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American Builder

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AMERICAN CARPENTER AND BUILDER COMPANY

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ADVERTISING RATES

Furnished on application. Advertising forms close on the 15th of the month preceding date of publication.

SUBSCRIPTION RATES

One year, \$2.00; six months, \$1.00; single copies, 25 cents. Special rates for two or more subscriptions when received together, to be sent to different addresses—Two subscriptions, \$1.75 each; three subscriptions, \$1.50 each; five subscriptions, \$1.25 each; ten or more subscriptions, \$1.00 each. Extra postage to Canada, 50 cents; to foreign countries, \$1.00.

PROTECTION FOR OUR READERS

The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interests of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

Be sure in writing to advertisers to say: "I saw your advertisement in the AMERICAN BUILDER."

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VOL. XXIX

April, 1920

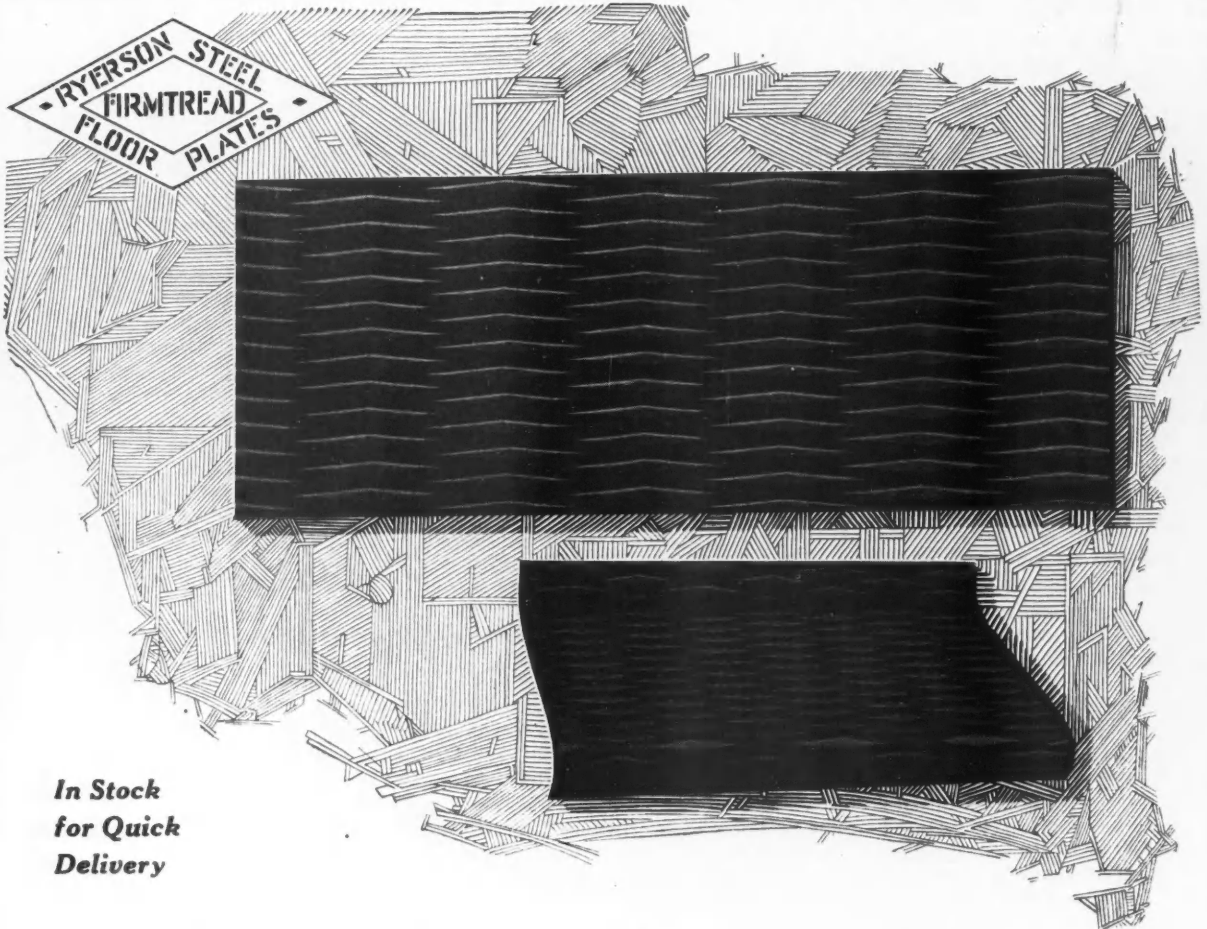
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The American Builder has always been edited in conformity with the wishes of its readers. It has attempted to interpret for them their ideas and problems. We owe a great debt of gratitude to our many staunch friends who have aided this policy during the last fifteen years by constructive criticism and helpful suggestions. We want this friendly co-operation to continue. If you have a suggestion to make, if you do not find what you want, if you believe certain changes should be made, don't hesitate to write us and tell us about it. In spite of our wide range of activities and large circulation, we always have time to appreciate and profit by your opinions.

Editors and Publishers of the AMERICAN BUILDER.



**In Stock
for Quick
Delivery**

Great Strength and Safety in "Firmtread"

"Firmtread" Steel Floor Plates and Treads present the best, strongest and cheapest all-around safe surface on the market.

Strength. — "Firmtread" is rolled from open hearth steel, having a tensile strength of 55,000 to 65,000 lbs. per square inch, elongation of 20 per cent to 25 per cent and elastic limit of about 35,000 lbs.

"Firmtread" is many times stronger than cast iron.

Non-Slip Surface. — Special Diamond Pattern rolls give "Firmtread" a higher, squarer edged diamond than pressed pattern plates.

Less Cost. — "Firmtread" costs approximately 50 per cent less than the average specially prepared steel plate or tread and about 30 per cent cheaper than cast iron.

*We shall be pleased to send you complete
bulletin and prices.*

JOSEPH T. RYERSON & SON

CHICAGO

ST. LOUIS

DETROIT

BUFFALO

NEW YORK

Short Talks by the Editor



Fifteen Years Old

FIFTEEN years ago the AMERICAN BUILDER made its bow to the building industry. It was founded for the express purpose of stimulating the best in building thought, construction, material and methods, a policy from which it has never deviated.

Today it carries its message to 50,000 readers in the United States, Canada, Europe, South America, and in the far corners of the world wherever exponents of good building live.

That it enjoys an enviable reputation in the building field is demonstrated by the testimonials presented in another part of this magazine from firms who have used it for ten years or more as their medium to acquaint builders with their products, and by the thousands of letters which we receive from subscribers who have found it a real source of inspiration and practical information.

It is gratifying on this occasion of our anniversary to know that we are succeeding in no small measure in the purpose for which the magazine was conceived. The phenomenal growth in circulation and advertising are real reasons for an honest pride in workmanship.

We take this opportunity to wish our thousands of friends a prosperous year. There is big work ahead. Steadfast and constructive work will add more laurels to the profession.

The AMERICAN BUILDER will continue to give its hearty support to the cause of better buildings, better construction, and improved methods.



Our Birthday Dress

TO fittingly celebrate its fifteenth anniversary the AMERICAN BUILDER appears this month in a new dress in the form of a four-color lithographed cover portraying a beautiful home. A complete description of this attractive home with floor plans is printed in the editorial section.

In addition to the four-color cover this anniversary number contains a special thirty-two page section which is unique and something different from anything heretofore attempted. It contains sixteen pages in color, a blue-printed detail section with photographs of beautiful homes and other buildings with floor plans also

in color, illustrating and featuring in an entirely new way, certain subjects that are of special and timely interest to architects, engineers, contractors and dealers.

It not only opens the way to a new realm of interesting building thought, but is in itself a concise, compact directory of valuable information arranged in such a way as to be easily available to all busy builders. New subjects will be treated in a new way in the coming numbers of the AMERICAN BUILDER.

We are incurring the extra expense of this new four-color cover and special blue-print feature section because we want this magazine to be not only the builder's most complete guide, but his greatest business solicitor. By making it more attractive we will make it still more popular. And becoming popular, it will be the strong magnet which will draw the prospective builder and family to the conference table. We are supplying building information and inspiration in such a way as to appeal not only to the contractor, dealer and architect, but to his client as well.



Get Acquainted

GO thru the advertising section of the AMERICAN BUILDER this month. There you will find 373 enterprising, reliable manufacturers that want to know you, co-operate with you and have pleasant business dealings with you. They are 373 co-partners. They are the foremost representatives of every line in any way connected with the building industry.

They have spent time and money to perfect and produce some tool, machine or material that will add to the credit of the building industry, something that will help you cut costs, increase your skill, and make your reputation one to be proud of.

It is time well spent to look thru these columns every month. Are you acquainted with all these concerns? If not you should make it a point to know them. They want to be your friends, to help you in many ways. Here are 373 influential members of the building brotherhood who invite you to write to them and get better acquainted. They place at your service a trade directory without equal.

It certainly is gratifying to us that our readers are so important in the building field that so many manufacturers want to know them.



111 Progressive and Substantial Concerns who have advertised for a period of years in the American Builder tell of the results its advertising pages have obtained for them. For many years American Builder readers have been buying their products and [will be] glad to read their letters on this, the Fifteenth Anniversary of the American Builder, "The World's Greatest Building Paper."

"More Sales Than From Any Two Other Publications"

Keokuk, Ia., Feb. 18, 1920.

AMERICAN BUILDER:

I have used your advertising columns off and on for fourteen years; during the last eight years I don't believe we have missed an issue, and it is the only paper I have been using continuously during this time. There can be only one reason for that, and that is RESULTS.

We get more inquiries from the AMERICAN BUILDER and sell more machinery to its readers than from any other two papers. That signifies that you are catering to the better class of contractors who have the money to buy modern labor-saving machinery.

I shall in your next issue start using space for another concern I am interested in—the Contractors' Equipment Co., of this city—on small mixers and block and brick machinery.

Wishing you continued success and thanking you for your courteous treatment in the past, I am,

O. G. Mandt,

THE AMERICAN CEMENT
MACHINE CO., INC.



"A Very Satisfactory Medium"

Chicago, Ill., Feb. 7, 1920.

AMERICAN BUILDER:

It is a pleasure for us to say that we find the AMERICAN BUILDER a very satisfactory medium for advertising the line of goods we manufacture.

F. C. AUSTIN Co., Inc.

"American Builder Very Good, Indeed"

Indianapolis, Ind., March 9, 1920.

AMERICAN BUILDER:

We consider the AMERICAN BUILDER very good indeed, and are well satisfied with it. Yours very truly,

E. C. ATKINS & Co., Inc.,

T. A. Carroll, Advertising Manager.

"The American Builder Is a Winner for Us"

Milwaukee, Wis., Feb. 24, 1920.

AMERICAN BUILDER:

No doubt you, like ourselves, like to hear words of praise of the product that helps us pay the office boy and enables us to keep our "Tin Lizzie" in gasoline and oil. So here goes for a few boosting words regarding your paper and the results we have secured since we have been using the AMERICAN BUILDER as an advertising medium in placing our line of Concrete Mixers and Pavers on the market.

When your representative first called on us and told us about the possibilities of making sales by giving you a small ad, we were a little skeptical and wondered whether or not the pasture was not being painted a bit too green. However, your representative made us feel that even tho we got no results, it would be an act of charity and also help him keep his job. The first year the AMERICAN BUILDER proved to be everything we had heard about it. It brought inquiries and here and there a sale could be traced to our ad. The second year more inquiries came and, most important of all, a large number of sales were made. This, of course, made us stronger for your paper.

From year to year, as our business grew, your publication has increased the number of inquiries and sales. This, of course, is due to two reasons—our standing back of the goods we advertised and your having greatly increased the number of subscribers to the AMERICAN BUILDER.

In other words, *the AMERICAN*

Facts About AMERICAN BUILDER

The American Builder is not a consolidation of any other publications. It was founded by Wm. A. Radford 15 years ago (under name of "American Carpenter and Builder," later shortened to "American Builder") and has continued under his personal supervision.

First Issue.....April, 1905

Fifteenth Anniversary.....April, 1920

Present Circulation.....50,000

Number Towns on Mailing List.13,871

Starting with no subscribers 15 years ago, the American Builder has built up the largest and most influential list of paid subscribers in the history of the Building Industry.

Pages Advertising First Issue... 6

Pages Advertising Present Issue.202%

Number Advertisers First Issue 12
(Of these four are still in the American Builder.)

Number Advertisers Present Issue 387

The whole-hearted co-operation of its readers and advertisers has made the American Builder the Largest and Most Influential Building Paper in the World, having more circulation, more advertising and more advertisers than all the other papers in the Building Field COMBINED.

BUILDER has been a winner for us, and we trust that if the salesman who first called on us and induced us to advertise in the AMERICAN BUILDER is still with you, he is enjoying some of the "worldly goods" that he is entitled to for giving us the tip: "Use the AMERICAN BUILDER as an advertising medium in placing your goods before the contractor."

Wishing you all kinds of success, we remain,

Your friends,
ATLAS ENGINEERING CO.,
By C. W. Zimmerman, Vice-Pres.



"We Can Conscientiously Recommend Your Publication"

Danville, Ill., March 3, 1920.

AMERICAN BUILDER:

We are very glad to report that the AMERICAN BUILDER is considered one of our best advertising mediums. We can conscientiously recommend your publication to any firm who desires the best of service.

Yours very truly,
ALLITH-PROUTY Co.,
E. E. McClimans, Sales Manager.



"Cost of Selling Lowest in American Builder"

Toledo, Ohio, Feb. 9, 1920.

AMERICAN BUILDER:

We are very glad indeed to have the opportunity of expressing our views regarding the advertising value of the AMERICAN BUILDER.

As you no doubt know, we have been a continuous advertiser in your publication for a great number of years and have been entirely satisfied in every way.

Our ads in the different papers are "keyed" by the street number that we give in our address. In this way we have been able to keep accurate account of the inquiries we receive from the different publications in which we advertise.

We carry this still further, keeping a record of each sale as made and credit is given to the source from which the inquiry came.

Not only has the AMERICAN BUILDER been getting us a great many more inquiries than any other publication, but it secures them for us at a much lower cost. The cost of selling our machines is lower thru the AMERICAN BUILDER than any other publication.

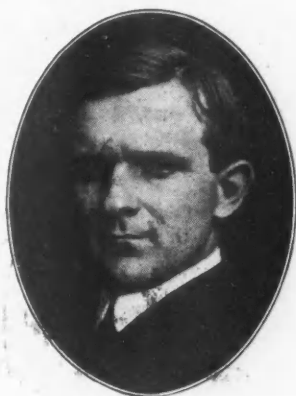
Wishing you success, we are,
Yours very truly,
THE AMERICAN FLOOR
SURFACING MACH. CO.,
Wm. B. Frey, Sales Manager.

"Always Had a Good Response From American Builder Readers"

Easton, Pa., Feb. 9, 1920.

AMERICAN BUILDER:

My acquaintance with the AMERICAN BUILDER really began some six years ago when, as advertising manager of the Alpha Portland Cement Co., I came to the conclusion that there was need for telling the builders of the country more about concrete methods.



S. ROLAND HALL,
Advertising Manager, Alpha Portland Cement Co.

It seemed to us, in the Alpha circle, that as time goes on the general builder will be called on more and more to erect the concrete garage, the concrete greenhouse, the concrete porch and the scores of other things that nowadays are preferred of a permanent, fireproof material. Accordingly, we began an educational and service type of advertising in the AMERICAN BUILDER and other publications in the building field.

By "educational and service type of advertising" I mean the kind of advertising that suggests uses of advertised material and gives the "how" of the use. I am enthusiastic about that kind of advertising—believe it gets much further than the hurrah for quality stuff.

I am glad to say that we have always had a good response from your readers to the Alpha announcements. Indeed, the better class of building papers have brought us inquiries as low as laymen's publications, which was somewhat of a surprise.

Now that I am giving an independent advertising service and giving special attention to building material advertising, I hope that I shall have occasion to send you something else that will prove as interesting to your readers as Alpha Cement advertising has been.

Sincerely,
S. ROLAND HALL.

"Orders Traceable to the American Builder Speak for Themselves"

Chicago, Ill., Feb. 17, 1920.

AMERICAN BUILDER:

Our experience with advertising in the AMERICAN BUILDER has been very satisfactory.

In fact, for a number of years we have keyed our ads, and the results obtained have been gratifying indeed. The number of inquiries received and the orders traceable to the AMERICAN BUILDER speak for themselves.

With congratulations for your Fifteenth Anniversary and with best wishes for your continued success, we are,

Yours very truly,
ARCHER IRON WORKS,
J. L. Houle, Secretary.



"Our Space Has Steadily Increased from Year to Year"

New York City, March 1, 1920.

AMERICAN BUILDER:

It was way back in 1911—if our memory is not at fault—that the writer began to use your advertising pages for the American Saw Mill Machinery Co., of Hackettstown, New Jersey.

We have been with you without interruption ever since. And our opinion of the value of your medium and its usefulness to us is best evidenced by the fact that our space has steadily increased from year to year.

We have enjoyed our association with you, and have profited by it. What more can we say?

We wish you continued success—and we expect to continue to contribute to, and share in, your success.

Very truly yours,
Lucius I. Wightman,
Advertising Counsellor for
AMERICAN SAW MILL MACHINERY CO.



"A Valuable Advertising Medium"

New York City, Feb. 22, 1920.

AMERICAN BUILDER:

We have been advertising in the AMERICAN BUILDER for several years and take great pleasure in stating that the results obtained have been very satisfactory. We like the make-up of your magazine and find it very readable and full of information, and from our experience believe it to be a valuable advertising medium for any concern that has anything to offer to the building industry.

Yours very truly,
JOHN BOYLE & Co., INC.,
By George E. Boreham.

"Brings Most Inquiries and Sales"

Toledo, Ohio, February 17, 1920.

AMERICAN BUILDER:

We have been advertising in the AMERICAN BUILDER for a great many years and from an advertising standpoint we consider the AMERICAN BUILDER the best magazine in the field. We are able to trace more inquiries and sales resulting from these inquiries than from any other paper we have ever advertised in.

Yours very truly,
THE L. BECKMANN Co.,
L. Beckmann, Jr., Secretary.



"American Builder Advertising Brings Very Direct Results"

Buffalo, N. Y., Feb. 26, 1920.

AMERICAN BUILDER:

We first began using the AMERICAN BUILDER to advertise Beaver Board in 1911, and started out with the very modest schedule of two half pages for the entire year.

Perhaps I can best express our growing confidence in the value of your publication by pointing out that our appropriation for space with you has been constantly increased. In 1916 we used twelve full pages—in 1919 we repeated with twelve more, and for the coming year we have contracted for thirteen full pages.



WILLIAM F. MacGLASHAN,
President, The Beaver Board Companies.

We have always felt that our AMERICAN BUILDER advertising brought very direct results and we are glad to give you this word of appreciation.

Very truly yours,
THE BEAVER BOARD COMPANIES,
L. A. Selman, Advertising Manager.



"Circulation Extensive and Substantial"

Chicago, Feb. 27, 1920.

AMERICAN BUILDER:

Our experience with advertising in the AMERICAN BUILDER has been highly

satisfactory. The circulation of your paper is not only extensive but evidently of a substantial nature. We are pleased and proud to have "Brasco" Copper Store Fronts before your subscribers continuously.

Very truly yours,
BRASCO MANUFACTURING Co.,
C. Hess, President.

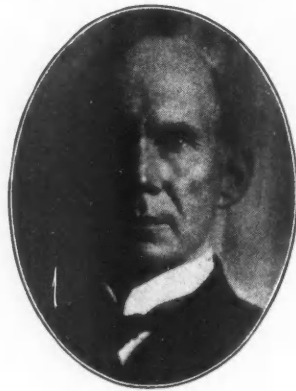


"More Inquiries Than From the Other Three Publications at Less Cost"

East Walpole, Mass., Feb. 13, 1920.

AMERICAN BUILDER:

We have used the AMERICAN BUILDER



CHARLES SUMNER BIRD,
President, Bird & Son.

regularly for a number of years. Our records on the number of inquiries date from 1913. Each year since 1913 we have received more inquiries from the AMERICAN BUILDER than we have from the three other publications we have used during the greater part of that period. The average of the yearly cost per inquiry has been less than in the other building papers used.

Needless to say we expect to continue the use of your publication in advertising Art Craft Roof, Neponset Black Waterproof Building Paper and Neponset Paroid Roofing.

Yours very truly,
BIRD & SON, INC.,
By Austin N. Kilham.



"Well Pleased With the Results"

Cambridge Springs, Pa., Feb. 20, 1920.

AMERICAN BUILDER:

For some years past the Blystone Manufacturing Co. has been placing a small quarter-page ad in the AMERICAN BUILDER.

Permit us to say that the results gained from the use of the AMERICAN BUILDER have been very satisfactory. We have arrived at this conclusion by checking up the inquiries and the actual

sales made from each issue, as we key each advertisement, which enables us to know just how much we are getting for our money.

It is unnecessary to say that we have been very well pleased with the results and expect to occupy more space in the future.

Very truly yours,
BLYSTONE MANUFACTURING Co.,
Luther G. Conroe, General Mgr.



"High Class Magazine and Good Advertising Medium"

La Crosse, Wis., Feb. 23, 1920.

AMERICAN BUILDER:

We believe the AMERICAN BUILDER to be a high class magazine and should be a good advertising medium. We have been running copy in the AMERICAN BUILDER for several years. While the direct business we can attribute to advertising is not very large, still we feel that your circulation, especially with the retail lumber dealers, warrants our continuance.

Yours truly,
BADGER CORRUGATING Co.



"Used American Builder for Years"

New York City, Feb. 20, 1920.

AMERICAN BUILDER:

We have, as you know, been reaching the building field thru the AMERICAN BUILDER for some years; in fact, ever since we started to introduce our building specialty, Con-ser-tex Canvas Roofing. We have continued to renew our contract from year to year, and this should be sufficient evidence that the service you render us is satisfactory.

We believe that the field for the use of Con-ser-tex is very much larger than we have thus far developed, this being due, to a great extent, to the fact that all the builders do not yet recognize the full merits of Con-ser-tex or its wonderful wear-giving qualities, and we are trying to tell them about it thru the aid you render.

Very truly yours,
W. L. BARRELL COMPANY,
Thos. B. Rodgers, Manager.



"Results Are Good"

Louisville, Ky., Feb. 18, 1920.

AMERICAN BUILDER:

The W. E. Caldwell Co. used advertising space in the AMERICAN BUILDER during the years 1907, 1917, 1918 and 1919. The results were good in 1907 and 1919, but very poor in 1917 and 1918. This was to be expected, however, as building was practically dead

during the last two years named. This year should show even better results than last.

Very truly yours,
W. E. CALDWELL Co.,
Per W. E. Caldwell, Jr., Adv. Mgr.



"A Wonder in Putting Across Orders"

Milwaukee, Wis., Feb. 17, 1920.
AMERICAN BUILDER:
We are thinking seriously of cutting



FRANK F. HASE,
President, C. H. & E. Mfg. Co.

out our advertising in the AMERICAN BUILDER because it is not only bringing us too many inquiries, but the inquiries are turning into too many orders for us. The AMERICAN BUILDER surely is a wonder in putting across business.

Yours very truly,
C. H. & E. MANUFACTURING Co.,
Frank F. Hase, President.



"Goes to the People Who Really Do the Buying"

Columbus, Ohio, Feb. 18, 1920.
AMERICAN BUILDER:
We are getting a satisfactory amount of inquiries from the AMERICAN BUILDER which shows that your magazine is going to the people who really do the buying.

Yours truly,
THE J. W. COULSON & Co.,
By T. H. Weiser.



"Only One in the Building Field"

Canton, Ohio, Feb. 19, 1920.
AMERICAN BUILDER:
As old advertisers in the AMERICAN BUILDER we have, of course, been satisfied with the results obtained, else the AMERICAN BUILDER would have been dropped from our list.

At one time we used three or four papers going to the building field, but a careful checking of results showed us that there was only one we were justified in continuing. This one is the AMERICAN BUILDER, and I feel that I can safely say as long as you pursue the same course in the future that you have

in the past and we obtain the same results we are now getting, you can count on the continuance of our advertising.

Wishing you the success you merit, and with kindest regards, I remain,
Yours very truly,
THE CANTON FOUNDRY & MACH. Co.,
J. R. Poyser, Secretary.



"Leading Publication of Its Class"

Rochester, N. Y., Feb. 20, 1920.
AMERICAN BUILDER:
It affords us pleasure on the occasion of your Fifteenth Anniversary to congratulate you on the success of the AMERICAN BUILDER, which, to our mind, is one of the leading pioneer publications in its class. We have been continuous advertisers in your publication for many years.

We find your publication up to the minute, bristling with new ideas, properly set forth and illustrated, so that the individual as well as the artisan can readily understand. The AMERICAN BUILDER has our hearty wishes for its continued success.

Very truly yours,
CALDWELL MFG. Co.
J. G. O'Brien, President.



"Helped Us Build Good Will with Contractors and Lumber Dealers"

Clinton, Iowa, Feb. 10, 1920.
AMERICAN BUILDER:
For the last four years we have been constant advertisers in the AMERICAN BUILDER and have found that it has been not only an inquiry-producer for us, but also a medium which has helped us build good will with the contractor and lumber dealer.

So long as the publication maintains its present reader interest, we hope that our advertisement will constantly appear in its columns.

Yours very truly,
CURTIS COMPANIES, INCORPORATED,
By G. L. Curtis, President.



"Pleased With Results"

Cadillac, Mich., Feb. 21, 1920.
AMERICAN BUILDER:
We have found that our advertising in the AMERICAN BUILDER has brought a large number of inquiries from contractors and builders all over the United States. In fact, we are quite pleased with the results.

Very truly yours,
CADILLAC LUMBER Co.,
By L. T. Burritt.

"Justly Entitled to the Position You Have Gained"

Leetonia, Ohio, March 2, 1920.
AMERICAN BUILDER:
During the many years we have been advertising in the AMERICAN BUILDER we have watched with much interest the steady improvement in the character of your publication. We recall that when you first established the AMERICAN BUILDER, you were very enthusiastic. Your methods were different, but you have proven that your plan was right and you have made good.

We congratulate you on the many improvements you have made in the AMERICAN BUILDER, and we feel that you are justly entitled to the position you have gained in your chosen field. The way you are going indicates that still greater success must be yours.

Very truly yours,
THE CRESCENT MACHINE Co.



"Every Time the Postman Comes, He Brings Inquiries"

Chicago, Ill., Feb. 17, 1920.
AMERICAN BUILDER:
The fact that the advertising of our company has appeared in the AMERICAN BUILDER continuously for nearly ten years is the best answer I can give to the question of whether or not advertising in your publication pays.

Every time the postman opens the door of our office, it is a matter of



F. A. MITCHELL,
Vice-President, Corexit Waterproofing Co.

comment if he does not bring at least one inquiry from an AMERICAN BUILDER ad. Very evidently the readers of the AMERICAN BUILDER are interested in the advertising pages as well as the editorial, which indicates the prestige your paper has gained. At the same time it indicates the discernment of your readers.

As you know, I also am interested in a company distributing metal lath and other building specialties, and when the proper time arrives you will get

(Continued to page 190.)

WASTE OF MONEY

SIGNS OF THE TIMES ON EASY STREET

[Copyright: 1920: By John T. McCutcheon.]



Reproduced by permission of the Chicago Tribune and John T. McCutcheon
Mr. McCutcheon presented the original of this cartoon to Mr. Radford

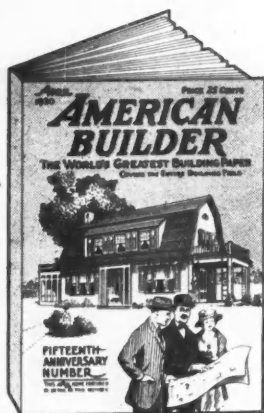
“Invest Your Money in a Home”—is the Message to the American

SAVING OF MONEY



Consistent saving enables the prospective home builder to accumulate enough money in a surprisingly short time to secure a "Home of His Own"

People, of the American Builder, Speaking for the Building Industry



Our April Front Cover Home

Beautiful Dutch Colonial House

BUILDING SHOWN ON FRONT PAGE HAS LATEST SPACE-SAVING AND LABOR-SAVING APPOINTMENTS—TWO DIFFERENT FLOOR PLAN LAYOUTS PRESENTED

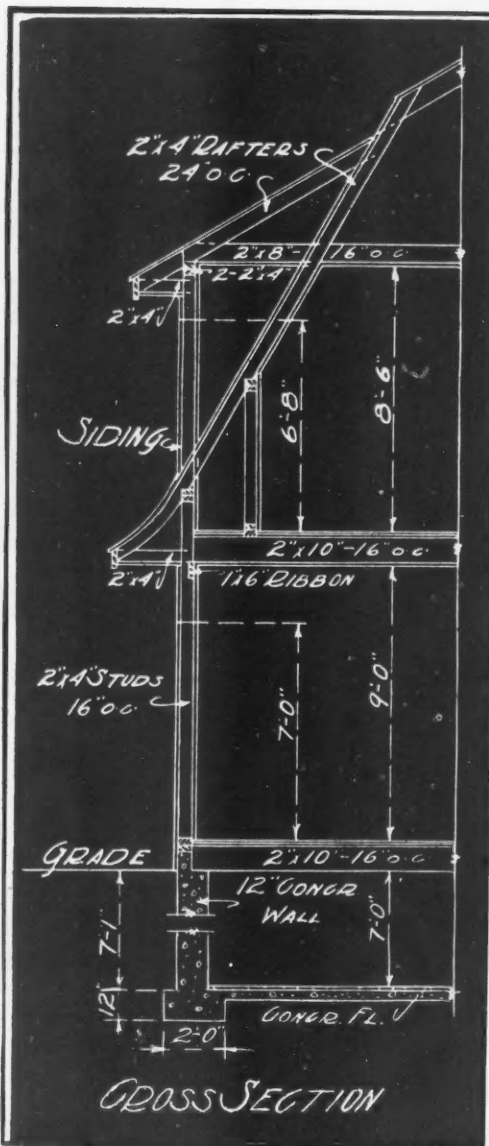
“GEE! I'd like to own a home like that.” No doubt that was your comment upon seeing the beautiful home on the front cover of this number of the AMERICAN BUILDER. It radiates a feeling of comfort and charm that cannot but affect the most calloused observer and inspire him as only a beautiful home does.

In the first place, a Dutch Colonial home is always attractive because it lends itself so readily to exterior adornment. The distinctively shaped roof, with its long dormers, is particularly appealing. Moreover, the house is set low on the ground and has a rambling, roomy look.

This home is substantial in construction, as the cross-section will reveal. It is set on a concrete wall, 12 inches thick, with sturdy studs supporting the ceilings and roof. It is sided with wide clapboard, painted white.

On the side (or the front, as it might be called) is an inviting entrance, set into the building proper, with artistic benches on each side. The wooden posts are enhanced by the liberal use of lattices and trellises for flowers and vines.

Passing around the end of the house, we find a wide sun



Cross-Section of House Showing Concrete Foundation and Arrangement of Studs and Rafters; Also Height of Ceilings.

porch, glazed in and surmounted by a balcony with canvas flooring. An attractive balustrade has been added. In plan "A" two pairs of French doors give access to the living room, which extends the full width of the house, and has a large open fireplace directly in the center of the front wall. This leads up thru a great, wide chimney. The rear porch is similar in style to the one in front but is not glazed in.

The owner is offered the option of either one of two arrangements. One set of plans, "A," shows the arrangement of the smaller house, 28 by 40 feet. The number and size of rooms can be varied, according to the size of the family. Very often more bedrooms are needed because the family is large. The alternate plan, "B," takes care of this.

In the first plan the dining room is reached by passing directly thru the hall, or by going thru the kitchen, which is on the opposite side of the dwelling. An extra toilet is placed between the living room and the kitchen. Tucked away in a corner next to the kitchen is the breakfast nook, with its quaint benches and table.

Upstairs, we find, in the first

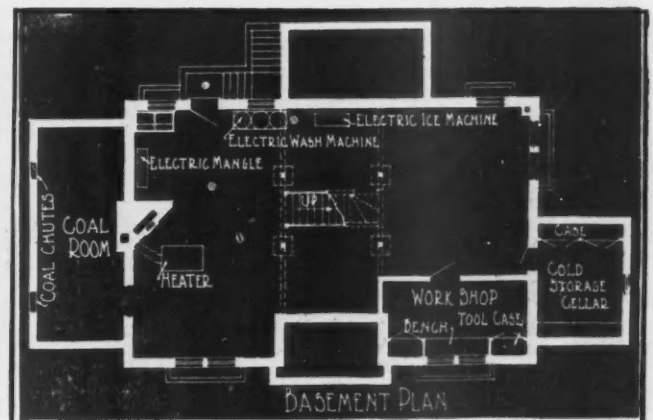
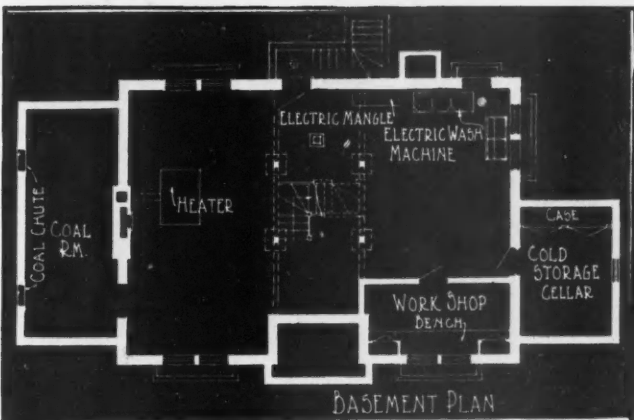
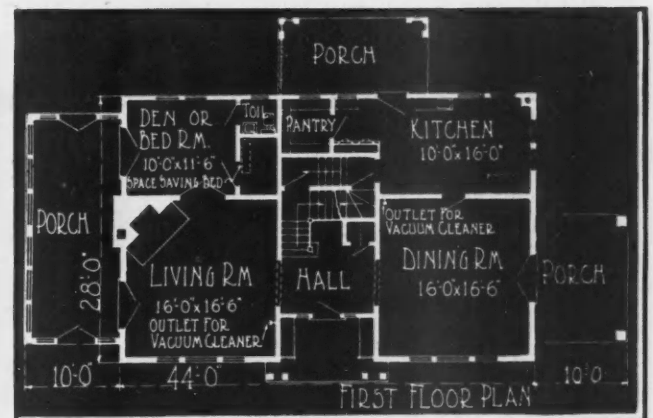
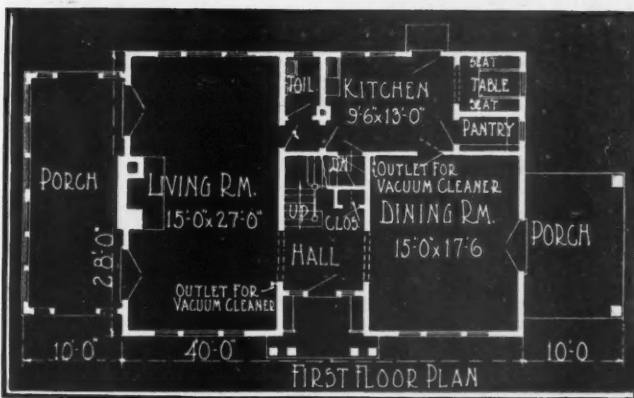
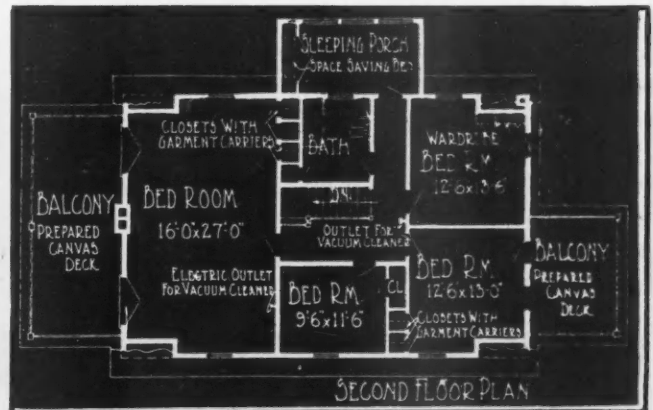
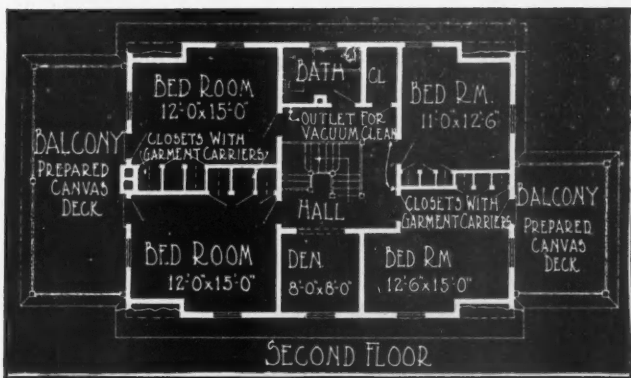
arrangement, four bedrooms, bath, and a small den.

In the alternate arrangement, which calls for a slightly larger house, 44 by 28 feet, the front of the first floor is given over to a living room, smaller than the other, and a den, or bedroom, as the owner wishes. It is equipped with a space-saving bed. The dining room has the same position as in the other plan, as does the kitchen, but the toilet has been moved into the room next to the den. There is no breakfast nook in this floor plan.

On the second floor, one large bedroom is placed in the front of the house, while a small one is substituted for the den in the first plan. A side sleeping porch, equipped with a space-saving bed, has been added. The general layout of the basement is the

same, with the exception of the location of the labor-saving equipment.

The architect who designed this home was aware of the tendency in modern requirements, because he paid especial attention to the placing and use of labor-saving equipment in the arrangement of the floor plans, and recognized it as one of the important features. Note carefully the arrangement of the heating plant and laundry machinery in the basement. The heater is placed in the large front room immediately next to the coal room. Two modern coal chutes are placed under the front porch in the concrete wall to take care of the fuel supply with a minimum of dirt. Dump-



Plan "A," House 28 by 40 Feet, Showing Basement, First and Second Floors. Note Very Convenient Arrangement of Rooms, Also the Electrical Outlets and Special Features.

Alternate Floor Plan "B," Size 28 by 44 Feet, Showing Optional Arrangement of Rooms and Electrical and Labor-Saving Equipment.

ing coal outside of the building and then hauling it into the cellar has always meant a lot of time and labor lost, not to mention the dirt. These iron coal chutes are built in this home to eliminate this undesirable feature.

The washing machine, mangle and ice machine can be placed in the most handy location. Two possible positions are shown in the floor plans. The rest of the basement is used for a workshop and cold storage cellar for vegetables and foodstuffs.

This building illustrates very strikingly the importance of planning electric wiring with especial relation to outlets for electrical labor-saving devices. As you can easily see, the most modern equipment has been planned for. In one corner of the living room is the outlet for the vacuum cleaner, also in the dining room. The den has been equipped with a space-saving bed, to be used as an "overflow." Otherwise it can remain tucked away in its dressing closet.

Upstairs, the idea of space-saving has been carried still further. The closets have been equipped with space-saving garment carriers, which eliminate the uncomfortable job of digging clothes out of a dark hole. As in the case of the first floor, outlets for elec-

trical devices have been placed in convenient points in the various rooms. It is wise in constructing a building of this kind to anticipate the further development of the labor-saving idea by placing extra receptacles and outlets in most of the rooms.

As shown by this home, the building of a house is no longer merely a question of putting together brick, stone or lumber, nor does it mean that only bedrooms, dining rooms, etc., should be shown in the floor plans. Many other considerations must be taken into account, in view of the new developments in building lines. The architect and builder have to provide the latest in space-saving and labor-saving equipment, as shown in this model structure, to keep their place in the front ranks of the profession.

The owner of this beautiful home wanted and received a combination of the beautiful and practical. It is a splendid example of what can be done in modern construction. Moreover, it satisfies the demands of those who have a great liking for old architecture. It links the old with the new. In the exterior we find a constant reminder of the beautiful homes of Colonial days, while inside we find the twentieth century ideas supreme. People who complain of the sordid ten-



In This Interior You Have Beauty Combined with Practical Building Ideas. Note the Space-Saving Wardrobe for Coats and Hats Between the Staircase and the Living Room. The Large Living Room Has Become Very Popular in All Types of Homes and Apartments.

dencies of the present commercial age can find a happy medium in this home, which will keep pleasant memories fresh without suffering the inconveniences which existed some years back.

This type of home has been gaining in popularity because of the gradual movement of the people in crowded cities to suburbs, where there is plenty of room. For those who do not like apartment buildings, but want a home of their own, this beautiful house should be a source of real inspiration and delight.

This home is not the result of whims or freaks. It is the sound and finished result of careful study and sifting out of a host of ideas that have been accepted by advocates of better and more comfortable homes. For, after all, comfort and convenience are the qualities which make a real home. This front cover home presents an ideal.



A Washing Machine Should Be Installed in Every Modern Home, as Shown on the Front Cover.

Electric Wiring for Residence

DETAIL SHEET (PAGE 113) SHOWS RECOMMENDED PRACTICE FOR WIRING BUNGALOW AND PLACING OUTLETS AND SWITCHES

IN wiring new buildings the most important factors to be considered by the architect and contractor are protection of wires, ample number of outlets for lighting fixtures, good switch control, and sufficient appliance outlets for the numerous labor-saving devices which are now used for heating, cooking, and power.

In the detail sheet on the next page are diagrams showing the wiring plans for the first floor and basement of a bungalow. It shows the location of the various outlets for laundry equipment in the basement and other electrical appliances thruout the home.

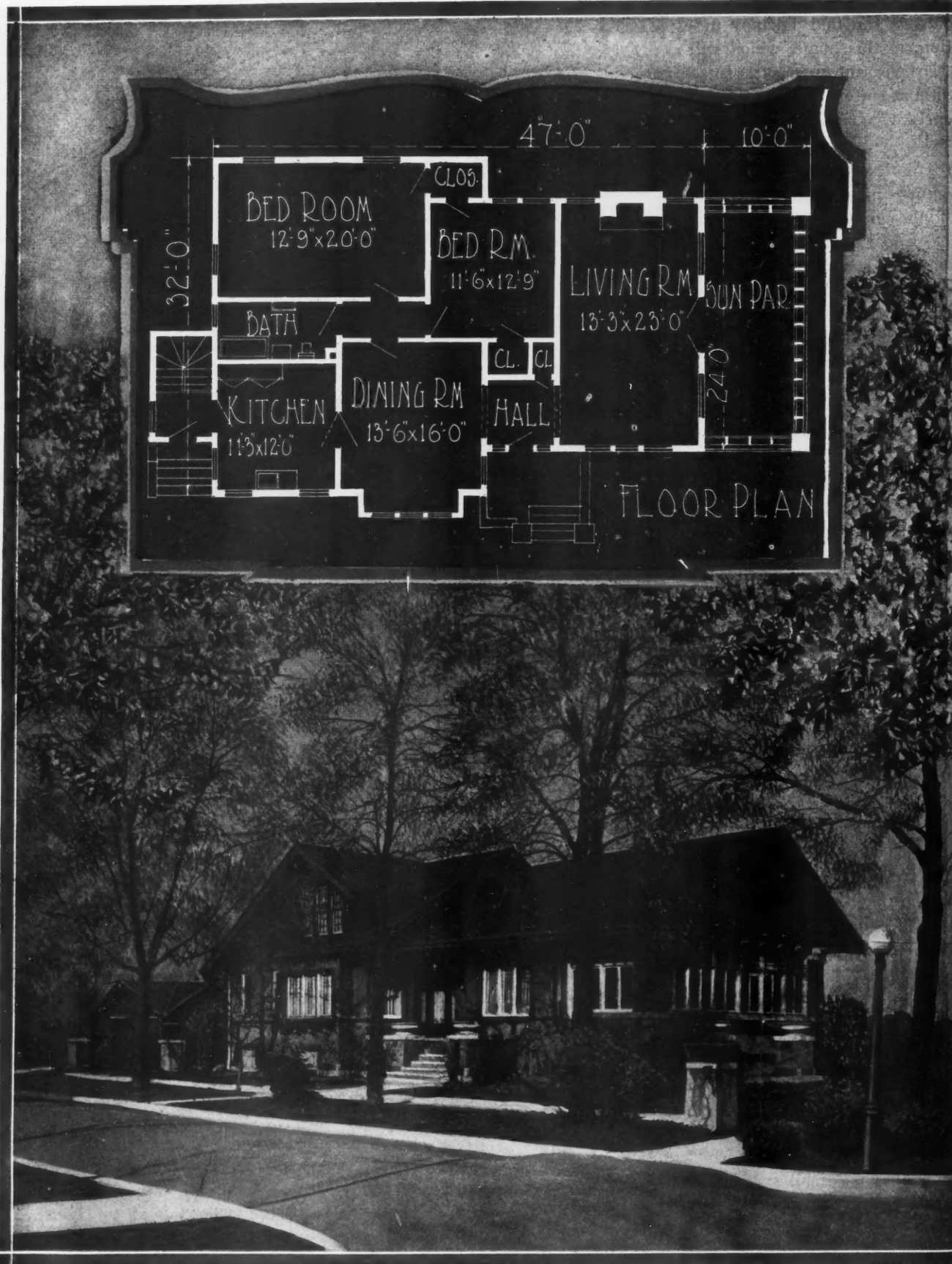
In the wiring of new buildings it is advisable to anticipate a considerable consumption of electricity by appliances, small motors, or in heating and cooking purposes by installing a separate wiring system for these devices.

This will permit them to be connected to separate meter. Many central stations make a lower rate for current consumed by these devices than for lighting current because they are used during the off peak period of the daily load.

As the detail sheet shows, ample outlets should be

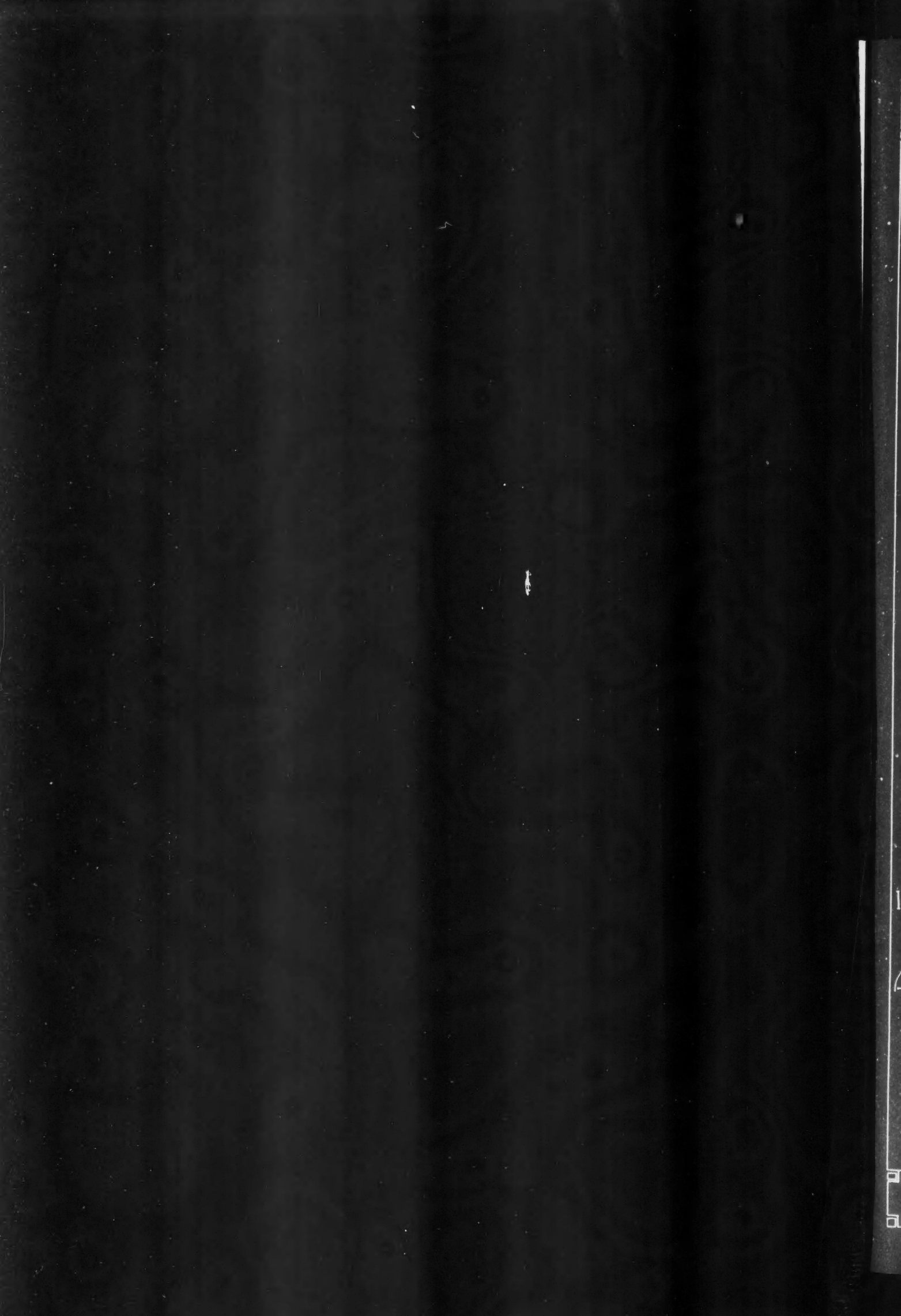
provided in all rooms for future use to take care of the rapidly increasing uses of electrical labor-saving devices. The obvious duty of the builder is to see that outlets and receptacles are provided for the electric range, vacuum cleaner, clothes washer, electric iron, sewing machine motor, and numerous other appliances. For smaller devices baseboard outlets with standard interchangeable dimensions at convenient points in the various rooms will suffice. The most economical time to install electrical appliances is in the course of construction. Be liberal with switches, outlets, receptacles, etc., for portable lamps, fans, and cooking devices. Bedrooms need them for electric heaters, vibrators, curling irons, and sewing machines. The kitchen is an important cog in this electrical arrangement, as is the basement, because so many devices are used in these two parts of the house.

All power receptacles should be designed to take the same plug and they should be made to fit only power outlets. Lighting receptacles come under a different classification, and are not designed to carry the heavy load which is required for power-consuming devices. Wires for conduit must be rubber-covered and have a double braid over the rubber.

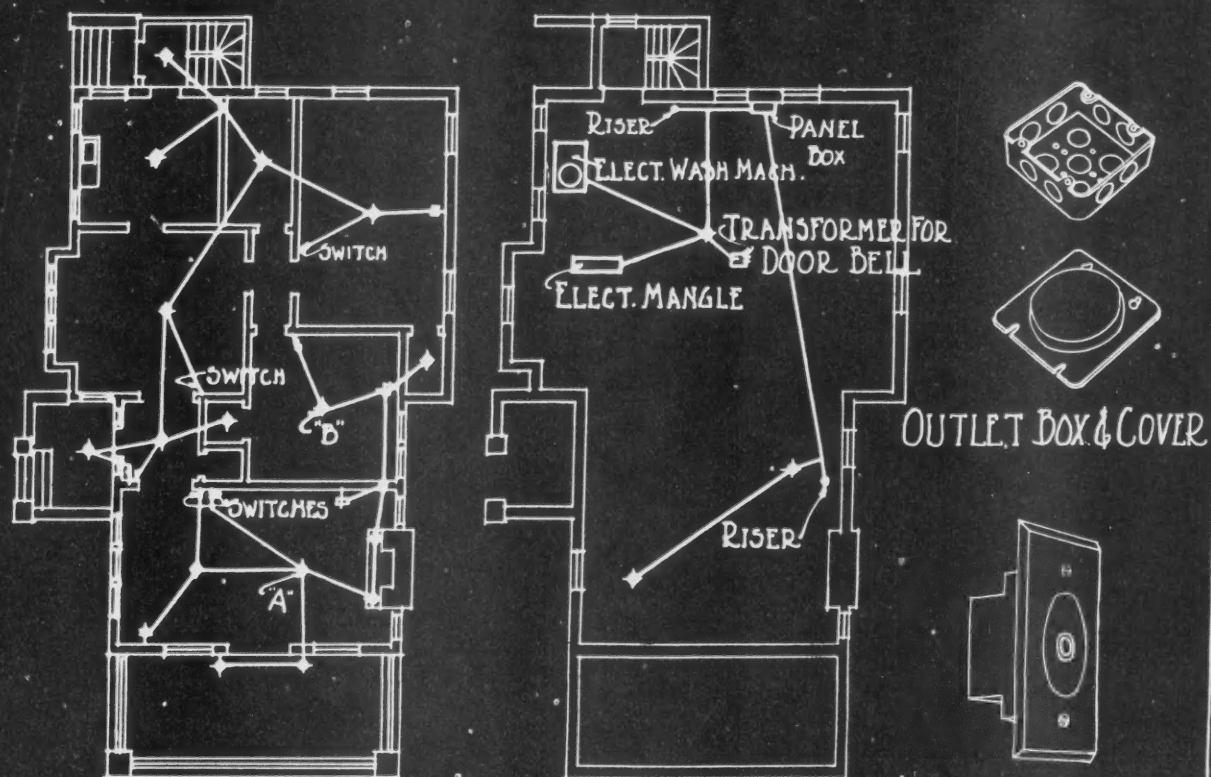


COZY FIVE-ROOM AND SUN-PARLOR BUNGALOW. You probably have been looking for just such a home as this. It has five delightful rooms with a large sun parlor 24 feet wide. A building of this type is admirably adapted for a wide and shallow lot. The bedrooms and bath have been placed in a convenient corner of the house removed from the activities of the living room and kitchen. The divided and numerous windows add considerable charm to this "homey" building, as well as provide the light which makes for a healthy home. The garage is located at one end of the lot close to the main driveway and is built in harmony with the bungalow. The wiring plan is shown in the detail sheet opposite.



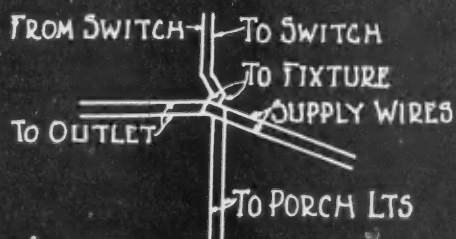


RECOMMENDED CONSTRUCTION

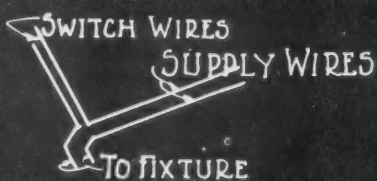


FIRST FLOOR & BASEMENT PLAN SHOWING RUN OF WIRES TO OUTLETS, SWITCHES, ETC.

BASE PLUG RECEPTACLE



WIRING AT "A"



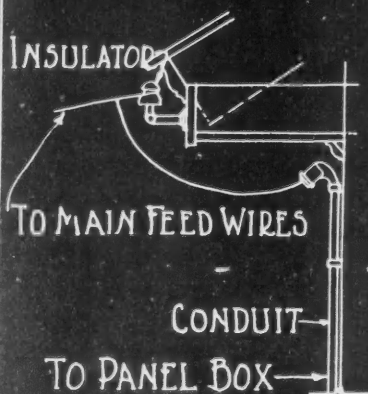
WIRING AT "B"



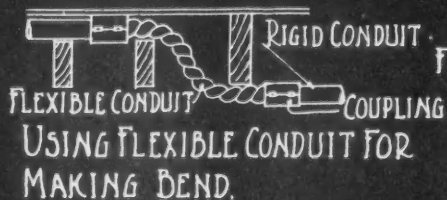
FLEXIBLE CONDUIT



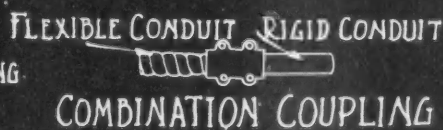
FLEXIBLE CONDUIT CONNECTOR



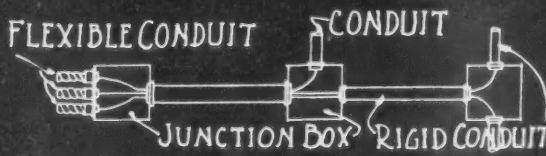
WIRING FROM PANEL BOX TO SOURCE OF SUPPLY



USING FLEXIBLE CONDUIT FOR MAKING BEND.



COMBINATION COUPLING



COMBINED USE OF RIGID CONDUIT & FLEXIBLE CONDUIT

ELECTRIC WIRING DIAGRAM FOR RESIDENCE



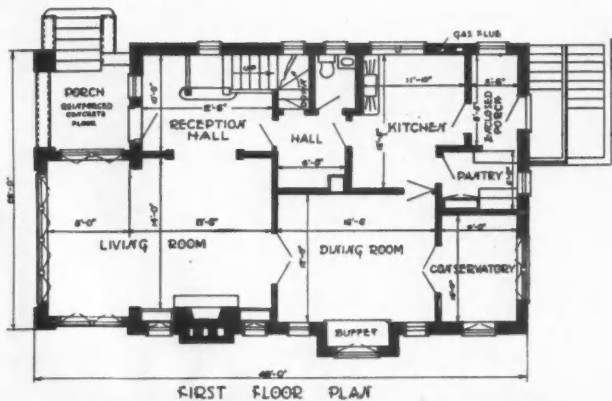
Concrete Block Residence and Garage Described in the Accompanying Article, in Which Smooth Surface Granite-Face Block Contrast Pleasingly with Dead White Trimstone.

An Attractive House of Concrete Block

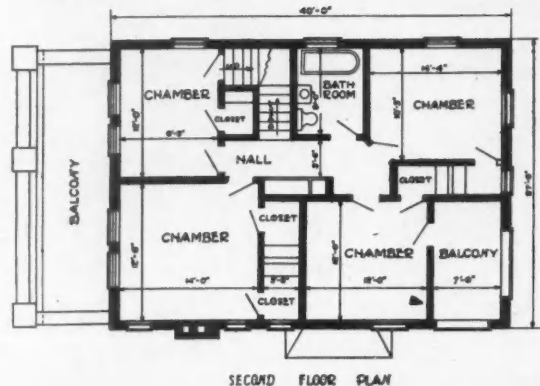
EIGHT-ROOM HOME HAS EXTERIOR GRANITE FINISH AND WHITE TRIM MADE BY PRESSURE MACHINE PROCESS

WHEN the chief engineer of a certain nationally known manufacturing corporation decided to join the ranks of the home owners, he built the house shown on this page, putting foremost the considerations of attractive appearance, low maintenance, resistance to fire, and easy resale, if ever desired. The building is constructed thruout of concrete block having smooth, light gray Vermont granite finish and flat, stainless white trim stone, sills, lintels, and water tables, all manufactured by the pressure machine process.

