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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



House Tax Exemption Unconstitutional

ONE of the popular forms of legislation designed to lessen the housing shortage is that furthered in the state of New York, where builders of new houses in New York City were granted freedom from taxation for a period of years.

The law became operative in 1920, and in the two years or more since it was entered upon the statute books considerable building has been done. Now there has been handed down a decision by Chief Justice Tierney of New York, holding the tax exemption law of that state to be unconstitutional. An appeal from that decision has been taken to a higher court.

What are the economic merits of such an arrangement?

We may class this tax-exemption with some of the temporary measures which are advisable in extreme cases, but which in normal times are contrary to public policy. Has tax-exemption increased building? Or was the building increase inevitable, tax-exemption or no? It paraphrases the case of the chicken and the egg.

One thing is sure. There is an absence of equity in the transaction, as between the owner of the building put up before the tax-exemption period, and the owner of the building erected under the tax-exemption provision. Since we require taxes to furnish revenue for the carrying on of the routine of city, state and federal government, and property taxes furnish a principal source of such income, it seems obviously unfair to discriminate against one or the other property owner; no matter whether the general welfare of all is furthered, our human judgments are such as to make the step full of pitfalls.

The advocates of the Single-Tax ought to find food for consideration here.



Will a Home Pay?

THIS summer many people will answer "Yes" or "No" to a question which will determine, to a great extent, their physical, mental, spiritual and financial well-being for many years of their future. That question is, "Will a Home Pay?"

It is not a question one can ask of anyone already owning a home. There is only one answer given by such—a home pays, and pays, and pays.

It is rather a question the renter must ask.

What is this rent he hands out monthly to the landlord or his agent? It is a contribution toward the upkeep of property in which he holds only the vaguest sort of right, the right of tenantry. The taxes, insurance, upkeep, property income, wear and tear exact more consideration than he can or does. If he does not meet them, through his monthly rental, he is literally and figuratively kicked out. But he gains nothing from this contribution to keep his community a going-concern. There are advantages which accrue, of course, but only to the owner of the property. In return for keeping it going as a going concern, the community does things for property. There are intangible things, but one can see the return. The community accelerates its growth; it improves itself. In doing so it adds to the value of the property, perhaps far more than one could figure out by logic and arithmetic that it should.

What is the result, for the tenant? He has his rent boosted. He is actually devoured by the thing he helps create. Surely a child can see this is not logical.

On the other hand, if he is the owner, all the advantages are on his side.



Teaching Accountancy In Schools

LEADING business men, manufacturers, and corporation heads favor introducing the study of accountancy into the regular courses of high schools and colleges. A survey made among several hundred nationally known men was the first step in a plan to get an adequate expression of opinion as to the value of an accountancy training to the boy or girl about to enter business.

Eighty-eight per cent of prominent men consulted favored the introduction of accountancy into high school and college curriculums. It was said that a proper knowledge of accounting methods will prove of great value in a business career.

No man can accurately gauge business results until these are understandingly reduced to figures, and therefore any business man equipped with the knowledge of how to reduce facts to figures and how to extract facts from figures has a distinct advantage over the fellow not so equipped.

The Restoration of the Parthenon

By STANLEY CASSON*

THE restoration of all ancient buildings leads inevitably to controversy. Doubt is invariably cast either upon the competency of the restorers or upon the possibility of reproducing the original appearance of the building to be restored. The criticism comes either from archæologists who mistrust the capacity of the restorers to understand the technique of the original builders or from sentimentalists who prefer ruined buildings to remain in the form in which we have been accustomed to see them for many centuries.

Proposals to restore the Parthenon are not new. A controversy of the most acute kind raged in France in 1905 when an extensive restoration was planned. Opposition was for the most part sentimental. The Parthenon should be left, said opponents of the scheme, in the state in which it has been. It is a magnificent ruin and should be left as such. To restore or reconstruct it would shatter our illusions.

Complete reconstruction is impossible and partial reconstruction would be inadequate.

In the spring of this year the council of the archæological department of the Greek Government considered and subsequently approved a scheme for the restoration of the Parthenon, so that whatever criticism was raised and is still levelled against the scheme would have to accommodate itself to the *fait accompli*. In fact, however, the scheme is now held up for want of money and it is extremely unlikely that much will be done in the matter for the next year, at least.

The scheme proposed was simple and not ambitious. All parts of the building which are no longer in position but which can be replaced and incorporated have been assembled and a commencement has been made at the restoration, with these intact parts and such minor additions as they need, of those parts of the temple of which most can be

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It is the policy of AMERICAN BUILDER to draw on its own original sources for its editorial contents. But this article, going back as it does to the very foundations of architecture, is of such interest to Architects and Builders that we feel it deserves the widest possible circulation.

After almost 2400 years the Parthenon still challenges the world with its enduring beauty, despite the wear and tear of centuries and the vandalism of man. The simple perfection of its design and construction makes its present partial restoration possible, and is an inspiration and incentive to every earnest Architect and Builder.



The Acropolis at Athens. This Enclosed the Parthenon, the Statue of Athene Promachos, the Old Temple of Athene, the Temple of Roma, the Great Altar of Athens, the Erechtheum, the Pinakothek, Propylaea, and the Temple of Nike Apteros.

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The Parthenon Columns at the Northeast Corner—the Best Preserved in the Building. The Parthenon, the work of Ictinus, was erected about 447 B. C. Its friezes and colossal sculptures are credited to Phidias. In plan and finish it is the most consummately beautiful building in the Doric style ever erected. A battle between the Turks and Venetians well nigh demolished it in 1687.

reconstructed from the parts so assembled.

The bulk of the damage to the Parthenon was, of course, caused in 1687 when Athens was besieged by the Venetians under Morosini. On that occasion the majority of the columns on the north and south sides

of the building were blown outward by the explosion of the powder which the Turkish defenders had stored in the *cella* of the temple. The drums of most of these columns lie still on the Acropolis, though the greater part of the architrave which they supported



The Propylaea. Interior showing a re-erected Ionic column and roof. Erected about 432 B. C. after a design by Mnesicles, this entrance or vestibule was famous for its beauty and originality. Ionic columns supported the roof of the hall, and there was a flanking Doric portico.

is in fragments and the roof, has almost completely vanished.

The general plan of the restoration was in the hands of M. Balanos, who was to be assisted by a skilled Russian architect. From the progress of the first part of the restoration the probability of success in the remainder would be decided. The plan of restoration for this year comprised only the re-erection in their original position of three columns on the north

side, namely, the seventh, eighth and ninth (counting from the west end). The component parts of these three columns are for the most part in existence, and the bulk of the architrave which they support is extant. The work of erection has, in fact, already begun, and the necessary scaffolding has been erected. A few column drums are so badly cracked by their fall as to be unsuitable for incorporation and they will be replaced by drums of gray limestone. Damaged edges

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The Propylaea. Columns of the east front before restoration. Four of the capitals and most of the superimposed gable have been restored.

of other drums will be patched with the same gray stone. The remainder of this row of columns will be completed if the stability and general appearance of the three re-erected columns are considered satisfactory. This re-erection will involve the rebuilding of five more columns only, since the three columns at the east end (the fifteenth, sixteenth and seventeenth) are not only intact but the best preserved in every way in the building. Thus of the total of eight columns which will require re-erection three are already surrounded by the necessary scaffolding. It should be noted, however, that the difficulty of dealing with these three is that one of them (the ninth) is itself a re-erection, carried out in the middle of the last century. But it is re-erected in a clumsy manner and will have to be pulled down and put up again before it is strong enough to support the architrave which will ultimately be placed upon it. Of the remaining five, two (the eleventh and twelfth) stand to a height of seven and eight drums respectively while the others have fallen completely, except for the basal drum.

Of the architrave and triglyphs enough remains to restore the complete alignment, though fragments only of the cornice are extant.

The temple as so restored will thus show its peripteral colonnade on three of its four sides with a total of thirty-one columns standing. The south side does not at present enter into the scheme of restoration. Of the total of fifteen columns on this side (the two end columns have been counted in as belonging to the

east and west ends) a larger number has suffered serious damage than on the north side. The force of the explosion seems to have blown more columns down and, in addition, to have done so with more force, so that the scattered drums are more damaged than on the north side. At present the reconstruction of this side is not entertained in the general scheme, and it will not be considered until the results of the preliminary restoration of the three columns on the north have been studied.

The plan of restoration or reconstruction is thus at present limited. Only one side is to be dealt with and only three columns of this side. In view of the definite plan thus proposed it is interesting to consider the merits of the various arguments brought forward in opposition to the scheme as a whole.

First of all there is the sentimental argument already referred to. Why should the building be touched at all? we are asked. It has stood so for many centuries, and we have been accustomed to a view of the Parthenon which shows it with the central columns of each side in ruins. What advantage is to be gained by a partial restoration?

This argument is largely based on untrue premises. In the early days of Greek independence when Athens was still a Turkish town in appearance the Acropolis was covered with a mass of Turkish houses, bastions and walls. These were removed shortly after 1835 by the influence and agency of a group of European archæologists and architects, amongst whom Ross and

Hanssen are the best known; and the general appearance of the citadel was, by a process of clearance, restored as far as possible to the appearance which it bore in the time of Pericles. The Parthenon was disengaged from its later accretions of Byzantine and Turkish date. The Erechtheum was cleared of the vast mass of surrounding and superincumbent Turkish domestic architecture and the Propylaea was cleared of the defensive walls and bastions in which it was enmeshed. The little temple of Athena Nike, or "Wingless Victory," which had been pulled down in 1686 by the Turks and made into a defensive tower was, shortly after 1835, rebuilt from its fragments.

To say, therefore, that by restoring the Parthenon we are destroying the appearance of the Acropolis as it has been known to travelers and scholars for centuries is incorrect. The present state of the Acropolis dates only from 1835, while the Parthenon as we see it today is in a condition which has lasted only since 1687, for it was then that the side columns were blown out. Any sentiment, then, which regards the Acropolis as being desecrated is a false sentiment. If the clearance of 1835 and succeeding years, which restored the citadel as nearly as possible to its fifth century condition and transformed it from a mediæval to a Periclean ruin, was acclaimed almost universally as an improvement in its condition, surely a continuation of the same process can hardly be condemned. The Parthenon that emerges from this present restoration will not only resemble very closely the Parthenon of the days before the explosion of 1687 but will also recall the Periclean building in the same way as the

removal of the mediæval buildings made it possible to form some idea of the Periclean Acropolis.

Perhaps a more insistent argument against restoration is that which alleges that any restoration of column or architrave will necessitate the addition of large quantities of new parts, which, from their newness, will strike the eye unpleasantly and give so patchy an effect as to destroy the beauty of the building. This can best be answered by referring to buildings which have already been restored on the Acropolis itself and at other Greek sites. The most notable instances are the Propylaea, the Erechtheum and the treasury of the Athenians at Delphi.

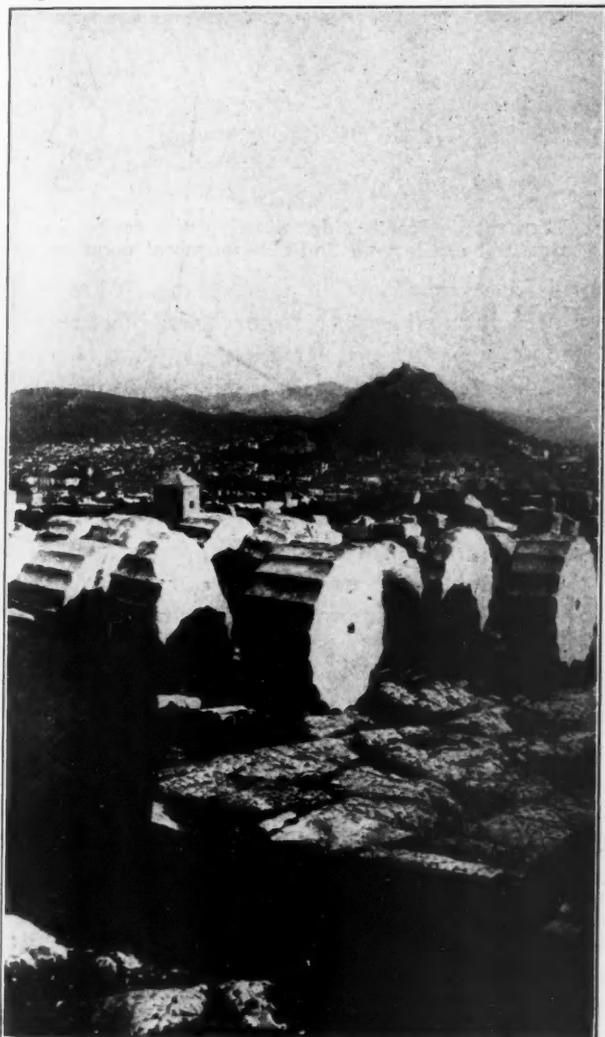
The Propylaea has been restored, but in no sense re-erected, during the last twelve years, largely by the aid and advice of such distinguished architects as were resident in Athens. Of these Mr. Dinsmoor, an American, is one of the most prominent. Weak blocks of the architraves and of the gable have been partly restored and missing block, in some cases, wholly replaced by blocks of new Pentelic marble, accurately cut and fitted. Most visitors to the Acropolis do not realize that the Propylaea as it stands today is very largely restored indeed. Four of the column capitals on the east side are almost entirely new, while a large part of the roof of the same side and one of the Ionic columns in the central aisle have been re-erected. No unwarranted restorations or improvements have been added and the present appearance of the building is vastly improved. Yet no protests have been heard and the work of restoration went on uncriticised and was generally approved.



The Parthenon. The columns at the east end.

Large additions have in the same way been made to the Erechtheum. Drums of the columns in the north porch are of new marble and the whole building is full of patches of new work. Yet the restorations are now sufficiently weathered for the white Pentelic marble to have taken on to a large extent the delicate oxidization or patina which is one of the qualities of Pentelic marble; and the additions, in consequence, are not glaringly obvious. The inner Caryatid on the east side of the Caryatid porch is entirely new, the work of a German architect, Imhof, and yet it does not obtrude itself unduly to the eye.

The Treasury of the Athenians at Delphi is one of the triumphs of the art of restoration. The building is a small temple *in antis* in the Doric style, 9.75 metres in length and 6.68 in breadth. It was rebuilt from what was a veritable rubble-heap by the French architect Replat soon after 1894. Most of the blocks of the stylobate and steps, of the *cella* walls and gable, were assembled, but of the two Doric columns between the *antae* only one column-drum had survived. The walls of the *cella* were found to taper in thickness towards the top and each wall was of a different thickness. This naturally facilitated the process of reconstruction. The Metope sculptures were removed and placed in the museum, but weatherproof casts were



The Parthenon—Drums of Fallen Columns on the North Side.



The Little Temple of Athena Nike, in the Ionic Style, and Which Is Built on a High Stone Platform Jutting Out Beyond the Propylaea.

put in their place. No trace of the pedimental sculptures was found. The building as restored and re-erected remains one of the beauties of Delphi and does more to recall the original condition of the shrine than any other of the less complete buildings which remain.

In view of these three examples of re-erection and restoration it seems difficult to contend seriously that the same process, when applied to the Parthenon, would ruin its appearance.

The little temple, in the Ionic style, of Athena Nike affords a less cogent argument. It was re-erected hastily and not in a very satisfactory manner. Its beauty is largely diminished by the absence of one complete side of the frieze which was removed by Lord Elgin before it was re-erected and is now in the British Museum. Its place is taken by an inferior cast which is not weatherproof and which has, in consequence, gone a dark black color. Missing ends and corners of blocks are restored with odd material, in some cases even in red brick so that the effect is not pleasant. But the building could with advantage be pulled down and re-erected again sufficiently well to take its place with the Treasury of the Athenians and the other buildings which have been scientifically restored.

It is clear, then, that none of the arguments against restoration which have been dealt with above can be

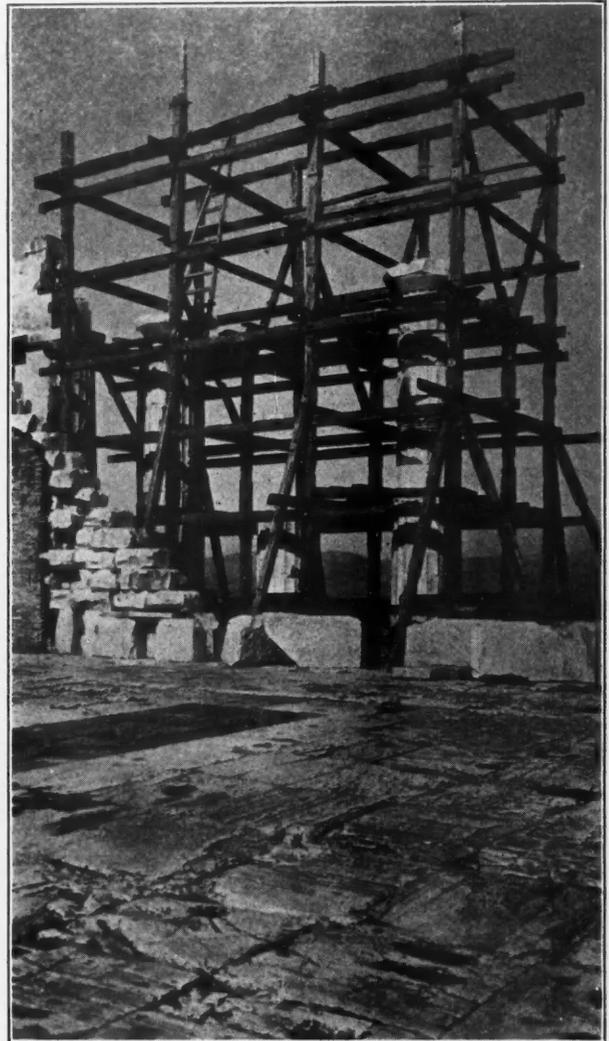


The Parthenon. Northeast corner showing scaffolding of the new restoration, on the north side.

seriously considered as sufficient to dissuade the Greek Government from its present plan of restoration of the Parthenon.

There remains one argument which is more cogent. It is contended that while buildings like the Erechtheum or the Treasury of the Athenians afforded what are, on the whole, comparatively simple problems for the restorer, the Parthenon is a graver and more complicated subject. The extant column drums of the fallen columns are not properly sorted out and cannot be sorted into their proper positions without a vast number of alternative trial fittings which will involve an endless amount of work and experiment before even one column can be re-erected. To do this in the case of the large total of columns which have to be so treated will consume all the money and time available for the work. To this it is only possible to reply that the architects who have charge of the work believe that they can establish the necessary fittings by preliminary measurement and are satisfied that no very extensive experimental work is necessary. Otherwise the work would not have been undertaken.

It seems a pity, however, that the funds available limit the restoration of missing column drums and other parts to the use of limestone instead of marble.

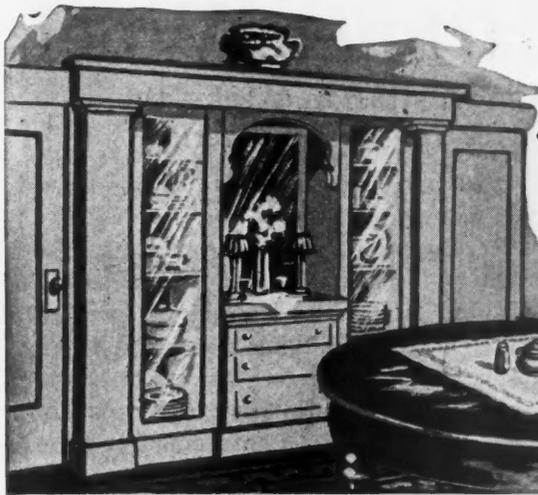


The Parthenon. North side, showing the scaffolding between the cella wall and the peripteral columns.

This is a serious flaw in the scheme. Marble has been used in all the other restored buildings referred to and it seems unfortunate that the Parthenon, the noblest building of them all, should be patched with this unsightly stone instead of proper Pentelic marble. But until the restoration becomes an international affair we must, perforce, be content with what the present impoverished government can afford.

In all restoration the chief danger is the imagination of the restorer, which may lead him to add or improve where additions and improvements are unnecessary and undesirable. But this is a greater danger in Gothic and Mediæval buildings than in those of Classical Greece.

Greek architecture is composed of such simple elements that the restorer, provided he be conscientious, will find it difficult to go wrong. The only mistake that may be made in the case of the Parthenon is that the restorer may be tempted to add too much. So little of the architrave and its associated parts remains among the fallen fragments that the restorer may want to improve beyond his means. But the actual plan contemplated is, fortunately, limited. There is to be no attempt to replace the roof for the simple reason that its structure is not known. (Continued to page 93.)



OUR FRONT COVER HOME

A Home One's Glad to Own

From Snubbed Gables to Stucco Exterior, and Recessed Entrance to Steel Basement Windows, Our Front Cover Home Has Cosy Comfort and Modern Convenience Writ Large Upon It.

THIS is a cozy bungalow, with an enclosed sun porch. It is small but with room accommodations for the average sized family, for though

the one floor plan shown indicates but two bedrooms there is room for two additional ones upstairs.

The well-handled stucco exterior, and the snubbed gables give a very pleasing impression of the house as a whole, aided to a great extent by the quaint arched entrance doorway, and the louvre window placed under the front gable end.

Entrance is through a vestibule.

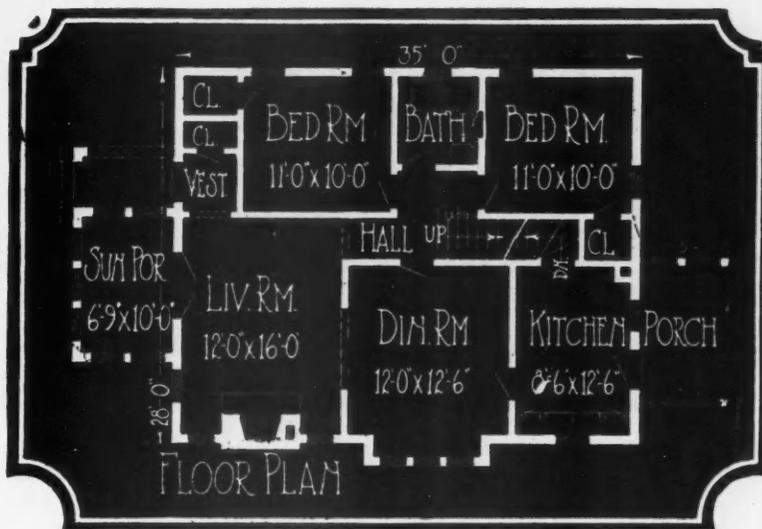
The living room is 12 feet by 16 feet—a good size; and a very spacious effect is created by the folding French doors which would naturally open from it into the sun parlor. There is a fireplace in the living room, and it could be equipped for electric glow light, gas log or regular wood or coal burning.

The dining room is immediately off the living room, and in the house as actually built this dividing wall between the two rooms was made the most of—china closets appearing built-in on the dining room side, and built-in bookcases on the living room side. The bay window in the dining room is a feature many housewives like; it gives a very pleasant view and makes the room larger without adding appreciably to the cost.

The kitchen is a good size, has light on two sides, and a porch. There are two bedrooms downstairs, connected by a hallway with the bathroom. The hall

opens from the living room and the staircase goes upward with a turn landing to the second floor. Here is space for more bedrooms which can be finished off or not, as accommodation requires.

Steel basement windows give a maximum of light in the basement—something any housewife appreciates.



A Recessed Porch Gives Access to a Vestibule and Thence Into Our Front Cover Home—A Five-Room House, with Sun Porch and Extra Upstairs Bedroom Space.

(Cont. from page 92.)

In the same way the interior columns

of inner shrine and *cella* walls will be left unrestored.

As a matter of fact, there is not enough material to make a restoration possible. But to re-erect the fallen columns seems quite within the limits both of the evidence and of the material. We are not faced with fundamental problems of design which, as in the case of the Mausoleum of Halicarnassus, is not known. The Parthenon was a Doric building of the utmost simplicity, with its main outlines both known and extant.

What is missing can be clearly understood as the metre of a lost hexameter. What is difficult is the actual process of reconstruction. But if the architects in charge of this work are satisfied as to its possibility, we are not justified in challenging their decision.

Prepare for Better Homes Week

June 4th to 10th Will be Better Homes Demonstration Week—the Climax of the Annual Campaign for Better Homes in America

JUNE 4th to 10th will be Better Homes Week. Women's clubs, commercial, philanthropic and civic associations all over the country are co-operating on this purely altruistic campaign,—the desire to make America a nation of *Better Homes*. In this exceptional opportunity for the exercise of civic helpfulness all considerations of financial profit, of business, are temporarily submerged. Architect and builder, and the merchandiser of everything that goes into erecting, decorating and furnishing the home combine with the other interests in the community to give them the benefit of their best thought, knowledge and experience. All work together for Better Homes Week and the good of the cause.

Originally sponsored by The Delineator, a woman's magazine of nationwide circulation, the Better Homes Campaign seized upon the imagi-

nation of the country from the time it was first given concrete shape in October of last year. In 1922 there were 961 towns and cities which put on demonstrations during Better Homes Week. Much of the enthusiasm for the Better Homes Campaign this year has grown directly out of the tremendous success of these last year's demonstrations. All of last year's participants have declared their intention of repeating with another Better Homes Week in 1923. Many other communities have fallen into line, until there will hardly be a town or community of any size in the United States which will let the week of June 4th to 10th pass without some form of Better Homes Week demonstration.

President Harding Gives His Endorsement

While attending one of the Better Homes exhibitions in Ohio President Harding made the remark that a practical demonstration should be made in every town in the United States. In giving his endorsement

again to the Better Homes Campaign this year he said:

"Not only is there the primary consideration of advanced material comfort, but the soundness of our social system and the stability of our country are greatly enhanced by the development of love for a home and the creation of a home that can be loved."

As a result the Better Homes movement has been taken up by several federal officials, and an advisory council organized with Secretary of Commerce Herbert

Hoover as Chairman. Vice-President Coolidge and Sec'y of Agriculture Henry C. Wallace, Sec'y of Labor James J. Davis, and Ass't Sec'y of the Navy Theodore Roosevelt joined him on the council. Mrs. William Brown Meloney, editor of *The Delineator*, was made secretary. From her offices at 223 Spring Street, New York City, she directed the actual work of organizing and distributing the educational liter-



Entrance Hall of New Haven Prize Home, a Noteworthy Example of Good Use of Small Space. This hall is part of the living and dining room.

ature, and gradually through their respective clubs and organizations the women of the United States began to make the Better Homes movement a success.

From the first it was essentially a woman's campaign. Though these women's clubs and organizations invited various civic, philanthropic and business organizations to take part in their local Better Homes campaign they have kept their movement non-political, and genuinely philanthropic. There are no selfish motives behind it, and no organization or individual is allowed to exploit it financially. Benefits, of course, accrue, for it is hard to imagine a Better Homes Week which would not be of great advantage to any community as a whole.

How New Haven, Conn., Won First Prize in the 1923 Better Homes Campaign

The character which the Better Homes Week campaign may take in your locality will be best

understood if we consider the city which won the first of the seven prizes awarded last year. Representing practically all the civic, philanthropic and business organizations of its community, the New Haven Better Homes Committee chose an eight thousand dollar five-room house for the Model Better Home. It was a house of modified New England colonial design and conveniently situated for the purpose.

The entrance hall of the house was a noteworthy example of what can be done with small hall space. The hall and the entire lower floor of this charming house were papered in sand-colored wall paper in an all-over design. As broad doorways connected each

room, and since the halls and stairs were part of the living and dining rooms, the hall furnishings were chosen to correspond with the furnishing of these two rooms. Under the stairs, and directly opposite the entrance was placed a handsome clothes storage chest, with a brilliantly colored piece of Chinese brocade and a vase with bittersweet on top. A rug laid parallel with the front door sill, a mahogany console table with a silver card tray, and an early American gilt mirror completed the hall furnishings.

The living room of the New Haven home was attractively and comfortably furnished. A broad velour taupe-colored couch, with an end table of weathered oak, faced the fireplace. The bookcase, piano, rocker and gate-legged table were of mahogany, and the black needlework armchair by the stand lamp was of walnut. The shade on the table lamp was of rose, black and gold; that on the stand lamp was black painted parchment. A green wicker wood basket stood close beside the black metal fire screen. Two brass candlesticks and a simple Chinese rose jar adorned the mantle. An antique gilt mirror was fastened close to the wall behind.

The dining room of the New Haven house contained a happy combination of furnishings. Windsor chairs were chosen to accompany an early American type drop-leaf dining table. A Sheraton sideboard, serving

table, china cupboard, banjo clock, and oriental rug completed an interesting room. A few heirlooms were displayed on the shelves of the china cupboard. Silver candlesticks and a silver coffee urn stood on the sideboard.

The adult bedroom of the New Haven Prize House was papered in pastel shades of figured wall paper. It was furnished with mahogany four-post twin beds, a ladies' dressing table, a tall mahogany chest, and three mahogany chairs. Linen rugs were on the floor.

The young girl's room of the New Haven Prize House contained ivory-painted furniture,—a bed, table, chest of drawers, a mirror and two substantial chairs of simple design. Corn-colored walls with several Wallace Nutting pictures furnished an excellent background.

The boy's room had a southern exposure and was papered in pale gray. The furniture was a darker gray, painted, and consisted of a bed with low head and footboard; a desk, a study book rack, two chairs, and small table with reading lamp in blue and gold. A sturdy blue rug, easy to keep



Another View of Hall in New Haven Prize Home. The chest in foreground is not merely ornamental—it holds clothes. The mahogany console table takes up hardly any room, and is very useful.

clean, completed the furnishings of this room.

The nursery in the New Haven Prize House had sidewalls of plain ivory paper with wide nursery frieze, three-quarters of the way up. A crib, a folding canvas dressing table, bathtub and a conventional nursery chair and other nursery toys were placed about the room.

The kitchen was finished, insofar as was possible, in white enamel, and was a very cheerful place indeed. There was a dark green linoleum floor, and curtains of pale green lawn at the windows, before which the sink was placed. To the side was the kitchen cabinet, and directly back of this the all-purpose work table, with chair. Stove, refrigerator and built-in cupboard were all most accessible and the kitchen arranged to make it a real, labor-saving workshop rather than a "sweatshop." There was a rear porch large enough for a chair and table and very desirable for out-of-door paring and other similar work in summer.

The New Haven Prize House contained no outside front porch, but its sun porch had windows which could be opened on warm days. It was furnished with natural colored wicker and fibre rugs.

Approximately ten thousand people visited this New Haven Model Home during the week it was on view.

Program of New Haven Demonstration Week

Since the New Haven Better Homes Week Program was ideal and very comprehensive it is given below. It might well serve as the basis of other Better Homes Week Campaigns everywhere.

SUNDAY

Better Homes Sunday observed by the Churches.

MONDAY

2:00 to 2:30 p.m. Music.
3:00 to 4:00 p.m. Food Demonstration. "The Use of White Sauce in Preparing 'Left Over' Dishes," by Miss Mathilda Hawkins, Educational Secretary, Y.W.C.A.
3:00 to 4:00 p.m. Group Conference. "Financing the Home," by Mr. S. Fred Strong, Conn. Savings Bank.
4:00 to 4:30 p.m. Musical Selections. Mrs. Fred Nettleton, Soprano; Miss Lillian Budd, Pianist.
7:30 to 8:00 p.m. Music.
8:00 to 9:00 p.m. Group Conference. "The Financing of the Home," by Mr. S. Fred Strong, Conn. Savings Bank.
8:00 to 9:30 p.m. Radio Program, musical selections by the High School Orchestra; Prof. Wm. E. Brown, Director. Party—Community Service.

TUESDAY

2:30 to 3:00 p.m. Music.
3:00 to 4:00 p.m. Food Demonstration, "Canning Meat with a Steam Pressure Cooker," by Miss Ellen Van Cleef, New Haven Home Bureau Office.
3:00 to 4:00 p.m. Group Conference. "The Model Kitchen and Household Equipment," by Mrs. Marion Dakin, Extension Specialist, Conn. Agricultural College.
4:00 to 4:30 p.m. Vocal Selections.

Mrs. B. Thomas Pest, Soprano; Mrs. L. B. Baker, Pianist.

7:30 to 8:00 p.m. Music.
8:00 to 9:00 p.m. Group Conference. "The Model Kitchen and Household Equipment," by Mrs. Marion Dakin, Extension Specialist, Conn. Agricultural College.
8:00 to 8:30 p.m. Musical Selections. Mrs. W. Phillip Shatts, Contralto; Miss Olive E. Hunt, Pianist.
8:30 to 9:30 p.m. Radio Program.

WEDNESDAY

2:30 to 3:00 p.m. Music.
3:00 to 4:00 p.m. Lecture and Exhibit. "The Relation of Food to Normal Weight," by Mrs. M. H. Robinson, Dietitian and Assistant, New Haven Hospital.
4:00 to 4:30 p.m. Vocal Selections. Mrs. Joseph F. Raymond, Soprano; Mrs. Frank E. Whitney, Pianist.
7:30 to 8:00 p.m. Music.
8:00 to 9:00 p.m. Group Conference. "The Location of the Home," by Mr. Alexander Cahn, Civil Engineer.
8:00 to 8:30 p.m. Vocal Selections. Miss Ruth Lathrop, Contralto; Miss Marion Fowler, Pianist.
8:30 to 9:30 p.m. Radio Program.

THURSDAY

2:30 to 3:00 p.m. Music.
3:00 to 4:00 p.m. Food Demonstration. "The Oven Dinner," by Miss Evelyn Gorham, New Haven Gas Co.

3:00 to 4:00 p.m. Group Conference. "Architecture and Construction," by Major George H. Gray, Architect.

4:00 to 4:30 p.m. Instrumental Selections. Mrs. Harold Davis.

7:30 to 8:00 p.m. Music.

8:00 to 8:30 p.m. Vocal Selections. Miss Sarah Fiske, soprano; Miss Marion Fowler, Pianist.

8:00 to 9:00 p.m. Group Conference. "Architecture and Construction," by Major George H. Gray, Architect.

8:30 to 9:30 p.m. Radio Program.

FRIDAY

2:30 to 3:00 p.m. Music.

3:00 to 4:00 p.m. Exhibition and Lecture. "Food for the Growing Child," by Miss Mary Nelson, Visiting Nurses' Association.

3:00 to 4:00 p.m. Group Conference. "Landscaping the Home," by Mr. Frederick A. Davis, Jr., Landscape Architect.

4:00 to 4:30 p.m. Vocal Selections. Mrs. Caroline Lubenow Thorpe, Soprano.

7:30 to 8:00 p.m. Music.

8:00 to 9:00 p.m. Group Conference. "Landscaping the Home," by Mr. Frederick A. Davis, Jr., Landscape Architect.

8:00 to 8:30 p.m. Musical Selections. Mrs. W. Phillip Shatts, Contralto; Mr. Ralph E. Linsley, Pianist.

8:30 to 9:30 p.m. Radio Program.

SATURDAY

2:30 to 3:00 p.m. Music.

3:00 to 4:00 p.m. Food Demonstration. "The Luncheon and Table Service," by Miss Dorothy Dick, Supervisor Lunch Room, Commercial High School.

3:00 to 4:00 p.m. Group Conference. "Furnishing and Decorating the Home," by Mrs. Charles Bradley Sanders.

4:00 to 4:30 p.m. Vocal Selections. Miss Helen Marek.

7:30 to 8:00 p.m. Music.

8:00 to 9:00 p.m. Group Conference. "Furnishing and Decorating the home," by Mr. Robert R. Chamberlain.

8:30 p.m. Violin Selections. Constant A. Moeller; Miss Pauline Doolittle, Pianist.

8:30 to 9:30 p.m. Radio Program.

SUNDAY

3:00 to 3:30 p.m. Music.

4:00 to 4:30 p.m. Musical Selections—Quartette.

8:00 to 8:30 p.m. Music.

8:30 to 9:00 p.m. Special Musical Selections.

Just whether the "Better Homes Week" in your locality this year will equal or surpass the New Haven one of last year depends upon the amount of enthusiasm you and your local organizations can bring to bear upon the subject. While the housewife takes the limelight, the participation of business men—architects and builders and building material dealers and house decorators and furnishers—will give the local Better Homes Week a larger measure of success. In each community the demonstrations will preferably center about a "demonstration house," newly built and completed, and thrown open to the public during certain hours of each day of Better Homes Week. If it should chance to be one of the new houses you your-

self have just completed your local "demonstration house" will give you an unexcelled opportunity to "listen in" and by attending frequently during Better Homes Week learn what the home-buying public wants and what it thinks.



The Spring Paint Drive

THIS spring, not content with painting their business and personal property—yards, offices, own homes, garages, etc., a concerted effort is being made by paint and varnish dealers in each locality to advertise by painting blank wall spaces in the locality.

After all, why should the side of a barn advertise that Dr. So-and-So's pink pills petrify pale people? It is much more healthful and to the point to have the local paint dealer approach a farmer living on some prominent, well-traveled road, with the proposition to paint his barn.



The Kitchen in the New Haven Prize Home. Observe how everything is arranged to save steps. Down in Alabama they found Friend Housewife walks two useless kitchen miles a day.

When a Thinker Builds

Espanol Villas, at Miami, Fla., Which Sprang Into Being Because a Thinking Business Man Applied His Sense of Initiative to the Proper Planning of Homes

THE man responsible for beautiful Espanol Villas, Miami, Fla., is not a builder and had hitherto been concerned in the building of not more than three or four structures. Therefore, he did not claim to be an expert.

"However," said Mr. William F. Whitman, when interviewed, "architecture, construction and landscape gardening have always interested me very much, and it was always difficult for me to pass by a new building without going into it and looking it over



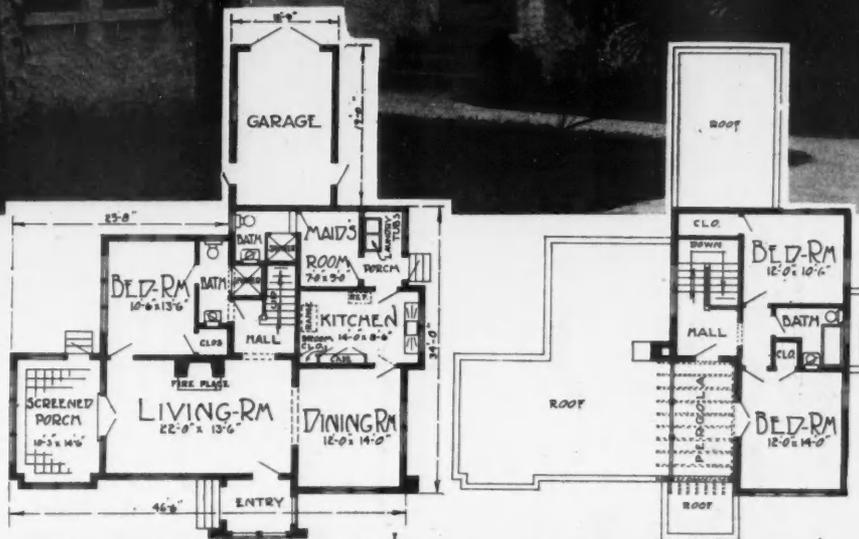
tests and there is less criticism for such than the smaller houses, particularly such buildings as are erected by the middle classes and cost a moderate sum. It is hard to find amongst such buildings one that is really pleasing to the eye, and it has always occurred to me that too little thought has been given by the owners, and certainly by the architects, along artistic lines. Just a break in a blank wall, or the curve of a roof, or the right location of a porch, or other small and inexpensive feature, would often



Above, Mr. William F. Whitman, and One of the Attractive Stucco Residences in His Espanol Villas, Miami, Fla., Development. The finish is dashcoat, tinted with colors that are out of the ordinary, but not freakish.

for its merits, and it always gave me pleasure to study such buildings as to their merits and demerits.

"As a rule, the large and expensive buildings employ good archi-



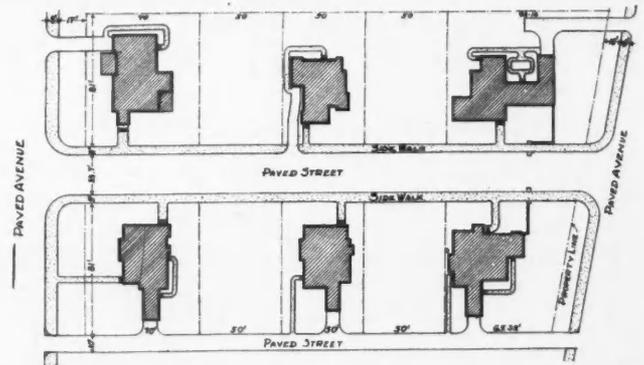
♦ FIRST FLOOR PLAN ♦ SECOND FLOOR PLAN

transform a homely house into a fairly good looking one.

"In my own dealings with architects I have tried to impress this idea upon them, not that the expense was to be much increased, but that by a moderate outlay of money an artistic effect could be produced by the addition of a pretty feature, or something that is unique.

"It happens that I had control of quite a large tract of ground 200 feet wide and 3,000 feet long, and it occurred to me that a street could be run down the middle with five-foot sidewalks on either side, and eliminating the public parkway. The parkway could very well be eliminated as it is so often neglected by both the city and householder. With the street and sidewalks taken out of the 200 feet, there was left a depth of 81 feet for the lots. On this property I purposed building houses of medium dimensions, to be artistic and consistent with each other.

