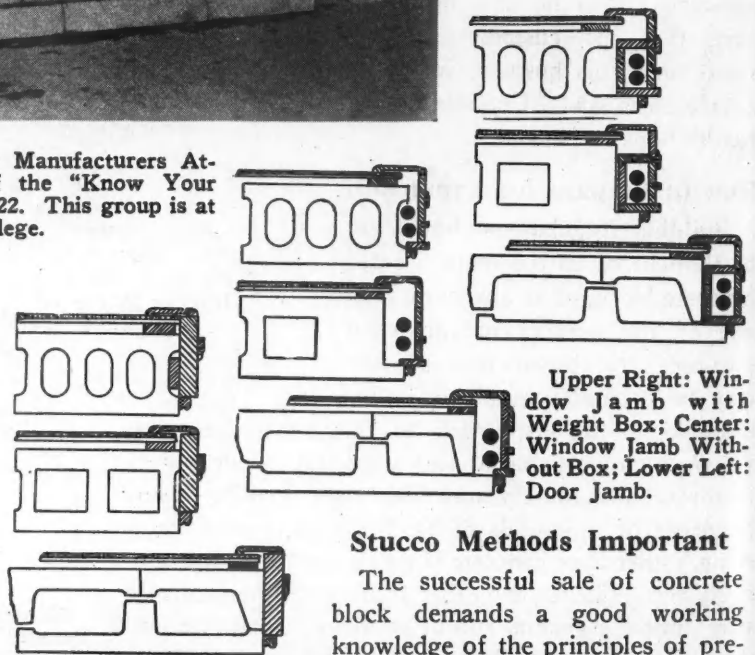
6. How are floor joists supported on concrete masonry walls?
7. How can concrete block be used as a backing for brick veneer?
8. How are furring strips and grounds for interior trim secured to concrete masonry walls?
9. How are blocks made to fit the roof along the gable?
10. How is the roof anchored to concrete block walls?

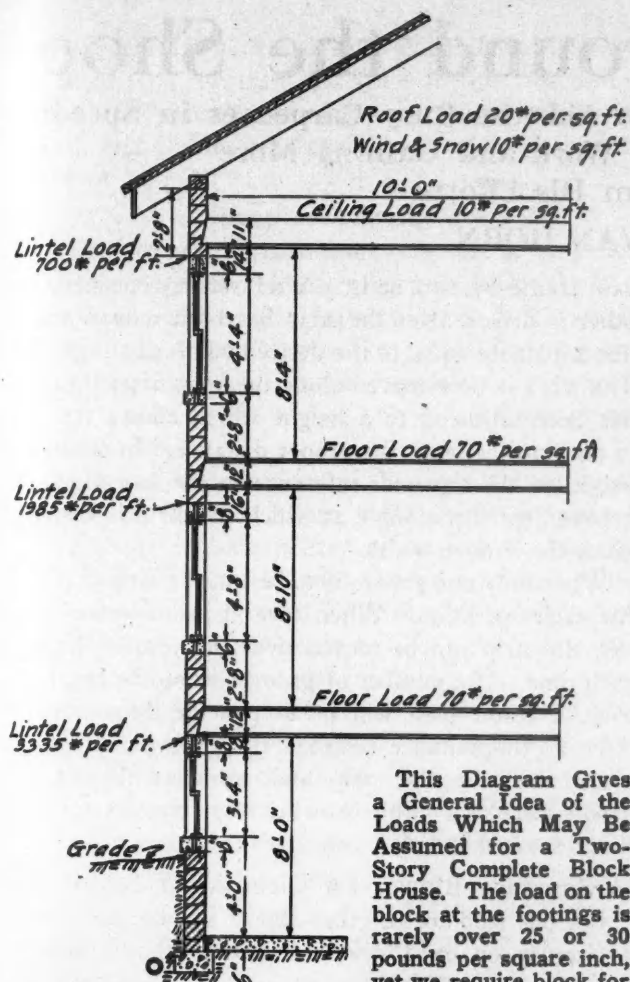
A thorough understanding of concrete block as a masonry material will suggest numerous ideas for reducing labor costs, eliminating special pieces and improving the character of the construction. Wall thicknesses should be limited to the practical minimum required for stability, load bearing and other requirements. For two-story residences and buildings of similar character, well constructed 8-inch concrete block walls have been proven thick enough. Walls should be so built as to avoid the use of brickbats, cut block, wooden lintels and slip shod masonry methods. Corner returns should be so designed as to require not

over one corner special in each course. Rock face block should be abandoned as rapidly as as possible, because of its unsightly appearance. Standardized joints and jamb block should be used. In laying block, block perpendicular surfaces of each piece should be buttered.



Over 2,000 Concrete Block Manufacturers Attended 40 Short Courses of the "Know Your Product" Campaign in 1921-1922. This group is at the Michigan Agricultural College.



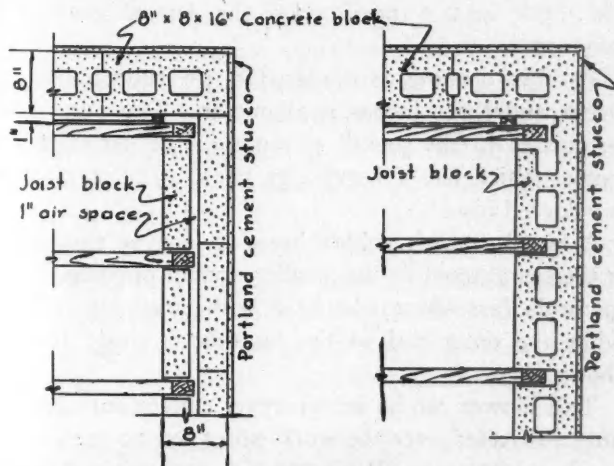


This Diagram Gives a General Idea of the Loads Which May Be Assumed for a Two-Story Complete Block House. The load on the block at the footings is rarely over 25 or 30 pounds per square inch, yet we require block for

these walls to be capable of carrying 700 pounds to the square inch.

paring and applying portland cement stucco. While it may be truthfully stated that two-thirds of stucco difficulties are automatically overcome when the stucco is applied to a rigid masonry base of proper suction and good mechanical bond, still there are many other points upon which satisfactory stucco work depends.

Sand used for stucco work must be clean and well graded. It should all be coarser than a No. 100 screen. The mixing must be thorough. After cement and sand are mixed together dry the water is added and mixing continued for three minutes. Thorough mixing aids plasticity and gives a workable mix with the



Details of Joist Bearings. Scale 1" = 1'-0".

least water possible. Each batch must be used up in 30 minutes.

Satisfactory proportions, once found should not be changed throughout the work. One sack of cement to three cubic feet of sand is a satisfactory mixture to start with. Some change in these proportions may be desirable but leaner mixtures are likely to absorb moisture while richer mixtures may craze. Drench the block walls before applying stucco. Keep mortar coats wet several days. Use a wood float in finishing. Stucco must be applied continuously so that it cannot dry along edges, producing unsightly markings. The first coat is applied in true plane but with rough surface, and is followed after a week by the finish coat (where applied to lath an intermediate coat is required).

The subject of proper stucco detail is one deserving of careful study. The two booklets "Portland Cement Stucco" and "A Plain Talk on Beautiful Homes" by the Portland Cement Association (Chicago) contain information on stucco textures and color as well, and may be obtained free of charge by any products manufacturer or builder.

Answer to Questions

It has not been the purpose of the author to propose or suggest in the foregoing any questions which cannot be readily answered. Readers may have any of these questions answered in the correspondence department of the AMERICAN BUILDER as far as space will permit and every inquiry on this subject will receive careful attention and personal reply from the AMERICAN BUILDER editorial department.



The Case for Integral Waterproofing

WRITING in "Architecture," Samuel R. T. Very, an architect states that there is no doubt that some of the practical disadvantages from the lack of integral waterproofing,—such as stucco-staining, discoloration, disintegration from frost and weather, the development of hair-cracks and also many ills from dampness due to sub-surface drainage, seepage through unwaterproofed foundations, mildew of food products and other stores, bacterial diseases, culture environment and metallic disintegration,—all can be materially lessened and even abolished by the proper selection and intelligent use of a suitable waterproofing compound.

Simple tests made by Mr. Very on his own account made him a convert to faith in waterproofing compound. He found that it was a fact that the personal equation of workmen is the principal field condition which prevents ordinary portland-cement concrete, properly mixed, and ordinary stucco from being as waterproof without a good compound as with it. Integral waterproofings in use did partly lessen the importance of the personal equation of cement workers, who must, when using them, pay more attention to proper grading, mixing, tempering, and placing of the concrete and stucco batches.

Saving Time Around the Shop

A Few Suggestions and Hints Intended to Aid the Busy Carpenter in Speeding Up Production, Doing Better Work and Gaining More Satisfaction from His Efforts

By DALE R. VAN HORN

WE have heard of the man who dug a well 100 yards from the house because the ground at that point was ten feet lower. When he saw the light six years later he estimated that the two dollars he saved in digging the well had cost him an extra pair of shoes, to say nothing of the 500 miles he had walked, figuring only two trips to the well each day.

There is also the story of the carpenter who believed in doing things the "good old-fashioned way," and did everything by hand to save the price of equipment. But progressive competitors ran him out of business and he died in the poorhouse.

Today the thing to do is to eliminate as much of the time element as possible, and this can only be done by installing machines and methods which others have tried out and not found wanting.

This article takes up a number of suggestions for doing better work quicker. The devices described are made on the spot; the methods can be used by the average builder to advantage. And each one has been on the carpet, tested, and has stood the test. You may find something below which will help YOU to increase the figures in the profit column of your ledger.

Cutting Grooves with the Circular Saw

A cabinet-maker once received an order for a cupboard for use in a dentist's office. Specifications called for a total of thirty-six drawers, each to contain from four to twelve grooves running the entire length of each drawer.

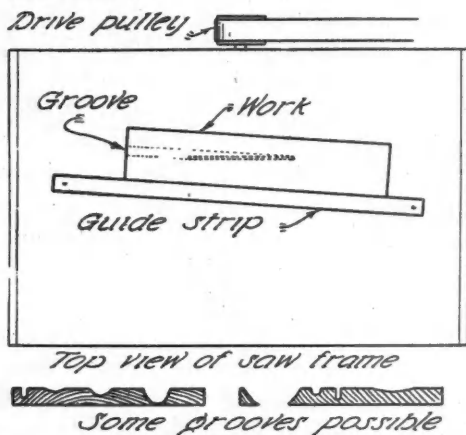


Fig. 1. How a Cabinet-Maker Made Grooved Drawer Bottom for Dental Tool Cabinet with Circular Saw.

The available equipment was limited. But the shop did contain a small circular power saw with a flat table top. All of these grooves were cut with the saw, and the job came out so well and so much time was saved, that the idea used has since netted the originator many dollars on time saved.

Fig. 1 shows a sketch of the method used. A guide strip of hardwood was trued up and made fast to the

saw frame by two nails. After setting one nail, the other is driven after the strip has been moved out of line a distance equal to the desired width of the groove. The work is then moved along the strip after the table has been adjusted to a height which allows the saw to cut into the work the proper distance. In short, the height of the top with reference to the saw gives the groove depth; the angle at which the strip is fastened gives the groove width.

When only one groove is to be cut, the strip is placed for each operation. When several grooves are to be cut, the strip can be moved over the proper distance each time. If a number of grooves are to be cut, however, a better plan will be to provide thin strips as thick as the distance between the grooves, and these placed between the strip and work as the various grooves are cut. This drawing also suggests some of the grooves that may be cut with this process.

A Sawdust Blower for Circular or Band Saw

For one who does a great deal of sawing, either with a circular or band saw, the blower shown will be

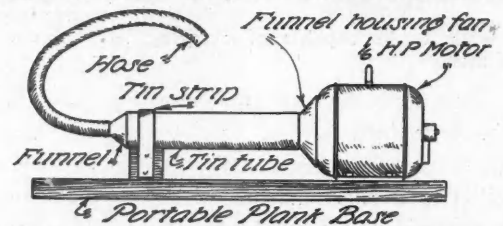


Fig. 2. A Home-made Sawdust Blower for Circular or Band Saw. Keeps pencil lines visible.

found a great help. The assembly consists of a small motor (the motor of an old electric fan will serve quite well) mounted upon a plank base of adequate length and width. A small fan of heavy sheet iron is made, only four inches in diameter, and over this, fitted tightly against the motor, a funnel is placed. The neck and a portion of the funnel cone are removed.

To this opening is soldered a tin tube about 10 inches and three inches in diameter. The outer end terminates in the mouth of another, though smaller, funnel which has a very large neck. The joint here is soldered also.

A length of soft rubber hose, as long as necessary, is then connected to the smaller funnel opening. The motor is fastened to the base with small lag screws, while the outer end of the tin tube is made fast as shown.

This blower can be set wherever convenient, and the nozzle directed over the work either by the use of one hand or with wire. While the air current is not of the

proportions of a blast, it is sufficient to keep the pencil line free from sawdust and helps to turn out perfect work. The chances are all parts required can be salvaged, thus eliminating any expense on the part of the builder.

A Simple Drawing Set

While accurate instruments are of a very real advantage to the builder or carpenter, materials to go with them, such as the drawing board and triangles can be made in the shop. For pencil drawings that do not require ruling pens, a complete drawing outfit can be assembled at a cost only of a compass and irregular curve.

The board is made of a suitable size, with the cleats on each of the four edges, rather than underneath. These cleats are one-quarter of an inch thicker than the board and with the ends carefully mitred. They are screwed on or nailed, with the lower edges flush with the bottom and the upper edges projecting one-half inch above the board.

The triangles are cut from three-sixteenth inch material and are long enough to reach half way across the board from any side.

With this arrangement the triangles are held against the inside edges of the strips, and they serve not only for laying out various angles, but as a straightedge as well. For, if the board is squared and the triangles, too, parallel lines can be run in any of the four directions.

A Sandpaper Wheel

Cut a wood block from two-inch hardwood, saw from this a disc five or six inches in diameter, and then saw out a deep notch one inch deep and one-quarter inch wide at the rim.

Place this on the free end of the emery or saw, lay a strip of sandpaper about the rim and secure the edges by driving a wedge into the notch to hold them in place. The wedge should extend a little way below the rim of the wheel. The paper is removed and replaced with a fresh strip by the removal of the plug. This kink will come in handy a good many times during the year. When not in use it can be hung in a convenient nearby place on the wall.

Some Bench Suggestions

If there is a vacant place over the bench between two windows, this will be an ideal place to built a little storage cabinet. It can be run as high as desired, from the bench up, but it should not be more than eight inches deep, as it will cut into the bench space if deeper than this.

Here can be built compartments, shelves and drawers for all the little odds and ends that are continually accumulating. With both sides and the front lighted up by the windows, it makes an ideal location for the small cabinet. It can be enclosed by double doors.

A swinging drawer for holding heavy tools will be more satisfactory than the ordinary sliding drawer because most of the friction caused by the weight of

the contents can be eliminated.

Mount a length of gas pipe next to one bench leg, using strap irons. The drawer must, of necessity, be shorter at the back than at the front to allow it to swing out on one corner. This is fastened to the pipe by two iron straps, a small bolt running through each through the pipe to keep it from sliding down. With a brace on the under side to prevent sagging, it will stand up under a lot of service.

While on the subject of benches, a handy seat should be mentioned because of its utility and lack of cost.

The top and column are taken from an old piano stool fastened to the edge of a wide board with strap irons and a caster fastened to the bottom.

The other end is then hinged to a bench leg at a height which will enable the seat to be moved under it when not in use. The seat itself can be raised or lowered at will and will take the ache out of backache one acquires while stooping over the bench when drawing or figuring. The caster rides on the floor at all times and takes all the weight, while the board connection to the bench holds it rigid.

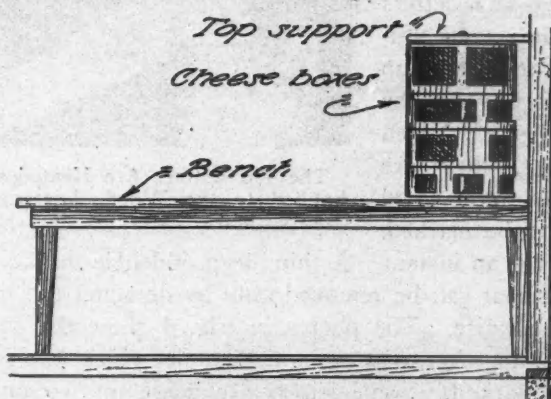


Fig. 3. A Work Bench Suggestion. Cheese boxes are mounted upon vertical shaft, and pivoted, thus swinging tools into reachable position.

Another form of storage is shown in Fig. 3. Several cheese boxes of different heights but of the same diameter are mounted upon a vertical shaft which is fastened to the bench top and to a studding by means of a wooden brace.

The boxes are nailed together, partitioned as desired and holes cut in the sides. If desired, the name of the contents can be written on pieces of paper and pasted over each opening. This form of container will best fit into the corner.

Stamping Your Tools for Identification

The honest fellow who comes into the shop with a respectful request to borrow a tool or two often turns out to be quite the opposite. Perhaps it is a neighbor who wants to use your saw. You sigh inwardly and kiss the beloved thing a fond farewell as you hand it over, for you have had other experiences with the same cuss. Once it is out of your hands how can you prove that it is yours?

The best way to take risk out of such transactions, if such transactions are necessary, is to stamp each tool with your name, or at least your initials.



Initial Stamps for Burning Identification Into Tool Handles Can be Made from a Tin Can.

With the pliers bend one end of each into the form of the desired letter, remembering that such letters as "S," "R," "D," "C," "D" must be formed in reverse, while other letters, such as "T," "A," "V" need not be reversed.

No attention is paid to strips except at the very end. The letters forming your initials are made up in this way and the ends heated. When red-hot, they are applied to the wood part to be marked, only for an instant.



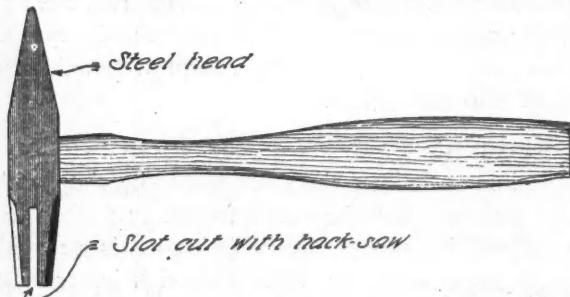
The Tin Letters Are Heated and Applied to the Wood, Leaving a Durable Mark.

A thin, deep, indelible mark will result that can be removed only by defacing the part with a knife. The photos in Fig. 4 show the steps taken, together with an axle handle which has just been marked. Some letters are made in two units, like "K."

A Magnetized Tack Hammer

A small hammer should be purchased, and after being magnetized as described below, kept for no other purpose than to drive tacks and that sort of thing. It is shown in Fig. 5.

Set the hammer head in a vice, and with a hack saw cut a notch one and one-half inches deep down



How Any Ordinary Small Hammer Becomes a Magnetized Tack Hammer by Slotting the Head and Bringing It into the Field of a Permanent Magnet.

through the face. The head now becomes the two poles of a horseshoe magnet and as such, is magnetized by bringing it into the field of any permanent magnet

Initial stamps cost money as a rule. But a set to serve your purpose can be made from pieces of tin cut from a tin can. You will need, in the way of tools, tin snips, a blow torch and a pair of pliers.

The strips should be about one inch

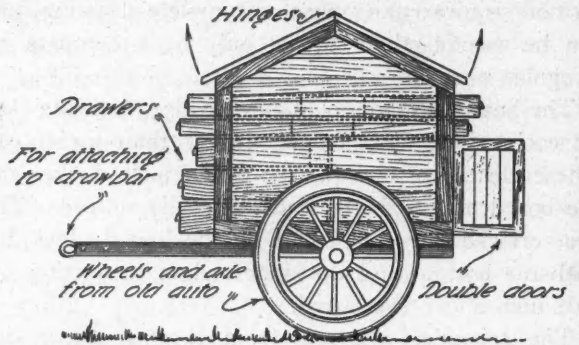
or a magnet kept excited by an electrical current.

If the quality of the steel in the hammer is good, this magnet will remain active for a long time, though a bar should be laid on the face to close the current when not in use.

A Portable Shop

One of the liveliest builders in a little western town has built what he calls a portable shop. And it really is.

The framework was first made in the form of a trailer, comprising two automobile wheels and axle,



This "Portable Shop" Is Strictly "Home-Assembled" and Is Fast Earning Its Owner a Name for Quick Execution of Small Jobs.

mounted on an angle-iron frame, with the front ends of the frame bent together and riveted. The rear end of the frame, or the portion two feet in front of and back of the wheels, is square.

Upon this is mounted the shop proper. It is of frame of suitable height, four and one-half feet long and eight inches narrower than the inside distance between the wheels.

This shop certainly has a lot of room for its size. There are seven drawers, as well as a double compartment at the rear enclosed by double doors. The roof even is hinged, and either half can be raised and material stored underneath.

The drawing above gives an idea of the proportions and appearance of this shop. The drawers pull out to the front and back, there being five forward and two at the rear over the double doors.

Light, tough wood, with hardwood pieces at the corners, were used. The front end of the frame is provided with a "U" bolt for attaching to the owner's car. When he has a repair job in the country he throws in what tools are needed, more, in fact, to prevent a possible return trip, and is on his way. As a matter of fact, it is kept filled with tools most of the time for just such runs, and is fast earning its owner a name for quick execution of small jobs.



Quick-Setting Lime Blocks Developed

A CAST lime building tile for use in making partitions has been developed at the Bureau of Standards by a fellow of the National Lime Association.

The material is composed of five parts by volume of ground quick lime, ten of hydrate or slaked lime, and one of wood fiber.