The blocks used in the construction of the walls are of standard size, 9 inches by 24 inches, with fractional sizes as required by the plans. These blocks are modified "E" shaped, each standard size unit weighing 50 pounds. The walls up to the second story belt course are of 12-inch (width) two-piece construction, making in reality double walls of parallel block with interbonding projecting lugs, producing header and stretcher bond every course. The walls above the second story belt course are of single piece construction, the furring strips being attached to the protruding



First Floor Plan of Attractive Concrete Block Home.



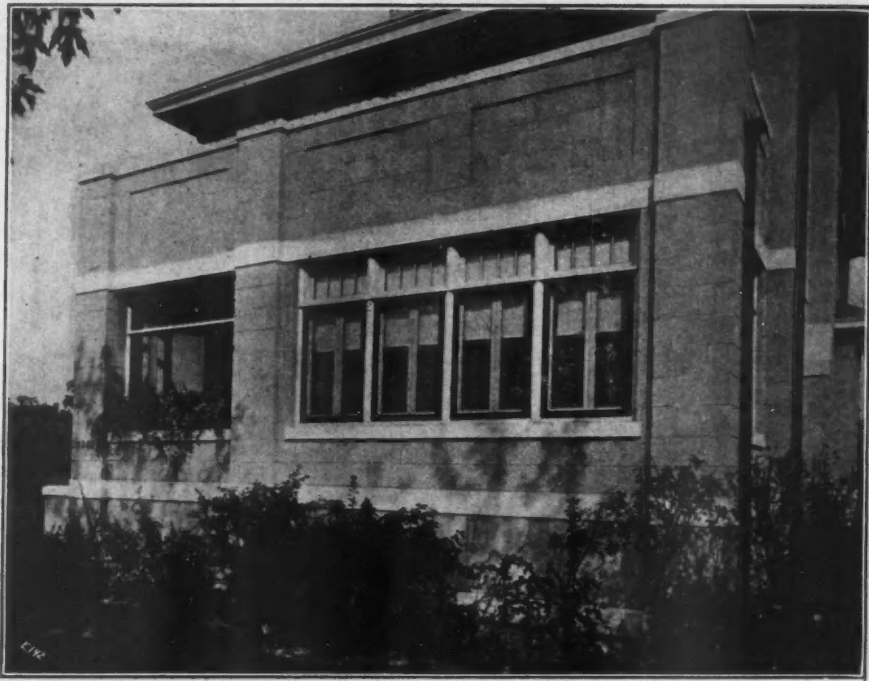
Second Floor Plan of Attractive Concrete Block Home.

lugs, forming air spaces between. All of the exterior surface blocks are faced with a one-inch surface of cement-granite facing, the remainder of the block being made of a dense, water-tight mixture of plain concrete. The interior and backing block are made entirely of the latter mixture.

Block and trim were laid up with a rich white cement mortar, making quarter-inch flush joints. Similar block today costs in the neighborhood of 45 cents per square foot for the 12-inch two-piece wall construction, with about 20 cents per square foot additional for laying. For the single wall construction the block costs about 30 cent per square foot, with 15 cents per square foot additional for laying. These prices apply in the large cities, where costs are usually at the maximum.

The light gray of the walls contrasts splendidly with the white trimstone and gives the structure an unusually cheerful, substantial and rich appearance. The illustrations show a temporary asphaltic roof which the owner plans to cover with standard green concrete tile, giving the building the heavier roof which its strong lines call for.

The structure is 40 feet by 26 feet in main dimensions, with sun parlor and rear porch protruding. The sun parlor (see first floor plan) is an unusually attractive room with the windows arranged in pairs,



Detail of the Front of the Concrete Block Residence, Showing Surface Texture and Struck Mortar Joints.

to swing on vertical axes like doors. There are four pairs of windows on the front of this room and two pairs on the south side. The front entry, originally left open, has been closed in by the owner for protection against stormy weather.

Four chambers on the second floor with roomy bath and plenty of closet and linen space are arranged in a pleasing layout. The front balcony may be used as a sleeping porch in good weather. The rear balcony provides a somewhat protected sleeping porch and a handy place to air bedding.

Hollow Tile Construction

DETAIL SHEET (PAGE 116) SHOWS RECOMMENDED PRACTICE IN TILE CONSTRUCTION

ONE of the axioms of wall construction maintains that no matter how strong the unit, the sill will be weak unless laid and united in the proper fashion. The detail sheet on the next page illustrates how tile should be laid to get the strongest and most durable wall.

All hollow tile exterior and interior bearing walls should be true and regular in size and so manufactured that the webs and shells are in direct compression when laid in the wall. Scored faces offer a good surface for stucco finish. Cracked or broken tile should not be accepted. To avoid this, tile should not be dumped from a truck but put in a special pile.

When laying tile it is optional to lay it with holes vertical in order to get the full strength, or it can be laid on side very effectively and is so recommended by some manufacturers.

It is not necessary for the mason to break up a lot of tile to provide small pieces, because it is manufactured in many sizes as the sheet shows. When setting joists in the wall they are laid on 1-inch slabs,

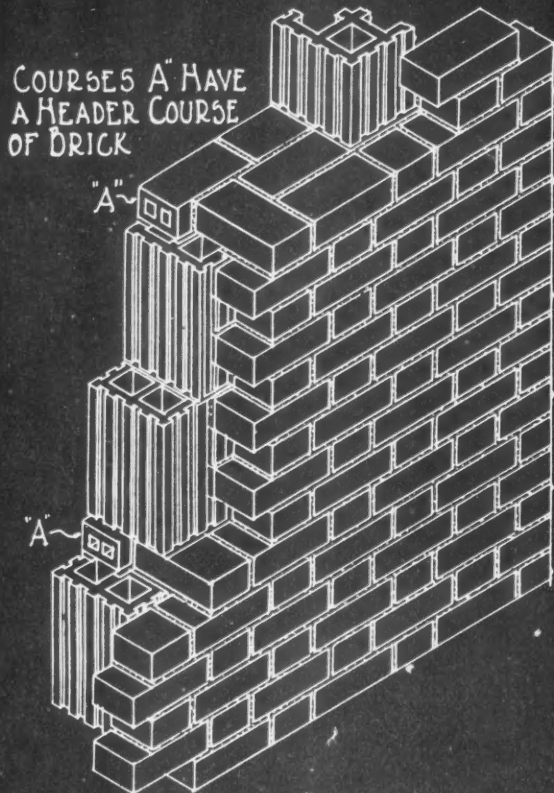
as shown in the detail. The facing tile is placed at the head of the beams and other tile are placed between the beams. The strength of the wall depends upon thoro bearing of the webs and shells. Every hole not only weakens the wall but only makes it easier for dampness to penetrate.

In putting on an exterior finish over a hollow tile wall, such as face brick veneer or stucco, certain practices are followed by builders. The small detail shows how brick is laid outside of an 8-inch tile wall. Between every two courses of tile, a header course of brick is laid to bind together the tile and the outside brick veneer.

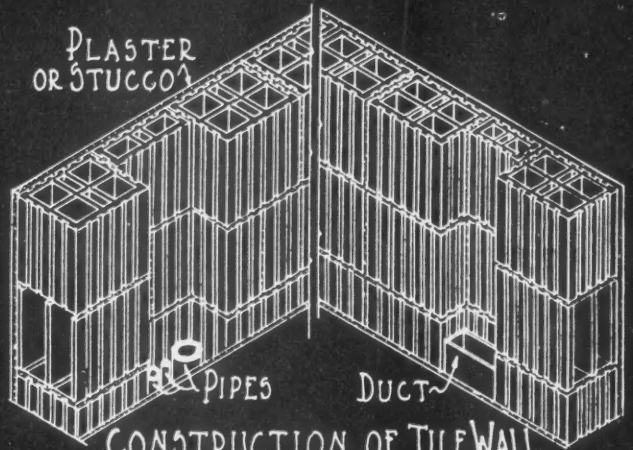
Chases should be provided for when laying up a wall for the many pipes, ducts, conduit, etc., that are needed in a building. In the case of interior plastering, the furring strips are fastened to metal plugs placed at regular intervals in the joints between tiles.

Another interesting detail shows very clearly the position of the wall plate with reference to the joists and rafters of the roof, and the main wall.

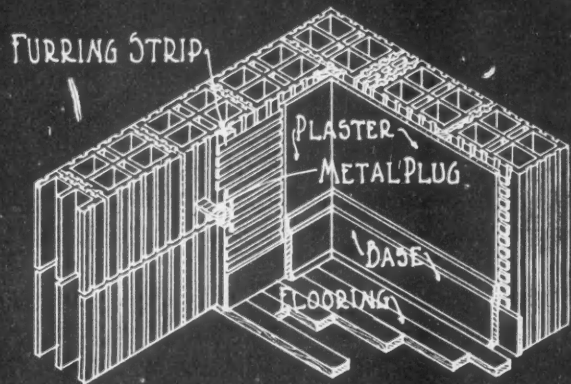
RECOMMENDED CONSTRUCTION



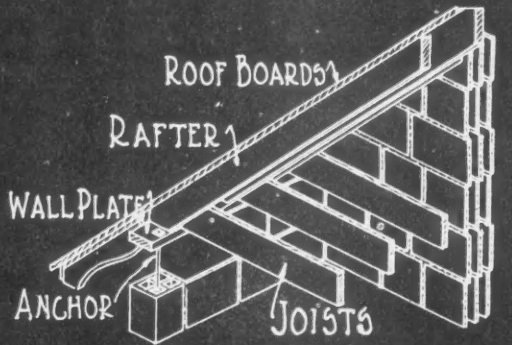
PERSPECTIVE OF 8" HOLLOW TILE WALL FACED WITH BRICK



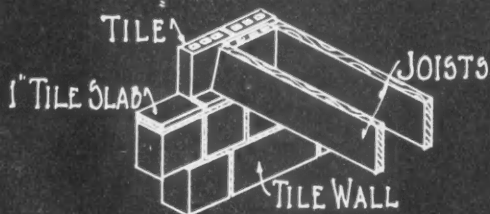
CONSTRUCTION OF TILE WALL LEAVING CHASES FOR PIPES ETC. TILE MAY BE LAID ON SIDE WITH SAME RESULTS



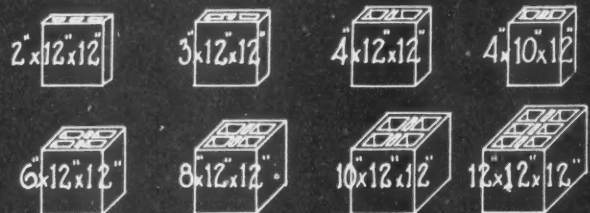
METAL PLUG IN TILE WALL FOR FASTENING FURRING STRIPS ETC.



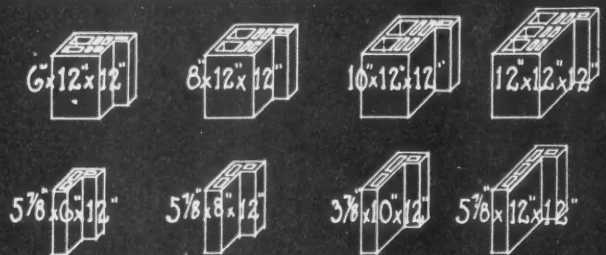
CORNICE & WALL PLATE DETAIL



JOISTS SET ON TILE SLAB

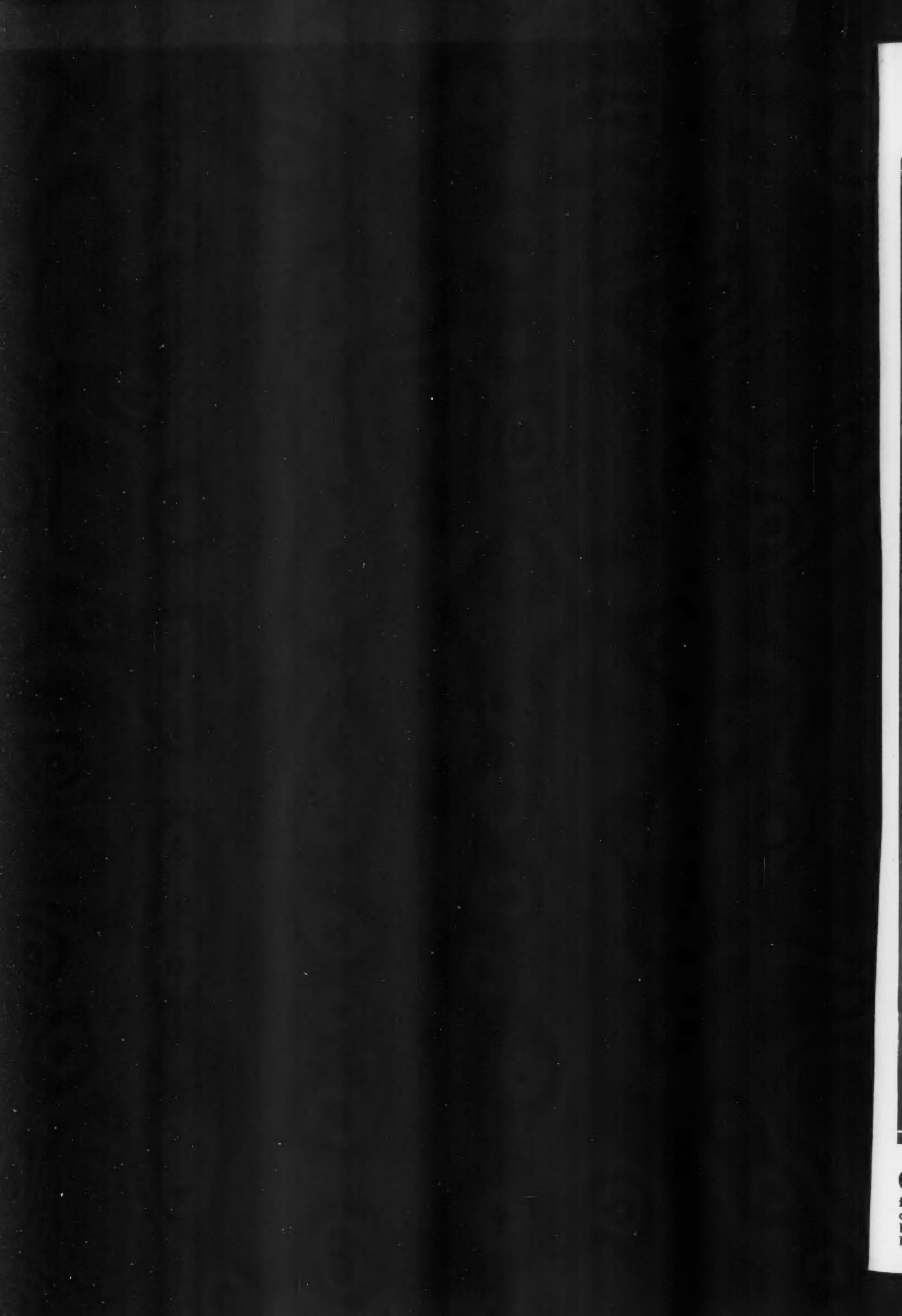


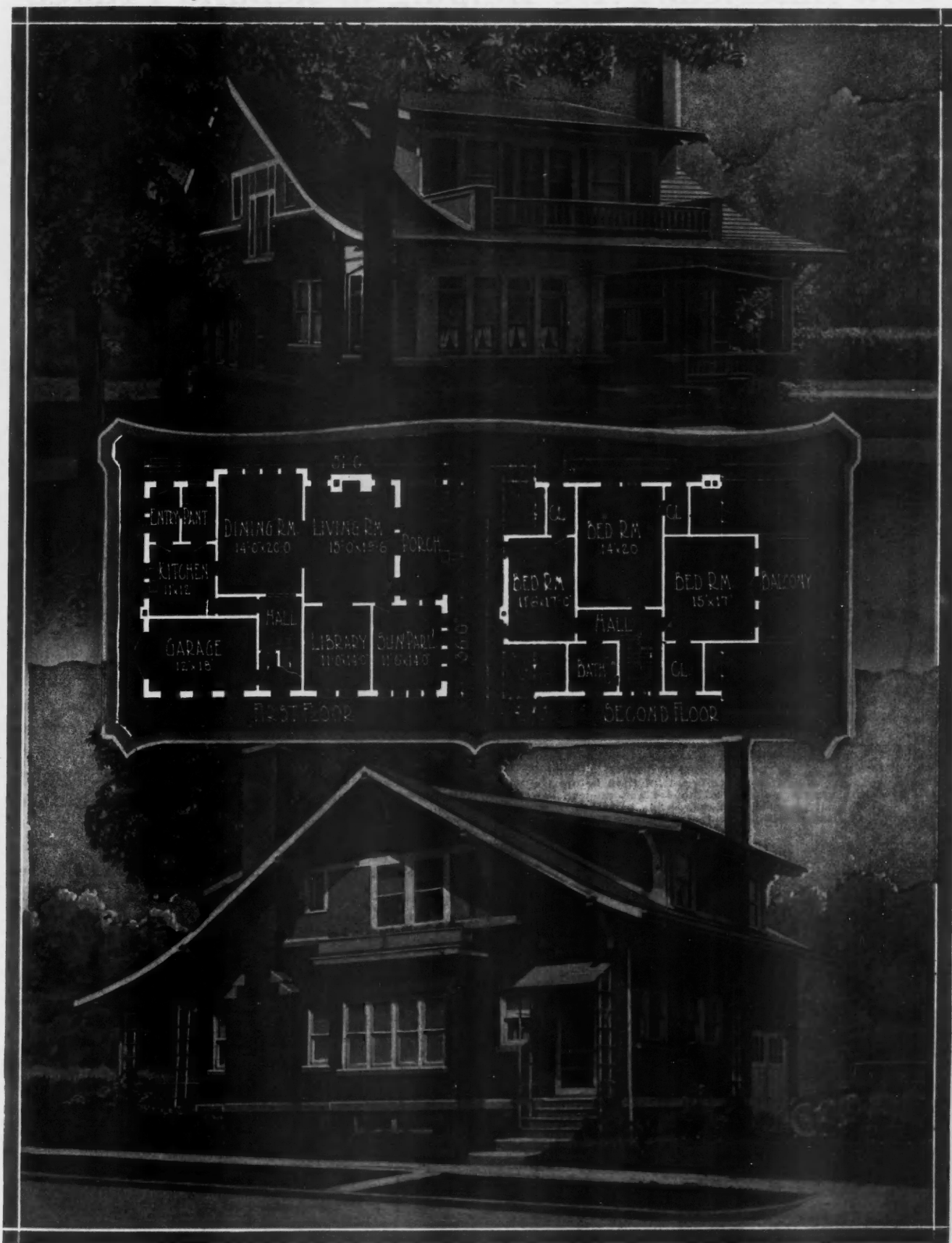
STANDARD WALL TILE



STANDARD JAMB BLOCKS

HOLLOW TILE WALL CONSTRUCTION





CHARMING STORY-AND-A-HALF RESIDENCE WITH BUILT-IN GARAGE. Here is an ideal home for the homelover, a real gem that calls for a garden setting. The structural walls are of hollow tile with a face brick veneer to the top of the first floor and stucco above. The details of the tile construction are shown on the opposite page. In addition to a living room, dining room, library, and kitchen on the first floor, a garage has been built within the building. The home is made even more delightful by the low, wide, sloping gable roof with its overhanging cornices and dormers and balcony. The house is 36 by 51 feet.

How Americans Are Helping to Rebuild France

ARCHITECTS FROM UNITED STATES TRANSFORM CITIES RUINED BY BOMBARDMENTS—SOME INCIDENTS ABOARD STEAMER FROM ENGLAND TO THE ORIENT

By Wm. A. Radford, Jr.

(On 'Round-the-World Trade Mission for AMERICAN BUILDER)

COLOMBO, CEYLON, INDIA, FEBRUARY 20.—One thing that impressed me greatly during my stay in Europe, and a fact that I am sure will interest the members of the AMERICAN BUILDER family, is the way American architects are helping the French to rebuild the cities left in ruins by the heavy shells of the German artillery.

those in American cities. The latter fact is caused by the influence of American architects and the example set by the American Expeditionary Force.

Before the war the pavements were of the worst sort, usually cobble stones that were uneven, tho usually in good repair. Sewer systems were of the antiquated type—sometimes they performed their functions and at others they did not.

The rebuilt cities have as good pavements and sewer systems as the average American city, while the houses and business buildings are of modern construction.

France, and all the other European cities and towns, need building, especially homes. There is a great shortage of building materials and builders' equipment, but at the present rate of exchange there will be little importing from the United States. But that drawback, I am sure, will right itself in a short time and a great market for American building materials will be open to American manufacturers.

After a week of dashing about London getting passports for some thirty-five different countries in the Far East, I sailed from Southampton January 21 aboard the Dutch steamer "Vondel," arriving in Co-



VITRIMONT, REBUILT BY AMERICANS. Vitrimont was ruined and razed by German artillery. Now it is more beautiful than before the war. Thru American interest it has clean streets, substantial houses and modern sewer and water systems. This photo shows what American money and American architects have done to rebuild Vitrimont. Church, dwellings and streets have only recently been completed.

lombo February 15. The twenty-five-day trip was not eventful; neither was it monotonous. I was surprised to find that among the 200 passengers on the "Vondel" I was the only American. Practically every European country was represented. Nine were British, but the

France is going right ahead with reconstruction, notwithstanding the increased cost of building. Cities that were nothing but piles of ruins when I reached Europe last summer now have modern homes, while the business sections are taking on the appearance of



VITRIMONT, FRANCE, IN WAR DAYS. After a series of bombardments had wiped out all semblance of order. Today Vitrimont is the first town to be reconstructed, entirely thru American aid.

Dutch were in the majority. This fact made me fully realize the difficulty that an American has in securing passage on any of the boats to the Orient, when every available berth is spoken for by European representatives, interested in securing the business of the Far East.

chance to see the cities along the way, as, since the war started, few ports are visited, and since the armistice the ship schedules have not been changed materially. Our first stop was at Port Said. Because some of the children aboard had the whooping cough, we thought we were not going to be allowed to land, but we finally made it and spent several hours in this picturesque city at the end of the Suez Canal. Then followed the journey thru the Red Sea and across the Indian Ocean to Ceylon.

I find upon my arrival at Co-



RECONSTRUCTED RHEIMS. Temporary huts which are now housing the inhabitants of Rheims. Before the war, Rheims had a population of 120,000. During the war this number was decreased to 500. Now there are 20,000 people in the city.

During the trip I sat at table with the British passengers and they were very cordial and companionable. The first three days of the trip across the Bay of Biscay the boat rolled around considerably and and there were many empty places in the dining salon. Being one of the fortunate ones who were not sick, I had all the "grub" that I could put away. And right here let me say that the Dutch boats have good food.

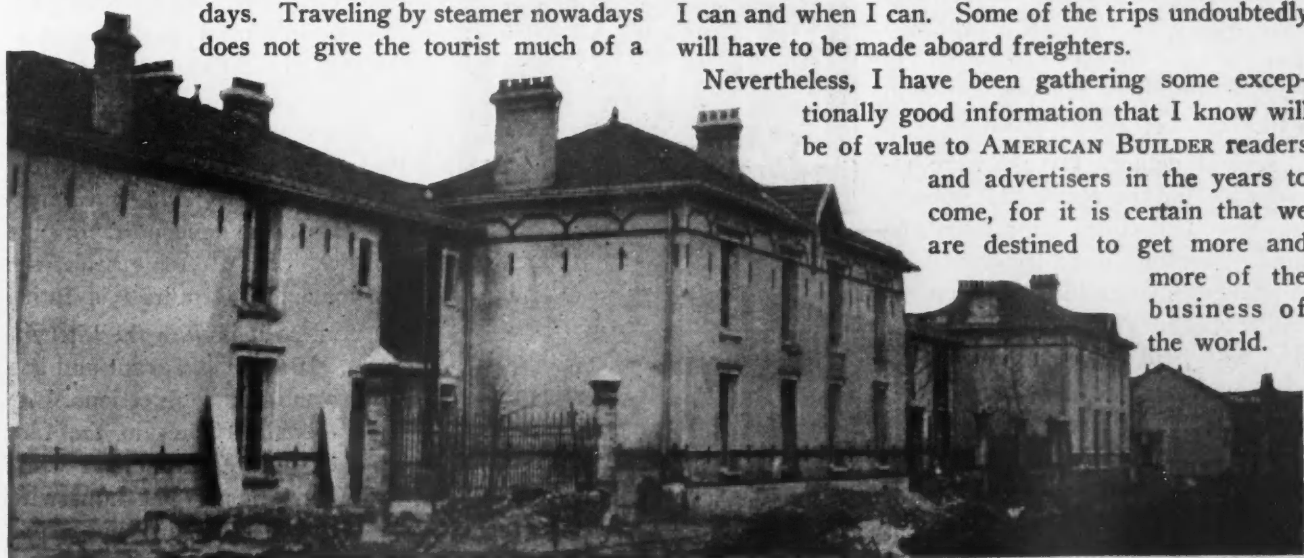
Reading, writing letters that were to be mailed at some distant point, playing shuffle-board and skipping rope for exercise were the principal activities of the days. Traveling by steamer nowadays does not give the tourist much of a



BUSINESS RESUMED IN RUINED RHEIMS. Photograph shows temporary stands erected in one of the public squares of Rheims.

lombo that I will have to continue my travels as best I can. Transportation is uncertain and extremely difficult to secure. It will be necessary for me to go where I can and when I can. Some of the trips undoubtedly will have to be made aboard freighters.

Nevertheless, I have been gathering some exceptionally good information that I know will be of value to AMERICAN BUILDER readers and advertisers in the years to come, for it is certain that we are destined to get more and more of the business of the world.



RECONSTRUCTED RHEIMS. Looking toward the palace. Photograph shows some of the workmen's homes erected from the plans of American architects. The Rheims Town Council has authorized the expenditure of several hundred million francs for reconstruction. American architects are in charge of the work.



Kitchenette Apartments Popular

SPACE-SAVING SMALL APARTMENTS ELIMINATE LABOR AND SOLVE SERVANT SHORTAGE

WHY is a kitchenette? Many of the "old school" cannot be convinced that it is not a "new fangled" idea or merely a passing fad; but it has several very substantial reasons for being a real factor in modern building. It is another addition to the rapidly growing space-saving family presided over by old mother necessity.

Why this revolutionary change in building practice? Were we living in any other than a distinctive age we might have a different story to tell or perhaps no story at all. But conditions are vastly different than they were some years ago. Increasing population in the cities and stagnation of building activities during the war have brought about a shortage of housing that called for unusual measures. Old established customs of living, altho firmly entrenched in the minds of people, have been forced to give up their strong position. Against the attacks of modern building innovations, these ideas have died a hard death. Tradition may be a mighty institution in Europe, but here it does not gain a foothold. Necessity dictates.

Several definite factors were responsible for the remarkable growth of the kitchenette apartment idea. Investors were constantly demanding that architects design and contractors build apartments that will yield a greater income on their investment. Otherwise they threatened to seek more attractive fields. Furthermore, the shortage in domestic help has been steadily increasing. People demanded a substitute. If they could not get the help to do the

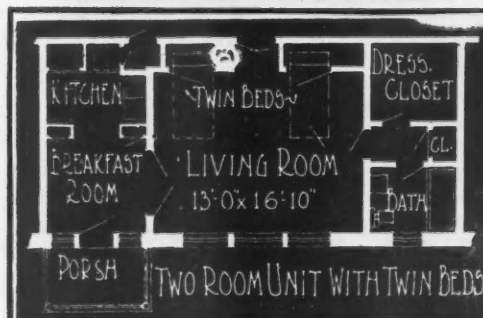
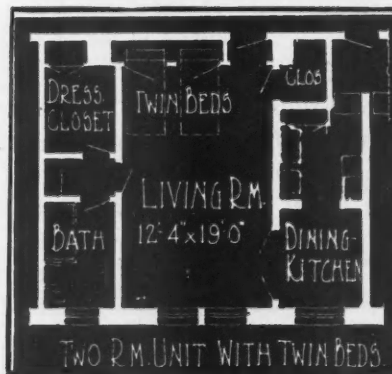
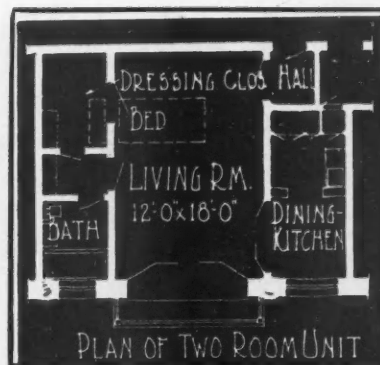
work they wanted homes that did not call for work—a servantless home. Hence the evolution of the large apartment building with service. The kitchenette apartment made its bow and was enthusiastically received.

Details of Kitchenette

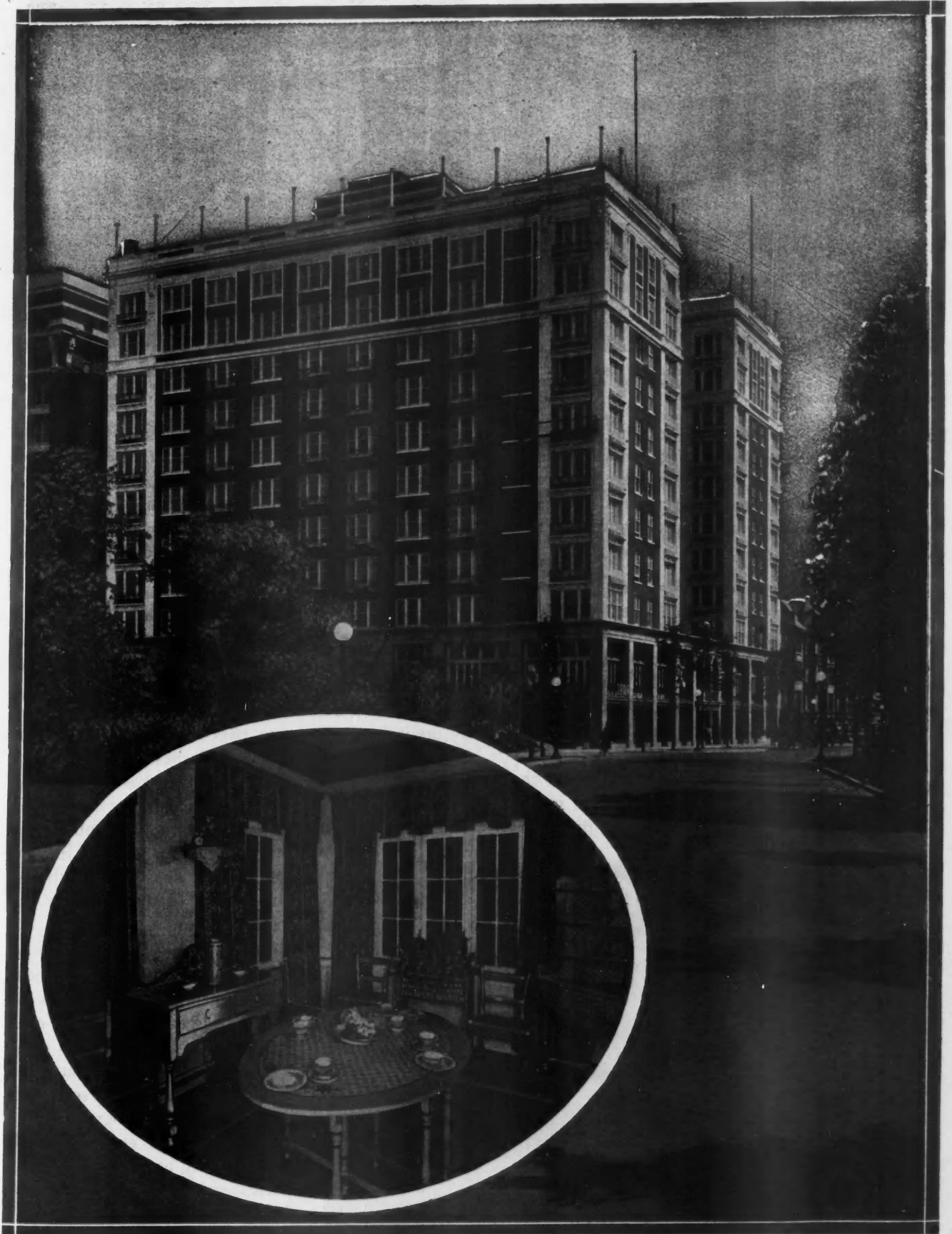
The modern kitchenette apartment consists of a living room, dressing closet, bath, and kitchenette, which is a combination kitchen-dining room. The bedroom has been eliminated by the concealed bed installed in the dressing closet. The kitchenette apartment contains two rooms instead of four, which means only two have to be furnished, two have to be taken care of instead of four, and two cost less to build than four.

No doubt it would be a difficult matter to convince our maiden aunts and conservative grandmothers that a real respectable human being could "live" and sleep in the same room. But in their day, the bedroom was regarded with more awe than it is today. It is rapidly disappearing from floor plans. When the wave of a magic wand in the form of a button or switch produces a bed from the artistic library table, a large, comfortable davenport, or the drawer of a dressing table, the argument of centuries is futile.

And so it is with the kitchenette. It supplies a want and has overcome many objections. Its real popularity lies in the fact that it reduces household work to a minimum. The housewife has found it almost impossible to get domestic help. Inevitably the demand is for less room. The



Floor Plans of Kitchenette Apartments. Two-Room Unit with Single and Twin Beds and Alternative Arrangement.



COOPER-CARLTON APARTMENT HOTEL, CHICAGO. A splendid example of the modern tendency in apartment building construction. Note the arrangement of the sun parlor shown in the small picture. It serves as a delightful little nook for meals or lunches when the service of the restaurant is not desired. Apartment hotels of this type are designed to save space and provide the utmost comfort with the least labor. They are replacing the large homes of many rooms because of the attractive investment features and shortage of domestic help. This hotel is equipped with the latest space- and labor-saving devices.



Living Room with Concealed Bed Hidden from View. It Is Fastened on the Door Jamb Which Opens Off to the Dressing Closet and Is Revealed Only at Night.



Sleeping in the Living Room Was Not Popular with Our Grandmothers, but Modern Space-Saving Ideas Make This Bed Popular in the New Kitchenette Apartments, Where Every Inch Counts.

kitchenette-dining room feature of this space-saving apartment provides a happy little nook for private meals with little work. Despite the excellent reputation for cuisine apartment restaurants may enjoy, people crave that intangible delicacy known as "home-cooking."

Equipment for Cooking

This little kitchen-dining room is equipped with a range, fitted into a recess in the wall or fastened to the back of a closet door, food cupboard, china closet, cabinet, refrigerator, and sink. The dining room can be changed into a breakfast room by adding a bench and table.

One of the important features in the kitchenette apartment, however, is the concealed bed with its dressing room. This room is the result of ingenuity in space-saving. In addition to holding the bed it is

large enough for a dresser or a dressing table with clothes storing devices. In a room of this size every inch of space has to be carefully utilized to take care of all the needs of a family. As in most cases it does not have a window, great care is shown in the installation of artificial lighting fixtures so that the light thrown on the dresser is satisfactory.

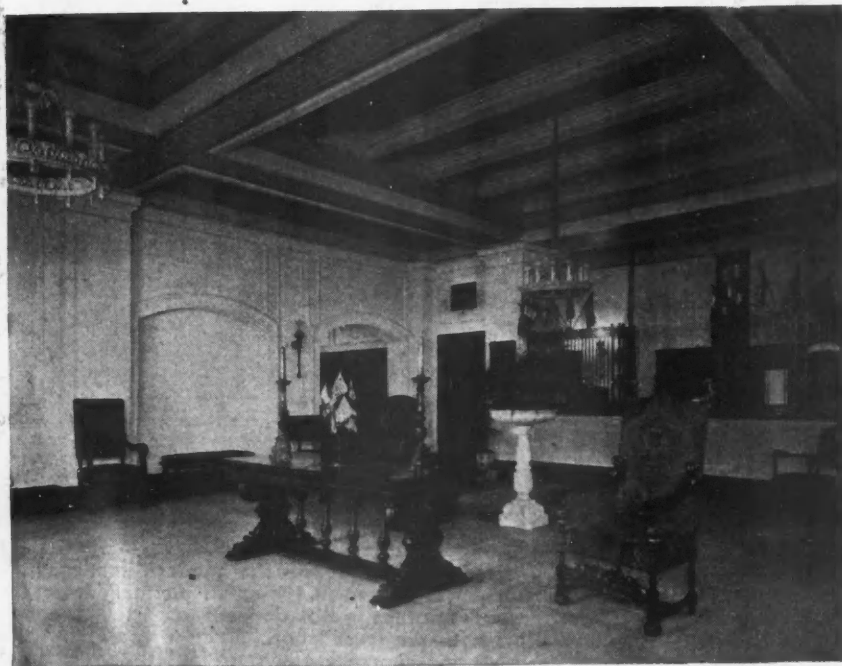
Concealed Beds Save Space

The beds are of standard size and have been so ingeniously devised that they bear no relation to the old folding bed, which is now a fit exhibit for the museum. To enter the dressing room when the bed is up it is necessary to pass thru the hall. When this hall is omitted the effectiveness of the unit is lessened a great deal, for it then makes the dressing room and bath one room. A space-saving cabinet for linen and clothing can be placed in this hall. This feature keeps the clothes in fine condition and does away with the inconvenience of digging them out of a dark closet.

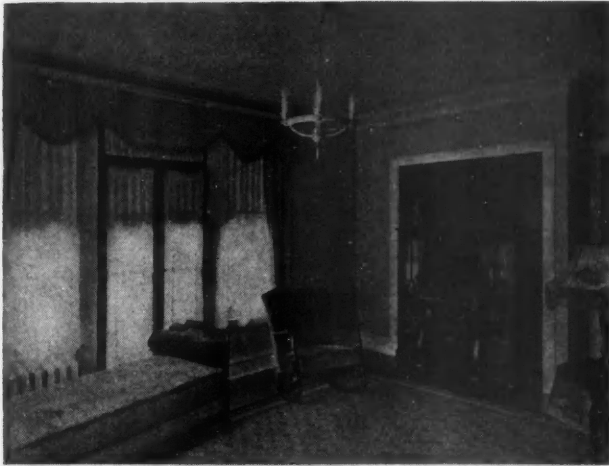
For some time the obstacle to successful operation of the kitchenette apartment was the proper kind of concealed bed. All sorts of contraptions that were far from comfortable and awkward in manipulation had a tendency to scare out tenants. But the progress in the manufacture of a convenient and easily operated bed has been largely instrumental in the marked success of this apartment.

Every form of ingenuity available is used to make these modern apartments the acme of service and convenience and at the same time a space-saver.

Some of the new kitchenette



Interior of Lobby of Cooper-Carlton Apartment Hotel. This Picture Shows the Tendency in Modern Apartment Building and Hotel Construction. No Expense Is Spared.

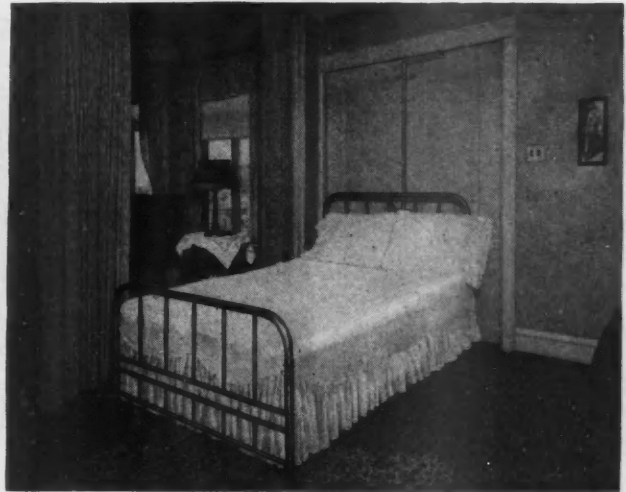


You Would Not Think That Behind the Innocent Looking China Closet Lurks the Hidden Bed, but It Comes Out Like the Owl at Night. Without It the Two-Room Apartment Would Not Be Feasible.

apartment buildings are equipped with refrigerating plants which are small and adapted for homes of all kinds. The occupants not only receive ice a la carte, but also enjoy that luxury which heretofore has been found in hotels only, running ice water. It is filtered by a machine.

Much of the objection to small apartments of this nature have been on the subject of ventilation. Now great electric blowing systems provide continual currents of fresh air which is heated in the cold months.

And so the progress in modern building ideas continues—amazing, incredible. Each new step reveals the unlimited possibilities.



Exposed to View After Hanging Behind the Door All Day. These Beds Are Standard Size and Are Generally Fastened to the Door of the Dressing Closet, an Important Feature of the Kitchenette Apartment.

The development of the kitchenette apartment idea is only the beginning of changes all along the line. One by one some of the most cherished ideas of home building and arrangement have been forced to give up the fight against innovations which must win because they possess the merit. As the crowded conditions of our large cities become worse each year, the need for improved housing in a minimum space becomes imperative. The kitchenette is one of the results of this need, and no doubt it will be followed from time to time by new plans and devices that will cut the size of buildings and increase their capacity.

Proper Insulation of Heating Plant Saves Fuel

DETAIL SHEET (PAGE 125) SHOWS PRINCIPLES OF INSULATION WHICH INCREASE HEATING POWER

KEEPING the heat where it belongs is one of the important results gained by the proper insulation of a heating plant. A plant is not installed to radiate and waste its heat in the basement.

To insure its proper distribution thruout the house, it is advisable for architects and contractors to specify that all exposed boiler surfaces, pipes and fittings carrying steam, hot water or hot gases should be insulated to prevent a drop in temperature or condensation.

Careful and proper insulation as illustrated in the detail sheet on the second page following will cause a large saving in fuel, make the plant give full service instead of half, and provide genuine comfort at an economy.

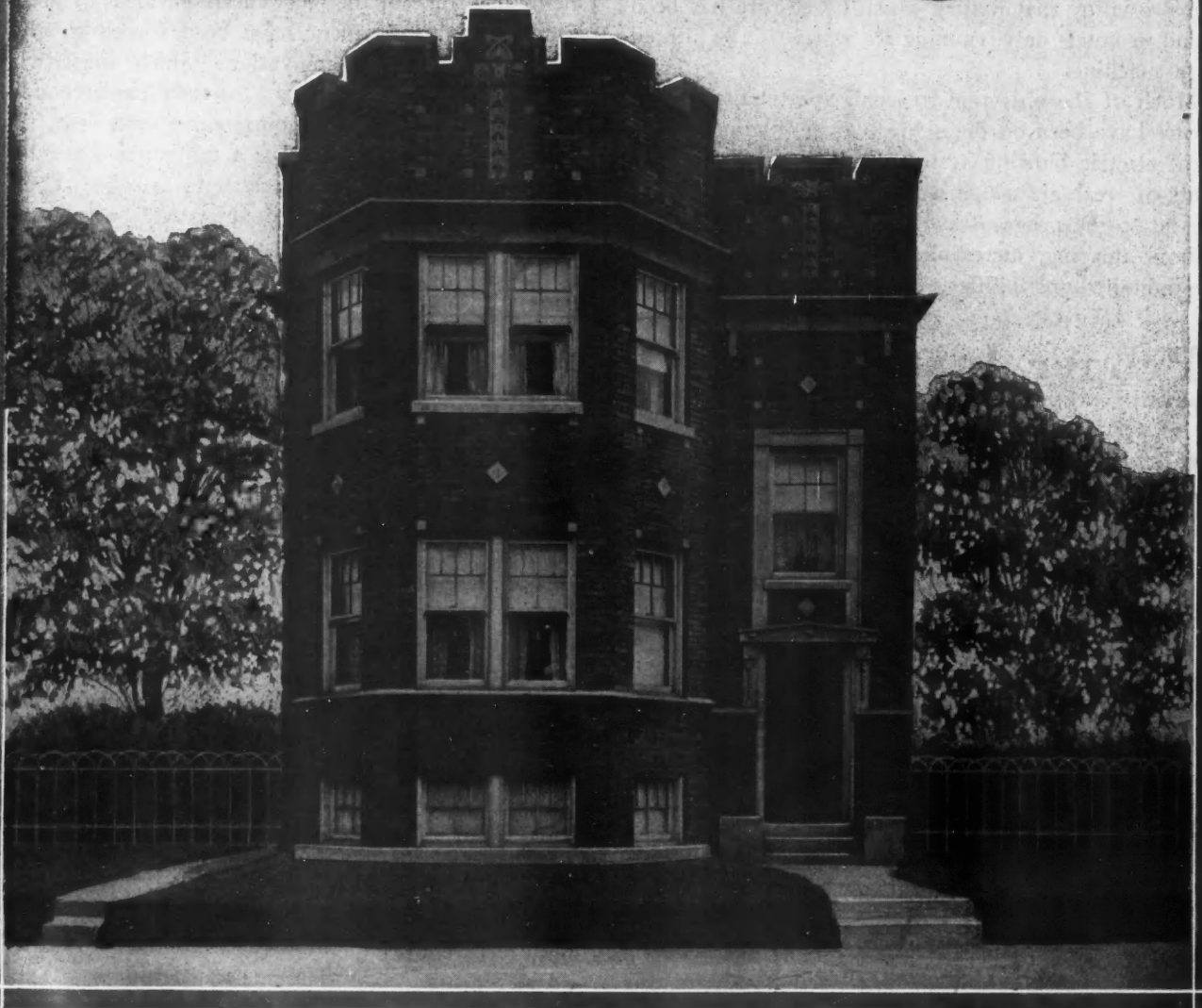
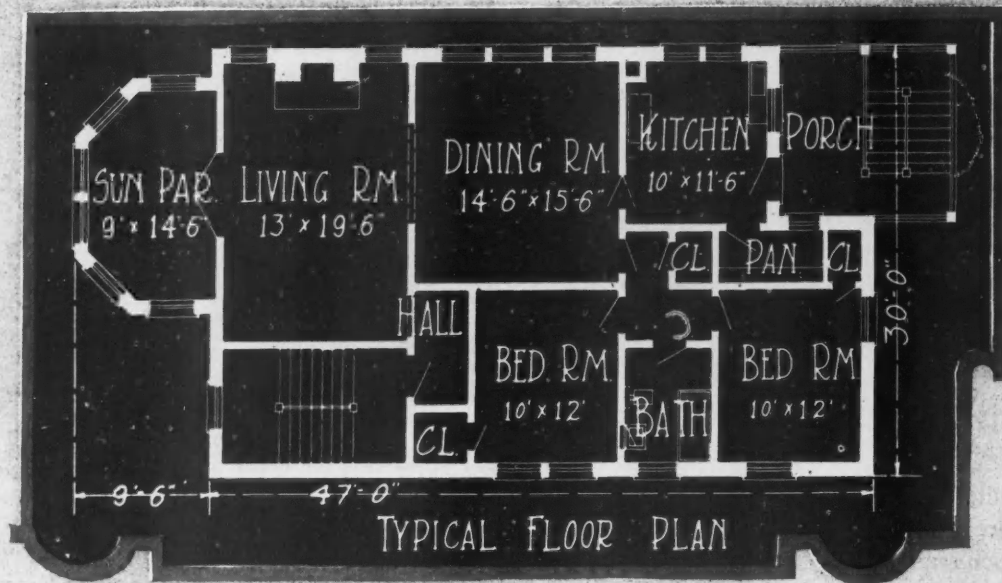
The general arrangement of the piping system of a hot water or steam plant is shown in the basement plan. Leading into the boiler is the return pipe which draws off the condensed vapor. The main supply pipe is the important feed pipe of the house and is well covered, as is the smoke pipe. The supply pipe branches off into the risers, which provide the radiators with the heat. A non-conducting insulation around these pipes increases the heating power by preventing unnecessary radiation.

The important relation between the installation of a

heating plant and the actual construction of the building is shown in the details of the pipe chase in the brick walls and the risers in the floors and partitions. To efficiently conserve the heat which passes thru the risers for long distances it is necessary to insulate these pipes as they pass thru the floor or partitions. As one detail shows, the riser can be insulated by a metal sleeve or by regular pipe covering. This insulation is particularly important where the heat must reach several floors. Unless the pipe is well protected, a large amount will be lost thru radiation.

Naturally the best insulating material is that which is a non-conductor of heat. Asbestos and magnesia have this property to a marked degree and are used extensively in the manufacture of insulating material. A material made up of asbestos fiber and finely ground sponge is used for the insulation of superheated and high pressure steam pipes.

Another composition is made of carbonate of magnesia and asbestos fiber. These materials are made in sections to fit the pipes and are covered with a plastic coat. Over this a canvas jacket is sewed. For boiler fittings and spaces, the material is used in block form. Especial care is shown in covering flanges, and at this point the insulation material is thicker.



MODERN TWO-STORY APARTMENT BUILDING A GOOD INVESTMENT. As a combination home and investment for the man of moderate means, this two-flat building is hard to equal. Within the attractive, well designed exterior with its artistic entrance are two comfortable and modern apartments, containing five rooms and a sun parlor each. The ample lighting facilities afforded by the octagonal-shaped sun parlor add considerably to the cheer of the apartments. On the detail sheet on the opposite page is shown the method of insulating the heating plant in this building. In this type of building, the heating plant should be accorded special attention to cut fuel expenses and give plenty of heat.

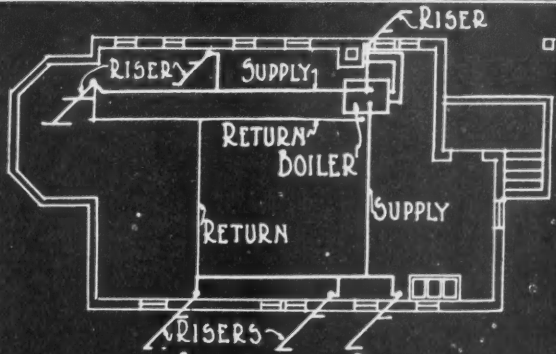
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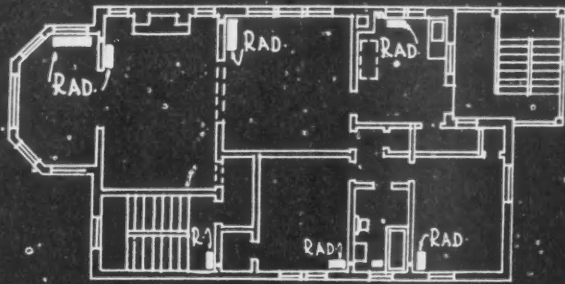
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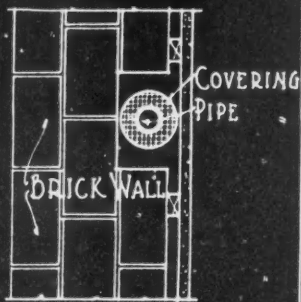
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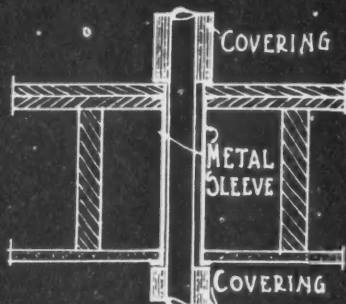
BASEMENT PLAN
SHOWING PIPING ARRANGEMENT



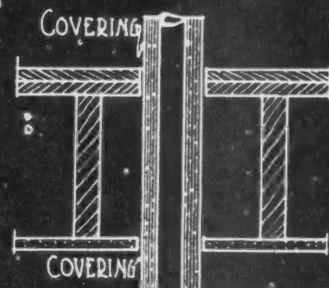
TYPICAL FLOOR PLAN
SHOWING LOCATIONS OF RADIATORS.



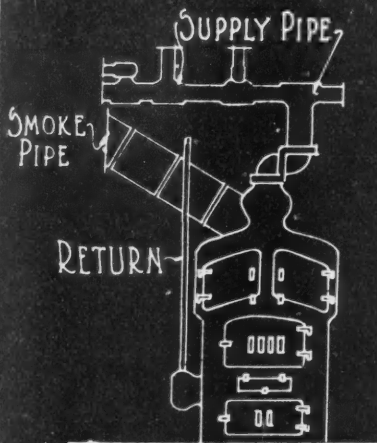
PIPE CHASE IN BRICK WALL



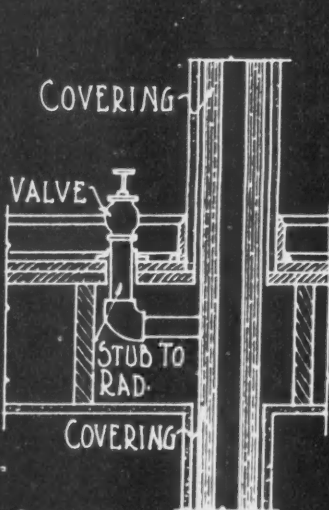
RISER THRU. FLOOR
WITH METAL SLEEVE



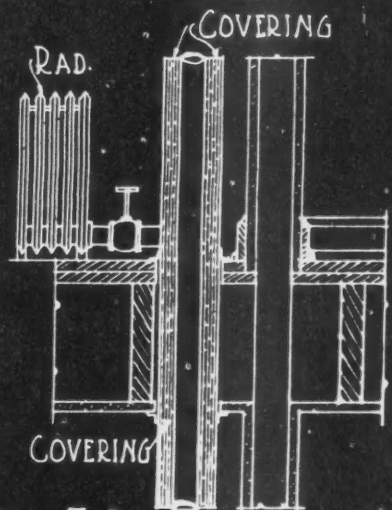
RISER THRU. FLOOR WITH
PIPE COVERING



BOILER, SMOKE PIPE &
SUPPLY PIPE COVERED



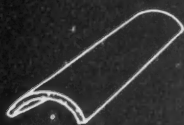
RISER CONCEALED IN PAR-
TITION & COVERED



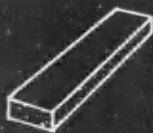
RISER TO RAD. IN UPPER STORY &
EXPOSED IN UNHEATED ROOM



TWO SECTION COVER.



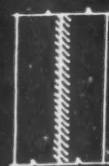
THREE SECTION



BLOCK COVER.



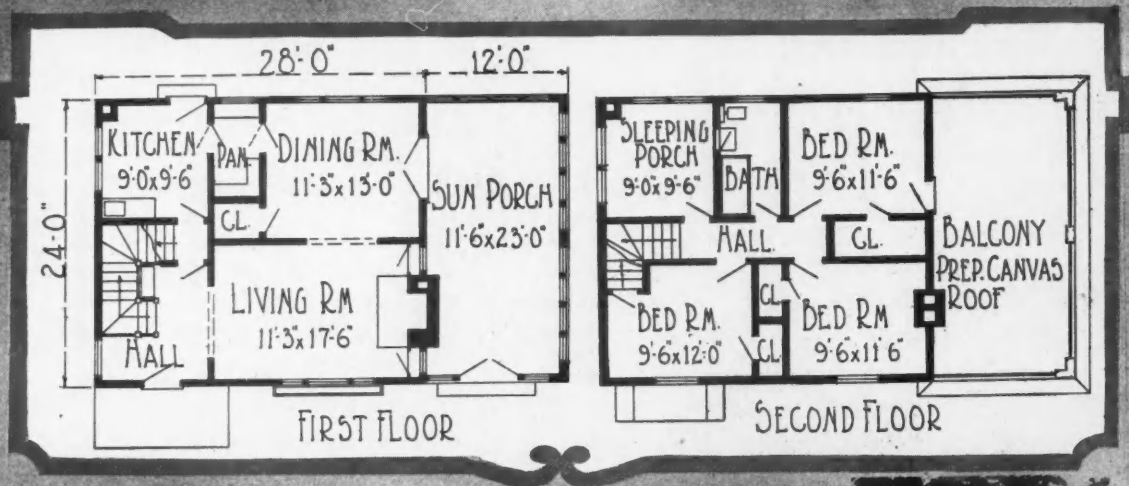
FLANGE COVER



CANVAS JACKET
SEWED ON

SEVERAL TYPES OF COVERING

INSULATION OF HEATING PLANT



A MODEST SIX-ROOM HOUSE. The walls of this shingle-sided home have been stained a rich brown, forming a pleasing contrast to the white trim of the windows, porch, and entrance. The small, semi-circular shaped dormer with its unique window, the small, divided window panes, and artistic entrance with its gracefully arched hood are harmonious touches that greatly enhance the general architectural scheme. French doors give access to the garden from the glazed-in porch, surmounted by a balcony with canvas flooring. There are six rooms in this home: living room, dining room, and kitchen on the first floor; three bedrooms and a sleeping porch on the upper floor. Altho it looks rather large, it is only 24 by 28 feet on the ground.



Building a Home of "Dobe" Brick. These Fair Artisans Are Solving Their Housing Problem by Using the Materials Which the Aztecs and Spanish Fathers Used Four Centuries Ago.

Reviving Use of Adobe Brick

MANY HOMES IN CALIFORNIA CONSTRUCTED OF MATERIALS USED CENTURIES AGO.

FOUR hundred years ago some Spanish missionary fathers struck across the great southwest in search of a new settlement. To their amazement they found in that section dwellings built of a peculiar brick and inhabited by the Aztec tribes. They were so impressed by this architecture that they built their missions and churches in California of the same material.

Today, because of the prevailing high cost of building material and labor, many people in California have reverted to the methods used by the old fathers and ancient Indians, and are building homes of "adobe" brick, as it is called.

The adobe brick is made of clayey soil mixed with straw and water. It has wonderful weather resisting powers as shown by the condition of the old missions after four hundred years. Besides being substantial and waterproof it lends itself to attractive styles.

This kind of construction is slow but simple and requires only a small working force. Some of the men are erecting their own homes, doing everything from making the brick to building the walls and stuccoing the exterior.

This picture shows a home at Huntington Park, near Los Angeles, in the course of construction. The workmen away to dinner, the girls got in the picture.

Insulation of Walls, Floors and Roofs

STANDARD METHODS OF INSULATION SHOWN IN DETAIL SHEET (PAGE 128) HELP TO MAKE WARM AND SOUND-PROOF BUILDINGS

"I BURN a lot of coal but can't get my house warm." This complaint is heard frequently by home owners who overlooked the advantages of insulating the side walls and floors in their buildings to make them warm in winter and cool in summer. It has come to be an important feature in the planning of structures.

On the next page is a detail sheet showing the methods of insulating walls, floors and roofs. The insulating material is placed between the joist and the rough flooring and between this layer of flooring and the finish floor. In the case of walls the material of a much thicker size is placed between the lath and siding. It acts as a barrier against the cold air which penetrates the building, and prevents the circulation of the dead air.