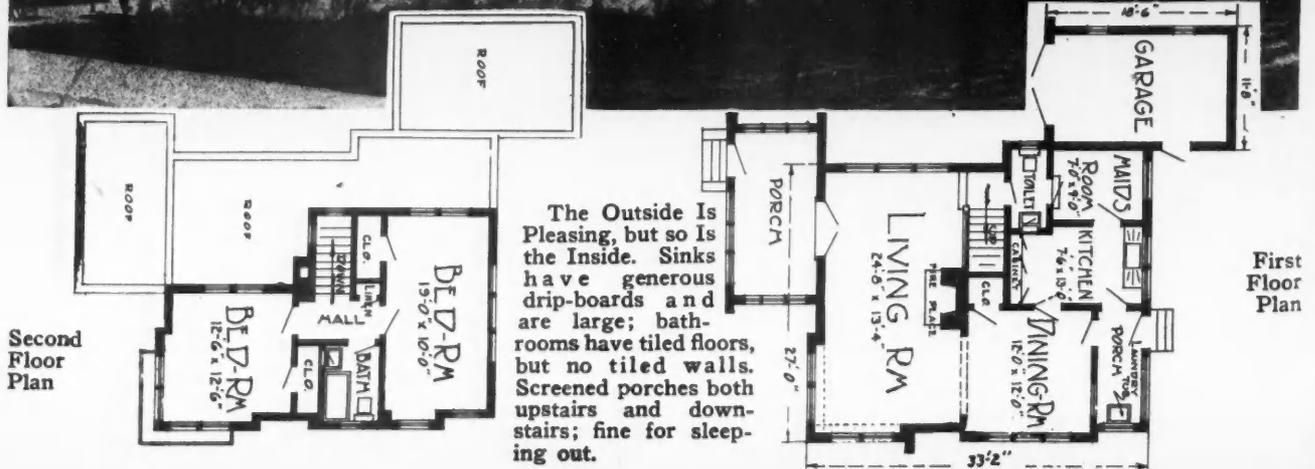
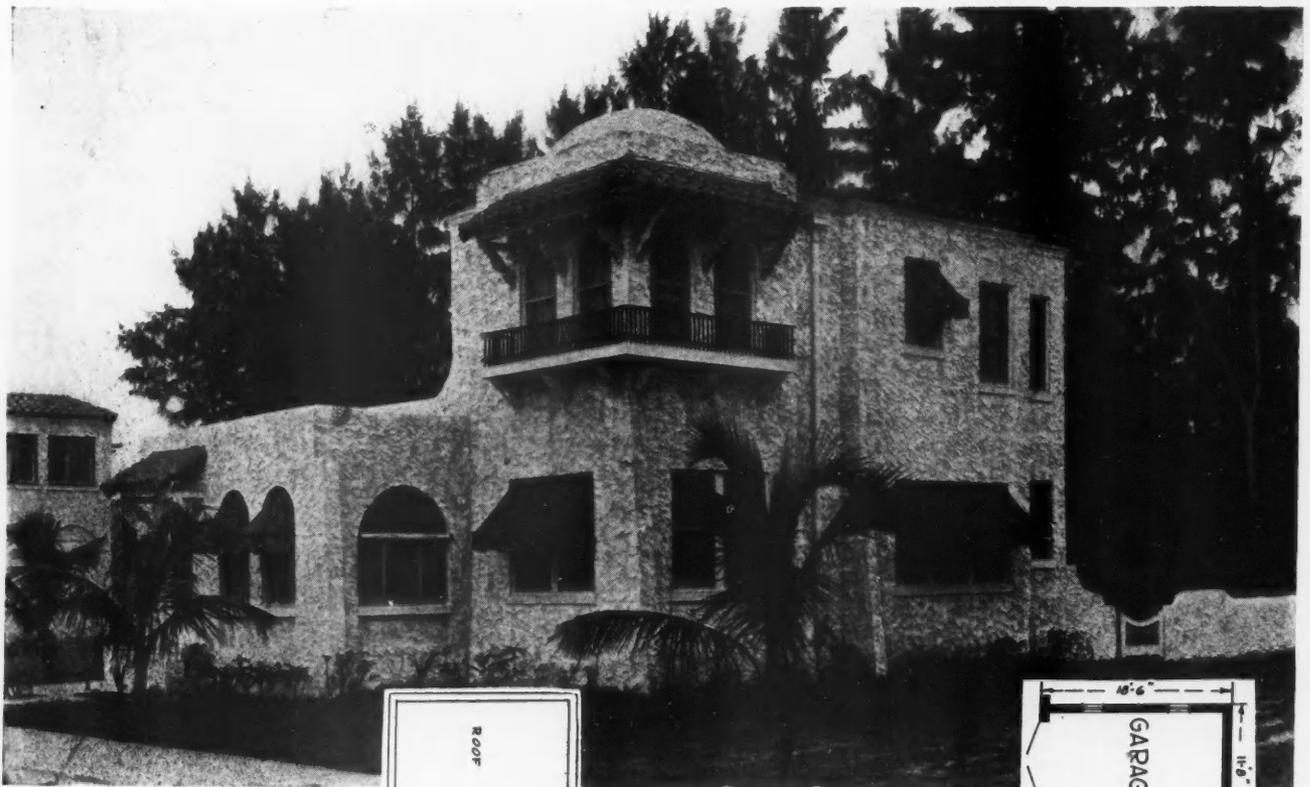
"With this in mind, I obtained sketches from various architects and chose one that made the most artistic sketches and who best responded to the above ideas, and I had the assistance also of a man very much imbued with these same ideas.



Mr. Whitman Had Control of a Track of Ground 200 Feet Wide by 3,000 Feet Long. This is how he made it into a unique residence parkway, running a street down the middle, with sidewalks on either side.

"These houses were built and plastered, using dash-coat and colors that were out of the ordinary and still not freakish, and that were consistent one with the other; and the picture is a very flattering one.

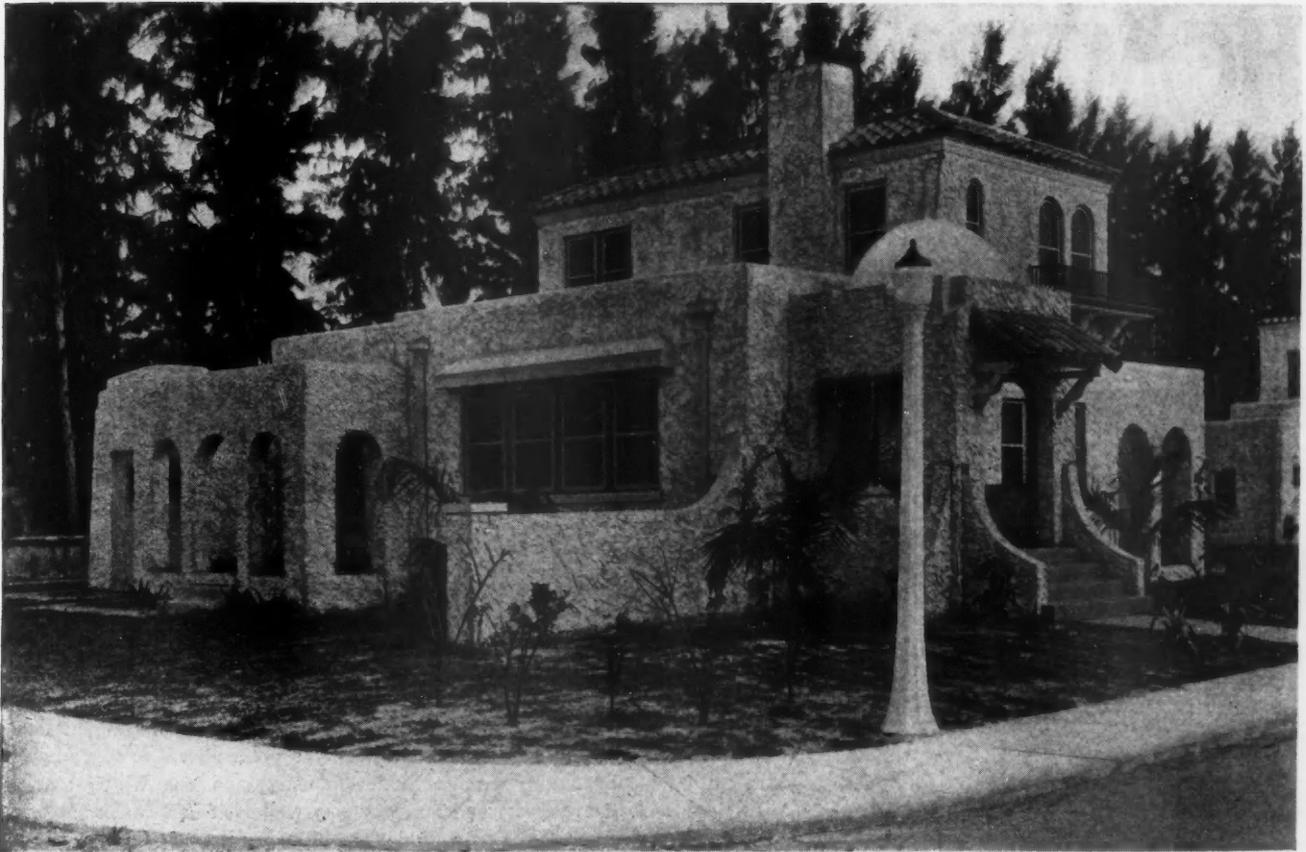
"The thought in finishing up the inside of these houses was to add a few features that would especially appeal to the householder. One of these was to put in a large sink with good generous drip-boards. In many houses the sinks are too small to hold a dishpan, and



The Outside Is Pleasing, but so Is the Inside. Sinks have generous drip-boards and are large; bathrooms have tiled floors, but no tiled walls. Screened porches both upstairs and downstairs; fine for sleeping out.

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Another One of the Attractive Whitman Houses at Espanol Villas, Miami, Fla. Since these have been erected there have been most extravagant compliments from hundreds on the beauty of the houses and the attractiveness of the parkway plan.

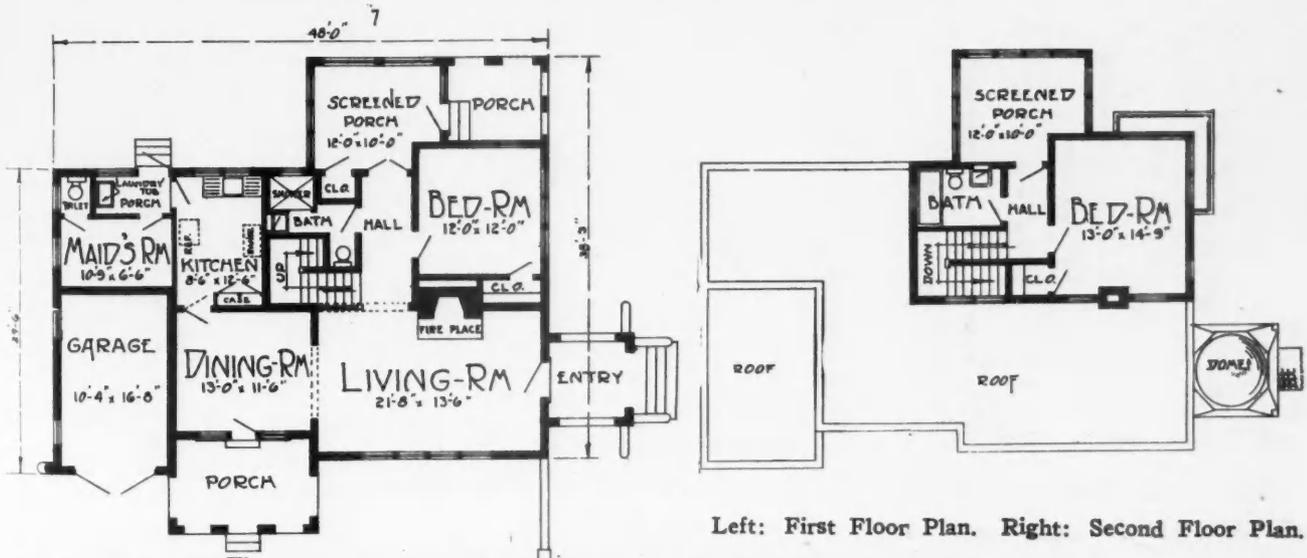
it seemed only fair to the housewife that a real sink be put in.

"Another feature was the bathroom which has tiled floor, but the side walls are not tiled as it seems to me that tiling the side walls in an inexpensive house is wholly unnecessary.

"There were other features added here and there in a most moderate way wherever opportunity afforded, being particular that they served a good purpose or that they added, though inexpensive, a beauty to the

house. The thought of economy in the final cost was maintained throughout.

"Since these houses have been erected there have been most extravagant compliments by hundreds of people and not one has failed to speak of the beauty of the whole plan. A number of people have told me that they never saw anywhere in any country a single block of houses, that were in fair competition with Espanol Villas, that equalled these in beauty and as a complete and finished picture."



Left: First Floor Plan. Right: Second Floor Plan.

The Inbuilt Garage Is a Feature in This Plan, as It Is with the Others. Notice the provision made for porches. Seems to us, if we were in Florida, our house would be a porch with a room attached.

HOME PLANNING TALKS

*By Our
Head Draftsman*



“There is Money Value in Distinctive Planning”

IN looking over the group of buildings called Espanol Villas, which the Editor has arranged so attractively for your attention on pages 97 to 99 of this issue, we have been struck by Mr. Whitman's strategy in planning his unusual homesites at Miami, Florida.

We are very much interested because it bears out an idea we have had for a long time, and that is: the architect or builder makes a mistake in assuming that his work is solely concerned with the designing and building of a structure. His functions go beyond that. It is his business to see that the building or buildings are so located as to create their own excuse for existence. They must bring into being, coincident with their erection, some definite contribution to the topography of the location in which they are erected. In other words, not the building itself, but its setting, determines its reason for existing, its artistic worth, its fitness for home or business, and its present and future re-sale value.

The landscape architect is therefore an under-estimated asset in most communities. Everyone appreciates the things the landscape architect *does*; do we, as architects and builders, allow our professional attitude to interfere with his usefulness? He should be called in when we are planning any ambitious group of buildings. His opinions should be given the required consideration. Discussion should be entered into to secure a full understanding on all sides.

Where he is not available, and we must trust to our own judgment, it pays to give proper consideration to this matter of making a future home or building group a really artistic, efficient, constructive addition to the community.

What I like about Mr. Whitman and his plan is how he, a business man, with no previous homesite plotting, designing or building experience, has yet gone ahead and produced a thoroughly creditable development, and one which hundreds of architects and builders may well visit and contemplate with envy. Nothing would have been easier than to take the limited number of lots available and put up something in the way of houses helter-skelter. But no; he sat down and figured out things,—just like, I imagine, he sits down and routes the machines of the office and factory and selling work in his business establishment. He saw where by not depending on the city street, but by building his own street, he would have a group of houses which would complement each other, and add to the worth and attractiveness of each other. He arranged things so that the occupants cannot help but be neighborly, even if they should be crankily bothered with that terrible affliction, hardening of the liver. One cannot imagine this as a development that will go down. Instead it will go up, and up.

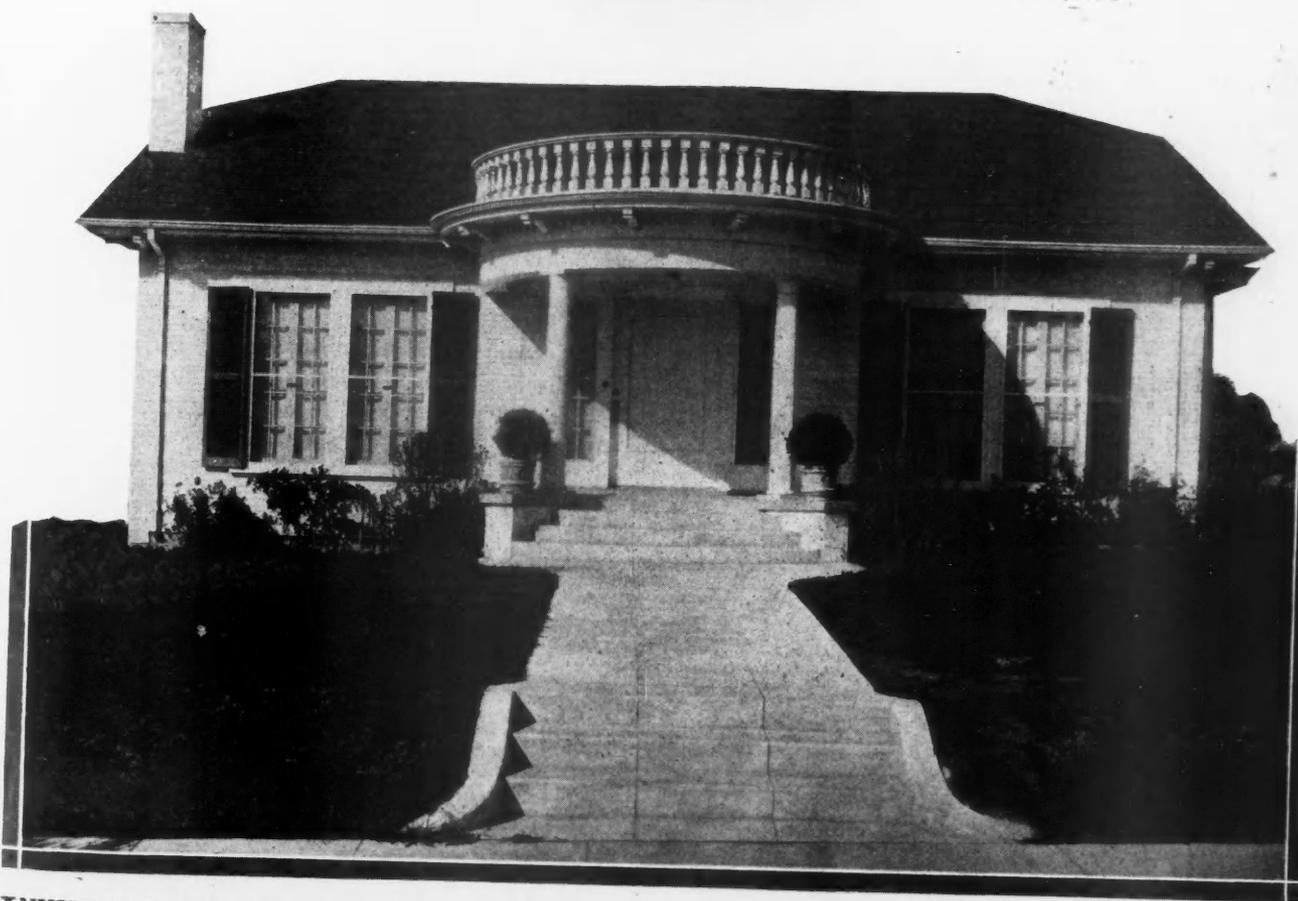
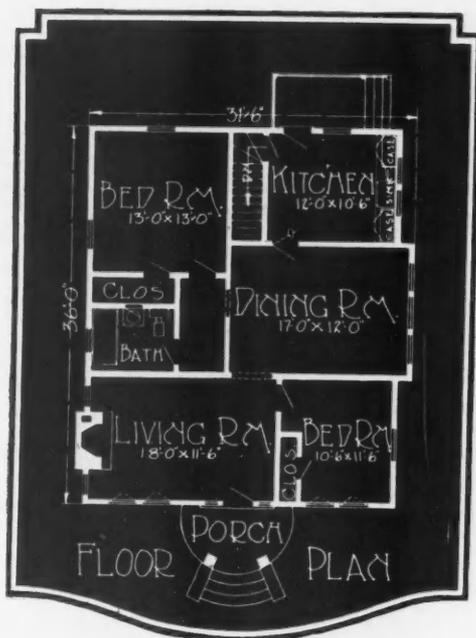
Notice, too, that they aren't all turned out of the same mold. Mr. Whitman knew that Mr. American Householder appreciates being offered something that has quality, that is out of the ordinary, and a “good buy.” And, being a business man, he went and gave it to him. There's a moral there, and blest if we don't think a lot of architects and builders will profit by it.



Espanol Villas, Miami, Fla., Developed by Mr. W. F. Whitman, Well Known Chicago Printer, Demonstrate the Commercial Value of Striking Design and Group Landscape Gardening.

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC



INVITING COLONIAL BUNGALOW. This very attractive bungalow, which makes use of Colonial detail in a finely restrained way, attracts by reason of its generally pleasant appearance. Steel columns support a spreading portico, finished in white, and set off by the two dwarf evergreens set in decorative containers at either side of the steps. The entrance door is flanked by quaint sidelight windows and leads directly into the living room

—an unusually attractive place, what with its ample two-sided lighting and fine end fireplace. The arrangement of the bedrooms is a bit unusual—one is directly off the living room, and the other off the dining room, yet both have the desired amount of privacy. Observe that the small compact kitchen has all the shelving, sinks etc., directly by the double window—certainly a worth while feature and making it a pleasant spot in which to work.

Cobblestones

By ERNEST HENRY NORWOOD

IT sweeps the sky, the lofty, tall skyscraper,—
Concrete and steel its mighty flesh and bones;
In marble grace Greek temple columns taper,—
But lowly Me shall build of cobblestones.

I find my rocks in mountain, vale and water:
Boulders of flint, polished by Nature's hand;
I lay them up in good rich cement mortar
For all such walls need careful work to stand.

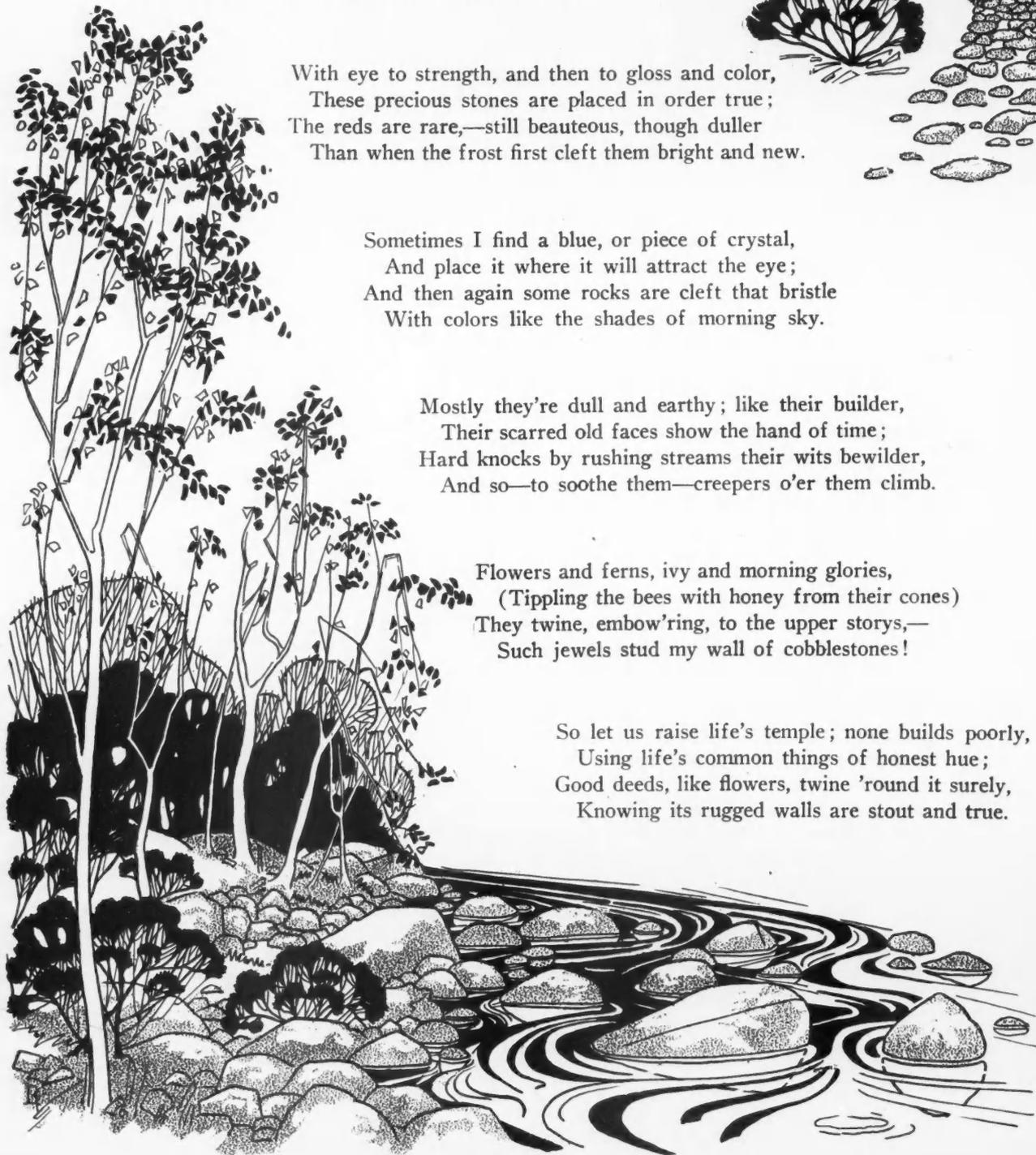
With eye to strength, and then to gloss and color,
These precious stones are placed in order true;
The reds are rare,—still beautiful, though duller
Than when the frost first cleft them bright and new.

Sometimes I find a blue, or piece of crystal,
And place it where it will attract the eye;
And then again some rocks are cleft that bristle
With colors like the shades of morning sky.

Mostly they're dull and earthy; like their builder,
Their scarred old faces show the hand of time;
Hard knocks by rushing streams their wits bewilder,
And so—to soothe them—creepers o'er them climb.

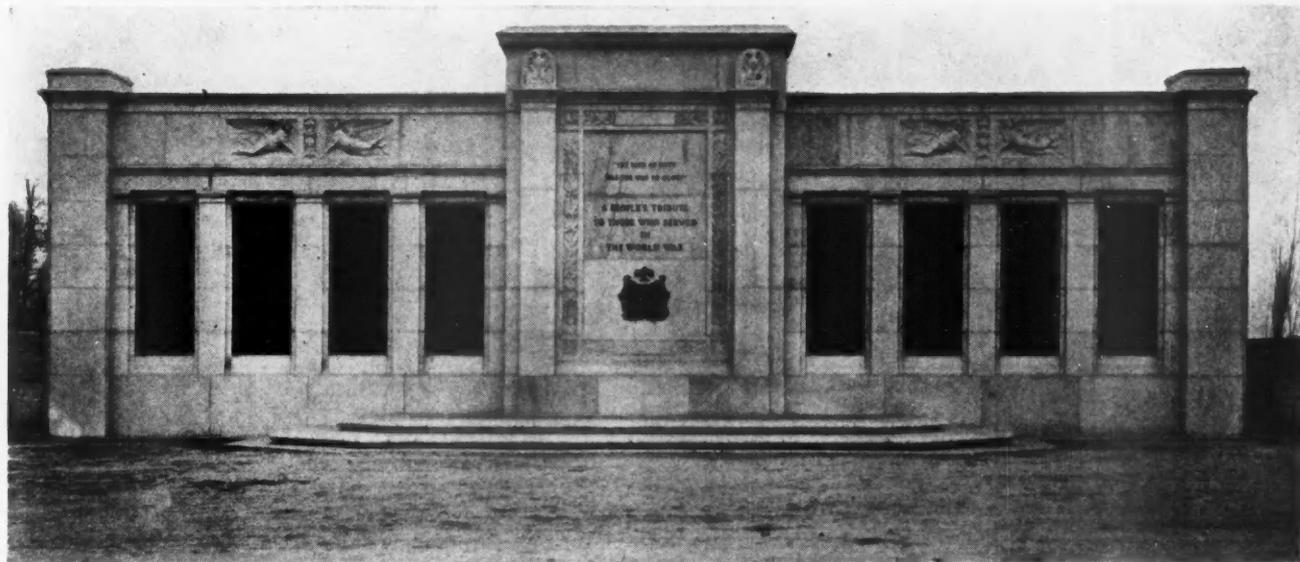
Flowers and ferns, ivy and morning glories,
(Tippling the bees with honey from their cones)
They twine, embow'ring, to the upper storys,—
Such jewels stud my wall of cobblestones!

So let us raise life's temple; none builds poorly,
Using life's common things of honest hue;
Good deeds, like flowers, twine 'round it surely,
Knowing its rugged walls are stout and true.



Philadelphia's Memorial Stadium

PAUL P. CRET, Architect and Sculptor



Facade of the Frankford Stadium, World War Memorial Erected at Philadelphia. Designed by Paul P. Cret, Professor of Architecture at the University of Pennsylvania.

A MEMORIAL stadium has just been finished and opened in Philadelphia that includes some architectural details which are considered by many to be of exceptional merit.

The memorial character as to the stadium is presented especially in the facade which is the work of Paul P. Cret, professor of architecture at the University of Pennsylvania and himself a veteran of the French Army in the late World War. He was assisted in the work by John F. Harbison and John P. B. Sinkler, City Architect of Philadelphia.

The memorial proper is of Tennessee marble and occupies a space in the center of the front of the stadium. In the memorial there are eight panels separated so as to be set off four on either side of a central panel. The latter, which is carved in the marble, bears the following: "The path of duty is the way to glory. A people's tribute to those who served in the World War." Directly beneath this inscription is the seal of the City of Philadelphia in bronze. To the right and to the left at the top of the panel are the figures of eagles carved in marble. On either side of the central panel are four bronze tablets set in the marble and on which there are 2,400 names of

boys and young men who served in the late war. Immediately above the bronze tablets are two figures carved in the marble, each of them representing Victory. Leading up to the central as well as the bronze tablets there are three steps, also of Tennessee marble.

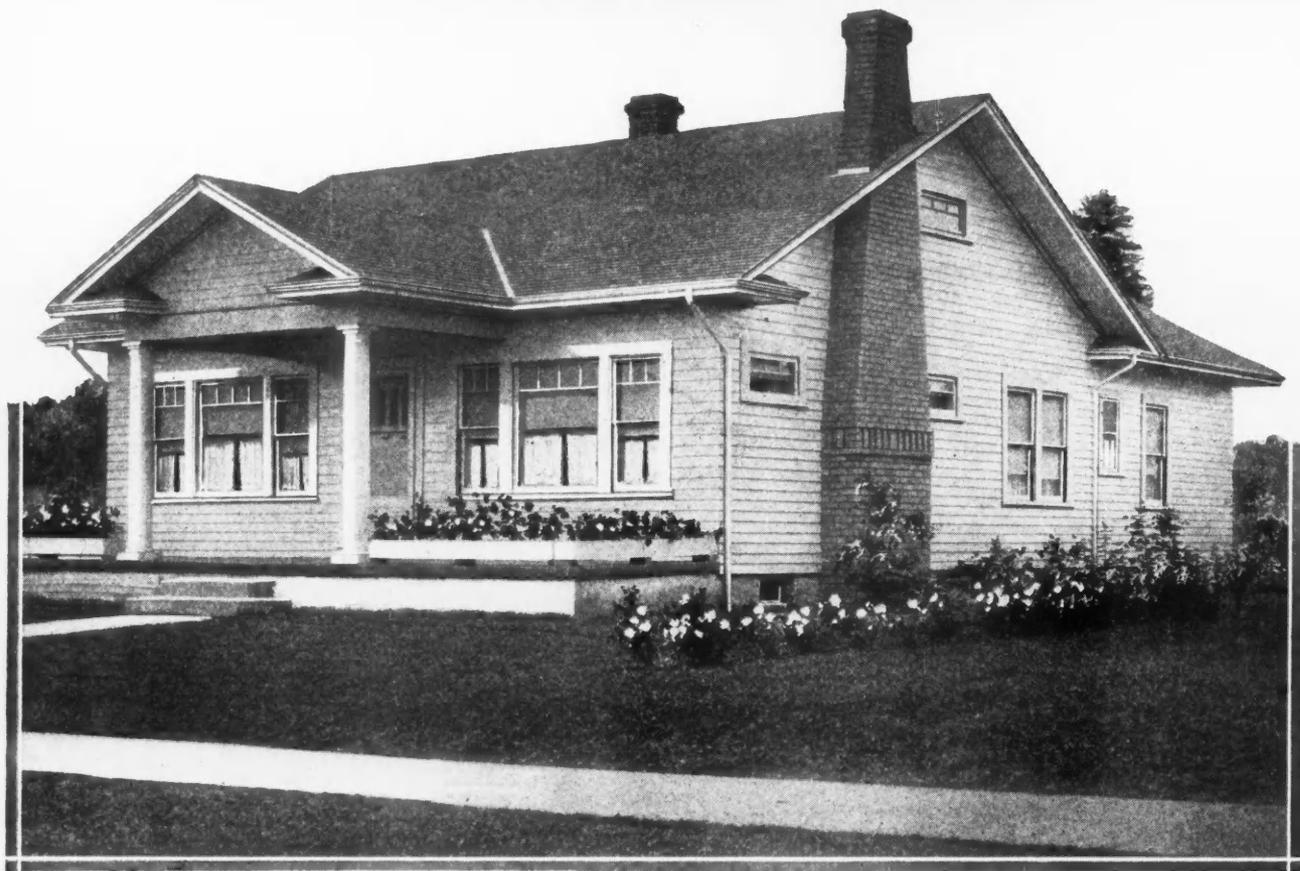
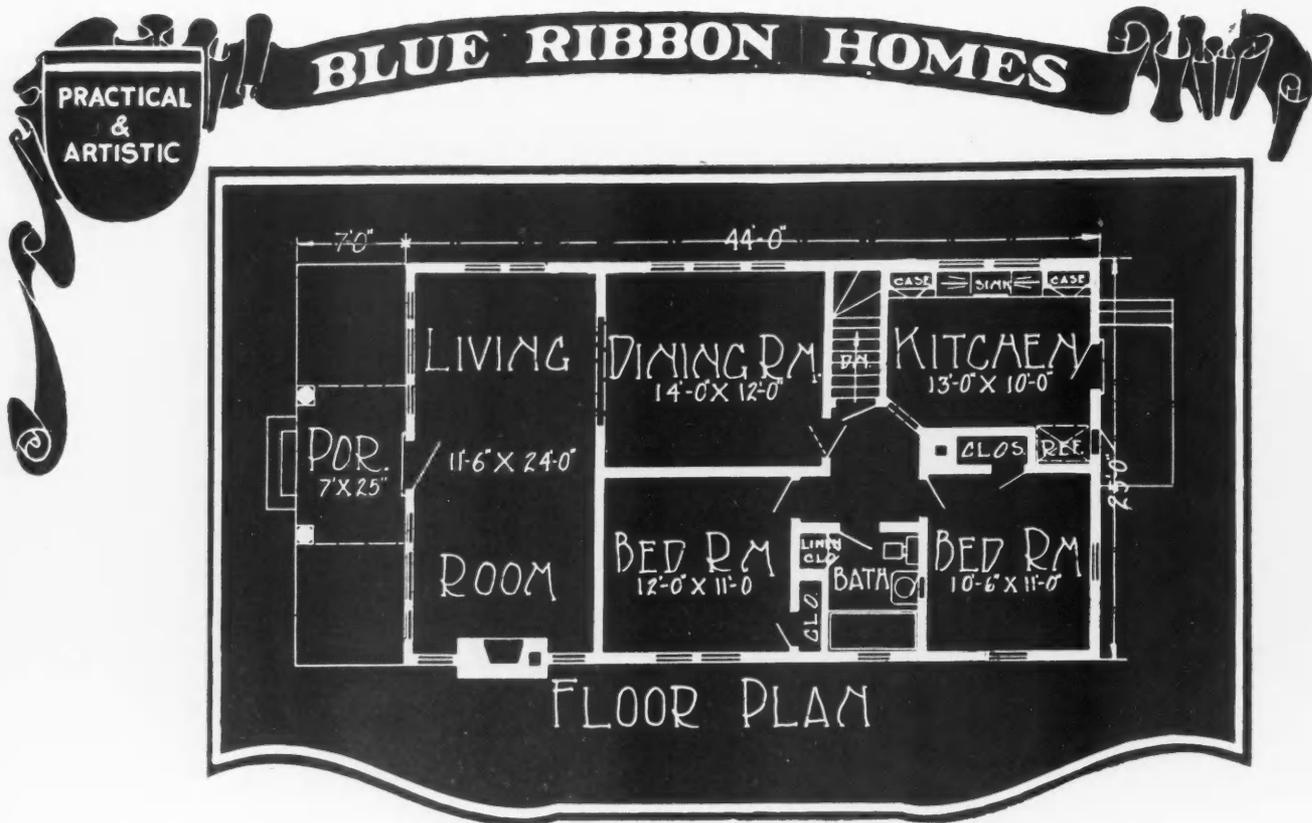
The memorial stadium is located in the northeastern section of the City of Philadelphia in a part of the city that was originally known as Frankford and still retains that name, altho it is entirely a part of the city. The stadium is especially for the use of the boys and girls of this section.

The field itself is 317 feet wide and 488 feet long. It is enclosed by a brick wall with limestone trimmings. There are concrete grandstands with a capacity of 10,000. The interior of the stadium or the field proper is so laid out that it can be used for any athletic event or for general purposes. The idea of this development was to place at the disposal of the community or the section known as Frankford a sort of community center. The total cost of the stadium and all its features was about \$200,000, \$80,000 of which is represented by the value of the ground.

JOHN F. McCLARREN.



Bird's-eye View of Frankford Memorial Stadium. In the front are the two club houses, one for boys and the other for girls. The latter and incidental details were designed by John P. B. Sinkler, City Architect, Philadelphia, assisted by John F. Harbison, architect, also of Philadelphia.

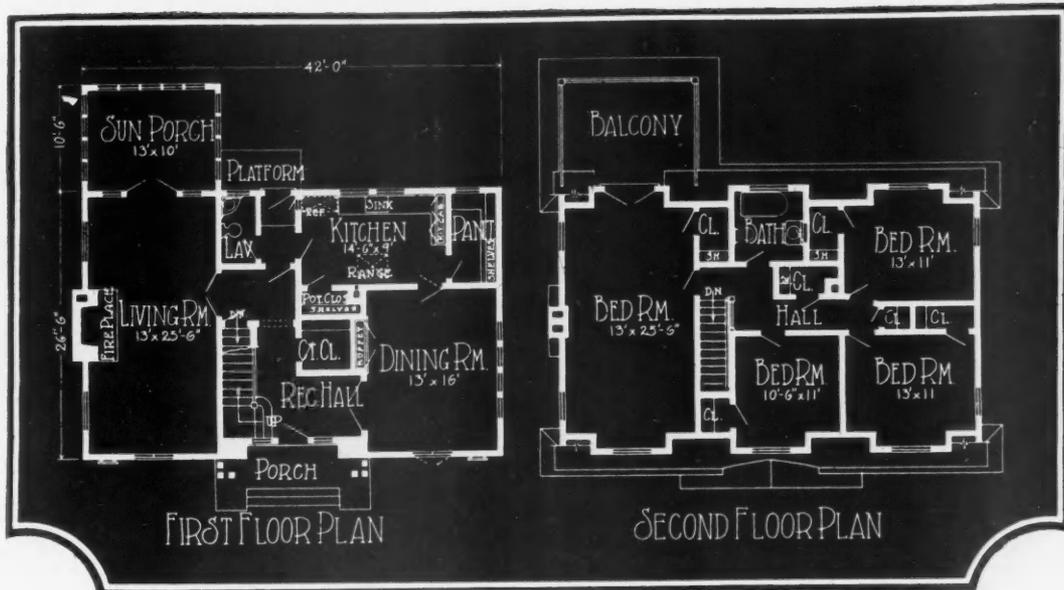


A VERY HOME-LIKE SMALL RESIDENCE. In spite of the vagaries of fashion in house building here is a type of residence which, though of no particular design or period, always appeals. The reason for this is that it fulfills the function of a home, without frills, and does not call for any extraordinary outlay for those details which, while they undoubtedly make for attractiveness, also add appreciably to the cost. The porch is a roomy portico sheltering the entrance doorway, which gives access to the living room—a fine large apartment, 11 feet 6 inches

by 24 feet, with space for a fireplace at one end. The dining room is a well-proportioned room, with a triple-light window. Separating the kitchen from the dining room is a passageway which could be equipped with cupboards to serve as a butler's pantry. Note that the kitchen has a portion set off to hold the refrigerator, with a door for outside icing. There are two bedrooms, each with ample closet room. There is a linen closet off the hallway that connects these bedrooms with the bathroom.

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC

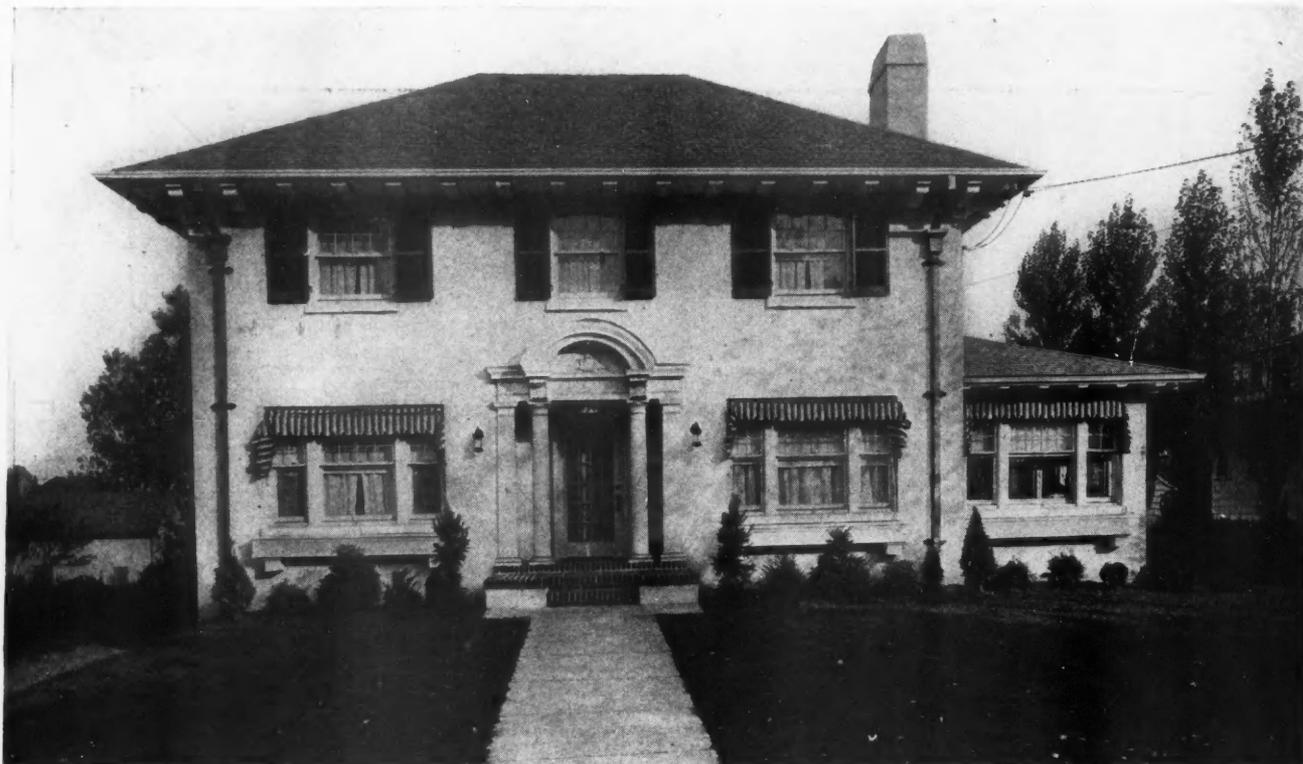


MODIFIED DUTCH COLONIAL. One can go far and not find a type of residence of such general appeal as the Dutch Colonial. Whether it is on a narrow or wide lot, in a row of other residences or on a corner, in view from all sides, it seems to fit in with the minimum of adjustment. In this residence the typical Dutch Colonial has been subjected to modifications. One usually looks for a wooden siding finish in a house of this type, yet this residence has been finished in stucco. The slope of the roof from the dormers to the eaves has been accented a bit

more than usual, and the chimney given a surface decorative treatment different than otherwise—yet who can deny that the effect is pleasing? It is a very roomy house, as will be evident from the plan, and as Dutch Colonial houses always are. Downstairs we have a fine living room, sun porch, reception hall, kitchen, dining room, lavatory, pantry, and closets galore; upstairs are four fine bedrooms, and a balcony suitable for sleeping purposes. Over-all dimensions are 42 feet by 37 feet.