A Colonial Country Home

BY R. C. HUNTER & BRO., Architects, New York

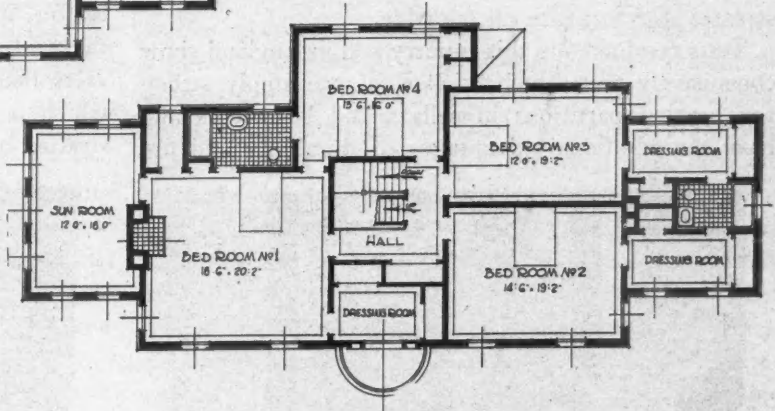
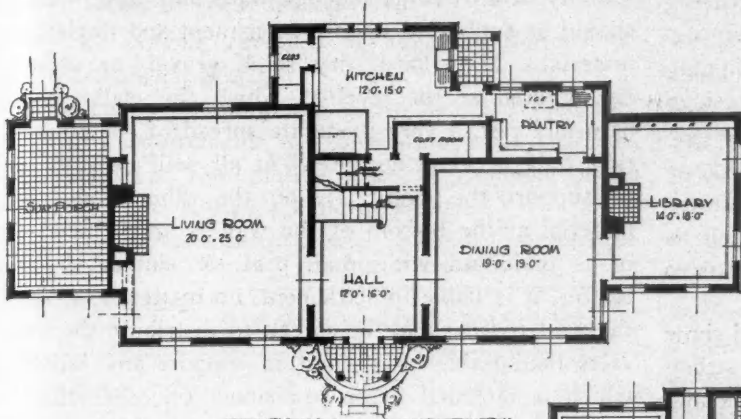
THIS house is a good example of the larger country house. The rooms are large in size and sufficient in number to provide for a good size family, the entertainment of guests and ample servant accommodations.

The rooms are arranged in a simple, convenient

The servants' rooms are on the third floor; they have ample light and ventilation, a generous dormer on the rear of the house provides for this without detracting from the plain, unbroken roof on the front.

The house is Colonial throughout, suggestive of the old New England Colonial farmhouse, so pure, direct and simple is the entire scheme. The relation of the wing to the main house is worthy of study.

The library in the wing is a very interesting room, a low ceiling, a large open fireplace, plenty of windows and built-in seats give a quaint, homey effect that is admirable.



manner. The main first floor rooms open up well from the generous central stair hall. The kitchen and service section are completely equipped and so planned that they are most efficient from every point of view.

The bed rooms are convenient to the baths and there are plenty of closets.



In This Colonial House, Designed by R. C. Hunter & Bro., Architects, the Entire Treatment Is Simple, Direct and Effective. There is excellent planning of the floors; servants' quarters, not shown, are on the third floor. The landscape has been developed in keeping with the house, and the house with the location.

Revising Building Codes (Part 7)

U. S. Government Recommends Minimum Requirements for Small Dwelling Construction with View Towards Simplifying Building Codes

EDITOR'S NOTE: This is the seventh of a series of abstracts AMERICAN BUILDER is making from the Report of the Building Code Committee, Department of Commerce. Readers interested in the full Report can secure it by sending 15 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C., and asking for the Report by its name, "Recommended Minimum Requirements for Small Dwelling Construction."

Par. 33. Masonry Partitions.

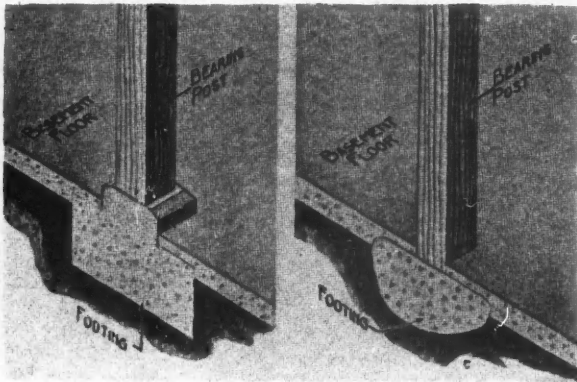
Partitions of incombustible materials of all kinds are desirable wherever a fire barrier is advisable, and are recommended whenever costs justify their use. When such construction in the form of blocks or slabs is used it should have such thickness or interior bracing and anchorage to connecting construction as will insure stability when subjected to the expansive stresses due to a fire on one side.

Tests conducted in this country and in England show conclusively that 4-inch brick walls are amply strong for bearing partitions in cellars and basements and have the additional advantages of durability and fire

not good and safe practice in general and therefore they have made their recommendations for 12-inch walls. (See Pt. II, sec. 31.)

Par. 35. Bearing for Foundation Walls.

It is of vital importance for the permanence and the stability of a dwelling that the walls and interior piers should be supported upon a permanent and unyielding material. If a hard, dry sand, gravel, or clay is encountered at the level at which the walls would naturally rest, a very moderate spread of the foundation wall, or even no spread at all, will be sufficient to support the load. If, on the other hand, the material at the bottom of the wall is an artificial fill or is underlaid with mud, peat, or similar organic matter, it is liable to settlement, no matter how much the wall footing may be spread to distribute the load. It is inadvisable to attempt to support any building which is intended to be permanent on other than a stratum of natural ground, free from organic material.

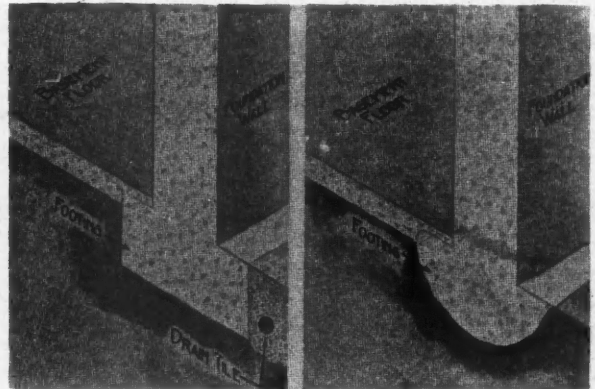


A Good, Broad, Flat Footing Is Much More Effective in Preventing Settlement Than Is an Undersized Footing. Column footings should extend above the floor in damp soils.

resistance. It is felt that the 8-inch partition ordinarily called for by the building codes of the country is unnecessary in this type of dwelling. The committee recommends strongly that wherever possible, brick, tile, gypsum block, or concrete block partitions be substituted for ordinary stud partitions.

Par. 34. Concrete Basement Walls.

The economical thickness of basement walls will depend to a large extent on soil conditions. The actual loads coming on basement walls of dwelling houses not more than three stories high would not require walls nearly so thick as those in common use. The thickness of monolithic concrete walls for houses need not be greater than 8 inches, except that they should not be thinner than the exterior walls of superstructures. Concrete hollow block or concrete tile walls 8 inches thick have been used extensively to carry two-story dwellings where soil conditions are normal. The committee, however, feels that this is



In Damp Soils a 4-Inch Tile Pipe Should Drain the Footing and Discharge Into a Suitable Outfall; Footing at Right Shows How NOT to Build It. Footings should never be built on frozen soil.

If such a stratum can not be reached by carrying the excavations for the entire wall down to its level, other means such as piles, either wood or concrete, may be employed.

Par. 36. Drainage for Foundations.

A line of small drainage tile with proper outfall extending around the outside of the foundation wall and level with its base will help materially to prevent settlements and dampness of basements.

Where provision is not made for circulation of air within inclosed spaces next to the ground surface, dampness accumulates and timber decays rapidly. Openings for the admission of air help to prevent such decay and increase the life of the structure. The total area of such openings should be not less than 7 per cent of the ground area inclosed.

Par. 37. Alternative Foundation Wall Requirements.

In case the grade or ground level varies on different

sides of the building two interpretations of the regulations applying to minimum heights of 8-inch walls are available.

(a) The structure may be built with 8-inch walls to the height permitted above the highest grade level, all walls below that level being required to have a greater thickness.

(b) The 8-inch walls may extend to the height permitted above the lowest grade level, walls of greater thickness being required at all places below grade when the basement or cellar is excavated.

Par. 38. Saving Involved in Recommendations for Foundation Walls.

The following tabulation shows average minimum thickness requirements for foundation walls, based on examination of 134 building codes. (A number of the codes did not regulate all the items listed.)

Height of building	Thickness of foundation wall			
	Brick	Concrete	Stone	Hollow block or tile
One-story	<i>Inches</i> 12.5	<i>Inches</i> 12.1	<i>Inches</i> 16.2	<i>Inches</i> 11.3
Two-story	13.6	12.7	17.4	12.6
Three-story	16.4	16.6	19.4	15.6

Variations in existing foundation wall requirements correspond practically to those shown for thickness of solid brick walls, the thickness of foundation walls being from 2 to 8 inches more, with an occasional case where basement and first-story walls are the same thickness.

Assuming for wall thicknesses recommended by the committee the average maximum story height permitted by the codes, and disregarding the recommendation that foundation walls inclosing unexcavated spaces may be 8-inch walls under certain circumstances, the thickness of foundation walls required by the committee under conditions similar to those above would be as follows:

Height of building	Thickness of foundation wall			
	Brick	Solid concrete	Rubble-stone	Hollow concrete or clay tile
One-story	<i>Inches</i> 12	<i>Inches</i> 8	<i>Inches</i> 16	<i>Inches</i> 12
Two-story	12	8	16	12
Three-story	12	12	16	12

Par. 39. Variation in Floor-Load Requirements.

Investigation of the floor-load requirements prescribed by 109 codes discloses variations as follows in the minimum floor load for dwellings.

Number of codes in which required:

	Pounds per square foot.
1	25
2	30
24	40
29	50
42	60
4	70
1	75
2	80
1	100

Three codes examined do not attempt to regulate floor loads, 15 permit a reduction of 10 to 20 pounds per square foot for upper floors, and 8 allow 20 or 30 pounds per square foot as a basis for design of attic-floor systems.

The committee believes that if the precautions and unit stresses elsewhere recommended are used for design of wooden floors the minimum live-load requirement of 40 pounds per square foot advocated will be ample so far as their load-bearing capacity is concerned and will insure the rigidity necessary to prevent plaster cracks and undue vibration. In the case of monolithic floors or those with solid or ribbed slabs wider load distribution, greater proportion of dead to live loads, and greater inherent rigidity justify reduction of the live floor load to 30 pounds per square foot.

Par. 40. Saving Involved in Recommended Floor-Load Requirements.

The average requirements for first floors in 109 representative building codes was 53.2 as against 40 pounds per square foot, the larger of the two requirements recommended by the committee. Assuming that the sizes and grades of material used are determined by code requirements, general adoption of the committee's recommendations would permit timbers of given size to be used for spans of approximately 10 per cent greater length, and in many cases would allow use of smaller timbers for given purposes. Economies possible in floor systems of various fire-resistive types also are considerable, but less capable of brief analysis. For the cities in which codes prescribe 60-pound floor loads and over, economies resulting from adoption of the committee's recommendations would be correspondingly greater.

Par. 41. Roof Loads.

The minimum roof loads specified apply only in localities where snow loads are not an important consideration. Roofs having a slope of less than 20 degrees are always liable to accidental loading, such as groups of moving people, storage of material, etc. Hence the necessity of moderate unit loads even when snow is not expected. Where large snow loads are to be anticipated the loadings should be increased in accordance with local experience.

Par. 42. Roof Coverings.

1. No direct requirements for roof coverings are included in Part 7, owing to the committee's decision not to consider in this report the influence upon construction of fire hazards created by building congestion.

2. The committee, however, is unanimously of the opinion that incombustible roof coverings should be used upon all two-family dwellings, and it recommends such roofings upon all buildings in congested areas.

(To be continued in November
American Builder)

How I Insured My Profits

A System Worked Out on the Job Where "Results" Counted—Simple Enough for the Smallest Contractor Yet Elaborate Enough for the Largest One

By FRANK R. WALKER

This is the second of two articles by Mr. Walker. The first appeared in September AMERICAN BUILDER.

LAST month we considered the use of labor distribution cards in addition to pay-roll cards, and several forms were shown to illustrate the cost system we suggested it would pay any builder to keep. This month we continue showing the way the cards can be made to show a permanent record of the costs of the job.

We are repeating the illustration of Form 3, shown in the September issue, as we now deal with the information to be kept on its other side. On Form 3 note that the first column states the quantity of work in place. In brickwork, this would be the number of

Now let us turn this card over and see what information is given on the back. Note the column headed "Total Labor Hours." Each week the number of hours worked by the different trades, such as Mason Foreman, Masons, Laborers, etc., are entered in these columns. The illustration shows that the Mason Foreman worked 337 hours on common brickwork previous to this week; four hours this week, making a total of 341 hours to date; the second column shows that the masons worked 652 hours previous to this week; 56 hours this week, making a total of 698 hours to date. On this job the mason foreman worked right along with the men, so there were actually 1,039 mason hours spent on common brickwork. The third column gives the time for common labor, which is 1,022½ hours, or practically one hour labor time to each hour mason time.

Now let's just look at the lower column, headed "Labor Hours Per Unit." That signifies the number of hours or length of time required by each trade to lay a thousand common brick; mix and place a cubic yard of concrete; frame and place a thousand feet of lumber, etc., depending upon the kind of work being done.

We have 341 hours time for mason foreman, and the front of the card shows 162 thousand common bricks laid. Dividing 162 into 341, we find that it required 21/10 hours foreman time. Dividing 162 thousand into 698 hours mason time, we find that it took 43/10 hours mason time, or a total of 64/10 hours mason time per thousand bricks (foreman laid brick with the other masons).

Now we will divide 162 thousand brick into 1,022½ hours labor time, and we find that it took 63/10 hours common labor time to each thousand brick laid.

Here Is the Value of This Cost Record

Suppose we are estimating the cost of another job similar to the one described above but in the meantime masons' wages have advanced from \$1.25 to \$1.50 an hour and common laborers' wages from 75 to 85 cents an hour. How much shall we estimate the work at the new scale of wages?

With the information given above, it is the easiest thing in the world. We know that it took 62/5 hours mason time and 63/10 hours labor time to lay a thousand common bricks. Well, all we do now to get a new accurate estimate is to multiply

Masons, 62/5 hours at \$1.50 an hour . . . \$ 9.60
Laborers, 63/10 hours at 85 cents an hour. 5.35

Total estimated cost per thousand bricks. \$14.95
You will notice our old cost at the lower scale of

NISSEN GARAGE, JOB 138									
LABOR DISTRIBUTION									
Case of Work <i>Brickwork</i> Week Ending <i>JUN 7-1923</i> Sheet No. <i>3</i>									
Job No. <i>108</i>									
OCCUPATION	F	S	M	T	W	T	HOURS	RATE	AMOUNT
<i>Common Mason Foreman</i>	<i>4</i>						<i>4</i>	<i>1.25</i>	<i>5.00</i>
<i>Brick Masons</i>	<i>16</i>	<i>8</i>	<i>8</i>	<i>8</i>	<i>16</i>	<i>56</i>	<i>12.5</i>	<i>70.00</i>	
<i>Laborers</i>	<i>17</i>	<i>12</i>	<i>17</i>	<i>9</i>	<i>17</i>	<i>72</i>	<i>1.75</i>	<i>126.00</i>	
<i>Mason Foreman</i>	<i>8</i>		<i>8</i>		<i>8</i>	<i>24</i>	<i>1.25</i>	<i>30.00</i>	
<i>Brick Masons</i>					<i>8</i>	<i>8</i>	<i>1.25</i>	<i>10.00</i>	
<i>Laborers</i>	<i>8</i>		<i>8</i>		<i>8</i>	<i>24</i>	<i>.75</i>	<i>18.00</i>	
Total									<i>60.00</i>
Quantity Work in Place	Pay Roll Costs	Labor Average Unit Cost	Average Quantity Per 8-Hour Day	Quantity Work in Place	Pay Roll Costs	Labor Average Unit Cost	Average Quantity Per 8-Hour Day		
<i>Previous</i>	<i>152 M</i>	<i>1972.00</i>	<i>13.02</i>	<i>1200</i>	<i>145.44</i>	<i>467.80</i>	<i>38.95</i>	<i>480</i>	
<i>This Week</i>	<i>10 M</i>	<i>131.80</i>	<i>13.18</i>	<i>1235</i>	<i>15.44</i>	<i>60.40</i>	<i>40.27</i>	<i>376</i>	
Total	<i>162 M</i>	<i>2110.80</i>	<i>13.03</i>	<i>1248</i>	<i>16.44</i>	<i>528.20</i>	<i>42.01</i>	<i>468</i>	

Form 3. Labor Distribution. Distributing workmen's time to common and pressed brick.

COST ANALYSIS RECORD									
TOTAL LABOR COSTS					UNIT				
	1	2	3	4	5	6	7	8	9
Previous									
This Week									
Total									
TOTAL LABOR HOURS					UNIT				
Previous	<i>337</i>	<i>647</i>	<i>950</i>	<i>4</i>	<i>58</i>	<i>183</i>	<i>708</i>		
This Week	<i>4</i>	<i>56</i>	<i>72</i>	<i>2</i>	<i>74</i>	<i>8</i>	<i>24</i>		
Total	<i>341</i>	<i>698</i>	<i>1022</i>	<i>6</i>	<i>82</i>	<i>191</i>	<i>732</i>		
LABOR HOURS PER UNIT					UNIT Per 1000 Bricks				
Previous	<i>2 1/10</i>	<i>4 1/10</i>	<i>6 1/10</i>	<i>1/10</i>	<i>11 4/10</i>	<i>1 7/10</i>	<i>11 3/10</i>		
This Week	<i>3/10</i>	<i>5 3/10</i>	<i>7 1/10</i>	<i>1/10</i>	<i>16</i>	<i>8 1/10</i>	<i>16</i>		
Total	<i>2 1/10</i>	<i>4 3/10</i>	<i>6 1/10</i>	<i>1/10</i>	<i>5 1/10</i>	<i>1 7/10</i>	<i>11 3/10</i>		

Labor Cost Analysis, Back of Form 3, Showing How Workmen's Time Is Carried Forward and Worked Into Hourly Costs for Future Estimates.

thousands of bricks laid; in concrete work, the number of cubic feet or cubic yards of concrete placed; the number of square feet of forms erected and removed, etc. The operation is the same regardless of the kind of work from foundations to finished carpentry, plastering, etc.

The third column, headed "Unit Average Labor Cost," gives the average labor cost of laying a thousand bricks, while the fourth column, headed "Average Quantity Per 8-Hour Day," gives the average number of bricks a mason laid per day.

wages was just \$13.03 per thousand.

In all my experience compiling costs I have found that the only worth while method was to keep all costs in units of hours instead of dollars and cents because they can then be used any time, under any conditions, in any locality and at any scale of wages.- Costs compiled in this manner have been of untold value to me, and I believe that any contractor who tries out this system on his own work will find it time well spent.

Here Is What the Timekeeper Does

On large jobs where a timekeeper is employed, it is up to the timekeeper and the various gang foremen to distribute the workmen's time to the different classes of work each day.

The timekeeper may use an ordinary time sheet, using small symbols in the upper part of each square to designate the class of work being done by each man, or he may use a weekly time check report.

You will note this form is arranged so that each day's time is divided into four parts, two for the morning and two for the afternoon. As the timekeeper makes his rounds on the job, checking the men at work, he places a small symbol in each square provided for the purpose. This represents the kind of work being performed by each man. Each square represents a two-hour period, the four squares making the 8-hour day. After the men have stopped work for the day, the timekeeper should enter the number of hours worked by each man in the time book or on the pay-roll sheets, and then from the symbols in the Time Check Report, the number of hours worked by each trade on the different kinds of work should be totalled, as previously described.

In order that the timekeeper's checkings may be verified and all chance of mistake eliminated,

Each Gang Foreman Turns in Daily Report

showing the number of men of each trade working in his gang, and what they were doing that day. (See illustration of Foreman's Report.) The timekeeper compares this with his own records, and if there is any discrepancy, the matter should be taken up with the foreman at once and straightened out. If this is attended to daily, it will result in the best unit labor costs obtainable.

Foreman's Report					
Job		Date		Job No.	
NISSEN GARAGE, JOB 108		JUN 7-1923		108	
Occupation	No. of Men	DESCRIPTION OF WORK	Quantity Work	Hours	Total Hours
Foreman	1	Laying Press Brick		8	8
Foreman	2	Laying Common Brick		8	16
Labour	7	Common Brick		9	17
"	1	Press Brick		8	8
Chief	3	Concrete Wall Forms			24
Labour	1	" " "			4
Signed <i>E. H. Milton</i> Foreman				TOTAL	75

Foreman's Report, Form 5, Turned in by Gang Foremen Each Day Giving Distribution of Workmen's Time.

Indirect Operating Expenses

Indirect operating expenses such as the wear and tear on tools, delivery expense, the wages of truck driver and helper, the wages of the yard foreman and yard force, rent of the yard or taxes, and taxes on material should be allocated to each job according to some fair method. There are various ways which might be recommended; the hourly expense rate is the one in greatest favor.

To find out what the hourly expense rate is, it is necessary to compare the records of a year or two in the past. Let us assume that the direct labor hours of the past year were 20,000, while the indirect operating expense as enumerated in the above paragraph amounted to \$5,000 during that year. For every hour of direct labor during the year there was an indirect expense of 25 cents. Hence if 500 hours of direct labor were spent on a job at 50 cents an hour the direct labor expense would be \$250. Since there is an addition of 25 cents per hour of indirect expense an additional burden of \$125 is charged against the job, making in all a cost of \$375.

In addition to these expenses, however, are administrative expenses such as office rent, salaries of stenographers and clerks, superintendent's or foreman's salary, expenses for such items as telephone, heat, light, depreciation on office furniture and fixtures, etc. Expenses of this sort can be allocated to each job in the same way. If, for instance, administrative expenses were \$4,000 during the past year, direct labor hours were 20,000, administrative expenses on a job of 500 direct labor hours would be \$100—or, using the same example as above—total expense so far for the job would be \$475.

Other Expenses

There are other expenses, such as those in connection with the steam shovel, pile driver, cement mixer, gasoline engine, etc., which have been left out of indirect operating expense because we believe these should be charged to each job directly according to the number of hours the machine is used on a job. It would be unfair to charge a repair job with the burden of operating such equipment when it is not ordinarily used for that work. Hourly expenses of operating each one of these machines, depreciation, repairs, fuel used, etc., should also be found by comparing the records of the past. This hourly expense should then be charged to each job according to the reports from the foreman on each job as to the number of hours the machine is used each day. This together with material cost should be added to the \$475 in order to find the correct cost of the job just given in the example above.

Keeping a record in this way will not disturb the general accounting system. The account now used will serve as a source for information on operating various jobs with the amount of labor and indirect expenses involved. The system is sufficiently accurate and yet fairly simple to keep.

NEWS of the FIELD



August Construction Dropped Only 5 Per Cent

THE decline in construction volume which began in June continued through August, according to F. W. Dodge Corporation. However, the August drop from July was only 5%. Total August building contracts in the larger cities in 36 Eastern States amounted to \$298,629,000. In the 27 States for which records were kept last year, the drop from August, 1922, was 15%. In these 27 states the construction started during the first eight months of this year has been just equal to the amount for the corresponding period of last year, although on June 1 this year had a lead of 15% over last year. This year's construction to date in the 36 Eastern States has amounted to \$2,723,911,000.