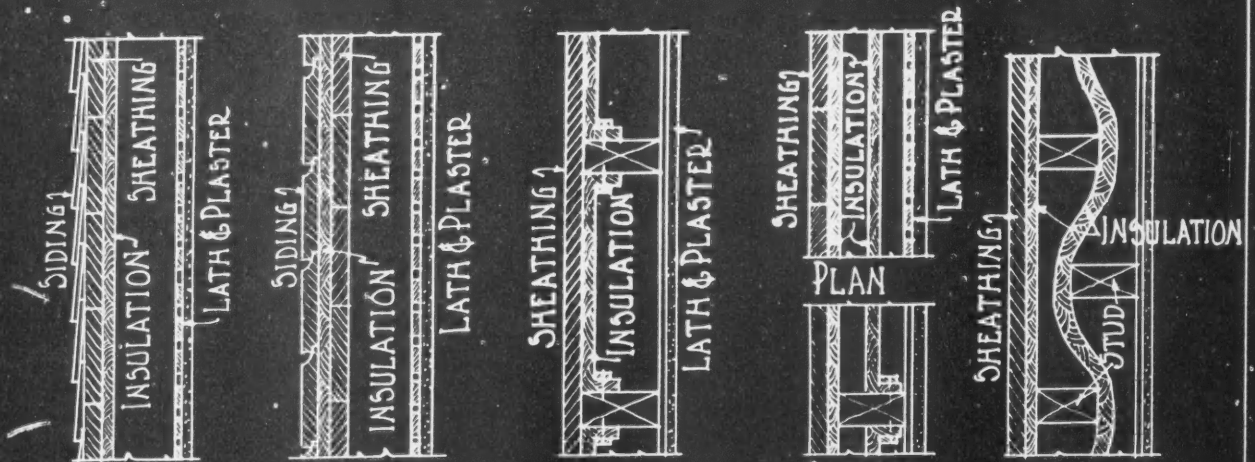
The sides can be doubly insulated by adding a coat of sheathing paper over the insulation material.

In the floor insulation it serves a double purpose. It keeps the house warm and acts as a sound deadener. It is used very often in store ceilings which as a rule are made of steel. Sound passes thru steel very readily. In most cases the steel is fastened to furring strips attached to the joists allowing plenty of cold to pass thru. The insulating material is placed between the steel and joists and above the joists underneath the finish floor.

Very often this insulating matting can be used under roofs directly beneath the shingles or roofing or in balconies that have been floored with prepared canvas.

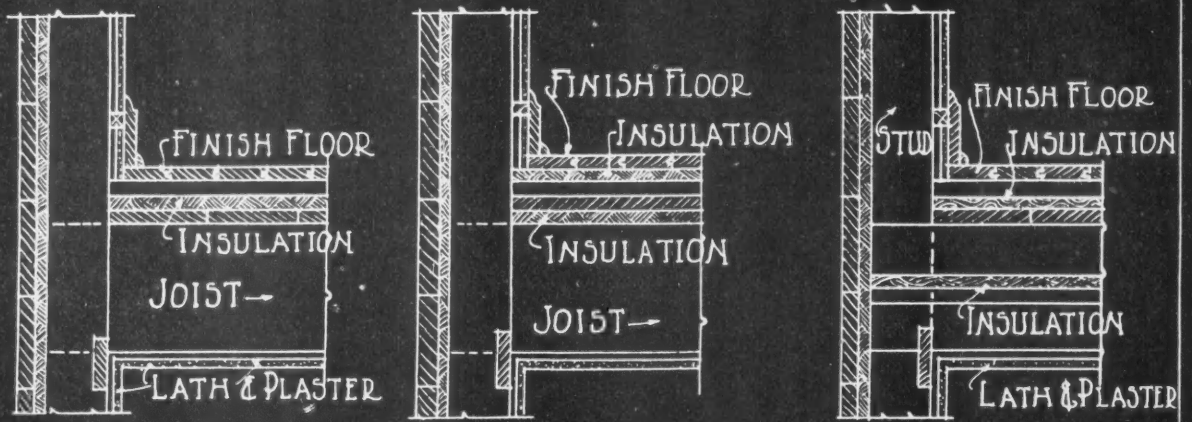
This insulating board is made from a variety of materials, such as spruce wood fibre felted into long sheets, gypsum and cardboard, fibrous mineral substance and granulated cork, cured eel grass stretched between tough paper.

RECOMMENDED CONSTRUCTION



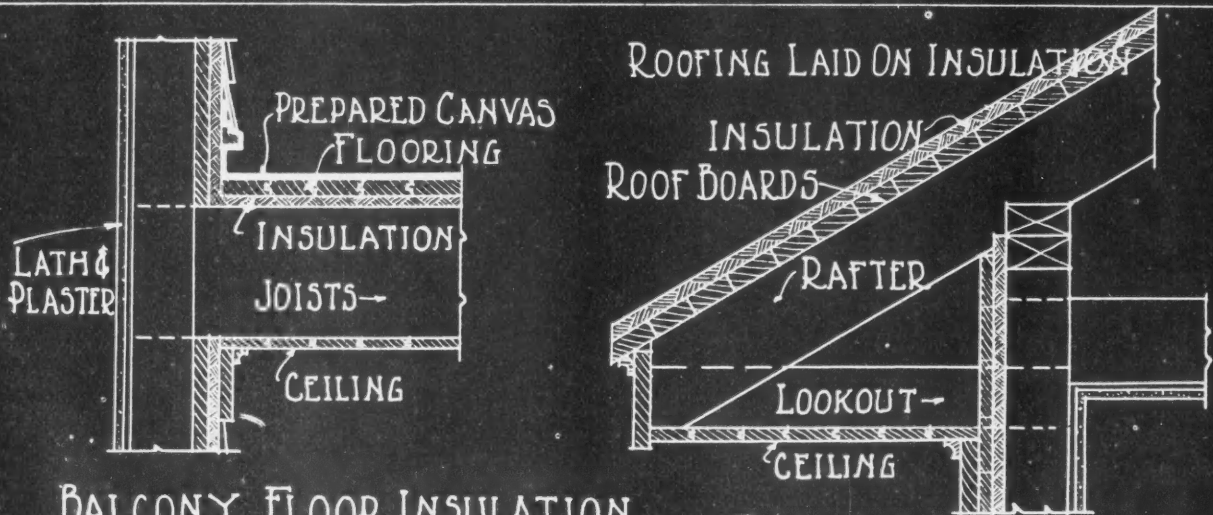
APPLIED TO STUDS APPLIED BETWEEN SHEATHING & STUDS APPLIED BETWEEN STUDS SECTION DOUBLE INSULATION STAGGERED STUDS INSULATION ON OUTSIDE AND BETWEEN STUDS

METHODS OF INSULATING WALLS



SINGLE INSULATION LAID ON ROUGH FLOOR ONE LAYER OF INSULATION ON JOISTS & UNDER FIN. FL. INSULATION ON ROUGH FL. & BETWEEN JOISTS

METHODS OF INSULATING FLOORS.



BALCONY FLOOR INSULATION

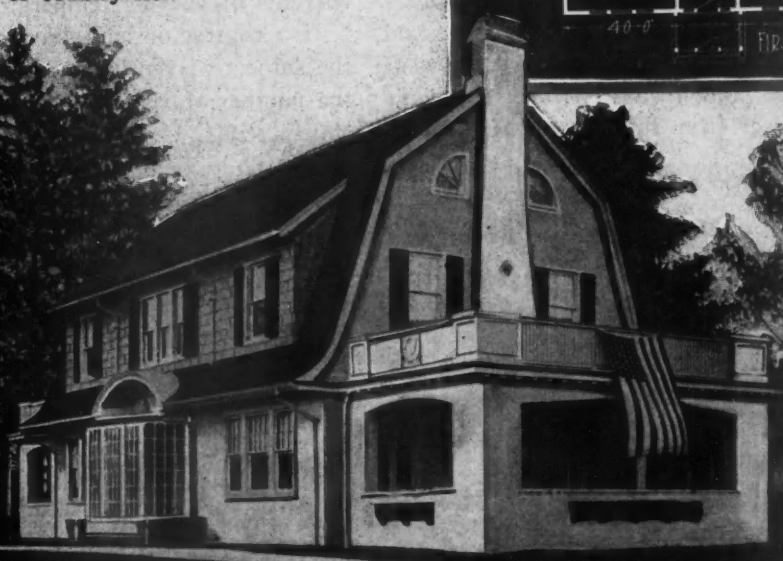
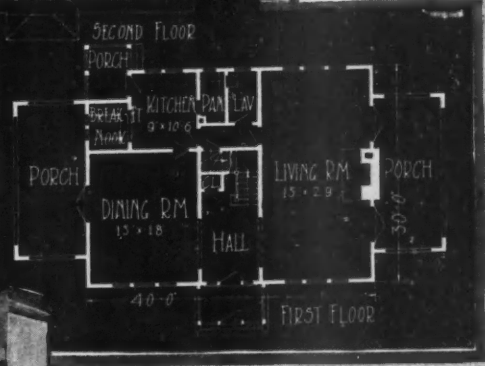
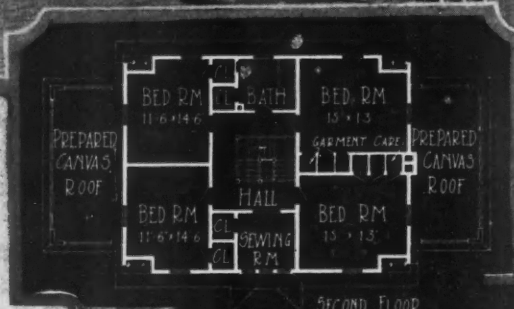
ROOF INSULATION

INSULATION OF WALLS, FLOORS AND ROOFS

QUAINT DUTCH COLONIAL HOUSE. A charming picture of a beautiful home that contains seven delightful rooms like the one shown here.

We get a glimpse at the interior arrangement of the living room, showing how it opens out on the large porch thru a pair of French doors. The roof of this porch has been converted into a balcony for the upper floor by the addition of canvas flooring and balustrades. The house radiates a "homey" feeling, due in large part to the shingle siding, green shutters, and the large chimney, which indicates an open fireplace. The little breakfast nook has not been omitted, while upstairs space-saving closets and a sewing room are additional features. This building is warm in winter and cool in summer because the walls and floors have been insulated according to the details on the opposite page.

Further provision is made for the warmth and general comfort of the house by the glazing-in of the picturesque side entrance. In the cold months either of the large porches can be converted into sun parlors by covering them with glass. To conserve space on the upper floor, garment carriers have been installed in the bedroom closets. The extra lavatory on the first floor is a convenient feature that is being installed in modern homes. Altho this dwelling is set lengthwise on the lot, it will fit well on a wide and somewhat shallow site. It is an admirable type of building for a suburban setting or country site.



Barn Ventilation from Contractors' Standpoint

IMPORTANT FEATURE OF BARN CONSTRUCTION NEEDS ATTENTION OF UP-TO-DATE BUILDER

By C. L. Atwood

THE rapid growth and development of the dairy business have brought to the front a very important detail in barn construction—ventilation.

Farmers formerly did not consider ventilation at all. Here and there a farmer would have a wooden cupola with louvers or slanting openings constructed on his barn to let the air out.

He did not know that the wind currents from the outside, traveling at the low rate of five miles an hour, would rush in those slanting openings and cause an air cushion which would, a great portion of the time, force the foul air back into the barn to contaminate what little fresh air might possibly get into the barn from open windows or loose construction. Sometimes those cupolas would be connected up with the lower story of the barn by square wooden flues, which were intended to carry off the foul air and excessive moisture from the stables.

This idea was an inspiration from a theoretical standpoint, but in practice it was a failure. The cupolas failed to function most of the time. When the atmospheric conditions were such that the wooden cupola might do a little good, the flues were often found to be frozen solid.

Their faulty construction caused condensation of the moisture from below, and when a thaw came, this foul, poisonous moisture dripped back into the barn or soaked into the flues and remained a menace to the live stock as long as they were in the place. These flues were always square, and the corners became dead air spaces which would have obstructed the free passage of moisture-laden air, even tho the ventilators on the roof were correct in principle and construction.

But faulty as they were, the wooden cupola and square box flues were forerunners of a system of ventilation that ventilates and helps to protect the dairy farmer and stock raiser from the ravages of tubercu-

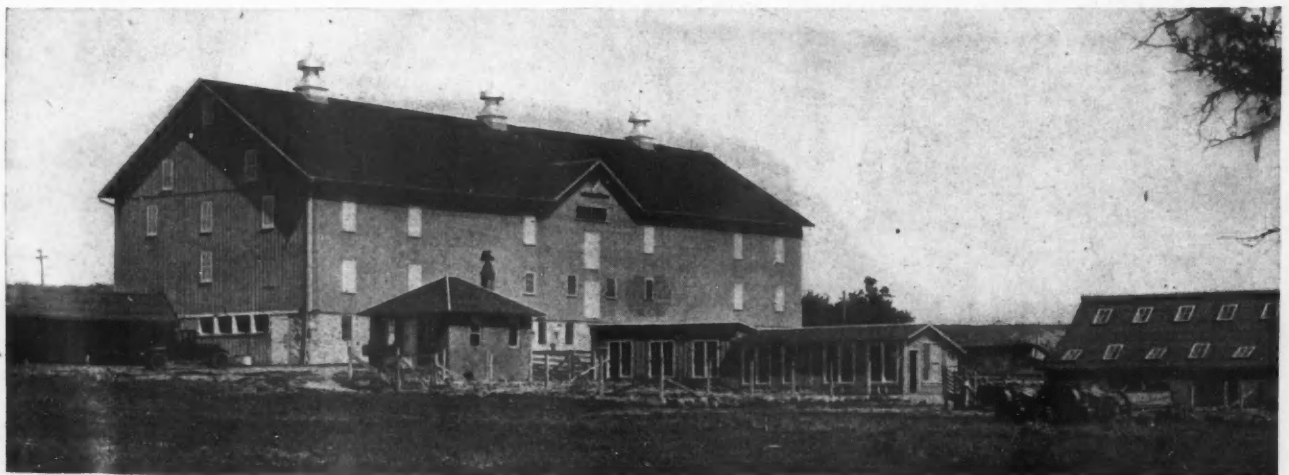
losis, contagious abortion and other diseases and lessen fire risks from lightning and spontaneous combustion.

The vital difference between the old wooden cupola and the up-to-date metal ventilators is, that the outside air currents do not, under any weather conditions, enter the barn thru the ventilator. They pass over and thru the upper section of the ventilator in such a way as to pull or draw the foul air from the interior of the barn. The wind band and cone-shaped part of the ventilators control the direction of the air currents, and they enter the vent at a slant that takes them out again, establishing an upward draught which the foul air is forced to follow. No matter from what direction the outside air currents strike the ventilator, the effect is the same, because of the circular cone construction, which is adjusted to the correct angle.

It is out of the contractor's field of usefulness to construct such a ventilator, but it is entirely in his province to erect it. He should make sure that the ventilator he installs is scientifically constructed along the lines suggested. The construction of metal flues is a metal worker's job, and the placing of them, to get the maximum of efficiency, requires experience and a careful study of ventilating engineering problems which are peculiar to each building.

There are some notable facts, however, that a contractor may well know, most important of which is this: Foul air flues can be metal or wood. Metal flues possess the advantage in that they can be made round, instead of square. They should be insulated by a waterproof insulating material to guard against condensation of moisture caused by contact with air currents of varying temperatures.

If a contractor has given considerable attention to the subject of ventilation, he will be able to prescribe the number of ventilators required by a building of a stated size. The varying number of cows, calves,



Modern Barn on "Spring Brook Farm," Beaver Dam, Wis., Owned by Fred E. Rogers. Mr. Rogers Believes in Fresh Air and Sunshine for His Live Stock. Note the Ventilating System in the Barn and the Many Windows in the Roof of the Hog House. Housed in Well-Ventilated and Sunshiny Buildings, the Animals Are Healthy and Productive.

of cows, calves, horses, and colts housed in a barn make the installation of a successful ventilating system more or less complex and hazardous.

The average contractor will find it easier and more profitable in the end to install a ventilator of approved construction or a complete system in accordance with plans and blue prints furnished by some firm who will take the responsibility for its successful working.

In this way he can increase his own prestige and establish a reputation in a business which promises to become of enormous proportions in the coming years of prosperity in the dairy business.



Barn of Adolph Finkler, Pine Lake, Wis. Another Well-Ventilated Barn.

Equipment for Gas Filling Stations

PLOT PLAN OF SERVICE STATION AND DETAILS OF GASOLINE STORAGE SHOWN ON NEXT PAGE

WITH the rapid increase in the use of motor vehicles has come a proportionate increase in the need for good service and gasoline stations. Without doubt the gas filling station is one of the most practical and attractive features in this great service chain.

They are located at various points about a city or town to fill that long-felt want of supplying gasoline to motorists who run short at an inopportune time. A corner site is generally picked for their location because it permits a driveway leading directly up to the pump. When his wants have been filled the driver can continue out to the street without backing up and turning around.

On the next page the plot plan of one of the most attractive types of gas filling stations is shown, together with the details of the gasoline storage. These stations are made very attractive and have a unique style of architecture. Artistic electric lights are placed at vantage points around the building to add to the general attractiveness of the setting and dissipate the commercial atmosphere. For this reason they can be located on boulevards and beautiful streets.

Naturally the arrangement of the various pumps and the source of supply is the important feature in the mechanical construction. As a rule the air pump is placed on the outer walk where drivers can get air without congesting the inner driveway. The gasoline pumps are placed at convenient intervals along the drive and in front of the station which has a cover projecting over the driveway. Several autos can be accommodated at one time.

The main surplus supply gas tank is located underground at one end of the building and the oil tank at the other. The oil pump is placed inside the station proper.

The nature of the product, which is very inflammable, makes it essential that the station be built as near fireproof as possible. The supply tanks are located underground in order to eliminate danger from fire. These tanks are made of steel and vary in size according to the needs of the particular station.

The standard equipment used in a gas filling station of this kind consists of a tank, a gage stick to indicate the amount in the tank, fill pipe, and suction pipe. Once the tank has been located at the safest handiest point for filling, the measuring and metering pumps are installed above ground. These pumps are equipped with a gasoline hose which enables pumping direct from the underground tank to the car. In this way all fire risk is eliminated.

The measuring or meter pumps are arranged to supply gasoline in fixed quantities such as half gallons, gallons, etc. They pump the gasoline from the tank, filter and measure it accurately, and register the gasoline pumped up to several thousand gallons. They are operated by a handle, and in some cases have a capacity of five gallons per stroke. A quick return device on the pump forces the plunger down four times as fast as it is raised. These pumps have also been adapted for use in small garages.

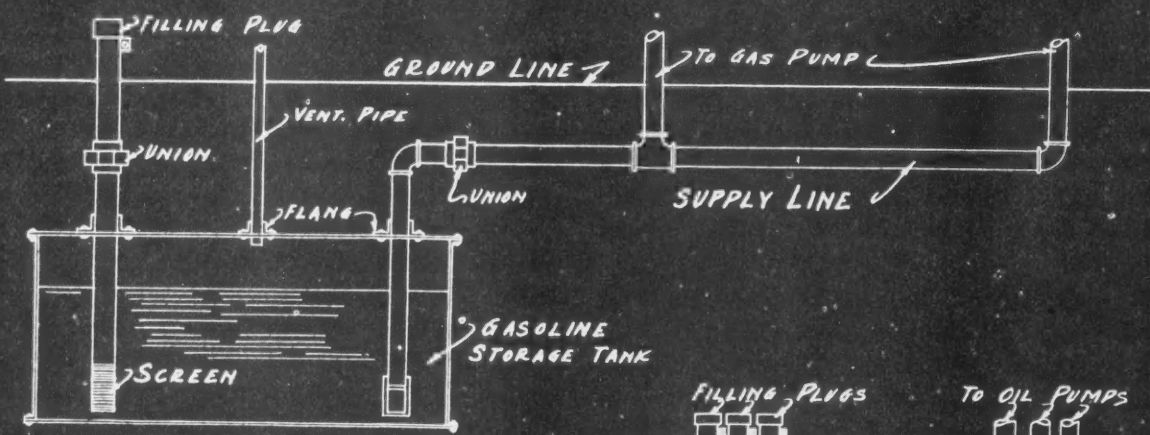
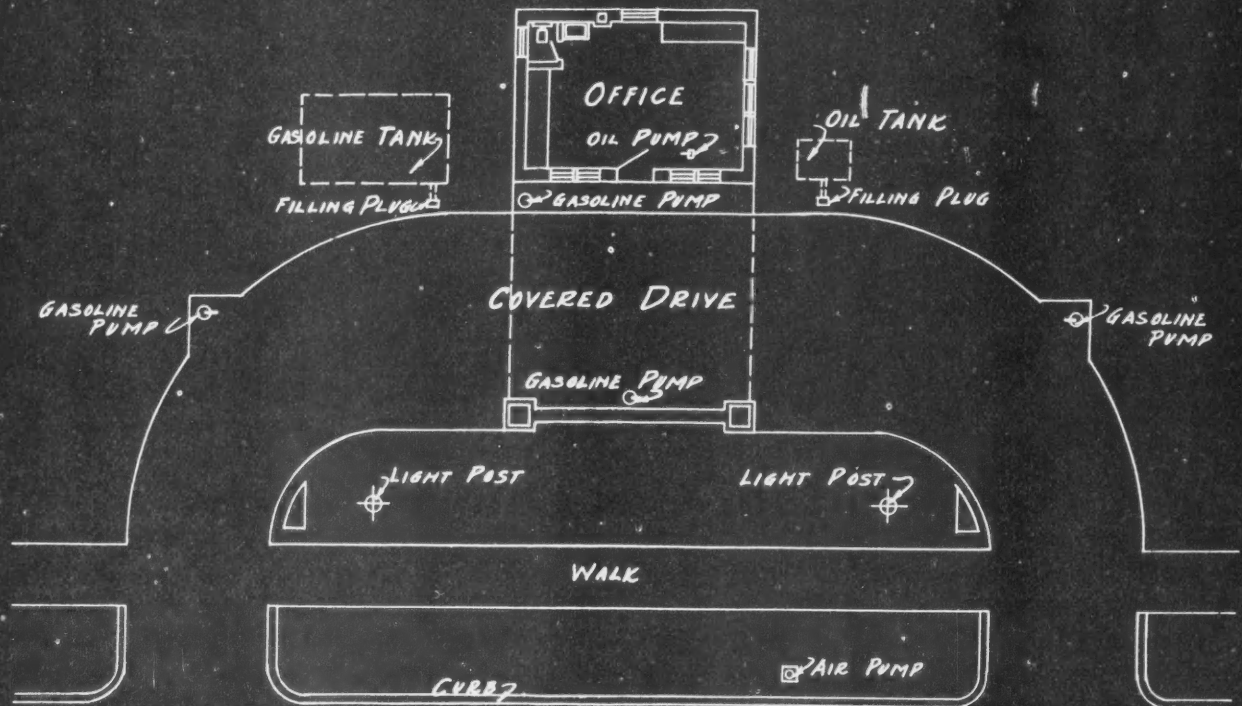
Lubricating oils do not require a large pump, as the quantities required are small. They are built to supply quarts, pints, and half pints.

In these stations air for tires is supplied by a compressor and tank. Running from this tank to the outlet on the sidewalk is a thin pipe. This outlet, which is nothing more than a rubber hose, is fitted with a device that enables it to fit over the tire valve. As soon as the connection is made the flow of air automatically starts. When not in use this hose is protected by a covered receptacle located near the edge of the curb.

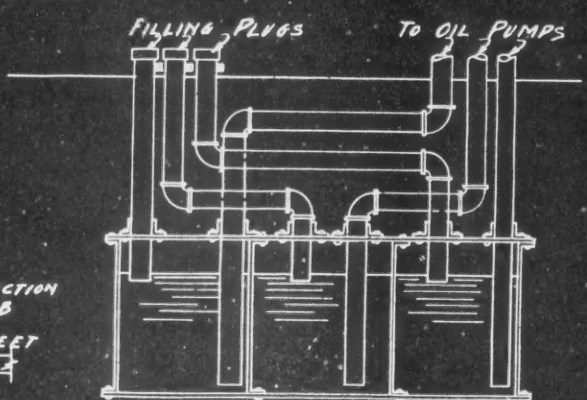
RECOMMENDED CONSTRUCTION

PLOT PLAN

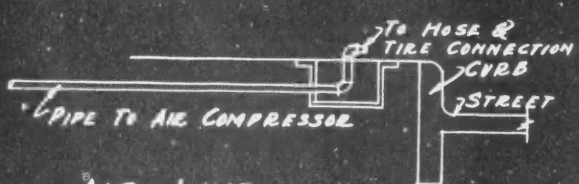
SHOWING LOCATIONS OF BUILDING, PUMPS, ETC.



SECTION THRU GASOLINE TANK & SUPPLY LINES

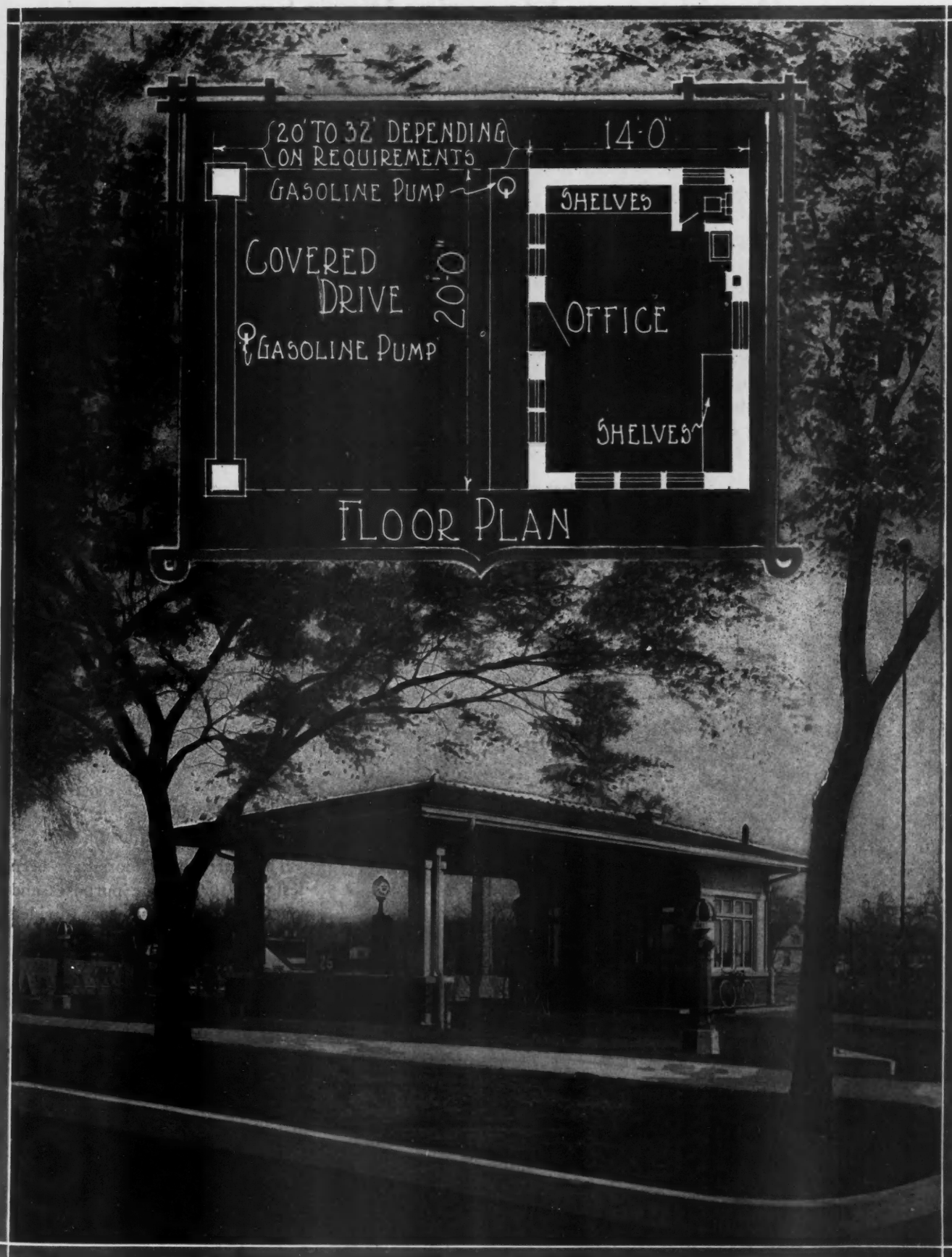


OIL STORAGE TANKS



AIR LINE

GASOLINE & OIL FILLING STATION



GAS FILLING STATION OF POPULAR DESIGN. These small buildings are a distinct architectural asset as well as a practical service station for users of motor vehicles. This building fits well in a corner site on any boulevard or good street. The artistic lights are arranged at vantage points to add to the general effect of adornment rather than commercialism. The actual building is not large, being 14 by 20 feet, but the effect of size is due to the cover over the driveway. The roof is made of heavy green tile. On the detail sheet opposite this page, the plot plan and details of the gasoline storage are shown. Such a building represents an attractive combination of utility and architectural style. It is fireproof.

Design for Storage Warehouse

FOUR-STORY CONCRETE AND BRICK STRUCTURE IS FIREPROOF AND ARCHITECTURALLY ATTRACTIVE

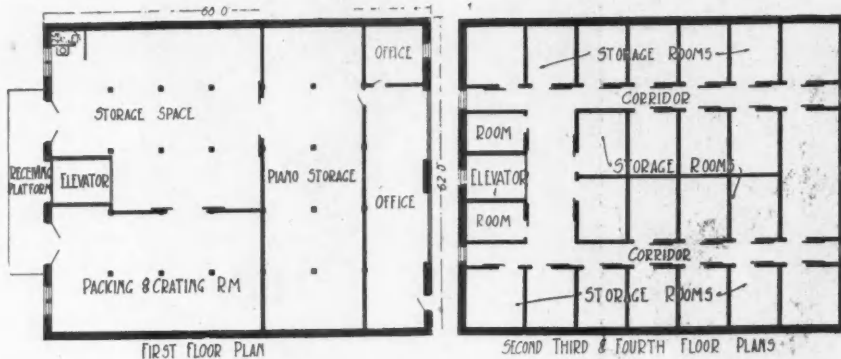
STORAGE warehouses must be as nearly fireproof as possible. For that reason they are built very substantially, with concrete pillars, floors and stairways, and brick curtain walls. The business of storage did not formerly call for an attractive building, nevertheless, the tendency in modern storage building construction is toward attractive buildings, not just four heavy plain walls.

The result is shown conclusively in the warehouse of this page. The front has been designed with care and skill. It can be located on a good street without causing a depreciating effect on the surrounding buildings. The building is built of brick with a face brick front, well enhanced by an artistic terra cotta trim.

The tower effect on each side softens and breaks up the plain hard lines of a structure of this nature. Windows as a rule are not needed, but a few can be

placed in the front to chase away that gloomy expression. They can be placed at the end of the aisles.

In the lower part of the building the attempt to get away from depressing warehouse construction has been carried out very successfully. Again the terra



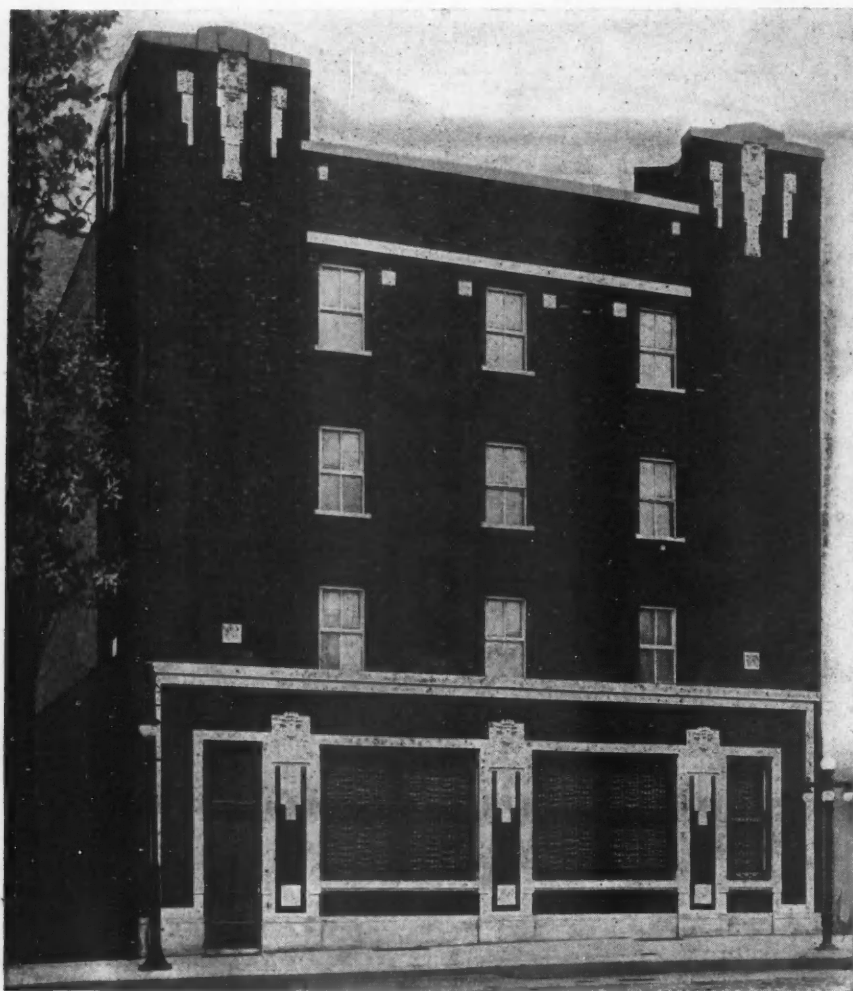
Floor Plans of Furniture Storage Building, Showing Work Floor and Storage Rooms.

cotta trim adds a distinct touch of attractiveness. The wide well-curtained windows help very much.

The main floor of the building is devoted to the handling of merchandise, either shipping or receiving. For that purpose a platform has been built in the rear with a heavy freight elevator close by. On one side in the rear is a storage space, while the other is set aside for the packing and crating. The space in front of the section is given over to the storage of pianos. The front of the main floor contains offices.

The three upper floors have been designed for storage purposes and for that reason have been divided up into storage rooms. These rooms are placed along the sides of the buildings and in the center between two corridors. Light for the aisles are provided by three windows in the front and rear. There are no windows on the sides of the building, since they are on the lot line.

The goods are brought up on the elevator and distributed to the various rooms, each of which has a small door. Contractors who have been asked to build a warehouse of this nature cannot find a more attractive or efficient type than is presented in this building. It is 62 by 68 feet in its dimensions on the ground.



Modern Storage Building. This Four-Story Structure Has an Attractive Appearance Despite Its Purpose. It Shows the Tendency in Present Construction to Make All Buildings Pleasant to Look at.

Put Your Trade-Mark on Wheels

By Chesla C. Sherlock

AN Iowa home builder has an eye to advertising his calling that should be interesting and valuable to other builders. He believes in linking up his name and business in such a fashion that people will be constantly reminded that he is the builder of the niftiest bungalows in town.

W. A. Spurrier, Jr., is his name and he has built more than one hundred homes in Des Moines in the past three or four years. He was the pioneer in the "Own Your Own Home" movement in his community.

His trucks are all equipped with miniature bungalow bodies, fitted with regular doors and windows, red brick sides and rubberoid roofing in real colors. This pictorial showing of his calling is supplemented simply by his name and the significant phrase: "Quick Courteous Service."

The sign above his downtown office is a regular little home that lights up at night, and smoke curls out



W. A. Spurrier, Home Builder, in Des Moines, Iowa, Believes in Advertising His Calling. He Built Miniature Bungalows on All of His Trucks.

of the chimney in lifelike fashion. The little bungalow rests on the canopy extending over the sidewalk, amidst a terraced lawn and shrubbery!

Such publicity as this cannot fail to keep his business and his name before his prospects all the time, and in a manner that is distinctly favorable to all concerned, as the success of his business testifies.

Installing Metal Store Fronts

FULL PAGE BLUE PRINT (PAGE 136) CONTAINS SEVERAL DETAILS OF MODERN STORE FRONT CONSTRUCTION

ATTRACTIVE store fronts are an important asset to a business, especially one that has a variety of merchandise to display. Architects and contractors are often asked to suggest the arrangement of the windows for an up-to-date store so that the maximum show space may be obtained.

For this reason we find a variety of styles in store front construction. The increasing demand for show space has resulted in the "island" case, a separate all-glass case placed between the two main windows and in the center of the main entrance. It provides display window space on four sides. There is also the long side windows leading to the main entrance set well back in the center of the building. All sorts of arrangements have appeared within the last few years that not only increase the efficiency of the business, but add to the general appearance of the building.

Perhaps the most instrumental factor in making this elaborate window display a success is the standard metal store front. These fronts are founded on the basic principle that plate glass should be held in a setting that will "give and take" in the face of wind pressure, and have distinctly attractive architectural lines.

The various parts used in this standard construction are ventilated sash, glass stops, division bars, corner bars, 3-way bars, reverse corner bars, sill coverings, bulkhead constructions, kick plates, etc. Some of them are shown in detail on the next page.

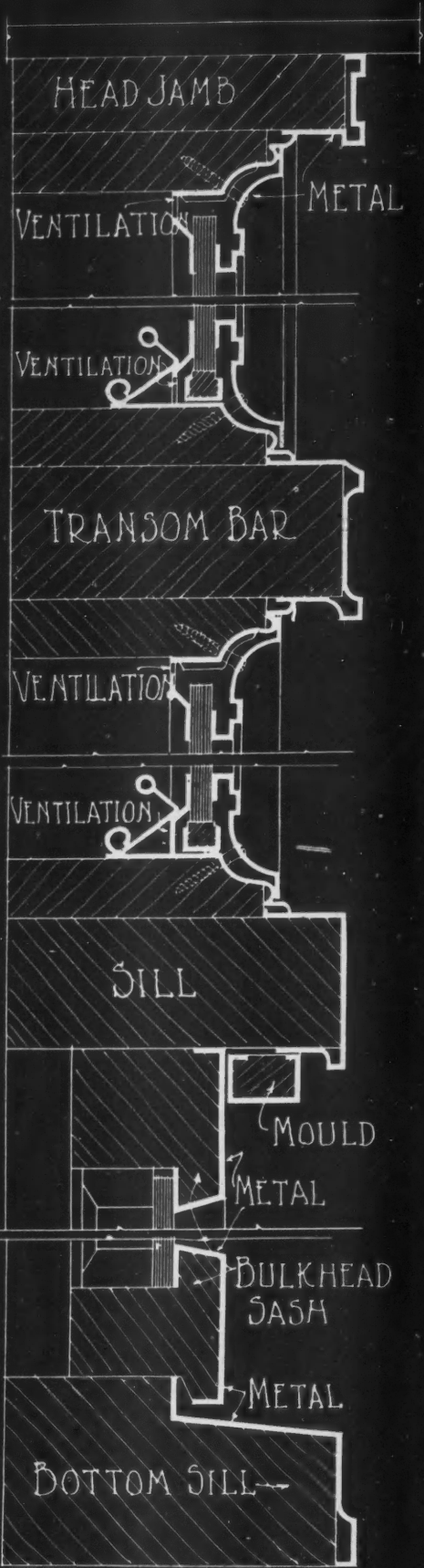
These store fronts are usually made simple enough so that the ordinary mechanic without previous experience can install them. Being constructed of metal they are durable and eliminate constant painting, repairing, glass breakage and high insurance. Moreover they lend themselves to a wide range of styles in store fronts.

The introduction of this type of store front has practically revolutionized that particular kind of construction. Like anything that is standardized, it has not only simplified construction by providing a material that can be installed by anyone, but has helped to cut building costs.

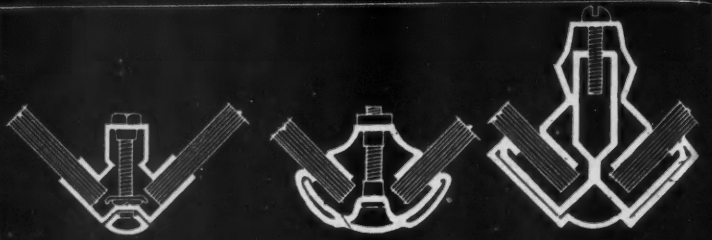
The metals used in these store fronts are generally bronze, copper, brass and steel. They are furnished in a variety of finishes.

Show windows to a great extent are a true gauge of the commercial activity of a community, just as the type of buildings are visible signs of the prosperity of the business section. In modern store construction builders recognize that the window front installation is a very important step in the construction process because it completes the general exterior appearance. The standardization of store front material has not only simplified the builder's task, but helps him to make his work attractive. A handsome looking building with inferior store front construction is like a beautiful dress over a misfit pair of shoes.

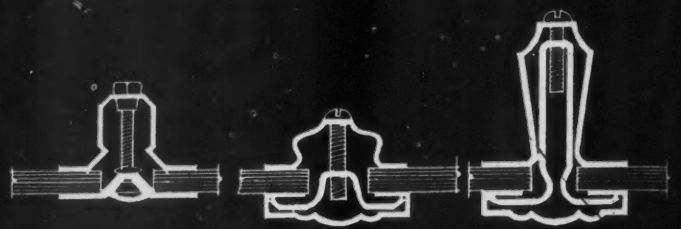
RECOMMENDED CONSTRUCTION



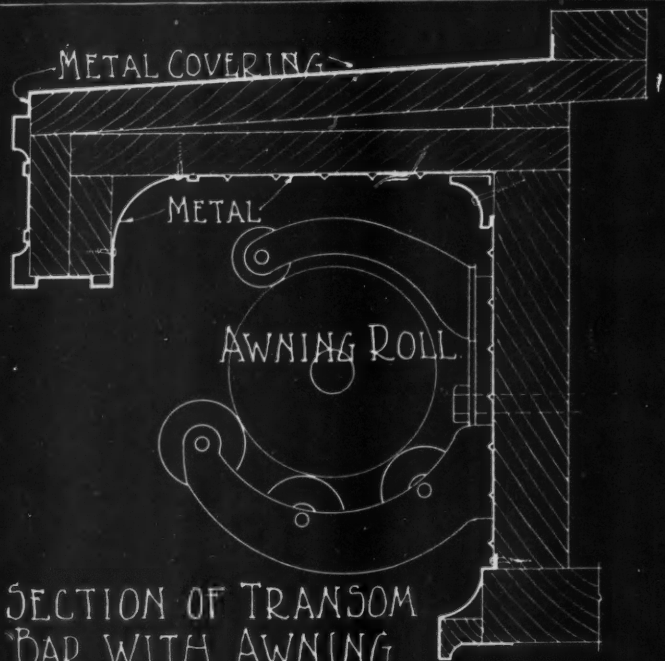
STORE FRONT SECTION



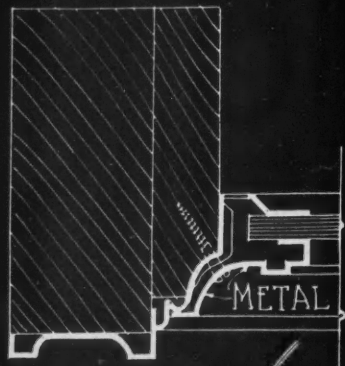
TYPES OF CORNER BARS



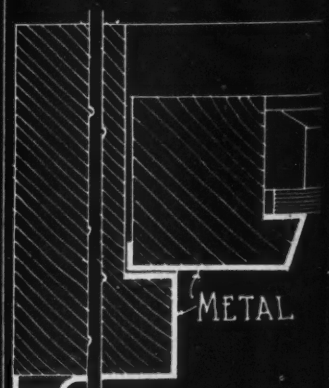
DIVISION BARS



SECTION OF TRANSOM BAR WITH AWNING

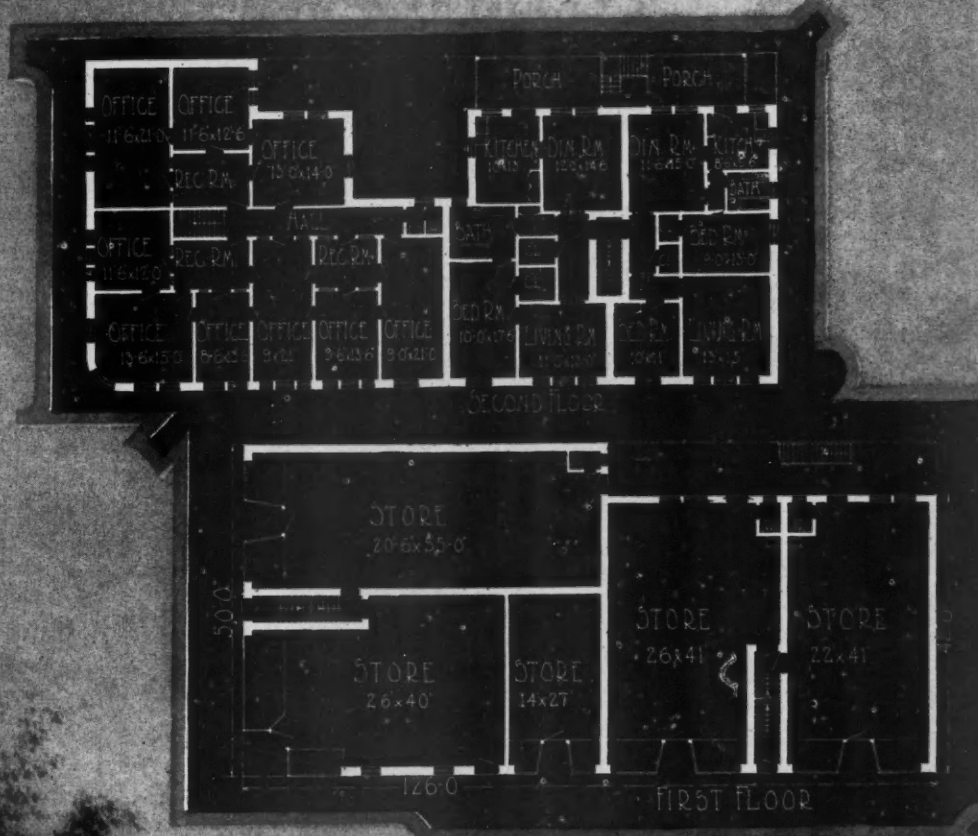


UPPER SIDE JAMB



BULKHEAD JAMB

METAL STORE FRONT DETAILS



CORNER STORE, OFFICE, AND APARTMENT BUILDING. A splendid example of modern building efficiency. On a corner lot, 42 by 126 feet, the owner has a two-story structure containing five stores on the first floor, and the offices and two apartments on the upper floor. The attractive investment feature of this kind of building is apparent. The property has been so utilized as to yield a maximum income. The stores are equipped with modern store fronts, as the detail sheet opposite will show. Upstairs, each three offices have been grouped about one reception room. The apartments contain four and five rooms. Substantial, yet attractive, with its face brick and terra cotta trim, this building is a real prize.



WHAT DO YOU THINK OF THIS INVITING ENTRANCE? Certainly it is most unique and embodies charm and style, as well as a refreshing difference. It contains a number of features that not only make it distinctive but help to fit in well with the general architectural scheme of the stucco home shown on the opposite page. A real effort has been made to get away from the beaten path, and it has enjoyed success, judging from the attractive benches and the brick step and landing. In the hood we find a combination of artistry and substantial construction further enhanced by well-designed and executed supports. The general effect is one of quaintness and appeal, which, combined with its uniqueness, makes something to be sought after.

Unique Tile and Stucco House

TWO-STORY RESIDENCE HAS ATTRACTIVE SIDE ENTRANCE AND LARGE PORCH

By John F. McClarren

MANY attractive features are included in the two-story hollow tile and white stucco residence shown here. It is especially adaptable to a suburban place or a site in the country. A lot 50 by 100 feet would be ample for the construction of the residence and would be sufficient to set it off nicely.

While there are many attractive features in the design those which stand out with considerable prominence, the Colonial details, the lattice work on the front for vines and especially the doorway are particularly emphasized. An economical feature is the arrangement of the chimney, the provision in the design being such to have the one chimney serve for both the kitchen range and the fireplace in the living room. The latter room, too, is unusually spacious, considering the size of the house, and has a direct connection with the kitchen. The connection of the dining room with the kitchen and pantry are also considered rather advantageous. The front porch is large. The linen and clothes room on the second floor, easy of access to the bed and bathrooms is deemed an attractive advantage. The space in the attic is so set off to meet conveniently the

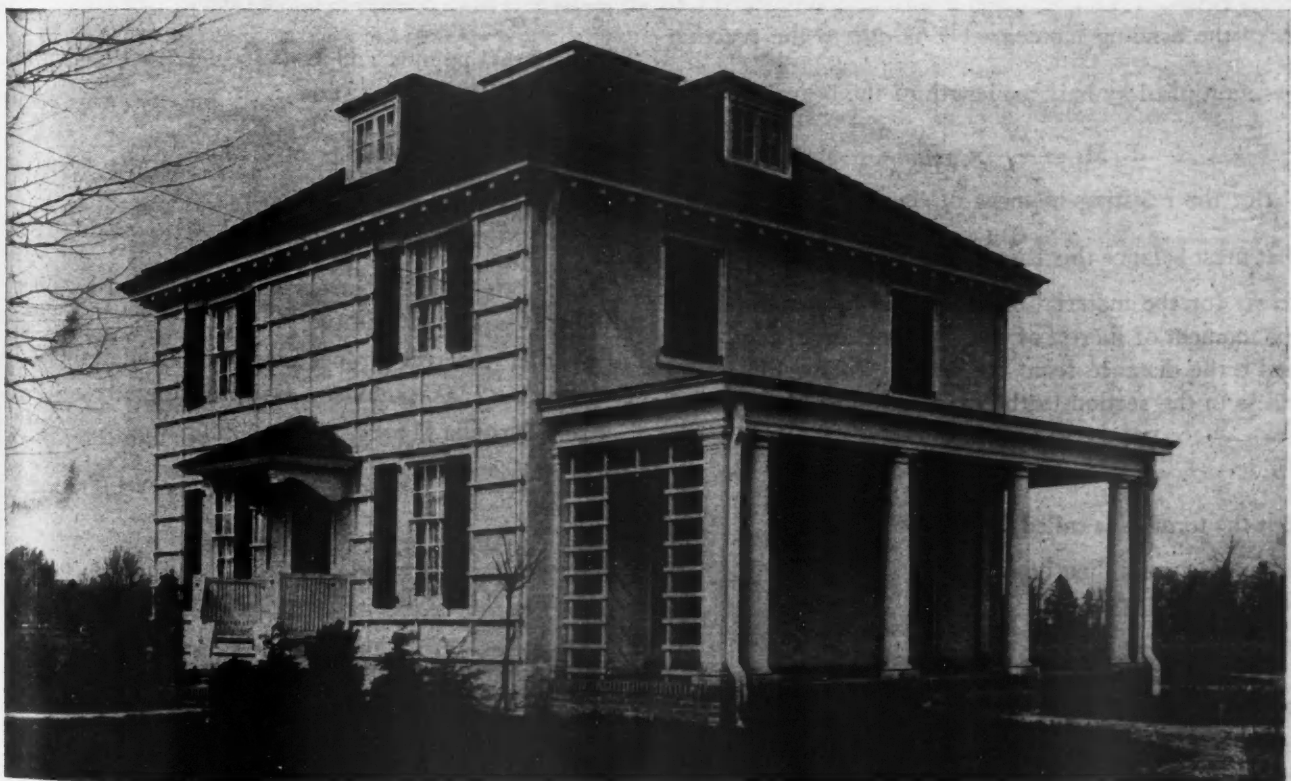
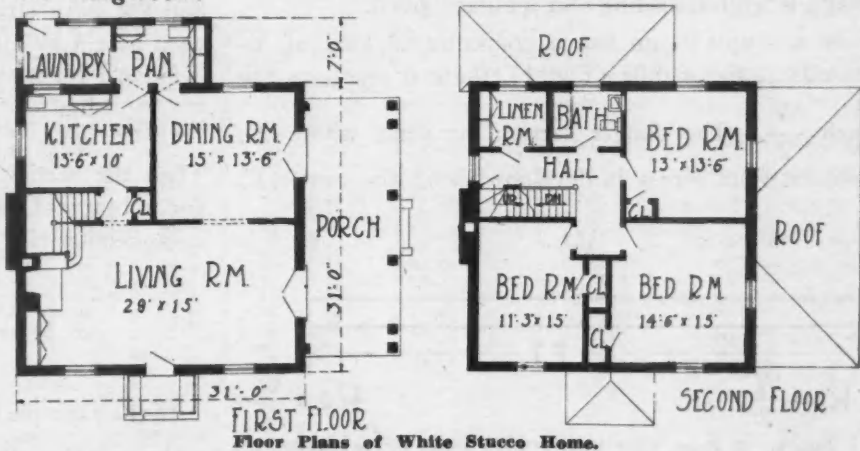
requirements necessary for storage purposes.

Hardwood floors thruout the house are contemplated in the design. The living room is to be done in a rich warm brown and the dining and bedrooms in white enamel with mahogany doors. Natural wood finish is contemplated in the kitchen and pantry. The roof is of shingles, painted green. Green blinds are the thought for the windows.

The construction of the house would cost between \$8,000 and \$10,000.



THEREFORE, when we build, let us think that we build forever. Let it not be for present delight nor for present use alone. Let it be such work as our descendants will thank us for.—Ruskin.



Beautiful Stucco Home with Hollow Tile Walls. Especially Adapted for Suburban Setting or Site in Country. Considerable Attention Has Been Paid to Interior Details. A Close-up View of the Side Entrance Is Shown on the Opposite Page.

DESIGN OF SAFE CONSTRUCTION

By Charles W. Leigh

Associate Professor of Mechanics, Armour Institute of Technology

Design of Simple Beams

ARTICLE 4 OF AN INSTRUCTIVE SERIES ON STRENGTH OF MATERIALS AND ENGINEERING DESIGN

IN the March number of the AMERICAN BUILDER, the writer discussed the method for finding the fibre stress in a given simple beam for a certain uniformly distributed load. If this fibre stress came within safe limits, the beam would safely carry the load. In this article, the methods will be discussed for selecting the proper size of I-beam or wooden beam, when the loading and span are given.

If a simple beam has a concentrated load of W pounds at the middle (Fig. 1), the end reactions are each $\frac{W}{2}$. The danger section, or place where the greatest fibre stress is developed is at the center C .

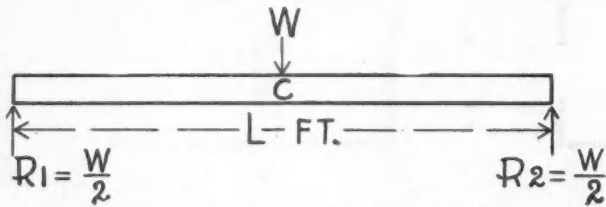


Fig. 1. A Beam with Concentrated Load at the Center.

Then the bending moment at C is due to the reaction $\frac{W}{2}$ multiplied by half the length of the beam.

$$B. M. = \frac{W}{2} \times \frac{1}{2} = \frac{WL}{4}$$

But the resisting moment of the fibre stresses at C that must balance this is $\frac{P I}{c}$, where P is a safe working stress for the material of which the beam is made, I the moment of inertia of the cross-section of the beam, and c the distance from the neutral line or line of no stress in the section to the extreme outer fibre. Then

$$\frac{WL}{4} = \frac{P I}{c} \dots \dots \dots I$$

But the term $\frac{I}{c}$ is called the section modulus.

Formula I may then be written.

$$\frac{WL}{4} = P \times \text{section modulus} \dots \dots \dots II$$

An application of this kind of loading occurs when a column or stud carrying weight from an upper story has its base resting on a beam in the floor below. Or where a heavy piece of machinery stands on the floor. Now, no matter where the machine is placed, the

greatest danger from failure will occur when the machine is in the middle of the floor. Consequently if the beam is designed for that position of the load, the floor will be safe no matter where the load is placed.

For example, suppose a machine weighing 2,000 pounds is placed at the center of a floor supported by beams 16 feet long. To find the fibre stress developed in a 4 by 10 stringer.

Now, I for a rectangular beam is $\frac{b h^3}{12}$, and $c = \frac{h}{2}$. Then the section modulus for a beam of rectangular cross-section is

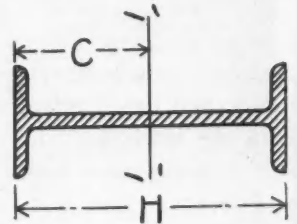


Fig. 2. Cross-Section of an I-Beam (Laid on Its Side).

$$S. M. = \frac{I}{c} = \frac{\frac{1}{12} b h^3}{\frac{h}{2}} = \frac{b h^2}{6} \dots \dots \dots III$$

In the example $b = 4$ inches, $h = 10$ inches.

$$\frac{I}{c} = \frac{b h^2}{6} = \frac{4 \times 10 \times 10}{6} = 66.7$$

$W = 2,000$ pounds and $L = 16 \times 12 = 192$ inches.

From formula I:

$$\frac{2,000 \times 192}{4} = P \times 66.7$$

$$P = \frac{2,000 \times 192}{4 \times 66.7} = \frac{384,000}{266.8} = 1,441 \text{ pounds.}$$

But a safe working stress is 1,000 pounds. Then a 4 by 10-inch beam is too small.

In order that the proper size may be determined, assume $P = 1,000$ pounds, a safe working stress.

From formula II:

$$\frac{2,000 \times 192}{4} = 1,000 \times \text{section modulus} = 1,000 \text{ S. M.}$$

$$S. M. = \frac{2,000 \times 192}{4 \times 1,000} = 96$$

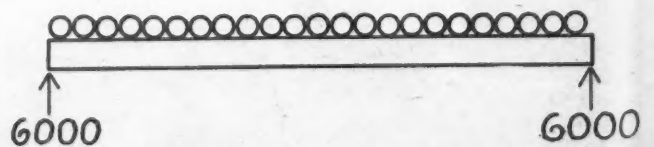


Fig. 3. Uniformly Distributed Load.

The problem then is to select a beam such that the width multiplied by the square of the height, and that result divided by 6 must be at least 96.

Try a 6 by 10-inch, $b = 6$ and $h = 10$.

$$\frac{bh^2}{6} = \frac{6 \times 10 \times 10}{6} = 100$$

Since the actual size of a 6 by 10-inch is only $5\frac{1}{2}$ by $9\frac{1}{2}$ inches, the actual section modulus would be less than 96. In fact, it would be

$$\frac{bh^2}{6} = \frac{5.5 \times 9.5 \times 9.5}{6} = 82.7$$

This would not be safe enough.

Try a 6 by 12-inch, $b = 6$, $h = 12$.

$$\frac{bh^2}{6} = \frac{6 \times 12 \times 12}{6} = 144 \text{ (Amplly safe)}$$

Also for an 8 by 10-inch, $b = 8$, $h = 10$

$$\frac{bh^2}{6} = \frac{8 \times 10 \times 10}{6} = 133\frac{1}{3} \text{ (Amplly safe)}$$

Whichever beam is used would depend on the special requirements for height.