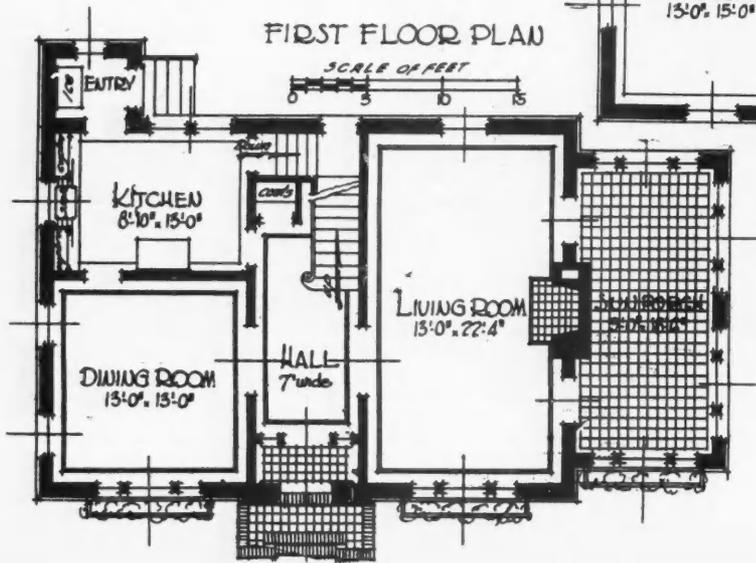
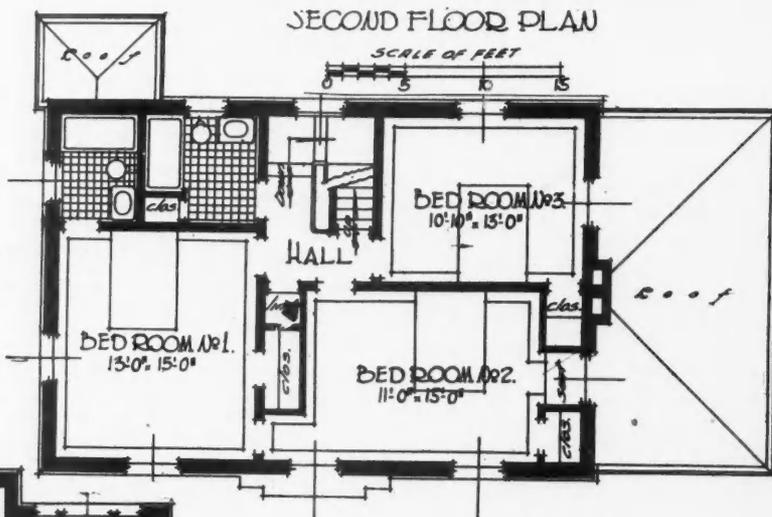
The Formal House

R. C. HUNTER & BRO., Architects



The Formal House Has a Certain Reserve and Dignity That Appeals to Many. It carries an air of stability and permanence. One would expect to find the leading doctor or banker or lawyer or business man of a community domiciled in this house.

THE formal type of house has a certain reserve and dignity that appeals to many. If properly designed it also carries an air of stability and permanence—a suggestion of substantial worth. For the city or the closely built suburbs, this type of houses seems ideal. It does not require a large lot with spacious grounds as befits a rambling English or Colonial house; it can be built quite close to the property line



and yet not looked cramped.

The details of the accompanying design have been carefully worked out by the architects. The recessed entrance is an attractive feature. The floor plans are well arranged and the rooms are of good size. The sun porch is completely enclosed and has a tile floor.

A garage is provided under the sun porch, an incline leads down from the grade in the rear of the garage floor. The garage has a complete fireproof enclosure, since the floor

of the sun porch is of reinforced concrete construction.

On the second floor are three good bedrooms, two baths and plenty of closets. Each bedroom has cross ventilation. The bathrooms have tiled floors and wainscots and the tubs are built-in. The bathrooms are located over the kitchen, so that one line of plumbing pipes serves the entire house.

A generous attic is provided.

A cellar extends under the entire house and here is the laundry, the heating plant, coal bin and the like.

The construction is of hollow tile with stucco finish, brick trimmings and slate roof.



A Bedroom with Built-In Mirrors

OF all architectural devices to give an appearance of spaciousness, the mirror has proven the most effective. The wide doors, high ceilings, or even the bay-window, which actually adds to the size of the room, hardly succeed in giving the impression of size and freedom that the mirror affords. Optically the mirror really does increase the size of the room, and the fact that the increased space is merely an optical effect does not alter its value.

The method of building in the mirror has everything to do, though, with how much the spacious effect of the room is increased. In the bedroom above, the room is so arranged that a wide mirror can be brought into the plan, and thereby a wide portion of the room be reflected and added to the optical conception of its

size. As one may observe there are two doors bearing mirrors with the space between them made into a stationary mirror. The door on the right leads out of the room, and the door on the left into a convenient closet. These are the only doors in the room, and it was a happy idea to build them thus close together and get the combined width.

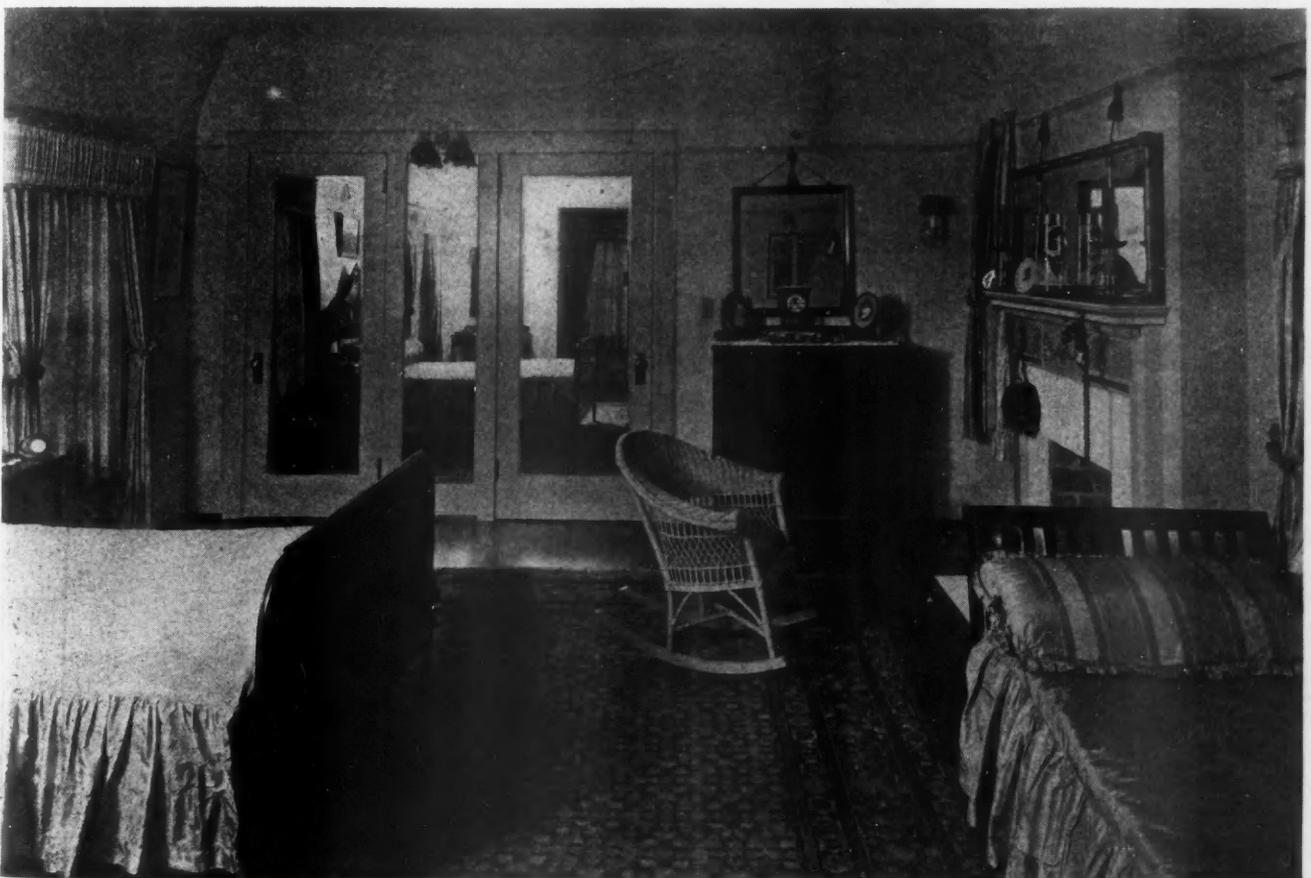
It is a bedroom that speaks its own praise. It is large, light and attractive in every way. The selection of furniture is in excellent taste and is grouped in a manner that best serves the demands of the occupants.

Bedrooms ought to be the heart of the home. They can be if they are well planned and then furnished in a worthy manner. It is never wise to put too many pieces of furniture in a bedroom. Such a method is repelling and lessens the room's serviceability. Attractiveness is not in the amount of furniture so much as it is in the arrangement. Often it is better style and not new furniture that is needed. Try various ways of arranging the furniture you have. Some new and pleasing effects are apt to result. Anyway, it is worth trying.—E. Bethea Marlowe.



Bridgeport Brass Company in New Chicago Office Location

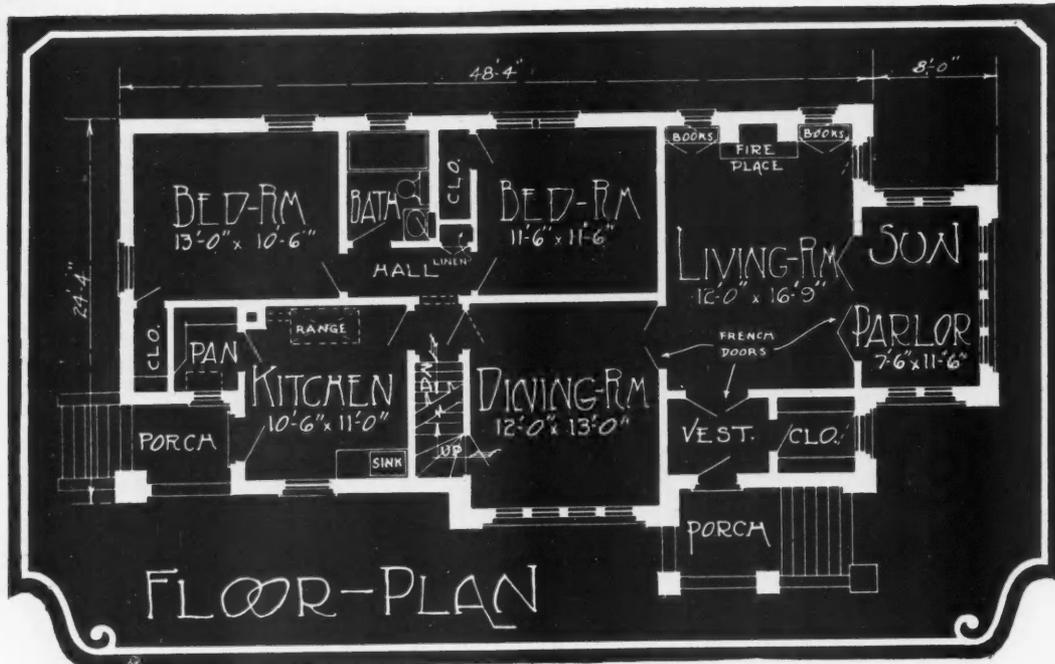
THE Chicago district sales office of the Bridgeport Brass Company, Bridgeport, Conn., has been moved from the State-Lake Building to the Wrigley Building. This is one of the most attractive business buildings in Chicago, and strategically situated between the two great business centers.



Observe How Well the Mirror Doors and the In-Between Mirror Add Spaciousness to This Room. As a bedroom it has other good points worth studying.

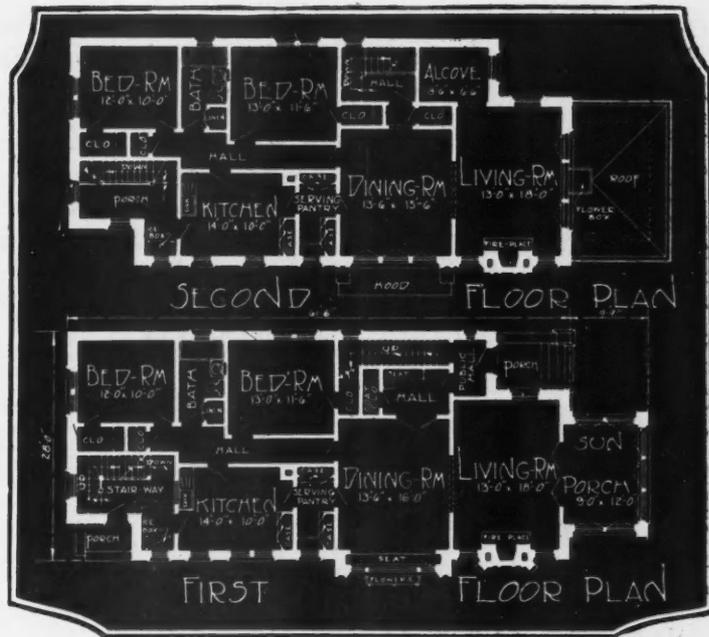
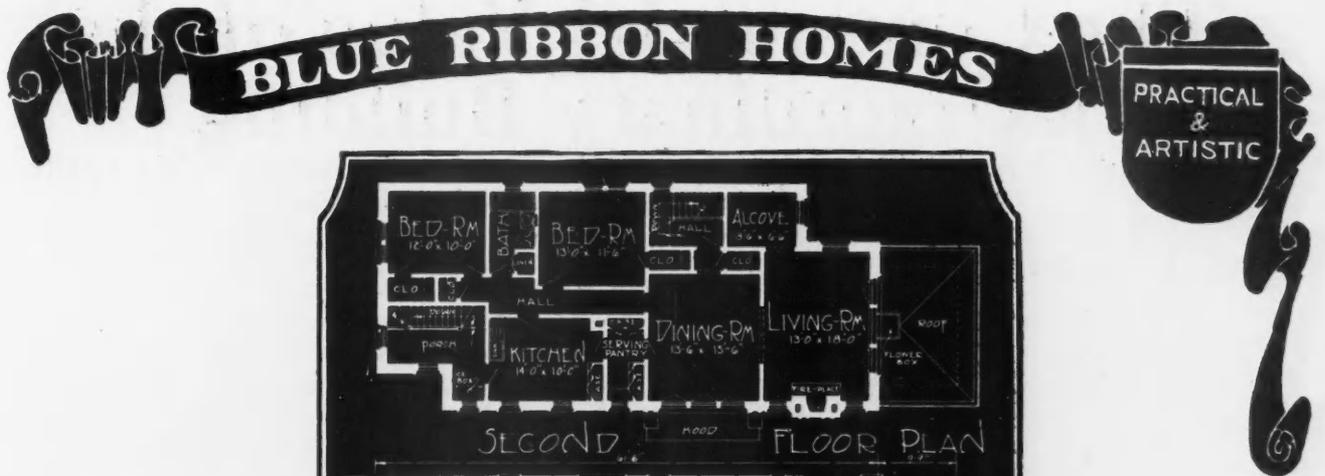
PRACTICAL
&
ARTISTIC

BLUE RIBBON HOMES



IMPRESSIONS, BUT DISTINCTIVELY HOME-LIKE BUNGALOW. There are clever lines in this tiled-roof bungalow that give it pleasing breaks of outline. There are five spacious rooms, but the sun parlor, 7 feet 6 inches by 11 feet 6 inches, has all the dignity of an additional room, with its French doors that open into the living room. The latter is 12 feet by 16 feet 9 inches, and has a fireplace flanked by built-in bookcases. An inviting feature is the entrance vestibule, with ample clothes-hanging closet space.

French doors separate the living room from the dining room, the latter being 12 feet by 13 feet, with a fine four-windowed outlook. The kitchen, 10 feet 6 inches by 11 feet, is divided by a vestibule from the dining room, and opens on a porch which could be screened in or enclosed. There are two bedrooms, with attic room for another, if need be. Brick exterior, stone trim, with stucco dormers. Over-all dimensions, 24 feet 4 inches by 56 feet 4 inches.



SUBSTANTIAL DUPLEX BRICK RESIDENCE. A thoroughly pleasing building is this two-story duplex residence of brick—designed to appear to the best advantage on a wide or narrow lot, in a row of other homes, or on its own individual grounds. Though apparently a two-

story residence it has a five-room apartment on each floor—a step advisable where the prospective builder of this house finds himself in a location where residence accommodations are at a premium. The rear porch is enclosed, and is integral with the building.

The Commercial Value of the Extraordinary Building

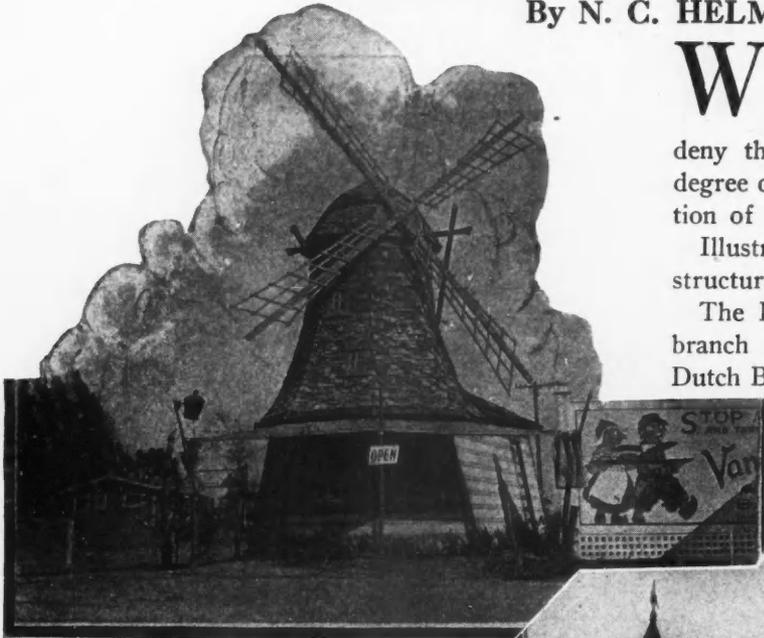
What, Besides Merchandise, Has Any Business to Offer Customers? Individuality Is as Important as Good Will to Any Business

By N. C. HELMS

WE may, at first sight, disagree with a great deal of the architectural development taking place in California these days, but no one can deny that our western friends are showing a high degree of originality, as well as an instinctive appreciation of the commercial value of beautiful structures.

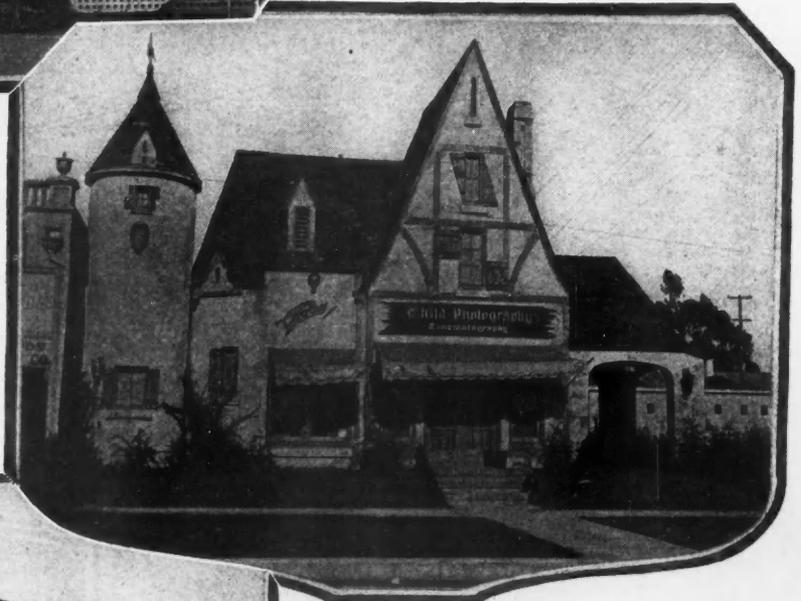
Illustrated on this page are a few unusual business structures in and about Los Angeles.

The Dutch windmill structure is one of the many branch bakery shops of Van De Kamp's Holland Dutch Bakers. This firm operates a large central bakery, from which deliveries are made to its many retail stores of the kind illustrated. The design is the company's own, and is logical in its suggestion of the firm name



Above: Van De Kamp's Holland Dutch Bakers. This firm operating a central bakery, from which deliveries are made to the retail stores of the company located throughout Los Angeles. The Dutch windmill design is the company's own. The buildings are built by a contracting firm and taken to the site by truck.

At Right: Photo Studio, Occupied by Cooley Children Photography, Los Angeles. Inside is a large reception room furnished with antique furniture, statuary, paintings and photographs.



Frank Meline Co. Branch Office, located at Wilshire Blvd. and Serrano St., Los Angeles. This company is a large realty concern and maintains departments devoted to architecture and building.

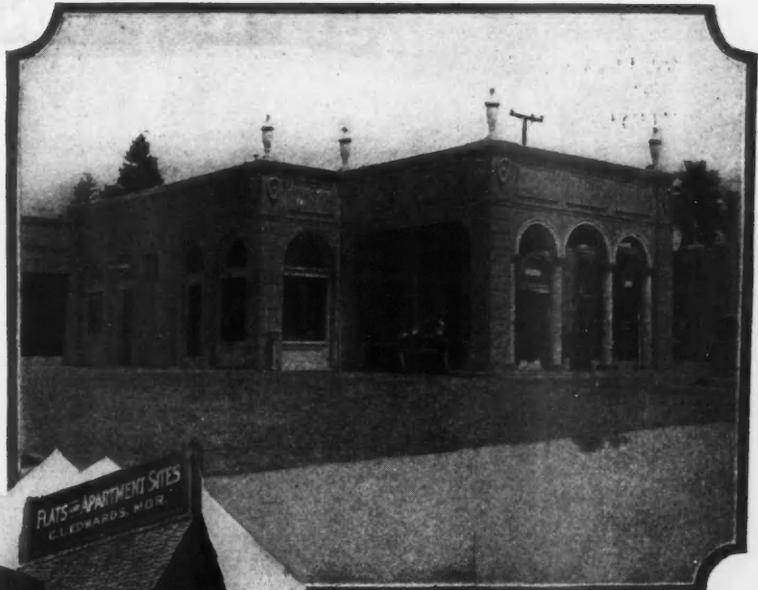
and racial associations. Then, too, "clean as a Dutch kitchen" is a phrase many people seem to know naturally, and it associates the bakery products with absolute cleanliness of preparation, baking and handling. These Dutch windmill shops are not built on the site; they are erected by a large contracting firm and transported to their future location on trucks. The inside is no different than that of any well-appointed bakery shop. But the bakery goods! We grow hungry writing about this.

The quaint building with a suggestion of Dickens, and with a circular tower, is the studio of Cooley Children Photography, Los Angeles. Offhand, we should

like to take our children here to be photographed; everything seems so quaint and attractive, that the baby and his brothers and sisters would appear at their best. Maybe a fairy princess lives in the tower and will come down and dance for them when they sit for the photographer! Inside, the large reception room is finished in fine taste, with antique furniture, statuary, paintings and photographs displayed unobtrusively but to good advantage.

Another characterful design is that of the real estate office which the Frank Meline Company designed and built for a branch office. It is a large company, and maintains departments devoted to architecture and construction. Naturally it wished to have its facilities exemplified in the type of building it erected. We would like to see many other real estate com-

Below: Taft Realty Co., 5751 Hollywood Blvd., Hollywood, Cal. Designed and built by the Taft Co. Building in form of a cross. A feature is the plate glass windows in partitions, giving better lighting to offices both forenoon and afternoon.



Above: Auto Service Station, Hollywood, Owned and Operated by the Pacific Rubber Co. of Los Angeles. Stations are equipped to give complete motor service, gasoline, oil accessories, tire service, electric service, wash, polish, grease and repair cars. F. L. Frole, Los Angeles, architect.



At Left: Branch Office by the J. Harvey McCarthy Co., Los Angeles. Building is about 16 x 20 feet, two rooms. Outer room is general office and reception room and back of this is a small office for the manager. The woodwork, window frames, door frames and the door are rough lumber showing axe marks. Aleck Curlett, architect.

greasing and repairing. F. L. Frole, Los Angeles, is the architect.

The quaint building which gives suggestions of a rough frontier cabin is a branch office of the J. Harvey McCarthy Company, Los Angeles, specializing in high grade real estate. Door frames and doors are of rough lumber, showing adze marks. Aleck Curlett, Architect.



At Right: Block of Stores of English Design. Chas. D. Wagner of Los Angeles, architect. Building located at corner of 6th St. and Oxford Ave. This is a neighborhood shopping district and the stores are occupied by small shops catering to an exclusive trade.

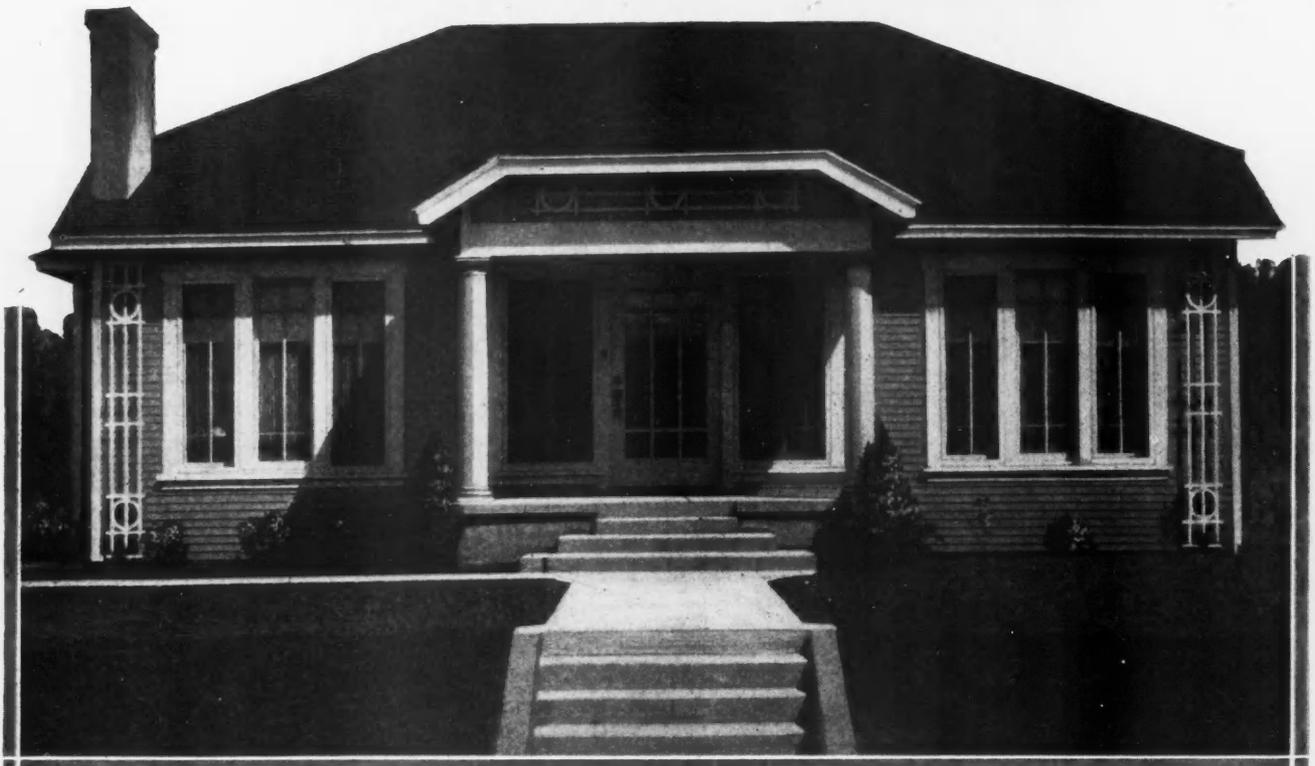
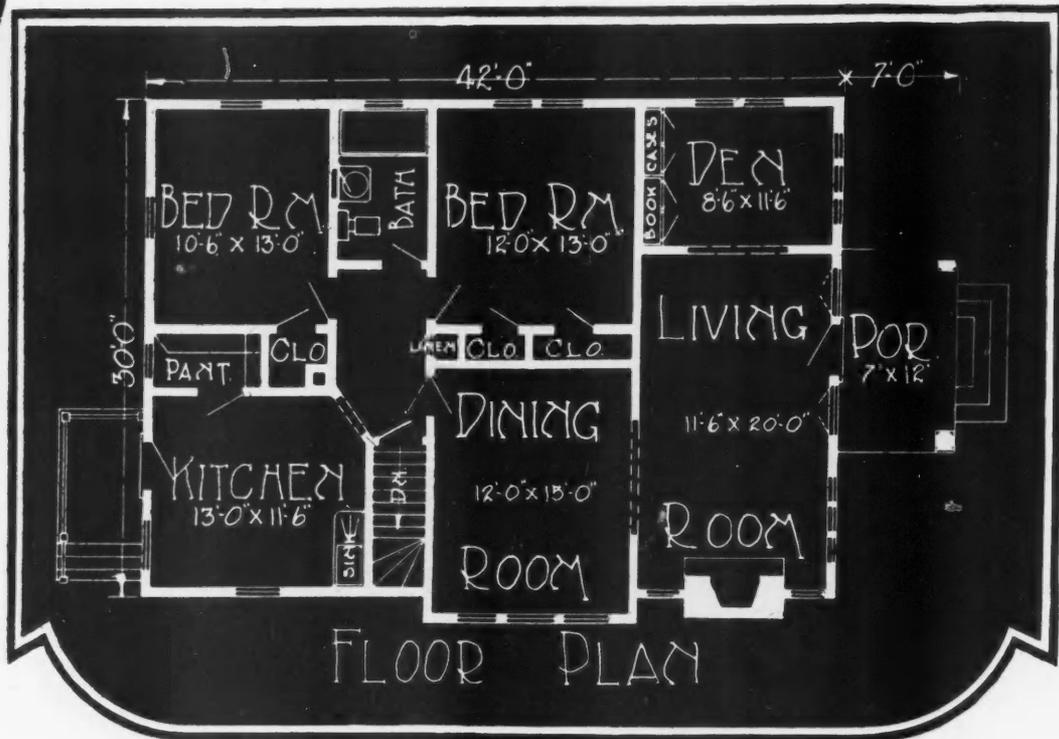
panies improve their subdivision corners likewise.

The Pacific Rubber Company, Los Angeles, is responsible for the very attractive auto service station illustrated. There are four like this in and around Los Angeles, equipped to furnish a complete motor service: gasoline, oil, accessories, tires, electric charging, car washing, polishing,



PRACTICAL
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BLUE RIBBON HOMES

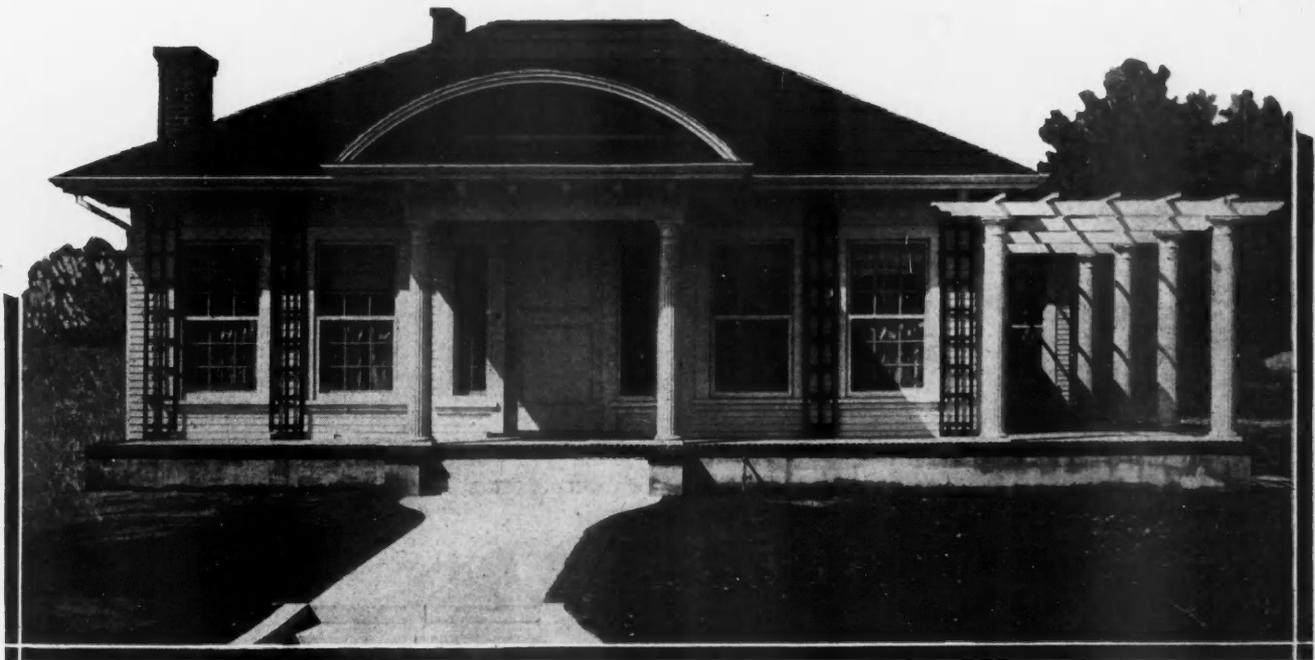
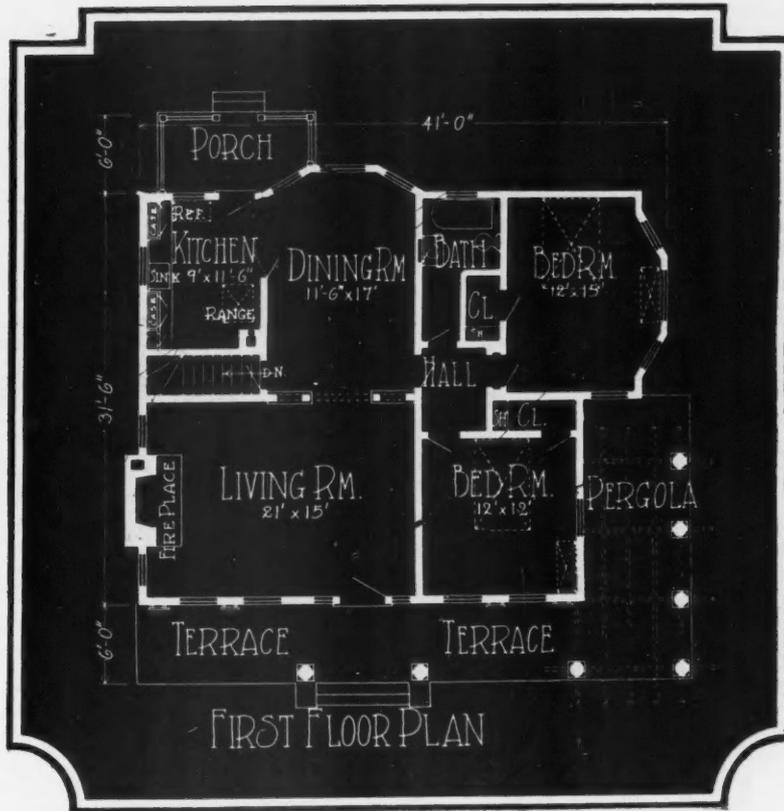


VERY PLEASING BUNGALOW. Observe how the trellises "dress up" the front of this charming bungalow, and how the long sweep of the glass windows right and left from the glazed entrance door give an effect of breadth which can be used advantageously to take away from the narrowing impression of a small lot. The porch has ample shading and the entrance door leads into the living room, with a flood of lighting from the windows at the end and side. The fireplace sits between the end windows, suggesting ingle seats at either side. Off the living

room we have a den, the mere mention of which arouses happy hopes in father's breast, we feel sure, as offering a place where he can keep his papers and his cigars and his tobacco and his pipes exactly where he knows they can be found for that after dinner smoke. There are built-in bookcases provided for in this den, and it might well be a study room or library or sewing room—depending on one's likes and dislikes. There are two bedrooms, with ample closet space, a nicely proportioned bay-windowed dining room, and a kitchen with window-lit pantry.

BLUE RIBBON HOMES

PRACTICAL
&
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A HOME NEAT AS THE PROVERBIAL PIN. Nine out of ten women, looking at this house, would register in their hearts a fond hope for a house exactly like it in every detail. Imagine roses on the front trellises, and flowering vines—like wistaria, for instance—overhanging the pergola, with a row of bright geraniums along the front of the terrace. Most anyone would like a home like it. Inside the promise of the outside is carried out. The living room is 21 feet by 15 feet—fine proportions—and

has a fireplace. A colonnade—or you might use French doors—separates it from the dining room—a room with a fine windowed bay. The kitchen is 9 feet by 11 feet 6 inches, but so well and compactly have all its fittings been handled that everything is at hand, and most convenient. A hall opening from the dining room connects with the bathroom and the two bedrooms. A detail worth noting is how the roof line is given character by the shingle treatment. Over-all dimensions are 41 feet by 43 feet 6 inches.

Metal Trim That's "Different"

New Style Metal Casing or Trim Adds Distinctive Touch to Handsome Residence Interior, and is Likewise Favored for Other Buildings

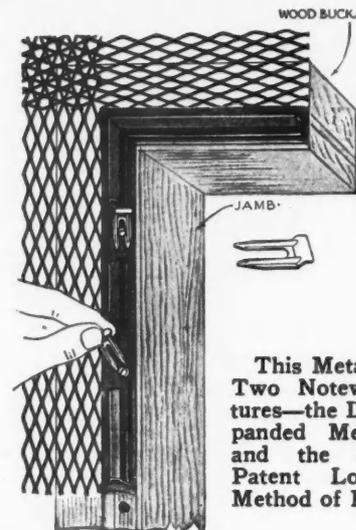
METAL trim was used for the doors and windows on the interior of the handsome residence illustrated on this page. The owner was delighted by the fine appearance, but not more so than his wife, who sensed its sanitary advantage and the ease with which it could be kept clean. When installed the trim came flush with the plaster; no dust could collect over the doors and the windows.

In design this metal trim has two noteworthy details: the diamond expanded metal flange, and the method whereby it is fastened to the door frame or jamb. The casings are punched with 7/16-inch round holes, 3 inches center to center, though in practice the clips will hardly be necessary oftener than 6 inches center to center. Three-quarter-inch No. 10 round head screws are set in the permanent jamb and driven to about 1/8 inch of home, the casings being then slipped over the heads of the screws and after being properly lined up are nailed to the buck.

The clips are then slipped under the heads of the screws and driven home with a nail set and hammer, the edge of a chisel, or any handy tool. This operation locks the casing fast and immovably down on the jamb. No screw or nail holes are in evidence in the metal moulding when the trim is completed and in place. The expanded diamond flange affords a perfect bond with the other materials, whether metal or wood lath; or should tile or other fireproof construction be used it is easily fastened with nails or staples.

That its advantages are appreciated is shown by the fact that the new office building of Eline's, Inc., Milwaukee, manufacturers of chocolate and cocoa, was fitted throughout with this metal trim. It will be used likewise in the new gymnasium which the same company is now erecting for its employees.

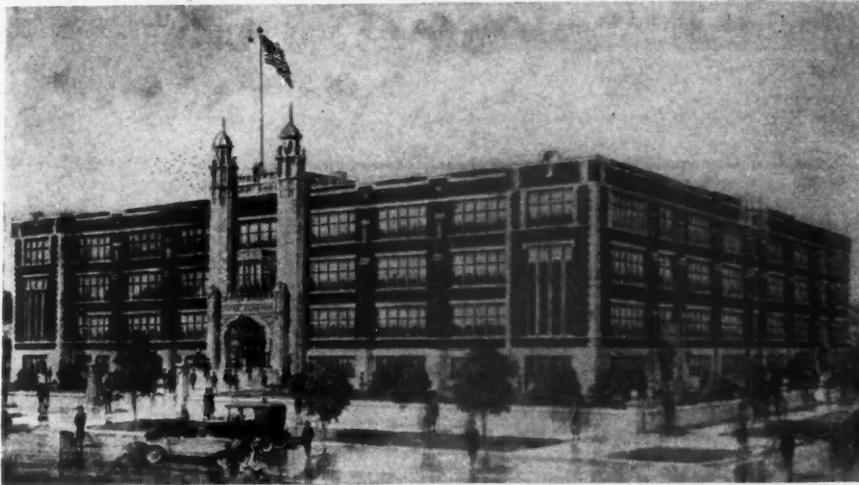
Perhaps the most pretentious building in which the new trim has been used is the new Central High School



This Metal Trim Has Two Noteworthy Features—the Diamond Expanded Metal Flange, and the Screw and Patent Locking Clip Method of Fastening.