The gradual decline in construction volume since May has taken place in an orderly manner, with a continuation of relatively large building volume. It has also been accompanied by a gradual decline in cost levels.

Last month's record for the 36 States included the following important items: \$126,871,000, or 42%, for residential buildings; \$62,664,000, or 21%, for public works and utilities; \$37,457,000, or 12%, for business buildings; \$25,861,000, or 9%, for educational buildings; and \$19,359,000, or 6%, for industrial buildings.

Contemplated new work reported in the 36 States last month amounted to \$508,484,000, a decline of 20% from the amount reported in July.

S. W. Straus & Co. state that official building permit reports from 252 comparable cities for August show a substantial increase over July of the present year. The totals are \$256,722,581 for August, 1923; \$233,882,261 for August, 1922, and \$241,393,803 for July, 1923; an increase of 10 per cent over August, 1922; and 6 per cent over July of the present year.



Fire Prevention Week, Oct. 7-13

THE Chamber of Commerce of the United States is launching a fire-waste competition among local chambers of commerce carrying on permanent campaigns, and is fostering Fire Prevention Week annually. This year Fire Prevention Week will be observed October 7th to 13th, and its object is to impress upon the community at large the necessity of conserving the resources of the nation by preventing fires.



American Homes for Australians

AN "Ideal Homes" exhibition in Melbourne has aroused great interest in American type houses and in mechanical house-keeping equipment, Trade Commissioner J. W. Sanger reports to the Department of Commerce.

The United States furnished most of the ideas for homes. House plans submitted were principally after the style of California bungalows, and the labor-saving devices entered in the contest were, in the main, American.

Sands Level in New Factory

THE Sand's Level and Tool Company, originators of the first level with wire bubble markers, has moved into larger and better quarters at Gratiot Avenue, Medbury Street and Fisher Street, Detroit, Mich. Julius Sand, vice-president, the founder and inventive genius back of Sand's Levels, has designed special machinery for largely increasing the output of the aluminum levels originated by this firm. These and an augmented force of employes have effected an increase of 60% over any former maximum output and enable their trade's requirements to be promptly taken care of.



Four Wheel Drive Takes on Earth Boring Machine

ARRANGEMENTS have just been made by which the Four Wheel Drive Auto Company of Clintonville, Wisconsin, have secured from the International Earth Boring Machine Company (Chicago, Illinois), the exclusive rights to the sale of the International Earth Boring Machine. The boring machine will be sold as extra equipment and when attached to the FWD truck is especially adapted for digging pole holes for telephone systems, telegraph lines, electric car lines and municipal work.



Wood Products Section to Be Feature of International Fair, Lyons, France

FROM the 6th to the 21st of October, 1923, an International Exposition will be held at Lyons, France, and an important section will be that devoted to wood products. Sylviculture, exhibits of the known commercial woods, woodworking machinery, specimens of fabricated material, and chemical by-products of wood will be featured on a large scale. No doubt American manufacturers of woodworking machinery and lumber producers generally will be represented, since the Lyons Exposition draws the attention of all commercial Europe.



Results of the Starrett Prize Contest

THE L. S. Starrett Co., well-known makers of precision tools and hacksaws has recently announced the winners of the recent prize contest on "How Starrett Tools Have Helped Me Most in My Work."

Letters of an unusual degree of merit were received from all parts of the country and the list of contestants included not only machinists, but auto mechanics and repair men, carpenters, masons, draughtsmen, engineers, millwrights and even a few farmers and blacksmiths. The Combination Square was almost universally chosen by the carpenters as the tool for which they found the greatest number of uses.

The first four prizes were won by the following:
Robert N. Walters, 824 Grand Avenue, Racine, Wis.
Harry Gibler, De Beque, Colo.
Leon H. Rice, 8 Riley Avenue, Manchester, N. H.
Wm. S. Clark, 430 N. Lawler Avenue, Chicago, Ill.



A BRANCH factory of the Detroit Steel Products Company has been established near Oakland, Cal., for the manufacture of Fenestra steel sash.

The location of this factory will result in quicker deliveries to the coast architects and builders. Formerly, when shipments were made to the coast directly from the Detroit factory, an unavoidable delay of from four to six weeks resulted, due to shipping conditions. This fact will prove of interest to architects.

FREE Offer to Contractors

Fill out and mail the attached coupon for a pint of Johnson's Floor Varnish free and all charges prepaid. There is no obligation whatever connected with this offer. All we ask you to do is test it out in comparison with the brand you are at present using.

S. C. JOHNSON & SON, Dept. A.B.-10, RACINE, WIS.
Please send me free, all charges prepaid, one pint of Johnson's Floor Varnish. I will test it and report results to you.

Name.....
Address.....
City and State.....
I Buy Varnish from.....
(Enclose Your Business Card)

JOHNSON'S FLOOR VARNISH

You know Johnson's Floor Wax—it's used all over the civilized world for polishing hard and soft wood floors. We want you to know Johnson's Floor Varnish, too. Our Varnish is just as good as our Wax. Johnson's Floor Varnish is easy to apply and has good body. It dries free from dust in two hours, and hard over night—gives a beautiful, high gloss which will not chip, check, mar, blister or scratch white—has great elasticity—is very pale in color—and waterproof. Johnson's Floor Varnish is a splendid all-purpose varnish. Use it not only for floors, but for trim and furniture. May be rubbed if desired.

"Made to Walk On"

Johnson's Floor Varnish is tough, elastic and durable. It gives a beautiful, high gloss which will not chip, check, mar, blister or scratch white. It is very pale in color so can be used on the lightest floors and linoleums



Dries Hard Over Night

Johnson's Floor Varnish dries free from dust in two hours and hard over night. It imparts a beautiful, high lustre—has good body—will give long wear—is absolutely water proof—and will stand all reasonable tests.

Beauty of Common Brick

Chicago Architects Show Way to Making Ordinary Common Brick Produce Walls of Unique Character and Rare Beauty

By FREDERICK TATE

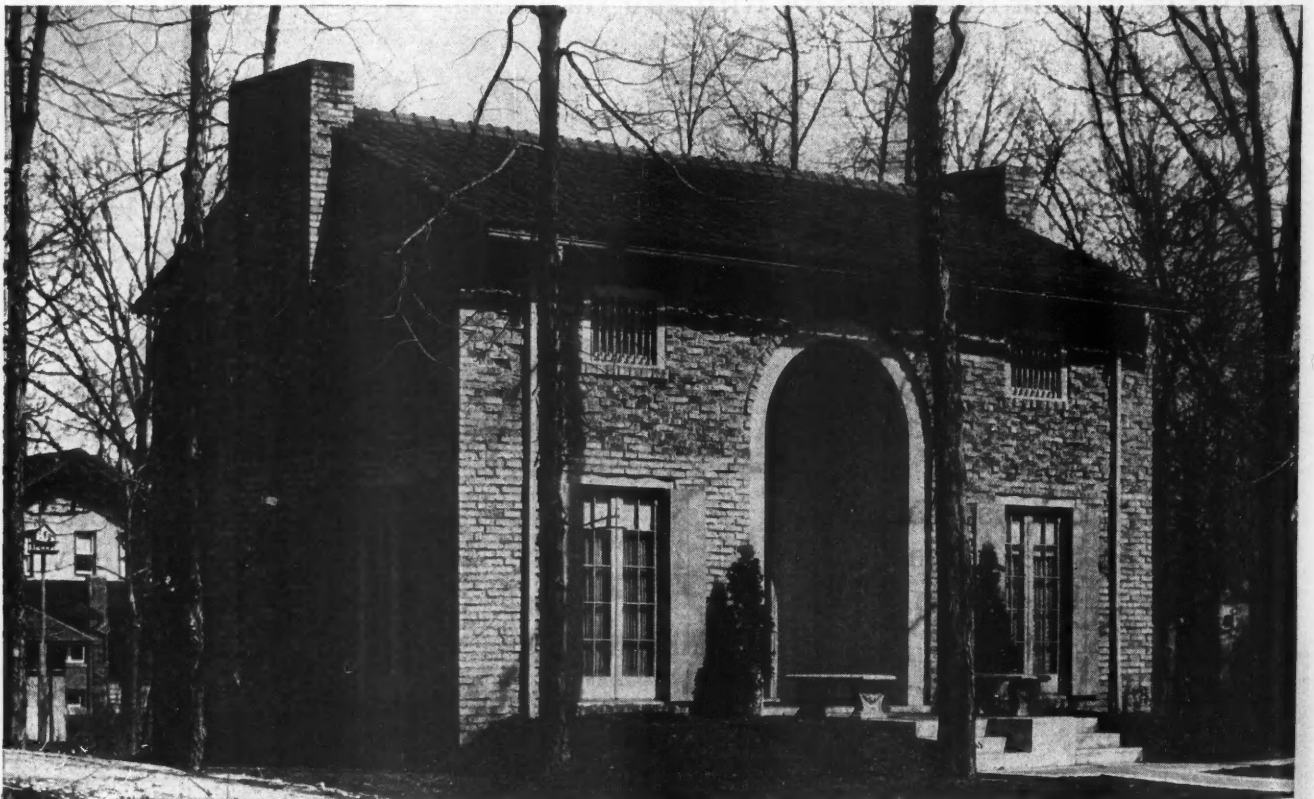
ALTHOUGH Chicago common brickwork is seen daily by millions of people in the rear of great office buildings, of apartment houses and of the thousands of little bungalows which dot the suburbs of that city, it is only recently that its remarkable qualities as a facing material have been appreciated. The photographs reproduced here show to what extent its beauty is being utilized in the building of literally hundreds of Chicago's most notable large homes on its North Shore. These houses, designed by first-class architects, are setting the pace for smaller homes, and it is expected that a considerable percentage of new structures built in Chicago will employ as facing material the very attractive brick which that city itself produces and which is known as Chicago common brick.

This will doubtless surprise many Chicago builders, who have always thought that their common brick was a fine material to use where nobody would have to see it. For foundation walls and sound structural members, also as a material to face back alleys and light courts, the average local builder has rightly thought that common brick had no equal. The idea that Chicago common brick might be distinctly beautiful never occurred to him until structures like those

illustrated here began to meet his eye when he traveled northward from Evanston. These successful common brick homes of considerable size and some pretensions, the kind of house in which economy of construction is not ordinarily a great factor, and in which the architect would not have hesitated to use the most expensive material on the market, if he could thereby have obtained the effect he wanted, has made him begin to wonder whether he, too, could not employ this economical material, that appeared so attractive, in his own work.

It is superfluous to say that the speculative builder strives to make every penny count. A saving of even \$10.00 per house would be a consideration to him if it could be done without hurting the real and sales value of the property.

Outside of the Chicago market, too, those who build to sell would be greatly interested in what is being done in other places in the utilization of this economical and very effective material for facing purposes, especially in the building of small and inexpensive homes. It is rather odd that it should be necessary to point out the entire appropriateness of using common brick in this way. The old historic brick buildings of this nation are, without exception, faced with



A Kiln of Common Brick Had "Struck"—the Firing Temperature Had Been Carried Too High. The bricks fused, turned brown and were scheduled for the dump pit. But James Roy Allen, Chicago architect, saw their possibilities for this house.

10¢



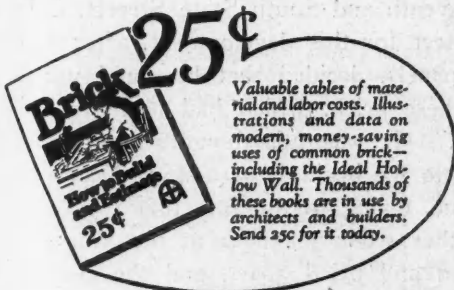
THE SAQUOIT
One of the 60 in
"Your Next Home."

You Can Increase Your Home Building Business Four Times —



THE HIAWATHA
Another of the 60. Has been called the finest house of its class ever designed.

The Book of Modern Methods



Valuable tables of material and labor costs. Illustrations and data on modern, money-saving uses of common brick—including the Ideal Hollow Wall. Thousands of these books are in use by architects and builders. Send 25c for it today.

More than 100,000 of these plan books, "Your Next Home," are already in the hands of prospective builders. Hundreds of copies are going out daily.

Every home builder can cash in on this great interest in better brick homes. Get an assortment of the working drawings and specifications of these splendid, economical, brick houses. Sit down with your prospects and show them the attractive exteriors, the excellent arrangement of the rooms, the many unusual conveniences and distinctive features.

Be Ready to Show These Plans to Your Prospects

You can get these plans—original quarter-scale blueprints, as complete as can be made—at very low cost. Order at once the drawings for at least ten or twenty of these houses. Be ready to show them to the would-be home builder. See how easy it is to sell these homes.

Every one of the 60 selected brick homes shown in this book was designed by a competent architect, has *actually been built and lived in*.

If you haven't a copy of "Your Next Home" send 10c for it today. Make a selection of plans, order them, and watch the few dollars you invest grow into hundreds of dollars of increased business.

Send 35c and get both books, with price list of working drawings



The Common Brick Industry of America

2131 CLEVELAND DISCOUNT BUILDING
Cleveland, Ohio

The Ideal Brick Hollow Wall
Made of standard brick—cuts the cost one-third





It Is Not Necessary to Go Abroad for Picturesqueness. Here is a home of common brick built in an exclusive Chicago suburb which possesses every element that makes for picturesqueness and genuine interior comfort. The Staggered brick wall was specified by Chatten & Nammond, of Chicago, the architects.

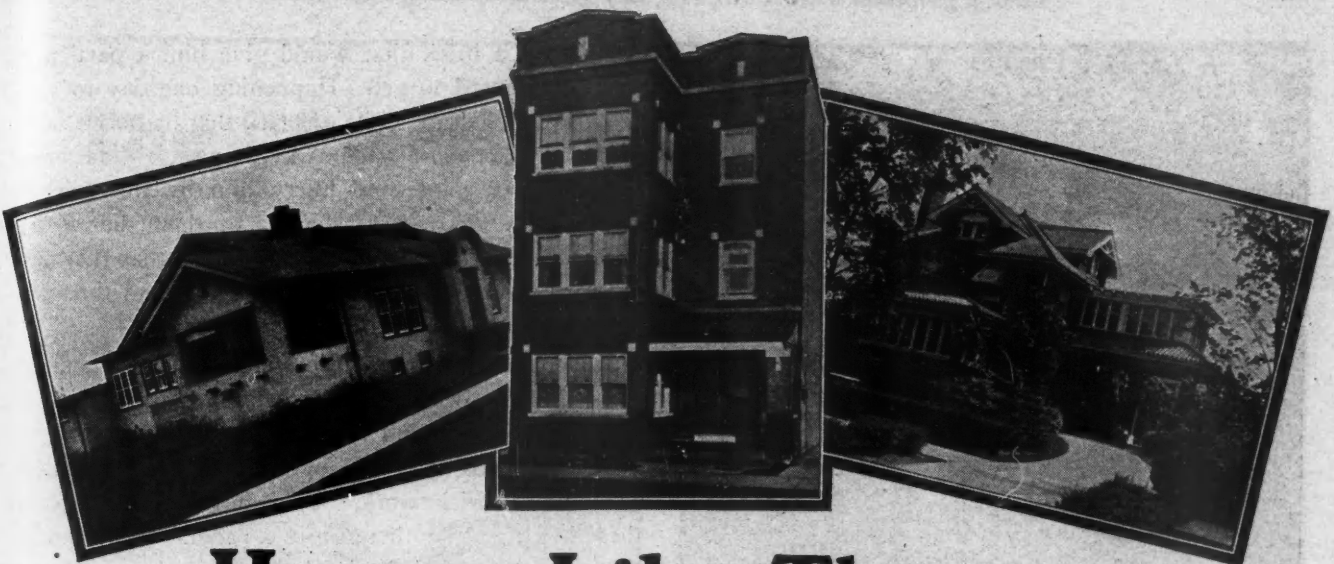
the better quality of common brick that were supplied to the job. It is hardly necessary to go abroad for further justification, but we could name the famous old brick buildings of England, Northern Italy and Holland as wonderful examples of common brick design and construction and facing, such as we of the present day can hardly hope to equal. It is a fact also that a very great proportion of the brick buildings built in the United States at the present time are faced with the most appropriate brick selected from the common brick delivered to the job.

There is no quarrel or competition here between face brick and common brick. Common brick, as all in the construction industry know, is a solid building unit of burned clay with a natural face, whereas face brick has the face roughened or otherwise treated to produce special effects in texture or color. Beautiful effects can naturally be obtained with face brick. The face brick manufacturers can supply any color or combination of colors and any texture desired. Some of the most beautiful brick buildings in this country are built of face brick, so designated, but we must not lose sight of the fact that when properly laid with proper bond and mortar joint, beautiful effects are being obtained very economically every day with common brick, and some of these are illustrated here.

The story of how Chicago common brick began to be widely used as a facing material is quite interesting. An architect happened to be visiting a Chicago common brick plant about three years ago. A kiln of brick had been "struck"—that is, the firing temperature had been carried too high—and the brick

had fused together and had assumed a brownish color, a color which the architect was informed would not be tolerated by the purchasers of this product. Inasmuch as there was no market in sight for them, they were considered spoiled brick and were being thrown as waste into the clay pit. The architect suggested to the plant superintendent that he send down a few hundred brick to the brick company office and have them laid up in sample panels. This was done, and the beautiful effect produced by these bricks was so striking that the manufacturers began to look around for a market for the particular kiln of brick that had been struck. A number of houses were being contemplated by the Chicago Housing Association at that time at Eighty-seventh and South State Streets, Chicago. The architect for this development, after seeing the sample panels, decided that he could use a great many of these brick, which had been dubbed "Dearborn brick." It was not thought practicable, however, to go into the business of making Dearborn brick at that time, owing to the fact that the brick were stuck together when taken from the kiln and had to be broken and pried apart, and the cost of manufacturing them would have been much greater than the cost of manufacturing ordinary common brick. The architect, therefore, took what was left of the struck kiln, and for the remainder of the walls used just ordinary common Chicago brick. These houses can be seen at the address named, and are worthy of a visit by Chicago builders. The brickwork is strikingly effective and satisfactory.

In the meantime, to bring the attention of Chicago



Homes Like These—

are enjoying the many advantages of Kleen-Heet—the modern home heating system. Thousands of homes the country over are using Kleen-Heet. Contractors and builders are fast realizing that a real saving in home construction costs is one answer to Kleen-Heet's popularity. It enables the builder to utilize all of the basement—a clean billiard room, den, play room, etc., can be built in place of dirty coal bins, etc. A considerable saving can also be made on upper structure.

Kleen-Heet

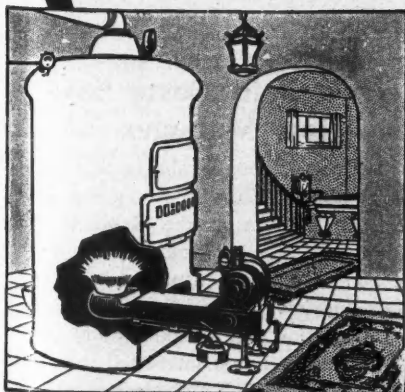
NO LABOR · NO COAL · NO ASHES

AUTOMATIC OIL BURNING SYSTEMS

render instant, unvarying, clean heat without the burden of coal-shoveling, dirty ashes and troublesome attention. Burn low-priced oil, always obtainable. Controlled automatically by a thermostat from any upstairs room desired. Operate with any type of heating plant. Furnished with either gas pilot or electric ignition.

IT IS A SUCCESS

because it is simple and sturdy in construction—the product of a corps of expert oil heating engineers. Kleen-Heet is listed as Standard by the Underwriters' Laboratories. It is built and guaranteed by a company of strong financial responsibility and permanence. Kleen-Heet saves home owners' money, time, labor and space. Dirt, work and uncertain heat are banished forever. Whole rows of houses are being built with Kleen-Heet installations. It is the modern method of home heating.



(Licensed under Doble Laboratories and Good Inventions Co. Patents)

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The coupon here will bring all of the inside facts. Get them now. We have distributors and display rooms in all the principal cities. Write to us today. Address

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Gentlemen:—Please send me full information about Kleen-Heet.

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My Business is.....



Not Hard to Understand the Rustic Appeal of this House with Its Staggered Brick Giving Fine Play of Light and Shadow.

architects to the newly discovered possibilities of this well-known material, an architectural competition for a fireplace in this brick had been conducted and participated in by many leading Chicago architects. While the number of designs submitted was rather disappointing, it obviously brought the possibilities of Chicago common brick to the attention of the principal architects of the city, and the movement toward its use as illustrated here was the result. Not content with laying the brick in the ordinary traditional way, the bricks are often staggered in and out, giving a most interesting play of light and shade over the front of the building. A few—not many—of these houses have been treated with whitewash, and some are built with Ideal walls. The great majority display most admirable designing and thorough study of the possibilities of common brick in their elevations.

This rediscovery of Chicago common brick is perhaps as momentous to the local building industry as was Stanford White's discovery of Harvard brick. It will be recalled that Mr. White at one time had looked

in vain for a brick that would give him a particular effect he wanted to get. Happening one day to visit a brick yard, he saw a pile of brick that had been carefully sorted out and piled away as waste. The brick manufacturer wanted to hurry him by this pile of brick, as he was rather ashamed of them, but to his astonishment, Mr. White informed him that that was the very brick he had been looking for, and thus was established the vogue of Harvard brick.

So we would say to every builder in every community—do not overlook the possibilities of your local product. Never mind how rough or unattractive the brick may look in a pile or when laid up carelessly as common brick work. Take a hundred or so of these brick and lay them up in a panel. Use a mortar that contrasts with the brick in color (in most cases this will be the natural mortar color), lay them carefully, and you will be surprised at the attractive effects you will obtain.



Hardware Trade Favors Decimal System

AMERICAN hardware manufacturers, jobbers and retailers are working strenuously for the adoption of the decimal system as the basis of their buying and selling. When their end has been accomplished the next logical step will be for other trades and professions to fall in line until American business has at last freed itself from an antiquated pricing system inherited from Europe and abandoned long ago by practically every nation there.

Present methods of buying and selling in the hardware trade are much confused. The plan of pricing goods by the dozen or by the gross has been wished upon the dealers of the present generation by their fathers, who in turn received it ungraciously from the generation that preceded them.

The small dealer who wants five hundred of a certain article frequently does not know whether to order "41 $\frac{2}{3}$ dozen" or "3 $\frac{68}{144}$ gross"—so instead asks for "500."