When the loads get very large, and the large sized timbers are not desirable, use is made of steel

I-beams or other shapes of steel beams as the conditions require. Since in steel beams a safe tension and compression working stress is 16,000 pounds per square inch for steady or dead loads, the builder would select a steel beam, because its resisting fibre stress is high.

Now, the calculation of the section modulus of the various shapes and sizes of I-beam channels, and tee-beams, etc., is long and tedious. The manufacturers of steel beams, such as Carnegie, and Cambia, publish hand books with all the necessary data tabulated. No doubt many of the readers of this article are already familiar with hand books. But for those who may not have worked with them, a short table will be printed containing the following properties of I-beams, viz., height, weight per foot, area, moment of inertia and section modulus.

Experiment has shown that steel fibres are equally strong in tension and compression. Therefore the neutral line of the cross-section of an I-beam is the line thru the center parallel to the outer flange edges. Then c is simply one-half the height of the beam. The last column of the table "Section modulus" (S. M.) is obtained by dividing the moment of inertia of the section by one-half the height of the beam.

Take, for example, a floor designed to carry a uni-

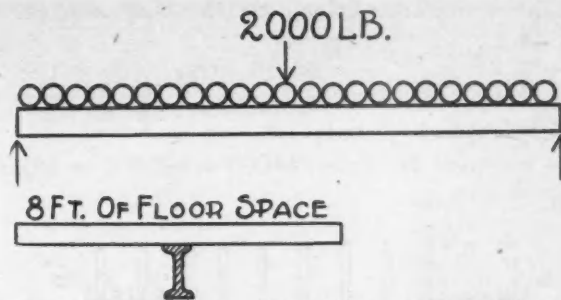


Fig. 4. Side View of Beam and End View of I-Beam with Section of Floor to Be Carried.

form load of 150 pounds per square foot of surface. The span or length of beam is 20 feet. The beams are to be spaced 8 feet from center to center. In addition to the uniform load there is a concentrated load of 2,000 pounds due to a column resting on the beam, or to a machine which is to be carried on this floor (Fig. 4).

In this case the danger section will be at the center of the beam.

The maximum bending moment due to the two loads will be the sum of the moments due to each load.

Each beam must support a strip of floor 8 feet wide and 20 feet long, or

$8 \times 20 = 160$ square feet of surface. Since the load is 150 pounds per square foot, the total uniformly distributed load on the beam is $160 \times 150 = 24,000$ pounds. But bending moment is $\frac{1}{8}WL$.

$$\therefore \text{B. M. (distributed load)} = \frac{24,000 \times 20 \times 12}{8} = 720,000 \text{ inch pounds.}$$

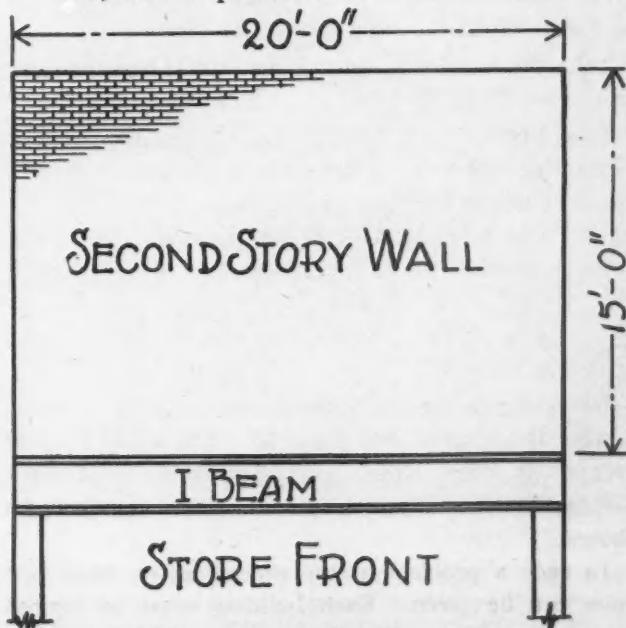


Fig. 5. View of the Front of Building.

Depth Inches	Weight per ft. Pounds	Area Section Sq. Ins.	Moment of Inertia	S. M.	Depth Inches	Weight per ft. Pounds	Area of Section Sq. Ins.	Moment of Inertia	S. M.
4	7.50	2.21	6	3	10	25.	7.37	122.1	24.4
4	10.50	3.09	7.1	3.6	10	30.	8.82	134.2	26.8
5	9.75	2.87	12.1	4.8	10	35.	10.29	146.4	29.3
5	14.75	4.34	15.1	6.1	10	40.	11.76	158.7	31.7
6	12.25	3.61	21.8	7.3	12	31.5	9.26	215.8	36.
6	17.25	5.07	26.2	8.7	12	35.	10.29	228.3	38.
7	15.00	4.42	36.2	10.4	12	40.	11.76	245.9	41.
7	20.00	5.88	42.2	12.1	15	42.	12.48	441.8	58.9
8	18.00	5.33	56.9	14.2	15	45.	13.24	455.8	60.8
8	25.25	7.43	68.0	17.	15	50.	14.71	483.4	64.5
9	21.00	6.31	84.9	18.9	15	55.	16.18	511.	68.1
9	30.00	8.82	101.9	22.6	15	60.	17.65	538.6	71.8
9	35.00	10.29	111.8	24.8	18	55.	15.93	795.6	88.4
					18	60.	17.65	841.8	93.5
					18	70.	20.59	921.2	102.4
					20	65.	19.08	1169.5	117.

Properties of Steel I-Beams

For the concentrated load the bending moment is $\frac{1}{4}WL$.

$$\therefore \text{B. M. (concentrated load)} = \frac{2,000 \times 20 \times 12}{4} = 120,000 \text{ inch pounds.}$$

Then the total B. M. = 720,000 + 120,000 = 840,000 inch pounds.

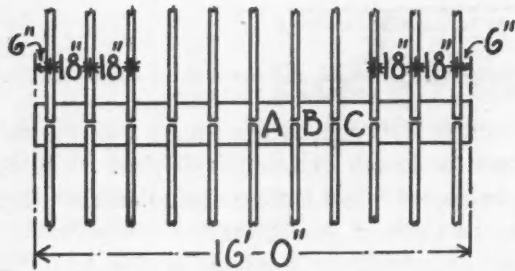


Fig. 6. View of Girder Supporting the Floor Beams from Both Sides.

From formula I:

$$\text{B. M.} = P \times \text{section modulus.}$$

For structural steel $P = 16,000$

$$\therefore 840,000 = 16,000 \times \text{S. M.}$$

$$\text{S. M.} = \frac{840,000}{16,000} = 52.5$$

Referring to the table for I-beams the nearest section modulus greater than 52.5 is 58.9, which corresponds to a 15-inch 42-pound I-beam. Therefore, if the floor is supported by 15-inch 42-pound I-beams, it will safely support the distributed load and the 2,000-pound load in any position on the floor.

Suppose a two-story building of brick is being constructed in which the lower floor is to be used as a store (Fig. 5), then the front would be all glass with its frames. The problem to find the necessary size of an I-beam to carry the load over the glass front. In most cases the floor beams for the second story would be parallel to the store front. In this case the I-beam would then carry only the weight of the brick wall, say 8 inches thick and 15 feet high. This load would be uniformly distributed along the beam.

Take the weight of a brick wall as 112 pounds per cubic foot.

Then $112 \times 1 \times 8/12 \times 15 = 1,120$ pounds per foot of length of I-beam. If the span of the beam is 20 feet the total weight is

$$W = 1,120 \times 20 = 22,400 \text{ pounds.}$$

By formula I:

$$\frac{1}{8}WL = P \text{ (S. M.)}$$

$$\frac{1}{8} \times 22,400 \times 20 \times 12 = 16,000 \text{ (S. M.)}$$

$$\text{S. M.} = 42.$$

Referring to the table, the nearest section modulus is 41. But that is less than 42. The nearest value greater is 58.9 which corresponds to a 15-inch 42-pound I-beam, which would be the one to be chosen.

In such a problem as the preceding, no hard fast rules can be given. Each building must be figured separately. There might be cases in which a stringer

or column would rest on the I-beam. In any case the designer must calculate the moment of each load, about the danger point, add them to the moment of the distributed load, and determine the section modulus corresponding.

As an illustration of a problem of this type, take the designing of a girder for the floor beams of the barn floor considered in the March number of the AMERICAN BUILDER. The floor beams were 18 inches from center to center. Each end of the floor beams carried a load of 1,050 pounds. The floor was 30 feet wide and divided into two sections. Each section was carried by floor beams, their outer ends resting on the wall girder and the ends on the middle girder. Fig. 6 is a view of the middle girder. At A, B, C, etc., are the ends of two floor beams, each of which exerts a force of 1,050 pounds, or a total of 2,100 pounds. Fig. 7 shows the eleven loads on a girder of 16-foot span. The total load is $11 \times 2,100 = 23,100$ pounds. Since they are symmetrically placed each reaction at A and H is $\frac{1}{2}W$ or 11,550 pounds, as shown in the figure.

The danger section is at G, the center point.

The bending moment at G will be formed by calculating the moment of the reaction R at the left (clockwise), also the sum of the moments of loads at B, C, D, E and F (counter-clockwise) and taking the difference. The work is as follows:

- Moment of 2100 (B) = $2,100 \times 90'' = 189,000''$ lbs.
- Moment of 2,100 (C) = $2,100 \times 72'' = 151,200''$ lbs.
- Moment of 2,100 (D) = $2,100 \times 54'' = 113,400''$ lbs.
- Moment of 2,100 (E) = $2,100 \times 36'' = 75,600''$ lbs.
- Moment of 2,100 (F) = $2,100 \times 18'' = 37,800''$ lbs.
- Moment of 2,100 (G) = $2,100 \times 0'' = 0''$ lbs.

567,000'' lbs.

Moment of 11,550 (A) = $11,550 \times 96'' = 1,108,800''$ lbs.

Maximum bending moment is:

$$1,108,800 - 567,000 = 541,800 \text{ inch pounds.}$$

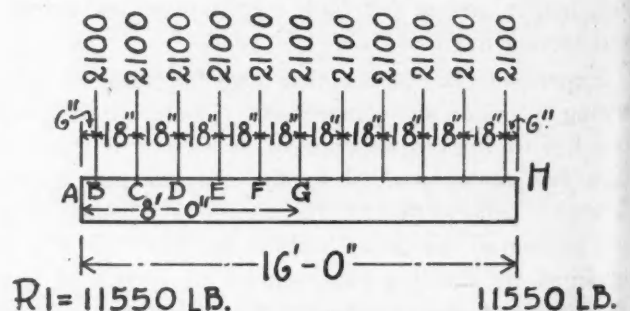
For a steel I-beam, $P = 16,000$ pounds. From formula I:

$$541,800 = 16,000 \text{ S. M.}$$

$$\therefore \text{S. M.} = 33.9.$$

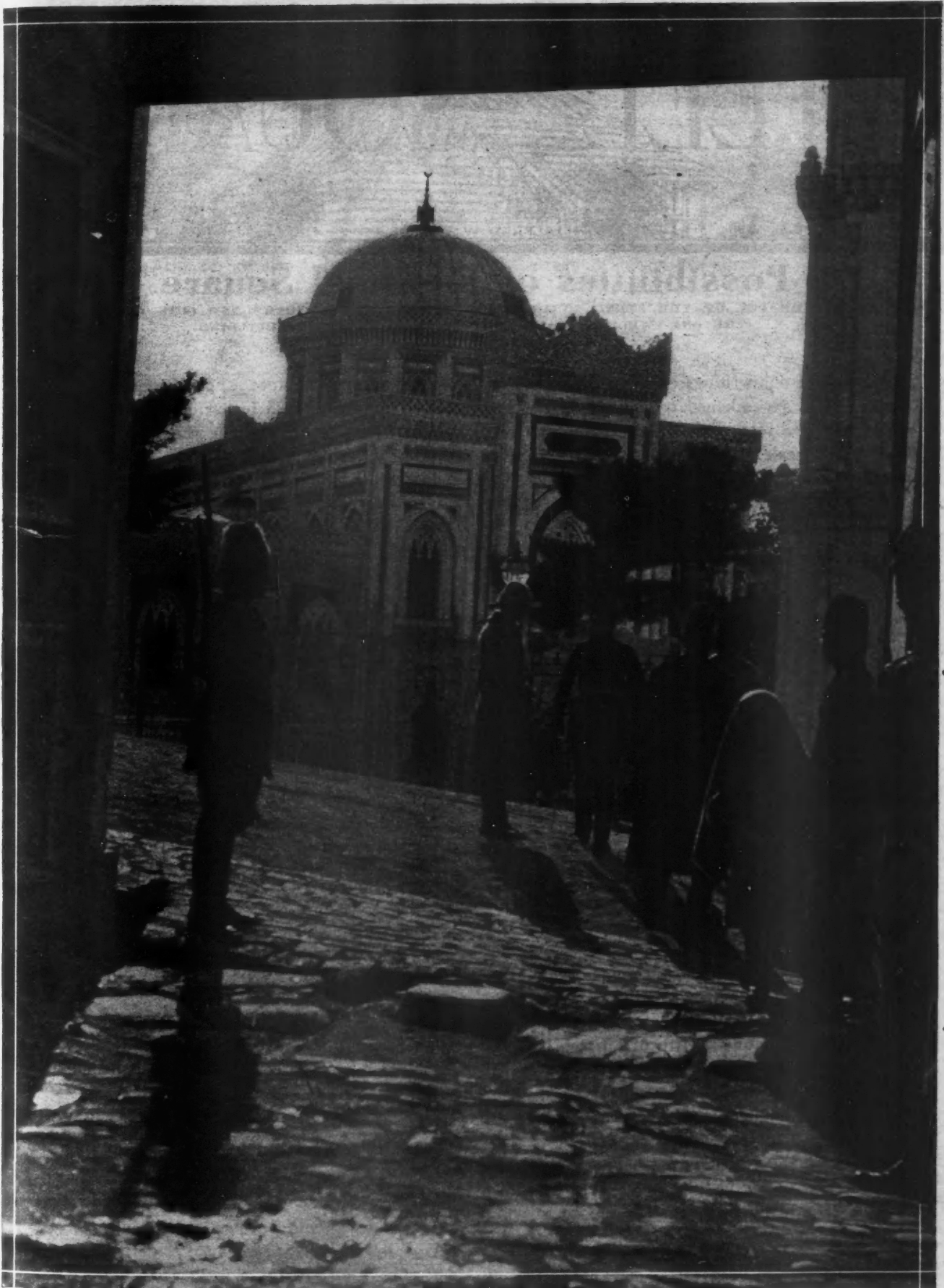
The nearest section modulus in the table is 36, which corresponds to a 12-inch 31.5-pound I-beam, which would carry the load.

(Continued to page 175.)



$R_1 = 11550 \text{ LB.}$ 11550 LB.

Fig. 7. View of Girder with the Concentrated Loads and End Reactions.



A GLIMPSE AT TURKISH ARCHITECTURE HERETOFORE BARRED TO PUBLIC GAZE. Only since the great war has this section of the Sultan's grounds been open. It reveals the private mosque of the head of the Turkish empire, a monumental structure with an elaborate scheme of architectural arrangement, worked out to the finest details. It represents years of painstaking work wrought by hand.

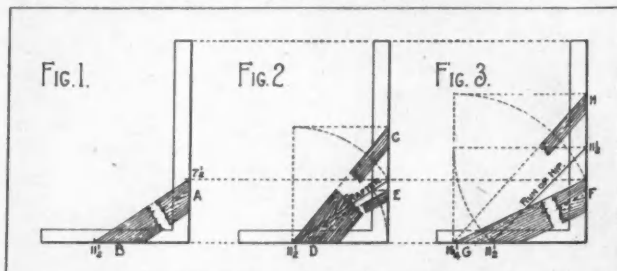


Possibilities of the Steel Square

ILLUSTRATING THE USE OF THE STEEL SQUARE IN OBTAINING THE LENGTHS AND CUTS OF RAFTERS BY THE ONE-TWELFTH SCALE FOR THE SQUARE CORNER BUILDING

By A. W. Woods

IN most all of our writings on the use of the steel square we have reckoned on a basis of the full scale per one foot run of the common rafter; having the full scale for one foot run it is an easy matter to find the lengths of the relative rafters for any run by simple multiplication or running of the



The Steel Square for Rafter Cuts.

square, because in that way we have a standard or full scale to work from for any run and pitch, while, on the other hand, if we use the scale to one inch to the foot (1/12 scale), we will have a change of figures for the different runs and pitch which cannot always be readily arrived at without first making a diagram from which to obtain the proper proportions to take for the various cuts and especially so for the top cuts of the jack, hip and roof boards.

The one-inch scale has some advantage over the full scale in finding the length of rafters, because one placing of the square is all that is required, but if the placing should be off one-twelfth of an inch it would affect the length of twelve fold, whereas in the full scale it would require the placing of the square (usually called running) as many times as there are feet in the run of the common rafter and if there is a fraction in the run it requires an extra placing which in the case of the hip or valley furnishes a problem of no small means for the novice to solve, but the misplacing of the square in the running would only affect the length of the rafter for just what the misplacing really is. However, it is not probable in running the square, say twelve times, would amount to a whole inch.

Now for illustration purposes we are going to work in fractions in both the run and rise, using the one-

twelfth scale to the foot. For example, we will say that our building is 23 feet wide and the rise of the roof is 7 feet 6 inches. The run being one-half the width of the building would be one-half of 23, or 11½ inches, which is taken on the tongue, and the rise being 7 feet 6 inches, we take 7½ inches on the blade as shown in Fig. 1. These proportions give the plumb and seat cuts as shown at A and B, respectively, for the common rafter, and the length of the line between these figures will be the length of the rafter per 1 inch scale.

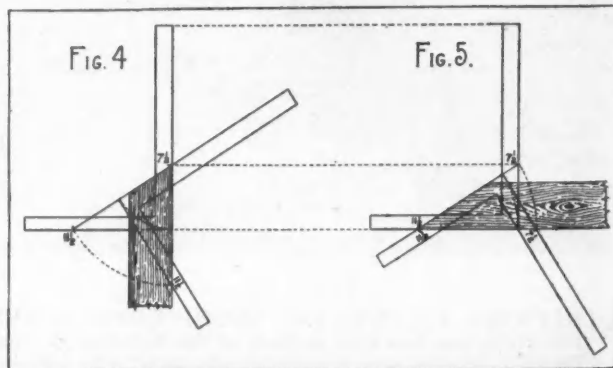
Passing on to Fig. 2. In this illustration is shown how the proper proportions are determined for the top cut of the jack, side cut of the roof boards to fit over the hip or in the valley and the miter cut for same as shown at C, D, and E, respectively.

Note: This side cut of the jack is obtained by taking the run of the rafter on the tongue and its length (the rafter) on the blade, the latter giving the cut as shown. These proportions also give the side cut of the roof board, but reversed on the square as shown.

The edge or miter cut of the roof board is obtained in this case by taking the run of the rafter on the tongue and the rise of the rafter for an equal length of run on the blade. The latter will give the cut as shown.

There are other ways of illustrating this cut, but as they would tend to confuse rather than enlighten in

(Continued to page 150.)



The Steel Square for Rafter Cuts.

Law for the Builder

CONTRACTOR'S LIABILITY FOR INJURY CAUSED BY DEFECT IN WORK DISCOVERED AFTER ACCEPTANCE

By Leslie Childs

AN interesting case in which it was attempted to hold a contractor liable for a defect in the work, discovered after completion and acceptance, was that of Wood vs. Sloan. The case arose in New Mexico, being reported in 148 Pacific, 507; the facts were as follows:

J. B. Wood and others, doing business as the Wood-Davis Hardware Company, contracted with one Jennie Schaeffer, who owned an office building in Santa Fe, to install a stationary washstand, and connect it with the city water system. Wood entered into the work and installed the washstand, it being accepted by the owner of the building, Schaeffer.

About three months after this, J. H. Sloan, who occupied the office in which the washstand had been installed, approached it to obtain a glass of water, when a board in the floor, which had been removed and replaced in making the installation, gave way and his foot and leg went thru the floor. For injuries sustained by this fall Sloan brought an action against Wood, the contractor.

The evidence in the lower court showed that in installing the washstand, Wood, or his employes, removed the board in question. That in replacing it, they failed to support the end, which extended out to the front of the stand, but not far enough to be fastened to the joist. It seemed that Wood should have nailed a cleat to the joist to afford support, but this was not done and the board was left loose at one end.

The jury gave a judgment against Wood, the contractor. The latter appealed to the supreme court, which, among other things, said:

"The general rule upon this subject may be stated as follows: Where an independent contractor is employed to construct or install any given work or instrumentality, has constructed or installed the same, the same has been received and accepted by the employer, and the contractor has been discharged, he is no longer liable to third persons for injuries received as a result of defective construction or installation."

The court then stated the exceptions to this general

rule, giving the reasons for the exceptions, and quoting authorities. Then reverting to the case in hand continued.

"The floor board was rendered dangerous by reason of the defective method of replacing and supporting it. The jury found, specially, that the defect rendered it imminently dangerous to use the washstand in the regular and ordinary way.

"In this class of cases, . . . the defendant must know of the defect and its dangerous character. Under the proofs in this case, the defendants (Wood and others) had no actual knowledge of the defect; the board having been replaced by their employe and servant. Their knowledge of the defect, if they are to be held to have any, must be imputed to them by reason of the fact of the employe within the scope of his employment. The knowledge of the defect and the danger in such is necessary. . . .

"Applying the doctrines and principles heretofore outlined to the facts of this case, it is clear that the defendants (Wood and others) are not liable. They had no contractual relations with the plaintiff (Sloan) and owed him no contractual duty. There is no evidence that they knew of the defect and its dangerous character. They simply are guilty of negligence. There is no implied invitation on their part to use a dangerous instrumentality. In such circumstances, the independent contractor is not to be held liable. . . ." The court thereupon reversed the judgment rendered in the lower court, and ordered a new trial.

This was a well considered case. The authorities were reviewed in an exhaustive and able manner and the opinion is without doubt in accord with the great weight of authority. This authority holding that before a contractor can be held liable, for defects in the work after same has been completed and accepted, it must be shown that he acted in bad faith somewhere along the line.

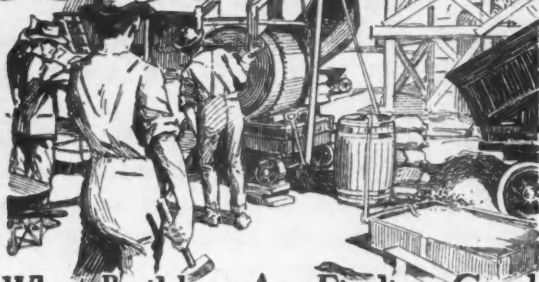
✦

BOLSHEVISM is a weed that will not flourish in communities of home owners.



When He Approached the Washstand for a Drink of Water, a Board, Which Had Been Removed and Replaced in the Installation, Gave Way and He Was Injured. He Sued the Contractor.

OUT ON THE JOB



What Builders Are Finding Good

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

A Monster Grindstone

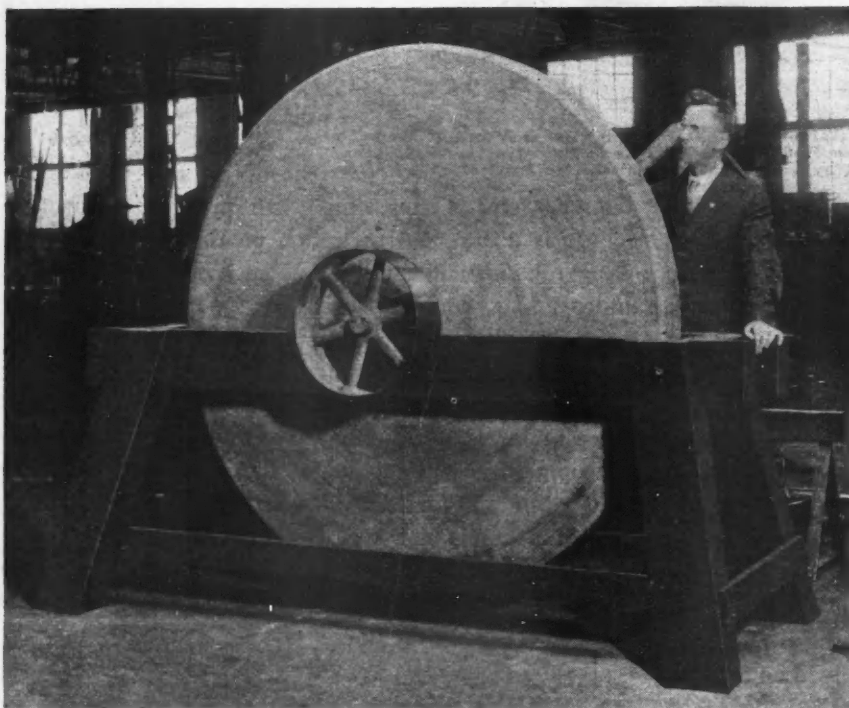
GRINDSTONE measurements ordinarily range from 6 inches diameter for the household type of 2 feet diameter for the farm power type, with a variation in thickness of stone from 1½ inches to 3 inches, and eighteen different styles of mountings.

The monster in the picture was made to the special order of the Ridgely Trimmer Company, for use in their plant at Springfield, Ohio.

The stone itself measures 6 feet in diameter with a face measurement of 7 inches and weighs 2,309 pounds unmounted. It is fitted with steel shaft and pulley, babbited bearings and compression grease cups. The framework is made of 6 by 8 timbers securely bolted together.

The stone is so perfectly balanced that it may be moved easily with the pressure of one finger.

The Ridgely Trimmer Company drive this grindstone from



Huge Grindstone, 6 Feet in Diameter, with a Grinding Face of 7 Inches.

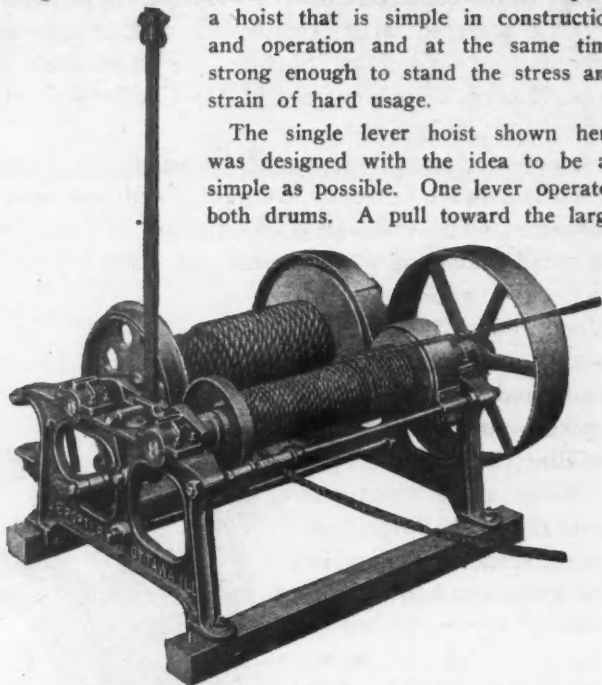
a shaft in their Springfield plant where it is used to grind cutlery.

Hoist Simple in Construction

IN view of the present labor shortage it is quite advantageous for the contractor or builder to have at his disposal

a hoist that is simple in construction and operation and at the same time strong enough to stand the stress and strain of hard usage.

The single lever hoist shown here was designed with the idea to be as simple as possible. One lever operates both drums. A pull toward the large



Single Lever Hoist. One Lever Operates Both Drums.

drum throws it into gear, a pull in the opposite direction engages the small drum. When the lever is upright, both drums are neutral.

The hoist is fitted with two brakes. The brake on the main drum, operated by a foot lever, is powerful. Slight foot pressure will stop the drum and hold the load. The brake on the smaller drum is thrown on automatically whenever the drum is out of gear, exerting enough pressure to keep it from spinning when the rope is unwinding.

The drum plate is lined with regular automobile lining which engages the surface of the gear plate when it comes in contact with it. The hoist can be taken apart in a few minutes by removing three cotter pins and is easily reassembled.



Concrete Marble for Interior Trim

NEW processes have brought the artificial marble manufacturing industry to a point of importance in the building field. It is difficult for the average person to believe that about 80 per cent of the beautiful marble he sees in restaurants, homes and buildings of all kinds is not real, but manufactured; yet this is the case.

The beautiful designs in onyx, ivory and a score of other appealing schemes which make interiors so attractive do not come from quarries in the quantities which we are inclined to believe. In fact, a large part of them are made of rough concrete coated with a patent-process veneer. In the picture shown here are several finishes which have been put on concrete. The stone can

be finished with brilliant color effects, shadings and veinings.

They are molded into a variety of shapes for trim for windows, wainscotting and doors, and for use in mantels, table tops, bank and store counters and trim. This artificial or concrete marble, as it is called, has helped in a way to solve the difficulty of getting suitable marble trim at a reasonable cost.



\$50 Daily Profit with Two-Man Crew

A RECORD of unusual profits under adverse conditions was established by Mr. Gerry Wolf in the excavating work on the new factory for the Milwaukee Glove Works Co. at Tenth and National Avenues, Milwaukee, Wis. The work was done by a combination excavator and loader, two five ton trucks and two men, and netted the contractor a daily average profit of fifty dollars.

The excavator and loader was backed up to the curb, which was a distinct advantage in the loading because the trucks were not forced to go down into the hole—they merely drove up to the machine on the street level and received their load.

The excavator is equipped with an eighteen horse power, heavy duty gas engine which furnished a 2½-ton pull on the digging cable. The operation is extremely simple, being controlled by a two speed forward and a reverse lever. The slip is filled at the slow speed of 106 feet per minute, the second speed hauls it to the excavator at the rate of 206 feet per minute. The slip rides into the apron, automatically unlocks the pivot arms which swing upward with it and dumps the load down the chute into the awaiting truck. The reverse lever is then pulled; the pivot arms swing down and lock. The slip backs out of the apron at 228 feet per minute to the point of excavation.

At this point, at right angles to the line of digging, a heavy chain is stretched between two steel stakes. Two sheaves are hooked at required points and the single heavy cable passes thru them. The location of the sheaves can be



Attractive Display of Concrete Marble, Showing Various Designs for Interior Walls, Trim, and Store Counters.

changed in an instant.

On this job two trucks were available for hauling the material away, there should have been about seven or eight. The average loading time for each five-ton truck was six minutes and as there was a forty minute haul it meant that there was a resultant wait of about fifteen to twenty minutes between loadings. Even in spite of this handicap the daily eight-hour average excavation was 150 cubic yards.

The particular feature of economy on this job was the fact that the entire operating "crew" consisted of two men—one to guide the slip and the other operating the excavator.



Keep the Cement Sacks at Work

ONE empty sack at the cement mill is worth any number of them lying idle in dealers' or users' hands all over the country insofar as shipment of cement is concerned. Like many other kinds of cotton goods, cement sacks are scarce. If every idle cement sack in the country were returned to the plant which sent it out, there would be considerable relief of the present shortage, both of cement and sacks.

Besides, cement sacks cost you money—money which is not working for you as long as you keep the sacks in your possession and thus make it impossible for the manufacturer to buy them back.



Hauling Slip Up Incline to Apron Where It Dumps Mud Into Waiting Truck.



Combination Excavator and Loader at Work. Note Position Against Curb. The Trucks Do Not Have to Go Down Into Hole.

Building a Home with 3,000 Pegs

CINCINNATI MAN DUPLICATES SWISS CHALET, EVEN TO CONSTRUCTION METHODS

By FELIX J. KOCH

IN all of Switzerland, itself, one could not find a more typical Swiss home of the old style than that built by Albert Fisher, of Cincinnati. The home stands on the bank of the Ohio River, in the Walnut Hills section of the city. Not alone did Mr. Fisher want Swiss architecture, but demanded Swiss construction, using the old-time method of substituting pegs for nails. To observe this requirement more than 3,000 pegs were necessary.

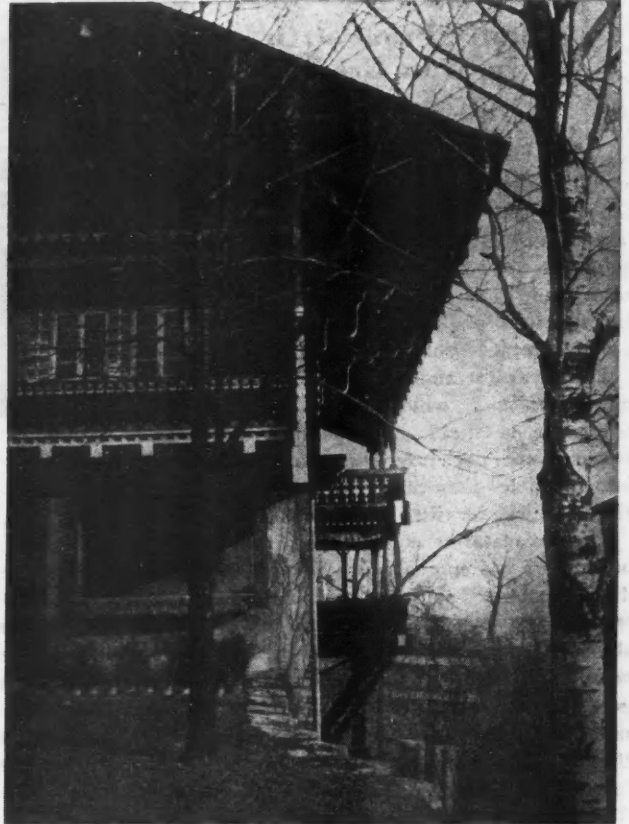
The house was constructed of 6 by 6-inch yellow pine timbers. The walls up to the second floor sill are stuccoed, and above the plain timbers show. The timbers were laid one on top of another and held together by oak pegs. These pegs had to be specially fashioned, so a milling machine was improved on to turn them out. The design of the pegs was similar to that of a broomstick, only twice as thick. Holes were bored in the yellow pine timber by a ship auger, and then the pegs run thru. At the corners the construction was like that of a hog house, dovetailing together and holding perfectly, without marring the appearance of the whole.

Roof Has 10-Foot Overhang

Over the house there came the great overhanging roof, projecting fully 10 feet at each side, which adds to the beauty of the home and protects the walls from the weather. At one side a stone porch, or lodge, was constructed.

The living room, or hall, extends across the front of the house and is 30 feet long. Off the living room is the dining room and back of that the kitchen. At

the rear of the dining room is another porch. The front bedroom, upstairs, also extends the width of the house, and has an alcove for the bed. A series of six windows, glazed with stained glass, with the excep-



View of Side of Reproduction of Swiss Chalet, Built at Cincinnati. This View Shows the "Lodge" at the Side of the House.



Swiss Chalet, Built by Albert Fisher, Cincinnati. Even Old-time Swiss Building Construction Was Employed, the Timbers Being Held Together with Oak Pegs, 3,000 of Them Being Required.

tion of one or two panes. Over these windows, set into the gables, are paintings set on the timbers. Between the paintings are numerous carvings, the patterns being secured from books on Swiss architecture. Some of the designs are as old as 1600.

The house was designed by Architect Plimton, of Cincinnati, who had studied Swiss architecture abroad. It required two years to build and cost about \$15,000, several years ago.

The accompanying illustrations show views of the house.



IT is a truism of political economy that the land or home owner is the foundation on which the political stability of the Nation is founded.

Builder Uses Dynamite on Job

PHILADELPHIA CONTRACTOR SAVES TIME AND MONEY ON FIFTEEN JOBS

RAZING old buildings and foundations is a job contractors do not like to tackle. It involves time, labor, delay and money.

However, when Mr. Norman Supplee, a Philadelphia contractor, recently was confronted with a task of this kind he decided to use different methods. He bought a supply of dynamite and set to work.

He had entered into a contract with a new owner to remodel certain buildings and alter and improve the grounds of a large suburban estate near the city. The work involved a large range of operation and he found that dynamite came in mighty handy on fifteen different jobs.

In excavating he found it necessary to remove several stumps of live and dead trees. Instead of digging them out he blasted them out and saved half the cost. Several concrete floors, pavements, gutters, copings, and stone masonry walls partly under and partly above the ground had to be removed to make way for new buildings. He not only eliminated the tedious job of breaking them up by man power, but saved ten to twenty per cent of the cost and about four weeks' time by blasting them out.

The plans called for a swimming pool. At the time of the year the ground was frozen and very difficult to

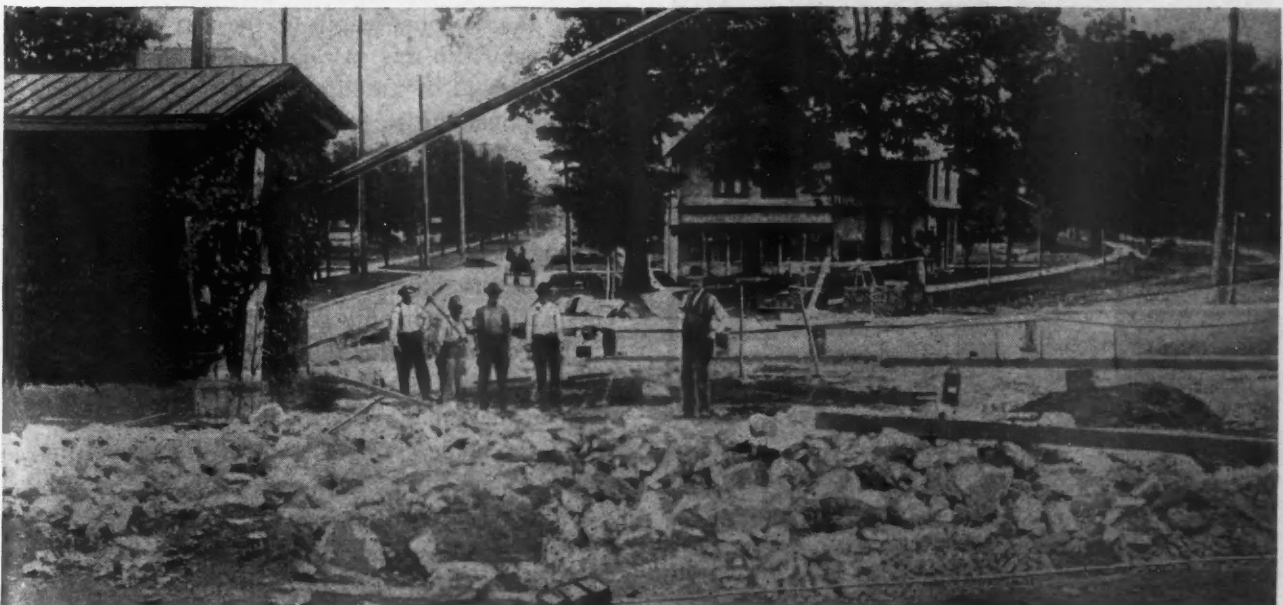
work. So he used dynamite and saved \$150 on this \$1,600 item. By the same methods he loosened the earth and made holes for cesspools and postholes, sav-



The Old Way. Razing a Concrete Foundation by Hand. It Is a Tedious Job, Costing Money and Causing Delay.

ing two weeks' time over the old methods.

His activity was not limited to building. He had also contracted to arrange the grounds and again he found that dynamite was a valuable aid.



The Modern Way. How a Concrete Foundation Looked After One Charge of Dynamite Had Been Set Off.

How to Frame Roof of Round Barn

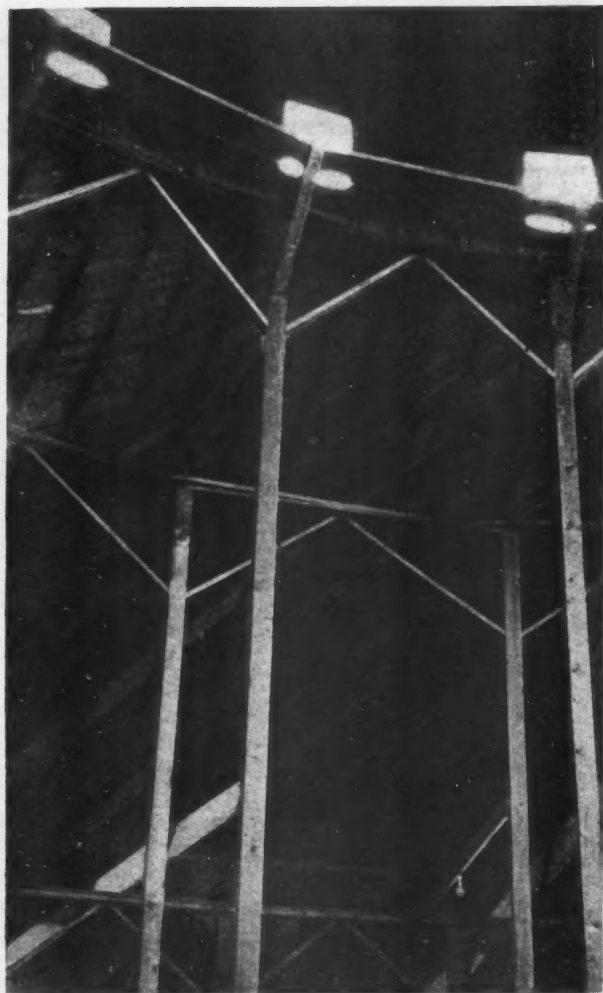
CONSTRUCTION MORE SIMPLE THAN MOST BUILDERS REALIZE.

By Ivan D. Wood

IT IS a general conception that the round barn presents many difficult problems, so far as the roof framing is concerned. As a matter of fact, the common gable roof, with certain complications such as dormer windows, or the hip roof with its ever puzzling jack rafters may be much harder to frame.

Many builders in the central west are being called upon to construct round stock sales pavillions. These buildings are from 65 to 95 feet in diameter. The outer wall is ordinarily constructed of brick and is 8 feet high. The roof is conical and framed at slightly more than $\frac{1}{3}$ pitch. The first slope terminates at the inner plate, which supports 5 foot studding between which are framed the upper windows as shown near the top in the photograph.

There are two common methods of framing the plates. The segmental plate can be rapidly assembled and is plenty strong enough to do the work. The method of breaking joints is plainly shown in the photo. The segments are of just the length between the 4 inch by 6 inch uprights and the outer side of the segment is cut to the curve of the roof. This can be



Interior View of Roof of Round Barn, Showing Position of Rafters and Plates.

rapidly done on a band saw or hued roughly to line with a sharp hatchet and finished with a circular plane.

The material used varies with the size of the circle, but in most places a 2 inch by 6 inch or 2 inch by 8 inch will be wide enough to form the segment. Knee braces of 2 inch by 4 inch material extend from the uprights to the plate and add stiffness to the structure. The two plate members should be firmly spiked together. A second way of framing the plates consists in building it up out of five pieces of 1 inch by 4 inch, set on edge, bent to the curve and spiked together. Some builders take the precaution to place $\frac{1}{2}$ inch bolts thru the five members of the plate at intervals of 5 feet. This is to be recommended unless the nailing is extremely well done.

The round plate if well supported on uprights as here shown and well nailed has the ability to resist a great deal of spreading thrust. The small plate shown at the extreme top of the photograph supports a conical roof of slightly greater than $\frac{1}{3}$ pitch the rafters of which are 2 inches by 6 inches by 20 feet, without the aid of any cross brace rods. The sheathing on a round roof helps to absorb some of the spreading thrust if laid diagonally to the rafters. The rafter framing does not differ materially from any other roof.



Possibilities of the Steel Square

(Continued from page 144.)

connection with the illustration we will pass them by for the present.

Passing on to Fig. 3, is shown the plumb and seat cut of the corresponding hip rafter as at F and G, respectively. The figure on the tongue is obtained by taking the diagonal length of the run of the common rafter, which in this case is $16\frac{1}{4}$ inches. This figure and the length of the hip gives the top cut of the hip to fit against the ridge piece. Note: This is for the unbacked hip. If the hip is backed before this cut is made, then the same proportions as used for the top cut of the jack as described in Fig. 2 applied to the backing plane will give the proper cut.

Now let us return to Fig. 1 again. The proportions $11\frac{1}{2}$ and $7\frac{1}{2}$, not only give the plumb and seat cuts of the common rafter, but also give the cuts of the siding boards, for either vertical or horizontal boards to fit in the gable as shown in Figs. 4 and 5, respectively, the blade giving the cut in the former and the tongue in the latter.



THE agencies that are striving for moral uplift along the lines of Christian missionary work recognize the folly of preaching religion to the hungry, homeless man.

To better know
**The STANLEY WORKS
 PRODUCTS**



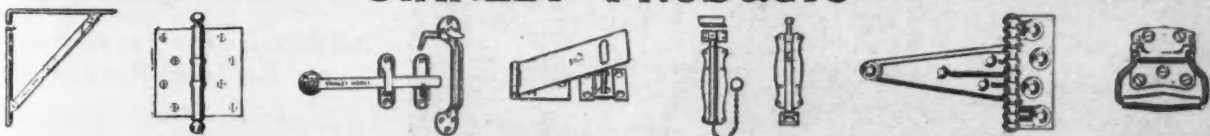
THIS new catalog shows a variety of hardware sets for one or more car garages. Everything that would interest a prospective garage builder is carefully explained and illustrated.

When your client asks about Stanley Garage Hardware be prepared with all the information concerning the different garage sets.

The catalog also contains illustrations of several types of garages that will serve as a suggestion to your client.

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CORRESPONDENCE

QUESTIONS ANSWERED

IDEAS EXCHANGED



You Are Requested and Urged to Make Free Use of These Columns for the Discussion of All Questions of Interest to the Building Industry

An Interesting Question

To the Editor:

Farnam, Neb.

I have a question for your Correspondence Department. In a kitchen cabinet where the drawers open thru from either side, is there any way to automatically stop them in position when shut?

VINCENT WHITNEY.



Here is Finish for Maple Floor

To the Editor:

Detroit, Mich.

In reply to Mr. Chas. Gordon's request for information about finish for a maple floor, I suggest if it is a kitchen floor to oil it with one part linsed oil, raw or boiled, and one part turpentine. If raw oil is used, add about $\frac{1}{2}$ gill of dryers. Omit the dryers in boiled oil. Oil about every two months. In other rooms, oil as before and then give two coats of good floor varnish. Sand paper the floor between coats.

WM. STRAY.



How to Renew Old Oil Stones

To the Editor:

Watertown, N. Y.

In the February number G. D. Stahl asks for a method for renewing old oil stones. When a young man learning the cabinet trade, I saw the men take oil stones and put them over

the stove separated from direct contact with the iron by nail under them. The heat rapidly drew out the old oil, which was wiped off a few times. They were turned over so both sides were freed of oil. Then they took gasoline and washed over their faces. If the stones wanted truing up, they took them to the grind stone and forced them against the side, which speedily cut them down. Then they finished them on a board with sand and water. Another way was to burn out the oil, but I am not sure that this method will not injure the stone.

Regarding proper use of oak flooring in the February AMERICAN BUILDER, I saw no suggestions as to the care that should be used to protect the oak from taking up dampness, especially when it is laid on the first floor. In my own practice I always renail old flooring, putting two 10d. nails in every board on all joists, drive down all high points and cover the entire surface with black asphalt building paper, turned up one inch all around the room. This will prevent the dampness from the basement getting thru the under side of the new floor. The reason for turning the paper up at the sides is to close all places where draughts may blow under the old base. A small quarter-round put down around the room as a finish makes a neat and cold-tight job of it. Never use rosin sized paper, as it will absorb moisture like a sponge and hold it.

Unless these precautions are taken many swollen and warped floors will result. I hold that hardwood flooring less than $\frac{13}{16}$ inch should not be over $1\frac{1}{2}$ -inch face, and never under cut. It is altogether wrong practice for the makers of thin flooring to cut out the under side. It weakens the board and it will surely either buckle or dish in the center where the least dampness reaches it. Another fault I find is that the tongues and grooves are cut much deeper than is necessary. This causes the edge to curl up, forming that familiar wash-board effect we all see so much. One-eighth inch would be plenty. What do the other brothers say to this?

J. M. KANE.

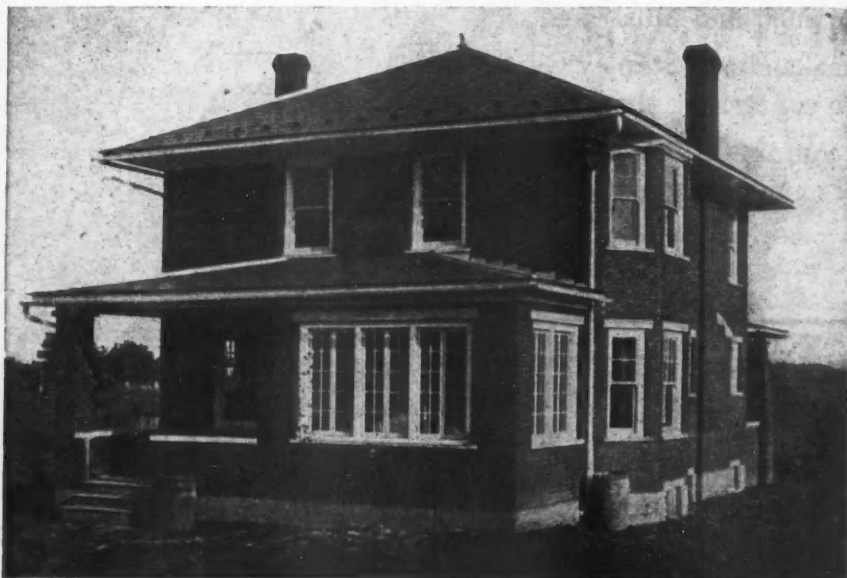


Builds Home from American Builder Blueprints

Palmer Heights, Easton, Pa.

To the Editor:

I am sending two photographs of the front and rear views of my new home which I built from blueprints furnished



Rear View of Mr. Weissenolf's House, Showing Sleeping Porch and Substantial Brick Construction. He Built Ten Homes Similar to This One Last Summer.

SERVICE

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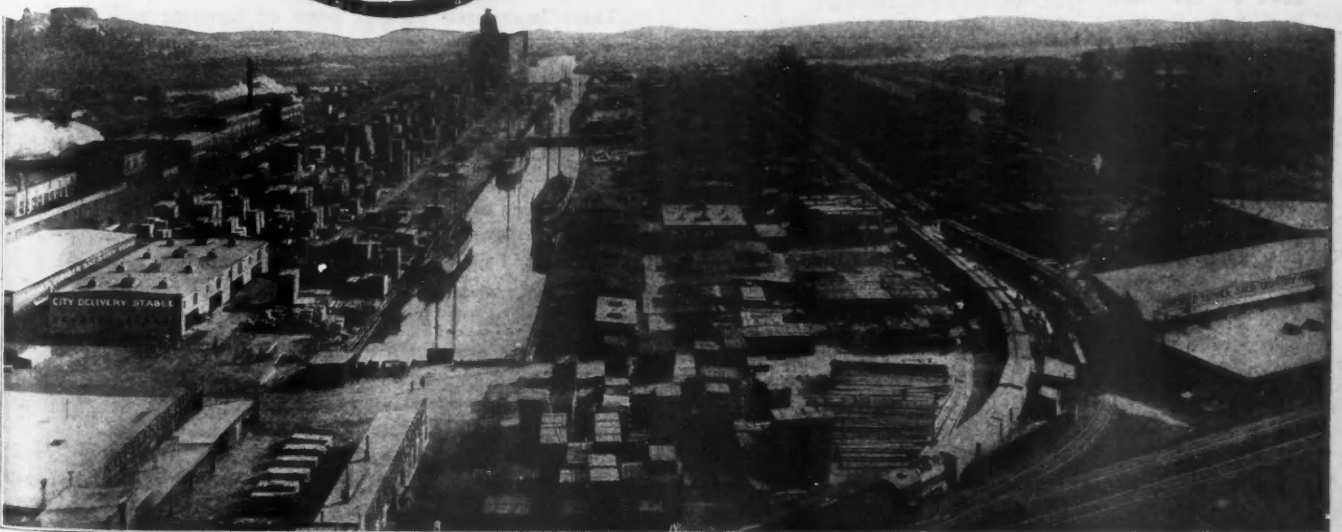
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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Front View of Hip Roof Brick House Built by Arnold Weissenloff, Contractor, in Easton, Pa. He Used Plans Which Were Published in the AMERICAN BUILDER.

by the AMERICAN BUILDER. Last summer I built ten homes similar to the one shown. The houses certainly are beautiful and the layout perfect. You may use the photographs for reproduction in the AMERICAN BUILDER.

ARNOLD WEISSENLOFF.



Constructs Molded Concrete House

To the Editor:

Pontiac, Mich.

In the January number of the AMERICAN BUILDER, the article on cement block construction was very interesting, but I have some suggestions to offer.

I note Mr. M. J. Staigle, of Seroco, N. Dak., makes an inquiry in regard to a hollow concrete wall. Let me relate my experience last spring: I superintended the construction of a hollow concrete wall built by Mr. Normer B. Tucker at Dearborn, Mich. It was a one-story bungalow containing four rooms and bath and 26x28 feet in size. We excavated a trench 14 inches wide and 3 feet deep and filled the trench with water. We then dry-mixed eight parts of sand and gravel to one part of cement, filled the trench, and stirred the mixture as we filled it, to a mud. The next morning we had a hard, firm footing. We had staked down 2x4's on the edge, level all around, filled to the top and smoothed off.

Then we commenced to build our wall with a set of hollow wall molds which Mr. Tucker had bought. These molds were adjustable for two 4-inch walls with a 2-inch hollow space and two 7-inch walls with a 2-inch hollow space.

We had a mold which formed a perfectly square corner one foot each way. The side wall mold laid a piece of wall 4 feet long, 9 inches high, and 10 inches wide, with a 2-inch hollow space, in both corner and side wall, making two 4-inch walls, with a 2-inch hollow space tied together with corrugated galvanized iron wall tie.

We reinforced both walls every 4½ inches in height with a No. 8 iron wire.

Setting our molds on a footing which was level, we built up to the joist line, then made a fire cut on the ends of the joists, 2 inches back. By inverting the piece cut off, we used them as a core by tacking on a ½-inch strip which we set on top of the wall.

We then built one course above the joist top, and set our joists in pockets formed by blocks with one end resting on

the girder in the center of the building.

Working from our joists, on which we had laid a rough floor, we built to window sill line. Then we cast all our window sills solid in the wall with a sill mold, set the window frames and built the wall to the top of the frames. For lintels over the window frames we used two pieces of 2x4 lumber nailed together, 4 inches longer at each end than the window frame width on inside wall. A piece of angle iron 4x4, the same length as the wood, supported the outside wall.

Then we proceeded to build to the plate line, inserting a ¾-inch bolt head down with a washer in the concrete every 16 inches, bored holes in the 2x8 plate and bolted it tight, bedded in cement mortar.

After enclosing the building with roof and windows, we allowed it to dry out for 24 days, then plastered directly on the inside walls, with a skim coat of brown mortar and a coat of white

sand finish. We stuccoed the outside directly on the concrete, both plaster and stucco adhering firmly without a crack or seam anywhere. In fact, the white coat inside has not a stain on it—a pure white surface.

This house has been built nine months, tested by rainy and freezing and zero weather, and does not show a suspicion of dampness. It is the warmest house in the town of Dearborn, Mich., and uses less fuel.

In Mr. Staigle's case, if he can secure the sand and gravel for the hauling at even 50c to \$1.50 a load, he can build the cheapest, most durable, fireproof walls known.

All he would have to buy would be the cement, and if he does the work himself with a couple of helpers, the cost would surprise him.

Any further information on this subject will be cheerfully furnished by either Mr. Tucker or myself, as I am going to build both cellar walls and house walls extensively this summer.

H. F. HOOVER.



Tile Engineer Answers Questions on Floor Loads

To the Editor:

Schuyler, Nebr.

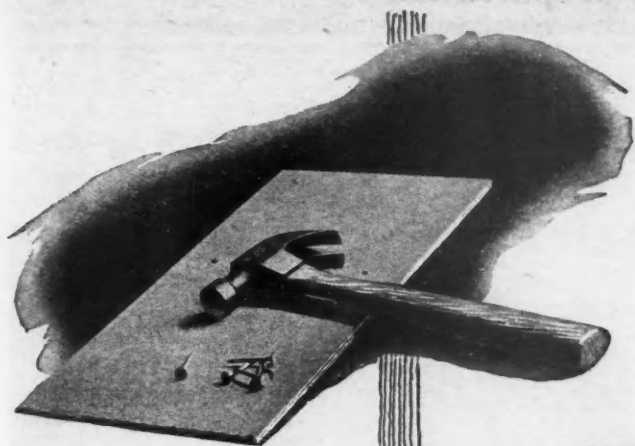
There have been various types of concrete and tile floor construction offered thru your correspondence department, but I haven't seen any where the common 4 by 8 or 5 by 8 by 12 building tile has been shown by any of the contractors. I have used this system on different jobs and have floors 20 by 20 feet square that held up under heavy loads perfectly. In placing these floors I butt the ends of the tiles together and fill in between the rows with about 4 to 6 inches of concrete, also over the top at the same pouring. About 2 to 3 inches of concrete is put on top. One ¼ inch reinforcing rod is placed in each filling of concrete between the tile. What would be the extreme size that you would recommend for a safe load for dwelling house or hotel by this system?

R. P. BASTA.

Answer—Your letter addressed to the "AMERICAN BUILDER" has been forwarded to us for reply.

The reason that the 4 by 8 by 12 and 5 by 8 by 12 hollow tile have not been used in one-way combination floor slab construction is because the 4 or 5 by 12 by 12 tile is more economical.

Less concrete and reinforcing steel is required in this latter



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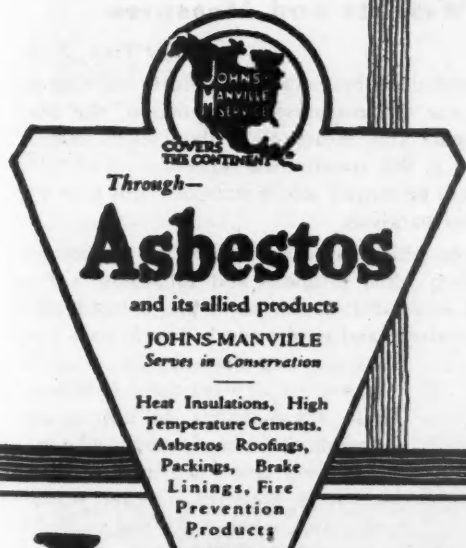
The right nails come with these shingles—and even the nailholes are put in to make the work still easier.

Moreover, in addition to being easy to lay, Johns-Manville Asbestos Shingles are fireproof, waterproof, strong and exceedingly attractive in appearance.