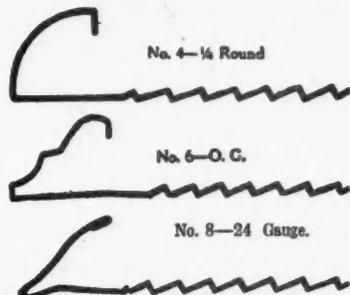
Metal Trim Was Used for the Doors and Windows on the Interior of This Handsome Dutch Colonial Residence of Fred A. Link, Albany, N. Y.; John B. Waldbillig, Contractor.



Central High School, Tulsa, Okla., Geo. Winkler, Architect. The fact that metal trim does not easily mar or become defaced caused it to be specified for this large school.

Building at Tulsa, Okla. The fact that it does not easily mar or become defaced gives it an advantage for school use.

The fact that it is constructed of metal makes this particular trim warp-proof, and unaffected by the varying atmospheric conditions in homes or other buildings heated with warm air, steam or hot water. It is made in three different styles of moulding, designed to be installed flush with plaster, with $\frac{3}{4}$ -inch grounds. An alternative installation would be to apply plaster $\frac{1}{2}$ inch thick, leaving a $\frac{1}{4}$ -inch projection of the moulding.



The Metal Trim Is Made in Three Different Styles of Moulding. Designed to Be Installed Flush with Plaster.

Standardization of Technical Symbols Planned

A RECENT conference held in New York City under the auspices of the American Engineering Standards Committee revealed a sentiment among engineers, scientists, government officials, business paper editors, and industrial executives, emphatically in favor of the unification of technical and scientific abbreviations and symbols.

It was agreed on all sides that the standardization of abbreviations and symbols would result in inestimable mental economies. The present situation with respect to the use of abbreviations and symbols in engineering, scientific, and other technical fields is comparable to a language which has degenerated into a multiplicity of dialects, each of which has to be translated for the users of the others. Abbreviations and symbols constitute an ever-growing and important part of the language of engineers, scientists, industrial editors, and other technical men. The use of one symbol or abbreviation for several different terms and the use of several different symbols or abbreviations for one meaning are, however, at present causing a great deal of confusion, misunderstanding, and, often, serious errors.

It was thought desirable to include as a part of the project the graphical symbols which are used in engineering drawings, diagrams, and the like, for representing instruments and

apparatus and components of them.

It was agreed that the co-operation of foreign standardizing bodies should be sought. The importance of international uniformity in symbols is great on account of the international character of much engineering and scientific work, and the importance of reference books and periodicals in foreign languages.



Construction in Canada

THE value of the building authorized during February as indicated by reports tabulated by the Dominion Bureau of Statistics, was considerably higher than in the preceding month and also than during February, 1922. The 56 cities making returns issued permits valued at \$4,744,478 as compared

pared with \$3,705,256 in January, 1923, and with \$4,201,955 in February of last year. The increase in the first comparison was \$1,039,222 or 28.0 per cent and in the latter it stood at \$542,523 or 12.9 per cent.

Statements were furnished in some detail by 37 of these cities, showing that they had issued permits for slightly over 400 dwellings valued at \$1,323,430. Permits for buildings other than residences (including garages, stables, stores, factories, etc.) of which 575 were issued, reached a total of \$3,157,308. In a number of centers no permits were issued during February, building being at a low level on account of seasonal conditions.



Clifford F. Messinger Made Second Vice President of Chain Belt Company

CLIFFORD F. MESSINGER, for the past three years general sales manager of the Chain Belt Company, Milwaukee, has been elected second vice-president, according to an announcement just made by the company.

Mr. Messinger graduated from the Sheffield Scientific School, Yale University, in 1911, and entered the employ of the Chain Belt Company the same year. He has at various times occupied the positions of advertising manager, manager of concrete mixer sales and general sales manager. He is also a director of the Chain Belt Company and a director of the Interstate Drop Forge Company, Milwaukee.



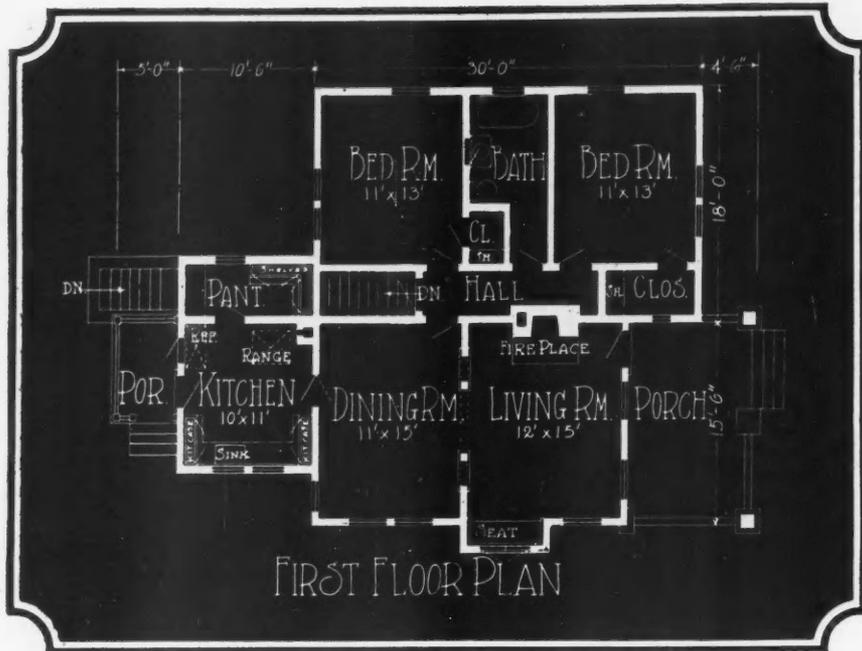
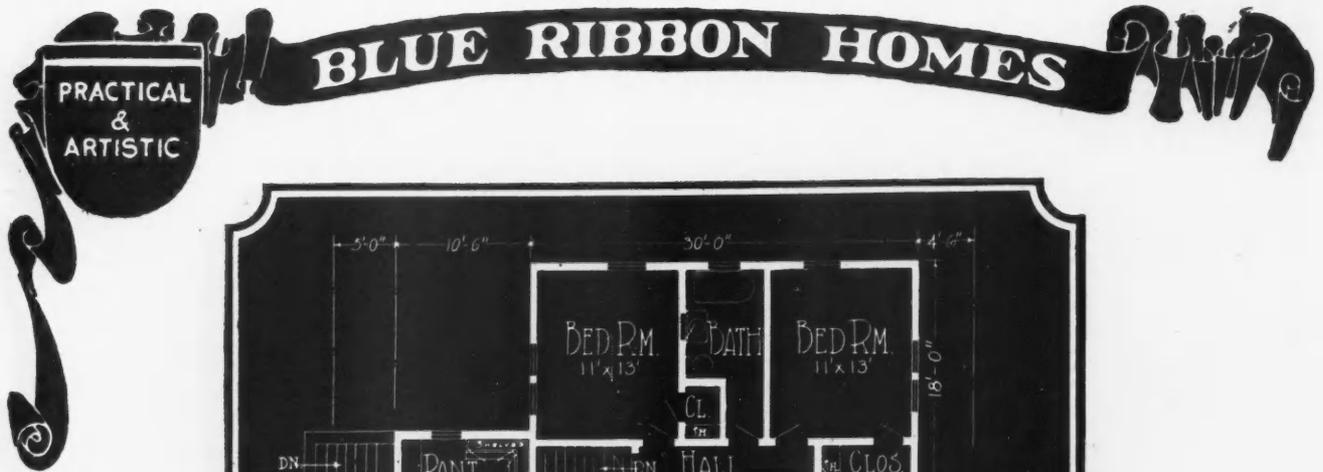
Milwaukee to Have First Annual Home Exposition

UNDER the auspices of the building industry of Milwaukee, Wis., a Home Building Exposition will be held in that city at the Auditorium, June 2 to 9. There are 266 exhibit spaces available, which it is expected will be all spoken for. A feature will be the six-room Demonstration Bungalow, which will be erected within the Auditorium grounds and given away free on the closing day of the exposition.



Building Progress Featured at Philadelphia Civic-Industrial Exposition

AN embracing and authoritative display of architecture, building and building materials will form a considerable part of the Philadelphia Palace of Progress, a civic-industrial exposition to be held in the Commercial Museum, May 14-26, to celebrate the 240th anniversary of the founding of Philadelphia. The exposition will represent the civic, municipal and industrial advancement of Philadelphia.

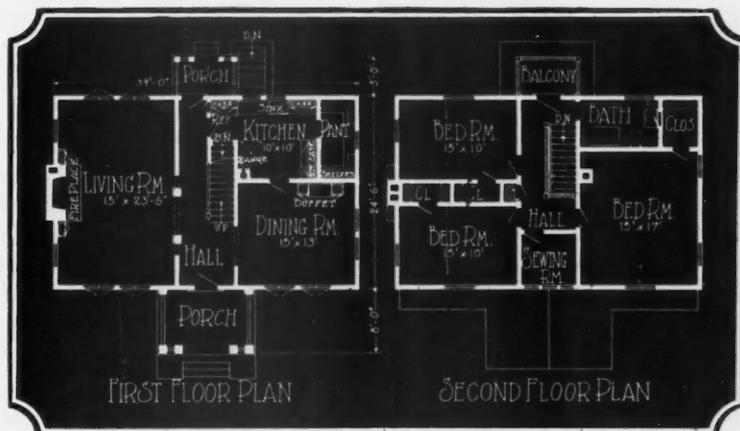


ATTRACTIVE SMALL HOUSE. A house of the sort that will appeal to folks wishing the maximum of housing effectiveness without the outlay of any excess expenditure for "frills." The roomy porch, recessed under the small extension gable, is roomy and inviting. It gives access direct into the living room, fitted with a fireplace and a window seat that has many decorative possibilities. A colonnade or French door arrangement separates from the dining room—well-lighted, with windows on two sides.

The kitchen has the working parts, such as the sink, cabinet, etc., placed where they will get the full benefit of light from the two windows, and the refrigerator is so placed as to have its ice placed in through the icing door from the porch outside. The pantry is well-lighted and roomy. The hall opening from the dining room leads to the bathroom and to the bedrooms, two in number, and both having good closet space. Outside dimensions over-all of this nice home are 33 feet 6 inches by 46 feet.

BLUE RIBBON HOMES

PRACTICAL
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SUBSTANTIAL, DIGNIFIED RESIDENCE. This house should appeal to the prospective homeowner who may have childhood associations that make the two-story dwelling still appeal as against the more modern bungalow. It is not too big, and does not make the work of house-keeping too great, but it presents a fine, dignified appearance, and an impression of well-proportioned interiors that the floor plans carry out. Downstairs, for instance, we have a nicely proportioned living room, reached from a hall which has all the old-time decorative possibilities of an

open staircase. The living room has a fireplace and light on three sides. Across the hall is the dining room, which connects directly with the kitchen. There is nothing old fashioned about this latter; it has every modern arrangement, using space to the utmost to give maximum convenience. Upstairs are three bedrooms and a bathroom, and a sewing room right at those three windows you see at the center of the second floor. Altogether, this is a substantial, dignified, extremely liveable home.

Walnut—"Brown Beauty"

A Wood Which Our Pioneer Builders Favored, Which the Cabinet-Maker Prizes, and Which Has Furthered the Achievement of Beauty in the American Home

By GEORGE N. LAMB

AMERICAN walnut, also commonly known as black walnut, is found growing wild from southern New England to central Georgia and west to central Texas, north to eastern Kansas and Nebraska and in the southern portions of the Lake states. While this territory is the original botanical range of the species, much has been widely planted and is now to be found in practically every state in the Union.

The commercial supplies of walnut logs come chiefly from the states of Ohio, Indiana, Kentucky, Illinois, Iowa and Missouri. The original hardwood forests, from the Atlantic seaboard west to the Missouri, contained a very considerable number of fine walnut trees, but much of this timber was cut out far in advance of other logging operations.

When the central portions of the hardwood belt were settled literally millions of fine walnut trees were cut, rolled into log heaps, and burned. Today there are no large stands of walnut timber. In the few remaining blocks of virgin hardwood timber a sprinkling of walnut trees is to be found but most of the commercial supplies come from isolated trees and small groups. It is very rare indeed that any one tract can be found containing as much as 100,000 feet of walnut.

The settlers in Pennsylvania, Maryland and Virginia early picked walnut as the most durable tree and used it unsparingly in the building of their rude cabins, furniture, and for rail fences. This practice was followed by the pioneers as they gradually made their way west to the Mississippi River.

The manufacture of walnut has always been more

or less of a specialty due to the fact that it was possible even in the very early days to go to considerable distance for walnut trees and to bring them to market at a profit. Today there are quite a number of exclusive walnut mills in the country but these mills find it necessary to reach out from 200 to 500 miles for their logs. The principal supply comes from logs that are gradually accumulated at the railroad by an agent or buyer, and mostly come from timber that is dead or dying and must be marketed in order to avoid loss. Some of it comes from timber cleared from new ground which the owner wishes to bring into cultivation.

Walnut trees are very universally preserved and protected throughout the country so there will always be a new crop of trees coming on. At the present time the farmers are planting it around their places in woodlots and in isolated spots where the land is not convenient for cultivation. A great many walnut trees are also planted as highway or roadside trees.

The production of walnut lumber has never been large at any time and for 20 years prior to the war there was an annual production of approximately

fifty million feet. However, practically all of this went into the foreign markets and the belief became prevalent in this country that walnut was virtually extinct.

During the war the production of walnut increased to over a hundred million feet a year and went exclusively into gun stocks and aeroplane propellers.

Since the war walnut, having been largely shut off from its foreign markets, has come into rapid popularity in this country and it is now a favorite wood



American Walnut Grows Wild in All Portions of the United States. It was favored by early pioneers for their cabins, furniture and rail fences. Now it enjoys the appreciation of those who value it as a pre-eminent finish and cabinet wood.



Beautiful Walnut Logs, but Often the Bane of the Sawyers' Lives, Since Careless Man Utilized His Friend the Walnut Tree for a Barbed Wire Fence Post, a Sickle Holder, and Other Uses That Leave Iron Imbedded in the Tree.

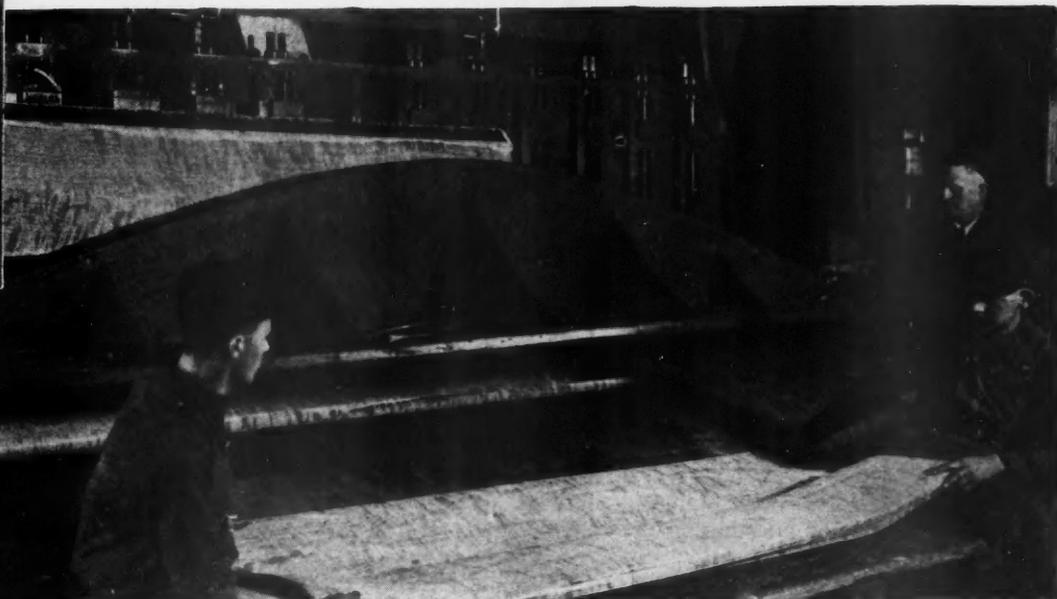
for furniture and interior trim.

The logging of walnut is more a matter of transportation than anything else. Most hardwood sawmills are supplied by the cutting of large tracks of timber from which the logs are taken to the mill, usually short distances, by log trains or water transportation. But for the walnut mill much of the timber now being cut is located at long distances from the railroads and is widely scattered. This condition has led to the use of motor transportation, which is much more economical for hauling logs 10 to 25 miles than would be the old team-hauling method.

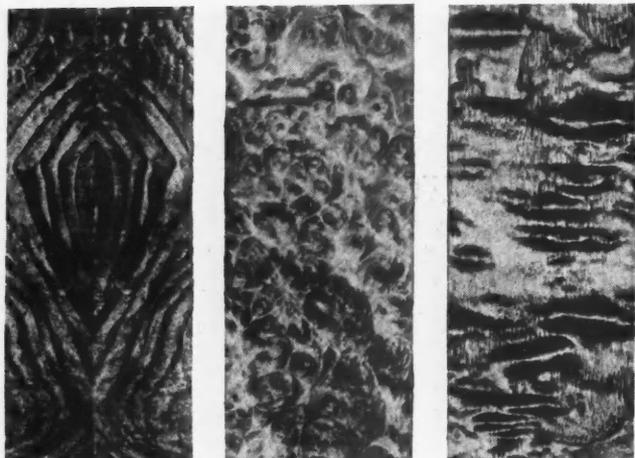
Walnut trees are usually cut with a stump only a few inches high except in cases where the stumps are particularly attractive and then the whole tree is grubbed out and the stump sent to market attached to the first log.

One of the greatest difficulties encountered by the walnut lumberman is the fact that almost every second walnut tree has imbedded in it some kind of hardware. The most common metal found is of course barbed wire and staples, but most every conceivable piece of iron is encountered. Spikes, sickle bars, sickles, hooks, clevises and horseshoes are a few of the things that have become imbedded deeply in walnut trees. When these logs are sawed the presence of this imbedded iron may not be found by the men that prepared the logs for sawing, altho each log is given careful scrutiny to discover evidences of iron. When a saw runs into a heavy piece of metal it usually rips out a large number of the teeth of the saw, which on a band saw means that the saw is practically ruined. There is also the possibility that in striking the metal the saw will be broken and this is extremely dangerous to the men operating the mill.

Nice, clean logs over 18 inches in diameter are more



Slicing—One of the Common Methods of Veneer Manufacture. An enormous knife cuts off thin sheets of walnut from the log. Above, a matched walnut veneer panel.



Rarely Beautiful Figurings of Genuine Walnut Which Explain Its Favor as a Cabinet Wood. No mere hand cunning could duplicate this patterning. Left to right, matched panel, Burl figure, and stump figure.

commonly used for veneers than for lumber, while the logs 12 to 17 inches in diameter are manufactured principally into lumber. Walnut veneers are cut in three different manners and in the last generation the walnut industry has made great improvements in producing beautiful veneers.

Perhaps the most common method of veneer manufacture is to peel off thin sheets of walnut from a log much as you would unroll a spool of wide ribbon. This method of manufacture requires a very heavy lathe and the wood is cut away with a knife.

Another method somewhat similar is to bolt a block of walnut to a circular lathe in such a manner as to make the block revolve in a wide circle. This is known as half-round cutting and is very commonly practiced.

The other method is slicing or sawing, and both of these methods produce quarter-cut stock.

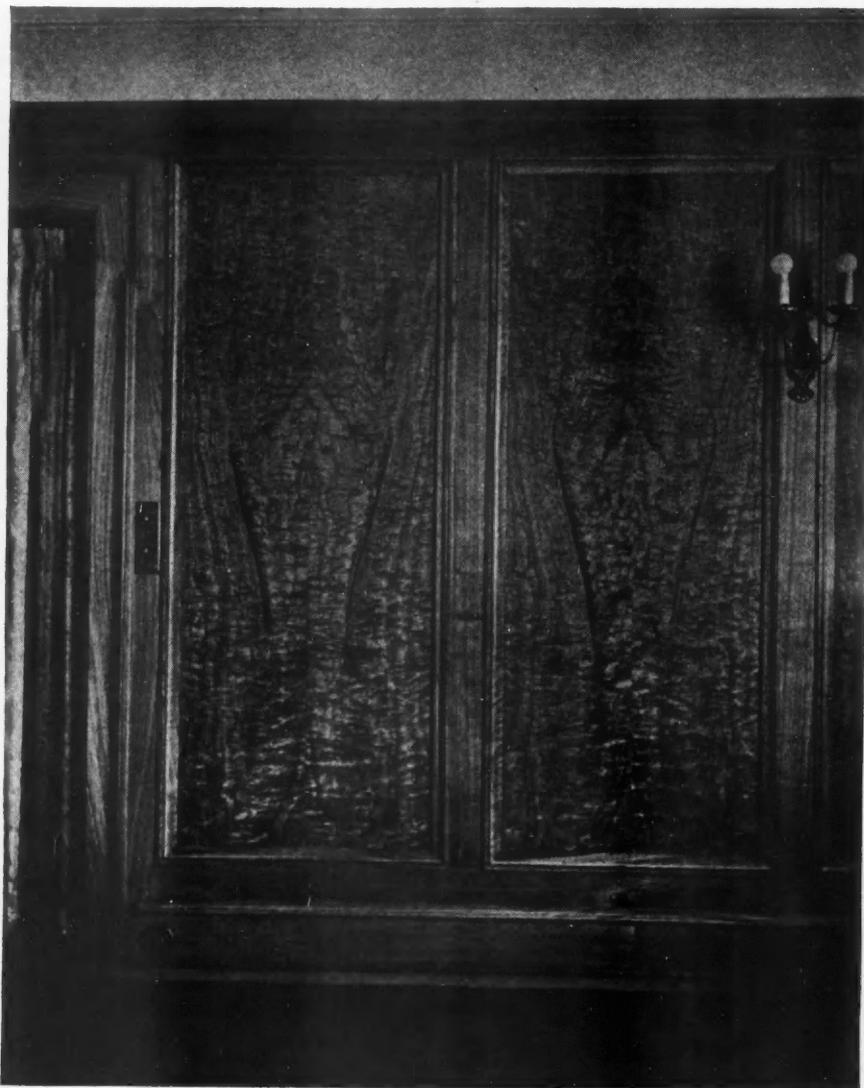
No two logs of walnut ever produce wood that is precisely the same in appearance and it is this individuality of each tree that makes walnut so attractive to the cabinet maker. Walnut is primarily a cabinet wood and except in isolated instances is not used for structural purposes. It is a favorite of the cabinet maker because it is strong, stable, durable, and beautiful. The wood is natural dark brown in color and requires little or no staining in the finishing of it.

The universal esteem in which walnut is held has led to the market-

ing of substitute woods finished to resemble walnut. Imitation walnut can always be detected if one will examine the wood carefully and look for the pores.

One of the most interesting uses of walnut in recent years has been its introduction as woodwork or paneling in houses built primarily to sell. Many operators have found that by using walnut interior trim in the living room and dining room or by paneling the hall and living room or dining room in walnut, they have been able greatly to increase the salability of a house. Walnut paneling is obtainable in stock sizes from the large panel manufacturers. The mouldings and other solid pieces of woodwork are obtained quite often directly from the lumber manufacturer as rough lumber and put thru a local woodworking mill.

The Government Forest Service estimates that there is over a billion feet of merchantable walnut in the country and this amount, even tho there were no young trees coming on, would maintain the present rate of production for 20 years. Therefore it appears that there will always be a fair amount of this handsome wood for furniture and the finishing of interiors.



Walnut Panels in the Living Room of the Residence of J. N. Penrod, Esq., Kansas City, Mo. This room gives the impression of being hung with rare tapestry.

Parables of Bildad the Builder

II. A Man Getteth Hep

MY lamented Sire, than Whom there was none Whomer, often Spake me Thusly: "A Weak Mind and a Strong Back sufficeth a Hod Carrier, but He who Useth his Shoulders to carry his Head supporteth Wisdom." And in like Manner he would Say: "Place not too Great a Strain upon a Man's Honesty, for when Sorely Tempted even a Saint may Fall."

Now at my Majority I left his Roof for the City of Make-Good-or-Make-Room, and right Proudly bore by Chest to my First Job.

Truly it was a Marvelous Building. "Verily, its Builder winneth the Rubber T-Square," mused I, "and Its Design would do Credit to a Puller in a Taffy Factory." And I Swore, taking out the Snags from my Plumb Line.

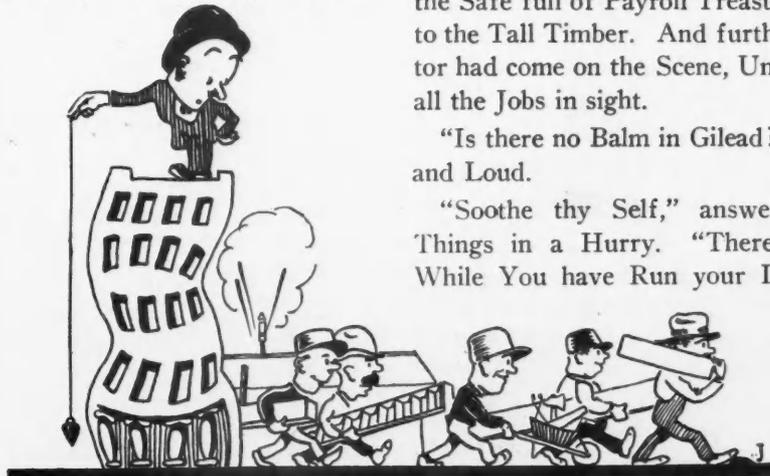
And at the Day's End the Foreman said: "Did I not Bargain with Thee for One Doubloon and Sixty-six and Two-Thirds Centavos an Hour? Here, take thy Pen and Sign for Two Doubloons per Hour, for Life is Too Short to Trouble with Fractions." And I thanked my Lucky Stars.

Now it came to Pass that I Walked Homewards with Sundry Fellow-Workers. And many bore Shovels; and others Picks; and others Kegs of Nails. And yet others bore Jacks and Ladders; and others, parts of Scaffoldings. And at Intervals they Turned their Faces Back toward the Building Marvelous and gave it the Merry Ha-Ha. And when I would Question them they Bent Double, crying: "Desist, for this is Our Little Joke."

Now bright and early in the Morning of the Second day I reported for Work. And there were Wagons Galore, with lumber for Scaffolding, and a Great Fleet of Trucks laden with Tools and Material. And a Wild Eyed Man rushed from the Construction Office and Signing his Mark, made off with the Speed of a Hare.

And when I Questioned my Helper he Answered: "He is the Big Boss, and a Whirlwind."

All day I labored, Envyng that Great Man. And at the End I Stood off, admiring this Building Marvelous, which merely grew, like the Damosel Topsy, and looked more a Corkscrew than Ever. And again the Tool-laden Laborers, passing on, Gave it the Merry Ha-Ha!



And While I Endeavored to Take the Snags from My Plumb Line Sundry Workers Wended Their Way Homewards, Bearing Tools and Materials and Giving the Building the Merry Ha-Ha.

"Truly one Might Weep with better Grace, for it is Pitiabie," I said. And then I heard Weeping, and turning Saw the Wild Eyed Man of That morning. But he Sped Hare-like no longer; rather Had he Lead in his Shoes. And I introduced Myself, a Humble Laborer on his Payroll.

"Ha!" he laughed, brittle. "Has it at last Come that one of my Men remaineth Beyond the Closing Hour? Art thou Crazy?" And then he Broke Down, and laying his Snout on my Shoulder sobbed forth his Dread Secret. For what with Estimating and Chasing Back and Forth with Bids and Financing and Securing Material and Tools and Meeting the Payroll he was Out of His Mind. And this Night, returning Weary to his Office he Had found it Cleaned Out, and Minus the Safe full of Payroll Treasure, and the Trucks gone to the Tall Timber. And furthermore a New Competitor had come on the Scene, Underbidding and Copping all the Jobs in sight.

"Is there no Balm in Gilead?" wailed he, Wild Eyed and Loud.

"Soothe thy Self," answered I, Guessing many Things in a Hurry. "There is a Remedy, surely. While You have Run your Legs off Your Laborers

have Run off with Your Tools. And Thank thy Stars thy Foreman is Gone with the Payroll, for Being no Sure Reckoner he Has paid Your Men Overmuch this Long

Time. And let us Get some System with Tools, checking Them in Nightly; and advise the Fathers of Families to Seek elsewhere than the Scaffold for Kindling. And be Glad to Kiss your Office Furniture Good-Bye, for Surely it was Cargo with Noah, and Invest in These new Office Fixtures and Devices that Figure and Estimate more Wisely and Expeditiously than Solomon. And as for the Competitor, let him Grab what he May; right gladly They may be to have you Step In and Complete at Your Own Figure, for when the Jug is Full Up then One may Safely Skim Cream."

And he fell on my Head, thanking loudly: "Henceforth Thou art my Superintendent."

And I was Glad that I had Improved on the Advice of my Sire, for Wise is the Man who Useth his Shoulders to Bear his Head, but Wiser Yet is he Who, Possessing his Head, useth It for Other than a Hair Farm.



WE like "Bildad." Do you? With encouragement we may be able to keep this Good Stuff going.

—EDITOR.

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.*

Making the Home Clothes Closet Moth-Proof Through Use of Aromatic Red Cedar

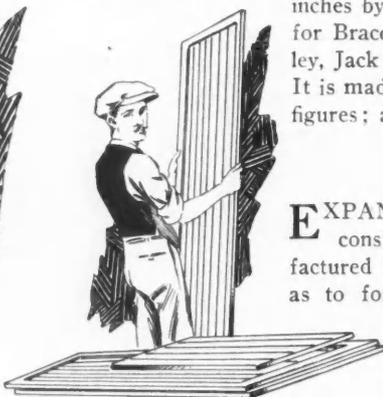
AROMATIC red cedar has long been known as an effective moth destroyer. This remarkable property of red cedar wood has been scientifically verified by the experiments of the United States Department of Agriculture. It is an inherent quality of the wood that actually kills moths. The wood is light, close-grained, compact and durable, red in color

and strongly aromatic, and has now become available at such low cost that it may be used in the most modest dwelling, as well as in the highest class of apartment, hotel, and residence.

Practically every architect and builder knows the value of this wood and have specified that one or more clothes closets of a home be lined with it.

Panels of Red Cedar Applied Directly to Wall Studs and Floor and Ceiling Joists While Building Is Being Erected.

In new construction lath, plaster, and base boards may be eliminated and the red cedar panels applied directly to studs on the walls and floor joists on ceilings. One of the illustrations shows this installation. In fire-proof construction the panels are nailed to



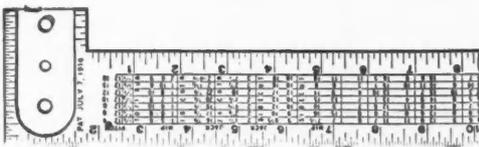
Installing Red Cedar Panels in the Clothes Closets of House Already Erected.

furring strips. Homes already built can have protection by installing panels as shown in the illustration. These panels are made up at the mill and installed by representatives. The measurements are so accurately taken that no cutting is necessary in the home. One of the illustrations shows panels as placed in old construction.

Clothes closets lined with cedar add a vital selling feature or "talking point" to the home, particularly since the cost of lining at the time of construction compares most favorably with that of lath and plaster.

"Take Down" Steel Squares

A HARDWARE manufacturer has brought out a patented "take-down" standard steel square with a screw locking device which is easily operated by a coin or any instrument that will fit in the slot of the screw. It is put together by placing the end of the tongue in a double seat on the body of the square, and is held together by two self-contained binding screws. A dowel pin located between the two screws insures keeping alignment.



The Take-Down T-Square Makes Handy Carrying of That Useful, but Otherwise Clumsy Tool.

There is a slight clearance between the body and the tongue when locked, which will take up any slight wear, and the screws are case hardened to withstand hard usage. The square can be taken apart easily even if rusty, as the tongue lifts out of the seat in the body when the screws are loosened. There are no parts to lose as the screws are self-contained. It is made in a body size 24 inches by 2 inches, tongue 16 inches by 1 3/4 inches, and on the square is information needed for Brace Measure, Patent Rafter Table, Table for Hip, Valley, Jack and Cripple Rafter and Table of Cuts for Polygons. It is made in plain steel; blued steel with enamel marks and figures; and also in Royal Copper finish.

Expanded Wooden Lath

EXPANDED wooden lath is now being manufactured, consisting of strips of carefully selected wood, manufactured by specially constructed machines, and expanded so as to form longitudinal strips connected by diagonal ribs.

The ribs are narrower than the strips so that the plastic covering when applied passes beneath and around these ribs, forming a perfect key, thereby becoming an integral part of the structure to which it is applied. The back of the lath is covered with paper of varying thicknesses to meet all requirements. It is manufactured in two thicknesses—



Strips of Carefully Selected Wood Are Pierced and Sliced by Special Machines and Backed with Waterproof Paper to Form This Expanded Wood Lath. The plastic mass oozes through and around, forming a perfect key.

5/16-inch and 3/8-inch, 16 inches wide, 4 feet to 8 feet long. It comes in bundles of 15 sheets in a bundle. Being made of wood, it is claimed for this new expanded lath that there is no oxidization of the body of the lath or subsequent deterioration from contraction and expansion. It has been subjected to rigid tests and meets all requirements.



A Pocket Level

MECHANICS are finding that a little pocket level, lately placed on the market, is extremely convenient. It weighs only 5/8 oz., and it occupies about the same pocket space as a fountain pen.

Its uses are almost as many as those of the larger wood level. It can take the place of the straight edge and level, with the assurance that the work will be accurate. It is very



Handy Pocket Level, Which Has Wide Range of Usefulness, and Takes Up No More Pocket Room Than Fountain Pen.

convenient in carpenter work, laying tile, stone, brick and cement walls, and for ditching, sewerage, laying drain tile, for grading of all kinds and for setting machinery foundations.

It consists of an accurate proved level glass, placed in a 3-inch special shape aluminum tube, and held firmly in place with plaster of paris filling. The end pieces and hooks are formed from one piece of nickel silver, and are attached to the tube by nickel silver rivets that pass through the tube and through the lugs at the top and bottom between the hooks and the center of the level, thus preventing the hooks from pulling out of alignment in case of rough uses. The clip is of spring nickel silver and is securely fastened under the end pieces.



Handy Steel Scaffold Brackets

THE steel scaffold bracket is here to stay. It undeniably has many advantages, and the choice naturally lies between the waste and extra of the old style wooden bracket and the easily applied efficiency of the steel one—with the latter winning from first choice.

The scaffold bracket illustrated requires no nails and is claimed by its manufacturer to be most compact when folded up. It can be put up by one man in a very short time, and

its steel hook is so designed that it can be put through a very small hole in the sheathing. The tension put on the hook by the chain causes the hook to draw the bracket tight against the sheathing, eliminating side swing. To guard most effectually against the latter the top bar is reinforced by an angle bar section which makes assurance against side swinging doubly sure. The bracket was subjected in one test to a pull of 700 pounds from its extreme end before any bend became evident in the brace.

The top bar is made of two pieces of seven-eighths inch by one and three-eighths inches steel, riveted together, and is durable and very strong. The angular support bar is one inch by one inch tee steel. The perpendicular bar is made of two pieces of one inch by one inch angle steel.

Steel scaffold brackets invite the attention of the builder and contractor desirous of turning an expense item into one that means profit.

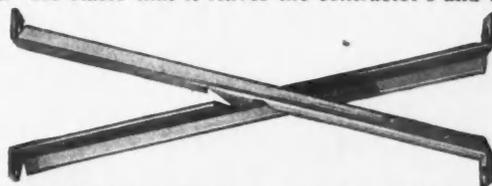


The "Safety First" Possibilities of the Steel Scaffold Bracket Are Evident from This Illustration.



Steel vs. Wooden Bridging

ONE manufacturer is making steel cross-bridging which is made of one piece of metal jointed at the center. It requires four nails for each piece of bridging, and two cross-bridgings can be out in place in the time wood bridging would require. He states that it leaves the contractor's and builder's



Steel Cross-Bridging Is Neat, Dustless, Dirtless, Tight, Warp-Proof, and Neither Splits or Dries Out.

cost installed much below that of wood, and the new bridging is coming into wide use among up-to-date builders and contractors. It comes in bundles of 100, convenient to handle, and with each piece ready to nail in place.

Revising Building Codes (Part 2)

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

Editor's Note: This is the second of a series of abstracts American Builder is making from the report of the Building Code Committee of the Department of Commerce, and is done to give wider publicity to the Committee's Recommended Minimum Requirements for Small Dwelling Construction. The others will follow in succeeding issues.

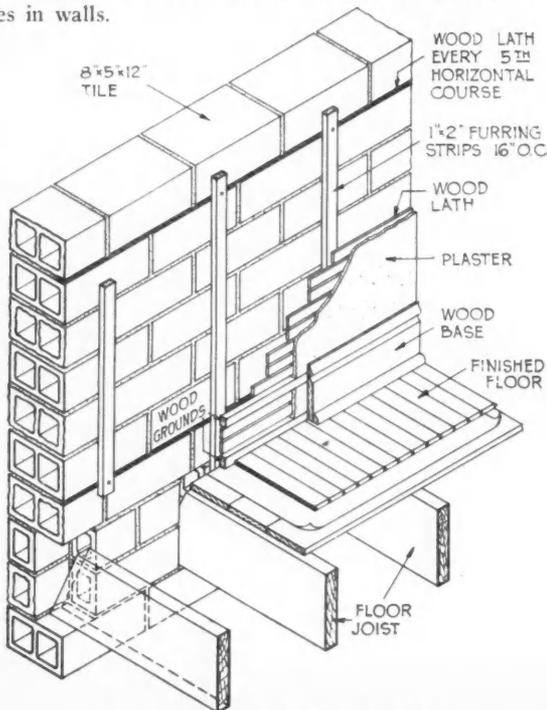
Dwellings Having Walls of Hollow Building Tile, Hollow Concrete Block or Hollow Walls of Brick

ARTICLE III

The minimum thickness of exterior walls built of hollow building tile, hollow concrete block, or hollow walls of brick, shall be 8 inches for the uppermost 20 feet. The total height shall be limited to 30 feet, provided that when gable construction is used an additional 5 feet is permitted to the peak of the gable.

All tile and block walls shall be bonded in every course by breaking joints at least 3 inches. Where a 3-inch facing of stone ashlar or terra cotta or a facing of brick is used, the thickness of the hollow-wall backing may be 2 inches less than that required for exterior walls, provided the facing is well bonded to the wall.

Note. The expression "hollow walls of brick" used in the above section and hereafter includes only those of the all rolock types built with a solid row of headers immediately below and above the ends of joints. The term "hollow concrete block" shall be understood as including all types of hollow concrete block units, including those designed for use in combination to bring about interior spaces in walls.

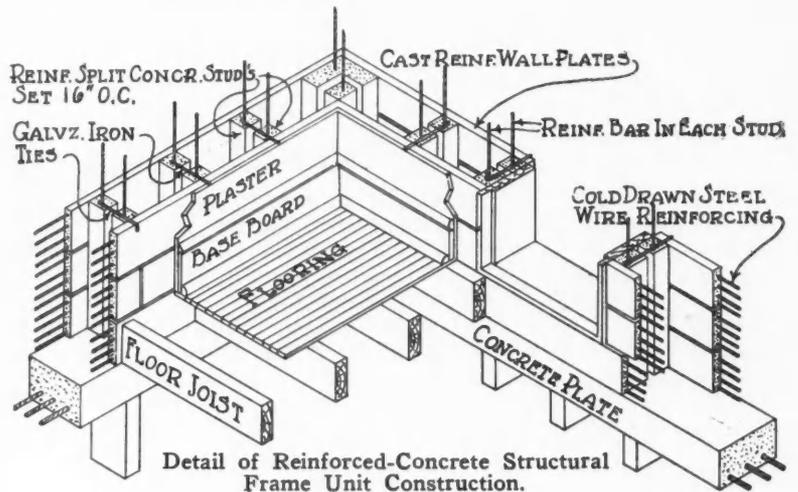


Detail of Hollow Tile Construction.

A running bond of 6 inches will usually be found most satisfactory in providing for openings, when using the standard sizes of tile. When hollow building tile is combined with a facing of brick or cut stone, a masonry bond between the two materials should be used, so that the entire thickness may act as a bearing wall.

So far as is possible the cross webs of one course should rest upon those of the course below, and care should be taken to insure full mortar joints on all web-bearing surfaces.

Arch lintels may be constructed successfully of hollow tile. A practical form of tile lintel is made by butting a sufficient number of tile end to end, filling the cells with concrete, and inserting reinforcement rods in the lower tier of cells, thereby obtaining the effect of a reinforced concrete beam. The coarse aggregate for such filling should not exceed one-half inch diameter.



Detail of Reinforced-Concrete Structural Frame Unit Construction.

Sills should project at least 1 inch beyond the finished surface of stucco, and to prevent passage of moisture a window sill of solid materials should in no case extend entirely thru the wall.

Section 9. Piers of Hollow Building Tile or Hollow Concrete Block.

Hollow building tile or hollow concrete block shall not be used for isolated piers unless solidly filled with concrete. The unsupported height of such piers shall not exceed ten times their least horizontal dimension.

Section 10. Bearing for Concentrated Loads.

Walls of hollow building tile or hollow concrete and hollow brick walls on which beams, joists, or concentrated loads rest shall be provided with bearing plates or courses of solid tile, brick or concrete. Such bearing plates when of tile or concrete shall be of form adapted to the service required.