With the decimal system in operation and the particular item referred to above listed at, say, \$4.68 a hundred pieces, it would be an easy matter for the dealer to figure the price to be charged for 500 pieces; "4.68 multiplied by five" is a very simple problem. Under the present system the items above would be listed at \$6.75 a gross. Five hundred pieces would first have to be figured out to be 3 $\frac{68}{144}$ gross and the latter multiplied by \$6.75—difficult mathematics, to say the least. When a similar order, so far as size is concerned, calls for "41 $\frac{2}{3}$ dozen," another arithmetical problem must be solved despite the fact that "41 $\frac{2}{3}$ dozen" and "3 $\frac{68}{144}$ gross" are equal quantities.



Public Not Interested in Costs Says Home Exposition Manager

RECENTLY there has been considerable public and newspaper discussion about building costs going up," says H. H. Lincoln, Managing Director of the Home Building Exposition held at Milwaukee, Wis. "Discussion has been carried on by Tom, Dick and Harry who usually know very little about actual conditions and have the mistaken idea that sales can be made by price discussion and knocking some part of the building industry. The public is not interested in costs so much as they are in getting information and ideas in order to carry out a desire for home building."

The "American Universal Way"

Will earn for you just—

Six men's pay



TIME BOOK			
NAMES	Rate per Day	AMOUNT	
		Dolls.	Cts.
<i>D. Reuter</i>	8.00	8	00
<i>C. Torah</i>	8.00	8	00
<i>H. Moran</i>	8.00	8	00
<i>J. Malloy</i>	8.00	8	00
<i>G. Clark</i>	8.00	8	00
<i>R. Duncan</i>	8.00	8	00
		48	00



TIME BOOK			
NAMES	Rate per Day	AMOUNT	
		Dolls.	Cts.
<i>J. Morris</i>	6.40	6	40
<i>Operating Expenses:</i>			
			60
			1.00
			8.00

BIGGER PROFITS—A BETTER JOB

Hand scraping is slow and expensive—and the results are unsatisfactory. The "American Universal" machine, electrically driven, full ball bearing construction, will replace six men on your payroll. Leaves a beautiful, smooth surface—a much better job at one-sixth the cost. Edge roller feature makes it possible to surface right up to base board.

MAKE \$30.00 TO \$40.00 A DAY

SURFACING FLOORS AS A BUSINESS. Equipped with the "American Universal," the floor surfacing contractor earns the wages of six men. Every job a good advertisement. "American Universal" floor surfacing contractors make from \$30.00 to \$40.00 per day. Send coupon for full particulars.

FREE FIVE-DAY TRIAL

Let us explain free five day trial offer. Let us send you testimonials from contractors who are saving money, increas-

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

ing their profits with the "American Universal." Coupon brings free catalog and full particulars. Mark on coupon whether you are a building contractor or want to become floor surfacing contractor.

MAIL THIS COUPON RIGHT NOW

AMERICAN FLOOR SURFACING MACHINE CO.
515 South St. Clair Street Toledo, Ohio

Send at once, without obligation to me, full particulars and free catalogue on your "American Universal" floor surfacing machine. Don't fail to explain free five-day trial offer.

- I am a building contractor.
- I want to become a floor surfacing contractor.

Name _____

Street Address _____

City _____ State _____

WHAT'S NEW?



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

A Practical Roofer's Bracket for All Kinds of Roofs

THIS is a bracket which is instantly adjustable to any pitch roof, automatically locking into position. It is attached to the sheathing boards by nailing a notched, removable nail stop. It is detached by unhooking from beneath the overlaid course of roofing. It is made of galvanized metal, and all the die-cut stamped parts are scientifically riveted together. It is guaranteed to carry any weight a roofer



These Galvanized Metal Brackets Help Get the Shingles on in a Hurry. They are easily attached, quickly removed and leave no marks.

may pile on it, taking boards or planks up to 12 inches wide.

As any roofer knows, to shingle or slate with makeshifts or scant 2x4s requires extra time and material. With this, the staging is attached to the main roof, affording safety and freedom of movement, and the men keep off the roofing—hence no scars, cracks, after-leaks or after-repairs.

These roofing brackets come with or without a plank stop, which attachment holds a 2 x 4, 2 x 6 or 2 x 8 firmly against the roof. It is easily attached, and practical men like it.



Dependable Low Cost House Heat From Kerosene Flame Furnace Heater

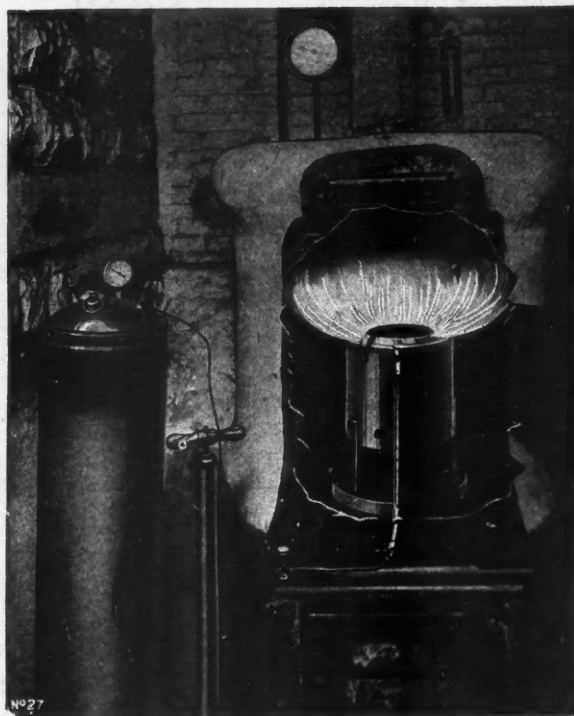
ILLUSTRATED is an easily installed burner, which can be fitted in any type of furnace, and burns only a small amount of kerosene to give perfect heating to the house. The kerosene is stored in a pressure tank; the pressure is furnished

by one who tends the furnace, and requires pumping about twice a day, morning and evening. The pumping operation is not hard—about like pumping up a bicycle tire.

The kerosene is fed into the burner under pressure, and when lit burns as spray with a clean smokeless flame which yields an intense heat. Observe in the illustration how this heat is concentrated upon the part of the furnace or boiler which forms the stream or water jacket; it sends quick heat through the house in very short time after the fire is started.

There is no danger from accidental combustion of the kerosene, for the pressure tank is far enough away from the heating unit to have no effect from its heat. The whole installation is really very simple, and presents no mechanical complexities to the housewife who may have to look after the heating plant during the day.

It solves the fuel problem satisfactorily, since there is no necessity for laying in a big bin of coal; the kerosene can be bought in drums as required, and one of these takes up very little room. Then there is the advantage of having a basement free from ashes and coal dust and that always-present, if invisible, soot which seeps upward through the floors and makes the carpets and draperies grow dingy in the course of the winter.



In This Furnace or Boiler the Kerosene Is Fed to the Burner Under Pressure, and Burns with an Intense, Clean, Smokeless Flame, Which Heats the Whole House Economically and Comfortably.

How Men in the Building Trades Get Into the Big Pay Class

Opportunities Everywhere for Those Who Can Read Plans, Make Estimates and Superintend Work

NEVER in the history of this country have men in the building trades had the opportunities for money making that are offered today. Building is on the boom. Able men are needed on work already started and on work for which the plans are ready.

There is big money ready for men who can read plans, make estimates and superintend construction—and this is where the ambitious man who will train as an expert will find his chance.

As a workman, a man draws pay for what he can do with his hands. As a foreman or superintendent he gets paid for what he knows. And the contractor taking small jobs who gets posted on the higher branches of building can take on the big propositions which pay the largest profits.

Some men have reached the big money class only after years spent in picking up information as they went along. This is the slow way to success and comparatively few men get very far by depending upon their experience and hard work alone. The man who trains under experts and gets the benefit of their knowledge saves years of waiting—he gets quickly to the front.

The man who can work best with his head is the man who gets the big pay job or makes the largest profits in business. The world pays more for brains than it does for muscle.

There, for instance, is a man in Oklahoma. His name is Woodside. He worked for years just as thousands of other carpenters are working, taking a job here and a job there, making a journeyman's wages and no more. He did the sawing and nailing and joining while other men did the planning and directing and made the real money.

Fortunately for Woodside he saw an advertisement of the Chicago Technical College which offered to train him by mail in his spare time to do the very things which these successful men were doing. He wrote for the catalog, got information about the Builder's Course and enrolled. Read what he says.

"I was working as a carpenter receiving \$6.00 per day when I took up the course. In less than three months I got a job as foreman on a big apartment building at \$8.00 a day. Five months later I was superintending a reinforced concrete job covering nearly half a block. I am now in business for myself specializing in theatre construction."

And there is P. Marchand, a contractor in Louisiana who writes: "My income increased 100% and have more work than I can do. Have three churches, and several other buildings to construct."

Another man with Chicago "Tech" training is S. J. Dickerson of Rhode Island who says: "When I started your Builder's Course I was making \$50 a month on the average. Now making \$150 a week."

These are only three examples of what this training has done for ambitious men who saw that "the big pay goes to the man who knows" and who put in some of their spare time to get the instruction of the Chicago "Tech" experts.

Let America's Oldest and Largest School for Builders Give You the Training that Means Greater Success and More Money

Hundreds of carpenters and men in other building trades attend our Chicago school.

For twenty years we have been training ambitious men who are now foremen, superintendents and independent contractors, making big money while other men who started with just as good chances as they had are still at the bench. You can get this same training at home in your spare hours for

we teach the same courses by mail and you get the supervision of the same experts. No special, previous education required to take up this course. Send the coupon below and get the catalog with full information about our courses and about our small fees and easy terms of payments.

Some of the Subjects We Teach

PLAN READING—How to read a building plan. Floor plans and elevations. Use and meaning of different lines on the plan. Sections and section lines. Cross Sections. How different materials are shown on the plan. How to read dimensions. Detail drawings. How to lay out work from the plans. Tracings and blue prints—How they are made. Contracts and specifications. Practice in reading complete plans from basement to roof, etc., etc., etc.

ESTIMATING—Figuring amount and cost of material, time and labor for all classes of buildings. How to figure all kinds of carpenter work—stairs, roofing, rafters, mill work, window and door frames, mouldings, cornices, etc., etc. How to figure brick, stone and concrete work. Sheet metal work, glazing, plumbing, heating, wiring, etc.

THE STEEL SQUARE—How to use the square to solve building problems, such as figuring common rafters, hip rafters, jack rafters, etc., etc.

SUPERINTENDING—Methods of work on all classes of buildings. Uses and preparations of all kinds of material. Hiring and handling men.

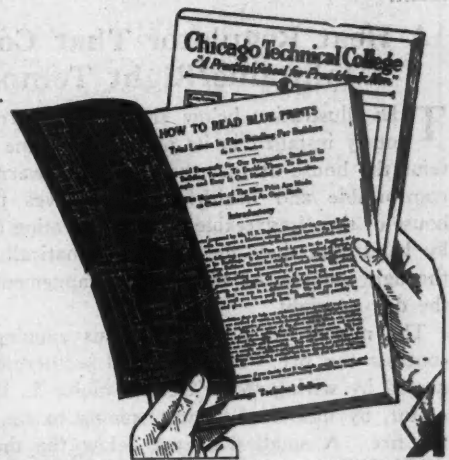
Also complete home study courses in architectural and other branches of **DRAFTING**. If interested in any branch of Drafting ask for special catalogue.

FREE! 2 BOOKS AND BLUE PRINTS

Your request brings our 2 Books, one on "How to Read Blue Prints" containing a lesson in Plan Reading with which we send blue prints, drawings, etc. With this lesson you can test yourself and see how easily you can learn by our method before you decide about enrolling. The other book explains the Chicago "Tech" Method of Training by mail.

Send the Coupon

Get these free Books and Blue Prints and see for yourself how Chicago "Tech" training will put you ahead. Just sign and mail the coupon today to Chicago Technical College, 1036 Chicago Tech. Bldg., Chicago.



CHICAGO TECHNICAL COLLEGE,
1036 Chicago Tech. Bldg., Chicago, Ill.

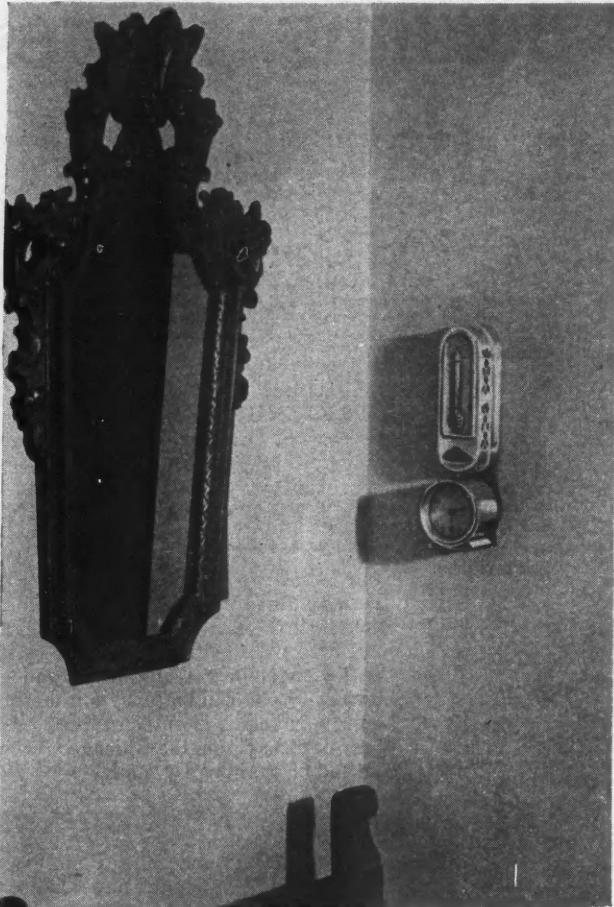
Please send me your 2 Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below.

Name

Address

Post Office State

Occupation



A Handsome Little Device in Sand Blast Bronze Finish Which Fits Unobtrusively on the Room Wall, and Is a Heat Regulator Governing the Heating Unit in the Basement.

A Heat Regulator That Controls and Maintains Right Temperature

THE illustration below shows a heat regulator, inconspicuously installed in its place on a home wall, which maintains the house at just the degree of warmth which is most comfortable and healthful. It relieves the people of the house of the disagreeable duty of operating dampers and drafts by hand, and does the work automatically, dependably and, through the use of the clock arrangement, at any hour of the day or night.

The motor, by means of chains running to the dampers, controls the fire. It consists of a thermostatic device connected by wiring to an electric motor in the basement. The motor, by means of chains running to the dampers, controls the fire. A small dial just below the thermometer enables the householder to set the regulator for any degree of temperature during the day. The clock governs the hour at which daytime temperature is reduced for the night. It also causes the thermostat to automatically raise the temperature to normal warmth before the family arises in the morning.

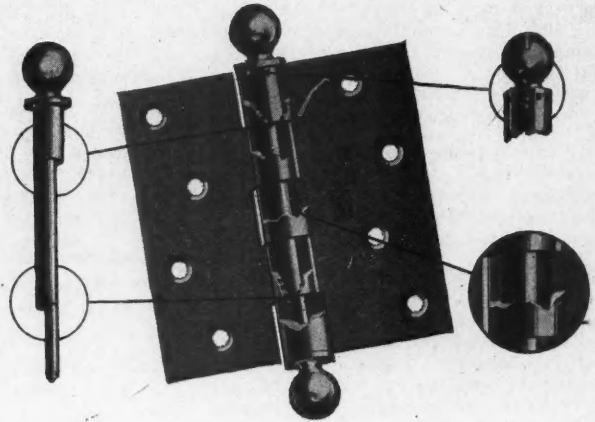
The regulator comes in One-Day and Eight-Day models, both identical in outside appearance and design, and which fit inconspicuously into any room of the house. They are finished in sand blast bronze and can operate in connection with any type of motor. ❖

Adjustable Hinges Eliminate Door Troubles

A VERY ingenious hinge is now on the market that eliminates the annoyances caused by doors which become jammed in wet weather, and that rattle in the wind in dry

weather. By adjusting the hinge, door clearances can be changed quickly when changes in weather cause wood doors to expand or contract or when a building settles a trifle, causing the doors to stick at the top or when the door sags and sticks on the sill, or when the latch or lock does not properly engage the keeper.

This adjustable hinge swings the door the same as the old-fashioned type of hinge and has the same general appearance, but the pin is an eccentric instead of a straight wire, which when turned draws the two sections of the hinge together or forces them apart in accordance with the direction turned. The pin is held permanently in position by means of slots at the top knuckle.



This Adjustable Hinge Swings the Door Like Any Ordinary Hinge, but the Pin Is an Eccentric Which Can Be Turned to End Jamb-Sticking or Rattlings of Doors in Moist or Windy Weather.

The middle knuckle of the hinge acts as a grease cup and is packed with a non-fluid grease which will not run under heat and assures complete lubrication of the pin and knuckles and thereby insuring a silent hinge and one of long usefulness. Adjustment and self-lubrication are the two distinct features of improvement which mark the adjustable hinge as a decided advance in modern construction. The adjusting pin permits complete adjustment of the door all around in the frame—up and down and to and from the jambs. Adjustment is simple and easily made by anyone. So don't cut the door when it sticks but change the hinges and make the door permanently adjustable to the ever changing conditions of buildings and doors.

They are sold in all sizes and qualities.



Vanquishing Lost Space with Vanishing Doors

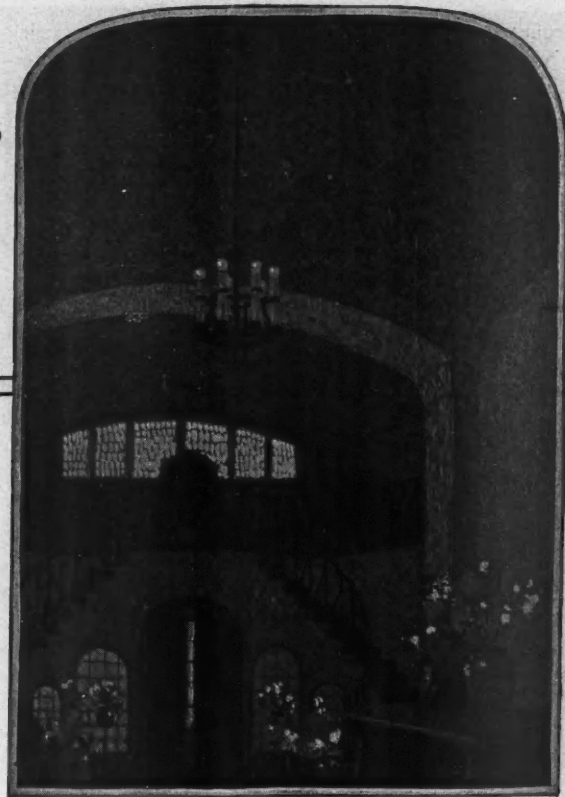
THE present demand for increased conservation of space has found the manufacturer of a "vanishing door" wardrobe and closet ready with his own unique device. It saves at least 15 per cent in the time and cost of construction, to say nothing of the space released for other uses, and in the case of the larger wardrobes, such as those of schools, there is an extra saving in material expense and upkeep.



This Door "Vanishes" Alongside Inside of Closet.

*For finer and more
durable Interiors*

KELLASTONE
IMPERISHABLE STUCCO
Super-Plaster



KELLASTONE SUPER-PLASTER is a distinct type of caustic magnesia cement. It is composed of accurately proportioned quantities of heat controlled Sierra plastic magnesium oxide and specially prepared ingredients, mixed or gauged to the proper degree of plasticity with liquid magnesium chloride.

It is applied in a manner similar to and with the same tools as ordinary plasters and may be spread over almost every kind of construction surface, including wood, metal and various laths, gypsum partition blocks, tile, brick, stone and poured concrete walls and ceilings, and molds readily, securely and permanently.

KELLASTONE SUPER-PLASTER forms an even, seamless surface as tough and strong and almost as light as an equivalent layer of close grained hardwood. Nails can be driven into it as readily as into wood and with no more injury. Moderate settlement will not harm it and extraordinary blows will not break or damage it.

KELLASTONE SUPER-PLASTER has behind it the facilities, the experience and the sterling reputation of the largest manufacturers of oxy-chloride products in the world. It is manufactured and sponsored by the same organization that has made Kellastone exterior stucco, the standard by which all others are judged. See your local dealer or write us for catalog, prices and full information.

NATIONAL KELLASTONE COMPANY
CHICAGO — NEW YORK



Wardrobes or clothes closets with hinged doors that swing into the rooms demand too much space consideration and interfere with the use of the adjoining compartment. Illustrated are two uses for a certain make of vanishing door that has met with favor among architects and builders generally. The door does not stick or bind, as it is hung on double pivoted arms top and bottom, and closes against felt instead of between jambs. It is not affected by settlement or any movement of the wood. There is nothing about it to wear or get out of order, and it moves easily, silently, and requires no additional floor space. In a school, for instance, it can be readily noted how easily it is operated, and how safely, by a mere child. In the home, as a clothes closet door, and in the school or other public building, this vanishing door is now considered standard equipment and the thoughtful architect or builder can make no mistake in specifying it. ❖

Even Boys Find Floor-Surfacing Profitable Business

THE photograph below is a likeness of John Frank Smith, fourteen-year-old son of Griff W. Smith, one of the largest contractors and builders in Lexington, N. C.

John is only fourteen years of age, yet he can take his father's floor surfacing machine and turn out a strictly first class job. John says it is no trick at all to run it, and if he were only older and could quit school he would go into the floor surfacing business, for his dad has more than he can do with the one machine.



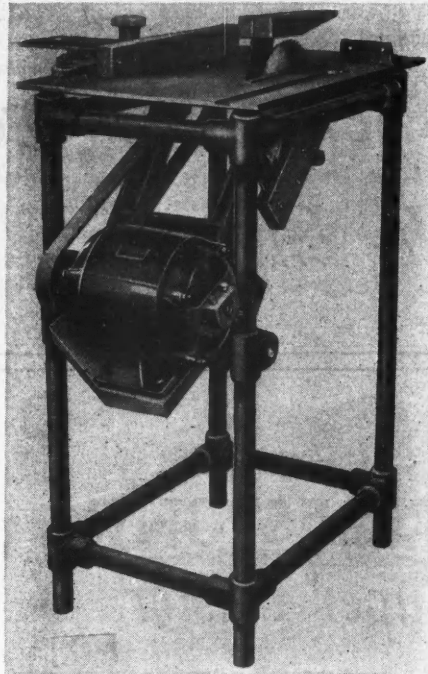
No Trick at All to Run This Machine, Thinks This Fourteen-Year-Old Boy, Whose Father Is Making Good Money Locally in the Floor Surfacing Business.