You can probably get them from your building material dealer, or if you prefer, the nearest Johns-Manville branch will give you full particulars.

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form of construction because it is not necessary to have the reinforcing bars or joist closer than 16 inches c-c, and any closer spacing just loses that much value in the saving in weight over solid concrete slab construction. Four-inch wide ribs or joist are ample for all ordinary requirements.

Regarding the spans and loads that this type of floor construction will support, we wish to state that the National Fire Proofing Company issue booklets showing safe loads for various spans and thicknesses of floor slabs. We are also preparing tables showing safe loads for these various spans on one-way combination floor slabs which will be entered in our Handbook which is in the process of making. Sixty pound live load is ample for residence and hotel floor construction but the dead weight of floor and floor fill, also partitions, would be allowed for.

We hope these answers will have answered all the questions that you have in mind on floor loads.

CHAS. C. CROCKATT,
Pittsburgh, Pa.



How They Build in Utah

To the Editor: Morgan, Utah.

I am sending you two pictures of building I put up during the winter months. The gothic roof barn is the first to be built in the county and, in fact, the first that I have seen in this country.

There is a great future for this western territory now. Modern outbuildings are being constructed. Everybody has the fever. I have read the AMERICAN BUILDER for a number of years and could hardly get along without it.

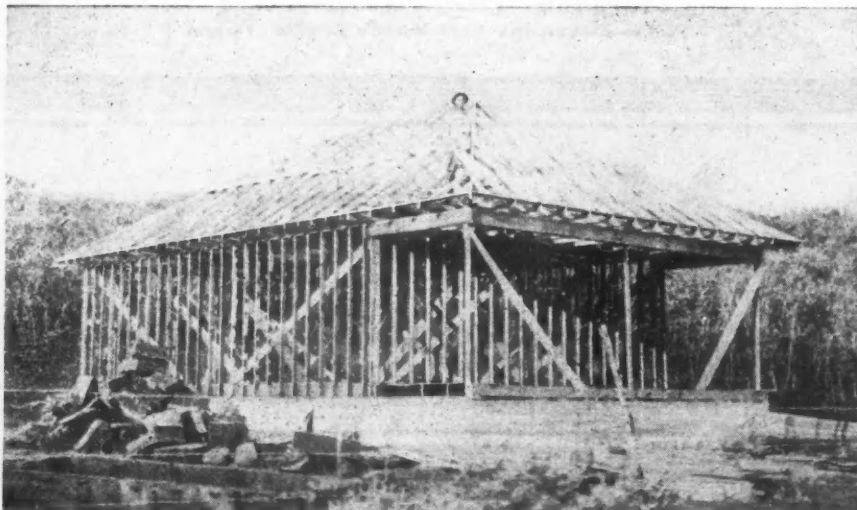
CLARENCE PORTER.



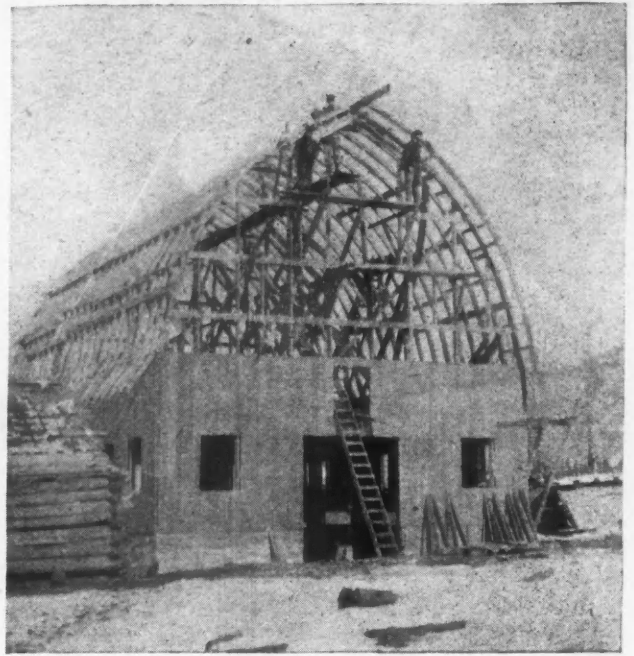
Favors Use of Steel Square Key

To the Editor: Millport, Ohio.

I have been a subscriber to your paper for a long time and think it is excellent because it keeps a carpenter up to the times and helps him learn a great deal from the experiences of brother carpenters. It contains much information about truss building. Last season I built a skating rink 60x115, 12 feet to the square. I put in seven trusses and made the roof self supporting. All chord lines were built of four pieces of 2x10, the principal rafters were 2x8, and braces 6x8. The center bolts were 1¼x15 feet. When the trusses were built, I tightened all bolts at one time, and it picked the trusses up off the temporary posts. If each car-



Mr. Clarence Porter, of Morgan, Utah, Built This Outbuilding During the Winter Months. He Reports a Big Building Boom in That Section.



The First Gothic Barn Erected in Morgan, Utah. It Was Built by Mr. Clarence Porter, Building Contractor, Last Winter.

pen-ter would send and get the key to the steel square by A. W. Woods, he would not have to worry so much about the cuts of rafters. After studying the chart, you can use the square on any rafter pattern. F. H. BROWN.



Opposes Change to Metric System of Weights and Measures

To the Editor: New York, N. Y.

If the bill introduced by Senator Shafforth of Colorado, which provides for the compulsory adoption of the Metric System of Weights and Measures in the United States, is enacted, industry in this country will suffer losses of billions of dollars and will be thrown into a state of chaos that would result in practical paralysis.

The propoganda which has been directed by proponents of the Metric System while insidious and fallacious, has been widespread and successful insofar as it has induced various chambers of commerce and semi-trade bodies to pass resolutions favoring the adoption of the system, and to forward them to Congress. These organizations do not, however, represent the manufacturer, who is the one actively concerned in the issue. In fact, it is doubtful whether manufacturers as a whole fully realize that this danger has reached such a menacing status.

Transition from our present standards to those of the Metric System would mean the introduction of a dual standard, as has been the case in other countries where the change has been made. Results would be exactly the opposite of those claimed by its advocates—complexity instead of simplicity, confusion instead of order, and diversity instead of uniformity. Not only would there be confusion and loss thru the necessity of converting from one standard to the other in commercial trans-

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actions, but it would require complete new equipment in many forms of measuring equipment, tools, gauges and innumerable articles of manufacture, not to speak of changes in designs, plans, etc.

Advocates of the Metric System argue on the advantages of a uniform world system, but this disappears in the face of the fact that its adoption has in no country brought about a uniform system in domestic affairs, while in most countries it has been a grotesque failure. The most favorable result has been nothing more than a partial change, the old system of continuing in use along with the new, and leading to nothing but hopeless complexity, confusion and disorder.

If the Metric System had possessed any merit, it would have been put into use in this country long ago, not by force of law but by that of expedience. The very fact that the people of the United States have declined to avail themselves of its principles and to abandon the system to which they are accustomed, should justify the denial of the passage of a law to enforce its adoption.

Whatever the nature and purpose of this metric propaganda that is so effectively making its impression in this country, it behooves every American citizen to realize the influence such an enactment would have upon American life and industry, and to act accordingly lest we learn its results when it is too late, as has been the case with other forms of insidious propaganda. A. E. FULTON, Vice President, International Motor Co.

How to Set Joists in Tile Construction

To the Editor: Halst Valley, N. Y.
I am building a bungalow of tile with a tile cellar and would like to know the best way to set the joists on the ground floor, also the best way to nail the base boards on for the trim.
BURT C. THOMAS.

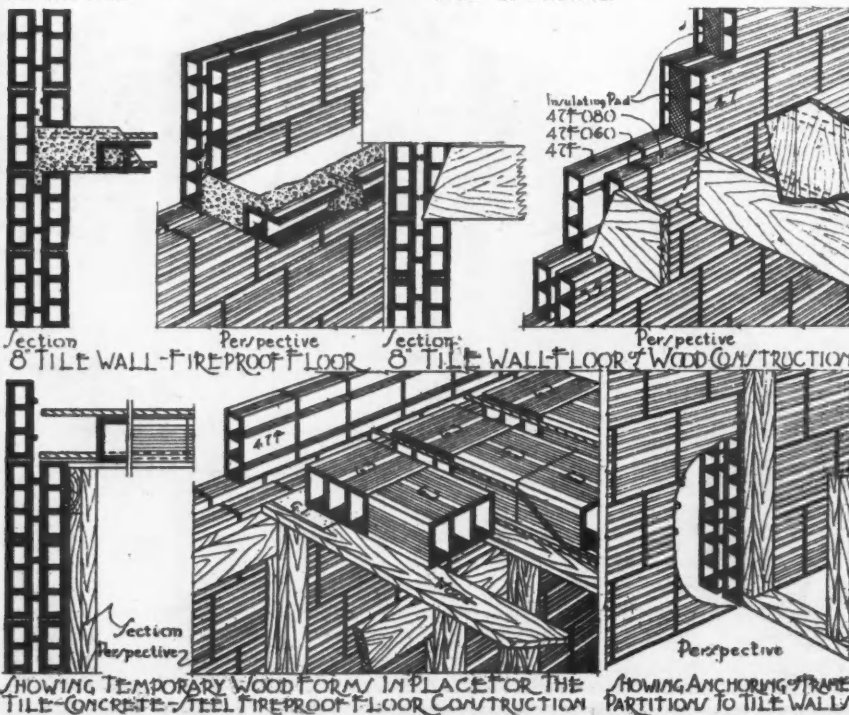


Fig. 1. Detail Sheet, Showing Joist Setting in Tile Construction.

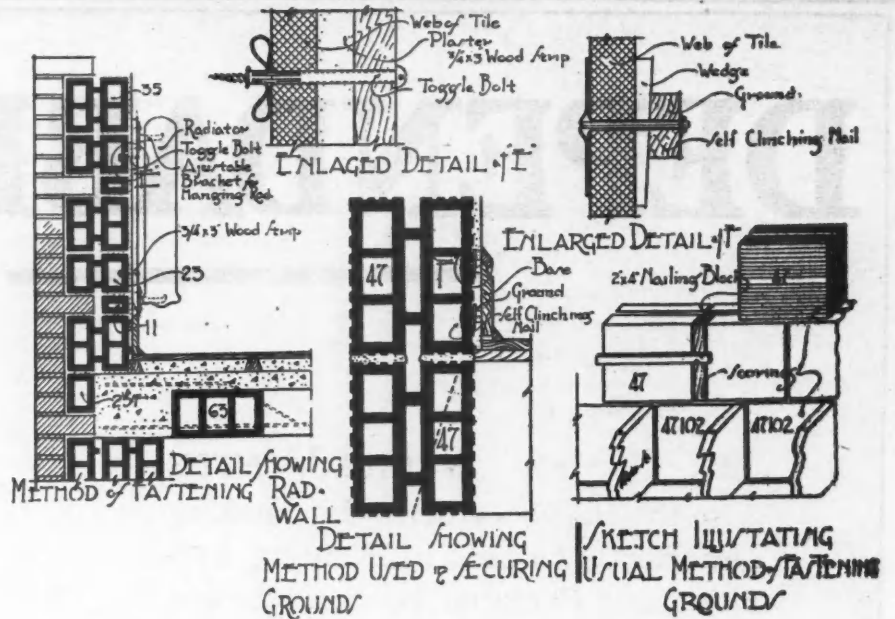


Fig. 2. Methods of Attaching Baseboards. Cross Sections of Self-Clinching Nails and Anchor Bolts.

Answer—On this page you will find two portions of detail sheets of tile construction. The various methods of procedure shown here are first-class engineering practice.

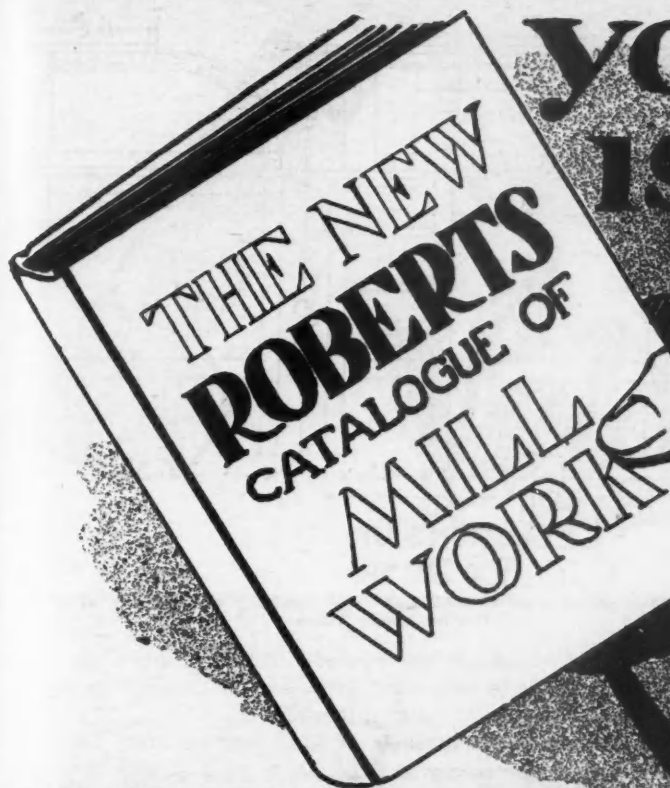
The one which I have marked Fig. 1 answers your question as to how to set joists for the first floor, showing both a sectional and a perspective drawing of this method. It also shows the method of attaching a fireproof floor to the tile wall, including method of forming for a fireproof floor.

Since you are building a house with fireproof walls, why not also have fireproof floors? The combination tile and reinforced concrete beam floor can be built at a comparatively reasonable cost. This drawing shows 6 by 12 by 12 tile used in the floors, but 4 by 12 by 12 tile will be entirely satisfactory for house floors with ordinary spans and will cost only about two-thirds as much for the masonry part of the floor. A friend of mine plans to build a two-story house 32 by 32 this spring. His contractor figured the costs with fireproof floors and ceilings—using 4 by 12 by 12 tile in the construction shown here, with quarter sawed oak surfacing. His figures showed that the completed house would not cost much more by using the fireproof floors and ceilings.

You can surface such a floor with concrete instead of with wood, and cost of the fireproof floor will compare favorably with that of lumber floor. If you surface with concrete instead of with wood, use a finish coat of 1 to 1, using fine sand. Mix it with some standard hardening and waterproofing compounds; trowel it perfectly smooth, and paint any color you wish. If you use carpets, it is completely covered anyway. If you use rugs, the exposed edges of the floor can be made very attractive. Such a concrete surfaced floor is not hard to walk on, and it is not cold.

The drawing I have marked as Fig. 2 shows two methods of attaching base boards. One is by means of nailing blocks set in the vertical end joints of

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the tile while laying up the wall. The latter is by using some one of the several kinds of self-clinching nails or anchoring screws and bolts advertised in *AMERICAN BUILDER*. Personally, I prefer the latter. There is danger of the nailing blocks shrinking, or rotting, and the base boards becoming loose. The anchoring screw bolts and self-clinching nails are put right thru the web of the tile and there is practically no danger of their ever pulling out.

In the lower right-hand corner of Fig. 1 there is also shown the correct method of attaching door frames to exterior and partition walls by using these same patented nails, screws or bolts.

JAMES A. KING, C. E.



How to Build Roll Top Desk

To the Editor: La Fargeville, N. Y.

Many people would like to build roll top desks, but do not because of the apparent difficulty of the work. A design and method of construction which makes the work quite simple, as it is all straight work, except the curved or rounded ends of the upper part, which are not difficult to make, is given here. This desk consists of a table with drawers below and a case for pigeon holes, which is placed on top of the table, fastened to it by corner irons and screws.

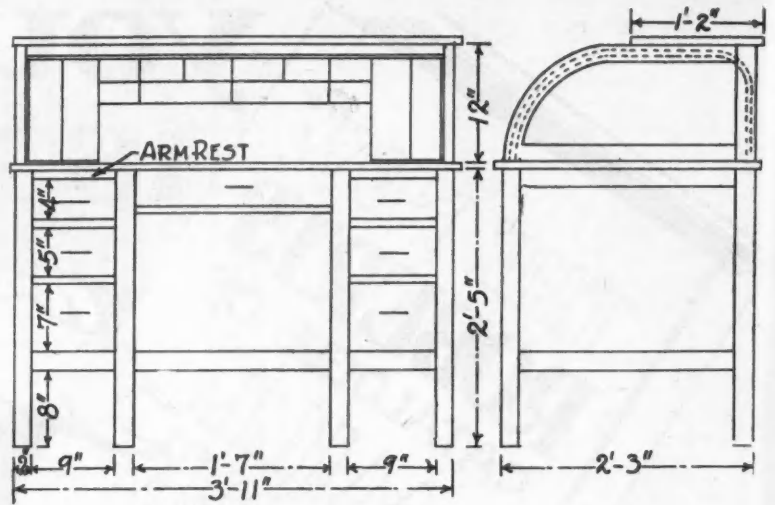
The table or flat top desk can be made first, and the roll top part added later.

The six legs are 2 inches square and 29 inches long. They are mortised for the rails and grooved for the panels; the mortises are 1/8 inch deep, 1/2 inch wide, the grooves 1/4 inch wide, 1/4 inch deep.

The rails are 3/4 inch thick with a shoulder of 1/8 inch on each side, leaving the tenon 1/2 inch thick and 1 inch long. The two back rails are 3 feet 9 inches long, and the cross rails 2 feet 1 inch. There are eight of these, two at each end and two for each inside leg.

The rail under the middle drawer is 21 inches, while those under the small drawers are 9 inches. Two more long rails, 3 feet 9 inches, for the back part of the top section are needed, if it is made with a panel.

If the rails are placed as shown in the drawings the panels will be 17 by 24 inches. Three-ply veneer 1/4 or 3/8 inch



ELEVATIONS OF ROLL TOP DESK

Front and Side Elevations of Roll Top Desk Which Can Be Made at Home During Spare Time.

thick or thin lumber may be used. The outer parts of the desk can be made of oak; other parts, such as drawer bottoms, of sides of spruce or other soft wood.

The leg rails and panels are fitted together first. Then the groove in the rails where the panels go is 1/8 inch from the face to bring it even with the one in the legs. It is 1/4 inch wide.

The frame should then be glued together. Drawer slides are then put in place, and the drawers made. The drawing shows something of their construction. Notice the arm rest above the small drawers; this is simply a board 9 inches wide and 22 inches long. A small piece of veneer may be glued on the end to hide the end grain.

The top is made last, so can be filled and varnished as soon as made and not have a chance to warp or check. It should be 1 1/8 inches thick, 2 feet 5 inches wide and consist of three or more pieces. These should be well dried and fastened together with dowels and glue. The top is fastened on with corner irons and screws.

The locking device for the small drawers may be arranged as shown so the curtain or roll top will press the stick down and allow the drawers to be opened. The ends are 1 1/8 inches thick and 12 inches wide. The groove for the roll top is cut 3/8 inches from the edge and 3/8 inch deep.

The end pieces are cut to shape to get a panel effect a piece 2 inches wide and 3/8 inch thick is glued on the outside around the edge. A thin piece of veneer is glued on the curved part to hide the end grain.

The back panel is fastened to the sides with corner irons. The top board is 1 1/8 inches thick, fastened with irons and dowels. The roll is made of slats glued to canvas. The pigeon holes are made last and put in place after the rest is finished.

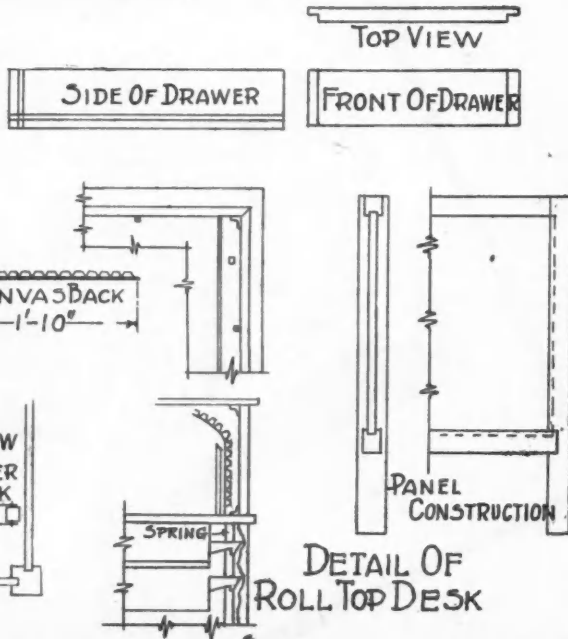
If carefully made and finished this desk will be a pleasing article of furniture for any home. JOHN UPTON.



IN good work the panels of doors, wainscot, etc., should be filled and given at least one coat of varnish before the work is put together; if this is done the completed work will not be marred by the panels shrinking and showing a streak of unfinished wood around the rails.



THRIFFT that uses its savings for production cannot be too strongly urged—the nimble sixpence is of more service to the country than the slothful pound.



Detail of Roll Top Desk, Showing Various Sections.



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How A. P. Nelson Won Success in the Concrete Block Making Business

A STONE MASON FIFTEEN YEARS AGO, MR. NELSON STARTED MAKING BLOCKS IN A SMALL WAY—NOW HE IS ONE OF THE MOST PROSPEROUS BUSINESSMEN AND MANUFACTURERS OF SPENCER, IOWA

By J. D. Eddy

SPENCER, IOWA, is not a large city, but it is typical of the many towns of about 4,000 population or less that are found scattered thru this state, noted for its rich soil and prosperous farmers. It is a good town; its residents reflect the prosperity of the surrounding country. However, it is not a place that the average enterprising manufacturer would select as the site of his plant. He would consider the opportunity in Spencer too limited.

Nevertheless, in Spencer, Iowa, there is a business that any man in the building industry might envy. And in envying, realize that there are great opportunities in the smaller cities for men with initiative; the will to succeed, and with a willingness to "stick." For one of the largest and most prosperous businesses there is the concrete block making plant of A. P. Nelson.

Fifteen years ago Mr. Nelson was a stone mason, working for wages as steadily as most stone masons do in cities the size of Spencer. His work covered all sorts of masonry construction, but principally foundations for buildings—residence, business and farm buildings.

It will be remembered that it was about fifteen years ago that the concrete block making "boom" struck the building industry. Thousands of men went into the block making business. Those who made high-class block succeeded; those who made poor block did not. Mr. Nelson was one of those who was not satisfied with anything but strong blocks, made of good materials and turned out so that when they were placed in walls they verified the claim that they are a high-class, permanent building unit.

Beginning with a 16-inch hand machine, which, by the way, was bought on the installment plan, Mr. Nelson went along for five years making blocks and a good living for himself and his family. These five years were spent in gaining experience in block making, and his success demonstrated that there was a future in the business. Ten years ago the hand machine was replaced by a power tamper. And during the last ten years nine other machines have been added, all power driven.

Mr. Nelson's plant at Spencer employs fifteen men to operate the ten power tamper block machines. These machines turn out between 3,000 and 4,000 blocks a day. Three-fourths of the blocks are rough faced for foundation work. The balance are smooth and panel finished blocks for walls above grade.

Practically all the blocks made at the Nelson plant are 8 by 8 by 16-inch. A wet mix is used, the blocks being thoroly tamped by the power tampers. They are taken from the machines almost immediately and placed in air-curing rooms back of the machines. Each

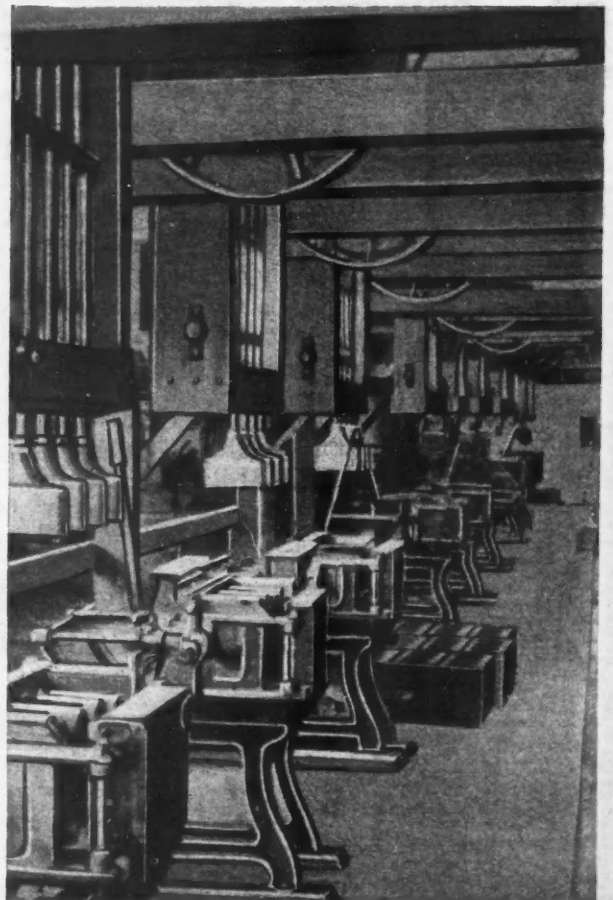
machine has an operator, while one man feeds two machines.

Mr. Nelson's business covers the territory within a radius of 100 miles of Spencer. Material dealers in practically all the towns within that radius carry the Nelson blocks in stock. Some of the blocks are shipped by rail, but a majority of them are delivered by motor trucks. The business is so great that five motor trucks are kept in operation, delivering the finished blocks and hauling materials to the plant,

The aggregates for the blocks are secured from Mr. Nelson's own sand and gravel pit. A few years ago this pit was acquired by Mr. Nelson thru the aid of a local banker, who had watched his progress in the block-making business and stood ready to back him financially. The very fact that Mr. Nelson has a gravel washer in the pit, and not only supplies his own plant with aggregates, but has built up a good business in sand and gravel, gives some idea of the success he has achieved.

Mr. Nelson owns and lives in one of the finest

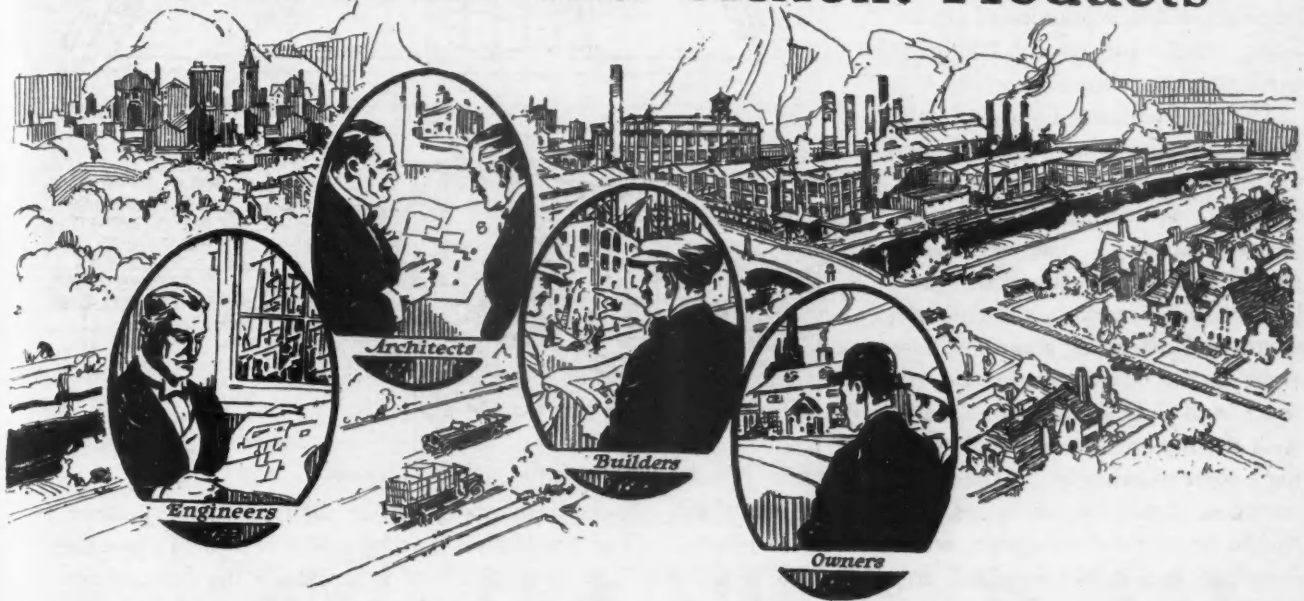
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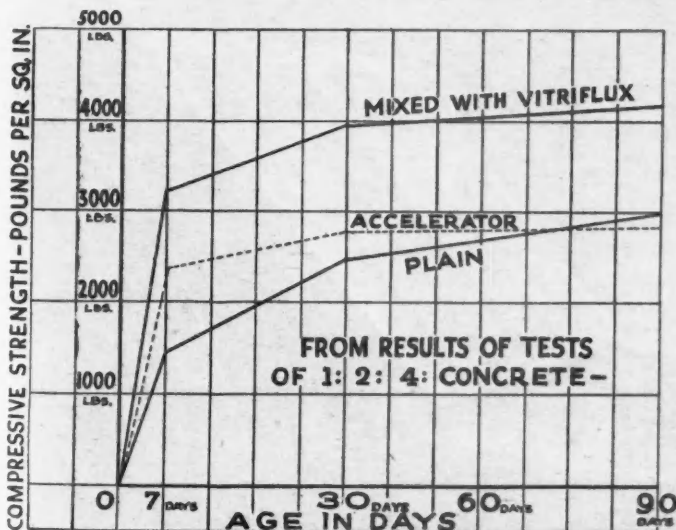
Interior View of A. P. Nelson's Concrete Block Plant at Spencer, Iowa, Showing the Ten Machines and Power Tampers That Turn Out the High-Class Blocks Mr. Nelson Sells to Material Dealers in a Radius of 100 Miles.

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Authoritative tests have shown that for commercial mixtures, VITRI-FLUX increases compressive strength 50% to 60%; increases tensile strength 25% to 30%; increases transverse strength 40% to 50%; accelerates setting; prevents freezing, and makes possible a high polish.

The Technical Staff of the Granitex Company invites inquiries relative to the use of VITRI-FLUX or of concrete. Specifications, and the names of users of VITRI-FLUX, will be mailed promptly on request.

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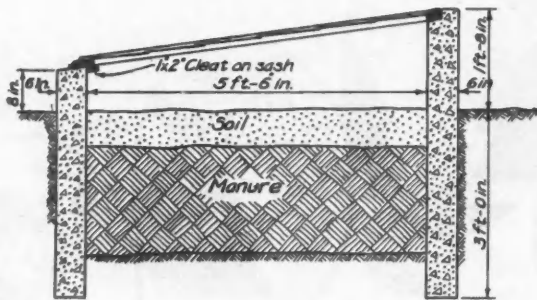
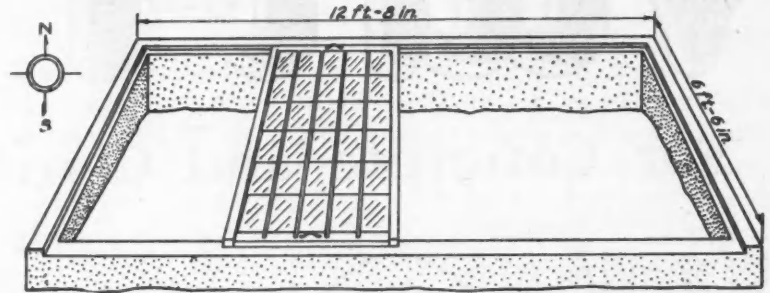
Design for a Concrete Hotbed

ILLINOIS CONTRACTOR BUILDS UP BIG SPRING BUSINESS ERECTING HOTBEDS

AN enterprising contractor in a central Illinois city writes that he has done quite a flourishing business during the past two springs putting in concrete hotbeds. The hotbed is almost a necessity for successful gardening operations, whether on a small or large scale, and can be made to return the cost of the improvement in a short time. The contractor referred to makes a practice of advertising small hotbeds for backyard gardening operations.

The type of hotbed shown in the accompanying drawing may be made of the dimensions shown or extended as required to give any desired capacity. The excavation should go below frost and the walls built with ordinary box forms, the north wall extending about one foot eight inches above grade and the south wall eight inches above grade, with the tops of the end walls sloping correspondingly. The wall thickness should be six inches. Top of the north wall should be recessed as shown, with a recess two inches deep and two inches in width, to receive the window frames. A corresponding recess should be made in the

top of the end walls, but not in the south wall, the top of which is given sufficient pitch to carry off moisture. The inside width of five feet six inches, as shown,



<i>Bill of Material</i>	
1-2 1/2	4 mixture
16 1/2	sacks cement
1 1/2	cu. yds. sand
2 1/2	" " pebbles
	or crushed stone
4	hot bed sash 3x6'
1 pc.	1x2x12'

Details for Concrete Hotbed.

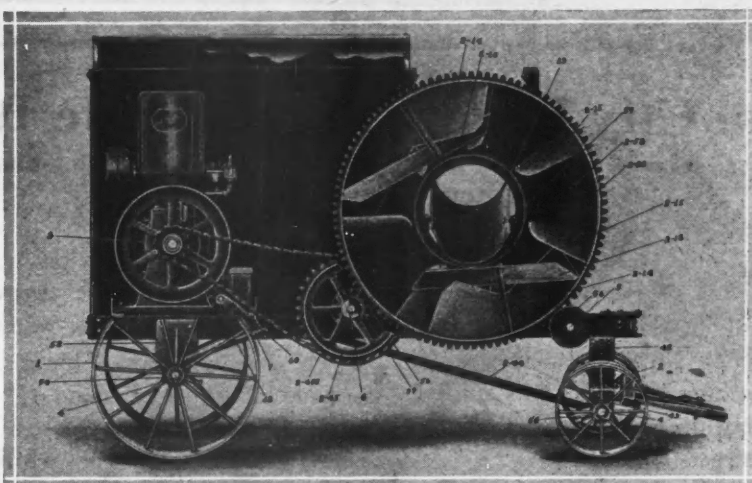
takes a standard hotbed sash six feet by three feet. The length shown accommodates four of these sash.

A complete bill of material for the construction of a concrete hotbed of this size is shown.



Newly Completed Concrete Hotbed in a Backyard Garden Patch of a Small City. An Enterprising Illinois Contractor Makes a Specialty of This Kind of Work and Has a Flourishing Business in the Spring Months. The Walls Are Six Inches Thick.

NEW WAY MIXERS



TRY THE NEW WAY ON YOUR SPRING CONTRACTS

YOU will find the speed, power and simplicity of New Way Mixers, a combination that makes more money for you on every job, large or small.

The quick charging and side discharge are two important factors in New Way construction.

They speed up your jobs.

Inexperienced workmen can operate this machine.

The New Way is made in three sizes. Half bag size of 5 cubic ft. One bag, 7½ cubic ft. and one bag and one-half, 10 cubic ft.

Write for catalog and prices without delay

NEW WAY MANUFACTURING CO.
Box 311
EAU CLAIRE, WISCONSIN





Bird's-eye View of Rebuilt Section of Halifax, Showing Modern Concrete Block Homes.

Canadian City Rebuilt of Concrete Blocks

HALIFAX SELECTS PRE-CAST BLOCK TO REBUILD DESTROYED AREA

By Wm. B. Reedy

WHEN the munition ship "Mont Blanc" blew up in Halifax harbor two years ago, it devastated over 300 acres and left Halifax with a serious housing problem on its hands. No time was lost, however, in organizing a committee and work was started almost immediately. Today the ruined area is a city of beautiful homes, wide streets and walks.

The problem differed from other housing problems in that most of the streets remained intact, with drainage and water systems. New wide streets cutting diagonally thru certain sections were laid out and open spaces were left for small parks and playgrounds.

With the general plan in mind the big question of actual construction was taken up. It was decided to build, in addition to individual houses, buildings with two, four and six apartments of four and six rooms each on each side of wide grass courts. The buildings containing four dwellings were of six distinct types. The middle dwellings have five rooms and bath and the end buildings have six. Where only two rooms are located on the first floor a kitchenette is provided by

partly screening off a portion of the dining room and kitchen and placing in the alcove the service fixtures such as range, sink and hot water heater.

Each dwelling has a liberal front porch with a vestibule which was found necessary owing to the Halifax climate. In every case a coat closet is adjacent to the entrance hall. The two flat dwellings have individual entrances on the side.

Material was the problem to be settled. After considering the various local materials available, concrete pre-cast block was adopted. It was to be manufactured at a plant in Nova Scotia, where clean sand and gravel could be obtained at a low cost. Slate was decided as roofing material. The foundations were of monolithic concrete. Where the concrete blocks were exposed, a faced block constructed of crushed granite giving a mottled granite effect was used.

This pre-cast block, which was selected for the exterior of the buildings, consists of a mixture of concrete, composed of gravel, crushed stone, sand and portland cement, with sufficient water to crystallize



One of the Beautiful Spots in the New Halifax Which Was Destroyed by Explosion of Ammunition Ship Two Years Ago. The Houses Are Built Around Attractive Grass Plots. This Reconstruction Work Was Accomplished in Very Short Time.



KELLASTONE, the all mineral magnesite stucco, binds the structural frame of a building into one seamless, weather tight stone like wall. Time, frost, weather, heat—even fire—will not penetrate walls built of

KELLASTONE IMPERISHABLE STUCCO

Unusual strength combined with architectural beauty. Kellastone does not crack like ordinary stucco—contains no Portland cement, lime or gypsum. By using various colored dashes any color effect can be obtained.

Reclaim that old building by overcoating it with Kellastone. Make money for the owner as well as yourself.

Write today for full information

National Kellastone Company

Room 515

155 East Superior Street, Chicago

KELLASTONE

IMPERISHABLE STUCCO

the cement thoroly, then molded into building units under heavy pressure, then cured in steam or rooms kept moist to prevent rapid evaporation.

How Block Is Made

Because of the heavy pressure, a wet mix can be used and the process of molding permits a facing with crushed granite, mica-spar, marble or colored sands.

The block is 9 by 24 inches on the face and is built into the wall either as a two-piece wall or as one piece. The two-piece wall comprises "T" shaped units, laid up in header and stretcher bond, breaking joints alternately back and front. The wall has continuous horizontal and vertical air spaces thruout. The inside and outside walls having no direct contact, forming a wall thoroly insulated against heat, moisture and frost.

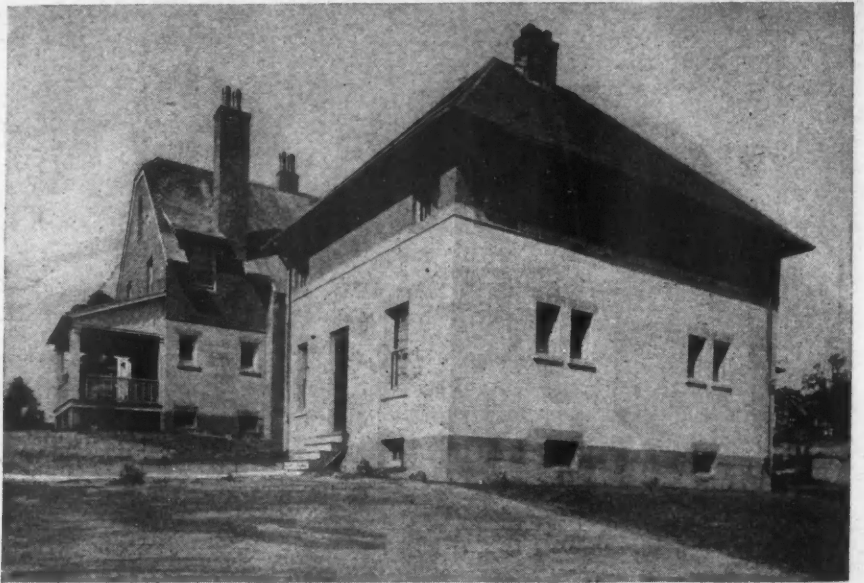
The one-piece wall is well adapted for small buildings or residential work. The blocks have two webs projecting from the back, spaced on 12-inch centers, and are laid up so as to break joints and form a strong, self-sustaining wall, ranging from 5 to 12 inches in thickness. Furring strips are fastened to the ends of the webs by a simple clip laid in the joint. Any form of lath is nailed to the furring strips and plastered in the usual manner.

The block machines are operated in the form of a press, estimated to exert a pressure of some 15,000

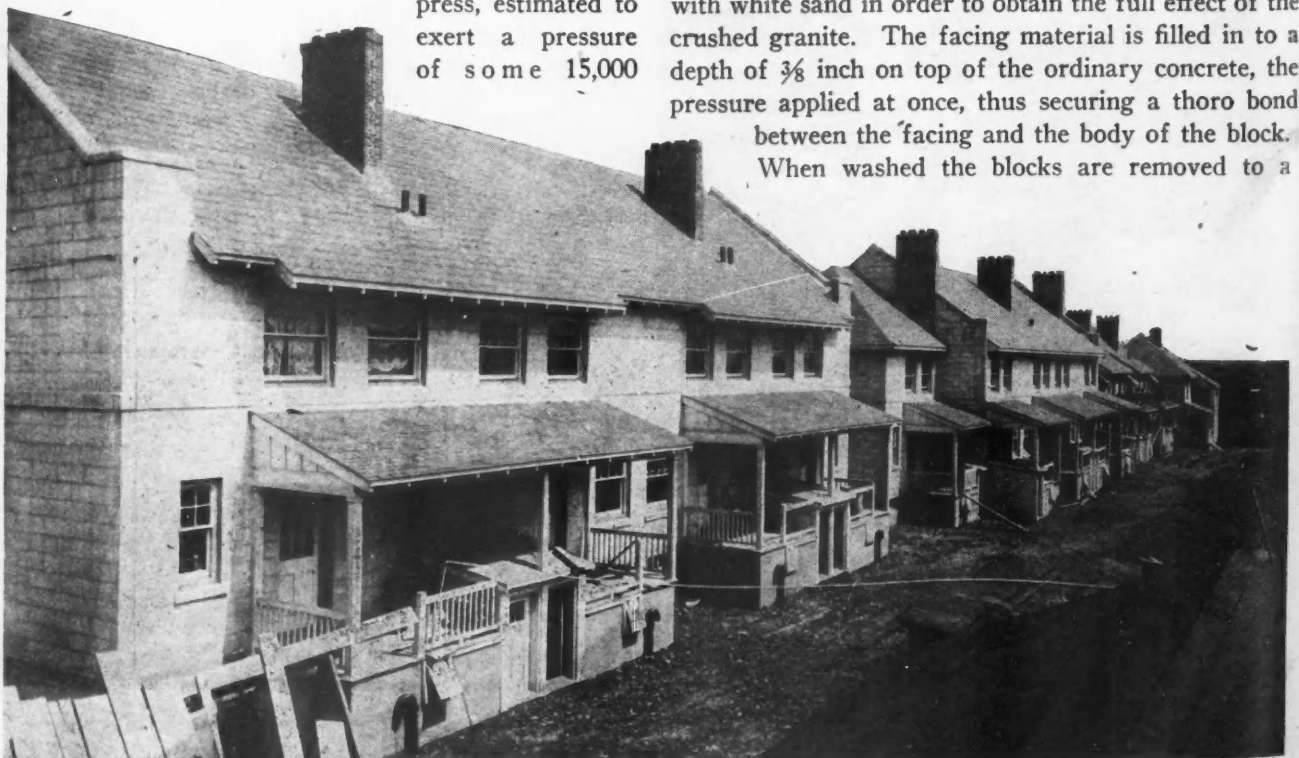
pounds against the face of the block. The plant was equipped with five machines, with a total output covering from 3,500 to 4,000 blocks per day. The pressure against the face of the block, while in the mold, compacts the concrete, squeezes out excess water and fills up the voids, forming a block with a dense face and square, sharp edges, which is immediately removed from the mold.

The concrete mixture used is a comparatively wet mix, the proportions being determined after careful experiments with the sand and stone available. In the manufacture of face blocks, white cement was used with white sand in order to obtain the full effect of the crushed granite. The facing material is filled in to a depth of $\frac{3}{8}$ inch on top of the ordinary concrete, the pressure applied at once, thus securing a thoro bond between the facing and the body of the block.

When washed the blocks are removed to a



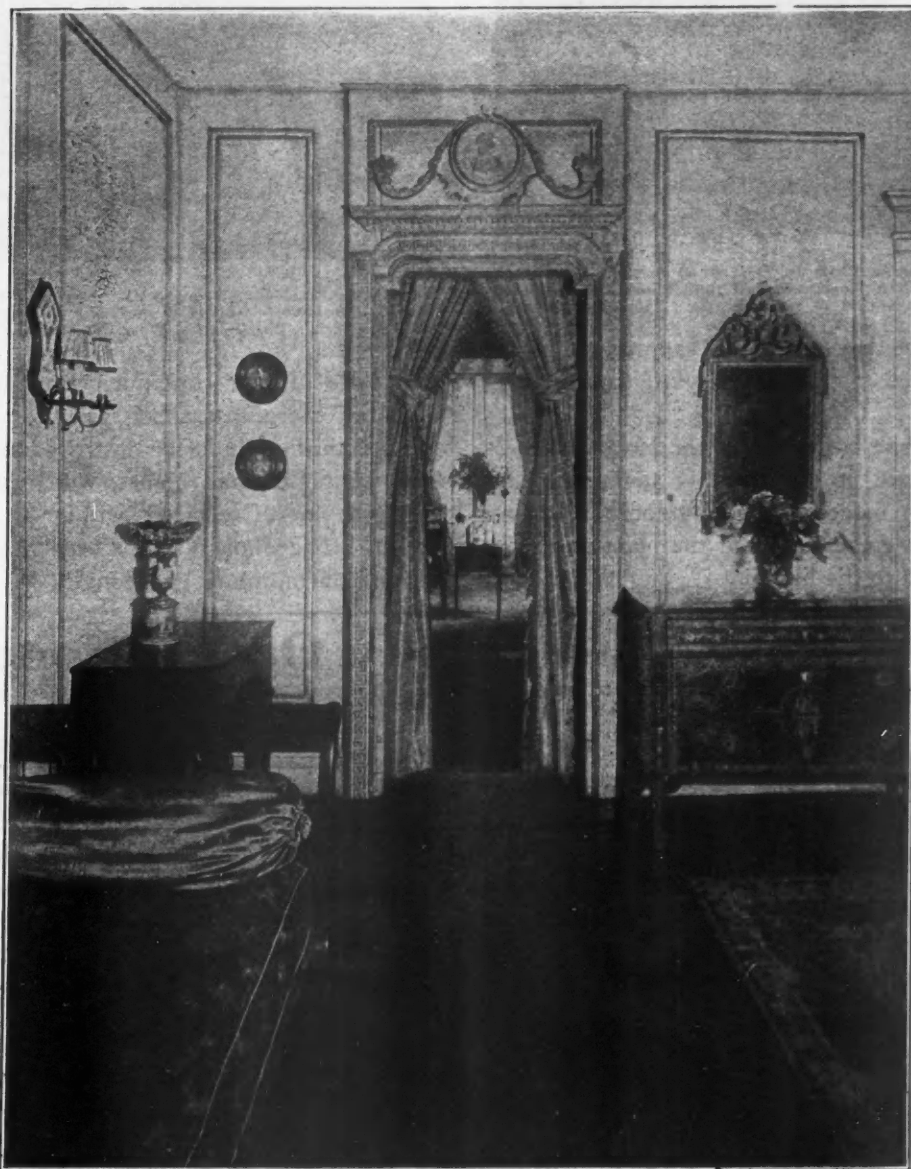
Six-Room Dwelling in Halifax Housing Plan. This Type Was Quite Popular Because of Its Attractive Exterior of Granite-Faced Concrete Block. It Contains a Kitchenette. Liberal Front Porch Is to Be Added.



Rear View of Apartment Buildings Containing Four and Six Apartments Each. These Buildings Are Typical of the Kind That Have Been Erected in Halifax. They Face a Large Grass Court.

DEVOE VELOUR FINISH

For Walls and Woodwork



DEVOE VELOUR FINISH IS THE PERFECT FLAT FINISH OIL PAINT FOR WALLS, CEILINGS, and WOODWORK.

The fine grinding of pigments and colors make possible a finish so soft in texture as to resemble velvet.

Surfaces decorated with this material can be washed

clean with soap and water without spotting or injuring the finish in any way.

Our decorative Service Department has planned harmonious color schemes for many prominent public institutions and private homes. We will be pleased to submit for any of your work panels showing decorative designs in one or many colors.

DEVOE & RAYNOLDS COMPANY, Inc.

101 Fulton Street, NEW YORK, N. Y.

Chicago Boston Buffalo New Orleans Houston Savannah Kansas City Denver Cincinnati



Another Type of Home Built in Destroyed Section. All These Houses Were Built with Vestibules, Which Were Found Necessary Because of the Climate of Nova Scotia. The Roof Is Slate.

steam room where they are cured (approximately 48 hours), then placed in the storage yard for shipment to the works.

On account of the large size of the blocks, 9 by 24 inches, they are laid up very quickly and remarkable progress has been made, a small number of masons being able to handle the output of the plant as fast as it can be delivered to the building.



Attractive Six-Room Home with Slate Hip Roof. The Foundation Is Monolithic Concrete and the Exterior Has a Mottled Granite Effect. The Blocks Were Made Near the Scene of Construction.

In spite of war conditions prevailing at the time this work of reconstruction was started, the commission practically rebuilt the destroyed area in two years, while eight thousand homes, which had been slightly damaged, were repaired within a space of eight months. The whole plan has been worked out with an idea of harmonious grouping.

How to Take the Porosity Out of Concrete

PATENTED HARDENERS STRENGTHEN AND WATERPROOF CONCRETE IN WALLS, FLOORS, OR ANY OTHER OF ITS MANY USES IN CONSTRUCTION WORK

By F. W. Bevatch

ABSORPTION of water by concrete is one of the problems that chemists have been working to solve for a long time, and in doing so have produced a number of waterproofing compounds. Thus has the old "bogey" of "damp walls" been eliminated.

Lately, however, the scientists have gone further and have produced compounds that will not only make concrete waterproof, but add greatly to its strength and hardness. The latter effect is one that makes the modern concrete better suited for use in floors, walls where a glazed or decorative surface is wanted, or in any of the other higher classes of concrete con-

struction where attractive coloring is wanted.

The advantages of a stronger, more dense and harder concrete are so many that they are obvious. Recently a committee of architects made an investigation of concrete in which one of these compounds was used, and the report made at the American Concrete Institute, at the Chicago meeting in February, was very enthusiastic.

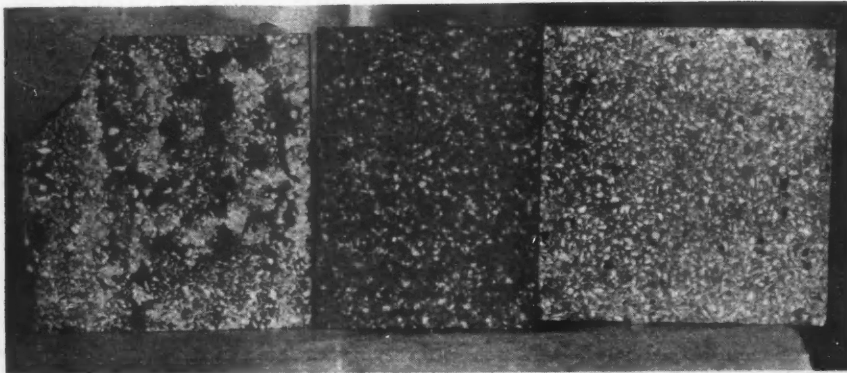
Floors and sample blocks of concrete so mixed were put to a number of tests and some of the results of these tests are:

The compressive strength of a 1:2:4 mixture was increased 58 per cent, and the tensile strength of a 1:3 mixture 24 percent, and the setting of the cement was decidedly accelerated.

Water absorption tests showed that on a 1:3 mixture only 2 per cent by weight was absorbed in 72 hours, while the capillary attraction was slight.

The committee examined many samples of concrete to which had been added a hardening compound. Among the samples were a few bricks made of fine gravel, no sand

(Continued to page 175.)

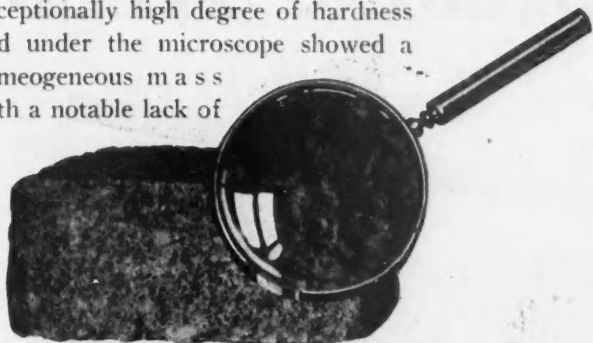


Fancy Aggregates. Thin Topping on These Specimens, Showing High Polish Produced by Hardening Cement.

How to Take the Porosity out of Concrete

(Continued from page 170.)

and a very lean mixture. These blocks demonstrated, the committee said, that the compounds have an extra binding and adhesive quality. All the samples had an exceptionally high degree of hardness and under the microscope showed a homogeneous mass with a notable lack of

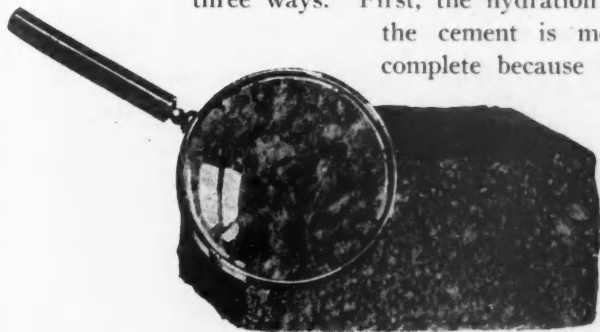


Concrete Mixed with Plain Water, Under the Glass.

porosity. This hard, glazed effect was particularly noticed in the concrete floors that were inspected.

Mortar or concrete treated with the hardening compound is fatter, more plastic and less sharp. Also, it is claimed, the freezing temperature is lowered six degrees.

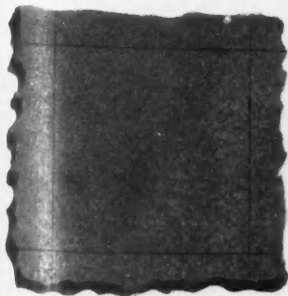
The strengthening, hardening and waterproofing of concrete so treated is accomplished in three ways. First, the hydration of the cement is more complete because the



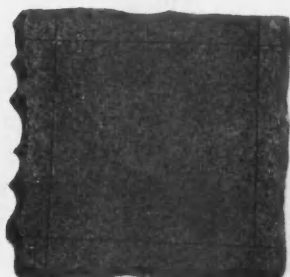
Close View of Concrete Prepared with Hardening Compound.

surface tension of the water is reduced; second, the complicated chemical reaction, which takes place when portland cement and water are mixed, is accelerated; third, the plasticity of the mass is increased and the settling and fitting into place of the millions of particles which compose the mass is facilitated.

The compounds are mixed with the water before it is added to the cement and aggregates, usually about one part of compound to eight or ten of water.



Trowel Finish on Concrete Made with Hardening Compound.



Trowel Finish on Ordinary Concrete.

The accompanying illustrations show, by comparison, how one of these hardening compounds acts on the concrete.



Design of Safe Construction

(Continued from page 142.)

If a wooden girder were used, $P = 1,000$.

Then $541,800 = 1,000 \text{ S. M.}$

$\therefore \text{S. M.} = 541.8$

But for a rectangle $\text{S. M.} = \frac{1}{6} b h^2$ by formula III.

Try 14 by 14-inch. Here $b = 14, h = 14$

$$\frac{1}{6} b h^2 = \frac{14 \times 14 \times 14}{6} = 456.7 \text{ (Too small).}$$

Try 14 by 16-inch. Here $b = 14$ and $h = 16$

$$\frac{1}{6} b h^2 = \frac{14 \times 16 \times 16}{6} = 597.3.$$

Since 597.3 is greater than 541.8, a stringer 14 by 16-inch will safely carry the load.

The problems given will be different from those constantly met by the contractor, but the methods outlined in this article if carefully applied will solve the problem in every case for concentrated and distributed loads.



How A. P. Nelson Won Success

(Continued from page 162.)

homes in Spencer. He has a high-class passenger automobile, which he uses to travel thru the territory in which he sells blocks. His family has a limousine for their use.

In the eyes of the people of Spencer Mr. Nelson is a rich man. In the eyes of the businessmen of Spencer he is the town's most successful manufacturer.

All of this prosperity has come to him thru getting into the concrete block-making business in a small way, and by having faith that concrete blocks, well made, are high-class building units, and would be in demand when builders learned of their merits.

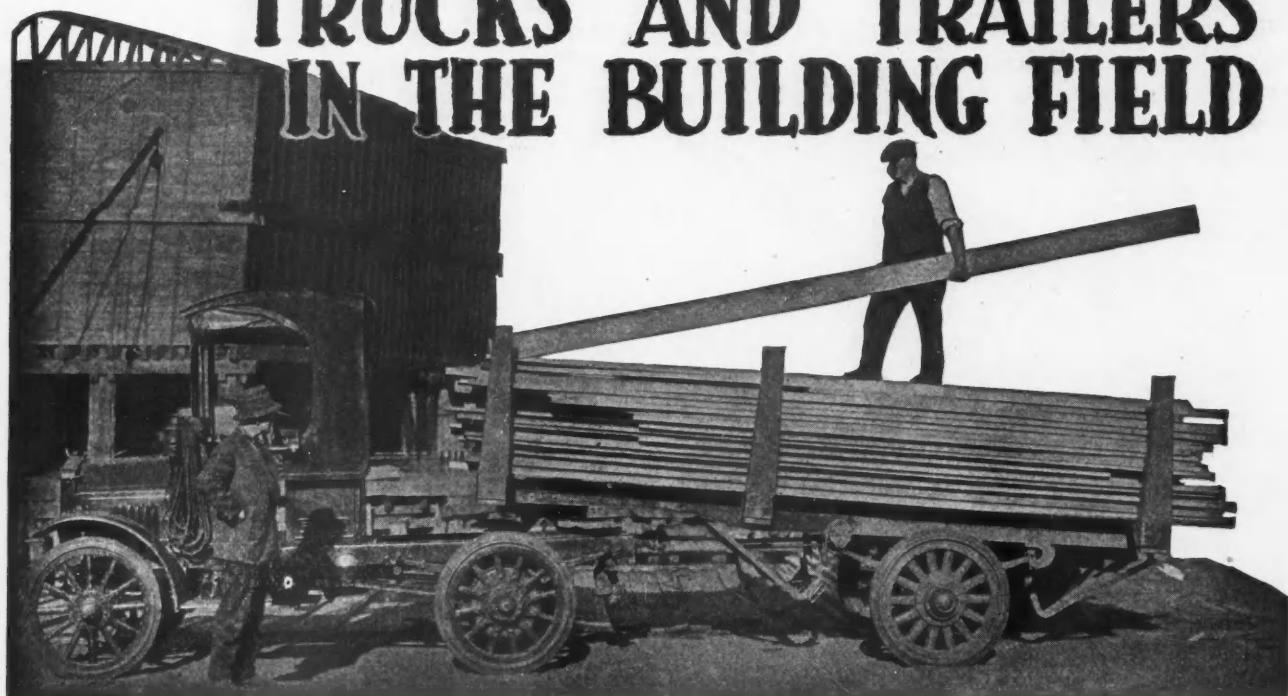


Building Keeps Up Pace

INDUSTRIAL building still maintains the lead over all other classes of construction activity, according to the F. W. Dodge Company's building statistics for the month of February. The total amount of contracts awarded during February in the territory east of the Missouri and north of the Ohio rivers, was \$216,663,000. Of this amount, \$70,641,000, or 32 per cent, was for industrial buildings; \$43,960,000 or 20 per cent, for business buildings; \$43,543,000, or 20 per cent, for public works and utilities; and, \$37,464,000, or 17 per cent, for residential buildings.