Section 11. Chases.

Chases shall not be permitted in 8-inch walls. In thicker walls chases shall not be cut but may be built in, and the back of the chase shall not be less than 6 inches thick.

Section 12. Quality of Materials.

Hollow building tile: The average compressive

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strength of hollow building tile used for exterior or party walls or piers, laid with the cells vertical, shall not be less than 1,200 pounds per square inch of gross sectional area tested with the webs vertical.

The average compressive strength of hollow building

tical height of 12 inches, shall be placed over all wall openings and at corners of the structure to prevent cracks. Floor and roof connection details shall be designed to transmit safely the vertical and horizontal loads imposed.

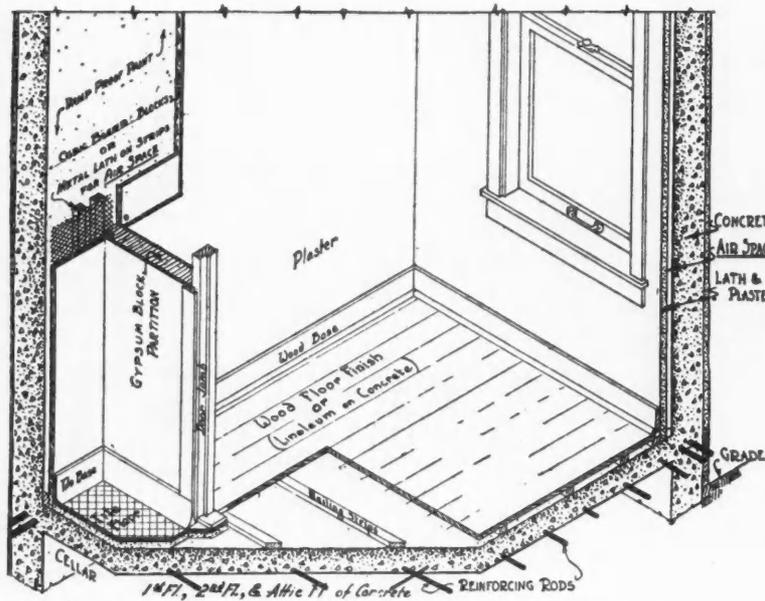
3. Hollow monolithic walls shall have not less than 6 inches aggregate thickness of material. Wall openings and corners shall be reinforced in the same manner as solid monolithic walls. The inner and outer parts of such walls shall be securely braced and tied together with non-corrodable ties or other means to bring them into common action. Where floor and roof systems are carried by such walls, provision shall be made for the distribution of these loads to all parts of the wall.

Note. "Monolithic" refers to a construction method where the concrete is placed in forms and remains in place in the structure. It is accomplished with various systems of forms ranging from those for casting a complete house in one operation to those for casting small portions of walls in courses.

Section 14. Unit Construction.

Precast concrete units for construction of dwellings shall be of sufficient strength, and where necessary shall be reinforced to carry safely the loads imposed. Connections between the several parts of each structure shall be sufficiently strong and rigid to resist the vertical and horizontal forces which may be imposed.

Note. "Unit" describes a type of construction in which precast units differing from ordinary concrete block or concrete tile are employed.



Detail of Monolithic Concrete Dwelling Construction.

tile laid with the cells horizontal, and which are tested with the cells in that position, shall not be less than 700 pounds per square inch of gross sectional area.

Hollow concrete block: The average compressive strength of hollow concrete block used for exterior or party walls or piers shall not be less than 700 pounds per square inch of gross sectional area tested as used in the wall. Hollow concrete block or tile shall show not to exceed 10 per cent absorption, under a 48-hour test.

Brick for hollow walls shall conform to requirements of Section 7.

Mortar: Either cement mortar, or cement-lime mortar, as defined in Section 7, shall be used for walls of hollow unit construction or hollow walls of brick.

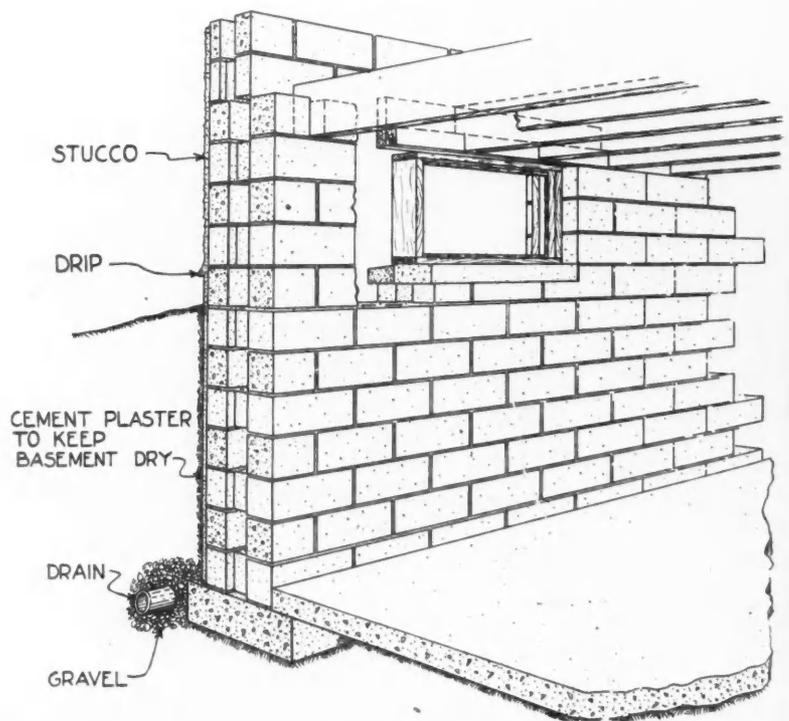
Concrete Dwelling of Monolithic, Unit or Structural Frame Type

ARTICLE IV

Section 13. Monolithic Concrete Dwellings.

1. Monolithic concrete construction containing not more than two-tenths of one per cent of reinforcement shall be classed as plain concrete. Solid bearing walls shall be at least 6 inches thick.

2. Reinforcement not less than two-tenths of one per cent, computed on a ver-



Detail of Concrete Block Construction.



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lasting asbestos in the Flexstone Shingle is a permanent protection to the roof on which it lies.

Where the average composition shingle is fire-resistant for a few moments only, a Flexstone Asbestos Shingle will withstand an intense flame for a very long time.

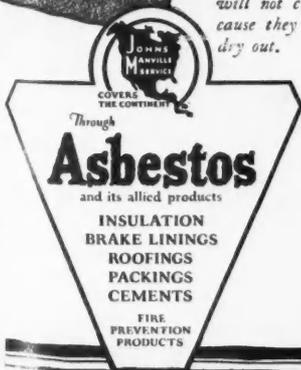
True, Johns-Manville Flexstone Asbestos Shingles cost a bit more than some others—but it is so little—only a fraction of a cent per shingle. You will find your prospect only too glad to give this little in exchange for genuine fire safety.

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JOHNS-MANVILLE Asbestos Shingles

Section 15. Concrete Structural Frame with Inclosing Walls.

Dwellings constructed with monolithic reinforced-concrete frames cast in metal lath or other forms, and with inclosing walls of concrete plastered or shot on metal lath, or of precast units carried by such frames, or having reinforced-concrete bearing walls, shall be designed in accordance with standard methods of reinforced-concrete design to carry safely the dead weight of the structure and the live loads which may be imposed. Inclosure or panel walls shall be of sufficient strength and rigidity to resist lateral forces and transmit them to the framework.

Note. "Reinforced-concrete structural frame with light inclosure and partition walls of reinforced concrete." This type has a structural frame of reinforced-concrete columns, beams and girders and floor slabs cast in place, and thin inclosure walls plastered and back plastered or shot with a cement gun on wire mesh or metal lath attached to columns and beams.

"Blocks, brick or tile of concrete laid into walls with mortar joints." City building codes do not, in general, provide for the construction of concrete houses of all the four types described, and thus good systems of unit construction of great promise and sound fireproofing and money-saving advantages are not permitted merely because they are not mentioned in the building codes. (The italics are ours.—The Editor.)

Section 16. Height of Concrete Exterior Walls.

The height of exterior concrete walls of the minimum thickness specified in Section 13 shall not be greater than 30 feet. Where gable construction is used, an additional 5 feet is permitted to the peak of the gable.

Section 17. Floors, Floor Beams, and Columns.

Floors, floor beams, and columns shall be designed in accordance with standard methods to carry safely the loads imposed.



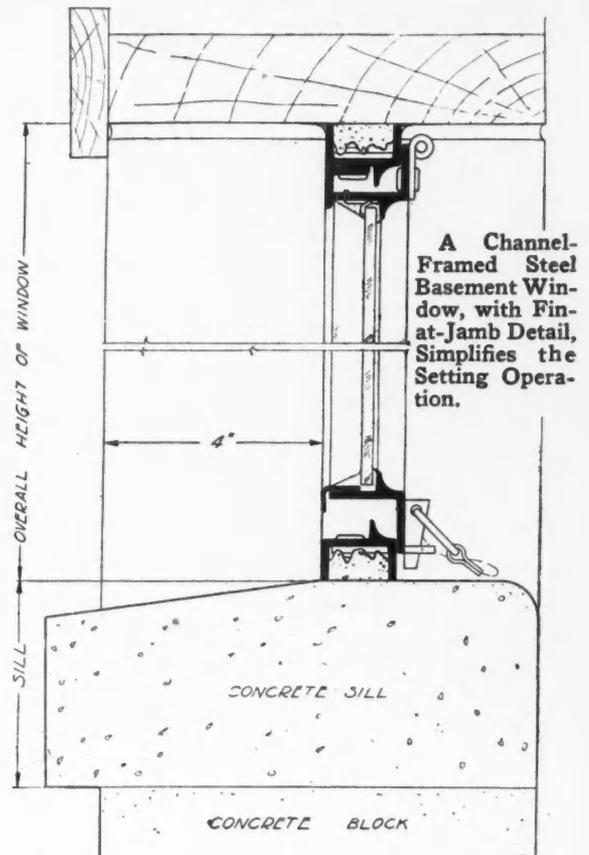
The Steel-Framed Basement Window

By N. A. HARRIS

IT is not necessary to plumb the jambs of the window openings in concrete block construction when a steel basement window with channel frame and fin-at-jamb detail is used. As the drawing shows, the edge of the extending fin acts as a guide to the mason as he lays up the blocks.

The two most popular sizes for use in this type of a basement are the two-light windows with 12"x18" and 14"x20" glass. The latter has an over-all height of 23 $\frac{3}{4}$ " and a width of 31 $\frac{1}{4}$ ". The height of three concrete blocks laid up with $\frac{1}{2}$ " mortar joints is about 25". (This varies somewhat, depending upon the locality where the blocks are made). It is evident, therefore, that the window set on a 1 $\frac{3}{4}$ " cement base, without a sill, will exactly equal the height of three blocks laid up, while the width is just a fraction under the width of two concrete blocks laid end to end.

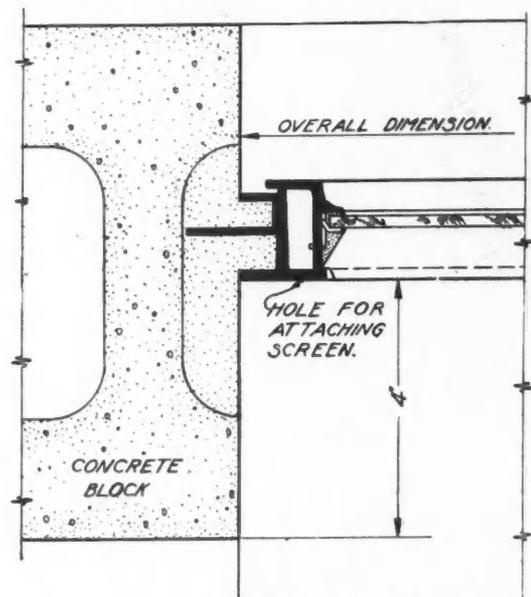
The best way to set this window is to bring the wall sill high. Then plug the holes in the blocks immediately beneath the window with wood plugs or wadded building paper. Cut two small blocks exactly 1 $\frac{3}{4}$ " thick by about 3" long and lay them on the wall far enough apart so that the corners of the window will rest on them when the frame is in place. Then spread a liberal supply of cement on the wall between and around the blocks, making it about three



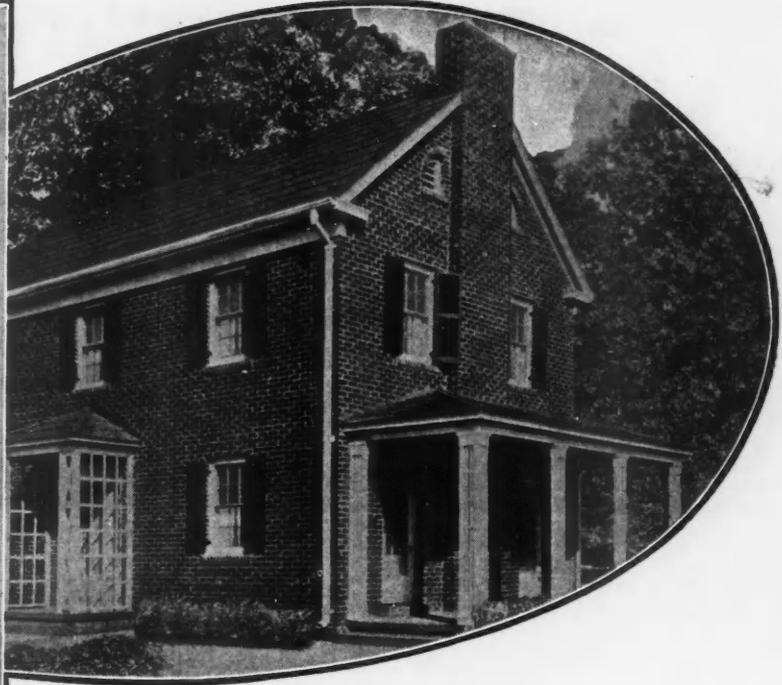
inches thick. Set the window in place and press it firmly into the cement until it is plumb and rests firmly on the two wood blocks.

The window will remain upright without bracing while the mason lays up the wall on either side. Place the blocks snugly against the edge of the extending fin and fill the channel groove and the concave rebate at the jambs as shown in the detail.

Finally trowel off the cement beneath the window to form a drip and point up both the inside and the outside of the jambs. Care should be taken to see that the jambs, when grouted up, will not bind the ventilator. A weather-tight joint at the head can be secured by filling the channel groove with mortar just before laying the bond timber.



The Edge of the Extending Fin Acts as a Guide in Laying up Blocks.



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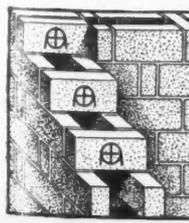
Photographs and floor plans of 60 beautiful brick homes—of wide range in type and price. Also valuable information as to modern money saving uses of common brick.

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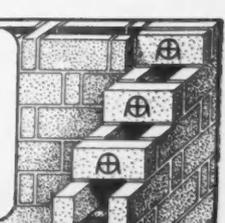
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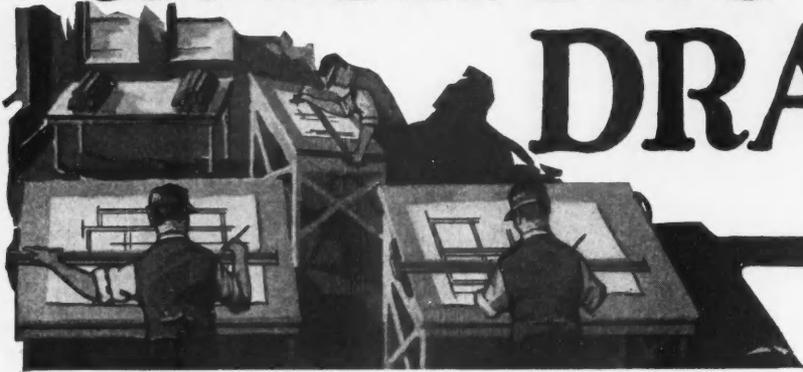
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ARCHITECTURAL DRAWING



Plan Conventions and Symbols

The Fifth of a Series of Articles of Great Practical Value to Builders

By M. K. TEACH

Instructor in Architectural Drawing, Bradley Polytechnic Institute

IN a previous article we have discussed the preliminary plans and sketches which eventually lead up to the working drawings. These preliminary sketches must, however, be approved by the client before the architect or draftsman can begin preparing the working drawings from them. A complete set of scale drawings consists of all plans, elevations (often interior as well as exterior), sections, and details, supplemented by a set of specifications necessary for the construction and completion of the building.

It is this set of drawings upon which the contractor bases his estimate and bids for the job, consequently they must contain complete information, dimensions and details to prevent any "extras" being charged to the owner by the contractor. In small or medium sized buildings the plans and elevations are made to the scale of one quarter inch to the foot. Due to the extreme size of the drawing that a large building would necessitate, this scale is sometimes cut down to one-eighth or even one-sixteenth inch to the foot, but this condition very seldom arises in residence work.

The plan of the principal floor should be laid out first and this, in the case of practically all buildings, would be the first floor plan. Due to the smallness of scale the architect cannot draw everything out in detail on the plan so he uses a great number of symbols and conventions to represent various parts and fixtures, such as windows, doors, light outlets, plumbing fixtures, etc. Many of these symbols and conventions with their application to a first floor plan of a frame Colonial residence may be noted from the accompanying illustrations. We might say in general that any part of the plan that will later be drawn up in a larger scale detail will be shown on the plan by a hastily made symbol.

This is also true of those parts of the building of which the contractor or workman on the job is familiar and of which there will be no detail drawn. It will be well for the student to draw at one-quarter inch to the foot scale, all the plan symbols herein illustrated, in order to become at least partially familiar with them before attempting to incorporate them in a set of plans. If the plan is to be symmetrical it is always best to lay it out from a center line and arrange it on the paper so the front entrance of the house will be toward the bottom of the sheet. However, in a number of cases this position on the paper will not be satisfactory. Such is the case in a long and narrow building where it may not only be awkward but may not even be possible. Next after the center lines lay out the walls and partitions according to the approximate dimensions determined when the preliminary drawings were made. At this time the draftsman should neglect all windows and doors and stress all thought upon the layout of the rooms.

After the complete layout is secured the draftsman erases parts of the partition walls where the doors are to be located. The doors and windows may now be drawn in according to the conventions illustrated in this article. Other details such as stairs, fireplaces, built-in buffets or cabinets, plumbing fixtures, and light outlets may now be drawn in, leaving the dimensioning and lettering until last. The material of which the walls are composed should be shown as illustrated but nevertheless each set of plans should contain a schedule of materials, which defines the system of material indication applying to all structural and decorative features.

This system of indication should always be sufficient to clearly define the materials which the contractor is

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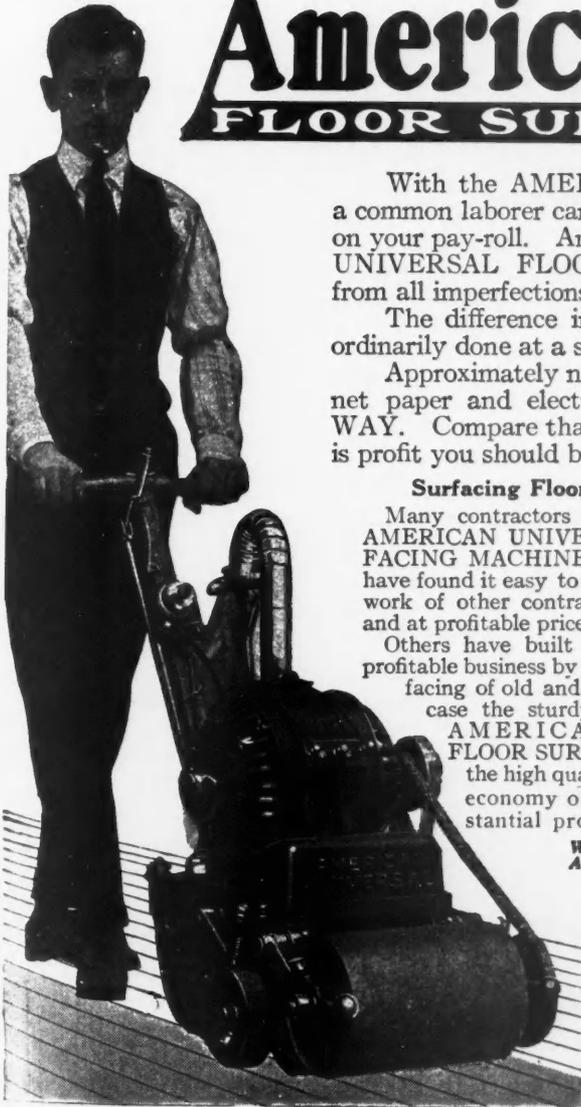
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expected to furnish, wherever such materials appear on a drawing, yet any scheme exacting a toll of more time than is absolutely necessary to differentiate between the various materials must be considered as a type of inferior draftsmanship. The material indication cannot be completely done by means of draw-

possible to build either a masonry or frame wall to any absolute dimension which the draftsman might assume. It sometimes happens that figures must be given to fix certain spaces between partitions such as that of a stair well for example, and in such cases the dimensions are run so as to show the space between studs and not the space from plaster line to plaster line. If the building is of masonry construction, dimensions are shown from outside face of outer wall to one face of the inside masonry partition. If, however, the outside wall is masonry and the partitions are frame, the dimension line should extend from the outer face of the outer wall to the center of the stud partition—the same as for frame structures. In locating the window or door openings in frame buildings, with respect to corners or projections, the dimensions are figured from the edge of the sheathing to the centers of the openings. In dimensioning the size of the window in a frame building it is customary to give the size of glass to be used, the horizontal dimension being given first in every case. The mill makes the frame to fit the size glass given and so no further dimensions need be given.

The stock sizes of glass run in even inches such as 20, 22, 24 inches, etc., although it may be cut to any fractional part if necessary. In masonry construction the width between the corner of the wall and the edge of masonry opening is given and the width of the masonry opening is figured in feet and inches.

MATERIAL INDICATION

IN PLAN OR SECTION		IN ELEVATION
	BRICK	
	FRAMING	
	LUMBER	
	FINISH	
	STONE	
	TILE	
	METAL	
	CONCRETE	
	PLASTER STUCCO	

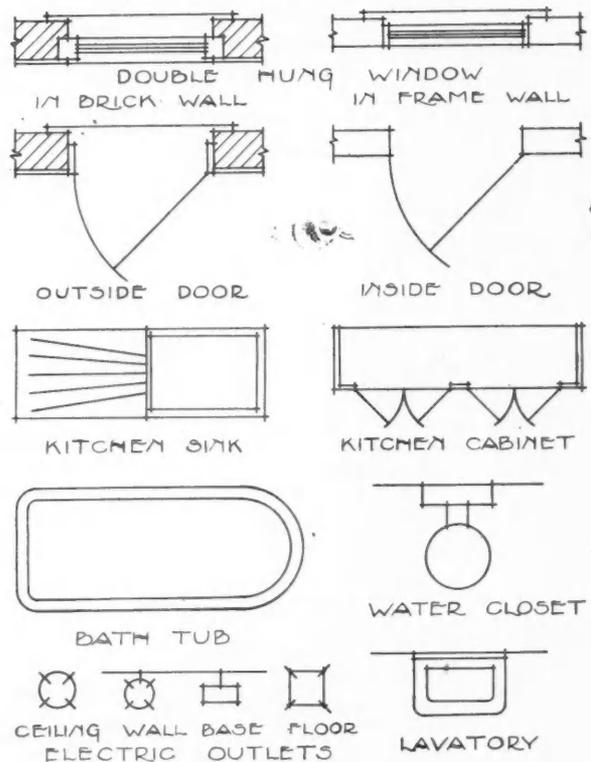
The System of Material Indication Should Always Be Clearly Sufficient to Define the Materials Which the Builder and Contractor Is Expected to Furnish.

ings alone and must be supplemented by notes and specifications.

Let us now consider the dimensioning of the plan, for the importance of dimensioning plans and elevations completely and correctly cannot be emphasized too greatly. No dimensions of any structural form to be built by the contractor should be left to guess or chance but sizes of parts with which the contractor has no concern should be carefully omitted. Dimensions should be placed on a drawing so as to be read from the bottom and the right of the sheet. Never from the left or top. In general, it is best to dimension spaces within frame buildings on dimension lines running from the plane of the sheathing on the outside of the building to the center of inside partitions.

It is customary, however, for some architects and draftsmen to dimension the actual room size, that is, from wall to wall. This method does not appear to me as being at all logical for the draftsman in this case must assume some thickness for the wall. Naturally some thickness for the wall must be assumed when it is drawn on the plan but it is practically im-

CONVENTIONS AND SYMBOLS AS SHOWN ON PLANS



After the Complete Layout Is Secured the Draftsman Erases Parts of the Partition Walls Where the Doors and Windows Are Located. These and other Details may now be drawn.

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In this case the size of the glass is not given, for the mill then makes the window frame to fit the opening. Some draftsmen prefer dimensioning the openings in brick walls in the same manner as previously described for frame buildings, that is, the dimension line running from center to center of openings, but this is not considered best practice. When the latter method is used some difficulty usually arises with brick widths and courses. In residence design, the sizes of the doors are usually given where they appear on the plan, noting the width, height, and thickness and information as to glass panel or transom. The horizontal dimension, that is the width, must in all cases be given first.

The width of doors is regulated largely by the purpose for which they are intended. In residences a 3-foot or 3-foot 6-inch outside door should be used, while under ordinary circumstances a 2-foot 10-inch, 2-foot 8-inch or even 2-foot 6-inch door would suffice for interior doors. Closet doors may be as narrow as 2 feet but 2 feet 6 inches is a better width. The height of doors

is somewhat regulated by appearance and utility. Interior doors are often made so as to line up with the head casings of the windows—transoms sometimes being used to accomplish this end. Stock sizes of doors range between 2 feet by 6 feet to 3 feet 6 inches by 9 feet. The sizes increase by 2-inch intervals. Inside doors run $\frac{7}{8}$ -inch, $1\frac{1}{8}$ -inch, $1\frac{3}{8}$ -inch, and $1\frac{3}{4}$ -inch thick but inside communicating doors should never be less than $1\frac{3}{8}$ inches in thickness.

The dimensions of sizes of the various rooms of the building are to a great extent determined by the size, kind and amount of the furniture and fixtures to be placed within it. For most pieces of furniture there is no fixed or established size, so the following dimensions will be given as approximate or average sizes. These, however, will be accurate enough to allow for, when the plan is being laid out and unless specified no heights will be given in this list.

- (1) Library tables, 30 inches by 48 inches.
- (2) Dining tables, 36 inches by 36 inches.
- (3) Piano, parlor grand, 58 inches by 72 inches.
- (4) Piano, upright, 32 inches by 68 inches.
- (5) Chair, Morris, 26 inches by 28 inches.

- (6) Chair, rocker, 26 inches by 26 inches.
- (7) Chair, straight back, 18 inches by 18 inches.
- (8) Bed, single, 36 inches by 80 inches.
- (9) Bed, three-quarter, 48 inches by 80 inches.
- (10) Bed, double, 56 inches by 80 inches.
- (11) Sideboard, 26 inches by 60 inches.
- (12) Kitchen cabinet, 26 inches by 48 inches.
- (13) Refrigerator, 26 inches by 36 inches.
- (14) Davenport, 32 inches by 80 inches.

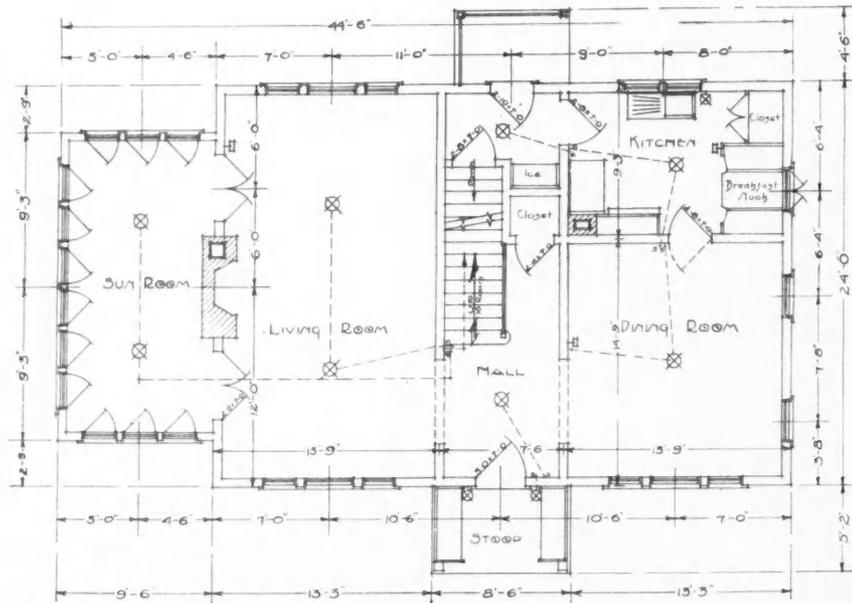
For the draftsman the nominal lengths of bath tubs are 4 feet, 4 feet 6 inches, 5 feet, 5 feet 6 inches, and 6 feet. The widths are generally 30 to 34 inches, including the roll. Six inches should be left between partitions and the foot of tubs for plumbing fixtures.

Lavatories are available in a wide range of sizes and types. There is the light type attached to the wall by means of brackets or is supported by means of metallic or porcelain legs; there is the corner type similar to the one just mentioned; and there is still a third type which stands free of the wall and supported on a porcelain pedestal. The last type mentioned is of course the most

expensive. Basins should be placed near a window if possible and if mirrors are to be included in the contractor's bid, they should be shown in the plans. The most common sizes of lavatories are 14 inches by 17 inches, 15 inches by 19 inches, 16 inches by 21 inches and 20 inches by 24 inches.

For the draftsman's purpose the following sizes for syphon water closets with overhead tanks are accurate enough, but are only approximate on account of the varying types. The over-all width of seat is usually 15 or 16 inches. Depth from the wall to front of seat is 23 inches but if the low down type tank is used, 25 inches should be allowed for this dimension.

Under the title of sinks we must include those for kitchen use, those for pantry use, and those for slop use. The common forms of kitchen sinks are 16 inches by 24 inches, 18 inches by 30 inches, 20 inches by 30 inches and 20 inches by 36 inches. Drain boards are usually used in connection with kitchen or pantry sinks and may be had in various sizes, the more common being 18 inches by 24 inches and 20 inches by 24 inches. These boards should have grooves in it to facilitate drainage and it is customary for the drafts-



Illustrating the Approved Method of Dimensioning a Floor Plan. The dimensions and sizes of the various rooms of the building are to a great extent determined by the size, kind and amount of furniture and fixtures to be used.

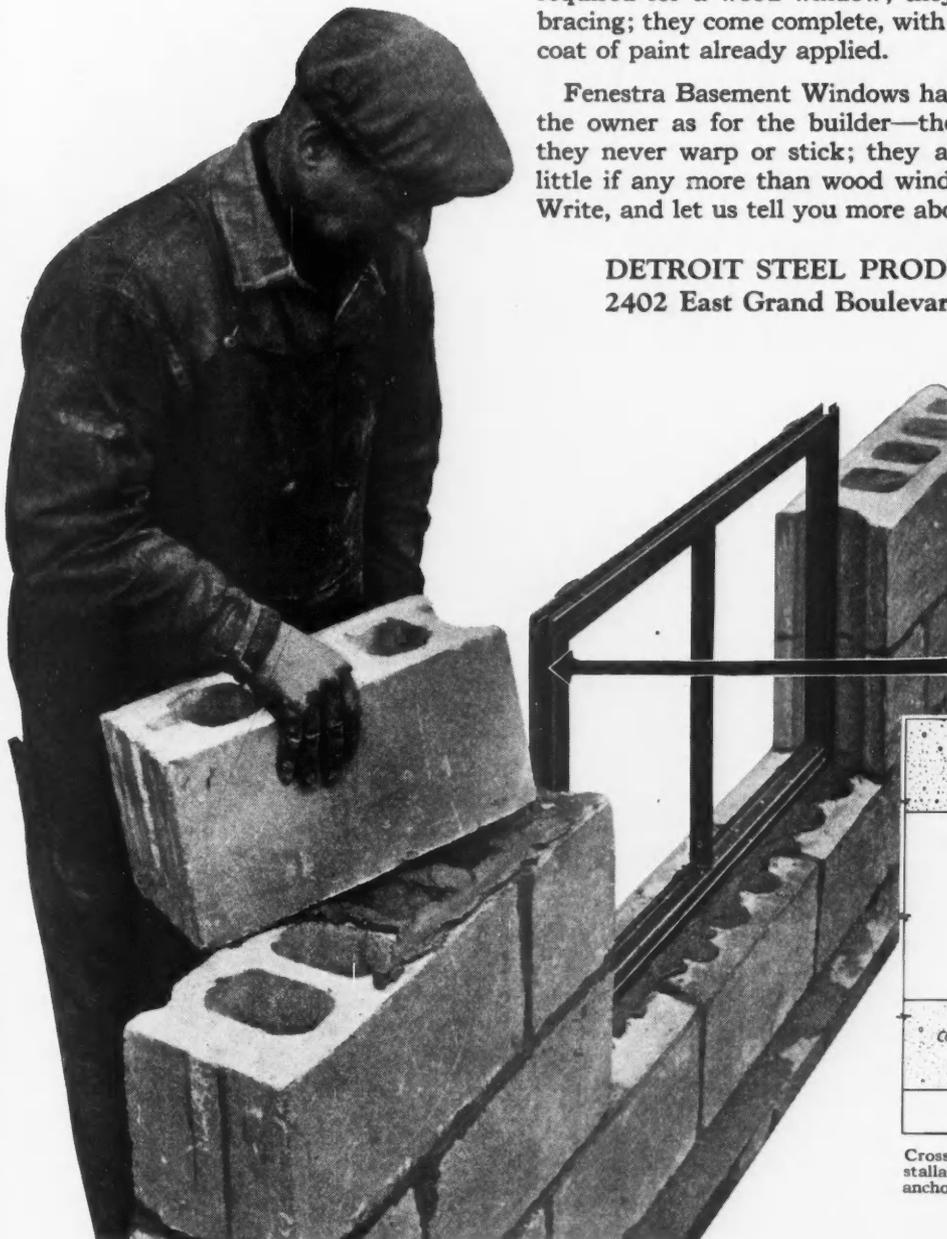
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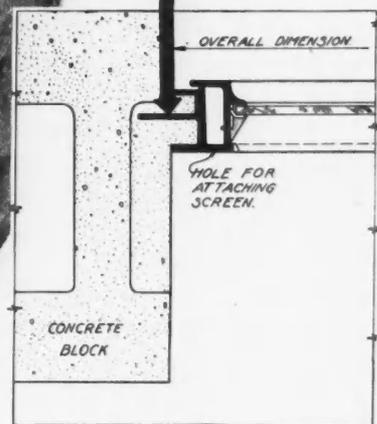
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man to show these drain lines on the working drawings. Drain boards may be placed at either or both ends of the sink. Slop sinks are commonly made of cast iron and may be had in sizes varying from 16 inches by 16 inches to 20 inches by 48 inches.

On the plan the outside walls of brick houses are shown 9 or 13 inches thick with an extra line inside to indicate furring and plaster. If the building is to be of frame construction the outside walls will be shown seven inches thick and main partitions six inches. Some partitions, however, such as closet partitions may show either four or six inches depending upon whether the 2 by 4 studs are placed with the 4-inch face parallel or perpendicular to the face of the wall.

Where flue linings of fireclay or terra cotta are shown on the plan, the draftsman must allow for four inches of brick work to incase it on all four sides. The building code of various large cities requires both the terra cotta flue lining and the four or more inches of brick work. Outside dimensions of terra cotta flue lining are $4\frac{1}{2}$ inches by $8\frac{1}{2}$ inches, $4\frac{1}{2}$ inches by 13 inches, $8\frac{1}{2}$ inches by $8\frac{1}{2}$ inches, $8\frac{1}{2}$ inches by 13 inches, 13 inches by 13 inches and larger.

The sizes of some features that govern the shape and size of rooms have just been given but these alone do not determine the layout of the rooms. One of the first considerations perhaps is the cost, for every person considering buying or building a small home wants the most space obtainable for his money. Regardless of the cost, style or arrangement of the house it must be kept in mind that the main consideration is to provide free circulation, that is, the means of getting from one room to another with the least possible exertion, time and number of steps. This usually necessitates a hall on both the first and second floors of a residence. It is often desirable to have a small rear hall as well as the larger front hall. These should be connected by a door. The large front hall at times seems like a useless waste of space but it provides a place to receive guests, remove wraps, and to enter most of the rooms from, so after all it does not seem like a needless expenditure of money. Also, the front stairway should start from this hall and never from the living or dining rooms. It is often advisable, however, to arrange for a rear stairs, especially if the residence is of more than moderate size.

In the average small house the living room serves as a parlor, reception hall, music room, den and library. Space should be left on the first floor for a small room which could be used as one or more of the last five rooms named. When there is no separate library, the living room should contain bookcases and a fireplace if possible. The living room, in many small houses, especially the small bungalow type, must not only serve as living room but also as dining room. This feature is not at all desirable and the whole design would be benefited if they were two separate, adjacent rooms connected by double doors or sliding doors.

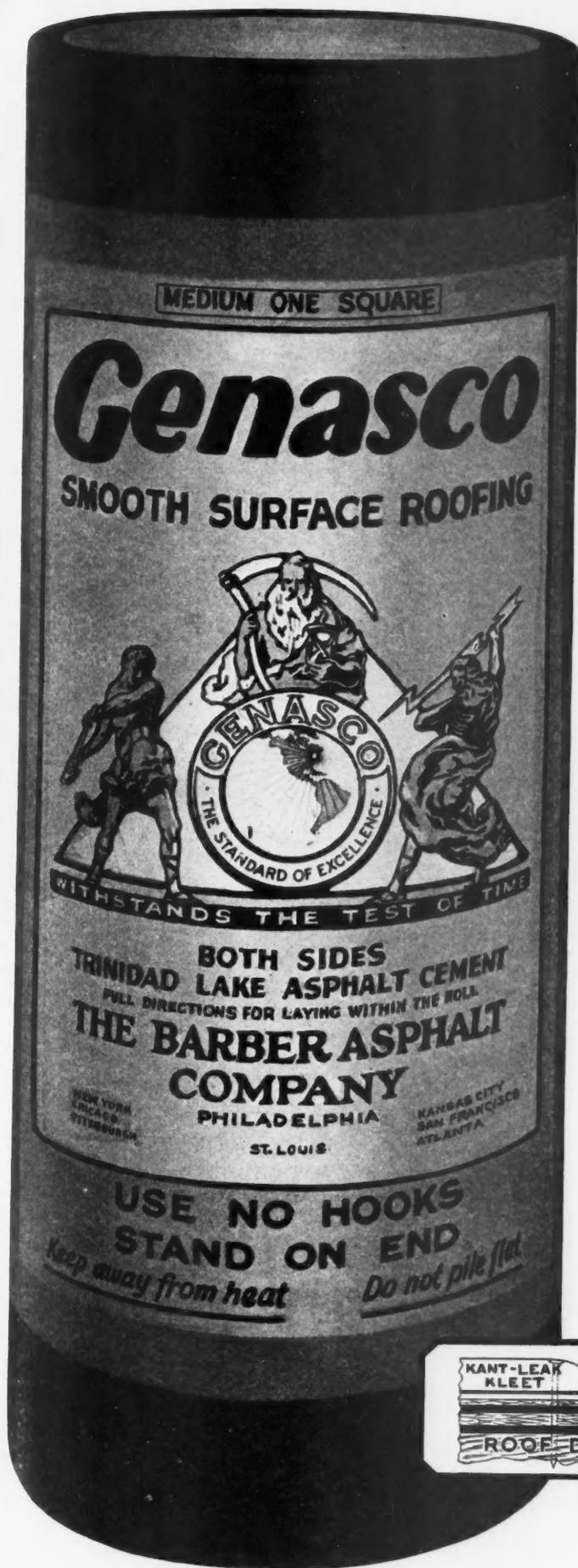
There is at the present time quite a diversity of opinion among housewives concerning the location of the dining room with respect to the kitchen. Some insist that a pantry should be placed between the dining room and kitchen while others most strenuously protest that feature and insist that it makes too many steps for the housewife. The former treatment is perhaps the best after all things are considered for it prevents a view into the kitchen, prevents the odor of cooking food from entering the main part of the house and serves as a place to prepare certain dishes before



In the Average Small House the Living Room Serves as a Parlor, Reception Hall, Music Room, Den and Library. The day bed is utilitarian and supplants the old style lounge.

being taken into the dining room. Where direct communication between kitchen and dining room is desired by the client, the draftsman should indicate a double swing door connecting the two rooms.

The kitchen should be so placed in the house that it will be easily accessible from the street for the delivery boy. For this reason many suburban homes have the kitchen placed at or near the front of the house. This necessitates the rear yard or garden being kept neat and presentable as a view from either the dining or living rooms. Every house should have a grade door easily accessible to the kitchen and leading off the stairway from kitchen to basement. Not many years ago, the kitchen was planned as one of the largest rooms in the house but the fallacy of this design is easily seen when one considers that a certain member of the household usually puts in many hours of the day walking from one part of the room to another. It should be convenient, compact, well ventilated and well lighted. One common fault among most kitchens is the lighting for in so many cases the housewife is required to cook or wash dishes with the light shining on her back and thus casting a shadow on her work.