In addition to knowing how to operate the machine, John is very apt on the typewriter and can get out a letter that would make the average stenographer envious. With the experience that John is getting in a general way after school hours, he is building the foundation so he will know just exactly what to do and how to do it when his school days are over, which will be in a few years' time.

A Handy Saw Table

ILLUSTRATED is a light weight, yet strong machine, made by an old established manufacturer of saw mill machinery; a handy saw table most every builder and carpenter can find excellent use for, it can be used on the job as well as in the shop, and is easily portable. It can be changed to belt driven from motor driven by the use of ordinary countershaft and pulleys.

It stands on tubular steel legs cast into corner fittings, forming an inseparable rigid frame to which the steel top is attached. This frame also supports the swinging arm or yoke which carries the saw mandrel.



A Well-Built, Reasonably-Priced Motor-Driven Portable Saw Table Most Every Carpenter and Builder Can Use Profitably.

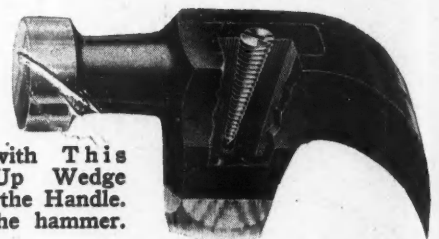
for raising and lowering the arm. A slot is planed in the table for the cut-off gauge supplied with the machine, and can be set at any angle, right or left, for mitre work. An excellent ripping gauge is provided which opens $9\frac{1}{2}$ " from the saw and is held in any position by a quick-acting clamp. It is adjustable for alignment with saw and can be removed quickly for long cutoff work. Safety guard and splitter and guard is provided, the saw being guarded both above and below the table. The machine can be changed from belt to motor drive simply by removing the pulleys and mounting the motor, no extra parts being required except the wood motor base. It is very reasonably priced and should prove a good investment for the user.

A Claw Hammer with a Take-Up Wedge

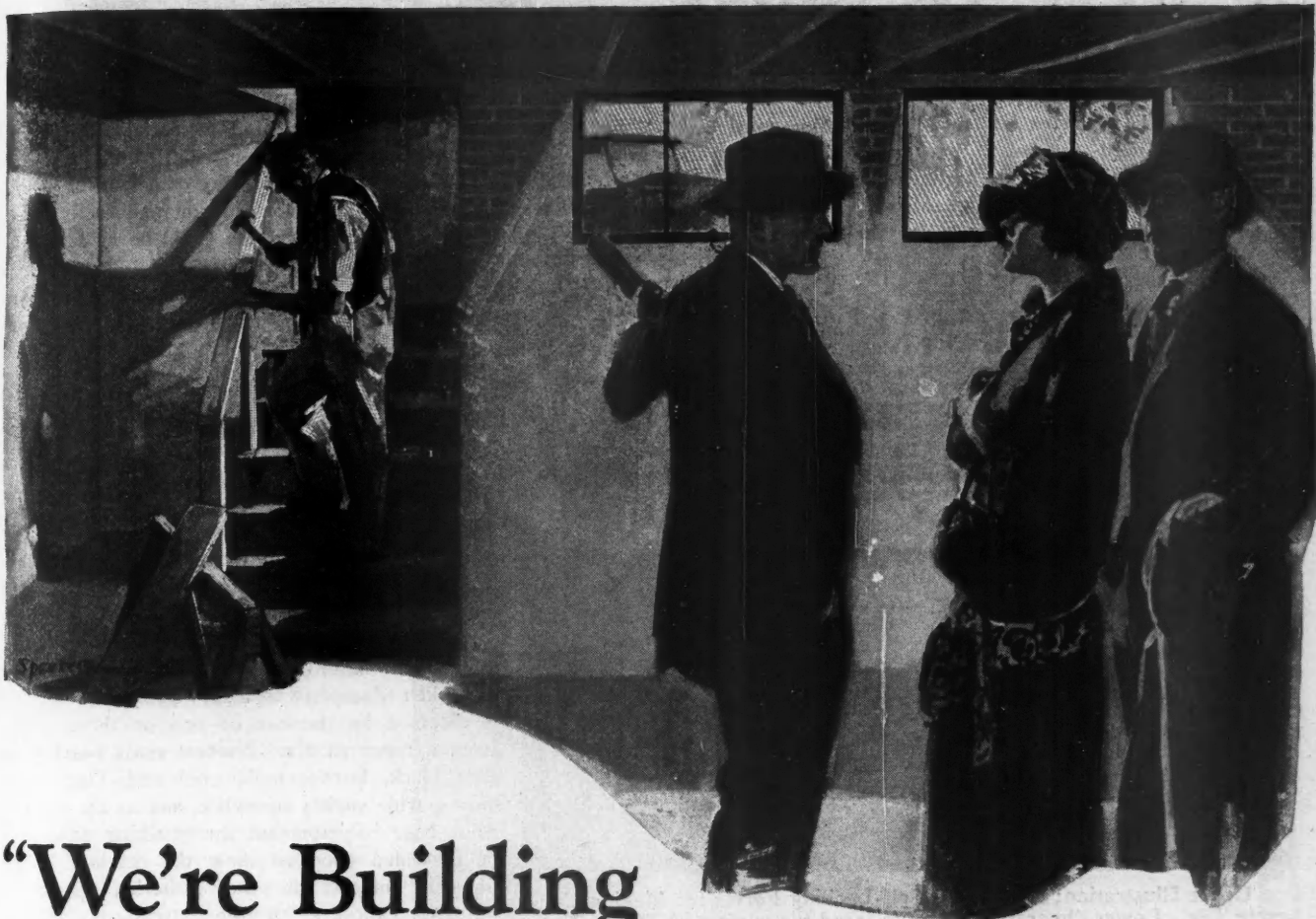
ONE of the big hardware manufacturers is making his trade-marked and well-known hammers, hatches and axes with a take-up wedge, as shown in the illustration. It instantly retightens the handle and is very convenient, since it takes up slack when the wood shrinks and the head can always be held tight on the handle.

Any carpenter knows the inconvenience, not to say danger, of the wobbly hammer or hatchet head flying off; likewise of the chance of breaking the handle in driving it into the hammer or hatchet head to tighten it.

No Chance of the Hammer Head Flying Off with This Screw Take-Up Wedge Holding It on the Handle. It comes in the hammer.



The take-up wedge has helped the sale of this particular make of tool very much. The tools have always been of high quality, and their design balanced in a way to make using a pleasure. This additional advantage of being able to tighten the handle with a turn of the screw should be very welcome to the user of tools.



"We're Building Brighter Basements"

"We're building brighter basements. It's daylight that makes the difference. Look at those Fenestra Basement Windows. They admit 80% more daylight and make the basement almost as bright, airy and usable as the rooms upstairs."

Here is a real argument that will help you sell the houses you build—and help increase your profits, too.

Like stationary tubs, hot water heaters, and other modern features, Fenestra Basement Windows are coming to be expected by most buyers.

They have revolutionized home basements by making them bright and airy and cheerful like the rooms upstairs.

Prospective buyers of homes are already asking for them. Architects are specifying them. They are rapidly coming into universal use.

That's why more and more investment builders are using Fenestra Basement Windows. They get better, fire-resistant construction at practically the same cost as wood. They get windows that are delivered complete, and can be more easily installed. Fenestra Basement Windows give them other good selling arguments at the same time.

You can get these windows through any lumber dealer. Full installation data will be sent gladly upon request.

DETROIT STEEL PRODUCTS COMPANY

B-2260 East Grand Blvd.

Detroit, Mich.

Fenestra

BASEMENT WINDOWS

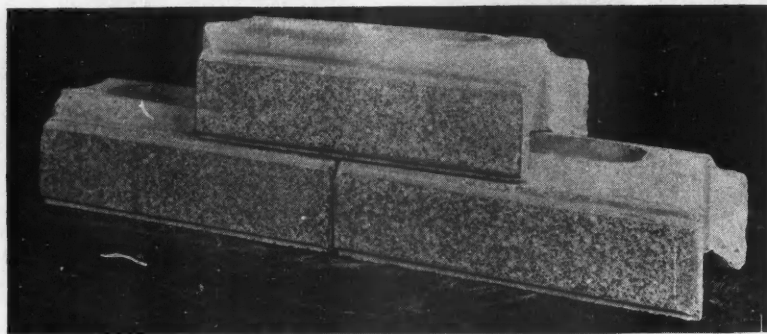
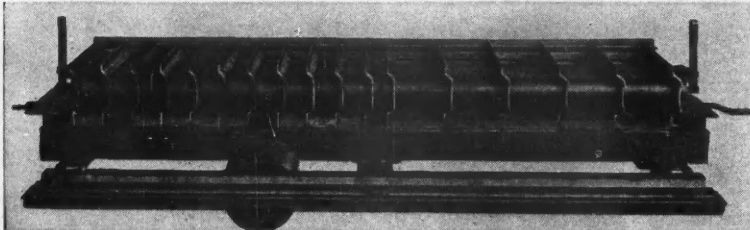
Fenestra

The name of the ORIGINAL steel WindowWall.

The symbol of superior QUALITY in material, patented design, workmanship and service.

Interchangeable, Self-Locking Metal Forms Make Wall Tile in Many Patterns at Profit

CONSTANTLY increasing costs in building construction create a need for ways that cut cost. Metal forms which do not require much preliminary outlay and which interlock to allow a wide range of sizes from the use of one set of forms are now in use for the manufacture of a



Upper illustration: Adjustable, Self-Locking Forms for Making Concrete Tile. Lower illustration: Granite-faced tile made with form. Note how top, bottom and ends interlock.

poured concrete building tile with a four-way vertical and horizontal lock. The tile comes out of the forms perfectly smooth, and the completed face front can be natural, beveled or tooled finish, or made to resemble granite, marble, limestone, pebble dash. It also can be made in non-fading colors which, being a unit with the tile, cannot crock. The addition of the proper matter to the aggregate gives a waterproof finished product.

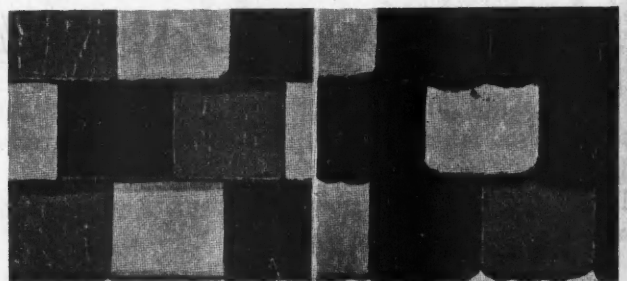
Each block fits into the adjoining one, locking at top, bottom and ends. The evenness of the joints is such that the amount of interior plastering is cut to a minimum, and besides, no furring strips are necessary. No stucco is required

on the exterior face, since the use of the stucco finish pattern is equal to a high class stucco coat. An 8 x 8 x 16 four-way tile made by this process equals 14 ordinary sized bricks. A mason can lay 150 such tile in a day, a volume equivalent to 2,000 bricks. With the use of the special self-locking and adjustable metal forms the tile can be manufactured in any locality, preferably in the near vicinity of a sand or gravel pit. The forms are of simple construction and easily operated. Under usual conditions these tile could be made by the use of the adjustable, self-locking forms at a cost of 10 to 13 cents each, including the necessary corner jamb and other changes necessary to complete a job.



Colored Asbestos Shingles in Thick Butt or Broken Edge Patterns Make Handsome, Durable Roof

IN THE better class of residence the architect and the builder find welcome variety possible for the roof through the use of asbestos-colored shingles. Although in many instances a single color alone is used, the artistic effect being secured through the natural silhouetting of the thick butt or broken edge patterns, a very agreeable variation is obtained by the use of two or three colors from a range of six. Natural gray, pearl gray, slate black, brown, Indian red and Tuscan red offer a wide variety of choice, and as the metallic color base is permanent the resulting effect can be depended upon to show the original beauty of the shingles to the passerby, regardless of any exposure to the forces of sun or weather.



Thick Butt Style

Broken Edge Style



One of the Popular Variegated Roofs of Colored Asbestos Shingles Used by a Prominent Kalamazoo Contractor on His Own Home.

A
W
MOIST AIR RISING FROM

A Furnace That Will Give You Warm-Air Heating at Its Best



Greater Capacity

The Sunbeam Furnace—either Pipe or Pipeless—generates and circulates an unusually large volume of warm-air in proportion to fuel consumed. Sunbeam greater capacity is due to over-size and scientifically proportioned castings and air passages.

Longer-Lived

The Sunbeam Furnace delivers a longer life of trouble-free service, for every Sunbeam casting is made of "Sunbeametal"—a newly developed furnace iron of remarkable strength and ability to withstand the stresses and strains of heating service.

No Dust Nor Dirt

The Sunbeam's air and dust seal cup-joints and double castings positively prevent smoke, dust and gases from being carried from the furnace into the house. The Sunbeam-heated home is a clean home all winter.

Quick Action

The Sunbeam is remarkably quick in its heating action. A slight turn of the Sunbeam Upstairs Regulator quickly changes room temperatures all over the house and does away with the necessity of going to the cellar to regulate drafts and dampers.

Convince Yourself

Specify Sunbeam Furnaces for the houses you build this fall. Watch their performance carefully during the winter. Get the home owners' opinion. You'll find your clients completely satisfied. You'll find that you have given them home heating at its best.

Get in touch with the nearest Sunbeam Dealer and write us for literature describing Sunbeam Warm-Air Heating in detail.

THE FOX FURNACE COMPANY, ELYRIA, OHIO
 Boston Atlanta Cleveland Chicago Denver San Francisco

SUNBEAM

WARM-AIR HEATING

The asbestos shingles used on the roof of the house illustrated have made it the most admired and talked-about residence in its neighborhood. Yet their original purpose has not been lost sight of; the mixed color asbestos shingles make a durable, practically indestructible roof that will not burn, rot, split, warp or check, and never requires either painting or repairing. They are made entirely of selected asbestos fibre and portland cement, scientifically colloided and finished under the proper hydraulic pressure. These colored asbestos shingles are made in standard thicknesses, shapes and sizes, as well as the extra thick butt and broken edge patterns, and since they are made by an old established concern, with dealer representation everywhere, builders will find they can be supplied easily at prices which are attractive.



Waterproofing Construction of Lincoln Memorial Reflecting Pool

THE central architectural feature in the development of the Lincoln Memorial site in South Potomac Park, Washington, D. C., is the long narrow reflecting pool extending from

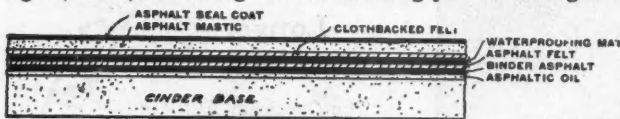


Fig. 1. The Cinder Base Was Impregnated with Asphaltic Road Oil, Sanded and Rolled with a Heavy Roller. It was then built upon as shown and the pool bottom finished with a soft coat of sanded and rolled asphalt.

the Lincoln Memorial towards the Washington Monument, with a smaller pool at the monument end. The larger pool is a shallow basin, 2,000 feet long and 160 feet wide, and is intended to function as a huge mirror in which would be reflected at one end the Lincoln Memorial and at the other, the Wash-

ington Monument. The waterproofing of this pool presented a novel and complex problem in waterproofing engineering, and the solution, because of the national prominence of the work, is interesting from both an artistic and practical viewpoint. The following construction was finally adopted as offering the greatest possibilities of success:

1. Impregnation of the cinder base with an asphaltic road oil, sanded and rolled with a heavy roller.
2. A binding course of a low melting point road asphalt, likewise sanded and rolled.
3. A layer of asphalt saturated felt to separate the road asphalt from the waterproofing mat proper and so prevent the absorption of one by the other.
4. The waterproofing mat, built up of two layers of asphalt saturated fabric applied with a specially high grade waterproofing asphalt.
5. A layer of 15-lb. asphalt saturated felt to which had been sealed a layer of untreated cotton muslin, the felt being laid with the muslin side up. This was intended to function as an insulating layer between the waterproofing mat and the mastic protection coat.
6. As a protection to the waterproofing mat, a 1" layer of asphaltic concrete or asphaltic mastic, rolled to a smooth surface.
7. A seal coat of soft asphalt, sanded and rolled with a heavy roller. This construction was built up as shown in Fig. 1. The steel mesh which was imbedded in the concrete apron, projecting 12" beyond the toe, and imbedded in asphalt mastic, is shown in Fig. 2, as is also the method of flashing, the waterproofing blanket being carried over the concrete beam and up the back of the granite coping.

The asphalt saturated fabric and the asphalt used were produced by a well known manufacturer of waterproofing and roofing, and his specifications were followed for the work.

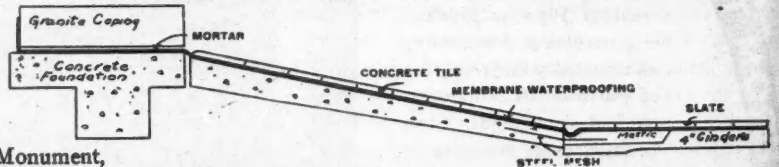


Fig. 2. Steel Mesh Was Imbedded in the Concrete Apron, Projecting 12 Inches Beyond the Toe, and Imbedded in Asphalt Mastic. Note the method of flashing, the waterproofing blanket being carried over the concrete beam and up back of coping.



The Reflecting Pool, South Potomac Park, Washington, D. C. This is the central architectural feature of the park and is intended to function as a huge mirror, reflecting the Lincoln Memorial at one end and the Washington Monument at the other. It presented a complex waterproofing problem.



High rents make home builders

Thousands of families today are determined to build or buy their own homes. They are "through" with paying high rents.

Why not popularize the home-building idea in YOUR community—and develop this business?

Genasco Latite Shingles solve your house-roofing problem completely. They are quick-covering, low in cost, fire safe, attractive and long lasting.

Equally important—Genasco Latite Shingles lock on the roof. The sun can't curl them. Frost can't pry them apart. Wind can't tear them off. *They lay tight and stay tight in all kinds of weather.*

Leading builders of the world have used and recommended Genasco Roofing for years. Write at once for illustrated booklets.

THE BARBER ASPHALT COMPANY PHILADELPHIA

New York Chicago Pittsburg St. Louis Kansas City

Front View

Back View



Genasco Latite Shingles lock on the roof. Made in three natural, unfading colors—rich warm red, cool sage green and blue-black.



See that Key



Genasco

Asphaltic Roofing, Flooring, Paints and Allied Protective Products

MOTOR TRUCKS and TRAILERS



Using Trucks to Full Capacity

DO you use your truck to its full capacity? Many builders and contractors believe they do, but consider:

Say your truck is rated at its usual load of around two tons. With a trailer it instantly becomes a six-ton truck, two tons resting on the truck and four on the trailer. Not only that, but the six-ton load is delivered to the destination, four tons left to be discharged at leisure, and the truck released for other work.

A number of trailers can be purchased for the price of one six-ton truck, and a good plan is to have several trailers in use. One truck will take care of them at the minimum of expense, and the capital invested will always be working for you.

In purchasing the trailer it is best to consider the

factor of safe trailing. The trailer should have its "fifth wheel," its connection to the tow, of a mechanical construction permitting oscillation at every angle. This relieves strain at the connecting points caused by curves, bumps or depressions in the road.

Trailers may be purchased equipped with dump bodies, for operation by hand hoist, and used for hauling cinders, gravel, crushed rock and other building material. One contractor had a big excavating job on hand and found that a truck and trailer hauled away as much dirt in eight hours as three or four trucks could haul, and as for the cost and accomplishment in relation to horses and scrapers and men, there was no comparison.

It is, of course, a foregone conclusion that the truck itself has been found an economical investment. Com-



Bringing the Material to the Job When It Is Wanted and as It Is Wanted Is One Prime Advantage of the Truck. It looks businesslike and helps to keep the working force keep businesslike and pleasant.

If we didn't have something real to back our statement that **FEDERAL Trucks** are the most modern trucks sold today we wouldn't be entitled to your patronage.



In the Building Business

Federals have a thirteen year record of efficient work. This Federal Fast Express is owned by L. Rubin, contractor, at Albany, N. Y.

Write for Booklet S 27, "Making One Thing Better"

FEDERAL MOTOR TRUCK COMPANY
DETROIT, MICHIGAN

paratively few building material yards, for instance, now use team delivery; time is too short and competition too great an item. But the builder and contractor uses a truck in a way which demands harder service than the plain delivery of material. Witness the illustration where the truck is pressed into service for dumping material from a high elevation into hopper and storage space below. Obviously the demand here was for a style of body and mechanism which would fill the needs of the user absolutely. During the past few years truck body makers have developed several new styles to meet these severe requirements of the builder and contractor, and the bodies are so designed that they are in compartments and can carry more than one kind of material at a time, and dump each load separately into different traps or chutes.

Again, the builder and contractor finds the truck filling an entirely different niche. Take the case of a milling company in Kentucky. They bought a truck rated as able to carry one and a quarter tons. The mill burned down one night; a real tragedy to the owners, as business was good and the mill could not be replaced in time to meet the next year's fall demands. Then the owners heard from a builder of a mill for sale 28 miles away, and they were sold. It was a 15,000 bushel elevator.

But how to move it? The truck was called into service and the builder proceeded to help them move the elevator. It was taken down and put into sections, and put aboard the truck, and in the dead of winter, through snow and slush, the parts of the elevator and the machinery were transported to the new site. The road for 10 miles was almost impassable because of mud, and the forced uneven loading of heavy parts of the building made the work doubly hard. After the mill was completed, the truck went back to the work of hauling material for the mill—the "daily grind," as it were.