The total for February, \$216,663,000, was only slightly less than that for January, which was \$235,848,000. In view of the fact that the number of business days in February was four less than the number in January, activity has been maintained at a uniform rate. The totals for both months are somewhat over the average monthly figure of 1919.

TRUCKS AND TRAILERS IN THE BUILDING FIELD



Light Trucks Speed Up Building

ONE AND TWO-TON MOTOR TRUCKS ARE ADAPTED FOR WIDE ACTIVITY IN BUILDING WORK

IN these days of modern efficiency, speed has become the important factor in industry. With thousands homeless because of the lack of buildings, the demand for speed in construction has become a national slogan. "Hurry up" is the cry all along the line.

Seeking to respond in a big way to this demand, contractors and builders find a wonderful asset to their business in the light one to three-ton truck. Not only does it furnish the speed needed, but because of its versatility and ready adaptability to different activities, it has proved itself to be of distinct value.

In this psychological time, the light, sturdy, speedy

truck will find an important part to play. While transportation has always been one of the fundamental problems of the construction industry, it presents a score of smaller problems in its own province. The variety of material to be hauled calls for separate solutions, and it is here that the light truck proves its versatility.

The lighter material, such as sash, interior trim, roofing material, flooring and a score of other things that are used, can be hauled quickly over long distances by means of the light truck. As a rule, it is not practical to have this material on the job until the men are ready to start work. If piled up outside for sometime

it will greatly depreciate, and in some cases become unfit to use. At the last minute the light truck can bring a load without danger of depreciation or loss of labor time.

Fine cut stone is invariably hauled to the job in small quantities as it is needed. Here again the light truck is adapted.

Twenty to thirty miles an hour is not unusual for this type of truck. It brings the lumber and material yard next door to the scene of building.

The contractor in the smaller cities and towns who covers a wide radius will find them a distinct



Light Indiana Truck Used by Dunlap & Co., Columbus, Ind., Starting Out with a Load of Sash. They Haul It to the Job When the Carpenters Are Ready.

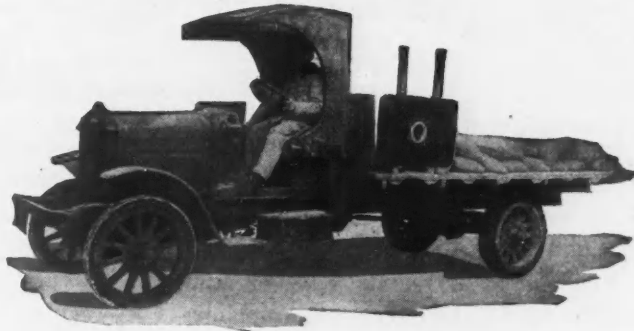
Stewart

MOTOR TRUCKS

CHASSIS PRICES

1/4-Ton.....	\$1350
1 -Ton.....	1750
1 1/2-Ton.....	2250
2 -Ton.....	2875
3 1/2-Ton.....	3895

f. o. b. Buffalo



In the service of the building trades

Ask your Stewart dealer, or send to the Stewart factory at Buffalo, for some of the fine economy records made by Stewarts for builders.

Stewart simplified construction produces a high-grade truck at low first cost—a perfectly balanced truck in the relation of weight to capacity to economy of operation.

The 3/4 ton and 2000 lb. delivery Stewarts have all the speed, comfort and convenience of the frailer half-breed passenger-car truck and none of its light construction.

The 1 1/2 ton, 2 1/2 ton and 3 1/2 ton models have overload capacity and reserve power, plus an exceedingly low running cost, and as seven-year-old Stewarts are still doing daily service, their life has not yet been determined.

Stewarts are making money for owners in big American cities, on hundreds of farms and in 38 foreign countries. Hundreds of firms that first bought one, now own fleets.

The owner of the above truck writes:

For your information we will state that we have three, two ton Stewart trucks in service which are being used for the delivery of Mason Builders Supplies. These trucks having been purchased by us in the year 1917 and they have been giving us very satisfactory results both as to cost of maintenance and performance of the motor.

(Signed) M. A. REEB CORPORATION
By M. A. Reeb

Stewart Motor Corporation, Buffalo

Quality Trucks Since 1912



Frank D. McKendall, Building Material Dealer in Providence, R. I., Finds This Federal Very Useful for Making Quick Deliveries of All Kinds of Building Supplies.

advantage. Of necessity he has to haul lumber and interior material, as well as short loads of heavy material, thirty, forty and even more miles to the jobs. Several trips are called for during the day for additional material. The light truck serves as a combination passenger car and truck, because it covers the distance almost as fast, while carrying a load.

The same advantages derived from the use of this type of truck will be gained by the lumber dealer. A big part of his work is delivery, and delivery of small loads in a hurry. He receives a call from some

contractor twenty or thirty miles away, probably in the next town, for five hundred or perhaps a thousand feet of lumber. The contractor wants it in a hurry, his men are idle. In a few minutes the lumber is loaded and the truck has started for its destination, which it will reach in an hour or less.

In the face of this successful competition the singlehorse team has gone down to defeat. It will not be long before that old method will be a matter of history. When a horse is idle it eats into the earnings the same as if it were working. The light truck only needs "feed"

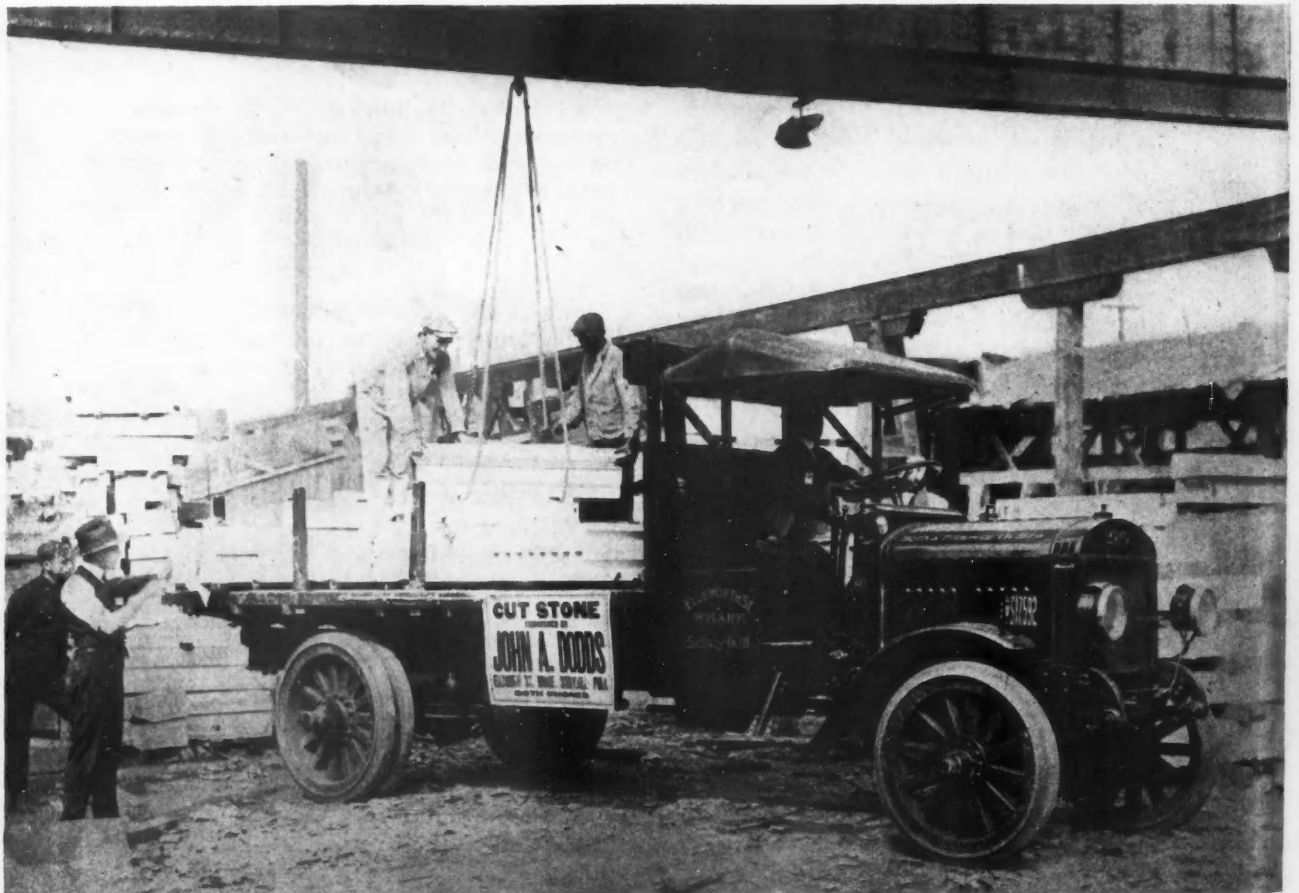
when it is in operation and it earns a whole lot more than merely its "keep."



How to Figure Depreciation

TRUCK owners should have an idea of one of the most important factors in successful truck operation—depreciation.

Every year a certain percentage of the original purchase price is written off as a depreciation charge. This amount should be set aside as fund to be used in purchasing a new truck when the old one has out-



One of the GMC's John A. Dodds, Schuylkill, Pa., Uses to Haul Orders of Cut Stone to the Job. This Material Calls for Careful Handling in Small Quantities and Dodds Uses a Light Truck for the Purpose.

DIAMOND T

"The Nation's Freight Car"

5,000 Miles — No Repairs!

THAT record was made by a Diamond T truck, on road construction for the Canadian Provincial Government—on Vancouver Island, near Victoria.

It was gruelling service—under a steam shovel, with a 10-mile, day-and-night haul over bad roads and precipitous grades.

Diamond T averaged on that job eight miles to a gallon of gasoline—150 to 200 miles to a quarter of oil. The tires were apparently still good for 10,000 miles of similar service.

Diamond T established, and held, the record for actual ten-mile efficiency—80 tons of material per day moved over that 10-mile course. It hauled seven full loads

to every five hauled by any other truck on the job.

One of the hills showed a 25% grade (estimated). Diamond T made it in second speed. The others had to go into low. One even had to turn and crawl up in reverse.

And not one cent spent for repairs!

A remarkable record, that. And yet it is merely indicative of the unusual service rendered by Diamond T trucks all over the globe, under all service conditions, throughout the past nine years. Diamond T owners know from experience that remarkable records are typical of their trucks—so much to be expected that the unusual has become commonplace.

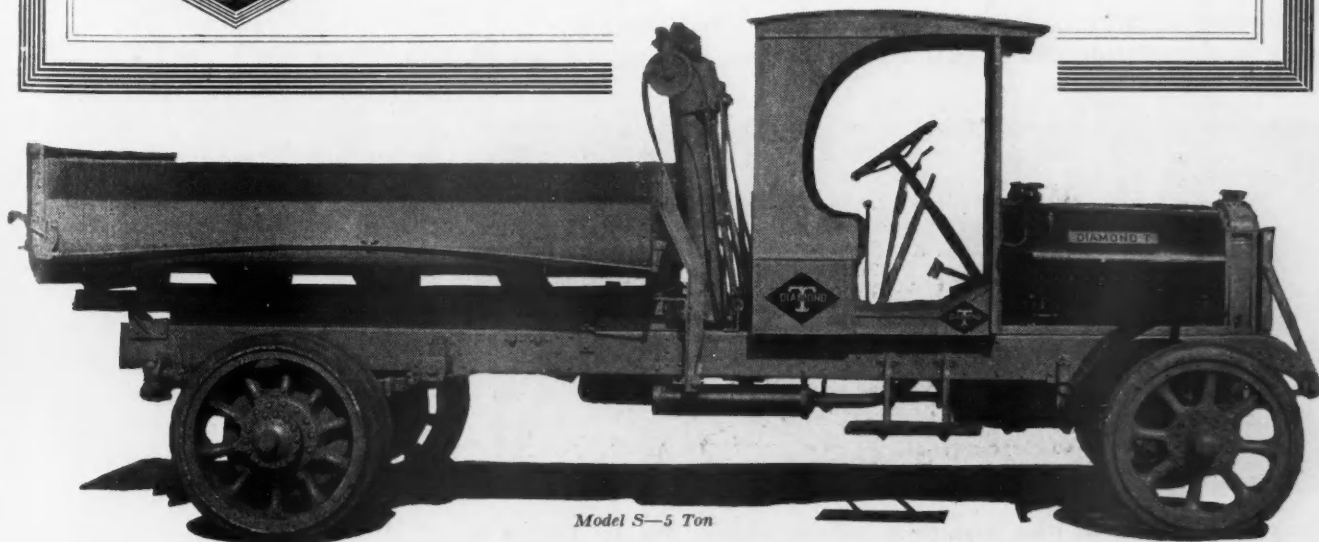
We could tell of scores of instances beside which the one above would seem no more than ordinary. They prove that Diamond T trucks deliver maximum efficiency, lowest-final-cost. If you buy transportation on this basis, you will want to know more about Diamond T—why and how it has earned the title, "The Nation's Freight Car." A request for information will put you under no obligation.



DIAMOND T MOTOR CAR CO.

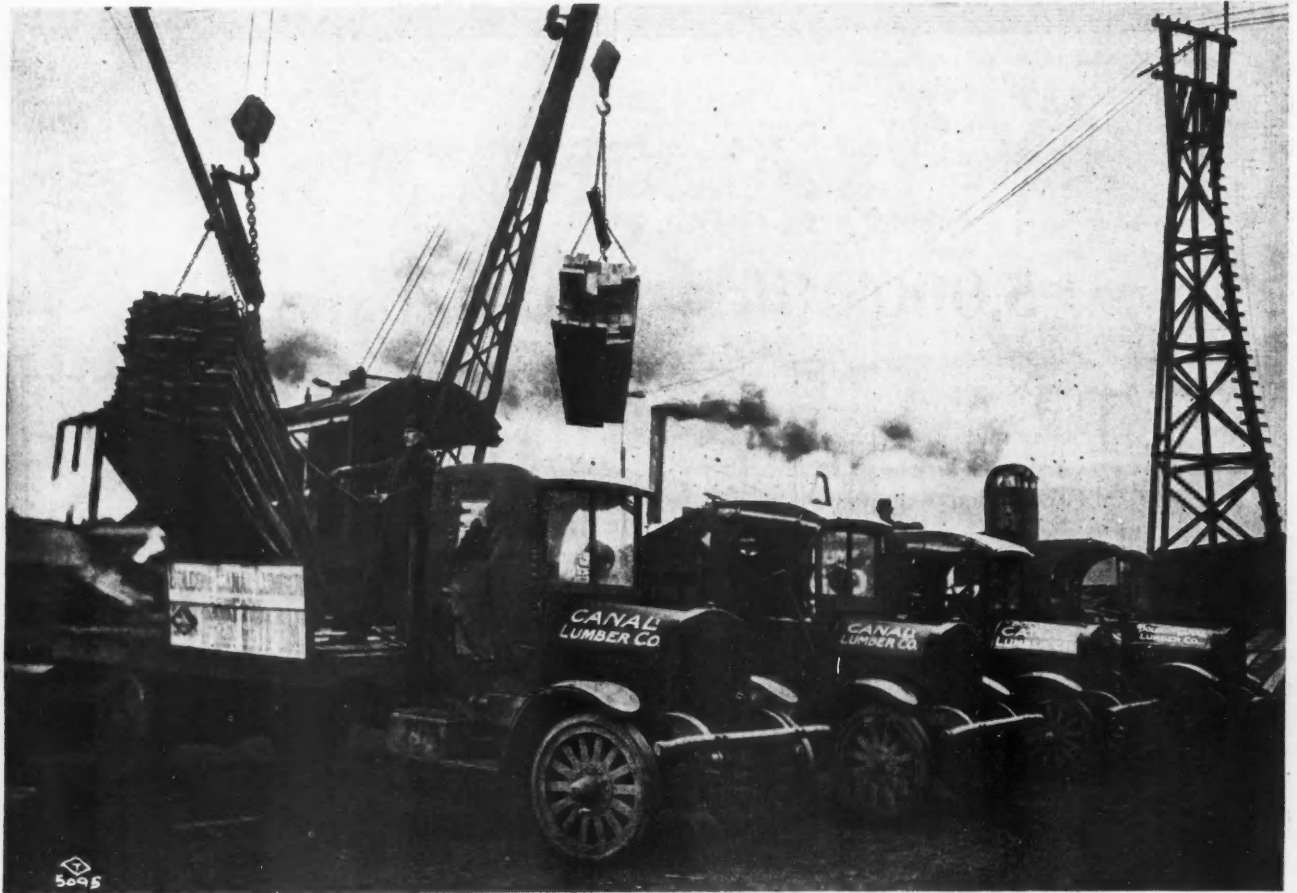
4556 West 26th Street

Chicago, Illinois



Model S—5 Ton

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Fleet of Diamond T's Operated by the Bolcom-Canal Lumber Co., Loading Up with Lumber for a Big Building Job. They Are the Reason for the Company's Motto, "Speed Gets 'Em."

lived its usefulness. Under this arrangement there is really no new investment.

Depreciation can be figured either by the estimated life in miles or in years. It should be figured in either case so that the owner has a sum of money with which to buy a new truck when it becomes more economical to get rid of the old one than keep it in repair.

In figuring the normal life of a motor truck several things must be considered. The owner should consider the life of a similar type of truck in the same line of business, street and road conditions, and, particularly, the care which the truck receives. The life of a motor truck is generally dependent on the kind of work it

has to do, the care it receives, and its size. Trucks operated at high speeds naturally have a higher depreciation rate.

When figuring depreciation on the yearly basis the normal life of a truck is considered five years, which allows for 20 per cent depreciation annually. This system is recommended because of its simplicity. After a car is used a month it is hard to get more than 40 per cent of the actual purchase price, but if it remains in the service of the owner the depreciation percentage averages about twenty. However, a truck which is given the proper care lasts much longer than five years.

Truck repair charges should not be paid out of the depreciation fund. This is obvious because there comes a time when no amount of repairs will restore the truck to its normal usefulness.

It is certainly an important thing for the truck owner to know how to figure out an intelligent depreciation charge. It shows him not only the cost, but the cheapness of motor truck transportation. If all of the 72,000 contractors, builders, lumber, and building material dealers who own from one up to a fleet of trucks worked out their depreciation charges in a logical and effi-



Two-Ton Acme Does Good Work for E. Dunning & Sons, Who Are Engaged in the Roofing Game in Terre Haute, Ind. This Light Type of Truck Has Been Very Handy in Hauling Light Loads When Needed in a Hurry.



3 1/2 Ton Federal truck operated by E. T. Gresham, Norfolk, Va.

Another

FEDERAL

The Federal is Built for the Contractor

Federal Trucks are designed and built especially to meet such exacting requirements of long life and dependable service as the contractor must require of a truck. This is perhaps the big, basic reason for Federal's popularity in the contracting field.

If you would choose a truck that you can depend upon to serve you well and live long by all means investigate the Federal. Your friends will testify to their economy and low maintenance costs.

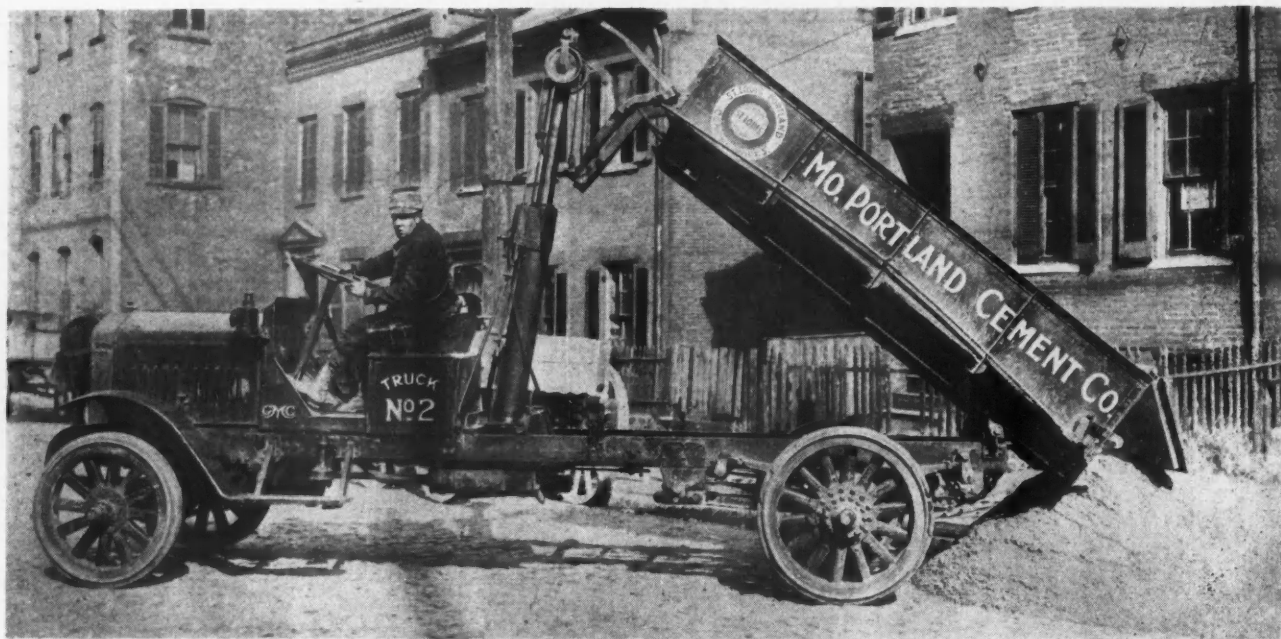
"Traffic News"—A Federal magazine of haulage will be sent you on request.

FEDERAL MOTOR TRUCK COMPANY
79 FEDERAL STREET DETROIT, MICH.



This is the sign of the 10th year Federal—a sign significant of ten years' success in every field of truck transportation.

"Shorten the Miles to Market—Use Motor Trucks"



Five-Ton GMC with Dump Body, Owned by the Missouri Portland Cement Co., St. Louis, Mo. They Use Several Trucks of This Type for Hauling Cement. The Dump Body Eliminates Delay and Cuts Labor Costs.

cient manner, they would find that a considerable amount of the costs now listed on the debit side of the ledger could be transferred into real tangible profits.

As the use of motor trucks in the construction field increases, the necessity of a good, efficient cost system becomes apparent.



How Trucks Cut Costs

IN many cases trucks are operated day and night, two hours being allowed between ten-hour shifts to replenish the fuel supply, to inspect the trucks, and make any necessary adjustments.

By using trucks many contractors have solved the

question of labor. For aside from the truck drivers and steam shovel operators few men are employed. Since one truck with one driver does the work of several teams and several drivers, fewer drivers are employed.

This saving in pay alone is sufficient to warrant trucks; this saving plus the saving that results from the greater efficiency of trucks is sufficient to wipe out their original cost in a few months.

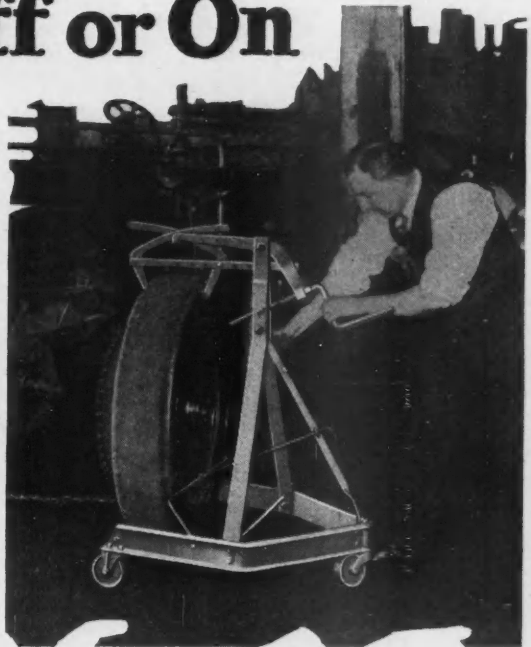
Unlike horses, trucks are not handicapped by summer heat—not handicapped by winter ice and snow. On road or off, up grade or down, thru city traffic or over roughest country road, they go in shortest time, turning loss into profit, time into money, putting the delivery and hauling system on a sound business basis.



The Masons Will Not Have to Wait Long for This Tile. This Heavy Packard Truck with Trailer Can Carry a Big Load and Get It to the Job in Fast Time.

Heavy Wheels - Off or On

One Man - One Minute



ATLAS WHEEL CRANE

For motor truck dealers and manufacturers—for fleet owners and garage men—for anyone who has to handle the heavy wheels of motor trucks. You know what a mean job it is—the tremendous weight—three or four men—crowbars and make-shift tools—two or three hours at best—risk of personal injuries and damage to bearings and brake linings. Not only that—but the earning power of the truck stands idle. The Atlas Wheel Crane brings an easier, better way and it quickly

Pays for Itself in Time and Labor Saved

The Atlas Wheel Crane does this mean job—does it with one man—does it in only a minute of time—does it without risk of injury or damage.

The grab-hooks of the crane will work under any fender and grip the steel rim of the wheel on each side. They lift just enough to suspend the wheel, so that it slips off easily when the crane is rolled back, and they hold it in exact vertical position to slip it into place again when ready.

The Atlas Wheel Crane must be and is powerfully built. Every part is made several times stronger than necessary. Except the casters, every part is forged, machine or channel steel, the strongest possible construction being used where the strain is greatest. There must be no costly failure in any part.

With this crane, the heaviest truck wheels are as easily handled as those of a Ford. It will lift a ton and will not break. The crane is adjustable to any kind or size of tire.

If you handle heavy truck wheels, an Atlas Wheel Crane will be a Big Money-saver for you.

Write at once for further information and prices on the equipment you need

**THE THOMSON
AUTO SPECIALTIES CO.**

Dept. E4. 36-38 E. Chestnut St., Columbus, Ohio



Big Five-Ton Duplex Four-Wheel-Drive Truck, Which Hauled Lumber for Medina Bending Works, Medina, Ohio, Thru Heavy Snow. It Did Not Lay Off a Day During the Winter, Despite the Bad Weather. It Also Hauled Logs from the Forest to the Mill.

Truck Hauls Lumber Thru Deep Snow

TWENTY-FIVE miles southwest of Cleveland lies the little town of Medina, Ohio. One of its chief industries is the Medina Bending Works, lumber manufacturers and specialists in manufacturing building material.

Part of their work consists of hauling the logs to their mill over a twenty to thirty-mile route in the worst kind of weather. The roads are in bad shape. When the lumber has been sawed the factory makes deliveries over a wide radius.

Scott Bennett, president of the concern, believes in motor trucks as an aid to lumber dealers. He has found them effective in his business.

"I have been able to operate trucks practically every day this winter in spite of the deep snow because of their tremendous power."

They have solved his winter transportation problems and he has also greatly enlarged his radius by making long deliveries in fast time.



Truck Does Work of Six Teams

IF you want an idea of the kind of roads W. L. Whipkey's 2-ton truck travels over near Connellsville, Pa., take the following incident as an example: The truck is heavily loaded with lumber, passing over a very rough road. It strikes a deep mud hole, the rear axle goes in up to the hub, and the front wheels, like the fore-legs of a bucking bronco, rise up about 12 inches from the ground and spin



This Three-and-a-Half Ton Stewart Truck Is Hauling the Stone Direct from the Quarry to the Job for a Buffalo Contractor. It Has a Utility Body Which Can Be Fitted for Carrying Sand and Cement by Adding Sideboards.

DUPLEX TRUCKS

B U I L T F O R B U S I N E S S



Why the Duplex Limited Is Winning Enthusiastic Approval All Over America

WITHOUT question the remarkable success of the Duplex Limited is due to the confidence that truck users all over America have in the Duplex Truck Company as builders of trucks that a business man can consider an investment in practical trucking efficiency.

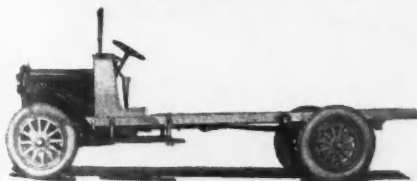
What does the steady, persistent growth of the Duplex Truck Company signify as regards this Duplex Limited?

For one thing it means that the Limited is designed and built by a company that is known to be successful—a company that is famous for building good trucks.

Medium Capacity—Two Wheel Drive—Complete Electrical Equipment—Pneumatic Tired—High Speed—it is a wonderful truck for general business hauling.

4 Cylinder enclosed type motor—water cooled—cast en bloc—Bore 4". Stroke 5 1/2". 3 Point Suspension. Pneumatic Cord tires 14 1/2" Wheel Base. Electric Lighting and Starting. Equipped with Windshield, Ammeter, Boyce Motometer, Speedometer, Electric Horn, Tools, Jacks, Rim Wrench, Front Fenders, Alemite High Pressure Lubricating System; Driver's Seat without extra charge.

Talk to the Duplex dealer in your vicinity. Find out for yourself why the Duplex Limited already is known as a very safe investment for a business man.



Why the Building Industries Have Accepted the Duplex 4-Wheel Drive as a Better Investment

WHETHER in the transportation of supplies or the difficult hauling problems of excavation work, the Duplex 4-Wheel Drive has proved its superiority in overcoming unusual conditions.

The Duplex not only makes good under spectacular conditions of heavy hauling, but it also does the everyday job of quick, dependable transportation quicker and cheaper.

It does these things first because the principles of the 4-Wheel Drive are sound and because they have been applied and consistently devel-

oped by one of the oldest and most successful truck companies in America.

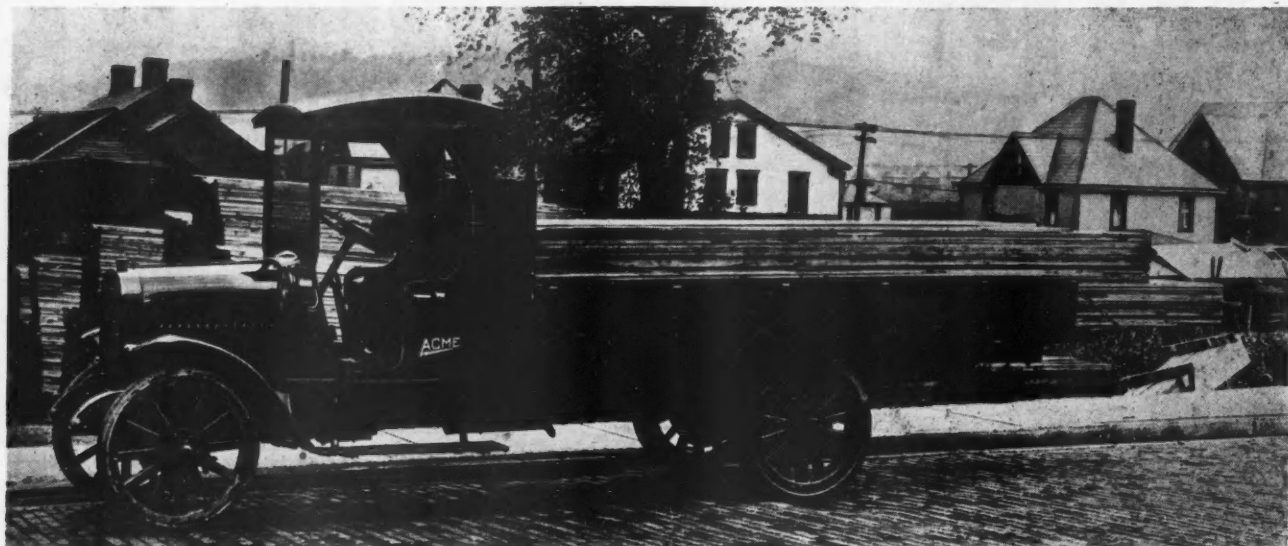
The All-Wheel pull of the Duplex Principle, the fact that the front wheels as well as the rear wheels exert energy every foot of the way, means more power and greater dependability for every form of heavy, bulky hauling.

Talk to the Duplex dealer. He will show you by facts and example rather than by argument why the building industries everywhere are coming to look on Duplex as their standard of a better hauling investment.

Duplex Truck Company

Lansing • Michigan

One of the Oldest and Most Successful Truck Companies in America



W. L. Whipkey, Contractor and Builder in Connellsville, Pa., Finds This Two-Ton Acme Takes the Place of Six Teams. He Delivers Material to a Town Twenty-Nine Miles Away in This Truck Over Roads Impassable for Teams.

around in the air.

But it is only for a moment or two. With the reserve power that is found in the truck for just such emergencies, the rear wheels hit the other side of the hole, climb out with a lurch, and the front wheels are back to terra firma again.

In describing the work his truck is doing, Mr. Whipkey says:

"As building contractors, our work comes in a bunch and must be taken care of when the time comes, or is lost. With our truck we can get out about six times as much material in a day as with a team, and during the winter months when business is dull it costs nothing to keep the truck, which is not the case in keeping a team.

"Our records show that for the year 1918 it cost much less to maintain the truck than the upkeep of a team, while there is no comparison in the service received.

"Our repair bills for the year 1918 were about

\$25.00, due mostly to accidents and not the fault of the truck.

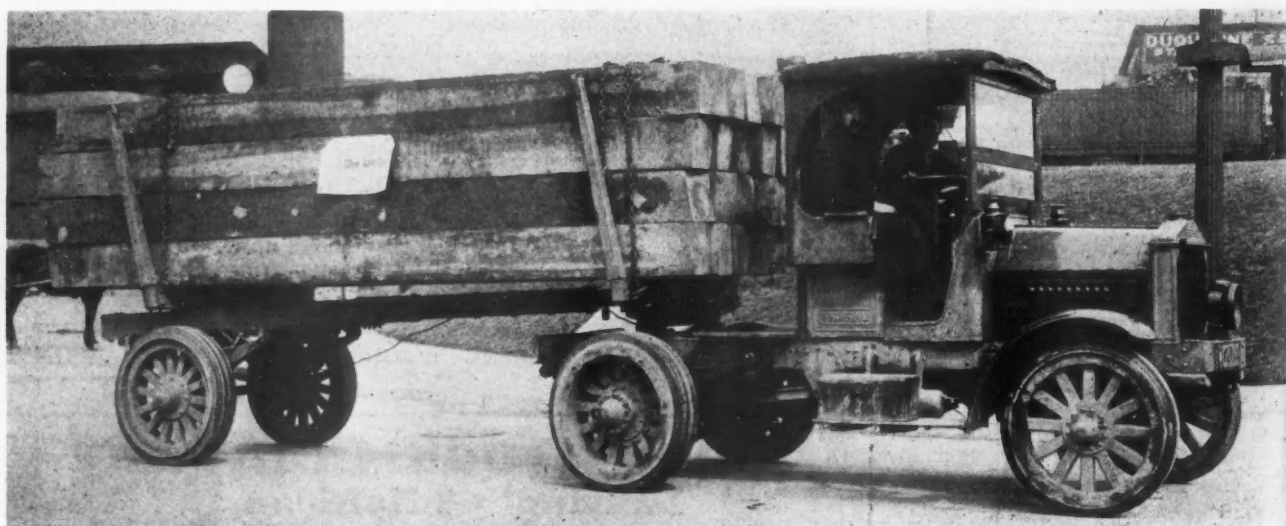
"During the war, when freight shipments were restricted, we got some very nice business by delivering building material to a point about 29 miles distant from our city, and over roads on which a team could not haul more than an empty wagon. In addition to getting a fancy price for the material, we received \$12.00 per thousand feet for delivering it, and the truck did the work, hauling almost two thousand feet at a load.

"In pulling out of ugly holes I have seen the front wheels more than 12 inches off the ground. But we came through O. K. and not a sign of any break or strain on the truck."



Trailer Fills Rush Order

IF you suddenly received a rush order for lumber and found that all your trucks were out at the time, what would you do?



Carrying a Load of Heavy Foundation Timbers. Federal Truck and Dump Trailer Is Effectively Used by the May Lumber Co., Pittsburgh, Pa. The Trailer Can Be Unloaded Quickly.



General Motors Trucks

THIS heavy duty GMC Truck went into service three years ago and at once began earning \$90 each 24 hours, with operating expense limited to the wages of two drivers and the cost of gasoline and oil.

It is still on the job and, of course, now earns more in a given time than it did three years ago, due to increased costs in materials and transportation.

It is such ability in GMC Trucks to keep on performing that accounts

for GMC popularity in all lines of business.

Such performance has built up a demand greater than the factory can supply.

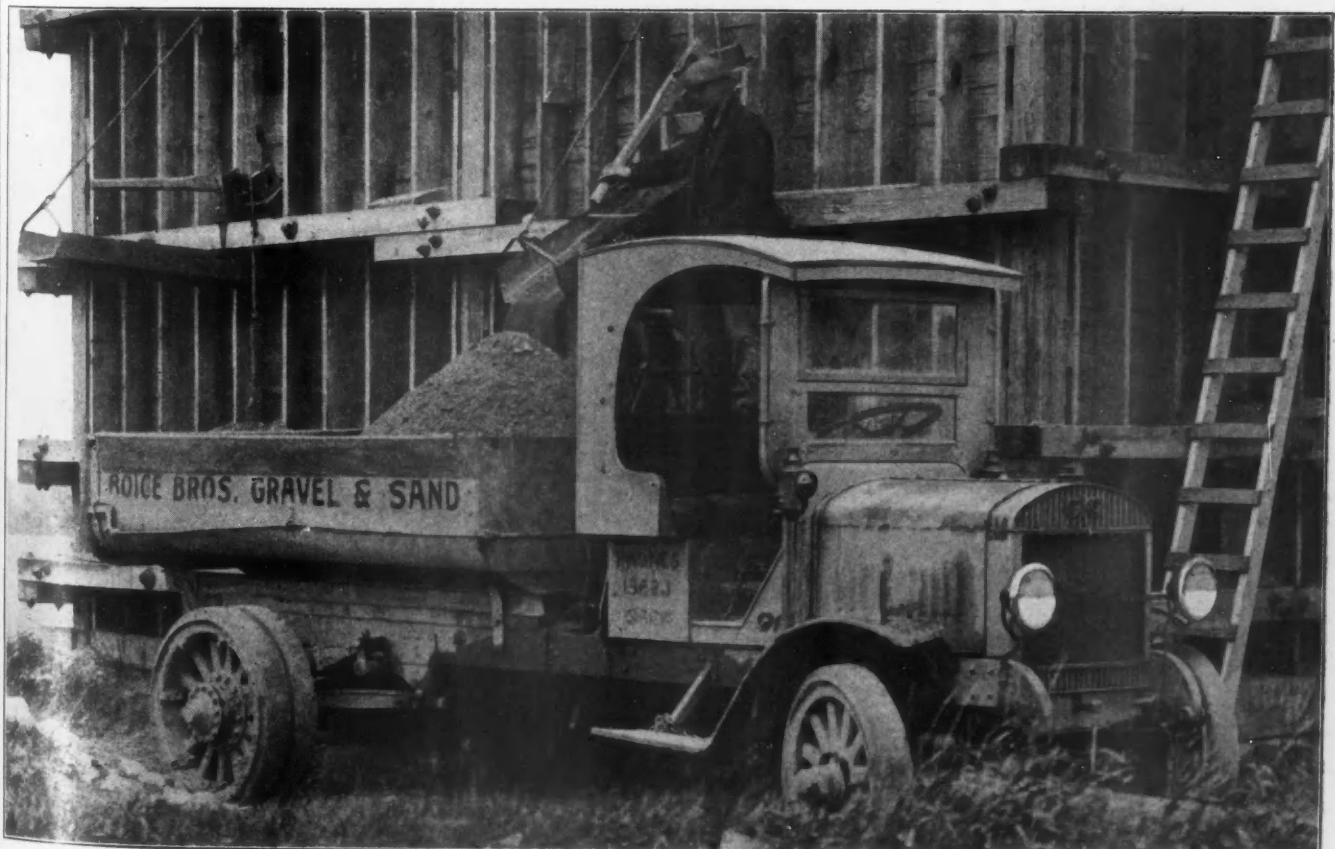
Behind this kind of truck utility is GMC quality. Quality is built in at the factory and it comes forth in the shape of long and satisfactory service.

GMC Trucks are products of the exclusive truck making unit of the General Motors Corporation, the strongest organization in the automotive industry.

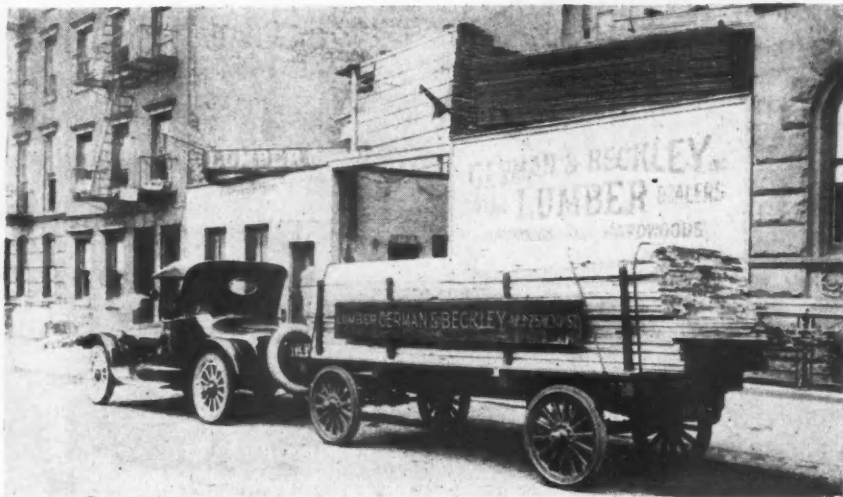
GENERAL MOTORS TRUCK COMPANY PONTIAC, MICHIGAN

Branches and distributors in principal cities

(39)



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



This Picture Shows How German & Beckley, Lumber Dealers in New York City, solved Their Transportation Problem. The Buick Roadster Is Pulling a Trailmobile with a Good-Sized Load of Lumber to an Emergency Job.

German & Beckley, Inc., lumber dealers in New York City, were confronted with this situation and found a solution.

They used a trailer and one of the roadsters with which a salesman covered his territory. A good load of lumber was loaded on the trailer, the roadster hitched on, and the order was filled promptly. It not only increased the good feeling between the lumber concern and that particular customer, but it showed the way to take care of emergency business in the future.

The trailer has become one of the features of the German & Beckley establishment. They find it an asset in many ways. It not only prevents a loss in a business as this one case showed, but by bettering service, helps materially to increase the satisfaction of all concerned and inevitably increases business.

It is an emergency vehicle as well as a heavy worker along regular lines.

THE man who believes that an honest truck should be loaded honestly; that it should not be expected to carry a constant overload of from twenty to forty per cent, will get his value out of his truck when his neighbor, an overload, is worrying about a broken axle, or a disgruntled engine.



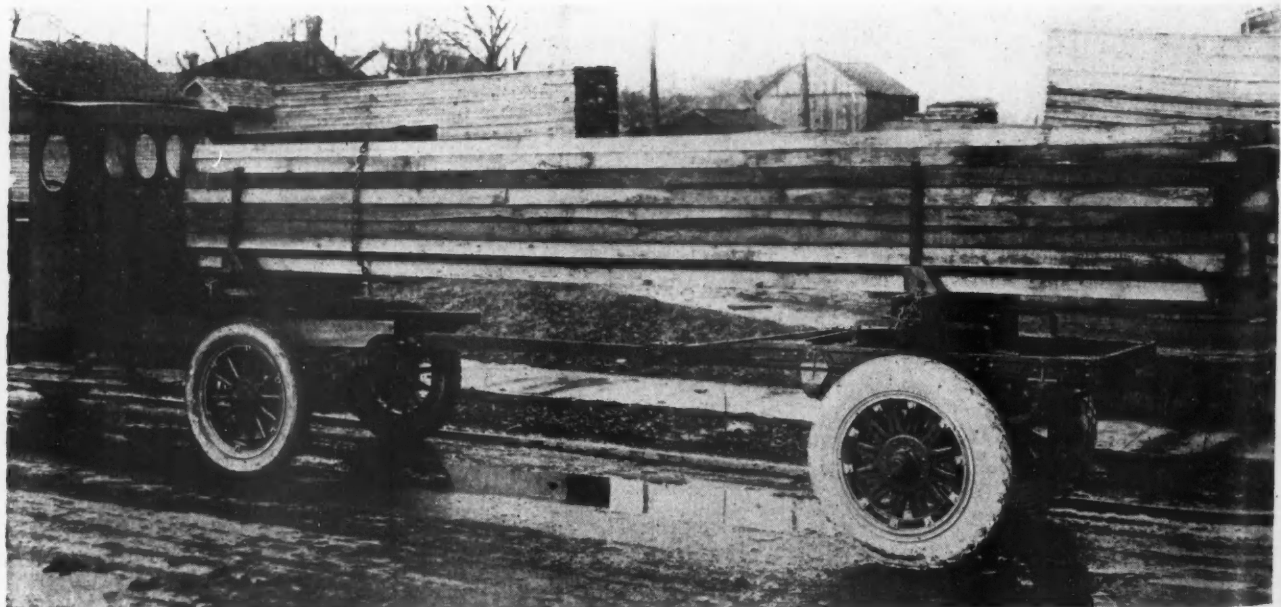
WHEN the retailer himself carries too great an overload and breaks down, he can take three months off and go to a health-resort; alas, there is no watering-place for machinery, and the overloaded truck has only one salvation, and that is to go to pieces in its early youth.



EVERY lumberman knows his loads must be large to pay profits. He also realizes that these loads are bulky, weighty, unwieldy and mixed. The horse can do the work perhaps in several trips; the truck can do it in one. And the time involved in the slow-moving team is a marked loss as against the truck's clear profit.

Delivery radius is increased, for the truck can go much longer distances, and in less time. The need of branch yards is eliminated.

Once it was that the truck's best work was done on the city's paved streets, horses were retained for hauling in the rural districts and smaller towns. Now with the extension of good roads in all communities, with the tremendous power and ability of the modern truck, the truck's field of operation is practically unlimited. One truck meets all conditions of service and does the work of several teams.



Miami Traller with Pneumatic Tires. This Picture Shows the Popularity Which That Kind of Tire Is Gaining in the Lumber Industry. This Combination Is Built for Speed, Which Will Be One of the Demands of the Builders This Season.

Jackson

FOUR WHEEL DRIVE TRUCKS

Making Heavy-Duty Truck Service More Efficient

Every difficulty encountered in heavy-duty hauling service is overcome by the Jackson Truck. This powerful hauling giant will operate through deep sand, swamp land, mudholes, over ditches, dirt piles, hills and mountains, etc.; and even under the most adverse traction conditions it will deliver the load right to the point of use. It will take your loads of stone and gravel out of the pits and dump them just where you want them.

In the Jackson Truck, power is transmitted to all four wheels, giving double the usual traction. Power, traction and strain are equalized. Equipped with all-weather coupe-cab; self-starter; patented front-wheel drive, and special easy steering device. Rides, drives and controls as easy as a passenger car.

The Jackson Four Wheel Drive Truck is ideal for use in construction work, logging, mining, oil work, long-distance rural hauling and all other heavy-duty service. Built in 3½-ton capacity. Write for specifications and particulars, or arrange with your nearest Jackson dealer for a demonstration

JACKSON MOTORS CORPORATION, Jackson, Michigan
Sales Dept. 159 Jackson Motors Bldg.



"No Hill Too Steep—No Sand Too Deep"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

ANNIVERSARY*(Continued from page 105.)*

some of our advertising appropriation.

During the last few years I have watched your constant and consistent growth with a great deal of interest, and you can rest assured that *you will continue to carry our advertising as long as I am in a position to place it with you.*

Cordially yours,
CERESIT WATERPROOFING Co.,
Frank A. Mitchell, Vice-Pres.



"We Appreciate Your Influence and the Class of Readers That Are Taking Your Paper"

Chicago, Ill., March 3, 1920.

AMERICAN BUILDER:

The fact that we have been in the AMERICAN BUILDER for the number of years that we have is an indication that we have felt that we are getting satisfactory returns from it, and that we appreciated your influence and the class of readers that were taking the paper. We wish you continued success and hope that with the improvements you are making from time to time in the make-up of your paper the field may be increased, and the influence of your paper widened.

With best wishes, we remain,
Very truly yours,
CHICAGO SPRING BUTT Co.,
Jas. Collins.



"Fortunate in Having Such a Valuable Medium"

Holland, Mich., Feb. 23, 1920.

AMERICAN BUILDER:

Your recent letter regarding the Fifteenth Anniversary of the AMERICAN



W. E. DUNN,
President, W. E. Dunn Mfg. Co.

BUILDER prompted the writer to look up the records in order to ascertain when we started advertising in your publication. We were very much surprised to find a contract dated Sept. 7, 1905.

As you doubtless know, we started at

that time with one-eighth page space, and the fact that our advertising has not only appeared in every one of your issues during the fourteen and one-half years but has been increased to page space demonstrates what we think of your magazine and the returns we have received.

It is interesting to note that the original contract reads: "Advertisement can be canceled at the end of three months if returns are not satisfactory, advertiser to be the judge." Now, after nearly fifteen years, we are glad that we did not cancel, but, on the contrary, *consider ourselves fortunate in having such a valuable medium as the AMERICAN BUILDER in which to carry our message.*

Sincerely yours,
W. E. DUNN MFG. Co.,
W. E. Dunn, President.



"Replies Received Prove Conclusively It Pays"

Chicago, Ill., Feb. 18, 1920.

AMERICAN BUILDER:

With a realization that "advertising



W. O. PHILLIPS,
Advertising Manager, Eugene Dietzgen Co.

works slowly but insures business for the future," we have consistently appeared in the AMERICAN BUILDER for a number of years.

The requests received by our various branches relative to the products featured have proved conclusively that it pays, thru your medium, to keep our name before the building industry.

With best wishes for a continuation of the success so worthily deserved by you, we are, Yours very truly,

EUGENE DIETZGEN Co.,
W. O. Phillips, Advertising Manager.



"American Builder Our Best Inquiry Producer"

Jersey City, N. J., Feb. 18, 1920.

AMERICAN BUILDER:

Without referring to our records we cannot tell just how long we have used the AMERICAN BUILDER, but we do know it has been for some time.

AMERICAN BUILDER *has always proven to be our best inquiry producing paper.* In fact, for 1919 it averaged over 50

inquiries a month. The last few months of the year the average was considerably higher than this; and for 1920 the indications are that it will far exceed the previous record, for in January alone we received 105 inquiries; so far in February, 40 inquiries.

As you know, we offer a sample of pencils, and our returns for January were nearly enough to pay the cost of the advertisement.

Very truly yours,
JOSEPH DIXON CRUCIBLE Co.,
B. H. Rowley, Adv. Dept.



"One of Best Inquiry-Producing Publications"

Salem, Ohio, Feb. 18, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER has been one of the best inquiry-producing publications in which we have carried copy. The majority of these inquiries come from small contractors, who are in a position to do us the most good in the field covered by your paper.

We believe we have been in the AMERICAN BUILDER long enough to decide that *the inquiries we have received are not merely a flash in the pan, but arrive with surprising regularity after each new issue.*

Yours very truly,
THE DEMING COMPANY,
By H. E. Stiver, Advertising Dept.



"One of Best Publications in the Building Field"

Detroit, Mich., Feb. 18, 1920.

AMERICAN BUILDER:

We have advertised in the AMERICAN BUILDER ever since the magazine was first issued and *we have always considered it one of the best publications in the building field.*

Yours very truly,
DETROIT SHOW CASE Co.,
H. L. Malott, Secretary.



Second to None in Its Field

Ashland, Ohio, March 8, 1920.

AMERICAN BUILDER:

Please accept our congratulations on

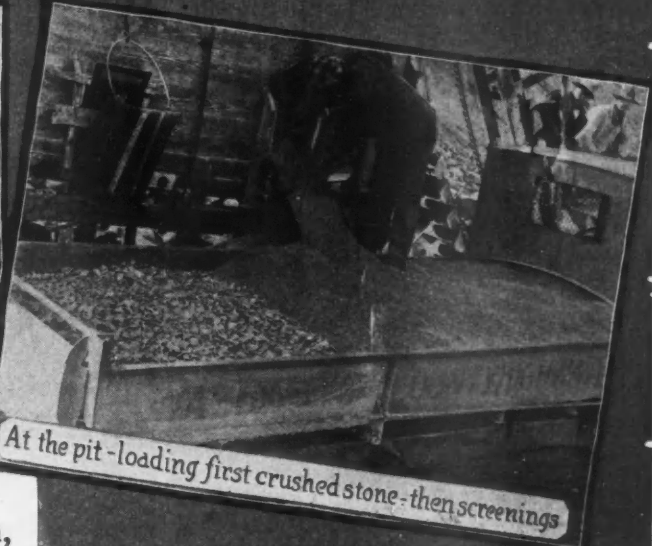


P. E. COUNTRYMAN,
President, Elite Manufacturing Co.

Building Roads in Wisconsin with Kissel Trucks



The necessary equipment in the gravel pit



At the pit - loading first crushed stone - then screenings

WASHINGTON County, Wisconsin, wanted good roads. The county commissioners, who had a nice appropriation for road maintenance, were determined to get as much road for their money as possible.

How they made use of available material, purchased necessary equipment; how they are building 14 miles of good roads with the aid of only one Kissel Truck—a "Heavy Duty" model—will prove interesting to all road builders, contractors and county commissioners.

Incidentally they developed special loading and dumping methods which saved time and labor—original features you could use to great advantage.



All set to distribute load

KISSEL TRUCKS

Performance Proof Folder Highway No. 3

It's free to contractors, county commissioners and others who have road construction, building or maintenance work planned.

Write the Kissel Contractors' and Good Roads Building Division for Kissel Truck Performance Proof Folders and other practical data.

Kissel Motor Car Co., Hartford, Wis.



Load evenly spread by the driver from his seat

this, your fifteenth, anniversary of your publication.

For a number of years we have been advertising in the AMERICAN BUILDER and the results have been all we could ask. As an advertising medium, we consider the AMERICAN BUILDER second to none in its field.

We want to thank you for your cooperation with us in the past and wish you continued success in the future.

Very truly yours,
ELITE MANUFACTURING Co.,
P. E. Countryman, President.

✦
"We Credit a Great Share of Our Success to the American Builder"

Brooklyn, Wis., March 12, 1920.

AMERICAN BUILDER:

In April, 1907, we placed our first advertisement in the AMERICAN BUILDER



F. M. CAMPION,
Treasurer, Fox Supply Co.

and have not missed an issue since that time. The AMERICAN BUILDER then was a two-year-old of the thoro-bred type, and *what we are today we credit a great share to the progressiveness and clean-cut business dealings of the AMERICAN BUILDER and its staff.*

During the thirteen years we have carried advertising space in the AMERICAN BUILDER we have gained the confidence of a large number of builders and carpenters thruout the United States and Canada and we can safely say that there is not a carpenter or builder in America who has not used or heard of the Fox Floor Scrapers and Fox Floor Scraper Knives.

Yours very truly,
FOX SUPPLY Co.,
F. M. Campion, Treasurer.

✦
"A Business Builder for Our Company"

Des Moines, Ia., Feb. 24, 1920.

AMERICAN BUILDER:

During the last five years the AMERICAN BUILDER has been the means of placing our concrete mixers in every nook and corner of the United States. Unfortunately, we are not in a position to handle export business at this time,

or we could have doubled our American business from the number of inquiries received from foreign countries.

The AMERICAN BUILDER has been a business builder for our company, and our business relations have been both pleasant and profitable. On your Fifteenth Anniversary we wish for the AMERICAN BUILDER much future success.

Yours very truly,
THE FRANK MFG. Co.,
C. H. Hickey, Manager.

✦
"We Advertise Exclusively in the American Builder"

Troy, N. Y., Feb. 18, 1920.

AMERICAN BUILDER:

For the last few years *we have advertised exclusively in the AMERICAN BUILDER and find the results most satisfactory.*

We very seldom interest ourselves in the reading pages of the magazine, but, judging from the inquiries and sales of our Transit-Level, *the AMERICAN BUILDER is read by very progressive, intelligent and honest business men.*

Wishing the AMERICAN BUILDER and its members further success and prosperity, we are,

Very sincerely yours,
GEIER & BLUHM,
James Geier, Manager.

✦
"Continued on Our Schedule"

Youngstown, Ohio, Feb. 19, 1920.

AMERICAN BUILDER:

I think that the fact we have continued the AMERICAN BUILDER on our schedule this year is a fair indication of just how we feel about your publication. Several publications were omitted this year that we have carried in the past.

With best wishes for your success, I am,

G. O. Sebree, Advertising Manager,
THE GENERAL FIREPROOFING Co.

✦
"Returns Certainly Justify Advertising in American Builder"

Chicago, Ill., Feb. 18, 1920.

AMERICAN BUILDER:

Relative to our experience with the AMERICAN BUILDER and our opinion of its worth as an advertising medium, there is no better testimonial than the fact that *we have been a consistent advertiser; that we have increased our advertising and that we have appeared in every issue, our returns certainly justifying this action on our part.*

Yours very truly,
THE GILBERT & BENNETT MFG. Co.,
By F. M. Lambin.

"We Have Obtained Excellent Results"

Greenfield, Mass., Feb. 27, 1920.

AMERICAN BUILDER:

We have advertised in the AMERICAN BUILDER for a number of years past, advertising consistently with fairly large space. *The results we have obtained have fully justified our expenditures and we feel that altho the direct inquiries have not bulked very heavily, we have obtained excellent results and are impressing on the contractor and builder the value to him of high-grade, sturdy tools that will last him practically a lifetime.*

Yours very truly,
GOODELL-PRATT COMPANY,
M. C. Overing, Advertising Mgr.

✦
"American Builder Is Standard for Judging Advertising Mediums"

Chicago, Feb. 16, 1920.