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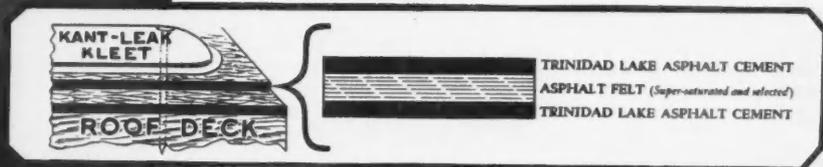
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Select Trucks Carefully for Purpose Intended

By P. L. SNIFFIN

ONE very important feature of motor truck use by building contractors is the actual adaptation of the vehicle selected to the task at hand. Individual conditions are so different from one builder to another that requirements vary widely. For instance, there is the matter of considering the truck's wheelbase dimensions and deciding whether the average hauling task can be accomplished more readily with a certain



Contractors and Builders, and Especially Those Specializing in Road-Building Work, Find Substantial Advantage in Using Swinging, Adjustable Partitions in a Dump Truck Body, as Shown to Right.

length of wheelbase. Where short turning or manipulating in narrow spaces is necessary, the contractor will find it best to specify equipment with short wheelbase. The accompanying illustration, for example, shows a 3-ton truck operated by Acampora Brothers, builders, of Mamaroneck, N. Y. It will be seen that the truck is considerably shorter than the average of its capacity, so the truck is able to drive through places and reach loading and unloading points that might otherwise be impossible. The contractor will find, in surveying the motor truck market, that practically all makes and sizes of trucks are supplied in long and short wheelbase sizes, and therefore it is well to consider individual running conditions before reaching a decision on the type of vehicle installed.

Contractors and especially those who specialize in road-building work, will often find substantial advantages in a type of dump truck body divided into compartments by swinging, adjustable partitions as shown

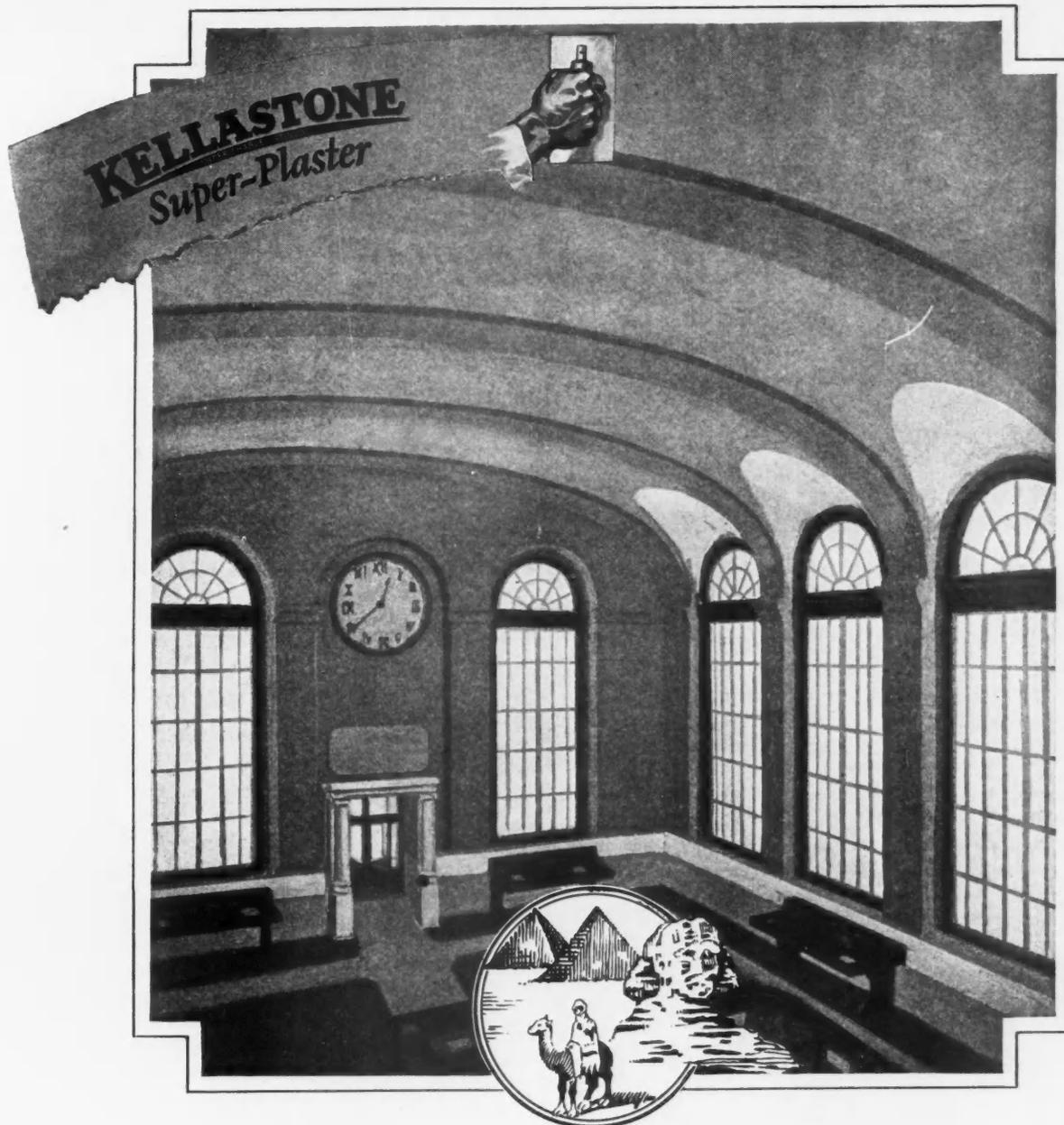
in the second illustration. For instance, Johnson, Drake and Piper, highway contractors of Minneapolis, created considerable interest among other contractors in that section by demonstrating without question the practicability and economy of using trucks for paving work. On a 15-mile paving project in southern Minnesota the "dry batch" method was used, employing a centrally located proportioning hopper from which correctly measured batches of sand, crushed rock and cement were delivered simultaneously into the different compartments of the truck body. The hauling equipment consisted of ten 2½-ton trucks with dump bodies divided crosswise in the center by a swinging partition.

After receiving the sand, crushed rock and cement the trucks pro-

A 3-Ton Truck, with Short Wheelbase, Which Sacrifices No Carrying Capacity and Enables the Driver to Reach Loading and Unloading Points Otherwise Inaccessible.



ceeded to a crawler type mixer located on the road at a point where the paving was being laid, and discharged the rear batch first in the skip of the mixer. By elevating the skip, this batch was dumped directly into the drum of the mixer and the skip was then lowered again to receive the second batch from the truck. The body of the truck was kept in an elevated position during the time the skip was delivering the first batch into the mixer, and the second batch was discharged simply by operating a trip lever on the outside of the body. Each batch measured 30 cubic feet and each truck carried two batches. Record of from 2½ to 3 miles of road construction per month were made.



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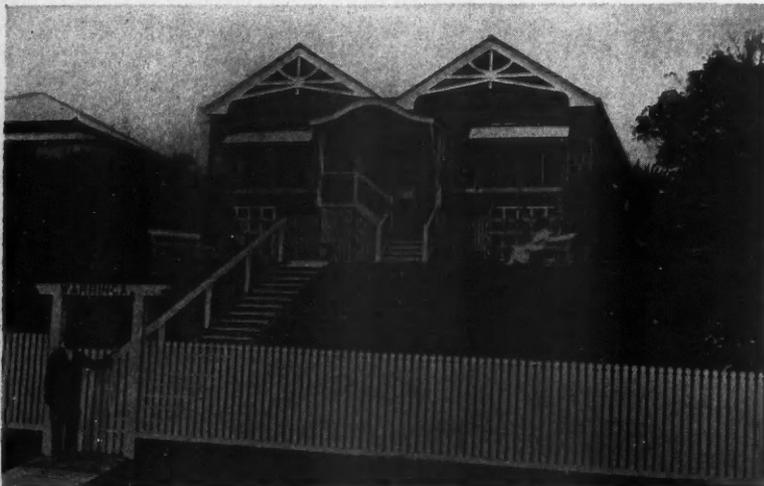
Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Architects and Builders

Home Building in Australia

To the Editor: Maryborough, Queensland.

Enclosed is a photograph of a seaside residence erected for Mr. John A. Fairlie a governing director of this company. It faces the rising sun on the foreshore of Hervey Bay at Pialba, distant about twenty-four miles from the city of Maryborough, Queensland. A good train service connects the towns and a good motor road is also made use of. The bay is of large extent and has a brown beach on which motor cars travel, and on which horse-racing is also indulged in. For some miles it is two hundred feet wide. It is a favorite spot for tourists who like fishing and swimming.

The house is situated on a 64-foot frontage, the building being 40 feet wide by 64 feet deep. The front portion forms one large living room, 40 feet by 16 feet, and is screened by glass windows and movable slat louvres on the front and both ends so that a breeze is always obtained in our hot weather. From the front embankment a stone can be thrown into the sea. The building is all constructed of wood with a corrugated iron roof. The lighting is obtained from a home light and power unit with a battery of accumulators. On the photograph are shown two palm trees at each side of the entrance. Immediately in front of the house at each side are rose trellis stands and small beds of crotons. The name "Warringa" over



Seaside Residence of Mr. John A. Fairlie at Maryborough, Queensland. Notice the moveable slat louvres, to entice the capricious Australian breeze.

the gate entrance signifies "Haven of Rest." Mr. John A. Fairlie, the owner, is the man standing at the gate.

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Chiseling Cleans Mixer

To the Editor: Allentown, Pa.

In reply to B. J. King of Hesston, Kansas, in regard to a caked concrete mixer:

Can it be cleaned? Yes, with a little patience and hard work. Just a week ago I cleaned our mixer. I took off the head, by loosening the bolts. With the aid of a chisel and heavy hammer I chopped my way straight through, and hammering on the drum, it came out fairly good.

R. E. ELLIOT.



A Couple of Handy Kinks

To the Editor: Detroit, Mich.

Am enclosing a couple of kinks which, though possibly old to some, deserve to be more widely used.

To Patch a Broken or Rusted Screen. Cut a piece of screen wire a little larger than the hole to be patched square or oblong as the case requires. Pull out one cross-wire around outer edge, then bend to a right angle position. To do this easily, cut a wooden block $\frac{3}{8}$ inch smaller than the patch. Lay the patch on block and bend edges squarely. Now mesh these into screen about the hole to be patched, hold a flat iron behind it and bend wires over.

To Ream a Hole in Wood. For instance: A $\frac{5}{8}$ -inch hole is too small, and you wish to make it $\frac{11}{16}$ -inch. Take an $\frac{11}{16}$ -inch bit with sharp side cutting lips, start in hole and turn backwards.

T. H. I.



To Construct Springing Floor

To the Editor: North Chelmsford, Mass.

I would like to ask AMERICAN BUILDER readers if they can tell me how to construct a springing floor for a small dance hall, 23 feet by 45 feet. Thanking you in advance, I am,

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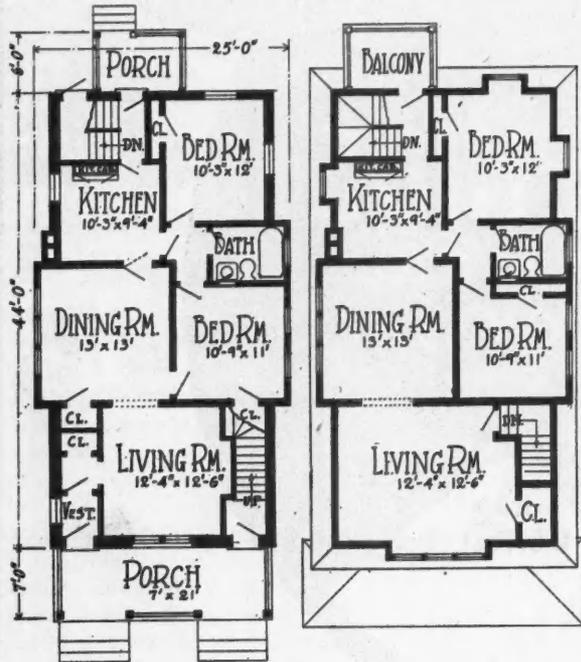
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CHICAGO, ILLINOIS

Duplex Homes in Reading Pa.

To the Editor: Reading, Pa.
 The first bright day last month I secured the services of a photographer to take the picture of the duplex house you see below, only to find when I reached it that another builder had come and likewise taken a photograph of the place, besides measuring it up—so the lady told me.

The first story is of light brick, the mansard of slate, and the roof tin—120 pound to the box. The living room and dining room are finished in chestnut, and the balance in cypress. Bathrooms are finished complete, with medicine cabinets. Both apartments are the same as to floor plan.



Floor Plans and Illustration of Duplex Houses Mr. Gring Is Erecting in the Suburbs of Reading, Pa.

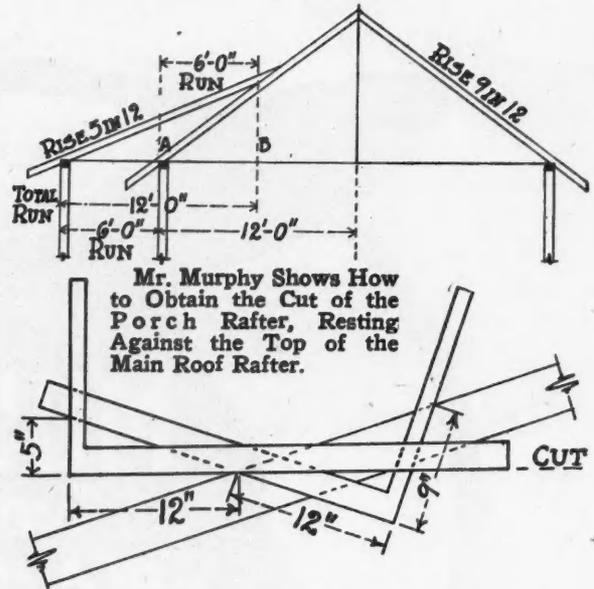
Hot water heat is used, and there is a stove heater in the basement for the kitchen hot water supply. The basement is cemented, likewise the walks, curb and gutter. A garage in nearly every instance is built and sold with the duplex house.

Nearly all my buildings are in this suburb, Hyde Park. I have built about one hundred houses in this section, from a bungalow to a three-story house. This duplex apartment home is the first one I have built. Things here are almost as busy as in the past summer.

DAVID E. GRING.

Mr Cooley's Problem Solved

To the Editor: Prairie Grove, Ark.
 I am enclosing some diagrams, answering Mr. Cooley's question in the February issue, page 144.



I find the AMERICAN BUILDER very helpful in my work.
 E. M. MURPHY.

Likes Hollow Wall Construction

To the Editor: Isle, Minn.
 In reply to J. H. Cronkhite of St. Helena, Ore., on hollow wall construction, I have used hollow wall construction for many years, and can frankly state it is the best wall that can be built for the money. It is better than other types of wall; about as cheap as a wooden wall.

Our company, the Isle Construction Company, has a number of buildings built on that plan. Some have been in use eight years and the owners will prove they are warmest in winter and coolest in summer—and in summer we have temperature as high as 99 degrees in the shade, and in winter down to 36 degrees below.

One of the main items is gravel. If your gravel cost is not too great the wall will compare favorably with a wooden wall in cost. Here is some data from my records:

On a building 50 feet by 110 feet I employed seven men—five at \$3.00, one at \$4.00, and one at \$5.00 per day. I used 108 sacks of cement, 18 yards of gravel, and 700 feet of No. 6 wire. We made two courses per day on an average, each course being 9 inches high. It was a 13½-inch wall, as follows: 6 inches concrete; 2½ inches air space; and 5 inches concrete, tied by ¼-inch iron cross ties, or just plain brick ties. I used two different makes of machines; either makes a good wall.

A. O. PETERSON.

Catch Questions Easy, Says Mr. Pollock

To the Editor: Downington, Pa.
 In one of your late issues you had a question sent you by a Belgian engineer about the amount of money in dollars a certain man would have to have in order to divide it among his four sons and charity. I have solved the question and find that he had \$1,021. By adding \$1,024 to this sum and by adding it again and again you can obtain any number of amounts which will satisfy the conditions.

Such questions are easy meat for us old builders. Tell your Belgian engineer to send them along.

W. I. POLLOCK, JR.,



What Is The Actual Profit On Your Store Front Jobs

ONE of our Brasco contractors states that he has made more money in the last six months with Brasco Copper Store Front materials than he ever made in twelve months before with any of the several other types of construction previously tried.

Here are the reasons for the bigger profits Brasco gives: (1) Brasco can be installed by ordinary workmen—you save skilled labor costs. (2) Brasco construction is simple—complete details and plans furnished enable you to set up jobs quicker. (3) Brasco construction endures—

no other sash gives you the selling advantage of Brasco Kalemein sash with the patented creosoted wood core that lasts indefinitely. (4) Brasco setting is **safe**—your glass breakage losses are practically nil. (5) Brasco assures beautiful finished jobs—jobs that advertise you and bring you a steady stream of new business.

The Brasco catalog, Brasco details, designs and your **personal** check-up on Brasco installation costs will open your eyes, too!

Mail the coupon for bigger store front profits!

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COPPER STORE FRONTS

BRASCO MANUFACTURING CO.
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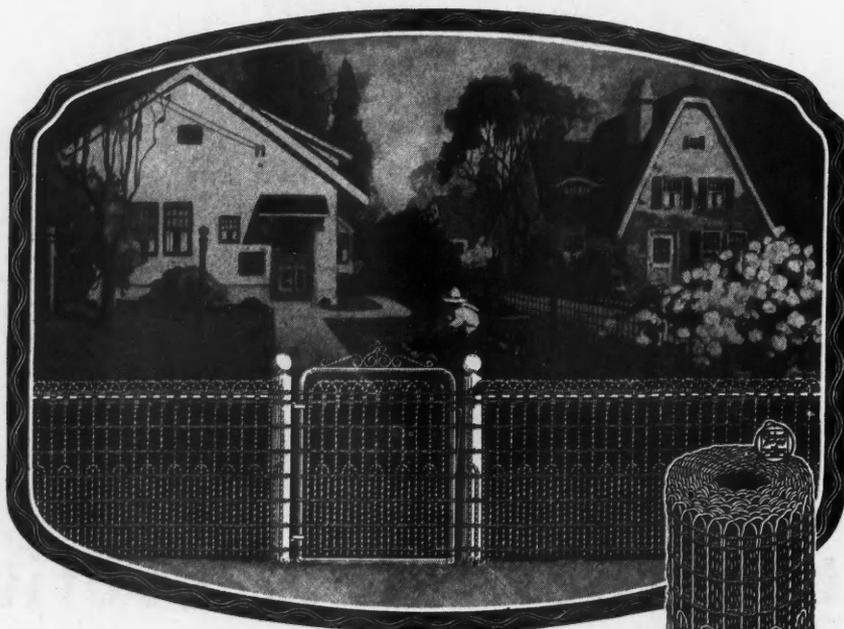
Gentlemen:

Brasco Profits Interest Me!
Send me your catalog and tell me how I can make more money installing Brasco Copper Store Fronts.

Name.....
Street and No.....
City..... State.....
(AB 5-23)

CYCLONE

Fence and Gates



Gives Premises a Finished Appearance

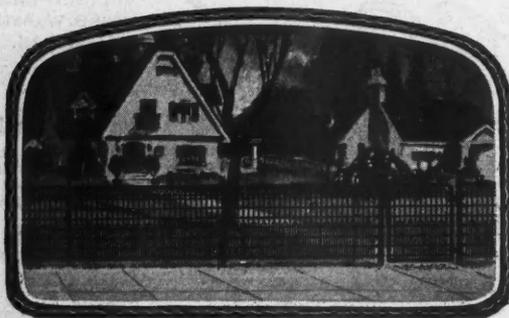
Increases Value of Property

Cyclone Fence imparts an impressive effect of completeness to home premises. Establishes privacy; gives individuality to the home; adds to the attractiveness and thereby increases the value of property. Through the protection it affords, Cyclone Fence inspires greater pride in and insures better care of property. Encourages the cultivation of beautiful home surroundings. The result is a more desirable and harmonious neighborhood that attracts the better class of home owners.

We gladly extend the services of our engineering department in selecting appropriate fence, solving fencing problems and lending any assistance that will assure satisfactory fencing service for any purpose.

The Cyclone Fence Company will contract for the erection of fence complete, or, if desired, will furnish construction superintendent at moderate cost to supervise installation of fence anywhere.

Furnished in 10 and 20-rod rolls for wood posts and 2x4 top rail.



CYCLONE COMPLETE FENCE

Complete Fence with Tubular Steel Frame Work

Particularly suited to front yards and division fence. Includes all posts, railing, fabric, gates, fittings, etc., to erect fence complete. "Complete Fence" is made up in the Cyclone Factory exactly in accordance with diagram as furnished by purchaser.

For particulars and catalog, write nearest offices, Dept. 33

CYCLONE FENCE COMPANY

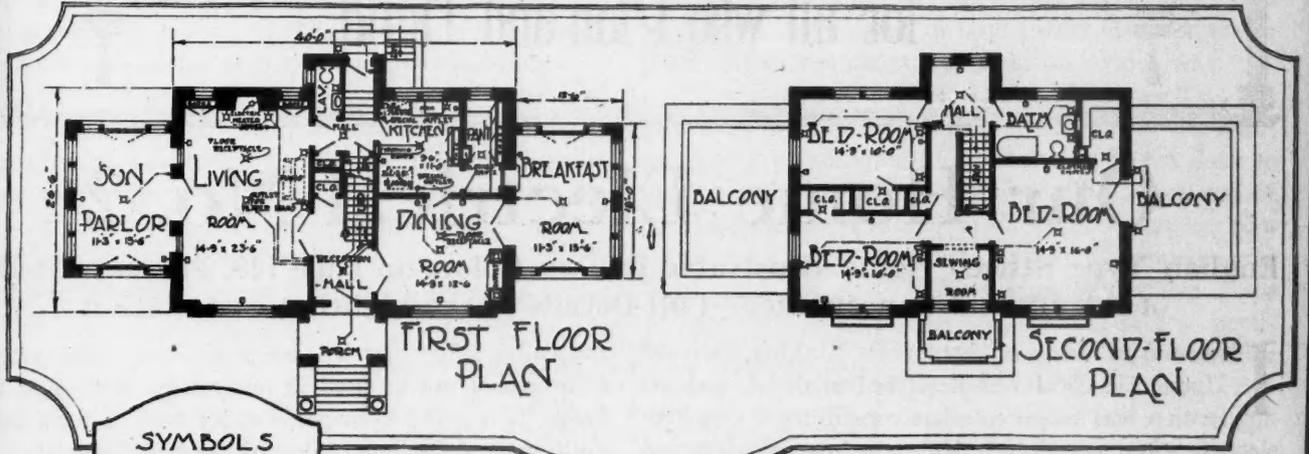
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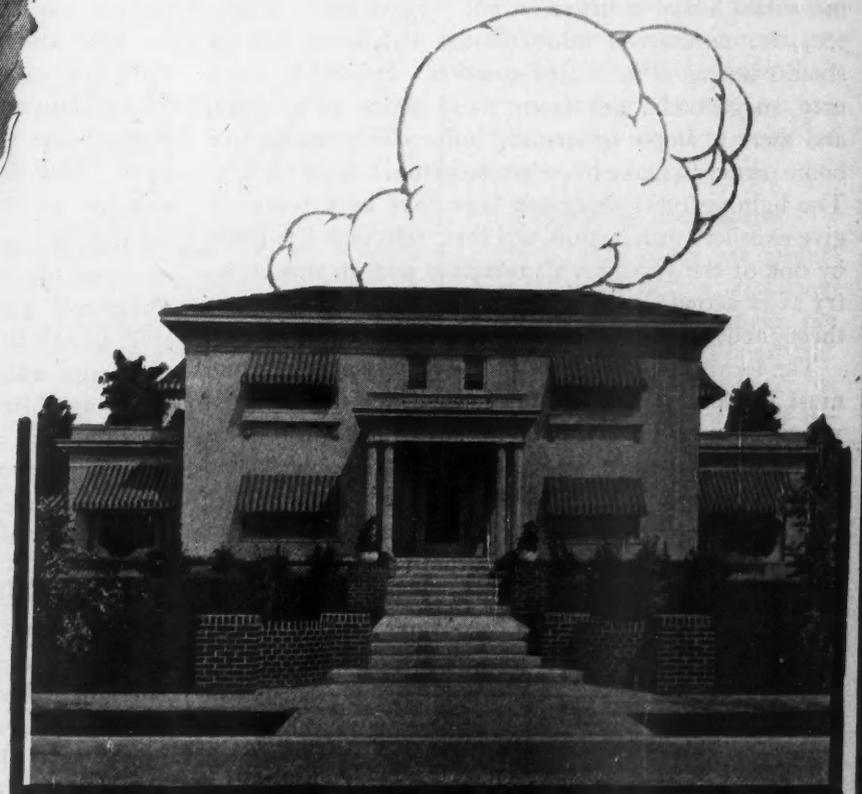
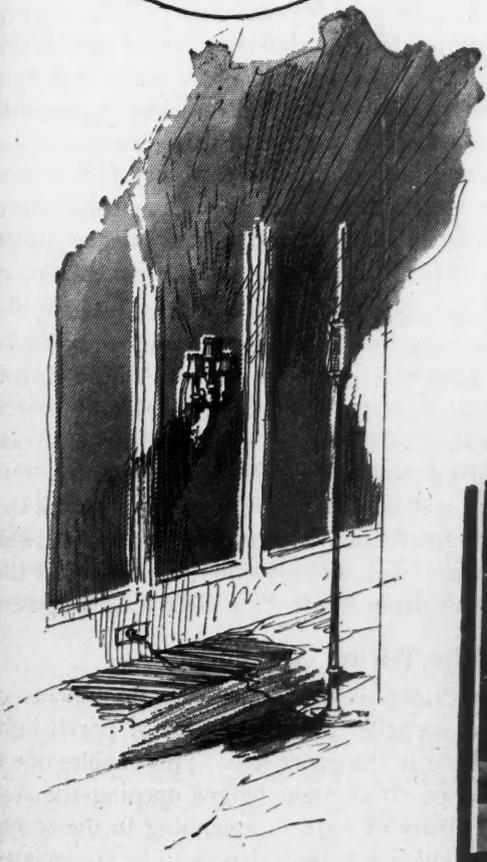


"The Red Tag"
 The Mark of Quality

BLUE RIBBON HOMES ELECTRICAL



- SYMBOLS**
- CEILING OUTLET
 - ⊞ BRACKET OUTLET
 - ⊞ CONVENIENCE OUTLET
 - ⊞ FLOOR RECEPTACLE
 - ⊞ SPECIAL OUTLET
 - ⊞ SWITCH



DIGNIFIED SQUARE TYPE RESIDENCE completely electrified and possessing all the features of design, arrangement and construction that appeal most to

the family of taste and established position. Eight rooms are provided. The two wonderful sun rooms flanking the plan on each side are winners.

ELECTRIFY ALL BUILDINGS

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



Our Home Electrical No. 2

English Type Stucco Home Illustrated in Two Colors on Page 149, Proves a Model of Beauty and Convenience—Full Details of the Lighting Installation

IN the April issue of AMERICAN BUILDER the first Home Electrical was described in detail, and attention was called to what constitutes a complete electrification, concerning both the use of electrical labor-saving household devices and correct illumination. In this and future issues the wiring specifications will not be repeated, each house in the series offering the same wiring problems. In the case of illumination, however, the size and shape of a room may make it necessary to substitute one style of fixture for another, and the most suitable units for each individual house in the series will be discussed. Then, too, the decorative value of the individual fixture should be taken into consideration. Individual taste may suggest changes from those styles listed here, and there is ample opportunity offered the prospective home owner to make his selections from a wide variety. The lighting units described here have been found to give excellent satisfaction, and their selection was made by one of the foremost illuminating men in this country after actual experiments in various electrical homes throughout the country.

The location and number of convenience outlets, too, must be considered from the standpoint of the individual room. They should be placed with reference to their eventual use, and their location should enable the user to get the best possible results from them. The architect never knows the location of furniture in a room except in a general way, and he should indicate the location of these convenience outlets in a manner that will give every possible opportunity for their use.

As stated in the April issue, the home owners of this country are becoming more and more educated in the necessity of complete electrification in the home. They are now demanding that every possible means be afforded them for the use of electricity, and it behooves architects and builders to see that their jobs contain ample outlets.

The home owner realizes that there is at his beck

and call a force that will make his daily tasks easier, a force that can be used in many ways to lighten the duties he is called upon to do every day. This is especially true of the housewife. Why should she labor all day long with a broom, for example, when for a few cents she can have at her disposal this force which will drive a machine that will do the work much better than she can? Is it fair that she should drudge over a steaming clothes tub when she can do the same work in a fraction of the time and more satisfactorily with an electric clothes washing machine? The list can be carried out almost indefinitely, and at the base of it all is the little convenience outlet that makes it possible. With this little contrivance untold good can result, and the building and architectural experts are fast coming to appreciate the benefits to be reaped from their foresight. Real estate men are using convenience outlets as a part of their selling talk to prospective customers.

From the standpoint of the speculative builder, too, complete electrification is of tremendous importance. There are numerous cases on record where houses built to sell at a certain figure have brought several thousands more after being exhibited as electrical homes and being thoroughly equipped electrically. Furthermore, the cost of installing the electrical work in a house under construction is much less than in a dwelling already completed, and a builder can save just that much if the sale depends upon the electrical equipment.

The Wiring Arrangements

At the front door of this house (see floor plans on page 149) are switches for the control of porch light, hall light and one in the upper hall. This enables one to illuminate the porch at night before opening the door and to have plenty of light in ascending to the second floor, both of which are conveniences to be appreciated. To the left of the hall as one enters is located the living room, and it is possible to control these lights also from the hall. There is also a switch at the entrance

to the sun parlor which makes it possible to illuminate the living room when entering from there.

The hall contains two convenience outlets placed at advantageous points, which make possible the use of labor-saving devices or portable lamps. On the stair landing, leading upstairs, there is also a baseboard receptacle for a lamp or other use. Around the walls of the living room are placed four duplex convenience outlets. Their location gives one ample use of them regardless of the placing of the furniture in the room and permits the moving of the furniture without losing the advantage of the convenient use of electricity.

A switch is arranged at the entrance to the sun parlor which lights the ceiling luminaire there, and another controls the brackets. Three baseboard outlets are provided for the use of floor or table lamps, appliances, etc. It may be that a radiant heater is needed on a chilly evening, and it is a simple matter to attach it to one of these outlets. The owner is sure to appreciate these conveniences. The switches controlling the lights in the main dining room luminaire are located both at the entrance to that room from the hall and from the kitchen. This makes for convenience and eliminates the necessity of walking around an unlighted room before switching on the lights. The side brackets are also controlled from both points. A heavy-duty floor receptacle is provided for the use of the various appliances ordinarily used on the dining table, toaster, percolator, waffle iron, egg boiler, etc. Baseboard outlets are also indicated at convenient locations for the use of appliances not used on the table, and also the vacuum cleaner, portable lamps, etc. Of course, there is an outlet under the table for the buzzer to call the kitchen. This is not indicated on the plans, and is operated, with the door bells, by using a transformer on the lighting circuit.

The main kitchen lighting unit, a ceiling luminaire, is controlled from a switch at the entrance of the room. There is a convenience outlet placed in such a way that it can be used with an electric iron, ice cream freezer or any other appliance. A 20-ampere receptacle is installed for use with the electric

range and is on a circuit of its own. There is also an outlet provided for the use of a ventilating fan, which is such an important adjunct in the modern kitchen. In the pantry an outlet is placed near the refrigerator space to make possible the use of an electric refrigerator, without which the modern home is incomplete. A switch is arranged at the entrance of the cellar stairs to provide illumination of the cellar before descending.

It is important that the light in the upper hall be controlled both from the lower and upper floor, so a switch has been placed in both places in order that a person using the stairs may light his or her way.

The ceiling and bracket luminaires in each of the bedrooms are controlled from switches near the door, enabling a person going into the room in the dark to flood it with light before entering. The liberal use of convenience outlets in each of the bedrooms makes possible a variety of arrangements

in the placing of portable lamps and the use of electric appliances. In one of the two smaller bedrooms will be found two duplex outlets and one single outlet, while an extra duplex outlet has been placed in the master bedroom. The second smaller bedroom has two duplex and two single outlets.

Care has been taken to assure convenience in using appliances in the bathroom, and a duplex outlet has been placed beside the mirror for use with an immersion heater, milk warmer, hair dryer, radiant heater or any other appliance that may be used.

Lighting the Home

First impressions are generally the most lasting, and inasmuch as the porch greets the eye first, proper illumination there should be considered at the outset. There are many decidedly attractive luminaires for use on the porch. They come in a variety of styles and sizes, and should be used with a 40 or 50-watt lamp.

In the living room, the ceiling luminaire is of the five-light candle type, silver or sand-colored finish, with shades of harmonious colors. For the six sides wall brackets, the one-handle type is used, with shade finish corresponding to the central ceiling luminaire. In a room of this size, this style fix-

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.

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.



The Dining Room in the Demonstration Home, Milwaukee's Better Lighting Campaign of May, 1922, Brought Out Many Ideas for Convenient Use of Electrical Appliances and Lighting Equipment.

ture would furnish proper illumination if 25-watt all-frosted lamps are used in the ceiling luminaire and lamps of the same size in the side brackets. When lamps are not shielded by glass, parchment or silk shades, 25-watt round all-frosted lamps will give the desired illumination. If the walls are dark, shades should be used. The provisions for the use of table and floor lamps make possible their use for additional decorative effect. When a subdued light is desired, it is probable that none but the portables will be employed, and very satisfactory effects can be secured from their use.

For the ceiling luminaire in the sun parlor, a semi-direct bowl-type unit has been selected, the bowl being of pastel shades and the finish in silver. For the wall brackets, the pendant type furnishes an excellent unit for the sun parlor. The shades of these should match and harmonize with the bowl of the center luminaire. The chances are that the center unit will not be used to any extent except for brief intervals because of the nature of the room, so a 75-watt lamp would probably be most appropriate for that purpose. For the side brackets, a 50-watt lamp in each would furnish sufficient illumination if the ceiling unit is not used to any extent; if it is used, 25-watt lamps will be sufficient.

There are three baseboard outlets for use with portable lamps, and they are placed so that the most effective use may be made of them. One of the outlets is of the duplex variety, making possible the use of a heater, percolator or some other appliance without disconnecting the lamp. The single-outlet table lamp should have a 50-watt white bulb, the double-outlet should use 40-watt all-frosted lamps, and 25-watt all-frosted ones should be employed with lamps having three outlets. Floor lamps generally have two, three or

four outlets, and these should take 50-watt white lamps, 40-watt all-frosted lamps and 25-watt all-frosted lamps in that order.

Extreme care should be exercised in selecting the dining room central unit over the table. It should be hung in such a manner as to give most of its illumination to the table, some light on the faces of the diners, and a lower level of illumination throughout the room. The dome-type unit has been selected in this case. If it is correctly hung it will afford a diffused light on the faces of the diners, and at the same time the intensity will not be too strong. The dome itself should be of such color as to harmonize with the decorative effects surrounding it, the wall covering, hangings, etc. Four wall brackets are indicated for this room, and they are of the two-candle type, with finish to match that of

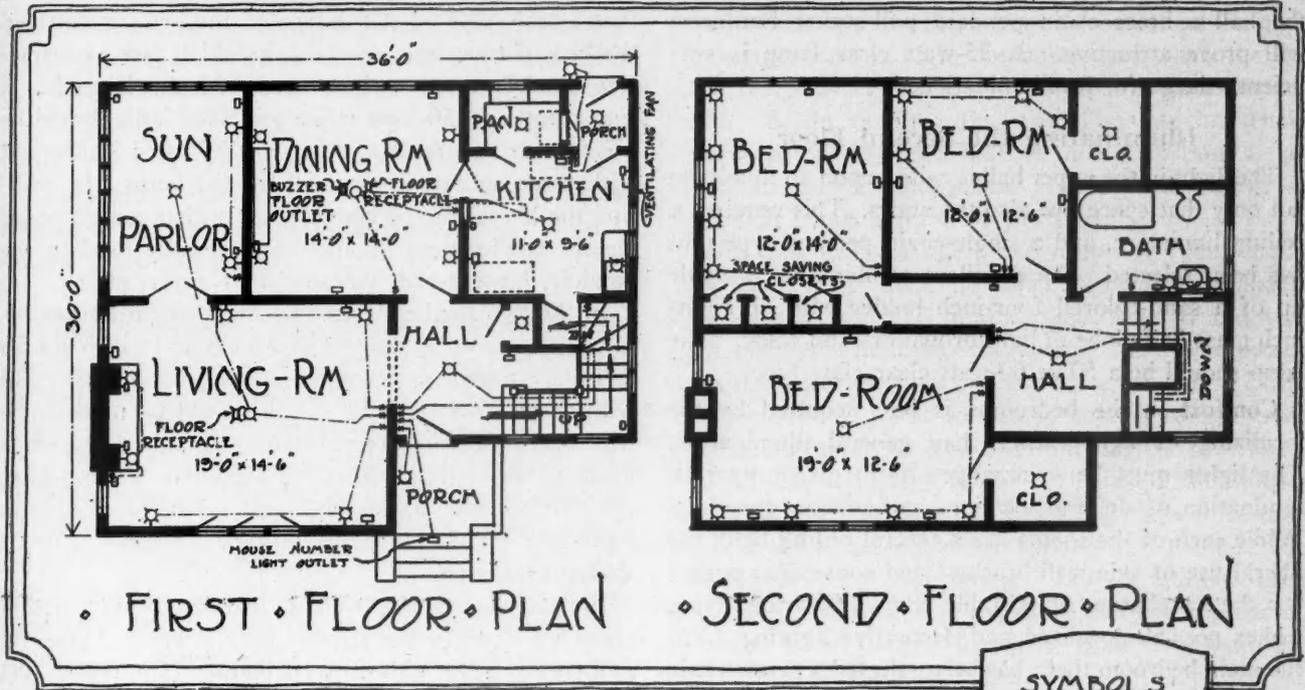
the central fixtures and shades to match the central dome. It is assumed that the buffet will be placed against the blank wall to the left of the main entrance to the room, and brackets have been arranged to flank it. There is also a duplex outlet arranged near where the buffet would be placed, designed to light a pair of silver buffet candlesticks if they are used. If the dome central fixture in the dining room has but one outlet, a 75-watt lamp should be used; if it has two, 40-watt all-frosted ones should be employed, and 25-watt all-frosted lamps are good practice in luminaires having three outlets. The 25-watt all-frosted lamp is the correct size for the wall brackets. It should be understood that the wall brackets are for secondary illumination and to enhance the decorative effect rather than for the purpose of lighting the room.

Kitchen and Pantry Lighting

A central ceiling luminaire has been selected for use in the kitchen. This is to be a white enamel chain pendant unit with a plain white enclosing globe of diffusing glass. The illumination which will be given by such a unit with a 75-watt white lamp will be ample for a room this size. Special attention should be called to the light over the sink. Much of the work in the kitchen is done around the sink, and the shadow cast by the ceiling light hampers the work. The unit installed directly over the sink, however, throws sufficient light for all purposes when used with a 50-watt lamp.

The pantry unit is a central ceiling luminaire of the single chain or stem variety. White enamel should be used on the metal parts, and a 50-watt lamp should be employed in conjunction with a six-inch glass enclosing globe of diffusing quality. The units in the entry and at the rear door should be ceiling-type luminaires of

BLUE RIBBON HOMES ELECTRICAL



- SYMBOLS**
- ☒ CEILING OUTLET
 - ☒ BRACKET OUTLET
 - ☒ CONVENIENCE OUTLET
 - ☒ FLOOR RECEPTACLE
 - SPECIAL OUTLET
 - ⎓ SWITCH



OUR HOME ELECTRICAL No. 2. is of the English or Eastern type, stucco construction. It is 30 by 36 feet in size and has seven good rooms. The electrical appointments are very complete without, however, going be-

yond the bounds of good sense. Remember "Electricity makes better homes"—use it to the limit. For description of the wiring and lighting installation of this home see pages 146-150.

statuary bronze or black 3¼-inch holders with six-inch glass ball globes of white or frosted glass. The lamp should be 40 or 50-watt size.

The lower hall is used mainly for the reception of guests, and its lighting should be given considerable thought. An attractive luminaire for a hall of this size should be a Colonial brass lantern with a glass cylinder. A 40-watt all-frosted lamp will give just the proper intensity of light. For the small closet in the hall a brass chain pendant pull-socket luminaire will prove attractive. A 25-watt clear lamp is sufficiently large for its illumination.

Illuminating the Second Floor

The light in the upper hall is called upon to illuminate not only that space but also the stairs. This requires a ceiling luminaire, and a single-chain pendant-type unit has been selected. An excellent combination is made up of a sand-colored four-inch holder with an eight-inch glass ball globe in light brown or sand color. The lamp should be a 50 or 60-watt clear-glass type.

Comfort in the bedrooms is best acquired by the localizing of light rather than general illumination. The lights must be so arranged as to give proper illumination of definite locations rather than generally. While each of the rooms has a central ceiling light, the liberal use of side-wall brackets and convenient outlets for the installation of portable lamps of various types makes possible localized and decorative lighting. For the main bedroom there has been selected a single-chain pendant luminaire of ivory enamel or silver in an eight-inch enclosing globe of delicate color tones and designs. The lamps used should be 75-watt size, clear glass. The wall brackets are one-light pendant-type units with their metal parts of the same finish as the

main luminaire. They should have 25-watt all-frosted lamps to throw light on the articles of furniture placed near them, the dressing table, etc. The baseboard receptacles on three sides of the room afford means of using portable dressing table lights, bed lamps or other forms of decorative units intended for such purposes. Reading in bed has become more and more a habit in many homes, and effective lamps designed for such purposes are to be found on the market. It may be that a table will be at the side of the bed, or between the beds if twin beds are used, in which case an attractive boudoir lamp will be used. If the lamp has a single outlet, a 50-watt white gas-filled bulb should be used; with two outlets, 40-watt all-frosted bulbs, and with three outlets, 25-watt all-frosted bulbs. In addition the liberal use of convenience outlets makes possible the employment of appliances usually used in the boudoir, heating-pad, vibrator, hair dryer, etc.

In the two smaller bedrooms single-chain luminaires of pastel tone enamel or silver with 8 or 10-inch shades delicately tinted or decorated have been selected, and with them 75-watt white lamps should be used. The wall brackets will be pendant-type units of the same finish as the central unit. The shades on the brackets, of course, will correspond with that of the main luminaire. The side brackets should contain 25-watt all-frosted lamps.