Indications are that coal is going to be somewhat

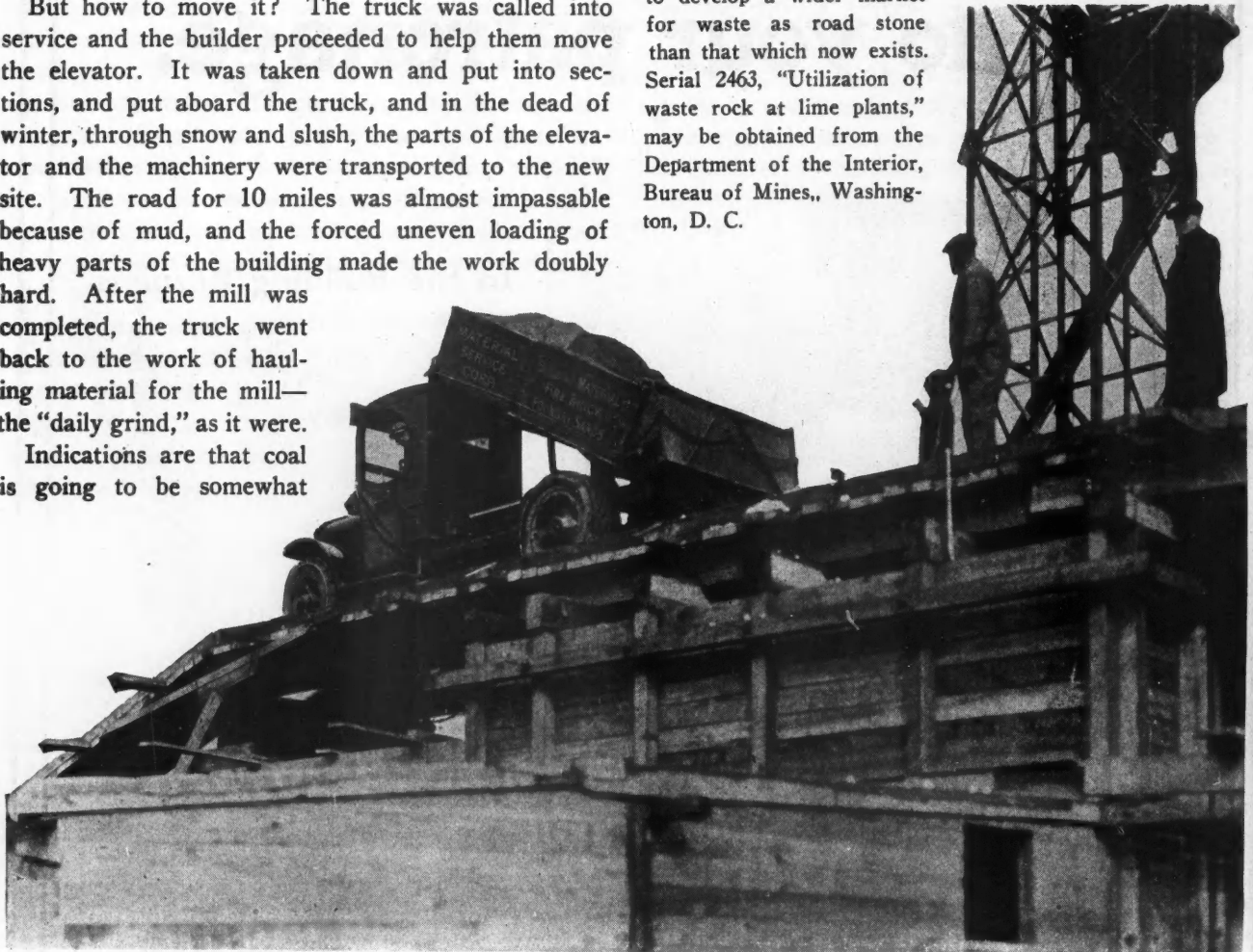
scarce this winter. The motor truck will be called upon to save the situation for the men who use building material and who have to have it, even if they are put to long hauls to get it.

Low cost is fairly certain in maintenance and upkeep. One contractor has operated his two-ton truck every day for two years with a repair cost of but \$1.85; another has run 27,000 miles in three years with no serious repairs; another has been in service three years continuously and never laid up a day. The truck buyer nowadays can be sure of proved units of construction in the truck he puts his money into.

✦

Waste Limestone for Road Building

SMALL sized limestone, or fragments unsuited for lime manufacture, constituting a by-product at lime-plant quarries, are used extensively for road building, states the Bureau of Mines. In districts where road stone is widely distributed and plentiful, it commands so low a price that lime plants can sell it only in limited quantities in local territory. However, some road-building projects are undertaken in regions where rock is not easily obtainable, and instances have been noted where the necessary supplies of small-sized stone have been purchased at lime plants many miles distant, even involving a combined rail and water haul. It is possible, therefore, through enterprising salesmanship to develop a wider market for waste as road stone than that which now exists. Serial 2463, "Utilization of waste rock at lime plants," may be obtained from the Department of the Interior, Bureau of Mines., Washington, D. C.



This Delivery Truck Backs Up the Runway and Dumps All Loads Directly Into the Mixer. Useful idea, also, for providing adequate reserve supply of gravel, sand, cement, etc., against delayed car shipments or other periodical shortages.



A Rolling Tool Chest —for Quick, Efficient, Economical Wiring

In Youngstown, the Pennsylvania-Ohio Power & Light Co. find this specially equipped, 1½-ton Garford serves a dual purpose. Not only does it aid this company's service to electricity consumers, but also *delivers the goods* in every sense of the word, at *lower cost ton mile*.

Ample space is provided for all the necessary tools, materials and equipment—and these are so placed as to be quickly accessible to the men on the job.

Here is a practical illustration of "engineering a truck to the job." Garford engineers analyzed the needs of this truck operator and recommended this Model

25-B chassis with special body, with valuable results.

This company realized that many special demands would be placed upon their wiring construction truck. They knew that this truck must be equipped and manned for every emergency. And they let Garford help them solve this problem.

It cost the Pennsylvania-Ohio Power & Light Co. exactly nothing to be *right*. A two-cent stamp is all it will cost you. An inquiry will receive the attention of experts. It will not obligate you to buy in the least. Don't hesitate to write.

The Garford Motor Truck Company, Lima, Ohio

Manufacturers of Motor Trucks 1 to 7½ Tons

GARFORD

DEPENDABLE TRANSPORTATION



400 KILMOTH CLOSETS

KILMOTH popularity is growing! Proof is shown by the number of closets in the Concourse Plaza that have been lined with this protective aromatic red cedar. Progressive builders realize the value of Kilmoth as a renting feature and are now profiting by their judgment.

Likewise are the tenants deriving great value in the saving of expensive clothes from destruction by moths.

In this age of modern construction, owners demand the best and most permanent of materials. Because Kilmoth is genuine red cedar transported from the manufacturer's own tracts, its aromatic qualities are everlasting. Easily handled and requires no attention after installation.

Sign this



DISTRIBUTORS

There still remains a few openings for responsible distributors. The response from better architects and builders to the Kilmoth advertising in the American Builder has been most gratifying in that Kilmoth now fills their requirements.

Kilmoth Products Corp. 50 Union Square, New York

Please send me your Distribution Plan.

Check opposite your business Builder or Contractor
 Sash Door, Mill and Supply Lumber and Supply

KILMOTH is AROMATIC RED CEDAR

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Successful Home Beautiful Exposition at Boston

THE outstanding feature of the recent Boston Home Beautiful Exposition was the cottage built of permanent materials which occupied the wide stage of Grand Hall Me-



The interest of visitors at the Boston Home Beautiful Exposition was concentrated on the "Concrete House" which literally and figuratively occupied the center of the stage in the Grand Hall.

chanics Building. The design was worked out by Robert L. Stevenson, architect. With several products manufacturers cooperating, the Boston Office of the Portland Cement Association directed the erection of the cottage, with concrete block walls, stucco exterior, and concrete tile roof. At the side of the house was erected a concrete block garage, in which the family motor car was housed. Between the house and the garage was arranged a formal garden, with paved courtyard, pergola and harmonious landscaping.

As a climax to the popularity of the exhibit, a bridal couple consented to have their marriage ceremony performed on the steps of the cottage, receiving a gift of \$500 from the Exposition management.



Henry K. McGoodwin Appointed Head of Department of Architecture at Carnegie Institute of Technology

HENRY K. MCGOODWIN, well-known architect, has been appointed head of the Department of Architecture and Chairman of the Faculty of the College of Fine Arts at Carnegie Institute of Technology, Pittsburgh, to assume his duties with the next college year. In his two-fold capacity, Mr. McGoodwin will succeed Professor Harry Sternfeld, acting head of the Architectural Department, and E. Raymond Bos-sange, Director of the College of Fine Arts, both of whom have resigned. Incidentally, Mr. McGoodwin's choice is a re-appointment, as he was Acting Dean of the College of Fine Arts, and Head of the Department of Architecture when he left the institution five years ago. His appointment was largely influenced by the record he had made at Carnegie Tech. where he served as a member of the faculty for twelve years, from 1906 until 1918, retiring to practice his profession, and to regain health. Under his administration of the Department of Architecture, and the subsequent supervision of Professor Sternfeld, the Carnegie Tech. School of Architecture has become recognized as one of the foremost institutions in the country.

WHITE MAGIC

The Electrical Section of the
AMERICAN BUILDER MAGAZINE, CHICAGO

October, 1923



THE CHILDREN'S HOUR. When the long day is over and Billie and Joan snuggle into their pajamas, then comes the Children's Hour. The old, old tales that never tire or become spoiled in the retelling are told by mother again. Joan likes the one where the Fairy Prince'

raises the Sleeping Beauty to Queen of Fairyland, but Billie likes Sinbad the Sailor better than 'most anything else. But both Billie and Joan and Mother concede that the warm glow from the electric heater suits them all equally well.

ELECTRIFY ALL BUILDINGS

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

WE, of the electrical industry, are very gratified to have the privilege through this department of talking to the men who plan and build the homes of America. We have a message of great importance to all. Follow it carefully, and you will make your homes and other buildings more modern, more attractive, more salable and more livable. Electrify all buildings. Plan from the beginning on adequate wiring, adequate outlets and a proper investment in lighting equipment. Look ahead and see the ever-growing use future occupants will want to make of electrical appliances and labor-saving electrical conveniences of all kinds. You will find this a policy and a line of approach that will instantly appeal to your clients and prospective clients.

Make full use of the Electrical Section of the AMERICAN BUILDER, feeling free to call upon us of the electrical industry for information or suggestions. We are organized to help.

E. W. Lloyd

General Chairman, Joint Committee for Business Development of the Electrical Industry.

Our Home Electrical No. 7

Modern Two-Family Brick Apartment Is Popular
with Home Builders and Investors

EDITOR'S NOTE: The Joint Committee for Business Development comprises representatives of contractors, dealers, jobbers, manufacturers and central station organizations including:

1. Association of Electragists, International, New York City.
2. Canadian Electrical Association, Montreal.
3. Electrical Manufacturers' Council (Associated Manufacturers of Electrical Supplies, Electrical Manufacturers' Club and Electric Power Club), New York City.
4. Electrical Supply Jobbers' Association, Chicago.
5. Lighting Fixture Dealers' Society of America, Cleveland.
6. Illuminating Glassware Guild, New York.
7. National Council Lighting Fixture Manufacturers, Cleveland.
8. National Electric Light Association, New York.
9. The Society for Electrical Development, New York.

* The Joint Committee for Business Development is organized with an Executive Committee and a Headquarters Staff, office 29 West Thirty-ninth street, New York, H. A. Lane, Director.

THIS month we present a two-family brick dwelling for our Home Electrical. All the previous ones have been single family homes of an entirely different type. The home this month is of brick and arranged to occupy a plot in the more closely populated section of the city. Since both floors are identical, the wiring and lighting suggestions will be practically the same for each. The wiring has been indicated to afford a maximum of convenience both from the lighting installation and from the use of electrical labor-saving appliances.

As we approach this dwelling, we are greeted by a cheery entrance, the marquise in front having been wired for four lights. The control for these

is located inside the door at a convenient spot, and eliminates the necessity of going outdoors to turn them on or off. Immediately beside the switch operating the marquise lights is one controlling that in the vestibule and the one in the upper hall. The utility and convenience of switch control of this nature cannot be stressed too strongly. The person who is able to save his or her steps in extinguishing or turning on the lights without the necessity of climbing a stairs will appreciate these step-savers.

To the right of the vestibule as one enters the house the living room is located. This room is rectangular in shape, and its main illumination unit is a central ceiling fixture controlled by a switch near the entrance from the small hall just beyond it. The specifications call for the installation of four duplex convenience outlets in this room for use with appliances of various kinds and portable lamps. The outlet over the mantel should be located just above the shelf and flush with the wall.

It is designed to provide means for lighting the attractive candlesticks which are on the market and which are designed for that purpose. Many home owners are installing duplex convenience outlets in all instances in place of the single variety. The difference in cost between the two is so slight that it is hardly worth



the while to quibble about it. The duplex outlet always presents two means of attaching appliances and portable lamps, and the home owner never knows in advance whether he will have use for it, so to be on the safe side, the double outlet is coming into favor.

Just beyond the living room is a small hall, and this is lighted from a central ceiling fixture controlled by a switch. The storage closet opening onto the hall has the same means of illumination.

The first of the two bedrooms of this floor is equipped with a central ceiling light controlled from a switch located in a handy spot near the entrance to the room. Two duplex convenience outlets are specified for installation in this room and are so located as to afford means of connecting the electrical appliances of various kinds designed for use in the bedroom. It is difficult for the electrical man to specify locations for these outlets until he knows just where the furniture is to be put, so he has to assume that the bed will be placed this way, the dressing table will go there, etc. The arrangement for this room, however, provided ample means for the use of appliances, the outlets being located on three sides of the chamber.

The small hall connecting the two bedrooms and the bathroom on this floor is lighted from a switch-controlled ceiling unit, while the bathroom receives



A Good Example of the Candle Type of Fixture. The convenience outlet in the baseboard is the most satisfactory way to light the portable lamp.

its illumination from two bracket fixtures flanking the mirror over the basin. These are operated by means of a switch located near the door and will provide ample illumination. The man of the house will be especially appreciative of this arrangement since the two lights will furnish him excellent illumination for his shaving. A convenience outlet is also specified and will be found mighty handy in the bathroom for use with a radiant heater, immersion heater, etc.

The rear bedroom is lighted in a somewhat different manner than the front one. In this case the

illumination is furnished from three side-wall brackets which are operated by means of a switch located near the door. A central ceiling fixture is not included in the lighting equipment for this room, the wall brackets furnishing ample illumination. The duplex convenience outlets are specified for use with electrical appliances.

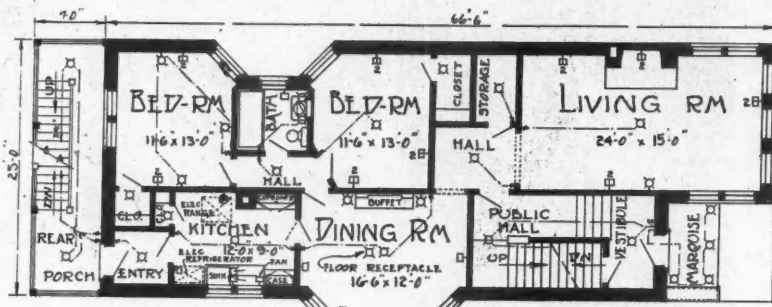
The dining room is lighted from a central ceiling fixture and two side-wall brackets. The main unit is controlled from a three-way switch located conveniently at both entrances to the room. This type of switch enables one to turn on and off the light from either of these two locations and is an especially handy arrangement. The wall brackets are not controlled by a switch but are individually operated. Three convenience outlets are



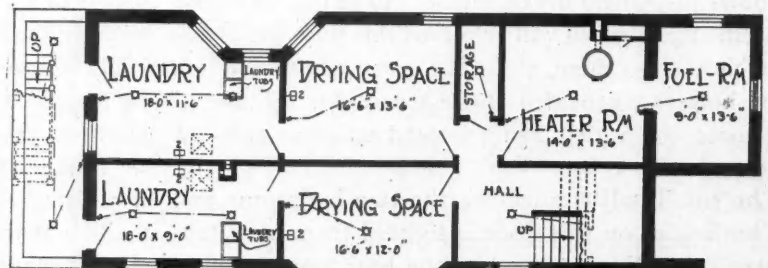
A Central Ceiling Fixture of This Type Adds a Decorative Touch to the Bed Chamber. Convenience outlets provide energy for the appliances and portable lamp between the beds.

Our Home Electrical

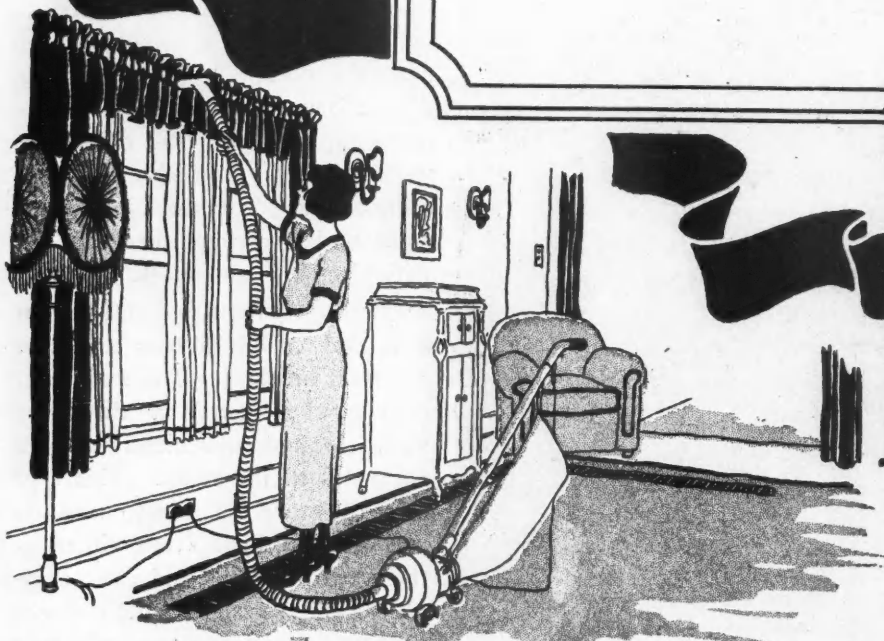
The Seventies



TYPICAL FLOOR PLAN



BASEMENT PLAN



- SYMBOLS**
- ⊠ CEILING OUTLET
 - ⊞ BRACKET OUTLET
 - ⊡ CONVENIENCE OUTLET
 - ⊞ FLOOR RECEPTACLE
 - ⊙ SPECIAL OUTLET
 - S- SWITCH

In a Well-Arranged Apartment Like This the Handy Arrangement and Provision for Electrical Conveniences Are Sure to Attract a Most Favorable and Well-Paying Class of Tenants.

specified at handy locations for use with electrical appliances used in the preparation and serving of food.

The kitchen receives its major illumination from a central ceiling fixture controlled by a three-way switch located near both entrances to the room. The light over the sink is not controlled by this switch but is individually operated by means of a pull chain. There is a convenience outlet located just above the drainboard of the sink for use with appliances of various kinds that go such a long way toward reducing the labor attendant upon kitchen work. There is another convenience outlet located near the ceiling to operate the ventilating fan specified for installation, and another for operation of the electric refrigerator. A heavy-duty outlet designed for use with an electric range has been specified. The light in the kitchen closet is operated by means of a pull chain and is not connected with the main unit.

The entry light is operated by a switch located near the rear door and provides illumination for one entering. On the rear porch there is a ceiling light operated by a three-way switch located near the door, and another three-way switch operates the light on the upper rear porch. This installation gives an example of the utility of these switches. A person coming in late at night is able to give himself illumination going upstairs and can extinguish the light below without the necessity of descending,

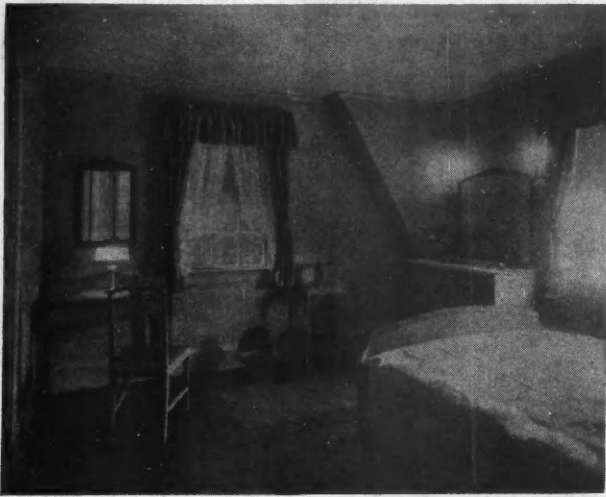
after he has gone up. They are tremendously convenient as step-savers.

The Lighting Installation

The ceiling lighting unit in the living room may be one of several types of fixtures. The candle one with about five candles has become very popular, and when the light is well shaded affords an excellent unit for this purpose. Many people are leaning toward the elimination of a ceiling fixture in the living room because the almost constant use of portable lamps of various kinds and wall brackets lead them to believe that one is not necessary. But for gatherings of various kinds, such as card parties, they are essential and should not be left out. Of course, they may not be used as a regular thing, but they should be installed nevertheless for such occasions as mentioned. The home owner who eliminates one in his installation will very likely wish that he had had the foresight to order one put in. The use of wall brackets is also an excellent practice since they afford means of varying the illumination of the room to conform with the mood, occasion, etc. The side-wall brackets are usually placed about six feet from the floor and may be controlled by a pull chain very conveniently. For the mantel, where a convenience outlet has been specified for use with them, attractive candlesticks of various kinds are on the market which do much to improve



More and More Are Home-Builders Seeing the Desirability of Building Duplex Buildings. Two-apartment houses like this are always a good investment and help pay for themselves.



The Wall Brackets on Either Side of the Bureau Are Great Aids to Milady's Use of the Mirror.

the decorative effect of the room. In the case of all the fixtures, emphasis should be placed on the fact that the lamp filament should be shielded from the eyes of the occupants of the room by means of shades of some kind, glass, parchment, silk, etc. The direct glare is, to say the least, very annoying and should be eliminated as far as possible by one of these means.

The unit in the front hall should be a lantern-type fixture, if the occupant has no preference for any other style. These are now manufactured in attractive shapes and styles and in a variety of finishes, and lend much to the general effect of the hall. They should be hung not less than 75 inches from the floor. For the two other halls a glass enclosing globe unit attached close to the ceiling will be found satisfactory in every respect.

The central ceiling fixture in the first bedroom may be one of a variety of units designed for such a purpose. Attractive two-light fixtures are obtainable in a variety of styles, and clusters holding two or three lamps will be found attractive. There are also bowl-shaped units which are efficient, as well as several other types. For the bedroom using side-wall brackets exclusively there is a wide variety of this style on the market. In the case of this type of unit, they should be placed about six feet from the floor. Attractive candlesticks and other styles of portables may be obtained for use on the dressing table and should be attached to the near-by convenience outlet. These lend an attractive effect to the scheme of decoration in the room and provide an alternative to the permanent lighting installation.

The bathroom fixtures should be of white enamel, and they are manufactured for such use in most attractive styles and shapes. In the closets a fixture attached just above the door has been found of great convenience. They are controlled by means of a pull chain, this method of operation being chosen in place of the style that operates the light

when the door is opened and turns it off when it is closed, because the latter method makes it impossible to leave the door opened for cleaning, airing, etc., without leaving the light burning.