AMERICAN BUILDER:

It is the writer's recollection that we advertised in the first issue of the



GEORGE HESS,
President, Hess Warming & Ventilating Co.

AMERICAN BUILDER many years ago, and we believe we have been in every issue since. *The BUILDER is our standard for judging other papers of its kind, tho it seems at times that this standard is rather severe. We have always secured results, and that is what we are paying for.*

HESS WARMING & VENTILATING Co.,
Per George H. Hess, President.

✦
"Advertised in the American Builder Many Years"

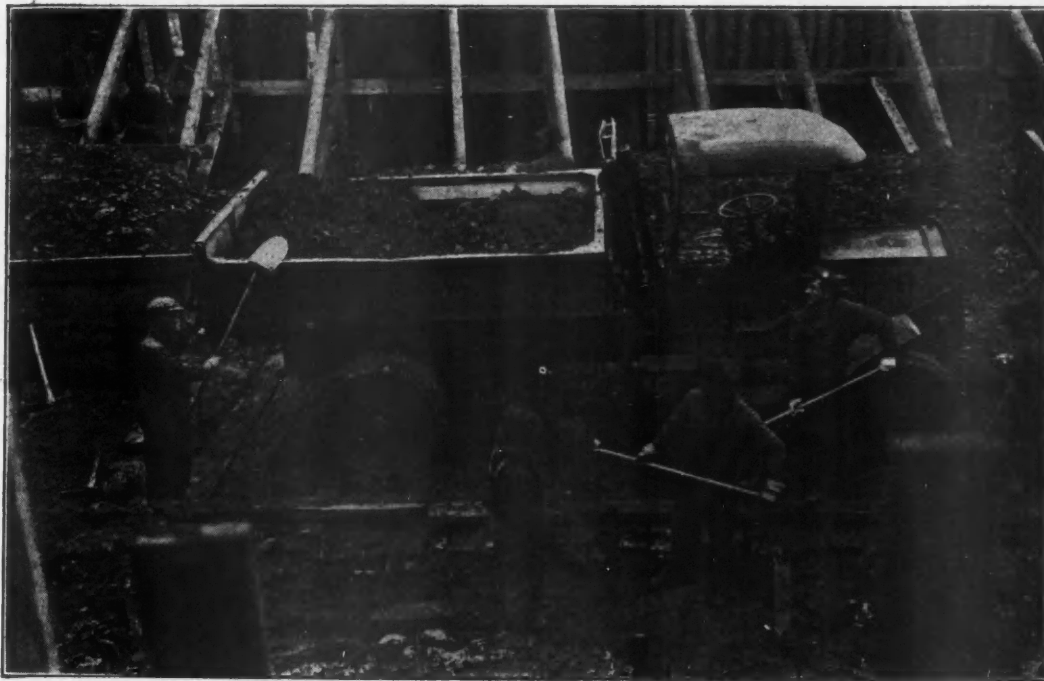
Waterloo, Ia., Feb. 17, 1920

AMERICAN BUILDER:

We wish to compliment you on the February issue of the AMERICAN BUILDER.

Herrick Refrigerators have been advertised in the AMERICAN BUILDER for many years. We hope that the results may continue satisfactory to us.

Cordially yours,
HERRICK REFRIGERATOR & C. S. Co.,
H. G. Northey, Secretary.



Cleaning up at the bottom of an excavation. Because of its ability to deliver 86 per cent of its power to the rear wheels on low gear, and its dispatch in handling big loads, the Packard truck is especially profitable to the contractor on rush jobs.

How Can the Contractor Be Sure of a Fair Return

EVERY contractor knows that transportation is a big factor today in determining the rate of progress on a contract.

With no storage space available on the average job, he can go ahead only as fast as his truck drivers can haul materials. Often, however, the driver is handicapped more than is realized by the truck he is given to work with.

The following National Standard Truck Cost System facts on the performance of over 1700 Packard Trucks in 1919 have a *vital significance* for the truck user.

An average *saving* in

gasoline of 10 per cent—due to greater efficiency in operation with the aid of the National Standard System.

The National Standard System used in connection with Packard Trucks has shown it possible to reduce cost per ton mile.

Truck owners who have used the System for a year or more, and have compared the Packard with other trucks, are standardizing on Packard.

* * *

The driver finds the Packard easier all around to handle.

Less vibration; because of the *smooth-*

running Packard engine, the construction of the worm drive, and the placing of 85 to 95 per cent of the live load on the rear axle.

Easier handling on the hills, owing to Packard high tractive force on the road; and four-speed transmission graded up by regular steps.

Easier to keep clean. Engine enclosed, and lubricated automatically. Fly wheel and clutch shut off from dust and mud.

The contractor who chooses his trucks from his driver's experience will gain both in time saved on the job and in a greater margin of profit.

“Ask the Man Who Owns One”

PACKARD MOTOR CAR COMPANY, Detroit

"Has Contributed in no Small Way to Our Success"

Chicago, Ill., Feb. 18, 1920.

AMERICAN BUILDER:

The best proof you could possibly have of our belief in the value of the AMERICAN BUILDER is our continued use of its pages in advertising our well-known Flex-a-tile Roof Coverings. In fact, *your magazine has contributed in no small way to our success* in marketing Flex-a-tile wherever dependable roof coverings are considered.

Please accept our sincere good wishes on your Fifteenth Anniversary. We take this opportunity to wish you continued success and hope you'll live to one hundred.

Yours very truly,
HEPPES ROOFING DIVISION,
The Richardson Company,
H. L. Moutaw, Adv. Mgr.

"Leads All Trade Magazines in Results"

St. Louis, Mo., Feb. 18, 1920.

AMERICAN BUILDER:

The number of replies we have received from our advertising in the AMERICAN BUILDER has increased from month to month, and now *it is leading all the trade journals in which we carry advertising.*

We might add that these inquiries come in all during the month about evenly spaced. This indicates to us that *the AMERICAN BUILDER is read thru by subscribers, and not merely looked at when it arrives and cast aside.* And we do not wonder at this, from the class of articles as well as the advertising which you carry.

HAYNES-LANGENBERG MFG. Co.,
J. J. Walsh, Sales Manager.

Cold Facts Show American Builder Advertising Pays

Cadillac, Mich., March 5, 1920.

AMERICAN BUILDER:

We are certainly pleased to learn that you will celebrate your Fifteenth Anni-



S. L. EKHOLM,
Secretary, Helm Brick Machine Co.

versary in April and think it is appropriate for us to remind you of the fact that we have been advertising in your medium since 1908. It is the policy of this company that no advertising will be continued unless it pays for itself, so the fact that we will soon have completed the eleventh year of advertising in your medium must assure you that we think very highly of the AMERICAN BUILDER as an advertising medium for our line of business.

Of course, it is unnecessary for us to tell you that we keep a careful track of all inquiries received from our advertisements appearing in the AMERICAN BUILDER, so we can tell at all times just how many inquiries we have received and what the sales have been. Therefore, when we say we are pleased with the AMERICAN BUILDER we have the cold facts to back up that statement.

We take this occasion to wish you continued success in your work and feel fully confident that when you celebrate your twenty-fifth anniversary we will still be advertising in the AMERICAN BUILDER. Very truly yours,
THE HELM BRICK MACHINE COMPANY,
S. L. Ekholm, Secretary.

"More Inquiries and Orders Than From Any Other Building Paper"

Leonia, N. J., Feb. 14, 1920.

AMERICAN BUILDER:

We have been using the AMERICAN BUILDER for the past six or seven years, and we wish to say that in this time *you have brought us more inquiries and more orders than any other building publication that we have used, and we have used quite a number.* You will see by the letterhead that our goods have been distributed widely thruout the United States, and this is due in a large measure to the excellent service of the AMERICAN BUILDER.

HIGHWOOD DUMBWAITER Co.

"Read by the Best Contractors and Builders in the United States"

Holland, Mich., Feb. 17, 1920.

AMERICAN BUILDER:

Your publication has become so useful in the building field that we want to offer you our heartiest congratulations. It seems to require occasions like anniversaries to make the development of business connections stand out in relief, and we find it refreshing just now, on your Fifteenth Anniversary, to consider the history of our connection with you.

We know that our advertisements in the AMERICAN BUILDER are being read by the best contractors and builders in the United States, because we find that

inquiries lead us to men who are doing everything that is humanly possible to build their houses into homes—into high-grade homes that all America is proud of. It is a delight to deal with men that are so active, so intelligent and so everlastingly following that ideal—Service to the world.

I know, gentlemen, that you are very happy, knowing, as you must, that you are doing your good bit for the world's progress. We wish you and your patrons the best of success.

Sincerely yours,
HOLLAND FURNACE Co.,
C. D. Karr, Advertising Manager.

"Returns Have Been Satisfactory"

Scranton, Pa., Feb. 19, 1920.

AMERICAN BUILDER:

The policy of the Advertising Department of the International Correspondence Schools probably is different from that of a majority of advertisers using your columns. All of our copy is placed on a direct-return basis. When a medium does not deliver its quota of inquiries and sales, it is dropped from our list. The mere fact, then, that we have carried AMERICAN BUILDER so long is sufficient evidence that the returns have been satisfactory. There has been a notable increase in returns during the past few months.

Congratulating you on the occasion of your Fifteenth Anniversary and wishing you a full measure of success in the years to come. I am,

Very truly yours,
INTERNATIONAL CORRESPONDENCE SCHOOLS,
Paul V. Barrett, Asst. Adv. Mgr.

"Appeals to Most Progressive Class of Builders"

Niles, Mich., Feb. 17, 1920.

AMERICAN BUILDER:

During the ten years we have used your publication continuously as an advertising medium, it has been a pleasure to note the progressive spirit back of the AMERICAN BUILDER. The virility of

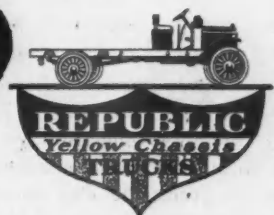


F. J. PLYM,
President, Kawneer Manufacturing Co.

What is the net experience of more than 60,000 users of Republic Trucks? Simply this:—The Republic stands up better under the hardest kind of hauling. Owners say their experience shows that Republic *performance* is unequalled. Their cost sheets prove a greater *ruggedness* and *economy*. That is why they add more Republic Trucks as their hauling needs increase. That is why the Company, in seven years, has built and sold more than 60,000 Republic Trucks.



REPUBLIC TRUCKS



Republic Motor Truck Co., Inc., 953 Michigan Avenue, Alma, Michigan

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

the editorial matter has always been a predominating feature. We have felt that the AMERICAN BUILDER should appeal to the most progressive class of builders and give them a monthly text book of exceptional value.

It may interest you to know also that *we have always felt that our advertising copy was in good company when it appeared in the AMERICAN BUILDER.* Your advertising patrons seem to have caught the progressive spirit of the editorial matter. Your advertising columns, in our opinion, have been just as "newsy" and instructive as your editorial columns.

Upon the occasion of your Fifteenth Birthday, we take pleasure in presenting our congratulations and hope that your next anniversary will find you progressing with proportionate amount of success.

Yours very truly,
KAWNEER MANUFACTURING Co.,
R. G. Tobine, Advertising Manager.



"The Fast Express Train in the Building Fields"

Owatonna, Minn., Feb. 18, 1920.

AMERICAN BUILDER:

The first advertisement which told the contractors and builders of the United States about the King Aerator and the King Ventilating System was used in the AMERICAN BUILDER about five years ago.

It is a peculiar coincidence that this first advertisement telling contractors



L. KLIMA,
General Manager, King Ventilating Co.

about steel ventilators and guaranteed ventilating systems should have been a four-colored, four-page advertisement, and every reader will well remember the story told in those four pages.

To get to the contractors and builders of the United States using the AMERICAN BUILDER as compared with any other publication of a similar nature is like going from one city to another on a fast express train as compared with walking.

You may be interested to know that

we get as many orders from farmers thru the AMERICAN BUILDER as we do from contractors and builders.

This is no doubt due to the fact that the contractor carries the AMERICAN BUILDER in his tool chest and tells his clients about the good things that are advertised in it.

AMERICAN BUILDER has been one of the publications that have helped to make the King Ventilating Co. the largest concern in the world devoting its entire time to the planning and manufacture of ventilating systems for farm buildings and creameries exclusively and we want to take this occasion to thank you for the excellent co-operation you have given us.

We predict greater success for the AMERICAN BUILDER.

Yours truly,
KING VENTILATING COMPANY,
By L. Klima, General Manager.



"Your Subscribers Are the Best Buyers in Building Field"

Jackson, Mich., Feb. 17, 1920.

AMERICAN BUILDER:

We have been advertising our products in the AMERICAN BUILDER since 1905.

During the first years a large number of the readers of the American Carpenter & Builder bought our Coltrin Continuous Mixers and assisted by their business and their boosting in building the foundation of our present large business.

In later years, we have met their needs by building Knickerbocker Batch Mixers in three, five, seven and fourteen cu. ft. mixed materials capacities, Mortar Mixers, Portable Saw Rigs, Hoists and pumps. These your readers continue to buy and boost.

What we think of the AMERICAN BUILDER as an advertising medium can best be answered by calling attention to the fact that our advertising has appeared in about all your issues since 1905.

You seem to be so close to your readers that our advertising in your publication is a personal introduction to your thousands of friends and enables us, you might say, to shake hands, get acquainted and make friends with the best buyers in the building field.

We take this opportunity to thank you and the readers of the AMERICAN BUILDER for your assistance in making Knickerbocker equipment so well and favorably known as it is today.

With best wishes for your continued success, we are,

Yours very truly,
THE KNICKERBOCKER COMPANY,
By W. W. DuPre, Sales Manager.

"Has Given Us the Very Best of Satisfaction"

Council Bluffs, Iowa, March 3, 1920.
AMERICAN BUILDER:

We are very glad to say that we have found the AMERICAN BUILDER first class in every respect. We have received many inquiries from contractors and builders who want elevators, dumb-waiters, etc.

Thanking you for past favors, we remain,

Very truly yours,
KIMBALL BROS. Co.,



"American Builder Dominates the Building Field"

Hartford, Wis., Feb. 27, 1920.

AMERICAN BUILDER:

I think the strongest thing we, as an



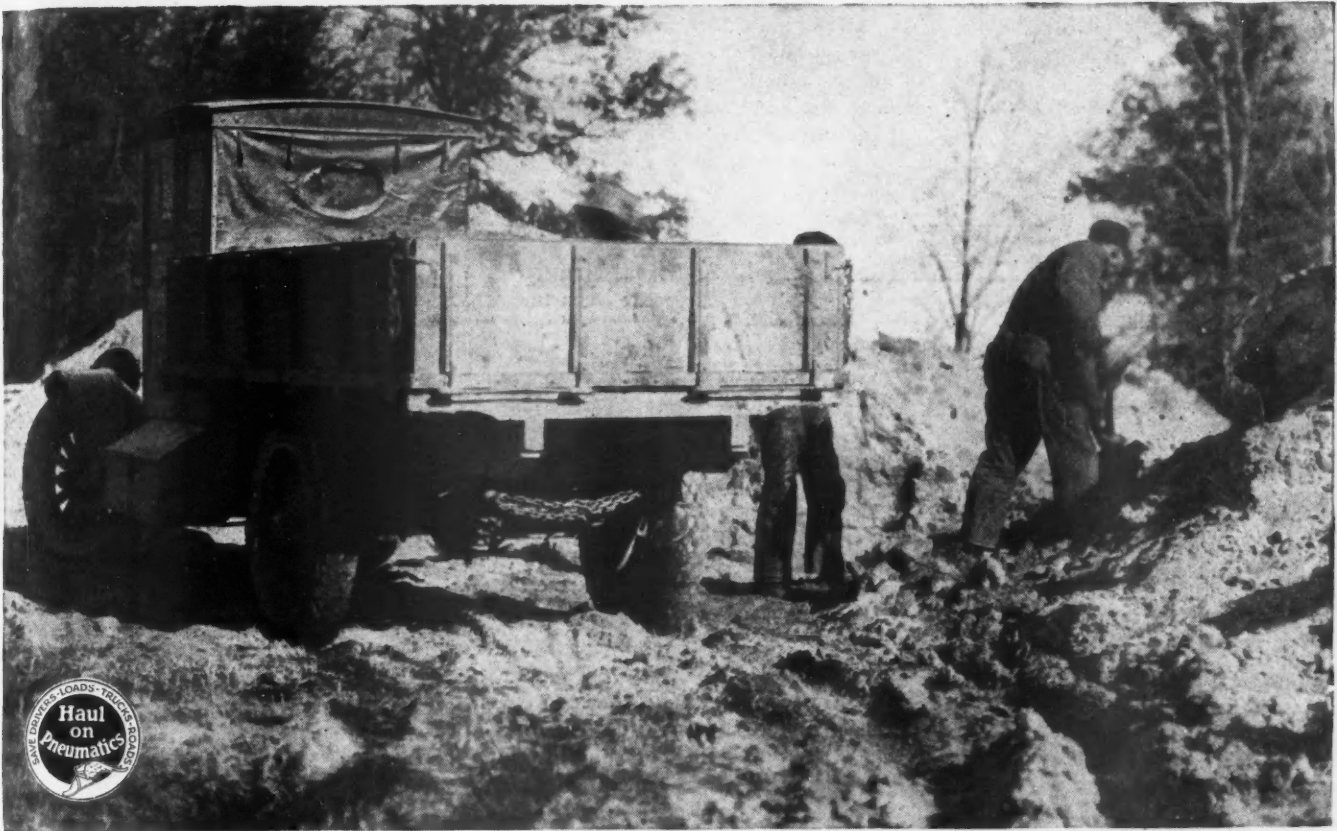
RALPH KAYE,
Advertising Manager, Kissel Motor Car Co.

advertiser, can say about the AMERICAN BUILDER is that we have used it continuously since 1912 and we have always found it a good paying medium for such a high grade product as Kissel trucks.

Selecting the medium is one of the biggest problems of the advertiser. There are many things that must be taken into consideration—the class of circulation—its editorial columns—and the articles that appeal to its readers—its circulation methods and general make-up of the publication.

All of these factors were considered by us when we first entered the columns of the AMERICAN BUILDER and each year when we made up a new list these factors are again gone over, and the fact that we have never missed an issue of the AMERICAN BUILDER since 1912 shows that in our minds it is a publication worthy of our patronage.

Advertising today is a cold-blooded proposition and it is only those publications that "have the goods" that secure the best kind of advertisers, and in the field covered by the AMERICAN BUILDER we have found that it apparently dominates that field, and as such we will con-



Copyright 1920, by The Goodyear Tire & Rubber Co.

Only Trucks on Pneumatics Can Do This Hauling

"Pneumatic tires enable us to use a motor truck—otherwise only teams could haul our steel girders and supplies to bridge construction over soft fields. Your Goodyear Cords save truck, time, labor—enable us to do work otherwise impossible."—O. E. Nichols, Superintendent of Construction, Rochester Bridge Company, Rochester, Indiana

PRODUCING records that equal and frequently exceed those indicated above is becoming the regular exploit of Goodyear Cord Tires on trucks.

In construction work particularly, where hard roads are rare and soft roads predominate, these tires have proved able in giving traction.

They have proved equally able in lowering truck repair costs, in permitting trucks to maintain uniform speeds without injury.

And in another essential quality, that of long wear, the sturdy correctness of Goodyear Cord construction protects our good name.

Users invariably find that their trucks on Goodyear Pneumatics do more hauling, do it better, do it cheaper, than when on solid tires.

Additional information indicating the economies and results secured with these tires can be obtained by writing to The Goodyear Tire & Rubber Co., at Akron, Ohio.

GOODYEAR

CORD TIRES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

tinue to use it indefinitely.

Very truly yours,
KISSEL MOTOR CAR Co.,
Ralph Kaye, Advertising & Pub. Mgr.



"Our Opinion of the American Builder as an Advertising Medium Is Very High"

Ambler, Pa., Feb. 18, 1920.

AMERICAN BUILDER:

The fact that our appropriation has included the AMERICAN BUILDER repeatedly shows that *our opinion of the AMERICAN BUILDER as an advertising medium is very high.*

Yours respectfully,
KEASBEY & MATTISON Co.,
Maurice J. Hoover, Adv. Mgr.



"Good Medium and Well-Edited Magazine"

Hoboken, N. J., March 2, 1920.

AMERICAN BUILDER:

Regarding our experience with the AMERICAN BUILDER as an advertising medium, we take pleasure in stating that *we find it a good medium for our purposes, and an extremely well-edited paper.*

We congratulate you on your Fifteenth Anniversary and wish you many more years of unqualified success.

Very truly yours,
KEUFFEL & ESSER Co.,
W. G. Keuffel, President.



"We Are Getting Good Results"

Kewanee, Ill., Feb. 26, 1920.

AMERICAN BUILDER:

So far as my short experience in this line of business extends, I think very highly of the AMERICAN BUILDER as an advertising medium. *We have been getting some good results from our advertising, particularly from contractors.*

Very truly yours,
KEWANEE MFG. Co. OF ILLINOIS,
R. H. Hayward, Manager.



"Valuable Magazine for Manufacturers of Contractors' Equipment"

Lansing, Mich., Feb. 17, 1920.

AMERICAN BUILDER:

It gives us pleasure to say that we consider the AMERICAN BUILDER *a very valuable magazine and one in which every manufacturer of contractors' equipment would be wise in advertising.* We might advise that it has brought to us the best results of any magazine advertising we carry.

We assure you that we are interested in the success and welfare of the

AMERICAN BUILDER and, if at any time you consider it advantageous to refer to us any manufacturer who is considering your magazine as an advertising medium, do not hesitate to do so, as we shall be glad, indeed, to recommend it.

Yours very truly,
LANSING COMPANY,
F. E. Anderson, Manager,
Concrete Machinery Department.



"American Builder Our Leading Sales Producer"

LaCrosse, Wis., March 4, 1920.

AMERICAN BUILDER:

We consider the AMERICAN BUILDER the leader in the sales of our Whirlwind Mixer. From an editorial standpoint, the AMERICAN BUILDER is a clean cut building paper, full of reliable information and covers the building field from A to Z. We have used the AMERICAN BUILDER for our advertising for a number of years and we assure you that we are well pleased with the results we have obtained.

Yours very truly,
THE LITTLE WHIRLWIND
MIXER Co.,
By J. H. Brabant, Manager.



"American Builder a High Class Building Paper"

Fairfield, Iowa, Feb. 17, 1920.

AMERICAN BUILDER:

As you know we have been placing Loudon advertising in the AMERICAN BUILDER for a good many years. The fact that we have continued the AMERICAN BUILDER on our schedule from year to year and have increased the size of the advertising from time to time surely proves that we have been well satisfied with your publication. *We consider it*



WILLIAM LOUDON,
President, Loudon Machinery Co.

a high-class building paper, and our hope is that it will continue to progress in the future as it has in the past.

Very truly yours,
THE LOUDON MACHINERY Co.,
By William Loudon.

"Read by Wideawake and Aggressive Contractors"

Mason City, Ia., Feb. 27, 1920.

AMERICAN BUILDER:

It gives us great pleasure to attest to the splendid results we have always obtained thru our advertising in the AMERICAN BUILDER.

There is no doubt but what you publish one of the very best mediums for disseminating new and practical building ideas.

In our opinion, *your circulation embraces the most wide-awake and aggressive contractors,* and any article that has real merit will attract attention if it is advertised in it.

Cordially yours,
MASON CITY BRICK & TILE Co.,
H. B. Keeler, Advertising Mgr.



"Brings Splendid Returns on Our Investment"

Pontiac, Ill., March 2, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER has been numbered among our advertising me-



WILLIAM ROCKE,
Secretary and Treasurer, Meadows Mfg. Co.

diams for several years, and *we have always received splendid returns on our investment in this publication.* The best proof of our satisfaction with the AMERICAN BUILDER is the fact that we have nearly doubled the advertising we used in 1919 in the 1920 issues of the AMERICAN BUILDER.

Yours very truly,
THE MEADOWS MANUFACTURING Co.,
Wm. Rocke, Secretary and Treasurer.



"Best Advertising Medium We Have Used"

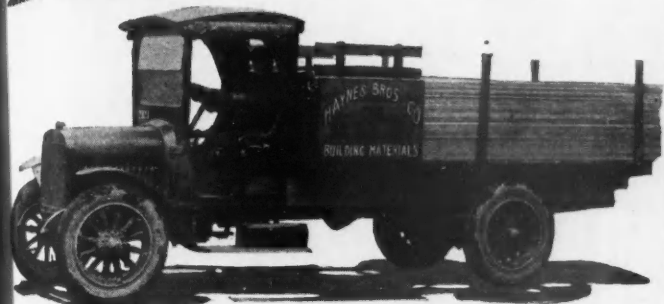
New York City, Feb. 19, 1920.

AMERICAN BUILDER:

We have advertised in the AMERICAN BUILDER during the last eight years continuously and can say that *the AMERICAN BUILDER is the best advertising medium we have used.*

Your organization, from the Eastern representative, Mr. Wolfrom, to the president, Mr. Radford, is the most efficient of its kind we know of.

ACME



Proved Construction Wins for Acme

The one-ton Acme truck owned by the Haynes Bros. Co., of Cadillac, Mich., shown above, is only one of the hundreds of Acmes in service in the building and contracting field. And every Acme in this work performs only as an Acme can. A 2-ton Acme owned by H. R. Masters, New Kensington, Pa., has been in service over 27 months, a total of 35,100 miles, at a repair cost of only \$6; a 2-ton Acme owned by Troutman & Christman, Sharon, Pa., has been in service over 23 months with a total repair cost of only \$42; another 2-ton Acme owned by A. D. Shaffer, Windber, Pa., was operated one year without any repairs beyond the changing of a spark plug.

Acme proved construction is your assurance of the highest type of performance even in the face of the heavy work trucks in this service are called on to do. It means that only the industry's best units, carefully selected and assembled, have been adopted by Acme engineers. It means that every model of Acme is correct in design and balance, so as to give the maximum of service at the minimum of cost.

We specialize in bodies, as well, enabling us to deliver completed trucks ready and able to perform your hauling work better than any other truck you know of. We have the proofs—write for our book, "Pointers to Profits."

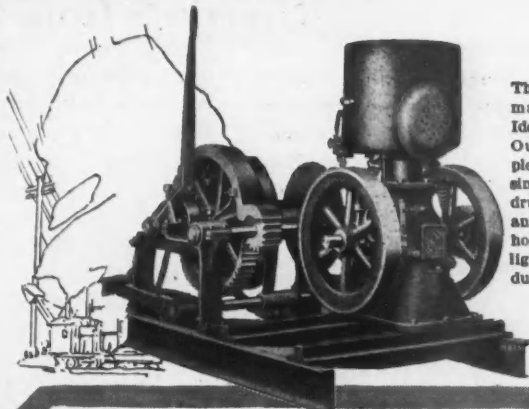
Acme Motor Truck Company

201 Mitchell St. Cadillac, Mich.

The Seal of Dependable Performance



Trade Mark Registered Inter-Nationally



This is one of the many types of Ideal Hoisting Outfits. Complete line includes single and double drum, one way and reversible hoists for both light and heavy duty.

Master of the Hardest Jobs

Ideal Engines have won an enviable reputation for standing up under work that proves too difficult for ordinary power.

And there is nothing at all mysterious about this ability. It is merely due to their rugged construction, extra power and simple design. Every feature embodied in their design is of proven dependability. Strength is placed where strength counts, and, best of all, they are dirt-proof and frost-proof. The dustiest, dirtiest jobs do not hinder their performance.

Complete line of hoists, pumps, excavating outfits, etc.

The complete line of Ideal Equipment includes practically every kind and type of labor-saving equipment that the contractor needs.

Hoists of various types and capacities; suction pumps, high pressure pumps, triplex pumps; air compressors, etc., are supplied as unit plants with Ideal Power.

Write and tell us your requirements and we will gladly send literature and quote prices.

IDEAL ENGINE COMPANY

R. E. OLDS, *Chairman*

630 E. Kalamazoo St.

Lansing, Mich.

DISTRIBUTORS

Boston
Cleveland

New York
Chicago
Omaha

Philadelphia
Minneapolis
Atlanta

Pittsburgh
Kansas City

IDEAL POWER



Every advertising man who enters our office is always informed that the *AMERICAN BUILDER* stands head and shoulders above all other building papers, so far as we are concerned. We are staying with you because you are rendering us real service.

Very truly yours,

MASTER RULE MFG. CO., INC.

By C. M. Nicholson, Pres.



"Productive of Results for Us"

Springfield, Mass., Feb. 4, 1920.

AMERICAN BUILDER:

The *AMERICAN BUILDER* has been as productive of results for us as any publication we have used.

MARTIN ROCKING FIFTH WHEEL CO.,

By C. H. Martin, President.



"Advertising in American Builder Most Profitable"

Chicago, Ill., March 2, 1920.

AMERICAN BUILDER:

When selecting the *AMERICAN BUILDER* as one of our advertising mediums we had no definite means of foretelling the results. But now that we are in a position to talk of the past we consider it a duty and a pleasure to say a few words regarding this advertising.

The co-operation and service which you have extended enabled us to make our advertising in the *AMERICAN BUILDER* most profitable and the benefits derived have far exceeded our expectations. We hope to be with you for a good many years to come, thereby availing ourselves of a sure medium to a still greater success.

Yours very truly,

MIDLAND TERRA COTTA Co.,

M. Mendijs, President.



"Certainly Brings Results"

Milwaukee, Wis., Feb. 7, 1920.

AMERICAN BUILDER:

We want to congratulate you on your phenomenal growth. We have advertised in the *AMERICAN BUILDER* for a number of years and certainly got results. The editorial columns are full of interest to contractors and builders, and the result cannot help but be advantageous to the advertiser.

Wishing you the greatest success and prosperity, we are,

Yours very truly,

MILWAUKEE CORRUGATING Co.,

Charles L. Atwood, Adv. Mgr.



"Delivers the Goods"

Cincinnati, Ohio, Feb. 18, 1920.

AMERICAN BUILDER:

In sending our congratulations on

your Fifteenth Anniversary, we feel that we are not only congratulating you but also ourselves, as our advertising has been in the *AMERICAN BUILDER* during that time.

The very fact that we have continued with you is the best evidence that the goods we sell have merit. There is nothing that builds character and confidence like time and any honest minded advertiser or subscriber who contemplates buying our wares should feel that the *AMERICAN BUILDER* and the Miller Lock Mortiser deliver the goods.

With best wishes, we remain,

Yours very truly,

A. W. MILLER MFG. Co.,

By Thomas Kennedy.



"Logical and Best Medium to Reach Contractors and Builders"

Huntington, Ind., Feb. 20, 1920.

AMERICAN BUILDER:

As manufacturers of the Majestic coal



W. D. REDRUP.

Vice-President and Sales Manager, The Majestic Co.

chutes and other building specialties, which are used thruout the entire United States, we have used the *AMERICAN BUILDER* for a number of years as being the logical and best medium for telling the contractor and builder about our products.

Your activity in recent years among the line yard lumber dealers, who are dealing more and more in builders' supplies, makes your publication still more valuable from our standpoint.

Very truly yours,

THE MAJESTIC COMPANY,

By W. D. Redrup, Vice-president.



"Read and Appreciated by the Building Industry"

Milwaukee, Wis., Feb. 16, 1920.

AMERICAN BUILDER:

We are very well satisfied with the results obtained from our advertising in the *AMERICAN BUILDER*. The inquiries received as a result of our advertising indicate that the *AMERICAN BUILDER*

is read and appreciated by members of the building industry.

Yours very truly,

L. J. MUELLER FURNACE Co.,

W. J. Maxwell,

Manager of Sales Promotion.



"Best of Anything We Use as an Advertising Medium"

Rochester, N. Y., Feb. 19, 1920.

AMERICAN BUILDER:

We consider that the *AMERICAN BUILDER* and one other are for the best of anything we use as an advertising medium. It seems to reach the mechanic and users of the tools and it has brought us a lot of sales, besides forcing the hardware people who do not like to handle high grade tools, to order our product, as our goods do a lot of advertising for us.

Very truly yours,

MACK & COMPANY.

By Wm. P. Clark.



"Use American Builder Year in and Year Out"

Waukegan, Ill., Feb. 20, 1920.

AMERICAN BUILDER:

It gives us very great pleasure to state that we have for many years used as an advertising medium your publication, the *AMERICAN BUILDER*.

The fact that we have used it year in and year out speaks volumes for what we think of the *AMERICAN BUILDER* as an advertising medium to reach the building field.

May we take this opportunity to tender our hearty congratulations on your Fifteenth Anniversary and to wish you continued success?

With best wishes to your staff, we are,

Very truly yours,

FRANKLYN R. MULLER & Co.

By Wm. Smyth.



"Inquiries Are Numerous"

Flemington, N. J., Feb. 18, 1920.

AMERICAN BUILDER:

We have used the *AMERICAN BUILDER* for too short a time to get any real idea of its value; but we do find, however, that we have numerous inquiries from the ads that have so far appeared.

Yours truly,

MALLORY MANUFACTURING Co.,

George R. Parker, Treas.



"Results Have Been Very Gratifying"

Chicago, Ill., Feb. 19, 1920.

AMERICAN BUILDER:

The *AMERICAN BUILDER* has been the means of our telling a large number of

Reduce Hauling Costs by Using Trailers



MIAMI TRAILERS will cut your hauling costs squarely in two. The illustration shows truck with two-ton trailer hauling over four tons of lumber—a load double the capacity of the truck alone—and the operating expense is increased by only about ten per cent.

Miami Trailers are the result of eight years successful manufacturing experience. They are built to last. In building Miami Trailers to meet the most exacting requirements, we have developed many exclusive features which make the Miami Trailer over strength in every vital point. The Miami hitch is simple and powerful, and so flexible that the trailer can be turned to a 45-degree angle in either direction without binding. Miami Trailers for lumber service are built in one, two, three and six tons capacity.

WRITE FOR FURTHER INFORMATION, PRICES AND NAME OF NEAREST DEALER

THE MIAMI TRAILER COMPANY, Box GB-4, Troy, Ohio, U. S. A.

Miami
TROY, OHIO, U.S.A.
Trailers

WILLIS SKYLIGHTS

GIVE PERFECT LIGHT AND VENTILATION

and are so constructed that the largest possible glass area is obtained.

Made of the best materials, by careful and experienced workmen.

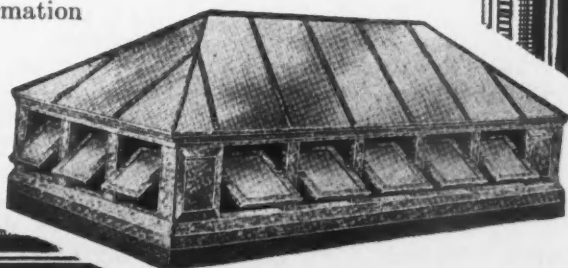
Strong and durable. Guaranteed not to sag or leak.

Can be erected by a man of ordinary ability with a hammer and screwdriver.

We make skylights in all styles and sizes and furnish full sized details for carpenter work.

Write for our catalog giving complete information on Willis sheet metal products.

**Willis Manufacturing
Company**
Galesburg, Ill.



people in the building game about Murphy In-a-Door beds, and the results obtained thru our advertising have been very gratifying.

With sincere wishes for your continued success, we are,

Very truly yours,
THE MURPHY DOOR BED Co.,
By M. A. Johnson, Sales Manager.



"We Have Been With You Since Your First Issue"

New York City, Feb. 9, 1920.

AMERICAN BUILDER:

We have been with you since your first issue, which is a pretty good indication of what we think of the value of your advertising pages. As we do our business indirectly, from customer to retailer to wholesaler to ourselves, it is not possible for us to state the monetary value we put on the AMERICAN BUILDER advertising, but tests we have made have been satisfactory.

CHARLES MORRILL, INC.,
By William C. Morrill, Pres.



"One of Best Pullers on Our List"

Chicago, Ill., Feb. 17, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER is recorded in our files as being *one of the very best pullers on our list of advertising media.*

Yours very truly,
NORTH WESTERN EXPANDED
METAL Co.,
E. Drage Browne, Adv. Mgr.



"Leads All in Number of Replies"

Lansing, Mich., Feb. 9, 1920.

AMERICAN BUILDER:

We have used the AMERICAN BUILDER as an advertising medium for several years and we take a great deal of pleasure in telling you frankly that *we have received more replies from the AMERICAN BUILDER for the amount of space taken than from any other medium we have ever used. We would not think that our advertising schedule was complete unless we contracted for liberal space in the AMERICAN BUILDER.*

You are entitled to a great deal of credit in what you have accomplished with the AMERICAN BUILDER in so short a time.

Yours very truly,
THE "NEW WAY" MOTOR Co.,
H. G. Heidt, Treasurer and Sales Mgr.



"Best Medium to Reach Contractors"

Sterling, Ill., Feb. 27, 1920.

AMERICAN BUILDER:

It affords us pleasure to subscribe to

the value of the AMERICAN BUILDER as an advertising medium.

We have used space in the AMERICAN BUILDER during the last twelve years and *we consider it one of the very best mediums we know of for reaching contractors and builders.* Had we not considered it such a good medium we certainly should not have used space during this extended period of time.

From an editorial standpoint we do not see how any contractor or builder can keep abreast of the times without reading religiously the columns of your publication.

Wishing the AMERICAN BUILDER the continuance of success which it so well merits, we are,

Very truly yours,
NATIONAL MANUFACTURING Co.,
By F. B. Kennedy.



"A Splendid Advertising Medium"

Jersey City, N. J., Feb. 28, 1920.

AMERICAN BUILDER:

We wish to congratulate you on your Fifteenth Anniversary. *The AMERICAN BUILDER has proved a splendid advertising medium for our metal shingles and tiles.* The fact that we have carried an advertisement with you continuously for the past fourteen years is sufficient evidence of the confidence we have in the AMERICAN BUILDER.

Wishing you many more years of success, we are,

Very truly yours,
NATIONAL SHEET METAL ROOFING Co.,
H. E. Cooper, President and Treas.



"American Builder Foremost in Its Field"

Oshkosh, Wis., Feb. 6, 1920.

AMERICAN BUILDER:

We are glad, indeed, to have the opportunity of congratulating you on the conclusion of fifteen years of successful effort.

You deserve a great deal of commendation for having been able in the years past to maintain that same high standard in value in your publication that has made it, we believe, the foremost in its field today.

It has been our pleasure to have been associated with you for a great many years—first in a small advertising way, and later in a larger way—and we have yet to come in contact with a fairer or squarer body of business men. Of your ability nothing need be said—the AMERICAN BUILDER speaks for you.

You ask us for an expression of our opinion of the advertising value of the AMERICAN BUILDER. I can only look back to the days when we started with you with an occasional quarter page—

and were rather doubtful about that—and for comparison then refer to our present copy, which occupies two preferred pages in every issue and in some issues four pages. Now if we didn't know this paid us, you'd have a mighty hard time selling us the space.

As evidence of the fact that the



J. W. WOOLEY,
General Sales Manager, Oshkosh Mfg. Co.

AMERICAN BUILDER is read, I can tell you that *our inquiries from advertising in it cost far less per inquiry than in any other publication.* A greater percentage of sales are made from these inquiries, with a consequent lower cost per sale.

Were the AMERICAN BUILDER not the ideal publication, it wouldn't have the circulation, the good live editorial matter, the fine "make-up," etc., that it has and be the best producing publication on our list. To my mind this is reason for the fact that it is read and appreciated by its 50,000 readers, and, being read, the readers cannot avoid being kept up to date with both building and equipment developments all over the country.

Sincerely yours,
OSHKOSH MANUFACTURING Co.,
J. W. Wooley, General Sales Mgr.



"Volume of Advertising Shows Satisfaction"

Chicago, March 1, 1920.

AMERICAN BUILDER:

The degree of satisfaction which we have experienced thru the use of the AMERICAN BUILDER is best evidenced by the volume of advertising which we have carried in your publication.

With best wishes, we are,

Yours very truly,
THE OLIVER TYPEWRITER Co.,
H. K. Gilbert, second vice-president.



"Nothing Like It Ever Published for Results"

Torrington, Conn., Feb. 19, 1920.

AMERICAN BUILDER:

"Nothing like it ever published for results." That's our reason for fifteen years' continuous support, both finan-

Trailmobile

Trade-Mark Reg. U. S. Patent Office

Saves Labor and Time

The Motorless
Motor Truck
Thousands in Use

DIVISION No. 1
Light, one-way four-wheeled Trailmobiles for use with passenger cars or light trucks: 1,250 lbs., 1/2 ton, and 1 ton.

DIVISION No. 2
Heavy-duty four-wheeled Trailmobiles for use with trucks: 1 1/2 tons, one-way; 2 tons; 3 1/2 tons, and 5 tons reversible and one-way.

DIVISION No. 3
Semi-Trailmobiles: 2 1/2 tons, 4 tons, 6 tons and 10 tons.

DIVISION No. 4
Pole Trailmobiles: 1 1/2 ton, 3 ton, 5 ton, and 7 ton.

THERE is a world of building to be done this year—and the biggest problem that faces the builder is to find the men. The Trailmobile system of hauling—widely adopted already in the lumber and building trades—will make it possible to do a great deal more hauling with less labor.

Trailmobiles double the efficiency of the driver by doubling the capacity that he hauls. They increase operating expenses for trucks only about 12 1/2 per cent. And the load can be put on while truck and driver are away.

The Trailmobile line is complete and provides a vehicle that will meet the requirements of any hauling situation in the building field. There are light four-wheeled Trailmobiles for light truck or passenger cars; heavy duty four-wheeled Trailmobiles; and Semi-Trailmobiles for use with short wheel-base trucks. Any of these models may be equipped with roll-off lumber dumping mechanism and drop frames which lower the load so that it will

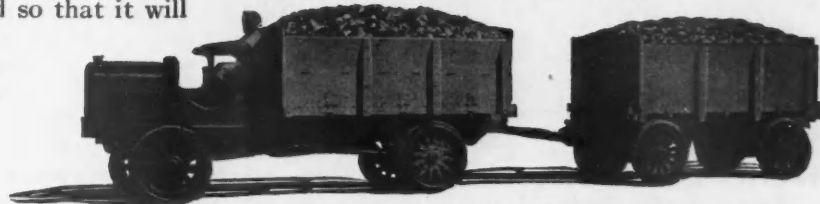
not scatter or break tongue and groove joints. Trailmobiles are as high-grade as the finest trucks.

Write for booklet, "Economy in Hauling"

The Trailmobile Company

583 E. Fifth Street

Cincinnati, Ohio



* Good roads are preserved by reducing the load carried on each wheel

Are You Using Surfaces and Finishes Best Adapted to the Result Desired with—

STRUCTURAL SLATE

Do you know what is meant by Sawed Edges, Split-Face Surface, Planed Surface, Standard Sand-rubbed Finish, Honed Finish?

Do you know the approximate cost of each? Do you know the type of work for which each should be used?

Chapter I—the first of a reference series on Structural Slate prepared in co-operation with the Slate Industry by D. Knickerbacker Boyd, F. A. I. A.—gives such essential facts in easily-assimilated form.



Mailed upon request.

The Structural Slate Company
PEN ARGYL PENNSYLVANIA

cially and morally. Continued success to you.

Very truly yours,
THE PROGRESSIVE MFG. Co.
G. E. Hermann, Secy.



"We Consider the American Builder the Foremost Paper in Its Field"

Ottawa, Ill., Feb. 27, 1920.

AMERICAN BUILDER:

Relative to our experience with your publication as an advertising medium, we are pleased to state that *we consider the AMERICAN BUILDER the foremost paper in its field.* As your records will show, our copy has appeared in the AMERICAN BUILDER for a number of years, and the manner in which contractors have become acquainted with Porter products thru this publicity is very gratifying to us.

Trusting you may continue the present high standard of your editorials and general composition, and with sincere regards, we are,

Yours truly,
J. E. PORTER Co.,
W. L. Weintz, Secretary.



"Practically All Inquiries Turn Into Sales"

York, Pa., Feb. 18, 1920.

AMERICAN BUILDER:

As far as the writer is able to judge, our advertising in the AMERICAN BUILDER has been successful and believe that we are securing results from it. We do not get many inquiries that we can trace directly to advertising in your magazine, but *practically all the inquiries that we receive turn into orders, and, of course, that is the kind of advertising that pays.*

Yours very truly,
PULLMAN VENTILATOR & MFG. Co.,
W. B. Gilbert, General Mgr.



"Best Advertising Medium for Our Line"

Robbinsdale, Minn., Feb. 23, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER is one of the best advertising mediums for our line. Anyone who travels over the country can see the effect of the education gained by the builders of homes from the building magazines in general and the AMERICAN BUILDER in particular.

Yours very truly,
PEARSON MFG. Co.,
By E. M. Pearson



"Well Satisfied with Results"

Rochester, N Y., Feb. 18, 1920.

AMERICAN BUILDER:

We have been very well satisfied with

the results of our advertising in the AMERICAN BUILDER.

PULLMAN MFG. Co.,
J. L. Willard, Secretary and Treasurer.



"Faith in the Pulling Power of the American Builder"

Aurora, Ill., Feb. 27, 1920.

AMERICAN BUILDER:

The fact that we have been using advertising space in the AMERICAN



FRED C. WEST,
Advertising Manager Richards-Wilcox Mfg. Co.

BUILDER continually covering a period of years gives evidence of our faith in the pulling power of the AMERICAN BUILDER as an advertising medium among a high class of readers interested in Door Hangers and Hardware Specialties.

In glancing over our file cards showing inquiries received from our AMERICAN BUILDER advertisements during the last year I find that these inquiries cover the entire schedule of products advertised in that medium, including R-W Sliding House Door Hangers, Garage Door Fixtures, Steel Folding Builders' Brackets, Swing Door Closers and Checks, Air-Way Casement Window Hardware, R-W Barn Door Hangers and other products.

We have noted your efforts to make the paper of interest and value to its readers in editorial service, which is, of course, the only nucleus around which a publication may develop a permanent clientele of successful advertisers.

Yours very truly,
RICHARDS-WILCOX MFG Co.,
F. C. West, Advertising Manager.



"Advertising in American Builder a Profitable Investment"

Philadelphia, Pa., Feb. 19, 1920.

AMERICAN BUILDER:

We are pleased to advise that during the eight years we have been using space in the AMERICAN BUILDER, *our advertising has been a profitable investment.* We receive numerous inquiries which we can trace directly to the AMERICAN BUILDER, and many of these

inquiries have resulted in substantial orders for Royal ventilators.

Yours very truly,
ROYAL VENTILATOR Co.,
Emil Voss, Manager.



"Accomplished More Than We Expected"

Chicago, Ill., Feb. 24, 1920.

AMERICAN BUILDER:

We have been advertising in the AMERICAN BUILDER for the last fourteen years and are highly pleased with the results obtained. *The AMERICAN BUILDER has given us the best of satisfaction in every way and has accomplished more good for us than ever could be expected.*

Gratefully yours,
M. L. SCHLUETER.



"The Leading Paper We Use"

Sidney, Ohio, Feb. 27, 1920.

AMERICAN BUILDER:

We are pleased to advise you that our results from the advertising we carry in the AMERICAN BUILDER have been such that we feel they should be called to your attention.

We have been carrying space in the AMERICAN BUILDER for the past fifteen years and have always classed it as *the leading paper that we use.*

We feel that when we wish to use extra space in any paper to create a little special interest among the wood-working trade the AMERICAN BUILDER is our first choice.

We wish to congratulate you upon your success in building up the AMERICAN BUILDER to its present status, and assure you that we will continue to advertise with you indefinitely.

Very truly yours,
THE SIDNEY MACHINE TOOL Co.,
B. A. Getz, Sales Manager.



"Best of Its Kind"

Cleveland, Ohio, Feb. 25, 1920.

AMERICAN BUILDER:

We wish to state that we have considered your publication one of the *best of its kind* on the market, and the fact that we are continuing its use as an advertising medium for Medusa Portland Cement is evidence of our appreciation of its efficacy.

Very truly yours,
THE SANDUSKY CEMENT Co.,
F. F. Selman, Advertising Dept.



"Peer of All Magazines for the Building Industry"

Detroit, Mich., Feb. 12, 1920.

AMERICAN BUILDER:

We wish to congratulate you on the

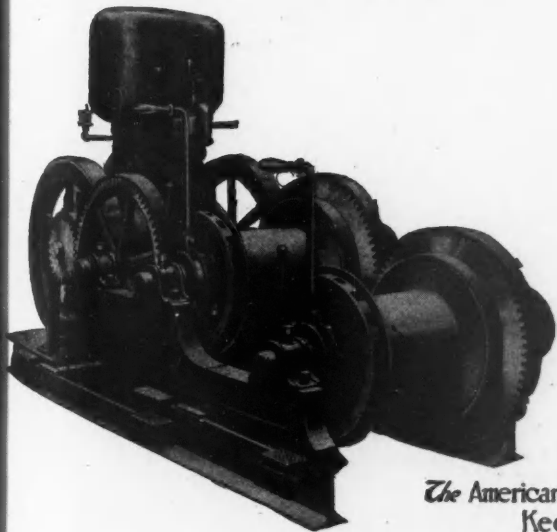
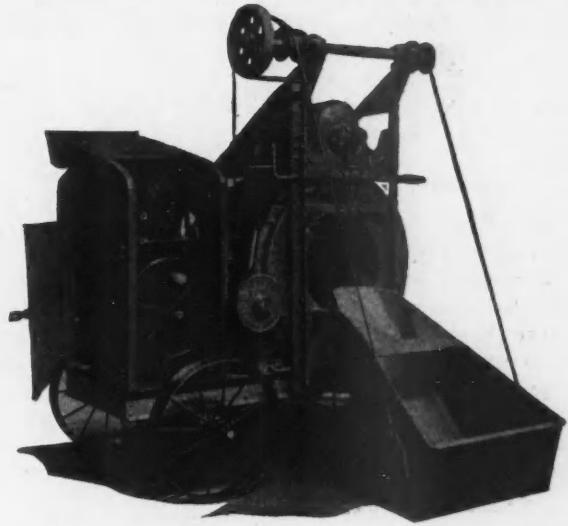
BOSS Labor Saving Construction Machinery

MIXERS

Fast Discharge

Boss Mixers are easily fed because the hopper doesn't clog and the drum opening is large. The mixed concrete is quickly discharged and the steel roller pinion drive, together with Hyatt Roller Bearings, makes the whole machine run smoothly, without break-downs, and with low power consumption. Investigate our famous *Low Charger* also.

Capacities— $\frac{1}{2}$, 1, 2, 3 and 4-bag batches.
Gasoline, steam or electric power.



HOISTS

With Hyatt Roller Bearings

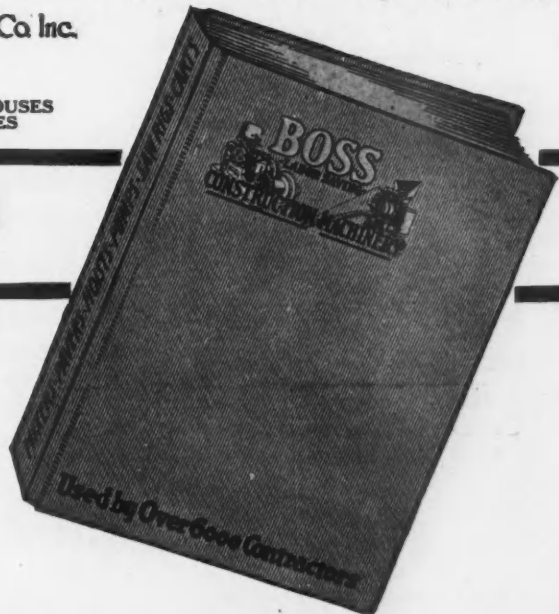
For hoisting concrete—for running material elevators—driving piles—excavating—back-filling—operating drag-line buckets, Boss gasoline and electric hoists are doing the trick with the least fuss and trouble. They have Hyatt Roller Bearings and S. K. F. Ball Bearings, and are built in seven sizes and three types. Look in the big Boss Catalog.

The American Cement Machine Co. Inc.

Keokuk Iowa
THE 300,000 HP. ELECTRIC CITY

BRANCH OFFICES—WAREHOUSES
IN ALL PRINCIPAL CITIES

**Get this Big Machinery Catalog
and Keep It Handy!**



\$265.00 BUYS

our $\frac{1}{2}$ -bag, low charging, Boss mixer with Novo engine and that's just one of the bargains that you will find in the big Boss Catalog of labor-saving construction machinery—the kind that is used by over 5,000 contractors in America and abroad.

Get the Boss catalog today! Get it before you actually need your machinery. Go through it carefully and see how our prices compare with other manufacturers—quality for quality.

AMERICAN BUILDER'S Fifteenth Birthday.

It also is a pleasure to inform you that the results we have received from our advertising in the AMERICAN BUILDER exceeded by far our fondest expecta-



FRANK SAND,
President and General Manager, J. Sand & Sons.

tions. With its aid we were enabled to get a national reputation for Sand's Aluminum Levels almost from the outset and a demand was created that we never have been able to catch up with.

We consider the AMERICAN BUILDER the "peer" of all magazines for the members of the building industry. We advertise in all of them and comparisons have convinced us of this fact.

Wishing you continued success, we are,

Yours very truly,

J. SAND & SONS,

Per Frank Sand, Pres. & Gen. Mgr.



"We Heartily Recommend the American Builder"

Milwaukee, Wis., Feb. 20, 1920.

AMERICAN BUILDER:

It has been our custom for a number of years to alternate our advertising mediums, making certain changes in the list of publications used each year. There are certain of these publications, however, which have remained on our list year after year and which we would not consider discontinuing under any condition.

We have advertised in the AMERICAN BUILDER longer than any other trade paper which caters to the building contractor, and we heartily recommend it to any manufacturer who wishes to reach the contracting field.

Yours very truly,

STERLING WHEELBARROW CO.,

H. H. Baker, Secretary.



"Reaches Unusually Large Circle of Carpenters and Contractors"

Fitchburg, Mass., March 3, 1920.

AMERICAN BUILDER:

We have been using the advertising pages of the AMERICAN BUILDER for a great many years because we feel that in this way we can bring the Simonds

Saws, both Hand Saws and Circular Saws, to the attention of an unusually large number of carpenters and contractors, who operate finishing or planing mills. You know we feel that the best saws on the market should be advertised in the best mediums.

Very truly yours,

SIMONDS MFG. CO.,

R. D. Baldwin,

Advertising Manager.



"American Builder One of Our Best Mediums"

Newtonville, Mass., March 9, 1920.

AMERICAN BUILDER:

We have found the AMERICAN BUILDER one of the best mediums for advertising our Silver Lake Braided Cordage. Probably the best evidence of our opinion of your publication is that we have used it for so long a period.

We wish to thank you for the attention you have given to our advertising and to express our appreciation for the very friendly business relations that have existed between us during all these years.

With best wishes for your continued success, we are Very truly yours,

SILVER LAKE COMPANY.

Wilfrid S. Drowne, Asst. Treasurer.



"We Have Had Very Good Results"

Newark, N. J., Feb. 20, 1919.

AMERICAN BUILDER:

Our experience with the AMERICAN BUILDER as an advertising medium has been very satisfactory, indeed. We have had very good results from our advertising.

Very truly yours,

THE STORM MANUFACTURING CO.,

D. Minor Lake, President.



"It Is Giving Its Readers Just What They Want"

Pittsburgh, Pa., March 15, 1920.

AMERICAN BUILDER:

The celebration of a Fifteenth Anniversary is an important occasion, and we wish to join with the rest of your good friends in extending congratulations and best wishes for your continued success.

It is hard to believe that the AMERICAN BUILDER is only fifteen years old when we look at its circulation statement, which shows over 50,000 friends. A rather healthy growth, we would say, and we believe it is because of the fact that it is giving its readers just what they want—information and plans for the best and most modern way of building houses, apartments, barns, garages, etc.

Incidentally we might say that it is just those builders we wish to reach with the story of "The Standard" Con-

crete Mixer and Contractors' Equipment, and the efficiency of this class of equipment in increasing profits and cutting costs. It is hardly necessary to add that the AMERICAN BUILDER has introduced



B. B. EVANS, JR.,
Advertising Manager, Standard Scale & Supply Co.

us to many of its readers.

So again—congratulations and best wishes for your continued success.

Yours very truly,

THE STANDARD SCALE & SUPPLY CO.,

B. B. Evans, Advertising Manager.



"Keep Up the Good Work"

New Britain, Conn., Feb. 11, 1920.

AMERICAN BUILDER:

"As we see you"—Build buildings and more buildings.

That is our impression of the AMERICAN BUILDER.

It would be rather hard to determine whether the AMERICAN BUILDER is more interesting to the builder and contractor or to the layman who is interested in building a new home.

We have heard some very favorable comments concerning the qualities of the AMERICAN BUILDER. As to its interest among the members of the building industry, we feel that the first paragraph of this letter expresses more clearly our thought as to what may be expected of the AMERICAN BUILDER.

Keep up the good work.

Very truly yours,

THE STANLEY WORKS,

Ray Young, Advertising Mgr.



"A Good Advertising Medium"

Seymour, Conn., Feb. 18, 1920.

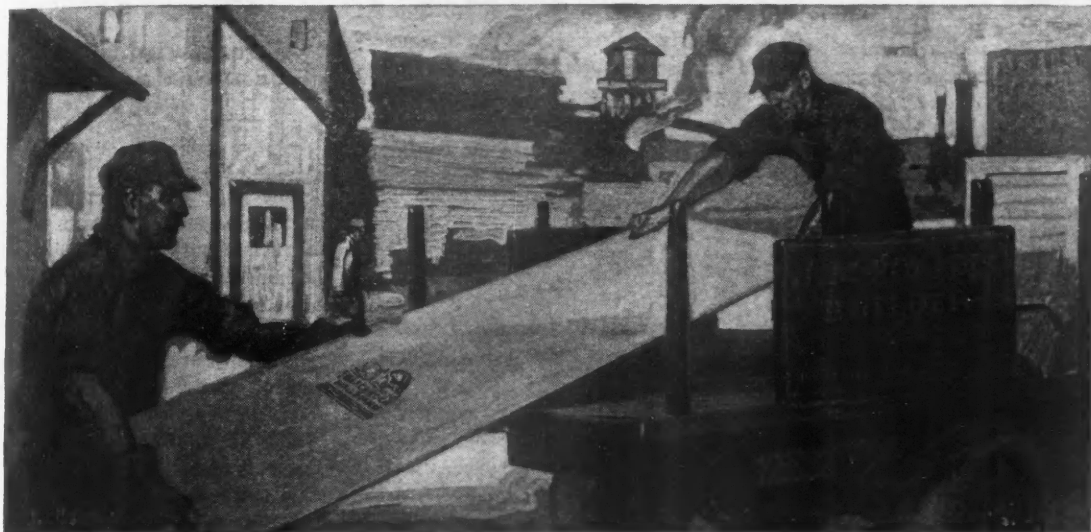
AMERICAN BUILDER:

The very fact that we have held our advertisement in the AMERICAN BUILDER for so long a time would indicate that we consider it a very good advertising medium. We have a great many inquiries for catalogs, etc., in which they refer to seeing our advertisement in the AMERICAN BUILDER.