For all closets single-chain brushed brass pendant types have been selected with glass shades. These are pull-socket units with 40-watt lamps. The pull socket has been selected because with the switch that turns on the light when the door is opened, the light is left burning sometimes when not in use. It is a simple matter to illuminate the space with the pull-socket unit.

The ordinary bathroom in the modern home is sometimes given little consideration in the matter of providing comforts and conveniences, but in this one, particular pains have been taken to assure the maximum in the matter of lighting. The usual central ceiling light has been eliminated and two flanking the mirror have been substituted. The mirror, after all, is the important spot in the room and should receive the proper amount of illumination. Excellent bathroom fixtures can be obtained in white enamel or nickel plate, and with 40-watt all-frosted lamps will furnish ample illumination for shaving and other purposes.



Electricity Lightens the Burdens of the Kitchen and Makes the Home Indeed a Place of Joy for the Housewife.

Our Home Electrical
No. 3 Will Appear
In June
American Builder
Don't Miss It

Electric Refrigerators in the Modern Home

MECHANICAL refrigeration has been used in cold storage plants, by artificial ice companies, hotels, restaurants, etc., for many years, and now it has come to be an important adjunct to the electrification of the modern home. The initial cost of the installation of one of these refrigeration units is the main thing, the upkeep being comparatively small, taking everything into consideration.

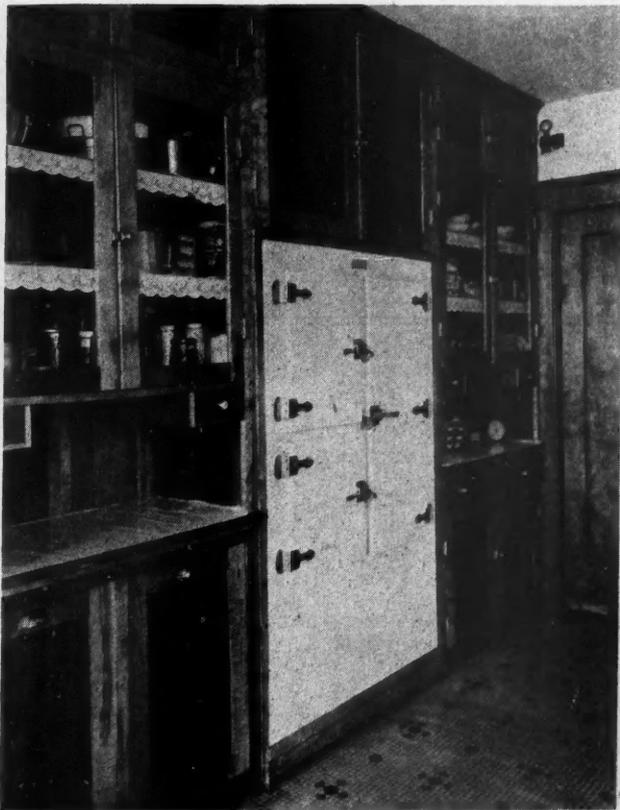
The average icebox is a source of worry to the housewife because of the rapid melting of the ice in summer, the uncertainty of the iceman's visits, the

These refrigerators are so constructed that when the temperature falls below a certain point, the motor starts automatically and the temperature is forced down. The motor will run more when the surrounding temperature is high, obviously, and when the desired temperature has been reached, it stops automatically. While running, the motor on one household equipment takes about half as much current as an electrical toaster, and unless freezing ice will be in operation about a third of the time.

The tests included the preservation of food, and it was found that lettuce retained its original crispness one week after it had been washed, drained and kept in a covered aluminum container. In a box cooled by ice, lettuce was unfit for use after five days. Milk kept sweet for a whole week, and another sample from the same bottle in an iced box soured after four days.

With one of these machines installed the housekeeper is able to close the home for days at a time and know that the automatic operation of the machine will relieve her of all worry. The refrigerants used are non-inflammable, non-explosive and non-poisonous, so there is no danger whatever connected with the use of one of these machines.

It is possible for the prospective purchaser to buy a complete intallation, that is, a box equipped with the refrigerating mechanism, or he may get only the refrigerating machinery and have it installed in his own box by the company's experts.



Up-to-Date Homes in the Future Will Have Electric Refrigerator Equipment Built in. It Is Clean, Sanitary, Compact and Convenient.

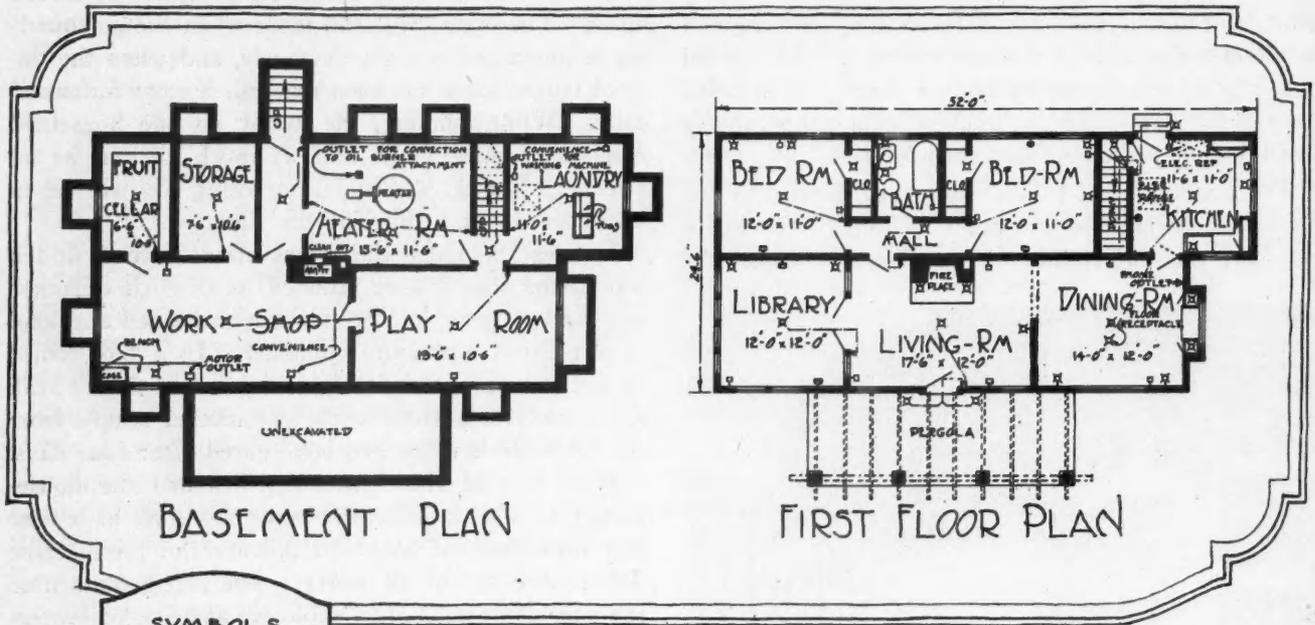
moisture-filled atmosphere which is circulating in the box. Almost as soon as ice is put in the average box, it starts to melt and decrease in size, and soon the temperature rises to the point where dangerous bacteria develop and multiply rapidly. With the electric refrigerator, however, there is no ice to worry about, the temperature of the food compartments remains almost constant, and food which would go to waste in an ordinary icebox will keep almost indefinitely.

Tests have been made by disinterested experts of the use of the electric refrigerator, and the results have shown that where there is a 10-cent rate for electricity the monthly bill would amount to about \$8.



A Tank and Coil, Electrically Cooled, Take the Place of the Customary Chunk of Ice.

BLUE RIBBON HOMES ELECTRICAL



- SYMBOLS**
- CEILING OUTLET
 - ⊗ BRACKET OUTLET
 - ⊖ CONVENIENCE OUTLET
 - ⊗ FLOOR RECEPTACLE
 - SPECIAL OUTLET
 - S- SWITCH



ABUNGALOW ELECTRICAL—This delightful little place is laid out for real home comfort. Notice the vista—the sweep of space across the front through library, living room and dining room. Notice the quiet privacy of

the bed rooms; and study that basement plan!—work shop, playroom, laundry—Satisfaction here for every member of the family. Electricity is employed intelligently in this home to do a multitude of useful things.

"My Own Electrical Home"

How It Is Wired and Equipped, and What It Costs to Operate Such an "All-Electric House" with Fifty-five Electrical Servants

By O. H. CALDWELL, *Editor, Electrical Merchandising*

HOW much does it cost to operate a complete electrical household—that is, a really-lived-in family home in which every possible operation is performed electrically?

For months the writer has had such an electrical home, pictures of which appear on the next two pages.

Below, is a list of the operations performed electrically in this household of three adults, two children (seven and three years old) and one maid:

All cooking, baking, sauteing and boiling
Refrigerating of foods
Making ice for table use
Freezing ices and mousses
Washing dishes
Mixing breads and cakes
Kneading bread
Whipping cream
Slicing vegetables
Chopping meats
Chopping ice
Grinding coffee
Making ice cream
Freezing ice for ice cream freezer
Beating eggs
Making butter and mayonnaise
Making fondants and candies
Mashing potatoes
Straining purees for soup
Drying vegetables
Percolating coffee
Making toast
Making waffles
Heating water for dish washer
Table grill for cakes
Washing clothes
Ironing (5 hand irons)

Ironing by machine (electrically heated, motor-driven ironer)
Cleaning floors, rugs and curtains
Cleaning upholstery
Sewing machine, electric
Thermostat control of furnace
Electric hand-drill
Grinding and buffing
Sterilizing jars and jelly glasses
Electric clocks (synchronous type)
Heating pads
Hair drier (drying hair and brushes)
Vibrator
Water heater, immersion
Electric victrola
House telephones
Bell-ringing transformers and bells
Lighting gas heater by electricity
Nursery toys—toy washing machine, toy range, toy iron
Making grape juice, et cetera

Two-hundred-watt lighting units are installed in the laundry over the washing machine, the ironer, and the ironing board; the dining room has a 200-watt amber-tint; and there are 100-watt units in entry hall, kitchen, etc.

Convenience outlets are numerous, and those in kitchen and halls are placed waist-high or knee-high, to avoid uncomfortable bending in connecting up appliances, vacuum-cleaner, etc. In the kitchen alone there are 22 outlets or places to use electricity.

Every Fuse Is Labeled with Proper Size of Replacement

The dining room table is wired, two pendant cord-connectors (one on either side of the hostess' position) affording easy connections for percolator, waffle iron, grill and toaster.

Each major appliance (including dining room table) has a separate branch circuit, properly labeled with correct size of fuse to be used. The panel box is of the enclosed "dead front" variety, from which no possible shock can be obtained in replacing a fuse. Both the power and lighting main switches are of the safety enclosed type with no exposed contacts. The meters are placed in a special weatherproof box on the outside wall, so that the meters can be read through a glassed slot without the meter-reader disturbing the household or entering.

All pull chains and switch plates are fitted with radium locator beads or buttons. All pull-chain sockets near plumbing or pipes have insulating joints.

All signal circuits, including door bells, house telephones, etc., are brought to a central interconnecting panel, so that any changes of connections can be made easily and quickly. If for example the women folk are all in the sewing room on the top floor, the doorbells can be arranged to ring there. Bedside telephone connections (as well as electricity outlets) are also great comforts during illness.

"Your Electric Bills Must Be Frightful"—They Ask

"But what does it cost to operate all these appliances? Electric conveniences are nice, but your electric bills must be frightful"—that is the comment of nearly every visitor who inspects the foregoing electrical equipment.

In all there are 55 different household operations performed by electricity in this home. No particular effort has been made for strict economy or the saving of electricity—in fact it is probable that rigorous care would reduce the present electricity consumption by 25 per cent. The operation of the major appliances is handled by a very intelligent colored maid, who takes good care of the devices. She has indeed taught herself to make minor electrical repairs, such as replacing fuses, fixing cords, putting on plugs, etc.

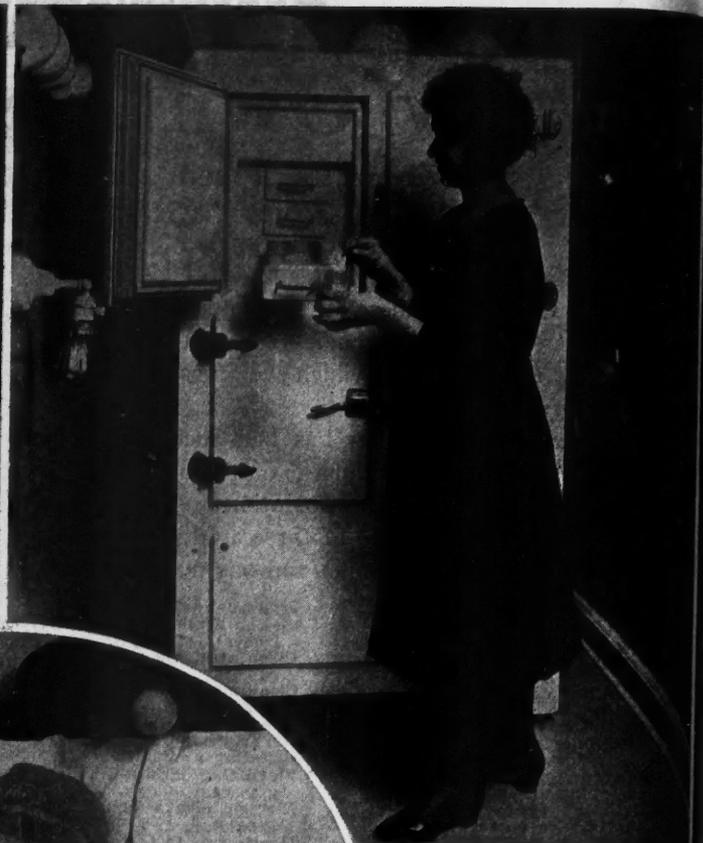
Boy Would Charge 50 Cents a Day to Tend Furnace

From the central-station company serving this section of Bronxville, N. Y., electricity for power and heating use is purchased at 5 cents per kilowatt hour. Electricity for lighting costs 12 cents per kilowatt hour, and the lighting bills run \$4 to \$6 a month.

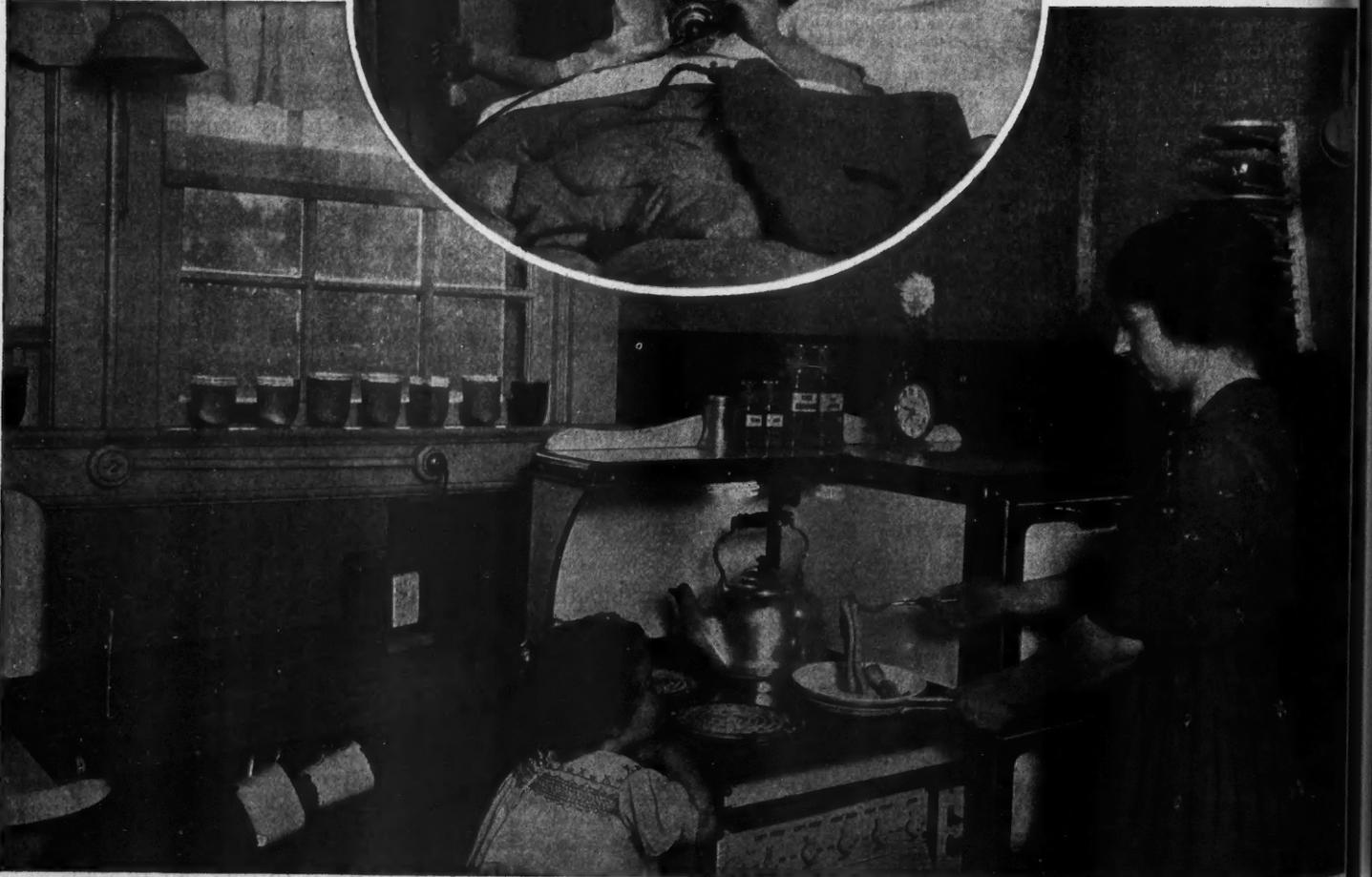
The power consumption has averaged 320 kw-hr. per month or about 10 kw-hr. per day,—a cost of 50 cents per day. This includes the operation of the electric range, the electric refrigerator, the electric heated ironer, and the faucet water heater, which are the principal consumers of current. Thus the total cost of operating the electrical equipment is not much in excess of the former daily expense for ice, gas for cooking, etc. Or, for another comparison, the cost of using all these electrical appliances, 50 cents a day, is the same as the cost of hiring a furnace boy to come in for a few minutes morning and evening to shake down the furnace and throw on a few shovelfuls of coal. Or compare it with the operating cost of an automobile. The average medium-priced family car doing



A whole day's dishes are washed by a twist of the switch, proudly applied by six-year-old Joan Hope Caldwell.



The iceman is forever banished from the Caldwell household where in this—as in all other things—the motto prevails "Do It Electrically."



Center—Joan Hope "dresses up" and tries out Mother's bedside telephone wherewith one can call the maid's room, kitchen and laundry—all without even lifting a coverlet. And a bed-lamp like this, with radium bead and turn-down socket, makes bedtime reading a real luxury. Then there are bedside outlets for the heating pad, electrically-heated blanket, and a night-light under the bed, which illuminates the floor without lighting up the room.

Below—A few steps away from the refrigerator (wherein electricity is busy freezing ice cubes) is this 7,000-watt electric range where the same versatile kilowatts broil, fry and bake, and new electrical culinary wonders are daily disclosed under the master-hand of the electrical housewife. On maidless days, does Mrs. Caldwell desire to spend the afternoon at her Garden Club, a clock mechanism will turn on the oven at the appointed hour in

her absence, and later an automatic thermostat will shut off the current and have dinner ready. Even the clock at the left, connected to a "convenience outlet," is also electric, being synchronized with the master-clock in the power-house 10 miles away. In the refrigerator picture, above, note the low bracket to light the food compartments. And the Caldwell kitchen and pantry contain exactly 33 outlets or places where electricity may be used.

Both the heated n by pilot allied lan



...in good, ma'am, Joan Hopé's toy electric range
has real electric cooking!

An electric should need a hardworking young
laundress will for Mary Jane!



The meter-reading
bothered
the Caldwell
household.

Both power and
light meters are read
through the little
window.



Electric coffee and electric waffles every morning! Yum-gum!
Note mirrored outlets which when not in use hang pendant
alongside the table legs



Both the ironing board and the electrically-
heated motor-driven ironer are semaphored
by pilot lamps. Overhead is a 200-watt gas-
filled lamp in an RLM reflector, which brings

electric sunshine into this workshop of the
home. A similar big lamp is positioned over
the washing machine. And the house tele-
phone is at the laundress' elbow.



Safety switches, of course — also
enclosed fuse panels.

Each of the major appliances has its own
separate fuse circuit. Makes it handy, too, for
the Editor to run off a recording test of any
appliance.

5,000 miles a year, costs \$400 to \$500 a year for gasoline, oil, tires and incidental repairs. Such a car therefore averages a cost of \$1.10 to \$1.37 a day, to operate, compared with 50 cents a day for operating an electrical home.

At lower power rates for electricity, this operating cost would be correspondingly decreased and at 4 cents or 2 cents (as charged in many places) the cost of such an all-electrical home would be 40 cents, 30 cents or even 20 cents a day for electricity.

But even at a 5-cent rate, for a medium-sized family the cost of operating a complete home electric, is from first hand experience only 50 cents a day.



Rings Bells Without Batteries

"BELL Out of Order"—we have all of us seen this sign; and we know that nine times out of ten it means "dry battery has gone dead."

Fortunately there is no longer any need of bothering with dry cells to operate door bells, buzzers, electric heat regulators, door openers, etc; since a simple little transformer is now obtainable at small expense that will change the standard 110 volt alternating current to the correct voltage required for these small—yet important—tasks.

The thoughtful architect and home planner is specifying bell-ringing transformers and builders are careful to see that this little item is included as part of the electrical work on all jobs.

Attention to a seemingly small detail of this kind brings its reward by satisfying the client with your endeavor to render to him the most efficient service.

And more often than not, a little convenience in the home such as a bell ringing transformer, increases the salability of a house and aids to a marked degree in deciding the purchase.

The cost is little and the transformer is so simple and rugged in construction that there is practically no wear out to it. Obtainable at any store where electrical supplies are carried, there is no obstacle in the way of always using this improvement, and

so escaping forever—both for yourself and your clients—the annoyances of run down dry batteries.

Using this bell-ringing transformer will keep your bells and buzzers always in working order. Only one of these simple, inexpensive instruments is required for the average home, and once installed is a permanent fixture. It is easy to install—connected to your regular electric light circuit from which it takes the current to ring the bells, it transforms the standard, 110 volt alternating current to the correct voltage required and it will never fail to ring with electricity in the line. It never goes dead, and, costing little more than one set of dry batteries, you can appreciate its value. The electric current required is so little that it does not even register on the meter. Anyone can easily install it by simply connecting the two terminal wires to the electric lighting circuit and two wires to the bell circuits.

Enclosed in its white-glazed porcelain case, it can be installed in the most convenient location. No need of locating it in the cellar or any other out-of-the-way places. It is unusually compact, the over-all dimensions being 4½ by 3½ inches, and weighs but 1½ pounds.



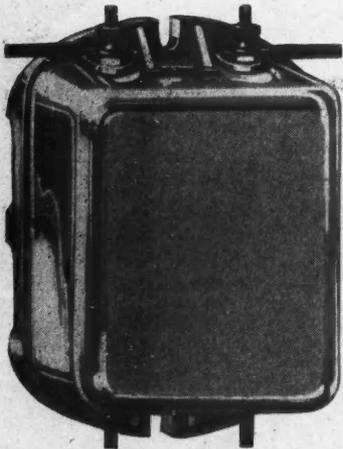
Electric Household Ventilation

WHO is there who has not entered a home only to be greeted at the door by the odor of things cooking in the kitchen? Whatever may be the food being prepared, try as we may it seems impossible to keep the odors located in the kitchen and prevent their wandering through the entire house. It may be that there are three or four windows in the kitchen, and the cook has them wide open and thinks the odor is escaping. It is possible, however, that the wind is blowing directly at the open windows on one side and literally forcing the odors back through the house. But as long as she has the windows open she thinks the odors are being eliminated.

The modern house, however, is now being provided with electric fans designed for drawing the odors from the kitchen rather than forcing them out. These devices are nothing more or less than exhaust fans placed in the window and operated by connecting them with the house wiring. They come in a variety of styles and sizes and afford absolute relief from all cooking and other kitchen odors. In the plans of the model electrical home on a previous page in this issue, it will be noted that provisions are made in the wiring diagrams for the installation of one of these fans.

In order to install the fan, an opening may be cut in the wall at any desired location, and the fan placed there, or it may be installed in a window. Sometimes they are connected with a flue leading from above the range into the chimney, and the odors are carried off in this way.

The fans are only operated when it is time to prepare



This Little Device, a Bell-Ringing Transformer, Does Away with Dry Cells.

store where electrical supplies are carried, there is no obstacle in the way of always using this improvement, and



FOR ANNUNCIATORS



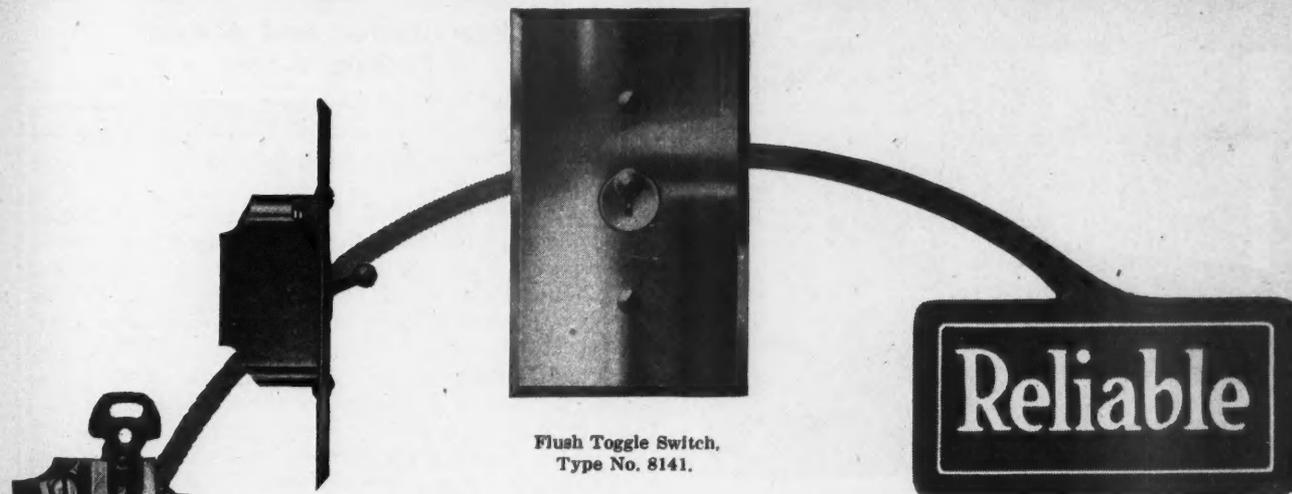
FOR TIME SIGNALS



FOR DOOR BELLS

The Bell-Ringing Transformer Has Many Important Uses.

HUBBELL



Flush Toggle Switch,
Type No. 8141.

Porcelain body fits
standard outlet boxes.

Surface Toggle Switch,
Type No. 8171.

Toggle Switches

Hubbell Toggle Switches are very easy to operate. A single lever or toggle arm turns the current on or off. No danger or confusion.

Made in Single Pole and Three Way in both Flush and Surface Types, giving the builder a switch for every location and purpose.

Convenience Outlets

Hubbell Convenience Outlets or flush receptacles are made single or duplex. They incorporate the Hubbell Universal Te-Slots, double contact springs, and individual contact chambers. Plates may be furnished in gangs, or for combination with switches.

Convenience Outlets help sell homes; they are among the first things demanded. Hubbell Convenience Outlets are reliable in service, and easily installed.

Ask your Jobber—or write us for free Circulars describing these and other modern electrical wiring devices.



HARVEY HUBBELL INC
ELECTRICAL SPECIALTIES
BRIDGEPORT CONN. U.S.A.

ELECTRICAL SPECIALTIES



The Window Installation of Ventilator Is Easy to Make in Already-Built Houses and in Those Being Altered.

meals, or whenever it is desired that they should run. When not in use, arrangements are provided for keeping out the cold outside air in winter, so there is no discomfort in that direction from their use.

In addition to carrying off the odors of cooking, such an installation will eliminate the presence of coal gas when the furnace or kitchen coal range has been banked, and it is of especial benefit when the latter is used for it carries off all particles of dust and soot before they have a chance to be wafted through the house and settle on the hangings and furniture. Its influence will be felt in all parts of the house and such an installation is worth many times the installation cost. The operating expense is almost negligible, and when



This Ventilator Is Built Into the Range Flue. Power is taken from a light socket or especial wiring can be provided.

used at meal times only, will cost but a few cents a day.

In many instances these fans have been used for general ventilation throughout the house. Placed near the roof where the hot air accumulates, they tend to keep the whole house cool, affording a frequent change of air through the upper rooms. In the laundry, also, they are of great usefulness in exhausting the odors of soap, dampness and steam that are incidental to washday.



The Fascination and Music of Falling Water

CHARACTERISTIC of the varied uses to which electricity is put is this beautiful miniature fountain. It has the quality of being fascinating and useful in more applications than one.

Naturally one would find this an ornament that would make the sun porch more truly delightful on hot summer days, and which in winter would serve to remind that the cheerless days would pass and the spring, with its April showers, would again bring the flowers of summer. But it would also serve as a most practical humidifier, with its constant tossing of tiny sprays of water in the air—a fact worth utilizing in winter over-heated apartments with closed windows. In summer time a little cracked ice and scent tablets placed in the fountain cools and perfumes the air delightfully. Aside from its beauty and utility as part of the home furnishings, it is being used to excellent ad-

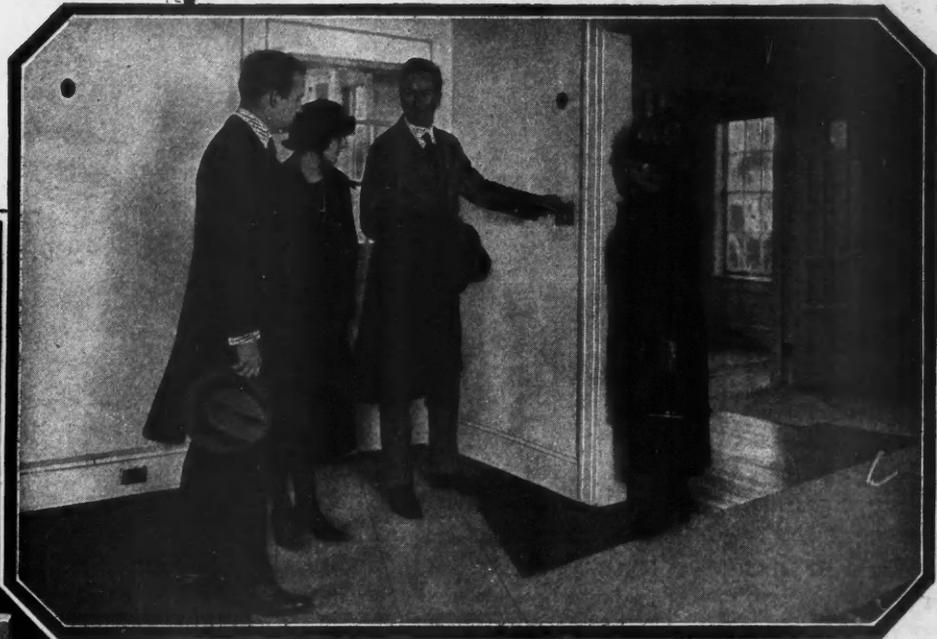


Twenty-four Tiny Streams Play Continually in This Motor-Operated Miniature Fountain, Humidifying, Cooling and Scenting the Atmosphere of the Home, Office or Shop Interior.

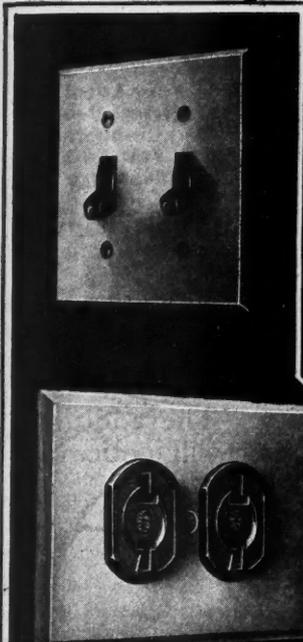
vantage as a show window attraction by alert merchants. The constant movement of the water and the natural question, "Where does it all come from; how does it go?" creates curiosity and attracts customers to within the store.

It requires no piping. It uses the same water over and over again, and is operated by a 110-volt universal motor and pump. Very little attention is required to keep it in working order. The pan proper is made of nickel-plated copper and the fountain head of zinc. The spray ring is ten inches in diameter and has twenty-four nozzles. A tinted shade, with a 2-candle power lamp, comprises the illumination, and the base is to be had in old ivory or gold finish.

When they stop and ask



"How is the porch lighted?"—you show them how all outside lights are controlled from inside and how with switches at every doorway one need never be in the dark.



G-E Two-Gang Tumbler Switches at every doorway give complete control of light from one room to another. G-E Twin Convenience Outlet permits simultaneous use of two devices.

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 AB5.



Builders attract more prospects by advertising "Homes Electrical"

"Completely electrified" in any real estate advertisement acts as a magnet. It attracts hundreds of home seekers who pass over the average advertisement.

Taking a hint from the "model homes electrical" which have drawn big crowds in scores of cities, progressive builders are today building, advertising, and selling "homes electrical".

Dealing in homes electrical instead of ordinary houses, is just a matter of *completeness* of wiring and quality of materials.

A small addition to the cost provides complete electrical convenience with G-E Reliable Wiring Devices—and the building advances from the house class to the "home electrical" class.

Selling electric homes means less sales effort, quicker sales, more profit.

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

41-227

A GENERAL ELECTRIC PRODUCT

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

A New Source of Greater Profits For Builders and Contractors



Your Local
Electrical Dealer
Can Co-operate
With You To Your
Advantage

It is the experience of builders the country over that even the most minor of electrical conveniences add greatly to the saleability of their houses. Some little time-saving, annoyance-saving electrical appliance will often settle the choice of a purchaser. It is the touch of completeness that makes homes sell for greater profits—that builds good reputations—establishes good-will—and increases your business. Here is a convenience that has become a necessity in every home that is wired for electricity. See that it goes into every new home you build. Suggest its installation on repair jobs of all old homes wired for electricity. The additional cost is only a trifle, but the service rendered is one that every home owner will notice and appreciate.

The Air-Way Bell Ringer

Constant Electric Current for Bell, Buzzers, Door-Openers, Annunclators, Thermostats, Heat Regulators, Etc.

No More Dry Battery Expense and Replacement

Dry batteries going dead is one of the greatest annoyances a home owner has had to put up with. The inconvenience is entirely eliminated with the AIR-WAY Bell Ringer. The one cost for the installation of the AIR-WAY is the only cost. There is no replacement expense and the operating expense is almost nothing because the current consumption does not even register on the meter. Only one instrument is all that is needed in the average home and once installed is a permanent fixture.

Easy to Install in Any Wired Home

You simply connect two terminal wires to the electric lighting circuit and two wires to the bell circuits. Can be located wherever most convenient. Handsome in appearance and thoroughly substantial in construction.

As Easily
Done As
Connecting
A Set of
Batteries



Guaranteed for a Life-Time of Service

The AIR-WAY Bell Ringer is a product of the highest quality. It is in keeping with the most exacting specifications. There is nothing to wear out, nothing to break, nothing to ever get out of order or replace. The instrument connects to the regular electric light circuit from which it takes the current to ring the bells and buzzers. It transforms the standard 110-volt alternating current to the correct voltage for operating these household essentials.

Take This Advertisement to Your Local Electrical Dealer

Ask him to show you the AIR-WAY Bell Ringer—explain its advantages and tell you how he can co-operate with you in your building operations to your mutual profit. There is a dealer near you who handles the AIR-WAY and can give you complete information. He will be glad to assist you with this and all of your requirements for things electrical.

Electrical Dealers—Notice!

Our new transformer merchandising plans are profit boosters. New display cartons are sales-getters. Ask your jobber for particulars or write to us. This is the first of a series of advertisements directed to builders and contractors.

The Air-Way Electric Appliance Corporation
Toledo, Ohio

Plan Better Lighting in Schools to Save the Eyes of Youth

THE lighting, building, education, health and social agencies of the country have joined hands in an effort to develop a nationally accepted code for school lighting which will correct the conditions partially responsible for the defective vision of 10 to 20 per cent of the school children.

The formulation of this code is being carried on under the auspices of the American Engineering Standards Committee, a federation of national organizations, government departments, and other agencies interested in standardization, whose official approval of a standard or code insures its ultimate acceptance, by the principal interests concerned.



B. F. Fuller, Manager of Panelboard Section, Westinghouse Electric Co.

B. F. FULLER has been appointed manager of the Panelboard Section of the Merchandising Department of the Westinghouse Electric & Manufacturing Company.

Mr. Fuller, who is well known to the electrical industry, has had a very extensive and thorough practical training in electricity. His new duties will be to head up the policies in the sale of panelboards for lighting and power distribution.



American 3-Way Luxfer Prism Co. in New Eastern Quarters

ON March 15th the American 3-Way Luxfer Prism Co. of Cicero, Ill., and New York City, moved their eastern office and factory from the location where they have been for many years—139 Spring St.—to 358-368 Webster Ave., Long Island City, New York. This space covers the entire block on Webster Ave. from 2nd Ave. to Third Ave., thus giving daylight to the factory on all four sides.

Very decided and continuous increases in business have made necessary the securing of more space and it is hoped that the new factory arrangements will enable the company to maintain their reputation for "on time" deliveries.



Sash-Door Standardization

IT is expected that early in May the Sash, Door and Millwork interests will adopt a simplified and standardized schedule growing out of the conference recently held in Washington at the call of the Division of Simplified Practice, U. S. Department of Commerce.

It was the sense of the meeting that at least 30 per cent of the present sash and door sizes should be eliminated and such recommendations were made.

This step on the part of the Sash-Door-Millwork trade represents the beginning of a signal contribution to wood utilization progress and again the U. S. Department of Commerce is to be congratulated upon its sterling efforts in behalf of business.



All Metal Weatherstrip Company in New Location

THE Allmetal Weatherstrip Company has recently moved to 229 West Illinois Street, Chicago, Ill. This company has grown to such a size in the last few years that it was necessary for them to take twice the space. They are carrying 1,000,000 feet of manufactured stock on hand in order to make their record breaking deliveries of shipping the same day that the order is received.



MAGNESTONE RED-E-ALL STUCCO

Here is the new Red-E-All package—Magnestone Stucco ready to mix with water. No binder tanks, no hydrometers, no surplus equipment necessary.

This is just the time-saving, labor-reducing practical stucco you have wished for.

Each bag of Red-E-All Stucco has the necessary quantity of binder packed right in it. The binder is contained in the cartridges which you see in the illustration. This method of packing prevents the binder from fusing with the stucco before you are ready to mix.

Red-E-All is the same reliable Magnestone Stucco which has been used successfully on thousands of jobs. It's ready to mix with water and apply.

Shipped in neat or sanded form.

Manufactured for smooth and dash finishes.

Magnestone is the easiest stucco to mix and the smoothest to apply.

Write for samples, specifications and literature today.

AMERICAN MAGNESTONE CORP.

Executive Offices:

Springfield, Illinois.

PLANTS AND SALES OFFICES:

Ottawa, Ill. Springfield, Ill. Kansas City, Mo. Minneapolis, Minn.
New York, N. Y. Detroit, Mich. Chicago Ill.

MANUFACTURERS OF—Magnestone Composition Flooring—the most practical and artistic floor for the home and public or commercial buildings [furnished in eleven colors]—also Smith's Colonial Mortar Colors, Magnestone Interior Plaster and Water Proofing Materials.



This Carpenter Makes \$35.00 to \$45.00 Per Day



E. A. Smith, 803 W. Walnut St.,
West Frankfort, Ill.

HERE is a man in Illinois who followed the Carpenter trade forty years. Eight dollars a day was the scale paid when Smith quit the job. That wasn't enough so he decided to get into something for himself. He heard of the "American Universal" electrically driven floor surfacing machine. Having scraped many floors by hand, he realized what an awfully hard job it was and knew that an "American Universal" machine taking this back-breaking work off of fellow-workmen would be welcome everywhere. He grasped the possibilities, as a carpenter familiar with the building game, of making big money surfacing floors with this machine.

Here is what Mr. Smith says after buying the machine and going into the floor surfacing business for himself.

"The machine I bought from you more than a year ago has paid for itself twenty-five to thirty times and I am well pleased with it.

"It has advanced my wages about four times over what I used to make as a carpenter. I now make \$35.00 to \$45.00 per day, and some days more.

"I have tried four other machines and could have bought them for half what I paid for the 'American Universal,' but it is always cheapest to buy the better machine.

"I will soon be ready for another machine. I make a practice of doing perfect work, the best on the market."

The "American Universal" is made in Toledo by the American Floor Surfacing Machine Company, 515 So. St. Clair St., who advertise every month in this magazine. For further particulars regarding this money-making machine, see their advertisement on page 131 of this issue.

Record March Residential Construction

RESIDENTIAL construction contracts awarded in March were greater than in any previous month on record, according to F. W. Dodge Corporation. Total residential contracts last month in the 36 eastern states of the country (including about seven-eighths of the country's total construction volume) amounted to \$175,705,000. This figure brought residential construction started during the first quarter of the year up to \$412,285,000. This class of construction has proceeded thus far at a rate of 44 per cent ahead of the rate of the early months of 1922.

Construction contracts let in March for all classes of construction in these 36 states amounted to \$371,447,000. The increase over February was 32 per cent. In 27 of these states the increase over March, 1922, was 14 per cent.

Residential construction in March represented 47 per cent of the total construction started during the month. Other important items in the March record were: \$51,233,000, or 14 per cent, for business buildings; \$48,192,000, or 13 per cent, for public works and utilities; \$41,903,000, or 11 per cent, for industrial buildings; and \$26,966,000, or 7 per cent, for educational buildings.