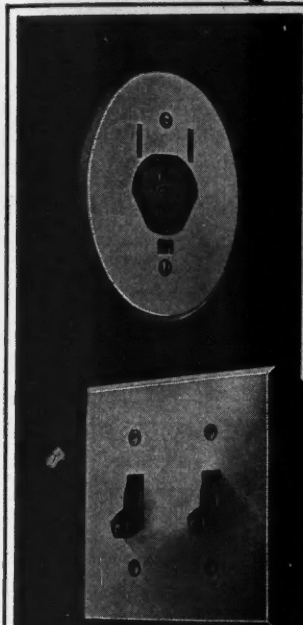
The illumination for the dining room can be furnished by a variety of types and styles of fixtures. These include the dome, the low-hung shaded shower, the shaded candelabra and the bowl shower. The top of the dining room table is the center of attraction, so the fixture should be hung so that the major portion of the light will be directed there, and so that the direct glare of the light will not be shining in the faces of the diners. The dome fixtures should have a clearance of 24 inches between its bottom and the top of the table; the shower fixtures should have 36 inches, and the candelabra should be 45 inches above the table top, figuring from the bottom of the shades in the case of the last two types. The wall brackets should be used merely for decorative effect and secondary illumination, and should not be used in place of the main unit.

Kitchen lighting is now in the advanced state, many excellent units designed just for this purpose being on the market. A good diffusion of light is desired for this room, and these various types of units are all designed for this purpose. Included in these types are those which should be hung close to the ceiling and those suspended which should have about 75 inches between them and the floor. Such units in a white tiled kitchen create an atmosphere far different from that prevailing in the dingy kitchen of years ago. They do much to make the "workshop of the home" as bright and cheerful as it should be. But with these excellent units or with any other light, the person using the sink or work-board is always sure to cast a shadow on the work, and to eliminate this an additional fixture has been specified to be hung over the sink. This will furnish the illumination desired and will be greatly appreciated by the person called upon to perform the household tasks at the sink.



There Is an Excellent Variety of Illumination Afforded by the Lighting Layout in This Living Room. Note the attractive fixtures over the mantel.

When they stop and ask



G-E Wall Elexit outlet for "plugging in" side lights or electrical appliances. G-E Two-Gang Tumbler Switches at every doorway give complete control of light from one room to another.

All dependable and experienced contractors using General Electric Reliable Wiring Devices are prepared to cooperate with you in making your houses "complete electrical homes."

National distribution of the booklet "The Home of a Hundred Comforts" has focused the attention of hundreds of thousands of home builders and buyers on complete wiring and quality wiring devices.

Send for your copy of this booklet today.

Address Section AB-10.

"Where do you turn the light on?"—you show them how you have provided for their convenience with switches that light one room from another so that it is never necessary to enter a dark room or go back to turn the lights out.

The model "Home Electrical" and the houses you build

Last year more than 1,000,000 prospective home buyers showed their interest in electrical comfort and convenience by visiting the model homes exhibited in seventy odd cities.

This year there will be many more exhibits—and many more visitors.

The national interest in "electrical homes" is every builder's chance to "cash in" big on a small investment.

It is only a matter of complete convenience wiring. You can make every home you build a model "home electrical"—and sell it at a price that will bring back to you several times the small extra cost of complete convenience wiring with G-E Reliable Wiring Devices.

G-E Reliable Wiring Devices, nationally known as the standard of excellence, are the home buyer's assurance of dependable electrical service.



Merchandise Department

General Electric Company

Bridgeport, Connecticut



Wiring Devices

A GENERAL ELECTRIC PRODUCT

41-216

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

For the rear entry and porch, together with the upper porch, an enclosing globe of glass at the ceiling will answer every requirement, since these units are under control of switches.

The light in the cellar may be ceiling lights with suitable reflectors at the ceiling. The unit at the foot of the stairs is controlled by a switch located upstairs, while the lights in the other portions are operated by switches placed near at hand. Since this is a two-family house, there are two laundries and two spaces for drying, which have the same type of installations. In the laundry there are two of these ceiling units with reflectors, each of which is operated from a switch near the door. One of these lights is so arranged as to furnish ample illumination to the wash tubs. In each laundry there is a duplex convenience outlet for use with an electric washing machine, ironing machine, iron and any other appliances which may be used there, an electric ice cream freezer on occasion, for example. The drying spaces are lighted by the same style unit controlled by a wall switch, and each has a duplex convenience outlet in case it is desired to use an appliance there. It might be possible that the housewife would hurry the drying process by turning an electric fan on the clothes.

The heater room is provided with ample illumination near the furnace, thus receiving light at the right spot for reading the dials on the heating apparatus, etc. The coal bin, too, has been provided with a light to facilitate the handling of fuel for the furnace. At the rear entrance to the basement there are two lights operated by a three-way switch which provides illumination for any one ascending or descending the stairs there.

Too much emphasis cannot be placed on having the switches located at the proper place for the sake of convenience and utility. Since we have this wonderful force literally at hand twenty-four hours a day, why not let us have it as convenient as possible. Note in these rooms that the switch in every instance has been placed on the side of the door that opens, and not behind it. Many times the reverse is the case and the result is that a person is compelled to grope behind the door in the darkness in order to locate the switch. Since switches make for convenience in the handling of the illumination, we defeat our purpose by making it more or less of a task to operate them.

For all practical purposes the

tumbler type of switch is the most convenient for the house. This is operated by means of pushing a lever up and down. One of its features is its ability to be operated by pushing with the elbow when one's arms are full of packages and the like. This will be especially appreciated by the lady of the house if she returns from her shopping tour with her arms laden down with bundles. She merely has to push the lever with her elbow without having to place her bundles down in the dark before she turns on the light.

✱

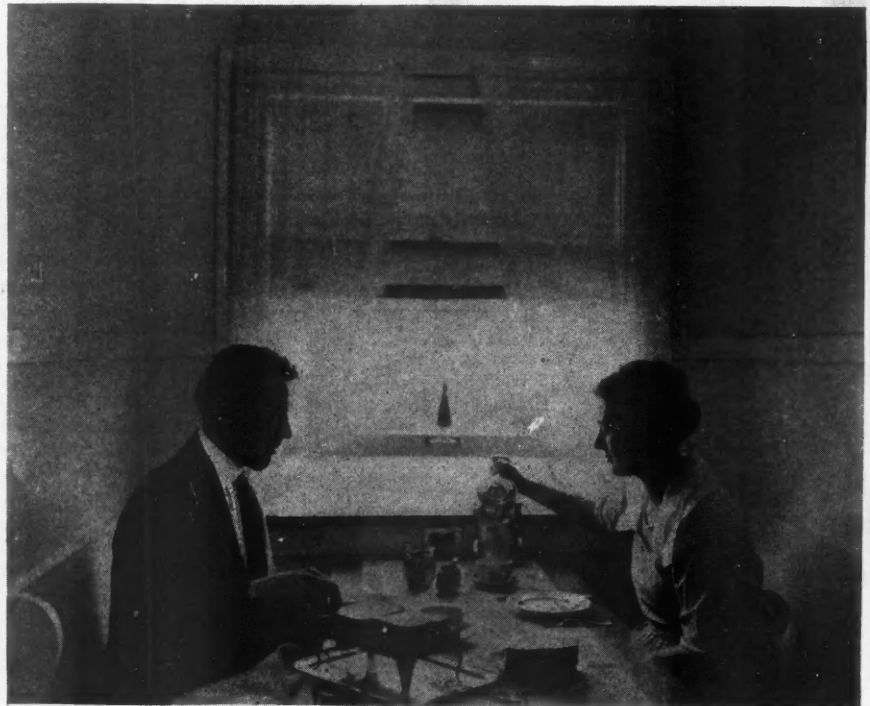
Making Waffles by Electricity

WAFFLES! The very mention of the word makes the mouth water, and whether eaten for breakfast, luncheon or supper, they make a most tasty dish. It is the easiest thing imaginable to make the batter for these delicacies, and the most efficient and satisfactory way to cook them is by means of an electric waffle iron.

Electric waffle irons are now on the market in both the round and oblong shapes, and are so designed as to eliminate all possible smoke and odor. They are extremely simple to operate, as are all electrical appliances, and merely the pushing of a switch will make them available for duty.

These chilly autumn mornings there is nothing so palatable as these delicate, brown-colored, crispy waffles. For the light luncheon they are equally satisfactory in every way, and for the light supper on Sunday evening nothing is more palatable or appropriate.

Of course, the only satisfactory way to use them is in connection with a convenience outlet.

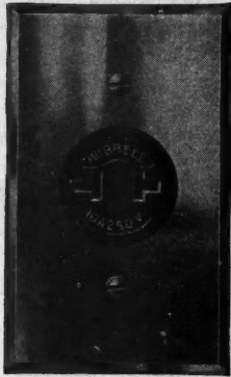


Waffles or Toast? The choice is very evenly divided. But whether you wish waffles or prefer toast, nothing makes them so well as electric waffle iron or the electric toaster.

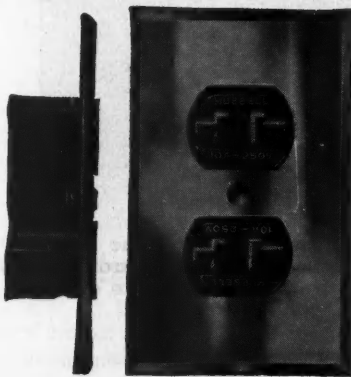
Electrify All Buildings

145

HUBBELL



Single Convenience Outlet No. 5547
Stamped Brass Flush Plate No. 5548



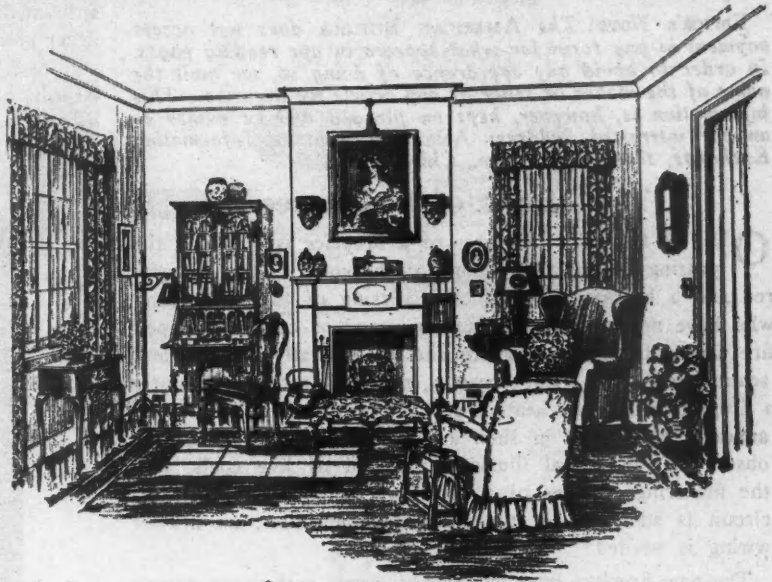
Duplex Convenience Outlet, composition body—No. 5890
Duplex Convenience Outlet, porcelain body—No. 6257
Stamped Brass Flush Plate for either of above No. 6258



Any standard plug cap, with parallel or tandem blades will fit any Hubbell Outlet.

No. 6282 Round Convenience Outlet, Plate 2 3/4" diam.

No. 6283 Round Convenience Outlet, Plate 3 1/4" diam.



Duplex Convenience Outlets

Adequately meet the needs of double-purpose rooms

Reception Room—Music Room—Library—two, and sometimes all of these, combined into a single Living Room in present day building plans.

Installing Hubbell Duplex Convenience Outlets is a simple and practical way to provide current for lamps, vacuum cleaners, and other devices now commonly used.

Home Buyers are quick to notice the presence of properly placed Convenience Outlets. They know that plenty of them in every room means more convenient operation of Electrical Household Equipment.

HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES

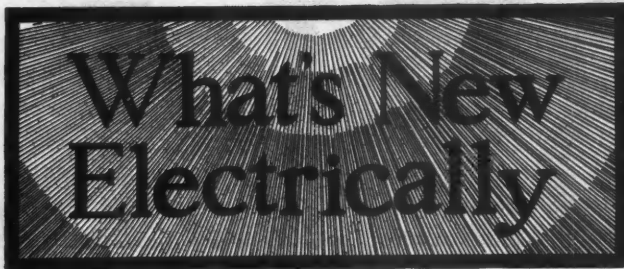
BRIDGEPORT



CONN. U. S. A.



ELECTRICAL WIRING DEVICES



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.*

The Magic of Fireplaces

ONE of the chief pleasures of a fireplace is watching the passing and repassing glow of the coals as they become red and a brighter red with the stirring of the air. Many who have no facilities for burning wood or coal in an open fire can still use the fireplace for its decorative, useful and sentimental value. For these a manufacturer has produced a fireplace where the heating unit conveys its heat to colored, annealed glass, and in such a way that there is given the observer's eye a real illusion of a bed of live coals, with the flickering changes of a real fire. The ordinary lighting circuit is sufficient for the electrical connection; no heavier wiring is needed.

The new fireplace heating unit also meets with favor among those who like a real open fire, but who wish to get away from the extra work it requires, the dirt it brings, and the way the room and draperies invariably take up some of its smoke and dust.

The firelight-effect heating unit can be had in styles of grates to harmonize with mantels of any design or period, and installation is a very simple process. The device is worth considering before the prospective user becomes the builder of a house, since it will help keep down the outlay through making the extra masonry expense of a large-flue fireplace unnecessary.

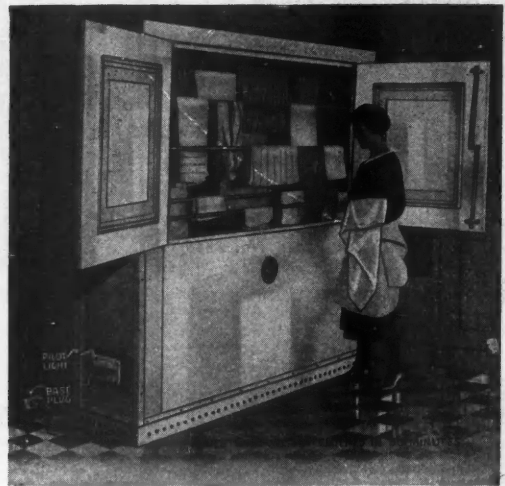


The Coals Are Glowing in the Fire, the Heat Is Generous, and Makes the Fireplace a Favored Spot, and It All Is Electrically and Cleanly Done.

Electric Clothes Dryer Dries and Bleaches Clothes Like Sunlight

EVERYONE'S nose knows and appreciates the clean, sweet smell of freshly washed clothes dried in the sunlight. There is no mistaking this odor; a clean, sweet, wholesome smell, more pleasing to the fastidious than the odor of a rare perfume.

Now comes along a manufacturer of an electric clothes dryer which is amazing and revolutionary. Amazing, in that without the use of a fan or mechanical device of any kind, his dryer conducts electric heat in a desired horizontal direction, and uses electric heat to both heat and ventilate the dryer. Revolutionary, in that clothes are dried, bleached and sterilized by the electrified air, which during the purifying process is converted into purified oxygen or ozone. This is an extremely powerful sterilizing agent possessing strong bleaching and



This Electric Clothes Dryer Duplicates the Actual Drying, Bleaching and Sterilizing Qualities of Strong Sunlight. It gives the cleanly odor of open-air drying to clothes.

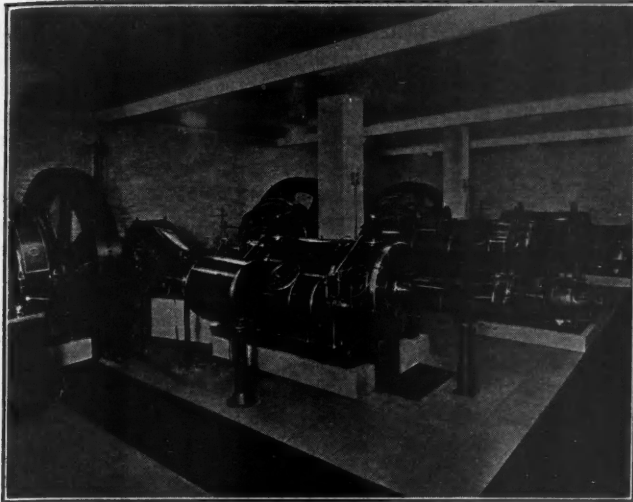
disinfecting powers, and is not harmful to the clothes in any way. It duplicates, by the most perfect known mechanical means, the drying and bleaching and sterilizing quality of strong sunlight.

Contrary to what one may think, the electric dryer is not large, considering its large capacity. It is but 20 inches deep, 80 inches wide and 79 inches high. It is handsome in appearance, and noiseless and economical in operation, for it will remain an invisible, efficient servant practically one's whole life long. It can be installed with no more trouble than extending the wires for an electric iron or toaster, and the precautions for absolute safety are thorough. Water and dripping moisture laden air cannot come in contact with the electric heating element or connecting wires, and the laundress cannot receive an accidental electric shock or injury from coming in contact with heating element or connections. The dryer can be had for gas heating, if preferred. The gas dryer can be converted into an electric dryer, or the electric dryer can be converted into a gas dryer, by a simple, inexpensive change in the heating unit.



Battery Charging

HUNDREDS of thousands of 6- to 12-volt storage batteries are in the hands of the public and thousands being sold daily to operate radio sets, automobile starting and lighting and for other purposes.



Installation of 3 C. W. Generators and 2 C. W. Balancers in the new Federal Reserve Bank Building, Cleveland

Absolute Dependability was Essential Therefore —the Choice was C. W. Equipment

WHEN the Engineers in charge of the construction of the Federal Reserve Bank of Cleveland considered equipment for the power plant installation the first consideration was:

Absolute Dependability and Reliability

and with no hesitation, or indecision over other makes their first choice was Crocker-Wheeler Apparatus—3 Generators and 2 Balancers.

It is striking and noteworthy that their choice of Crocker-Wheeler apparatus was agreed in by the Engineers in charge of the construction of the Federal Reserve Bank of New York, and the N. Y. Stock Exchange Building.

We manufacture direct current engine type generators in capacities from 25 to 3750 k. w.

Whatever your needs may be you will find safety and satisfaction in C. W. Apparatus.

CROCKER-WHEELER CO., Ampere, N. J.

New York Baltimore Chicago Detroit
Boston Pittsburg Cleveland Birmingham
Philadelphia Buffalo New Haven

Foreign Distributors: International Western Electric Co.



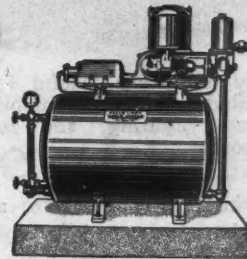
There is a

DELCO-LIGHT PUMP

for every domestic use



Delco-Light Cistern or Shallow Well Pump



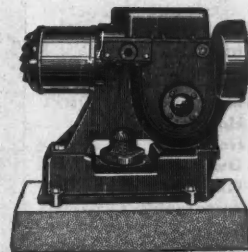
Delco-Light Shallow Well Pumps do not require a large storage tank. They pump water direct from the supply to the tap. They are automatic and require a minimum of attention. All working parts are entirely enclosed.



Delco-Light 1/2 H. P. Deep Well Pump

The Delco-Light Deep Well Pump has a complete protection from the weather in itself. The power head can be set up out in the open directly over the well. There are no belts, chains or unnecessary gears. The whole power head is kept perfectly lubricated, yet there is only one place to oil and it only needs oiling once in six months. The 1/2 H. P. Pump can be used in well up to 250 feet.

Delco-Light 1/4 H. P. Deep Well Pump



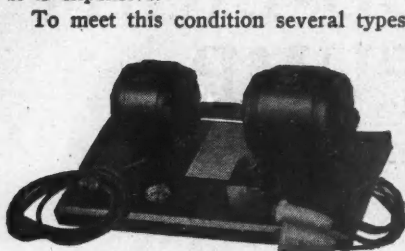
Delco-Light 1/4 H. P. Deep Well Pump is also protected from the weather and requires no pit or house. It is used in wells up to 125 feet. There is a Delco-Light Pump in a size to meet any requirement. They can be purchased at a moderate price, for a small down payment and on easy terms.

Delco-Light Pumps will operate on any kind of electric current. Write for catalog and name of nearest distributor.

Ask for Folder AB-11

DELCO-LIGHT COMPANY
Subsidiary of General Motors Corporation
DAYTON, OHIO

In many cases ample provision for automatic recharging is provided but where this is not true, as with some automobiles and all radio batteries, the problem of recharging must be considered as it is usually inconvenient to carry heavy batteries to a charging station and even where this is possible it is expensive.



A Battery Set Very Useful for Operating Radio Sets, Automobile Starting and Lighting, and for Other Purposes.

A set of this type consisting of a ball-bearing low voltage generator and motor wound for any of the usual A. C. current standards is shown in the cut herewith.

The motor and generator are connected by flexible coupling. There is an ammeter and rheostat to regulate the charging rate. The motor has ten-foot cord with attachment plug and the generator has six-foot leads with convenient spring terminal clips. Directions are simple and no mistake is possible in connecting to battery.



Reels Electric Cord Up and Down

THE cords used for portable extension lamps wear out quickly, due to abrasion, being tripped over, and the

deteriorating effects of oil and grease. Even where fixed lights are installed to lessen this wear-and-tear somewhat, and the entire lamp structure is put out of the way of workmen and machinery, the cure is worse than the disease—the light is too distant or inadequate.

A manufacturer has gotten around this difficulty by perfecting a reel whereon the cord reels on and off by spring action, much in the same way a window curtain springs up and down from its spring roller. The initial cost of this reel is slight, and the cord lasts four to six times as long as it would if not given such care.

The advantages are obvious, and indicate why the device has attained the wide measure of success enjoyed by it. The reel arrangement provides the desired flexible lighting unit for use over work benches, tables and machines. An adaptation of the model is the machine tool type, which is equipped with a connector body at the end of the cord, and which can be attached to any portable electric tool or device, such as electric soldering irons, drills, grinders, hammers, motors, fans and the like.



This Man Lights His Work with a Lamp Reeled Down from Overhead; It Is on a Spring Roller.

Paint with Electricity!

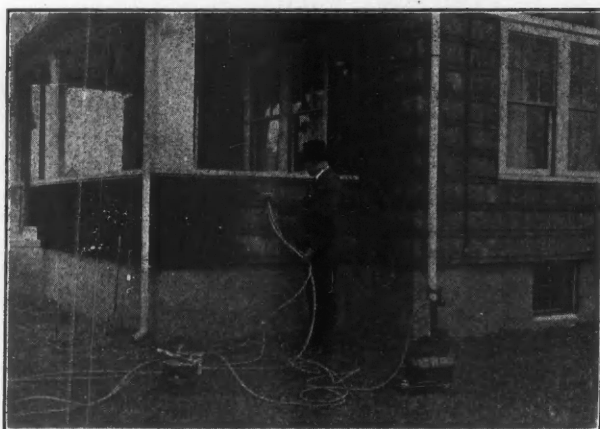
SPRACO "Extralite" Portable Painting Equipment

The speediest, lightest, most practical one-man portable painting outfit ever placed on the market.