Very truly yours,

THE JAMES SWAN COMPANY.

Wm. B. Swan, Pres.



Meet the Need for Speed With Black Rock

For speedy construction use Black Rock Wallboard. For permanence, use it. For economy, use it. Black Rock is easy to put up and a skillful result is quickly obtained.

Black Rock makes beautiful rooms. Correct panelling lends great variety to completed jobs. It is remarkably adaptable to the building of new partitions. On new work or over the old cracked plaster or wall paper, Black Rock Wallboard pleases the owner every time.

Owners get to know Black Rock for the distinctive moisture-repellant black center attracts their favorable attention. Its good performance then makes owners want more of the same kind. Black Rock is a great good-will builder for the carpenter, contractor and builder.

It is surface-sealed and sized front and back. Made to resist climatic conditions to the extreme. Needs no priming coat. Presents an ideal surface for the finest painted decorations.

We'll gladly give you more information about Black Rock, and the name of our nearest dealer.

The Black Rock Wallboard Company
79 Ontario Street, Buffalo, N. Y.



BLACK ROCK BLACK CENTER WALLBOARD

"Good Medium for Builders' Tools"

Athol, Mass., Feb. 17, 1920.

AMERICAN BUILDER:

We have been advertising in the AMERICAN BUILDER for a number of years and have always regarded it as a good medium for carpenters' tools. During 1919 we find that we received more requests for catalogs traceable to our advertising in the AMERICAN BUILDER than from our advertisement in any other building publication.

Yours respectfully,
THE L. S. STARRETT Co.,
By F. E. Wing, Treasurer.



"Regard American Builder Highly"

Detroit Mich., Feb. 28, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER has been on our advertising schedule for a great many years. The fact that the Truscon Products go into every field of construction makes it necessary for us to discriminate very carefully in the selection of our advertising mediums. The fact that the AMERICAN BUILDER has been carrying our advertising so continuously shows our high regard for the publication.

Yours very truly,
TRUSCON STEEL COMPANY,
S. M. Fechheimer,
Manager Publicity Department.



"American Builder One of Our Best Advertising Mediums"

Poughkeepsie, N. Y., March 2, 1920.

AMERICAN BUILDER:

It gives us pleasure to state that we have always regarded the AMERICAN BUILDER as one of our best advertising mediums. It seems to reach not only the contractors, but the carpenter shops of some of the largest manufacturers in the country as well.

Very truly yours,
JAMES L. TAYLOR MFG. Co.,
B. A. Mathews,
Secretary and Treasurer.



Results Overwhelmingly Place American Builder Beyond Comparison

Chicago, Ill., March 6, 1920.

AMERICAN BUILDER:

We take pleasure in stating that we have now been a steady advertiser in the AMERICAN BUILDER for eleven years. During this space of time we have also advertised in several other trade papers, and have keyed our advertisements in such a way as to enable us to check up results from the various sources. From these records we have found results so

overwhelmingly in favor of the AMERICAN BUILDER as to place it beyond comparison.

We are, therefore, glad to take advantage of this opportunity to express our hearty appreciation of the wonderful service the AMERICAN BUILDER has rendered us in acquainting the building profession with our line of machines.

With best wishes for your continued success and efficiency, we remain

Very sincerely yours,
TRIPLE "A" MACHINE Co.,
E. W. Anderson, President.



A Splendid Trade Paper

Lockport, N. Y., March 8, 1920.

AMERICAN BUILDER:

The AMERICAN BUILDER, in our opinion, is a splendid trade paper.

Our opinion of it, however, is best indicated by the AMERICAN BUILDER having been maintained on our advertising schedule almost continuously since we have been in business.

We believe your editorial policy of rendering real service to the contractor and builder is along the right lines. We are, therefore, glad to indorse your policy, which has seemed to us consistent and practical, not only to your subscribers, but to your advertisers.

Cordially yours,
THE UPSON Co.,
George R. Worley, Advertising Manager.



"Results Have Been Entirely Satisfactory"

Chicago, Ill., Feb. 23, 1920.

AMERICAN BUILDER:

The fact that we have carried our



CHARLES BUSHNELL,
Of Vaughan & Bushnell Mfg. Co.

advertising in the AMERICAN BUILDER so long shows that we consider this good publicity for our line of tools.

Our advertisements are not intended to bring direct results to us in the form of orders. What we want is to establish our brand in the minds of carpenters and to have them in turn secure our tools from the local dealers.

Your paper is one of several that we have chosen to carry forward this work and the general results in promoting our

line have been entirely satisfactory.

Yours very truly,
VAUGHAN & BUSHNELL MFG. Co.,
Irving S. Kemp, Sales Mgr.



"Advertising in the American Builder Pays, and Pays Big"

Chicago, Ill., Feb. 10, 1920.

AMERICAN BUILDER:

The page ads we have been running in the AMERICAN BUILDER have resulted in such a surprisingly large number of inquiries that we thought you might be interested in knowing about them.

Our branch offices have received and continually are receiving inquiries from lumber dealers situated in practically every state in the Union—inquiries which are the direct result of advertising in your publication.

It is needless to say that a good portion of these inquiries result in new customers for us, proving to us not only the high quality of your subscribers, but that advertising in the AMERICAN BUILDER pays and pays big.

The volume of inquiries continually being received shows conclusively that a large portion of the members of the building industry read the AMERICAN BUILDER carefully, not only your editorial and other matter, but also the advertisements of whatever material they may be interested in. They read—write for samples and prices—and then buy.

We wish you to know that we believe the AMERICAN BUILDER to be not only of great worth to and properly appreciated by the members of the building industry, but to be one of the leaders, if not the leading, publication in its field.

Yours very truly,
VULCANITE ROOFING Co.,
M. C. Herron, Adv. Mgr.



"In a Class by Itself for the Building Industry"

Waterloo, Iowa, Feb. 11, 1920.

AMERICAN BUILDER:

It is a very easy job for us to answer your letter of Feb. 5, for we have been using the AMERICAN BUILDER for six years. We have been very well satisfied with the actual sales coming from our advertising in this journal and we believe that the general impression of the trade has been very much enhanced.

We hope that your Fifteenth Anniversary number is a real success. It ought to be for the AMERICAN BUILDER is in a class by itself for the building industry.

Yours very truly,
WATERLOO CEMENT MACHINERY CORPORATION,
G. B. Arthur, General Sales Manager.

It Pays to Use
NEPONSET

The cost of Neponset Black Waterproof Building Paper is very little more than ordinary paper — but its **SERVICE** is entirely different.

Neponset Paper is waterproof. Wherever it is used, the walls are dry because the moisture of the outside is kept outside.

It is air-proof and eliminates draughty floors and walls when used under stucco, back of clapboards, between floors, and underneath the roofing.

The builder who uses Neponset constructs houses which are comfortable and easily kept warm—in fact, this building paper earns dividends in *coal saved the first winter.*

All Neponset Products are sold by hardware and lumber dealers. In case you cannot obtain stock locally, write to us direct.

Make your own test of NEPONSET'S waterproof qualities by immersing a sample in a pail of water.



BIRD & SON, inc., Dept. C, East Walpole, Mass.
 (Established 1795)

CHICAGO

NEW YORK

Canadian Office and Plant: Hamilton, Ont.

Makers of the NEPONSET Twin Shingles, NEPONSET Roll Roofings
 and NEPONSET Board



"Best Medium to Reach the Building Field"

Cedar Falls, Ia., Feb. 19, 1920.

AMERICAN BUILDER,

In our opinion the AMERICAN BUILDER is the best advertising medium that we



F. A. WAGNER,
Advertising Manager, Wagner Mfg. Co.

know of to reach the building field. Our results from advertisements in it are entirely satisfactory, and we can sum up our opinion in a few words: "The AMERICAN BUILDER Builds Business."

Wishing you the best of success and trusting that our pleasant business relations may always continue, we are,

Yours very truly,

WAGNER MFG. Co.,
F. A. Wagner, Advertising Mgr.



"American Builder Entirely Satisfactory"

Buffalo, N. Y., Feb. 24, 1920.

AMERICAN BUILDER:

If the AMERICAN BUILDER had not been entirely satisfactory to us we would not have been an advertiser for a period of years. When we find that any medium is not paying us it takes us a very short while to get out of that medium into another one, and we believe your records will show that we have been advertising in the AMERICAN BUILDER continuously for a number of years.

Very truly yours,

THE L. & I. J. WHITE Co.,
Ray R. Thompson, Treasurer.



"Produces a Steady Flow of Inquiries"

Galesburg, Ill., Feb. 26, 1920.

AMERICAN BUILDER:

The results from the space carried in the AMERICAN BUILDER have been very satisfactory. The mere fact that we have discontinued space in practically all other publications except the AMERICAN BUILDER should be ample proof. We are carrying from one-half page to one page each month and find that this produces a steady flow of inquiries of the most satisfactory kind. We are of the opinion that your publication will produce this same result for any man-

ufacturer who has a product which he wishes to present to the general contractor.

Very truly yours,

WILLIS MANUFACTURING Co.,
R. L. Worcester, Vice-Pres.



"American Builder Subscribers Are Live Wires"

Chicago, Ill., Feb. 10, 1920.

AMERICAN BUILDER:

The mere fact that we have been in the AMERICAN BUILDER ever since we started to advertise is proof of our success. A great number of customers whom we have had the pleasure of becoming acquainted with thru the AMERICAN BUILDER have always spoken highly of the paper and seem to look forward to receiving it with a great deal of pleasure.

We are planning to expand our business the coming year and will most certainly include the AMERICAN BUILDER, for its subscribers are all live wires and are always seeking better and quicker ways of doing things.

Very truly yours,

J. D. WALLACE & Co.,
H. L. Ramsay, Sales-Advertising Mgr.



Appeals Greatly to the Average Contractor

Seattle, Wash., March 2, 1920.

We consider the AMERICAN BUILDER unique in the building field, and when it



J. S. WILLIAMS,
Secretary, Shingle Branch, West Coast Lumberman's Association.

comes to a question of selecting mediums for our annual advertising campaigns, the AMERICAN BUILDER automatically goes on the list, as it covers the building field.

The character of the reading matter of the AMERICAN BUILDER is such as to appeal greatly to the average contractor and builder, and judging from the inquiries we have received I believe that our ads are read many times by the same readers.

Very truly yours,

SHINGLE BRANCH, WEST COAST LUMBERMEN'S ASSOCIATION,
J. S. Williams, Secretary.

"American Builder Continually Makes New Friends for Us"

Minneapolis, Minn., Feb. 23, 1920.

AMERICAN BUILDER:

We are pleased to offer an appre-



FRANK PEARCE,
Secretary and Sales Mgr., Whitney Window Corp.

ciation of the service the AMERICAN BUILDER has rendered us during the many years we have had an advertisement in its pages.

Long ago we realized that the best method of placing our product was thru the carpenter, contractor and builder. The progressive builder is the man who ordinarily has the final word as to the building material that will be used in the construction either of a home or any other type of building. The owner may desire this or that type of hardware, but he relies on the word of the man on the job as to whether it is best or not.

In seeking to interest this man thru the AMERICAN BUILDER, our confidence has not been misplaced.

WHITNEY WINDOW CORPORATION,
Frank Pearce, Secy. and Sales Mgr.



"Reaches the Heart of the Building Field"

York, Pa., Feb. 21, 1920.

AMERICAN BUILDER:

In view of the approaching celebration of the Fifteenth Anniversary of the American Builder, we wish to extend our most hearty congratulations. Our mutual relationship has extended over a period of almost seven years of continuous advertising, during which time we have not missed a single issue of this staunch publication which reaches the heart of the building field.

It will be our pleasure in the coming years to be associated with and classified among your advertisers with the same mutual fellowship for consumer, publisher and manufacturer.

Yours very truly,
YORK AUTOMATIC DUMB-WAITER WORKS,

Landon T. Reisinger, Proprietor.

"Built Just Before the War"

**This Well Planned Six Room Home
of Beautiful Brick
Cost Less Than Three Thousand Dollars**

This attractive six room home of Brick won first Prize in a country wide small residence competition, conducted by the "American Builder," just before the war.

The competition requirements called for photographs and floor plans of houses which had actually been built, costing \$3,000.00 or less was open to ALL CLASSES of building materials.

Award was made on architectural appearance, interior arrangement and economy of construction.

Hundreds of photographs and floor plans were submitted from all parts of the country, but brick scored the signal victory. It won First Prize.

Send for Free Folder of Floor Plans

We would like to send you, without cost or obligation, an illustrated descriptive folder of this prize-winning home.

This folder contains floor plans, interior views and an itemised account of the pre-war cost. It is so complete that any contractor can figure the present cost of this home locally.

**The Permanent Building Bureau
Chamber of Commerce, Chicago, Ill.**



THIS COUPON GETS FREE FOLDER OF FLOOR PLAN

THE PERMANENT BUILDING BUREAU
Chamber of Commerce, Chicago, Ill.

(PLEASE PRINT YOUR NAME AND
ADDRESS TO INSURE DELIVERY)

Gentlemen:—Please send me Free Folder of Floor Plans of Gates' Prize Brick Bungalow offered in April issue of American Builder. I am also planning to build.....

Give name of lumber and building material dealer.....

(YOUR NAME)

(YOUR BUSINESS)

(YOUR TOWN)

(YOUR STATE)

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Portland Cement Association Announces Changes

C. N. Reitze, formerly district engineer of the Seattle office of the Portland Cement Association, has been appointed district manager of the Pacific Coast offices of the association at Seattle, Portland, San Francisco and Los Angeles.

A. P. Denton, formerly district engineer of the Dallas office of the association, assumes charge of the San Francisco office as district engineer, effective March 15.

Charles A. Clark is appointed district engineer of the Dallas office of the association, effective March 15, to succeed A. P. Denton. Mr. Clark has been in the employ of the association since 1917.

H. E. Frech will assume charge of the St. Louis office of the association as district engineer, effective April 1.



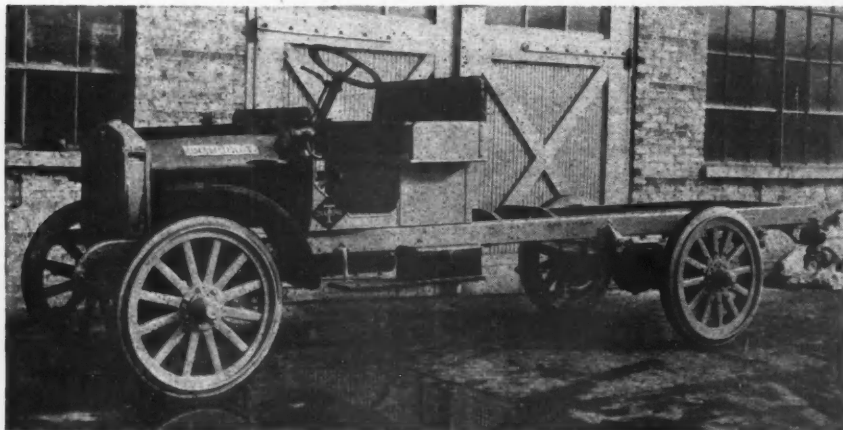
Diamond T Has New 2-Ton Truck

A four-speed transmission, a special "Dri-Gas" intake manifold and vacuum feed system for the fuel designed to obtain best results from present low grade gasoline, forced lubrication for all spring shackles, and bearing carriers for the propeller shafts are among the features of the just announced Model U 2-ton motor truck brought out by the Diamond T Motor Car Company. Like the other Diamond T trucks, the new vehicle is worm-driven.

The four speeds give unusual low reduction in the transmission; fourth speed, 1 to 1; third speed, 1.60 to 1; second speed, 2.69 to 1; first speed, 4.75 to 1; reverse, 5.95 to 1. The transmission was designed for heavy duty under severe operating conditions and all gears are of nickel steel with wide tooth faces for carrying heavy loads.

A vacuum system has displaced the gravity feed for the fuel supply. The special "Dri-gas" manifold, the combustion chambers and intake passages have been designed to obtain the best possible efficiency and economy from the low grades of gasoline now on the market. The Stromberg carburetor is used and there is a dash adjustment to facilitate starting. Ignition is furnished by a Bosch high-tension D U-4 Magneto. The unit power plant is a block casting of four cylinders, 4 inch bore and 5¼ inch stroke with an S. A. E. rating of 25.6 horsepower and a maximum of 43 horsepower at 1,800 revolutions per minute. All the valves are on one side and have removable heads. Three point suspension with a patent-applied-for ball and socket joint as the rear motor support, is used for the engine.

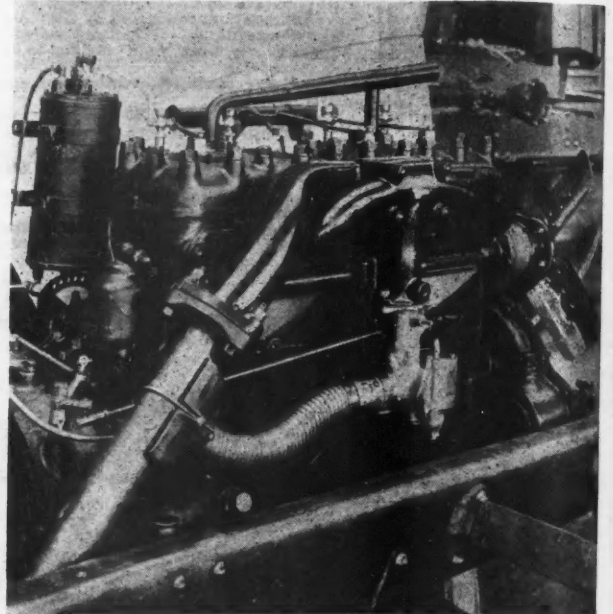
The Alemite process of forced lubrication for all the spring shackles enables the lubricant to be quickly and surely in-



Chassis of New Two-Ton Diamond T Truck. The Features Are a Four-Speed Transmission, Intake Manifold and Vacuum Feed System. The Truck Weighs 4,800 Pounds and Has Solid Tires, 36x4 Inches in Front and 36x7 Inches in Rear.

jected into the lubricating cups by the use of a special device. Oilless bushings—bronze impregnated with graphite—are used as bearing surfaces for brake cross shafts, starting crank shaft and foot pedals.

A long whipping propeller shaft is eliminated by using a special Diamond T bearing carrier. Double universal joints are used between the transmission and rear axle, with slip joint to allow for spring action. Between the clutch and bearing carrier universal joints of the Thermoid-Hardy type are used, connected by heat-treated propeller shaft welded to the joints by a patented process. The rear propeller shaft,



Close-up View of Engine.

between bearing carrier and rear axle, is equipped with the standard all-metal Spicer universal joints. Perfected Hotchkiss drive is used and radius rods are eliminated. The truck weighs 4,800 pounds. The tires are solid, 36 x 4 front and 36 x 7 rear.



Hendricks' Commercial Register, 1919-20, Ready

THE 28th Annual Edition of "Hendricks' Commercial Register of the United States for Buyers and Sellers for 1920" has just been published, after being delayed for two months by the strike of the printers in New York. It is published by the S. E. Hendricks Company, of New York, at \$12.50. The new edition contains several improvements, the most noticeable being the new method of exterior indexing by coloring the front edge red, white and blue to indicate the different main sections of the book.

The first blue section is the "trades index," a section of 162 pages in which every product listed in the book is indexed and cross indexed for ready reference. The red section is the main classified trade list. It contains 1813 pages, listing over 18,000 different products. In the present edition we find over 1,200 new headings, including many headings completely covering the

"Demand" "Wausau!"

SANDPAPER



9"x11" Sheet



8 1/2"x10 1/2" Sheet

"Wausau" quality should be known wherever sandpaper is used.

Your dealer should always keep it in stock. Don't let him offer you any other that's "just as good."

Wausau Abrasives Co.
118 S. Clinton Street
CHICAGO



COUPON FOR FREE SAMPLE BOOK

Wausau Abrasives Co., Chicago

Please mail me today FREE SAMPLE BOOK showing different grits.
My dealer's name is below.

Name _____ City _____ State _____

Dealer's Name _____

City _____ State _____

A. B. 2-20



Lesson in Plan Reading

FREE!

Send now for this FREE lesson which we will send to prove how quickly you can learn Plan Reading by our new, easy method. Not a penny to pay for this lesson. Just ask for it. Without a good knowledge of plans your opportunities are limited. As work you don't get the chance to study blue prints or to have their meaning explained. We make the chance for you. We place in your hands plans used in actual construction by contractors in Chicago and other cities, and you get lessons by men in charge of building work who will help you at every step and make you an expert plan reader.

Builders' Course On Easy Payments

Our Builders' Course gets right down to the things you need to know. And you can get it on easy payments. A small first payment when you enroll—then payments monthly—so small you will never feel the cost. At least write and find out what this course really offers and how you can make more money by learning what we will teach you in a short time.

Learn By Mail

Use your spare time at home to learn how to be a better workman, a better foreman or a better contractor. Even after you complete the course you have the privilege of consulting us when you want suggestions. We will always be ready to help you.

Some Things We Teach

Plan Reading Use and meaning of all the lines. Plans and elevations. Reading dimensions. Detail Drawings. Laying out work from plans. Practice in reading plans from basement to roof, etc., etc.

Construction Brick work, stone work, carpentry, plans and specifications. Every detail explained for residences, office buildings, factory buildings, etc., etc.

Estimating Figures on every kind of building work fully explained. Labor and material. Problems worked out from plans. Practical builders' methods studied from plans and specifications of actual building of every kind.

Arithmetic A complete course arranged especially for builders and contractors.

Architectural Drafting Also other branches of drafting. Send for special catalog on these courses.

Send the Coupon

Get this information now. Learn how to make more out of your work or out of your business by knowing more about it. All this information is free. Send for Free Lesson and this information—now. Just send request on the coupon below.

Chicago Technical College

436 Chicago "Tech" Building Chicago, Illinois

Without obligation on my part, send me the Free Lesson in Plan Reading, also information on your Builders' Course in Plan Reading, Estimating, etc.

Name.....

Street.....

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

Present Occupation.....

chemical industry. The third section of the book as indicated by the white edges contains 216 pages, listing the trade names under which products are manufactured, with the name and address of the manufacturer. The second blue section is the alphabetical section of 487 pages, containing all the names in the book in one alphabetical list, with addresses and their main line of business. This is followed by the index to advertisers of 20 pages, containing a full list of branch and foreign offices following each name. The whole book makes a volume of 2,703 pages.

It contains complete lists of all prospective customers for salesmen, and for purchasers it shows at a glance the producers of any product which may be required. The list of trade headings covers, from the raw material to the finished article, all products connected with the electrical, engineering, hardware, iron, mechanical, mill, mining, quarrying, chemical, railroad, steel, architectural, contracting and kindred industries, and the firms listed cover producers, manufacturers, dealers and consumers.

"Hendricks' Commercial Register" has been published annually by the S. E. Hendricks Co., Inc., exclusively for 28 years. The publication of this important reference book involves a tremendous amount of detail work in compilation and annual revision, and places before purchasing agents and sales managers a fund of valuable information not heretofore available.



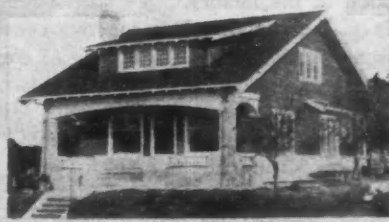
Knickerbocker Company Builds New Plant

In order to take care of the phenomenal increase in business the Knickerbocker Company, Jackson, Mich., has recently erected a large plant in that city. The factory, it is estimated, will not only take care of the demand but practically double the present output. It will be completely equipped with new machinery.

The new building is one story high and covers a section of land 50 by 190 feet. Modern methods of construction in



Picture Showing Knickerbocker Saw Machinery and Inalee Mast Used in Construction of New Knickerbocker Plant at Jackson, Mich.



The All Shingled Home Is Very Popular

Look at this group of modern homes—every one of them is shingled from crest to foundation.

Every one of them is distinctively attractive, *reasonable* in cost, permanent and a fine investment.

And as to the *kind* of shingles—use

RITE GRADE

(Inspected)

RED CEDAR SHINGLES

Such shingles are officially approved—each is of the standard under which sold, properly seasoned and well manufactured.

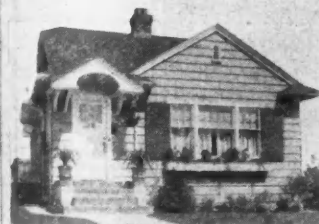
There are three grades of Rite-Grades—all up-to-grade. Ask your dealer for the grade you need.

Write for booklet "*Distinctive Homes*"

Shingle Branch,
West Coast Lumbermen's
Association
426 Henry Bldg.
Seattle, Wash.

and

The Shingle Agency
of
British Columbia
911 Metropolitan Bldg.
Vancouver, B. C.



which the machinery manufactured by the Knickerbocker concern took a large and important part, were used in the erection of the factory.

Up to the windows it is concrete construction; above that, brick and steel. All of the mixing of concrete was done by a Knickerbocker mixer, and an Insley Mast Distributing System was used for putting in the walls. The hoisting, sawing and various other jobs were accomplished by the use of the Knickerbocker swing-off and ripping machinery and hoists. Truscan steel sashes were installed thruout.

The accompanying photographs show the plant in process of construction.

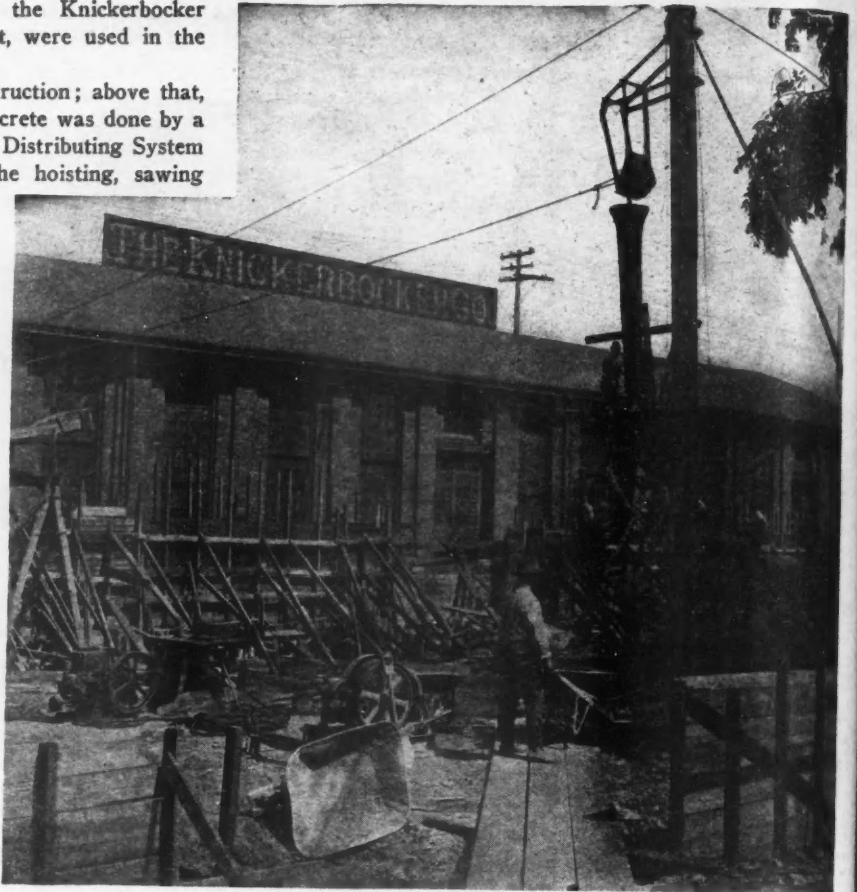


Convention Adopts Standard Size Brick

THE Second Annual Convention of the Common Brick Manufacturers' Association of America, held recently at Columbus, Ohio, was one of the most enthusiastic and successful meetings of brickmen ever held.

The association, which is only one year old, has members comprising all the most up-to-date brick manufacturers in the United States. The total output of brick of its members borders on four billion yearly.

One of the first questions decided by the convention was that of the standard size of brick. A paper was read by William Carver, assistant secretary of the association, on "Why There Should



New Knickerbocker Plant Built to Take Care of Growing Business. It is Built of Concrete, Brick and Steel.

Your Coal Window is Like One of These WHICH?

WHAT do you see when you look at your coal-bin window? Broken glass, ill-fitting sash, battered siding as in the upper picture? (an actual photograph, not retouched).

Or do you see an attractive Majestic Coal Chute—walls and foundation undamaged.

If your house hasn't a Majestic Coal Chute you can easily have one installed or, if you are building, don't neglect this essential feature. It will save its cost. You can see why. And it will increase the value of your property, not depreciate it.

Contractors

Suggest that houses you build are protected against damage or repairs by installing Majestic Coal Chutes—styles and sizes for every home or building. Details and specifications on request. Working drawings gladly supplied.

Ask also about our Underground Garbage Receiver and our Milk and Package Receiver.

The Majestic Company

802 Erie Street

Huntington, Indiana

Majestic COAL CHUTE

1. Protects Against Damage
2. Enhances Property Value
3. Lessens Depreciation
4. Saves Money

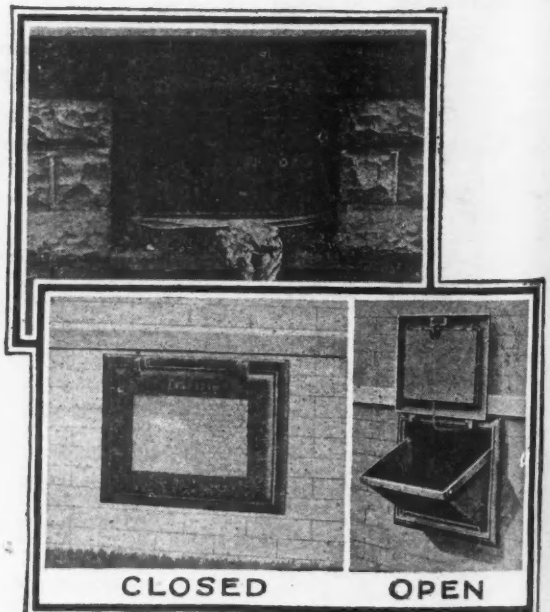


FIGURE IT OUT FOR YOURSELF



EASY TO
INSTALL

Every Window in Your Town Needs Allmetal Weatherstrip

On every window that you install with Allmetal Weatherstrip you make a double profit. An agent's profit on the strip and a profit on the installation.

Hundreds of other carpenters are capitalizing on the big demand for weatherstrip.

An Ohio agent says:—“I closed contracts last week amounting to \$6,000.”

You can easily make this business pay in your town.

Write today for our agency proposition.

ALLMETAL WEATHERSTRIP CO.
124 West Kinzie Street - CHICAGO, ILL.

ALLLITH-PROUTY

Convertible Wagon Bed Hardware

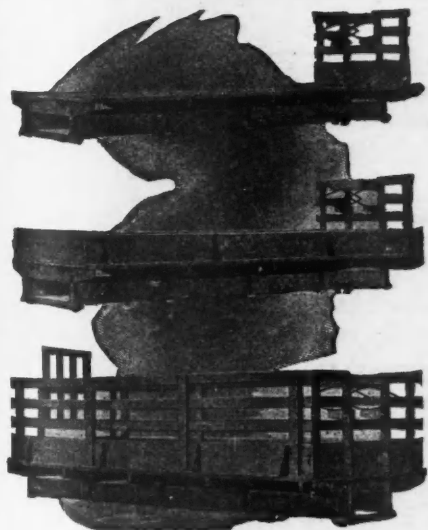
Enables you to build, during your spare time, three wagon bodies in one and at less expense than the cost of one new body. It provides a grain bed that is absolutely tight and leak-proof—a stock rack that slips on snug and solid—a hay rack bed that allows loading and unloading to be done faster and easier.

We Furnish Set Complete

in every detail—already to install. Even instructions and drawings which makes it easy for any carpenter or farmer to do the work—and do it at exceptionally low cost. Send for our illustrated literature that shows and describes this hardware and illustrates how easy any one can make this combination wagon bed.

Dealers everywhere find farmers keenly interested in this money and labor saving hardware, for the combination body type is needed on every farm. Get in touch with us for our proposition.

Write for our general catalogue No. 90 showing and describing our complete line of FIRE DOOR HARDWARE, Door Hangers and Tracks, Overhead Carriers, Garage Door Hardware, Spring Hinges, Hardware Specialties, Rolling Ladders, etc.



ALLLITH-PROUTY CO.



DANVILLE ILLINOIS.

Be a Standard Size for Common Brick." Among other things, Mr. Carver said:

"In making working drawings for brick buildings, the architect finds it impossible to dimension such things as window and door openings and pier and pilaster sizes until he knows the size of the brick which will be supplied to the project. This means much lost time and motion, and if it is decided to change over to another brick, a great deal of money is lost in changing dimensions all over the drawings.

"From my own experience, I can assure you that the architect will welcome heartily a standard size brick, so that no matter where the building is that he is designing, he can go right ahead with his working drawings.

"The considerations which affect more particularly the engineer are also of great importance to the architect. The structural engineer is interested especially in the strength of a building and its parts. He must have definite formulas of strength of his materials. These formulas are derived from actual tests, generally made by concerns specializing in such work, or by universities, etc. He can obtain formulas covering the strength of wood, steel or cement down to the last fraction of the pound. When he comes to brick, however, he is forced to do some guessing, owing to the variation in the sizes of the bricks which are tested.

"When common brick are used to back up face brick, both the face brick and the common brick should be of the same size. The weakest part of a wall is the mortar joint, and where the mortar joint has to be increased, the wall is weakened just that much. Where the face and backing are of different sizes, the courses must be evened up by increasing the mortar joint either on one side or the other.

"A bricklayer cannot work fast when the brick are of different sizes, and any factor which tends to increase the cost should be eliminated as far as possible.

"When a contractor is figuring a building, he should be able to know before hand just how many brick go into a wall. Upon this depends also the amount of bricklayers' time required to lay the brick and the amount of material in the mortar.

"When speaking of the standard size, I refer to the size $3\frac{3}{4} \times 2\frac{1}{4} \times 8$. There are several reasons why, in our opinion, this size should be adopted by our own association. Figuring with a joint of one-half inch two headers, plus a joint just equal the length of a stretcher. This makes it possible to use almost any bond or patterns desired on the face of the wall without difficulty.

"The same consideration would also hold true in regarding the thickness of the wall. With a wall eight inches thick, there would be a vertical joint one-half inch thick between each 4 inches thickness of wall, and all Building Codes through the United States will be able to call for an 8 or 12 or 16-inch wall without fractions.

"Another very important reason is that this size has already been adopted by the American Face Brick Association and the National Brick Manufacturers' Association. Comparisons were made on the relative amount of clay required for an over-sized and a standard brick, and the selling price of each. We have just had an excellent talk on the necessity for a uniform accounting system. It seems to me that before we can have a uniform accounting system of much value, every brick manufacturer must base his accounting on the same sized brick, or his figures will be misleading."

D. Knickerbacker Boyd, consulting architect of the association, showed the necessity for a common standard, and the size $2\frac{1}{4}$ by $3\frac{3}{4}$ inches was unanimously adopted as the standard size brick of the Common Brick Manufacturers' Association of America.

BUCKEYE

BUILDERS

handling Buckeye Products under our co-operative plan are making big profits.

Our Barn Planning Department and ventilating engineers assist Buckeye agents in securing contracts and giving satisfaction. Our Big National Advertising Campaign brings you new customers and makes Buckeye Products easy to sell.

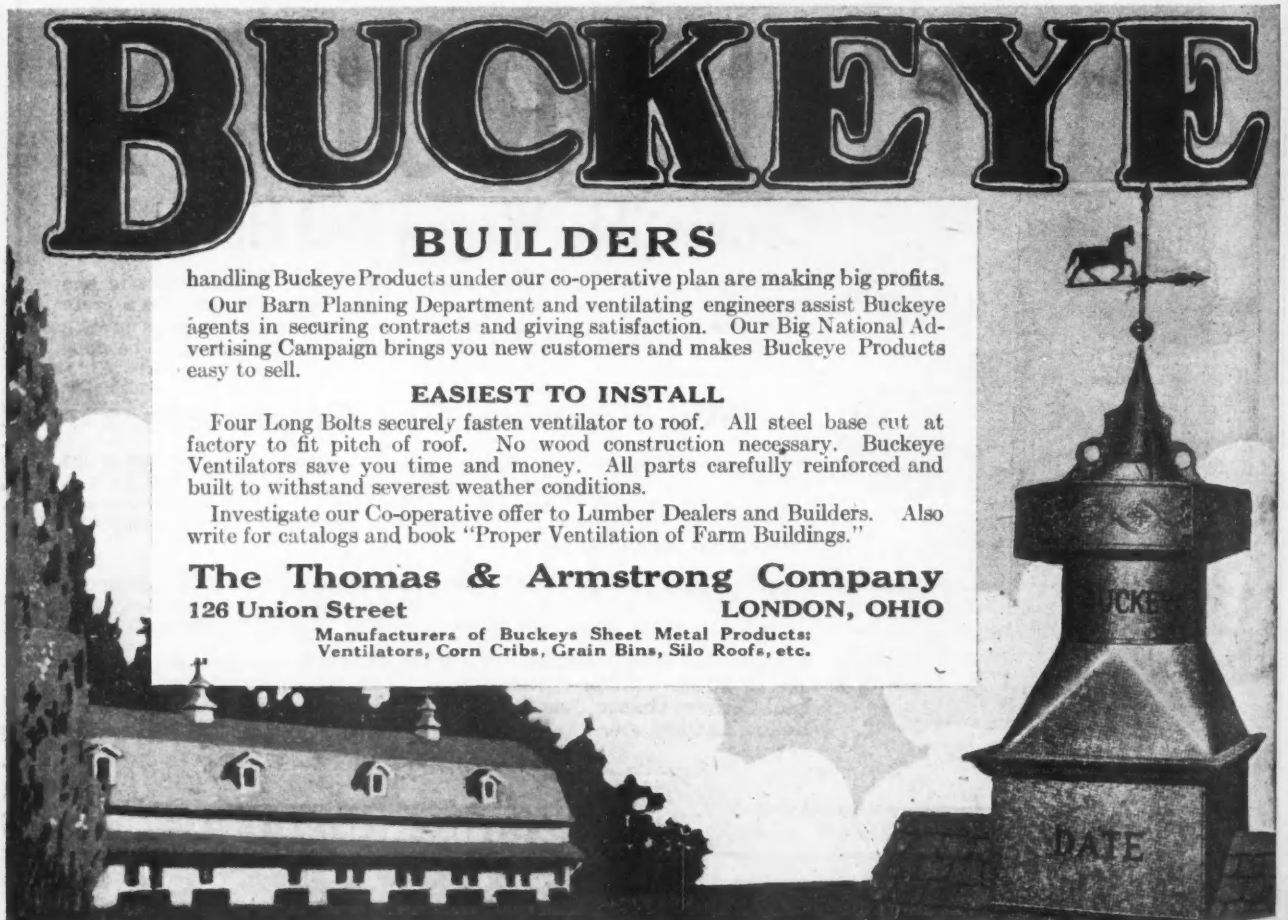
EASIEST TO INSTALL

Four Long Bolts securely fasten ventilator to roof. All steel base cut at factory to fit pitch of roof. No wood construction necessary. Buckeye Ventilators save you time and money. All parts carefully reinforced and built to withstand severest weather conditions.

Investigate our Co-operative offer to Lumber Dealers and Builders. Also write for catalogs and book "Proper Ventilation of Farm Buildings."

The Thomas & Armstrong Company
126 Union Street LONDON, OHIO

Manufacturers of Buckeye's Sheet Metal Products:
Ventilators, Corn Cribs, Grain Bins, Silo Roofs, etc.





THE LAST NAIL DRIVEN-YET HERE'S AN EXTRA PROFIT

YOU can make more money on that house and barn you're building, and do the owner a real favor by selling him a complete equipment of scientifically made lightning rods. Many carpenters and builders are adding hundreds of honest dollars to their incomes by installing

SECURITY WATER GROUND LIGHTNING CONDUCTORS

This rod has a special patented water ground feature not found on any other rod. It is endorsed by the National Board of Fire Underwriters and by many State Insurance Exchanges. Every installation is made under our \$500 offer of reward. The Security has been on the market for 28 years. Write for our special representative's offer.

A REAL SALES POINT

Notice the 2-foot water filled copper tube. This holds the bottom of the ground rod keeping it wet and insuring moist earth even during drouth. This means the highest conductivity and explains why the Security always protects.



THE SECURITY LIGHTNING ROD COMPANY

505 Pine Street

BURLINGTON, WISCONSIN

Build Hog Barns the Jamesway

THE Jamesway Hog Barn Book tells all about a new type of hog barn construction which provides a spot of sunshine and sun warmth in every pen in the barn two-thirds of the sunlit hours.

What this means to the hog breeders of the country can hardly be computed—only the hog man understands what sunshine and sun warmth in February and March, especially, mean to the growth and health of little pigs.

The James Mfg. Co. do not build barns. We make labor-saving machinery for the hog barn, but as a service to the swine industry, our Engineering and Barn Planning Staff have designed a new type of hog barn which has many advantages over any other.

These advantages are fully explained in the Jamesway Hog Barn Book, making it clear how the James Sunny Hog Barn lets the sunshine in.

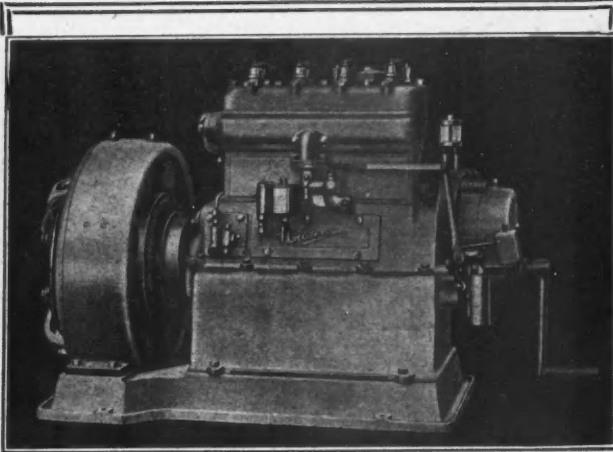
If you expect to build a hog barn for any of your customers, we shall be glad to send you this Jamesway Hog Barn Book (and furnish you blue prints of the James Sunny Hog Barn, if you ask for them), provided you give us the name of one or more farmers for whom you expect to build a hog barn this coming year.

James Manufacturing Company

Ft. Atkinson, Wis.

Minneapolis

Elmira, N. Y.



Universal

**4 K W
ELECTRIC
GENERATING
SET**

The Universal 4 K W set is being specified for all new buildings requiring isolated electric service, because of its smoothness of operation, reliability and economy.

It has sufficient power to carry the overloads now imposed on small lighting plants. It can be used to supply current direct on the line 110 volts, or operate through storage battery as desired. Its capacity of 4000 watts gives ample power to carry lights, motors, and utensils, with 200-20 watt lamps if desired.

CINEMA

The Universal is known among the moving picture trade as the ideal plant for operating picture machine and house lights of a small theatre.

ARMY AND NAVY

Used over 1500 Universal 4 K W sets during the recent war.

AT HOME

Many large farms, homes, and churches use one or more Universal sets to supply their current.

It will interest you to read how this best known of plants is constructed in our big especially equipped factory.

Send for Bulletin No. 30

UNIVERSAL MOTOR CO.
OSHKOSH, WISCONSIN

Merger of Aspinwall and Drew Concerns

Negotiations have recently been closed, whereby the Aspinwall Manufacturing Company of Jackson, Mich., manufacturers of Aspinwall potato machinery, has been merged with the Drew Carrier Company of Waterloo, Wis., manufacturers of Drew line of steel equipment for dairy barns, under the name of Aspinwall-Drew Company with authorized capital of one million dollars, which will provide ample funds for expansion and development.

The Aspinwall Manufacturing Company has been manufacturing potato machinery continuously for thirty-seven years. Their product is well-known in the United States and Canada, but there is also a large and rapidly growing foreign demand for their product. In addition to their main factory at Jackson, Mich., they have a Canadian plant at Guelph, Ont.

The Drew Carrier Company was organized twenty years ago at Waterloo, Wis., in the heart of the Wisconsin dairy country, to manufacture a line of litter carriers for use in dairy barns. It was one of the pioneer manufacturers in the line of labor-saving machinery, and from a small beginning as a manufacturer of one item, the Drew line has broadened out until it now includes stalls, stanchions, litter and feed carriers, steel pen material, automatic water bowls, ventilators, barn door hangers, and all kinds of steel equipment which goes to make up the modern sanitary dairy barn as demanded by the wide-awake, progressive farmer of today.

By combining the names into Aspinwall-Drew Company it will be possible to take full advantage of the names under which each has been known and advertised for so many years.

Mr. Chas. E. Shomo, Mr. Robert Minshull and Mr. L. F. O'Brien will continue to direct operations at the Drew plant, while Mr. L. Aug. Aspinwall, Mr. C. G. Rowley and Mr. Geo. N. Whitney, who have been connected with the Aspinwall company for many years, will remain with the new company and will continue to give their undivided attention to the manufacture of potato machinery at the Jackson and Guelph plants.

It is the intention of the company to retain the present heads of the various departments as well as all the employes of both concerns. Extensive plans for the enlargement of both plants are being given consideration at the present time.



**Portland Cement Association Opens
Portland Office**

The Portland Cement Association opened a new association office on March 1 in Portland, Ore., at 146 Fifth street, with Hans Mumm, Jr., as district engineer in charge.

Since 1903 Mr. Mumm has been engaged in various engineering work in Washington, having been county engineer of Snohomish County from 1912 to 1915, and the year following, city engineer of Everett, Wash. Mr. Mumm joined the staff of the Portland Cement Association in 1916, since which time he has been identified with association work in Washington.



Lumber Association Formed

An organization to be known as the American Lumber Association was formed at New Orleans recently by leading wholesale lumber dealers of the United States and declared to be the greatest lumber organization in the world in scope, capital and business represented. The new association began operations the latter part of March with headquarters in Chicago. Its membership comprises wholesale lumber dealers in all important American cities with selling connections in all parts of the world.

L. Germain, Jr., head of the concern of that name in Pittsburgh, Pa., was elected president and L. R. Putman, of New

"How to Cut the High Cost of Building"

—a new source of
profits
for you



KITCHENETTE apartments present the greatest opportunity for profits to the builder.

Contractors! Show your clients how to save the cost of one or more rooms without cutting down the accommodations of the apartments.

Portal Wall Beds are full size beds—as comfortable and as sanitary as any bed you ever slept on. For each Portal Wall Bed used the space for one bedroom is saved. You satisfy your client and you make money for yourself.

CHANGE that large residence into profitable apartments by installing Portal Wall Beds. Just think what nice apartments you could have—and rentals come high in these days! This is a new source of profit that you can easily take advantage of.

Let us show you how to install Portal Wall Beds. It costs you nothing to ask for further information. Our plan suggestions and catalog will help sell Portal Beds for you. Write for these aids—they are free.

PORTAL WALL BEDS

"Highest Award Always"

PORTAL wall-beds have received Highest Award wherever exhibited—an evidence of quality that should interest the Builder.

Patented oscillating arm permits the "Portal" bed to revolve in a foot less space than any other revolving bed—a good point to remember.

W. L. VAN DAME COMPANY
58 E. Washington Street, Chicago

MARSHALL & STEARNS COMPANY
1152 Phelan Building, San Francisco

G. E. SHERMAN.....70 Washington Boulevard, Detroit, Michigan
BURR-AVEY COMPANY.....445 Leader-News Building, Cleveland, Ohio
H. E. HOLBROOK COMPANY...444-5-6 John Hancock Bldg., Boston, Mass.
STIX, BAER & FULLER DRY GOODS COMPANY..... St. Louis, Missouri
KITCHEN-QUICK & COMPANY.....2nd and Lansing Streets, Tulsa, Okla.

Install Portal Wall Beds

Speaking of **CONCRETE GARAGES**

Are you building them? Every car owner needs a garage that will protect his car from weather and fire, one that will be reasonable in cost and require practically no repairs—a concrete garage.

There are several ways you can use concrete to build a maintenance-free, permanent garage.

Our booklet "Concrete Block Garages" will show you one way. Write for a free copy.

PORTLAND CEMENT ASSOCIATION

Atlanta
Chicago
Dallas
Denver
Des Moines
Detroit
Helena

Indianapolis
Kansas City
Los Angeles
Milwaukee
Minneapolis
New York
Parkersburg

Pittsburgh
Portland, Oreg.
Salt Lake City
San Francisco
Seattle
St. Louis
Washington

Orleans, who resigned as director of advertising and trade extension for the Southern Pine Association, was appointed manager. Mr. Germain is president of the National Bureau of Wholesale Lumber Distributors, which was formed to serve the lumber needs of the United States Government during the war.

In the official announcement, the purposes of the association are stated to be to standardize the buying and distribution of the enormous volume of wholesale lumber business; to enforce a rigid code of business ethics among lumber wholesalers; to systematize distribution so that no part of the market shall be crying vainly for lumber while other parts of the market are glutted, and to devise means for eliminating the present enormous wastage in the lumber business.



Atlas Engineer Joins Advertising Concern

Horace D. Kerr, formerly with the Atlas Portland Cement Co., as engineer in charge of the Western technical and Western service departments, has resigned and joined the staff of The Nichols-Moore Co., general advertising agents, Cleveland, Ohio.



Gehr Construction Co. Opens New Office

The Gehr Construction Co., Inc., of Alexandria, La., has opened an office in Monroe, La. They would like to have manufacturers of building materials send literature and specifications covering their products to that address.



CATALOGS BULLETINS & BOOKS RECEIVED

The following literature, dealing with subjects of interest to builders is now being distributed.

"Distinctive Garage Door Hardware" is the title of a new ninety-six page catalog issued by the Richards-Wilcox Manufacturing Co., Aurora, Ill. The book presents in detail the sets of equipment made by the concern for use in garages. It is printed in two colors and contains many illustrations and drawings.

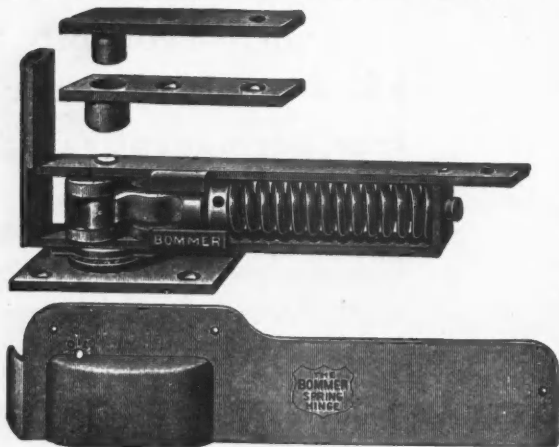
"Diamond T Accelerator," the booklet issued bi-monthly by the Diamond T Motor Car Co., Chicago, contains several stories on the use of their truck in various industries. It contains sixteen pages illustrated and a color cover page.

The AdSCO System of Atmospheric Steam Heating is described and illustrated in Bulletin 120 just published by the American District Steam Co., North Tonawanda, N. Y. Buildings in which the system has been installed are shown as well as drawings of the various parts of the appliance, and plans showing the way it is installed.

BOMMER

Floor Surface Spring Hinge

Double or Shingle Action, Holdback, Ball Bearing. Every moving part of this hinge can be oiled from a single hole on outside of side-plate.



The most durable hinge of its type; holds the door open when swung to 90 degrees at either side

Your Hardware Merchant Can Supply Them

Bommer Spring Hinge Company, Brooklyn, N.Y.



Stained with Cabot's Creosote Stain
C. M. Hart, Architect, Bay Shore, N. Y.

Stained Shingles

The Warmest, Most Artistic and Most Economical of all House Finishes

Wood shingles are two or three times warmer than the gummed paper substitutes, and they are cheaper, last longer and are incomparably more artistic and attractive. When stained with the soft, moss-greens, bungalow-browns, tile-reds and silver-grays of

Cabot's Creosote Stains

they have a richness and beauty of tone that no other finish can equal and the creosote thoroughly preserves the wood. Use them also on siding, boards, sheds and fences. Anyone can apply them with best results at least expense.

Cabot's "Quilt"

makes floors and partitions sound-proof by breaking up the sound-waves and absorbing them. It makes walls and roof cold- and heat-proof by a cushion of minute dead air spaces that prevents the conduction of heat. From 28 to 50 times as efficient as cheap building paper.

You can get Cabot goods all over the country
Write for samples and name of nearest agent.

SAMUEL CABOT, Inc.

Manufacturing Chemists BOSTON, MASS.
1133 Broadway, New York 24 W. Kinzie St., Chicago
Cabot's Brick Stains, Stucco Stains, Conserve Wood Preservatives, Damp-proofing, etc.

Let the barns you build advertise you

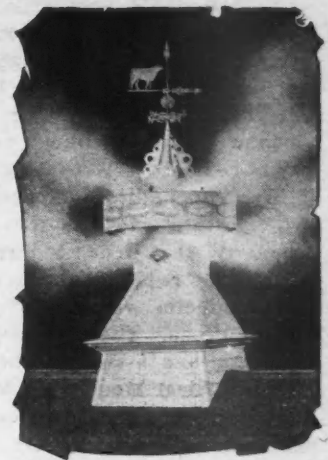
EVERY barn you put up should advertise you as a good barn builder. Whether it is good or poor advertising depends upon how well the owner is satisfied. Installing a King System will keep his stock healthier and preserve the building and contents by carrying off excessive moisture. Your client will profit, you will profit through his good will, and the condition of the building will advertise you favorably.

Let us make estimates on King Systems for the barns you are now planning. Send for our Book on Barn Ventilation. It is filled with photographs of many styles of barns with X-Ray views of King Systems installed.

KING VENTILATING COMPANY, 1202 Cedar Street, Owatonna, Minnesota
Ventilating Engineers for Creameries and All Farm Buildings

KING SYSTEM OF VENTILATION

"Makes Good Barns Better"



The King Aerator drawing moisture out of a barn. The steam can easily be seen in cold weather.



This diamond King trade-mark on a ventilating system is a guarantee that the building will be properly ventilated.



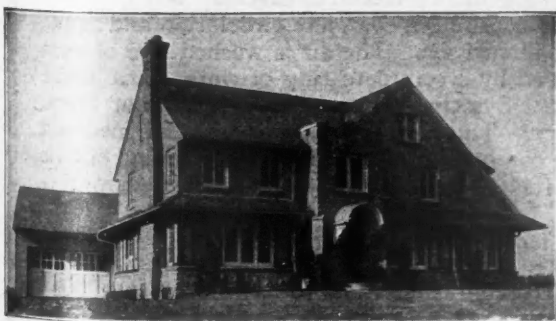
GOOD STUCCO JOBS

YOU can obtain good stucco results by selecting good stucco for your work. Good stucco must be a magnesite stucco, and should have the following qualities:

- It must be easy to apply.
- It should cover a wide surface.
- It must have great tensile strength and elasticity.
- It must set hard and dense.
- It must not break loose or fall off.
- It must resist expansion and contraction.
- It must not check or crack where the walls are of stable construction.
- It can be applied to almost any surface or lath.
- It must be dependable.



This house was made attractive and comfortable with Kragstone Stucco at small expense



A fine substantial home of rare artistic beauty, finished with Kragstone Stucco

"The Stucco Beautiful"

KRAGSTONE
AMERICAN MAGNESIA PRODUCTS CO. CHICAGO
STUCCO

Such a stucco is Kragstone Stucco. Kragstone Stucco is beautiful, permanent and inexpensive. Used in connection with Kragstone dashes, it is possible to obtain natural color surfaces, or striking combinations. To interested builders, we will send illustrated book, specifications and prices. Write to

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104 N. La Salle Street, Chicago

The Portland Cement Association has compiled an interesting little booklet explaining how to take photographs for illustration. It has a cartoon cover and contains several examples of photographs of construction projects which were taken without regard to rule. It shows by way of contrast pictures which are adapted for illustration.

"Styles for Stucco—Modern English Country Houses" is the feature article in the new monthly magazine published by the General Fireproofing Co., Youngstown, Ohio. This February number marks the change in policy of the bulletin which has been published heretofore as a house organ. The new issue will be sent to contractors, engineers, and architects throught the country.

Climax Steel Moulds for Making Slushpoured Concrete Building Blocks are described and illustrated in a sixteen-page catalog issued by the S. P. Stone Co., Columbus, Ohio. It also describes the iron trucks for mounting of flasks for factory use manufactured by the same company.

"Rainier Worm Drive Delivery Trucks" is the subject of a thirty-two page booklet with cover issued by the Rainier Motor Corporation, New York, N. Y. It contains several phantom views of the various parts which go to make up the truck, and illustrations of the truck in actual use.

"Graphite" for February reproduces several etchings and contains short articles and stories about the crayons and pencils manufactured by the Joseph Dixon Crucible Co., Jersey City, N. J. It is published monthly by that company.

"Pictures that Talk" is the unusual title of a booklet in colors published by W. L. Evans, Washington, Ind. The vanishing door which Mr. Evans devised is the subject of the booklet.

"The Model T Ford Car," is the title of a 410-page book by Victor W. Page, published by the Norman W. Henley Publishing Co., New York City. The new edition has been revised and contains descriptions and illustrations of the Ford car, Fordson tractor, F. A. starting and lighting system and the Worm Drive one-ton truck.

Furnishings, equipment and supplies for hotels, restaurants, hospitals, etc., are described and illustrated in the latest catalog issued by Albert Pick & Co., Chicago, Ill. It features the merchandise and building equipment which the concern manufactures and sells.

The Smith Simplex Paving Mixer is fully described in a color cover booklet published by the T. L. Smith Co., Milwaukee, Wis. The new mixer which the firm manufactures is illustrated by photographs and phantom drawings. The Smith company recently issued a book entitled "Never Failing Water," which deals with the subject of pumps. It contains friction tables and pumping charts.

Elevators and Crib Plans is the subject of a color catalog issued by the Morton Corporation, Morton, Ill. Its thirty-two pages are devoted to detail drawings of the Morton elevator, conveyors, and also include several blue prints of corn cribs.

The Clay Line of Farm Gates, Dairy Barn and Hog House Equipment is described fully in a new catalog issued by the Iowa Gate Co., Cedar Falls, Iowa.



TENANTRY is a poor substitute for the real home, as it leads neither toward independence or responsibility nor toward community association, which is as necessary for the poise and development of the adult as it is for that of the child.

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