The total volume of construction started in the first quarter of this year has amounted to \$895,325,000. This indicates a rate of activity 23 per cent greater than the rate for the first quarter of 1922. Residential construction has amounted to 46 per cent of all construction thus far this year. In total construction as in residential construction, 1923 to date has broken all previous records.

Contemplated new work reported from Jan. 1 to April 1, has amounted to \$2,291,104,000, compared with \$895,325,000 for contracts awarded in the same period.



North Western Expanded Metal Co. Takes Over Federal Steel Sash Co. Sales

THE Federal Steel Sash Company, formerly the Federal Bridge & Structural Company of Waukesha, Wis., has made an arrangement with the North Western Expanded Metal Company turning over to the North Western all sales of the Febrisco steel sash, both basement and industrial types as well as store fronts, for the United States.

The essence of the arrangement is that inasmuch as North Western salesmen are already selling the well known line of Nemco building materials throughout the United States these same salesmen can also handle the Febrisco sash at less expense than salesmen handling sash only.

This announcement will explain why certain correspondence addressed to the Federal Bridge & Structural Company is being replied to by the North Western Expanded Metal Company.



National Lumber Manufacturers Settle on 25/32 and 1½ Thickness

AT the meeting of the Standardization Committee of the National Lumber Manufacturers Association, held in New Orleans, March 23, in connection with the annual meeting of the association, an agreement was reached among the representatives of all constituent associations of the National body, excepting one which was not represented when the action was taken, upon standard finished sizes of lumber as follows:

That the 25/32 of an inch shall be the standard finished size, surfaced two sides, of all grades of 1-inch lumber, kiln dry basis, and 1¼ inches as the surfaced thicknesses of small dimension.

Make More Money—Be a Bigger Builder

The Good Things—the Big Things—of Life are for those who will reach out for them. You can have them for the grasping—just an energetic thought—saying "I Will" and they are yours. Are you content to make a small profit slowly on hand labor or—will you make a large profit quickly by means of a modern machine? Which?



Let The Magic Mixer— & Mix Your Concrete



Does it faster—better—cheaper

This Mixer will put you in position to do all kinds and classes of concrete work. It will enable you to work faster, do more work, do bigger work, do better work—and will help you build up a permanent and substantial business.

\$ 25

BRINGS IT TO YOU

Balance on Aloe's Easy Rental Purchase Plan—you have **TEN MONTHS TO PAY**—and the mixer will be making money for you faster than the easy payments come due. Certainly this is a rare opportunity for you to get away from the old shovel method and get into the class of the big men who are doing the big jobs in the modern way.

Your Big Opportunity For Greater Prosperity

With this wonderful machine and two men you can do as much work as you formerly did with six men. And you can do it easier, quicker and better, producing an absolutely uniform batch every time. It will mix $4\frac{1}{2}$ to $5\frac{1}{2}$ cubic feet per batch—can be speeded up to a batch every minute—over 2,000 cubic feet per day. It is the most practical and efficient mixer made—scientifically constructed of the best materials—light in weight, portable, simple and durable. Backed by the Aloe iron-pled guarantee to give the utmost service and satisfaction.

The Engine

Fitted with $2\frac{1}{2}$ horse-power four cycle, horizontal gasoline engine with high-grade Webster magneto. Simple, powerful, reliable, economical—requires only two gallons gasoline a day. Protected by all-steel housing. Two doors at rear make it easy to get at.

Anyone Can Run It

Nothing complicated—nothing to get out of order. Can be operated by anyone who will read and follow the simple directions which are furnished with each mixer. It comes complete—ready for work the day you get it.

FREE



Get This Free Book "The Concrete Road to Success"

You ought to have this booklet of invaluable facts about the wonderful opportunities the Magic Mixer offers you. Sent **FREE** together with full particulars of our Easy Rental Purchase Plan by which the Magic Mixer will pay for itself and put you on the road to greater success at the same time. Get this remarkable offer.

Free Trial Offer

So confident are we the Magic Mixer will please you in every way we will gladly send it to you for **10 DAYS FREE TRIAL** on payment of only \$25.00. Take it out on your jobs—put it to the most severe tests. Then, if you can be induced to part with it again ship it back at our expense—and we will promptly return your money without a word.

Mail The Coupon Today—NOW

The road to success is open to you. The opportunity to make yourself a big man is before you. The simple act of signing and mailing this coupon may be the turning point of your career. Don't sit idly by while other men are forging to the front. Start the coupon on its way. Get the facts. The time to act is **NOW**.

A. S. ALOE CO.
621 Olive St., St. Louis, Mo.

MAIL COUPON TODAY

A. S. ALOE CO.
621 Olive St., St. Louis, Mo.

Send me **FREE** booklet, "The Concrete Road to Success", full description of the Magic Concrete Mixer and particulars of your Easy Rental Purchase Plan.

Name _____

Address _____

*Write for
Our Distributing
Plan*

KILMOTH
*Aromatic Red Cedar
for Closets*

A model home feature endorsed by leading architects and builders. Makes clothes closets into big, roomy cedar chests—ideal for all homes, apartments and hotels.

Cost compares favorably with lath and plaster. For closets already built, Kilmoth is fabricated in panels for quick installation over lath and plaster.

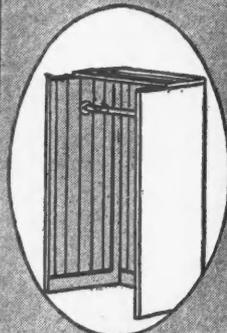
It's the aromatic qualities of Kilmoth that gives lifetime protection against moths.

Distributing Representatives Wanted

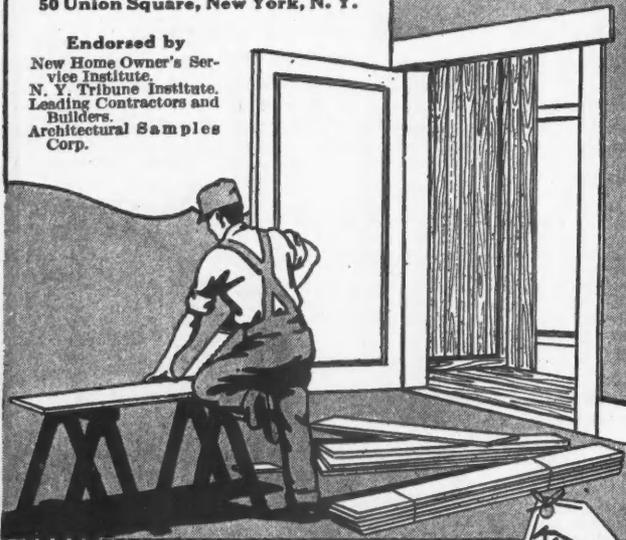
Exclusive distributing rights open to lumber supply dealers, or the like, equipped to handle quantity shipments. Representatives also wanted to sell straight lumber and panels. Co-operative sales helps supplied. Write for our plans.

Kilmoth Products Corp.
50 Union Square, New York, N. Y.

Endorsed by
New Home Owner's Service Institute,
N. Y. Tribune Institute,
Leading Contractors and
Builders,
Architectural Samples Corp.



*Kilmoth Panels
as installed over
lath and plaster
in
old construction*



KILMOTH PRODUCTS CORP.,
50 Union Square, New York

Please send complete information about Kilmoth. This request places me under no obligation.

Name

Address

**Copper and Brass Research Association
in Great Advertising Campaign**

A CAMPAIGN that is a combination of both selling and educational advertising is that recently inaugurated by the Copper & Brass Research Association, 25 Broadway, New York, N. Y. The campaign is unique in that it represents the appeal of an idea rather than a trade-marked product. A novelty of this advertising is the personification of the figure of Rust, which is shown in various devastating poses. It is sought by this means to obtain continuity of advertising purpose and idea, and to provide sufficient variation from the ordinary to give the campaign a personal, sustained interest.

The campaign goes far in offering co-operation of practical sort to the building contractor to tie up with the advertising being done by the Association. The building contractor is to be offered usable quantities of the following material, free of charge, imprinted with his name:

1. An illustrated booklet which tells in a good humored way the results of rust.
2. A handsomely bound and illustrated booklet, "How to Build a Better Home," to be sent by the building contractor to his building prospects.
3. Various pamphlets on copper roofing, brass pipe plumbing and builders' hardware.
4. Much miscellaneous material, included in the broadside announcement, and useful for hangers, newspaper advertising, etc.

The campaign is indicative of the fact that the brass and copper industries have gone into this new phase of merchandising their products in deep earnest.



**Reorganization of Standard Scale and
Supply Company**

THE Standard Scale & Supply Corporation announces that it has purchased and is now operating under entirely different management, the business formerly conducted by the Standard Scale & Supply Company.

The new corporation will manufacture the highest grade scales, concrete mixers and contractors' equipment.



**Sprague Electric—General Electric
Company Consolidation**

THE Sprague Electric Works of General Electric Company announces the consolidation of its district and local offices with corresponding offices of the General Electric Company, effective April 1, 1923. The manufacture and exploitation of Sprague products will be continued in the name of the General Electric Company in the recently organized Merchandise Department.

The Sprague Conduit Products Section and the Sprague Apparatus Section of the Merchandise Department will, for the present, continue offices at 527 West 34th Street, New York City.



**Ryerson Buys Cincinnati Iron
& Steel Co.**

JOSEPH T. RYERSON & SON, INC., with main plant and offices in Chicago, have purchased the plant, stock and good will of the Cincinnati Iron & Steel Company, Cincinnati, Ohio.

Mr. Lewis E. Skinner, who is well known in steel circles, through his 18 years with the Ryerson Company, now has charge of the plant. Mr. Skinner will be assisted by Mr. C. A. Parnell, former assistant to Arthur Allshul, at the Ryerson Buffalo plant.

The Ryerson Company will now have six Steel-Service plants, located at Chicago, St. Louis, Detroit, Buffalo, New York and Cincinnati.

LOUDEN

GARAGE DOOR HANGERS

Better Than Hinges—Bring You More Garage Jobs

It pays to do a good job for a customer. For instance when you install Louden Around-The-Corner Door Hangers in a garage you give your customer a convenience which he is bound to appreciate. The service he gets reflects satisfactorily on your judgment in selecting Louden Garage Door Hangers—makes your customer a booster for you.

Save Garage Space—Prevent Auto Damage

Doors hung with Louden Hangers hug the inside corner of the garage when opening and closing—need but a few inches of rear car clearance. Garage need be no wider or longer than to properly house car—can be built for less money—requires less building space.

Convenient. Door built in three sections, one of these being a swinging section for foot entrance—no need to shove entire door back

to enter or leave garage. This feature especially appreciated by women.

Safe. Door stands flat against inside wall when open, entirely out of way. No danger of door blowing shut and damaging car while driving in or out.

Easy Operation. Door slides open easily on roller bearing trolleys. Hangers inside, protected from weather. Door cannot be obstructed by snow, ice or trash.

Easy to handle—Set complete in a box

All hardware for door-stay rollers, hinges, screws, nails, trolleys, hasp, staple and handles—comes packed in a stout box, with simple and complete directions for installing. Track comes securely bundled for each set. No assembling—no shortages—nothing additional to buy. Built for doors of all sizes—regularly 8, 10, 12 ft. Write at once for special literature describing this perfected garage door hanger in detail. Ask your hardware dealer for Louden Hangers.

The Louden Machinery Company
5553 Court St. (Established 1867) Fairfield, Iowa

We are originators of the AROUND-THE-CORNER GARAGE DOOR HANGER—having a side door hinged to a sliding door. Completely covered by our Pat. No. 1,184,983, dated May 30, 1916. Beware of infringements.



Opening Front Door to Enter Garage—Not Necessary to Move Entire Door.

Looking at Door End of Garage from Inside—Foot Door Open.

Opening Entire Door—Note How Closely It Follows the Corner—Not An Inch of Space Lost

Garage Open—Car Ready to Enter

Door Entirely Open—Entire End of Garage Open.

VICTOR



Finally!

A Standard Keyboard, Adding and Listing Machine

\$100

Million Dollar Capacity

The Victor is a full size, finely finished machine, positively standard in every detail. Equipped with all modern features without extra charge. Used by big corporations and small retail stores alike, for efficient service at low cost. The first standard keyboard machine to sell at or near \$100. Simple in design and sturdy in construction. Fully guaranteed. Free trial in your own office, without obligation.

Nine Points to Compare and Consider:

1. Standard 8-Bank Keyboard.
2. Portability.
3. Clear Signal.
4. Triple Visibility:
The figures previously printed; the figures about to be added; the total in machine, all completely and easily visible to the operator.
5. Instantaneous Totals:
No extra pull of the handle, as on so many other machines.
6. Automatic RED Printing of Totals and Subtotals.
7. Non-Add Key.
8. Finish and Appearance.
9. Guarantee.

WHY PAY MORE? TAKE LESS?

EASY MONTHLY PAYMENTS IF DESIRED

Columbia Postal Supply Co.
Silver Creek, N. Y.

COUPON

COLUMBIA POSTAL SUPPLY CO.
Silver Creek, N. Y., U. S. A.

Without obligation to me, send me full details of your free trial offer, Victor Adding and Listing Machine.

Name.....

Address.....

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.

"Alpha Aids, No. 33" is at hand from the publishers, the Alpha Portland Cement Company, Easton, Pa. Issued at intervals in the interest of users of portland cement, this issue of Alpha Aids covers, among others, such practical topics as the making of fence posts, dam construction, attractive garden furniture, and how Alpha cement is maintained at its high standard thru rigid manufacturing safeguards.

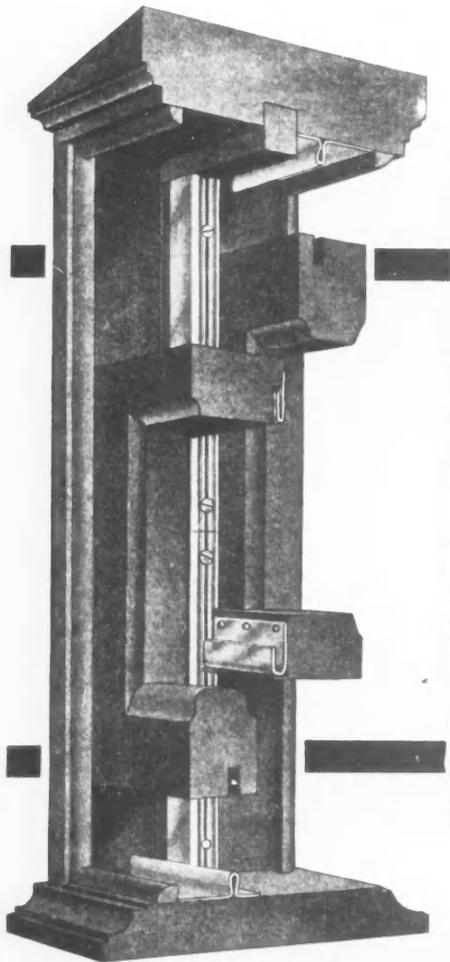
"A Bathroom of Distinction" is a handsome folder issued by the Fairfacts Company, 234 West Fourteenth Street, New York, and advertises their china bathroom accessories. These are of both the built-in and projecting type and their beauty and dignity and easy-cleaning features make an instant appeal. A large number of accessories are shown, and the folder offers many suggestions to the architect, builder, dealer, plumber and the prospective or present home owner.

"Acme Angles" is the house publication issued by the Acme Motor Truck Company, Cadillac, Mich., and devoted to interesting illustrated stories of Acme truck performance. Incidentally carrying coals to Newcastle finds its parallel in one Acme truck at Uniontown, Pa., which carries baled hay to horses.

"Bommer Spring Hinges" are described and illustrated in an attractive catalog issued by the manufacturers, the Bommer Spring Hinge Company, Brooklyn, N. Y. The superiority of this old established company's product is authenticated through the illustrated showing of the medals won through the numerous awards of competent juries at international expositions, but the architect, carpenter and builder have long ago demonstrated to their own individual satisfaction that Bommer Spring Butt Hinges are one of the most useful and satisfactory makes of spring hinges for general use.

"National Garage Hardware" is a well printed book at hand from the National Manufacturing Company, Sterling, Ill. It presents a number of garage suggestions to the prospective builder, ranging from those of simple design to those of more elaborate proportions, and naturally considers them in relation to the garage equipment made by the National Manufacturing Company.

"Modern Heating and Ventilating," the new Data Book issued by the Bishop & Babcock Company, Cleveland, Ohio, covers that company's unusually complete line of heating specialties and ventilating equipment for all services. This is quite one of the most conveniently arranged, helpful catalogs which have come to the editor's desk. It has 277 pages, and yet is small and compact. Naturally it illustrates and describes Bishop & Babcock specialties and equipment, and there is a wealth of tables and detailed illustrations which should make it an invaluable handbook



SAGER



You Contractors!

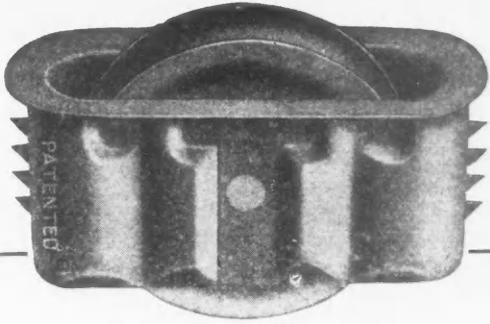
Do you realize that right now, in this building boom, you have a wonderful opportunity to make extra money by installing Sager Metal Weatherstrips?

They hold the foremost position in the estimate of architects, builders and the general public.

Do not lose this chance to increase your profits.

Write for Agency Proposition

Sager Metal Weatherstrip Company
162 West Austin Ave., Chicago



Sash Pulleys of Pressed Metal

- for steel or wooden sash
- for fine buildings
- for heavy windows
- to match other hardware
- of steel, brass or bronze,
or combinations of these
- with plain, roller or ball
bearings

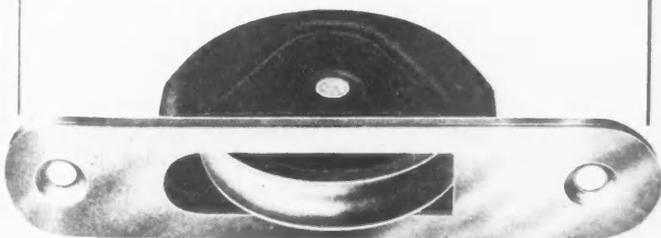
Sold by hardware dealers

*A catalog will be mailed at once
on request*

The American Pulley Company

Manufacturers of Steel Split Transmission Pulleys,
Steel Sash Pulleys and Pressed Steel Shapes

4200 Wissahickon Avenue
PHILADELPHIA, PA.



Just Like a Movie
"From Rags to Riches"

By the Magic of the
**COYNE "Job-Method"
DRAFTING COURSE!**

ONLY a few months ago out of a job. Today, a high-salaried Draftsman, facing the future without fear. Look at the picture! What other profession is so quickly, easily learned or pays as well?

Draftsmen Wanted!
\$300 a Month!



Instruments FREE!
Big professional set of Draftsman's instruments, board, triangles, etc., actual \$19.50 value will be given free to every "Job-Method" student. No strings to this offer. Coupon brings complete information. Mail it at once!

Big pay jobs open for Draftsmen everywhere, all the time! Before machines, buildings, autos, ships or most anything can be built a Draftsman must draw the plans. Look at the want-ads — thousands of opportunities for Draftsmen right NOW. "Loan me part of your spare time for a few weeks," says President Cooke, "and I'll guarantee to make a Draftsman of you quick or refund your money."

**Quickest
Way to
BIG PAY!**

Men in mechanical and building lines can smash ahead to bigger pay and better jobs after learning Drafting. The Coyne copyrighted "Job-Method" course gives you actual Drafting Jobs, not lessons out of books or mere theory. Most complete course ever produced, yet you get it all in half the time!



Bennett Wellington Cooke
President of the Coyne School of Drafting "greatest Institution of its kind in the World." Mr. Cooke has an international reputation for turning out big-job big-pay Draftsmen.

Learn "Radio" FREE!
This month only our \$45 Radio course free to "Job-Method" students. Teaches you to design, build, install and operate Crystal and Tube sets. Helps you make extra money on the side. Up to the minute Radio facts written so you can understand them.

Coupon Brings You **BIG OPPORTUNITY**

If you want to get ahead, make more money, the Coyne School will help you. Mail coupon today and get 2 Free Books and complete information. Let the other fellow do the hesitating—you act NOW!

—mail it today!

Address **B. W. Cooke, President**



Dept. 106, 552-598 So. Throop Street
Chicago, Ill.

Coyne School of Drafting
B. W. Cooke, President
Dept. 106, 552-598 So. Throop St.
Chicago

Without obligating me in any way please send me your 2 books, "Drafting the foundation of Industry" and "Learning Drafting by the Job-Method" — all absolutely free. Also complete information of your rapid home-study Drafting course. Free Radio offer and Free Instruments.

Name.....
St. No.....
City.....
State.....

for the architect, the builder and the heating contractor and engineer.

"Tank Water Heaters That Are Different" is a folder issued by the Hoffman Heater Company, Oberlin Avenue, Lorain, Ohio. It illustrates and describes the Hoffman line of tank water heaters. The point is made that enormous shop production, plus modern shop efficiency methods, makes possible the manufacture of Hoffman tank heaters of remarkable quality at a comparatively reasonable price. Furthermore, the user is insured thorough satisfaction by reason of high efficiency in operation and almost entire freedom from trouble.

"Permanent Furniture" is a handsome booklet issued by the Curtis Companies Service Bureau, Clinton, Iowa. "It doesn't matter," states the opening paragraph, "whether your house still is in embryo; whether you are making over an old house planned and built by someone else, you can make it very much your home by building in certain things * * * To be good at all it must be very good * * *" and then the book proceeds to make known the worth of the built-in furniture manufactured by Curtis after designs by Trowbridge & Ackerman, well known architects of New York. A very interesting, stimulating "selling" book.

"A New Refinement and Improvement of a Thoroughly Established Product" is a folder at hand from The Carney Company, Mankato, Minn. It outlines the result of a test of compression strength conducted for the Carney Company by the Pittsburgh Testing Laboratory, and also gives a simple method whereby a test on "Carney" mortar may be made by anyone interested. The advantages of refined and improved "Carney" to architects, builders and contractors is emphasized.

"Duro" Pumps and Water Systems is the title of the catalog issued by the Duro Pump & Mfg. Co., Day-

ton, O. It describes and illustrates "Duro" Electric and Engine Driven Pumps and Complete Water Systems for city, suburban and farm homes, and which help supply running water under a steady and reliable pressure for the bathroom, kitchen and laundry, or at the garage, barns, watering troughs, etc., or for sprinkling purposes and fire protection. "Duro" Pump and Water Systems are for deep or shallow wells, and are supplied for use with city current, farm light plant current or for gasoline engines. The catalog likewise gives helpful installation and other information.

"National Giant Farm Elevators" is the title of the catalog issued by the Portable Elevator Mfg. Co., Bloomington, Ill., to illustrate and describe the all-steel chainless bucket elevator manufactured by the company. The point is made that National Giant Farm Elevators save much hard work, high wages and horses, and the all-steel construction reduces wear-and-tear to a minimum.

"Ancient Beauty for Modern Buildings" makes out an excellent case for the pressed steel column manufactured by the Union Metal Manufacturing Company, Canton, O. It shows how the beauty of the fluted column has been adapted to every kind of structure through correct designing and construction, and is filled with illustrations and descriptive matter, with specifications, which enable the reader to fully appreciate the artistic value of Union Metal columns, their permanent construction, and reasonable cost.

"Hard-n-Tyte Engineering Service" is illustrated and described in a book at hand from the manufacturers, the General Chemical Company, 40 Rector Street, New York. It describes and illustrates installations using "Hard-n-tyte," a double crystalline fluosilicate, which penetrates and hardens the surface of concrete by chemical reaction. But

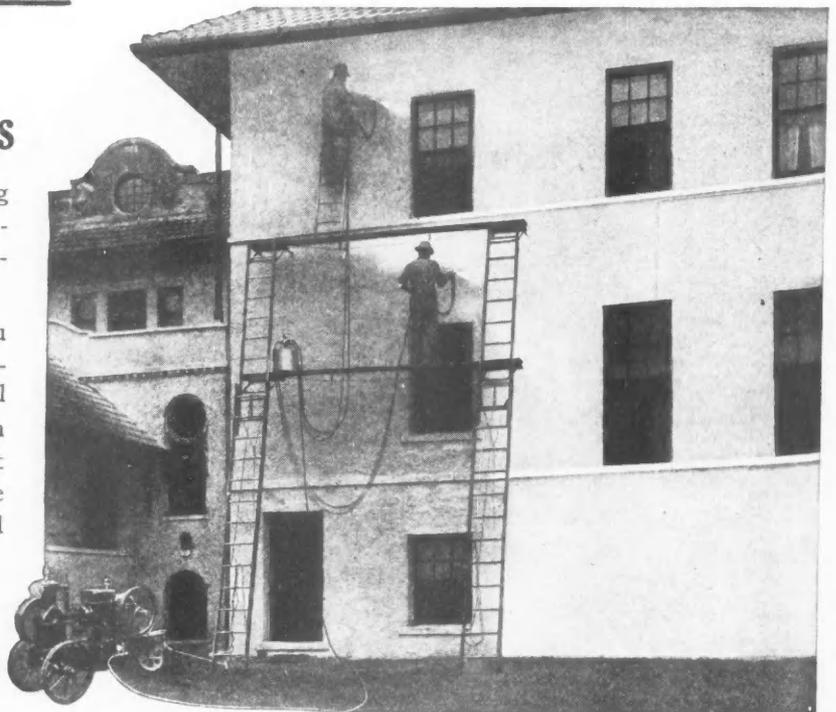
Speeding Up Your Painting and Profits

Painting with DeVilbiss spray-painting equipment will speed-up the work without extra effort and bring correspondingly bigger profits to you.

Spray painters will do more jobs for you in your present working time by spending less time on each job. Your men will like to operate the DeVilbiss spray gun because the work is cleaner and will not wear them out: this has a favorable bearing on amount of work done and profits for you.

DeVilbiss Spray-painting System

gives you all that is practical, complete and reliable in spray-painting equipment. The DeVilbiss spray gun operates on as low air pressure as good spraying permits; its fluid and spray adjustment is accurate and instantaneous; it paints 4 to 5 times faster than is possible with hand brush. DeVilbiss painting insures a more thorough and uniform coating with any kind of paint, on any inside and outside surface.



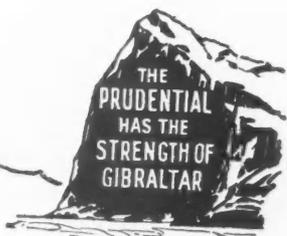
Further interesting facts about the DeVilbiss Spray-painting System, that will point the way to more painting and profits for you, will be gladly sent. Get the facts.

The DeVilbiss Mfg. Co.

3676 Detroit Ave.

Toledo, Ohio

GROUP LIFE INSURANCE



For the employer with an interest in his employees. Write today for the plan that will meet your needs.

The
PRUDENTIAL
INSURANCE COMPANY OF AMERICA

EDWARD D. DUFFIELD
President

HOME OFFICE: NEWARK
New Jersey



Fourteen Uses for Slate in this Garage

Exterior:
Roofs, walks, flower-boxes, porch floor, thresholds and coping of slate.

Interior:
Slate plinths, bases, wainscoting, window sills, shelving, work-bench, filter and sink.



SLATE is adapted to more uses than any other natural stone.

The permanence of slate is proverbial. It is unaffected by exposure, moisture, oils, dyes, chemicals, odors. Whether cut into blocks or slabs or split into veneer-like sheets, slate retains its resistant, sanitary and enduring characteristics.

These properties recommend slate for use—and its various colors permit of most effective contrasts—from roofs to walks; from vestibule to kitchen.

The diversified uses of slate are worthy of consideration in every building or rebuilding, roofing or re-roofing project—large or small—where effectiveness, economy and lasting satisfaction are desirable.

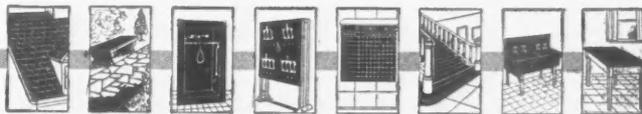
Through our service bureau you may secure promptly any information you desire regarding slate.

SLATE

CONSIDER ITS USES

- | | | | |
|-------------------|--------------|-----------------|----------------|
| Roofs | Stairs | Benches | Table Tops |
| Chimney Tops | Risers | Coping | Filters |
| Hearths | Landings | Bathrooms | Shelving |
| Mantels | Vestibules | Laundry Tubs | Range Bases |
| Thresholds | Porch Floors | Laundry Slates | Kitchen Slates |
| Sills | Areaways | Sinks | Electric Bases |
| Wainscoting | Garden Walks | Drain Boards | Dough Boards |
| Bases and Plinths | Fountains | Ice Box Shelves | Work Benches |

NATIONAL SLATE ASSOCIATION
757 Drexel Building PHILADELPHIA



the point is made that "Hard-n-tyte" is a service, rather than a material, and that the treatment of concrete with "Hard-n-tyte" is done under the direction of authorized engineers of the General Chemical Company.

Ruud Automatic Water Heaters for Small Homes are graphically illustrated and handled informatively in a folder at hand from Ruud Manufacturing Company, Pittsburgh, Pa. It is interesting to note how the manufacturers have adapted these household utilities to the changing market of small house construction, without departing an iota from the proven Ruud quality of the firm's larger water heating units.

"Medusa Waterproofed White Cement" is one more excellent brochure from the offices of the Sandusky Cement Company, Cleveland, Ohio, and is up to the standard we have come to expect for "Medusa" publications. This illustrates and tells what has been done with "Medusa" Waterproofed White Cement through the years, and complete specifications explains what others can do with it now. It is nice to note how illustrations and words have been combined to be most explicit and helpful.

"Meyer Cup Elevators" is a catalog issued by the Meyer Manufacturing Company, Morton, Ill. The selection of the right grain elevator for the small farm or bigger commercial elevator is a serious matter, and the company manufacturing the "Meyer" is to be congratulated on the way it makes the path of the buyer secure and easy. The reviewer has not, in many a day, read a catalog where so many testimonials from users give assurance of fair and honest and satisfactory dealing.

"An Investigation of the Properties of Chilled Iron Car Wheels" is Part III of a bulletin issued by the Engineering Experiment Station of the University of Illinois, Urbana, Ill. The price is 50 cents, and the bulletin is a resume of

work done under a co-operative agreement between the manufacturers of chilled car wheels and the University. The two previous bulletins, Parts I and II, dealt with the strains due to static loads, produced through various causes. This Part III deals with strains due to brake application.

"Lumber and Its Utilization" is Volume 1, Chapter 1, of a General Information Series to be issued at intervals by the National Lumber Manufacturers' Association, Washington, D. C. This volume is the preface, really, to such a series, and is, therefore, an announcement and brief account of the trade development activities of the National Lumber Manufacturers' Association. It lists the comprehensive series of later volumes, to be issued under specific heads covered under the broad title, "Lumber and Its Utilization."

"Farmer's Friend Cup and Portable Elevators" is a catalog of the grain handling equipment manufactured by the G. & D. Manufacturing Company, Streator, Ill. Included are cup, or bucket elevators, portable or drag elevators, wagon jacks, horse powers, speed jacks and spouts. The company, in its introduction, states that the buyer of "Farmer's Friend" equipment is getting machinery that has stood the test of time and every other test that can be given farm grain handling equipment.

"Union Vacuum and Centrifugal Boiler Feed Sets" are described in Bulletin No. 75, issued by the Union Steam Pump Company, Battle Creek, Mich. The Union Vacuum and Centrifugal Boiler Feed set is used for removing air and condensation from steam heating systems, etc., and returning the condensation to the boiler. Its design and construction, approximate dimensions and capacity, are shown and stated; likewise the different requisitions which must be made for it as a motor driven unit, if alternating or direct current is used.

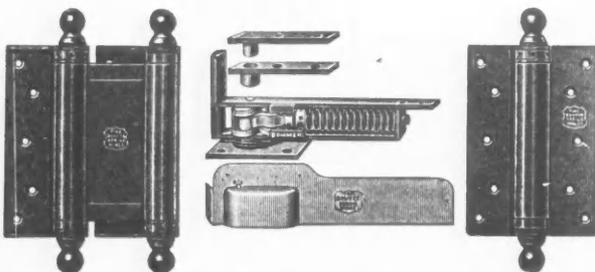
A melancholy chap was he
Until an "Ad" he chanced to see
which said!
"BOMMER SPRING HINGES" are the best

And now he is a happy man
with every comfort blessed—
It pays to take that "Ad's" advice—
be wise
"BOMMER SPRING HINGES ARE THE BEST"



BOMMER SPRING HINGE CO., Brooklyn, N. Y.

ESTABLISHED 1876



House near Chicago, showing its "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

Underwear for Houses

Underclothing makes people warm because it prevents the heat of their bodies from escaping. You can make your houses warm in the same way.

Cabot's Insulating Quilt

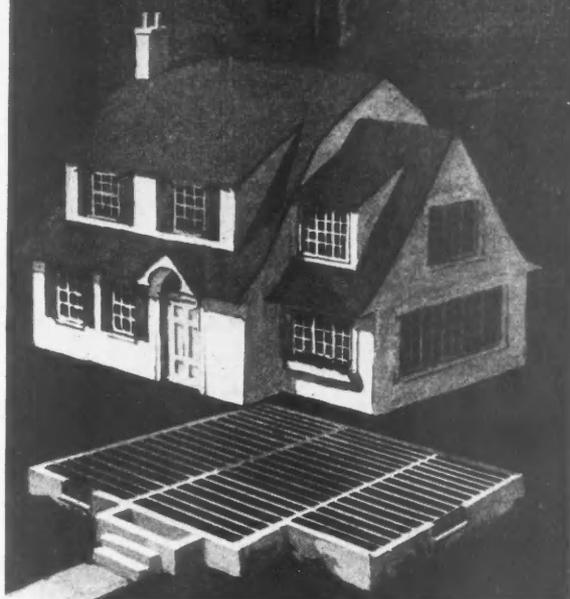
prevents the house heat from escaping. It insulates the whole house and saves the heat from the heater—that costly heat. It keeps the house warm on the smallest amount of coal; saves one-quarter to one-half of the coal bill. Makes the house comfortable for all time. Preserves health and saves doctor's bills. Makes the house cooler in summer. Quilt is not a mere felt or paper, but a scientific insulator that makes the house like a thermos bottle.

Sample of Quilt with full details, and references to dozens of users sent FREE on application

SAMUEL CABOT, Inc., Mfg. Chemists
BOSTON, MASS.

342 Madison Ave., New York 24 W. Kinzie St., Chicago
Cabot's Creosote Stains, Conserve Wood Preservative, Stucco
and Brick Stains, Damp-Proofing

What Protection have you from Basement Fire Hazards ?



90% of Residence Fires Originate in Basements

EIGHT hours out of the twenty-four most people are sleeping, insensible to the danger of basement fires. Positive protection can be secured by building the first floor of Truscon and National Steel Joist construction. Besides being fireproof, this construction prevents cracks due to settlement and shrinkage, eliminates basement dust seeping up as well as cold and dampness, and saves in repairs and redecoration.

Truscon and National Steel Joists are quickly and easily installed; they are durable, permanent and strong as the foundation. Send for our estimates and suggestions.

TRUSCON STEEL COMPANY, YOUNGSTOWN OHIO, U. S. A.

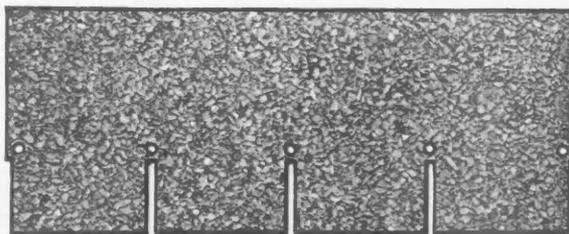
*Warehouses and offices from Pacific to Atlantic.
For addresses see 'phone books of principal cities.
Canada: Walkerville, Ont. Export Div.: New York.*

NATIONAL STEEL JOIST CO., MASSILLON, O.

TRUSCON
AND NATIONAL
STEEL JOISTS

Won't it always take less time?

- to pick up a *strip* of four shingles than four individual shingles?
- to hammer five nails than eight?



Cut the Labor Cost

—Make a Tighter, Safer Roof with

REX FLINTKOTE STRIP SHINGLES

Isn't it the cost of the finished roof that interests the home owner most? Strips may cost more than individuals in stock—but, the cost of the finished roof—materials *plus labor* will be less. The reasons will always be the same.



FLINTKOTE ROOFINGS

"Better Roofings for Less Money"

THE FLINTKOTE COMPANY

NEW YORK
342 Madison Ave.

BOSTON
88 Pearl St.

CHICAGO
Peoples Gas Bldg.

"Popular Mechanics' Concrete Handbook No. 1" published by Popular Mechanics Press, 200 East Ontario Street, Chicago, Ill., 50 cents.

This book describes 173 practical ways of using concrete in the home, shop and on the farm. Full directions are given for the user, requiring the use of only ordinary tools and equipment. There are 138 illustrations. It is a book which will appeal to everyone at all interested in concrete.

"Concrete Floors" is a folder issued by the Portland Cement Association, 111 West Washington Street, Chicago, Ill. It shows cross-sectional views of various types of concrete floors, with a table of the quantities of materials required, and a comparison of the dead weight for each type. It is a reasonable surmise that every architect, builder and contractor will wish a copy of this. It is rare to find three pages that give such a fund of condensed, important information.

"Union Pipe Covering" is Bulletin 1P, February, 1923, issued by the Union Fibre Company, Winona, Minn. It describes Union Pipe Covering in a general way, and gives data from the U. S. Bureau of Standards on the insulating value of its product compared with other insulating materials. It is stated that the insulating value from "Union Fibre" is four times that of others per dollar expended.

"Delco Light Pumps" are fully described and shown in a handsomely gotten-up folder at hand from the manufacturers, the Delco-Light Company, Dayton, Ohio. The folder illustrates their complete line of shallow well and deep well pumps for city and country home use. These electrically operated pumps come in sizes and types to meet every requirement, and are deservedly popular since their new and extremely simple type of installation requires no pit or pump house, protects the well from every form of pollution and requires practically no attention.

"Hisey Portable Electric Drills and Reamers" are described and illustrated in Bulletin No. 6, at hand from the manufacturers, the Hisey-Wolf Machine Company, Cincinnati, Ohio. The advanced engineering principles as applied to this company's line of portable electric drills and reamers will interest, we feel sure, every user of portable electric tools.

The Safety, Sanitation and Welfare Work of the United States Steel Corporation as conducted through the medium of the Central Department at the corporation offices, New York City, is fully covered in a book recently issued by the corporation. It is noteworthy that the number of dwellings and boarding houses constructed and leased to employes at low rental rates to date totals 28,451. The book gives a new insight into a phase of the corporation's existence which has hitherto not been fully appreciated by the outsider.

SAND

WITH

"Eight man power"

Portable Electric Sander

Removes Varnish
Finishes Hardwoods

Send for Bulletin

R. L. BARKER & CO.



25 S. Clinton
Street
CHICAGO



**Casements Do Not Leak Water
When Equipped With Allmetal
Waterproof Aluminum Channel**

Weatherstripping Is the Business To Get Into

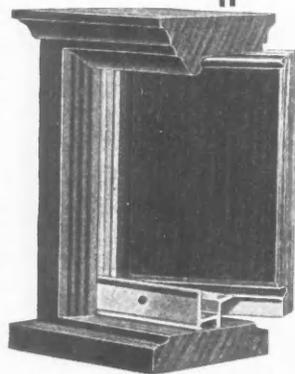
ALLMETAL weatherstrip is the strip to sell. It is easy to install. Never gets out of order or needs repair.

Capital Is Not Necessary

You do not need a lot of money to go into the weatherstrip business. The material is the smallest item on the contract. The majority of our best agents started on a "shoestring" and today they own their automobiles and the home they live in. We can cite a number of these instances. Hard work is what you need most.

Every New and Old Building Owner Is a Prospect

Now is the time to get work on new buildings. There are plenty of them. There is plenty of work to be had on occupied homes. Every home owner is a prospect. This is a profitable business. Don't delay. Get started in the best season. All of our men are busy.

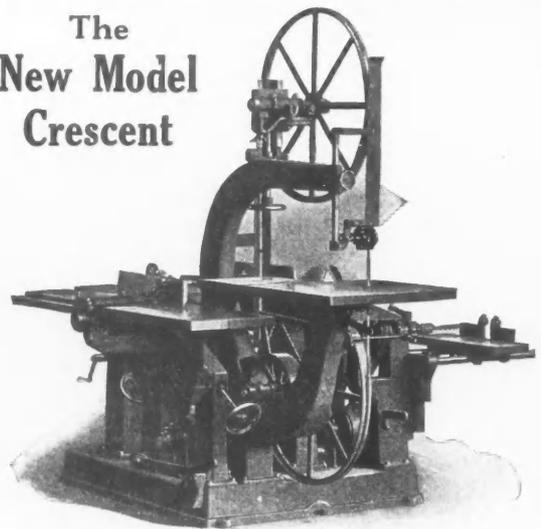


Illustrating Our Waterproof Casement Strip

Mail the Coupon

Allmetal Weatherstrip Company,
231 W. Illinois Street,
Chicago, Ill.
Gentlemen: Without obligation send us your agency plan.
Name.....
Address.....
City..... State.....

**The
New Model
Crescent**



**Universal Wood Worker No. 101 to No. 112
is Tremendously Popular**

because the machine is built to uphold the well earned reputation for quality that has made the Crescent line the standard by which wood working machinery is usually judged.

Send today for illustrated price list and at the same time ask for catalog of band saws, saw tables, shapers, variety wood workers, jointers, planers, planers and matchers, table cut off saws, swing saws, disk grinders, borers, hollow chisel mortisers, universal wood workers.

THE CRESCENT MACHINE CO.

224 Main Street

LETONIA, OHIO