The painting outfit with a thousand uses:

Exteriors and Interiors

- Apartments
- Hotels
- Hospitals
- Dwellings
- Garages
- Automobiles
- Screens
- Blinds
- Radiators
- Paint shops
- Etc., etc.



Cuts down painting costs. Improves quality. Saves time, labor, money. Saves its own cost on first good size job. Inquire today.

For data in detail send TODAY for "EXTRALITE" Bulletin P-81.

Manufacturers of
AIR WASHING EQUIPMENT
SPRAY COOLING EQUIPMENT
PAINT SPRAYING EQUIPMENT
FLOW METERS
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Engineers for
SPRAY COOLING SYSTEMS
IRRIGATION SYSTEMS
AERATING RESERVOIRS
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GAS WASHING

"EXTRALITE"
Total net weight 112 lbs.



"EXTRALITE"
Attaches to any regular light socket

Electrify All Buildings

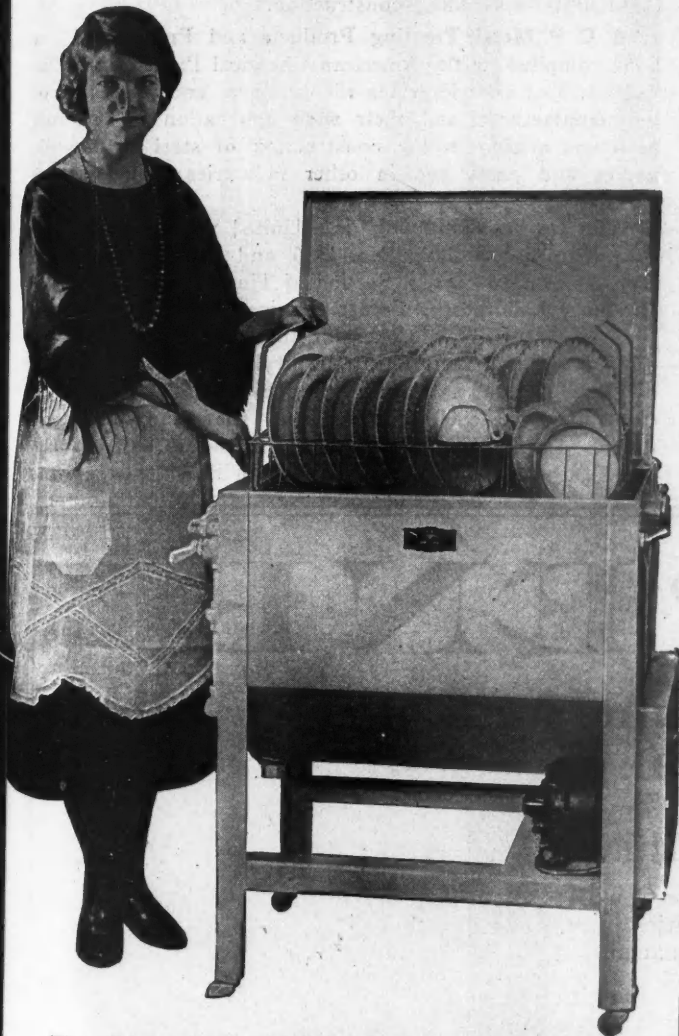
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When You Plan the Kitchen Plan for the Electric Dishwasher—Housewives Want It

ANY housewife, anywhere, is going to see that her kitchen is going to have as many electrical helps as circumstances will permit; and one thing you may be sure she is already sold on is the electrical dishwasher for doing up her dishes.

The electrical dishwasher takes up less room than that we have accustomed to think of as being required for the sink. In fact it is the sink, and when not in use for doing the dishes and pots and pans it is so arranged that ordinary washing of tea cloth, vegetables, etc., can be done in its tub.

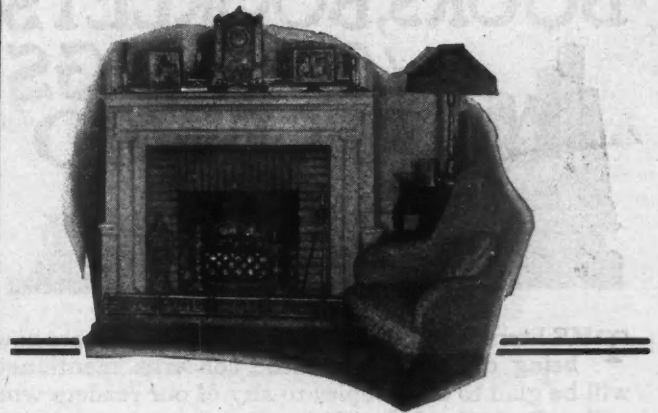
The electrical dishwasher illustrated washes, in ten minutes, the tableware of an ordinary family. It takes up about the same room as the average medium-sized sink, and is suited



The Dimensions of This Electric Dishwasher Are: Length, 26 Inches, Width 20 Inches, Height 34 Inches. Not big, but how it saves labor!

for restaurant and institution purposes as much as it is for residence use.

In operation the dishes are held in wire baskets or trays. Only a small amount of sudsy water is required. Spoon-shaped propellers fastened to a rapidly revolving shaft dip into this water, throwing it with cutting force into every part of the tank, cataracting through the dishes and washing them thoroughly. Then comes the rinsing with hot water sprayed from tubes at the side, and the thoroughly sterilized dishes are lifted in the tray and dry brilliantly of their own accord. The electrical dishwasher is durably made of Armco iron, finished white.



Chimney Flues

are expensive and often unnecessary

Unless a fireplace is used for burning wood or coal, its flue was an unnecessary expense.

Thousands of fireplaces, so designed, are standing idle today because a real fire means work, dirt and ruined draperies.

In Magicoal Electric Fire you can have all the beauty and charm of a real open fire—its heat and comfort, too—without these drawbacks. No flue is needed.

Magicoal will turn a dead fireplace into the most attractive spot in the room. Just provide an electric outlet in the fireplace. For the firelight effect the ordinary lighting circuit will do; for heat, heavier wiring is needed.

Whenever you build, save the expense of chimney flues, yet provide the means for "Firelight Happiness" which every one longs for—a fireplace opening, a mantel and Magicoal.

Send for complete data regarding installation, heating capacities and styles of grates to harmonize with mantels of any design or period.

Mayer Bros. & Bramley, Inc.
413 West 28th Street, N. Y.

Sole Distributors for U. S. A., H. H. Berry World Patents

MAGICOAL

REG. U. S. PAT. OFF.

ELECTRIC FIRE

"Firelight Happiness" at the turn of a switch

BOOKS, BOOKLETS and CATALOGS RECEIVED



THE literature and publications listed below are now being distributed and the concerns mentioned will be glad to send copies to any of our readers who will write and ask for them.

"Stay-Rib Metal Lath" is shown in a folder issued by the manufacturers, the Milwaukee Corrugating Co., Milwaukee, Wis., in three different weights, two finishes, and in such shape that the architect and builder can determine to their own satisfaction the quality and potential service of this excellent lathing material.

"Karnak Waterproofing Methods and Materials" are described in several bulletins at hand from the manufacturers of Karnak Waterproofing, Gardiner & Lewis, Inc., 5 North La Salle St., Chicago, Ill. These complete and scientifically accurate technical bulletins should be read by every architect, builder and engineer.

"Karnak Roofing" is described in Bulletin No. 5 at hand from the manufacturers, Gardiner & Lewis, Inc., 5 North La Salle St., Chicago, Ill. It is a complete discussion of the basic principles underlying the selection of a roof where permanence and suitability to purpose are the principal considerations.

"Byers TrucKrane" is described in a bulletin at hand from the manufacturers, the Byers Machine Company, 300 Sycamore St., Ravenna, Ohio. For excavating, driving piles, stripping, loading, wrecking, general building, and many other purposes this truck crane proves it is invaluable to builder and contractor.

"Hisey Combination Grinder and Buffer" is described in a bulletin at hand from the makers, the Hisey-Wolf Machine Co., Cincinnati, Ohio. This one horsepower machine is adapted for a large variety of work requiring the use of a grinding wheel, buff wheel, wire brush wheel or rotary wire rasp wheel.

"A Manual of Concrete Masonry Construction" is at hand from the Portland Cement Association, 111 West Washington St., Chicago, Ill. It contains information on types, sizes, shapes and other characteristics of concrete block and tile and presents approved practices of employing these units in building construction.

"A C P Metal Treating Products and Processes" is a book compiled by the American Chemical Paint Co., Philadelphia, Pa., and describes the products and processes of its manufacturer, and their wide application in the rust problems arising in the construction of steel automobile bodies and parts and in other industries using similar operations.

"Kiln Drying Handbook" is a United States Department of Agriculture Bulletin, No. 1136, and is obtainable from Rolf Thielen, in charge, Section of Timber Physics, Forest Products Laboratory, Forest Service, Madison, Wis. It presents to the dry-kiln operator, in simple condensed form, the fundamental facts about the drying of wood.

"Ohio Motors" as manufactured by the Ohio Electric & Controller Co., 5900 Maurice Ave., Cleveland, Ohio, are described in Bulletin 203 at hand. These are ball bearing, $\frac{1}{8}$ to $\frac{1}{2}$ horsepower, for alternating or direct current, and

MORENE

The Very Latest Medium
of Artistic Expression

for

INTERIOR AND EXTERIOR DECORATION

This wonderful discovery opens up a big field for Contractors, Architects and Builders as the possibilities in wall textures and mural decoration with this permanent and distinctive material are almost unlimited.

MORENE

The Wall Finish Distinctive

Morene is an emulsion based on white Portland cement, sand and asbestos so combined that the ingredients remain in suspension. Applied with a brush, it can be worked with a pallet knife or trowel in any texture and color effect desired, including Stippled Tapestry effects, Sand Finishes, Limestone, Caenstone, Travertine or Unpolished Marble.

For additional illustrations of Morene, see pages 92 and 93.

Write today for Descriptive Literature and Samples

MORENE PRODUCTS COMPANY, Inc.

249 West 28th Street, New York

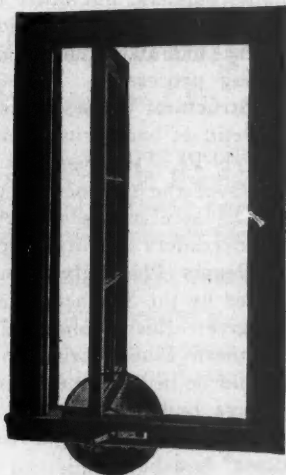


A view in the Halls and Stairway in the Clarendon Apartments, Riverside Drive and 86th Street, New York City, Chas. E. Birge, architect, William Randolph Hearst, owner, is shown above. Work installed by Vogel and Hase. Morene was applied over old painted surfaces roughly stippled, then flattened with a large pallet knife. When partly set, it was lined off with sunken joints.

Are you familiar with this type of window



Looking in—Easily installed on any stock casement sash—Simple in design. Made of rust proof bronze.



Looking out—Operated by worm gear, turned by a small control lever. Cannot stick.

Made possible by Carrier's Quadrant Adjuster. For use in public buildings, schools, hospitals, or residences where maximum ventilation, convenience and artistic effect are desirable.

Advantageous features of this type of window are—

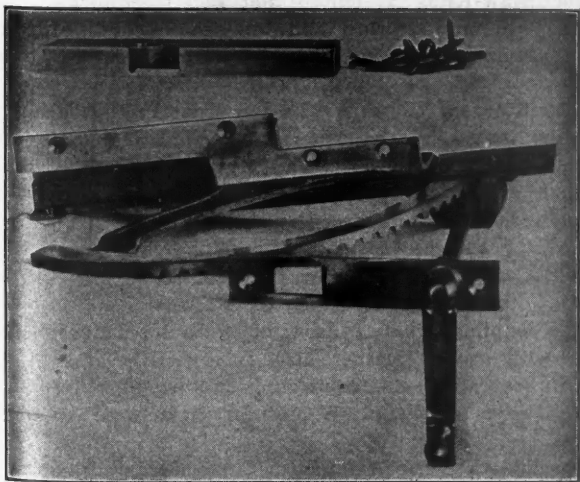
- 1—Not necessary to move screens to open or close window.
- 2—Window is automatically locked in any position.
- 3—There are no fasteners or hinges required.
- 4—Eliminates any possibility of rattling or sagging.
- 5—Both sides of window easily cleaned from within the room.
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are designed for application to domestic appliances, tools, pumps, machines, etc., operated from lighting circuits.

"The American Economy Heating and Ventilating Steam Boiler" is described in a folder received from the makers, the American Foundry & Furnace Co., Bloomington, Ill. This combines in one apparatus a steam boiler for heating and indirect radiating surface for warming air for ventilating purposes.

"The Canton Clothes Dryer" is described in a book at hand from the Canton Clothes Dryer Co., Canton, Ohio, and the advantage of the dryer as a genuine substitute for sunlight-drying fully pointed out. It will interest not only home builders, but other owners where drying equipment is needed for working clothes, swimming suits, etc., and where manufactured products need to be subjected to drying processes.

"Structural Slate Series, Chapter I" is an informative Bulletin at hand from The Structural Slate Company, Pen Argyl, Pa. It gives the origin and geological data and treats of the commercial grading and standard finishes of Slate. It classifies under A.I.A. File No. 22b, and interested readers are urged to get on the mailing list.

"Beauty Plus Service in Floors" is a handsome booklet issued by the Southern Pine Association, New Orleans, La. It gives illustrations and methods of laying edge-grain Southern Pine flooring to get a beautiful hard floor, and should be in the hands of every architect, builder and prospective building owner.

"Things You Ought to Know About Casement Windows" is a booklet issued by the Casement Hardware Co., 230 East Ontario Street, Chicago, Ill. It shows how buildings in various architectural styles are improved exteriorly and interiorly by the use of casement windows, and how Win-Dor Casement Window operators aid in making such weather-tight and practical.

"How They Beat the Coal Game" is a folder received from Hart & Crouse Co., Utica, N. Y. It tells how two New York buildings, one using ordinary tubular steel shell boilers, and the other, Hart & Crouse Smokeless Water Tube Steam Boilers, came through on the coal bills. The Hart & Crouse installation showed a saving of 23 per cent.

"White's Improved Instruments for Builders, Engineers and Surveyors" is issued by the David White Company, 901 Chestnut Street, Milwaukee, Wis. White Instruments are known the world over and the steady growth of business has enabled the makers to move into more commodious quarters and yield better service than ever.

"Blaw-Knox Flat Slab System for Building Construction" is Bulletin 211, issued by the Blaw-Knox Company, Blawnox, Pa., Pittsburgh District. It points out the economies of the Blaw-Knox System of flat slab steel forms, compared with wood forms, and how the method of using these simplifies operation, lowers costs, and insures better results.

"The Story of Gilsonite 99.5 Per Cent Pure Asphalt" is a folder issued by the American Asphalt Paint Co., 844 Rush Street, Chicago, Ill., and describes Gilsonite Select Asphalt and its various uses. Valdura Asphalt Paint, in black, red, brown and green is also described.

"Grundy Flexible Insulated Couplings" are described in a folder at hand from the manufacturers, the Charles Bond Company, 617 Arch Street, Philadelphia, Pa. This simple coupling, which consists of two outer flanges of cast iron, with central leather disc, is especially adapted for motor generator sets, connecting motors to pumps, machine tools, woodworking machinery, shafting to angle drives, etc.

"Specifications for Metal Lath Construction" are uniform Specifications agreed upon by metal lath manufacturers as the most economical requirement for satisfactory work,

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and are issued in printed shape available from The Associated Metal Lath Manufacturers, 123 West Madison Street, Chicago, Ill.

"Rex Mixers," the fastest charging and discharging concrete mixers of their type yet developed, are described in a catalog at hand from the makers, the Chain Belt Company, Milwaukee, Wis. Very compact machines, and easy to handle in close quarters.

"Dingman's Estimating Building Costs" is at hand from the McGraw-Hill Book Company, 370 Seventh Ave., New York. Price \$2.50 net. This 240-page book is based on fifteen years' practical experience and covers all operations from excavating to roofing and water-proofing. It shows how to analyze every construction job into its component parts and how to apply cost data to existing conditions. A useful, easily-understood book, invaluable for the builder and contractor.

"Concrete Data for Engineers and Architects" is presented as an aid to good concrete by the Portland Cement Association. It may be had from the main office, 111 West Washington Street, Chicago, or from any district office. Well graded aggregates, less mixing water, proper and complete mixing, careful placing and curing are treated of.

"Homey Homes." The remarkable success of Roobond Stucco in recent years has attracted wide interest and attention from architects and builders. From this has come a new structural type characterized by new materials and new methods, illustrated in this book issued by the Roobond Company, Cedar Rapids, Iowa.

"The Water Supply for Swimming Pools" with data on design, construction and operation is a bulletin which treats of the Graver Recirculating and Refiltering System for maintaining a hygienic water in swimming pools. It is issued by the Graver Corporation, East Chicago, Ind.

"Pittsburgh Reflectors" are described in a folder which emphasizes Pittsburgh economy, low first cost, quality of

fluted glass, reflecting and heat-resisting quality, and ease of attaching to the ordinary electric holder. Architects and builders specifying electrical installations will wish to have this bulletin from the Reflector & Illuminating Co., 505 West Washington Street, Chicago, Ill.

"The Farley & Loetscher Calendar" is at hand from the Farley & Loetscher Manufacturing Co., Dubuque, Iowa. It is a handsome 18 sheet calendar, issued to begin with July and ending with December, 1924, and advertises F. & L. Qualitybilt Millwork.

"Riddle Decorative Lighting Fixtures" are illustrated in color in a handsome book obtainable from the manufacturers, the Edward H. Riddle Company, Toledo, Ohio. Lighting appointments of real beauty and artistic merit that are obtainable at reasonable price from authorized Riddle dealers.

"Slate, Consider Its Uses" is a book which emphasizes the great range of usefulness of slate in connection with building. It is issued by the National Slate Association, 757 Drexel Building, Philadelphia, Pa., who will supply the book and particular information free.

"Concrete House Magazine" for May-June is at hand from the Portland Cement Association, 111 West Washington St., Chicago, Ill. A good, informative booklet for anyone intending to build a house.



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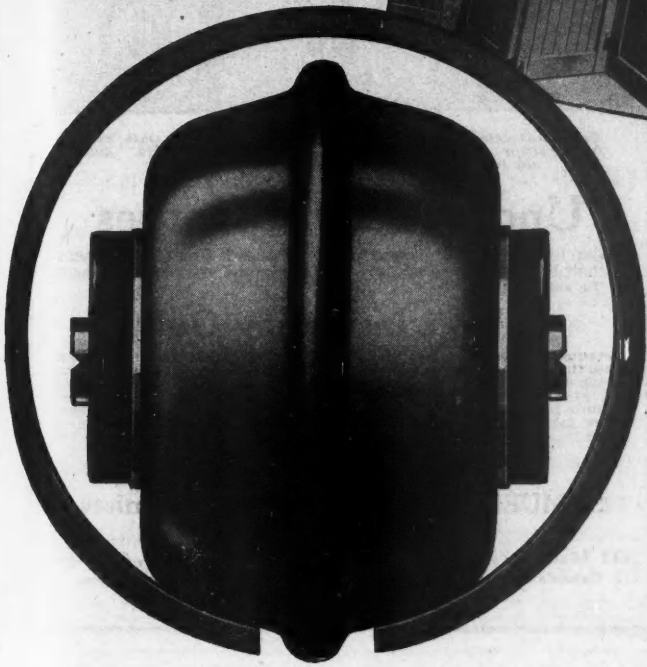
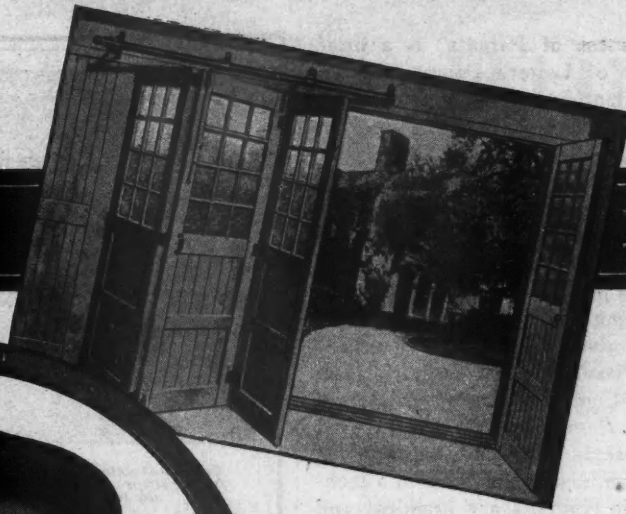
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"The Worth and Worthlessness of Patents" is a brief exposition of the vulnerability of Letters Patent, and an appeal for the extension of patent instruction by technical institutions for the betterment of industrial protection. It is obtainable from Thomas A. Hill, C. E. and Counselor at Patent Law, Woolworth Bldg., New York, N. Y.

"The Atlas Almanac" is a magazine prepared by the Technical Department of the Atlas Portland Cement Company, 25 Broadway, New York. It should appeal to the building material dealer, since it pictures and describes modern practical methods of handling materials, discusses sales and accounting problems, and gives dealers' experiences.

"The Contractor's Atlas" is issued by the Technical Department of the Atlas Portland Cement Company, 25 Broadway, New York, N. Y., and should interest contractors, builders and engineers. It presents up-to-date methods for all types of concrete construction, discussing them in a technical, educational manner. The contents are practical and authoritative.

"Truscon Steel Joist Data Book" is a handbook of information on steel joist construction in light-occupancy buildings. It is issued by the Truscon Steel Company, Detroit, Mich., and is profusely illustrated. Pictures and drawings practically tell the whole story. Tables of carrying capacities and properties are set large for easy reading. Architects and builders will wish this in their libraries.

"Natco Wall Construction." This is Bulletin, 174, issued by the National Fire-Proofing Company, Fulton Building, Pittsburgh, Pa. It deals with various types of Natco load-bearing tile and is a complete and practical text book for the architect and builder.

"Natco Homes and Garages" is an attractive booklet issued by the National Fire-Proofing Company, Fulton Building, Pittsburgh, Pa. It points out the superiority of Natco Hollow Tile for exterior load bearing walls.

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Houses near Chicago, showing the "underclothing" of Cabot's Quilt, with furring strips over the Quilt, on which the outside finish is laid. Roof also insulated. Leon E. Stanhope, Architect, Chicago

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