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VOL. XXV

September, 1918

No. 6

Lumbermen Patriotic

Advise with Farmer and Industrial House Contractor and Show Him Best and Cheapest Way to Make Necessary Improvements—Don't Overlook Labor Saving Equipment

WE know that the retail lumber dealers representing the rural building industry are 100 per cent patriotic, and desire to do everything they possibly can to contribute to the winning of the war. Their private business interests are gladly sacrificed if that is necessary to the general good.

The government has asked that unnecessary building be curtailed so that all energy can be turned to necessary building which will assist in the winning of the war.

Aside from the war construction work, which the War Department itself is putting thru, necessary building means just two things, (1) in the agricultural and stock raising districts farm buildings to increase production and save farm labor, and (2) in the manufacturing centers industrial housing or homes for working men.

Let every lumberman center his whole attention on these two lines of necessary building improvements, and do everything he can to encourage them.



U. S. Will Send Exhibit to Indiana State Fair

ONE of the features of the Indiana State Fair this year will be an exhibit by the Federal Government. Arrangements have been completed and the

exhibits will be opened when the state fair starts, Sept. 2. The federal exhibit, which is under the supervision of A. A. Ormsby of the United States Department of Agriculture, will include principally models of farm buildings, showing the construction of dairy barns, silos, poultry houses and other farm buildings. It will also include directions for farmers on how to assist in the national movement for conservation and production on the war-time scale urged by the departments at Washington.



Government Urges Building of Farm Tenant Houses

Washington, D. C., Aug. 20.—Farm tenant houses will be the means of solving the farm labor problem, according to G. I. Christie, assistant to the secretary of agriculture, and Clarence DuBose, special assistant, who have written a bulletin entitled "Supplying the Farm Needs." In it they say:

"There is at this time a need for a larger number of comfortable homes for the tenants and hired help on the farms. The old shack that was simply a place in which to exist will no longer satisfy the workers. For the appearance of the farm and the beautification of the country, suitable, comfortable homes should be built and maintained. The building of houses for the help will allow many farmers, instead of moving to town, to remain in their own homes on the farms, where they can render the greatest assistance to the community and to agriculture."

Tool Makers Forego High Polish and Cut Down Number of Styles

THE Government has requested all manufacturers to reduce finishes and to polish tools only where absolutely necessary for the utility of the tool. By eliminating high finishes, it will save labor and conserve emery and other materials which are very scarce.

Tool manufacturers are, of course, meeting the government's requests, and while tools will be neat in appearance and just as serviceable, they will not be as highly finished as formerly.

Also to conserve stocks the Government has requested that all manufacturers make only the absolutely essential patterns. One prominent concern advises that they have reduced their hammer line over 75 per cent, continuing only the most necessary sizes.

This same program is being carried out on all lines of tools and the carpenter should understand that if he purchases tools that are not as highly finished as formerly he is assisting the government to that extent.



Importance of Door Hangers

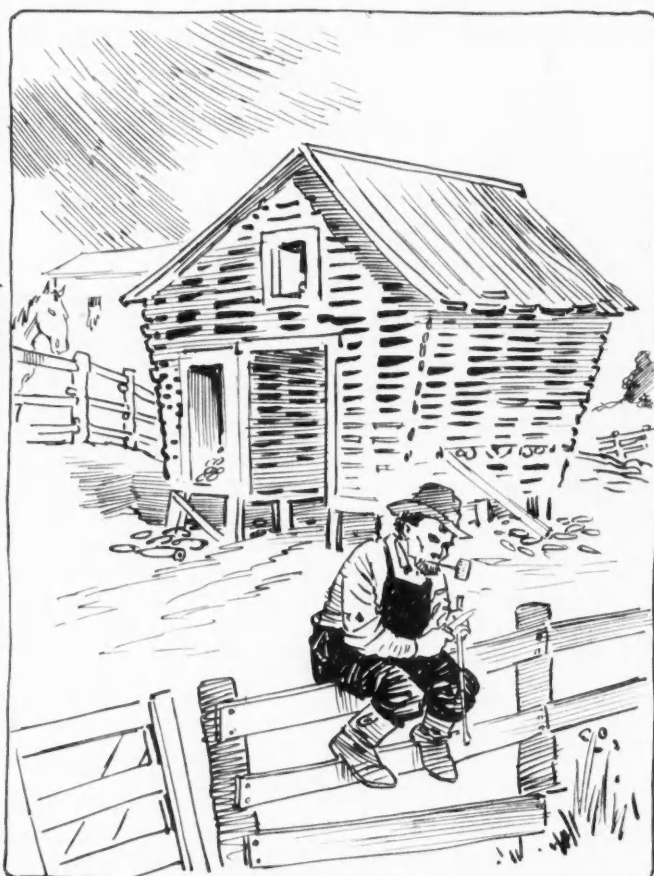
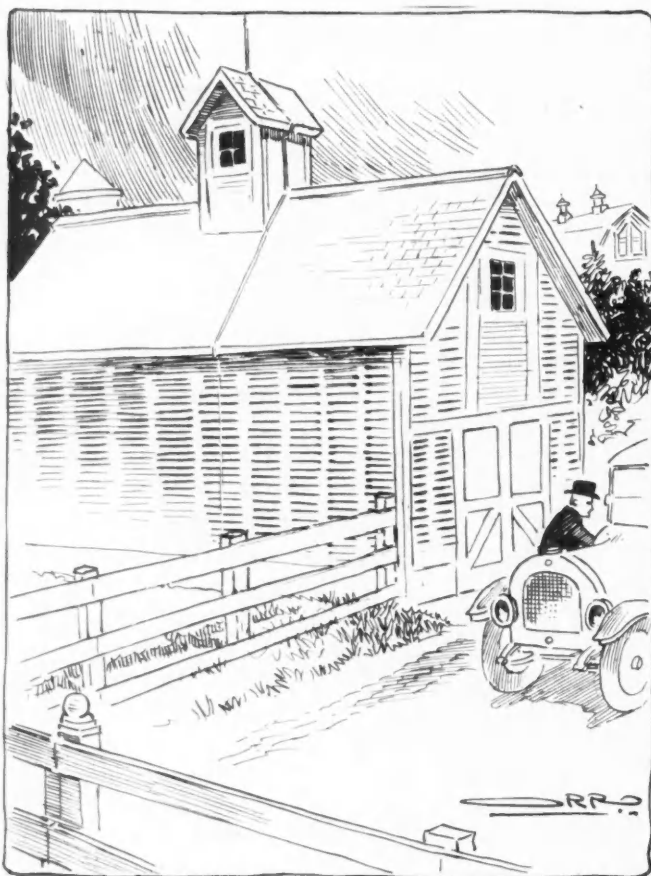
A PARAGRAPH from a recent letter from one of the leading manufacturers of builders' hardware is especially interesting at this time, when there is so much being said about "essentials" and "non-essentials":

"We might add that altho building is limited at the present time, the door hanger business has continued good with us and promises to be good because of there being a continued demand for door hangers, not only for new buildings but for replacements, which is especially true of barn and warehouse doors, where every care is being exerted in the protection of present buildings and the implements and other products that are stored therein. In other words, while it might appear at first thought that door hangers are not as essential as other products of the hardware line, the real facts are, they are required to keep the buildings properly protected, and outside of those needed for new buildings are used only for replacement of other hangers that have worn out or have not proven satisfactory, so that the manufacturer of door hangers at the present time does not in any way encroach upon the material that could or should be used for other war necessities."

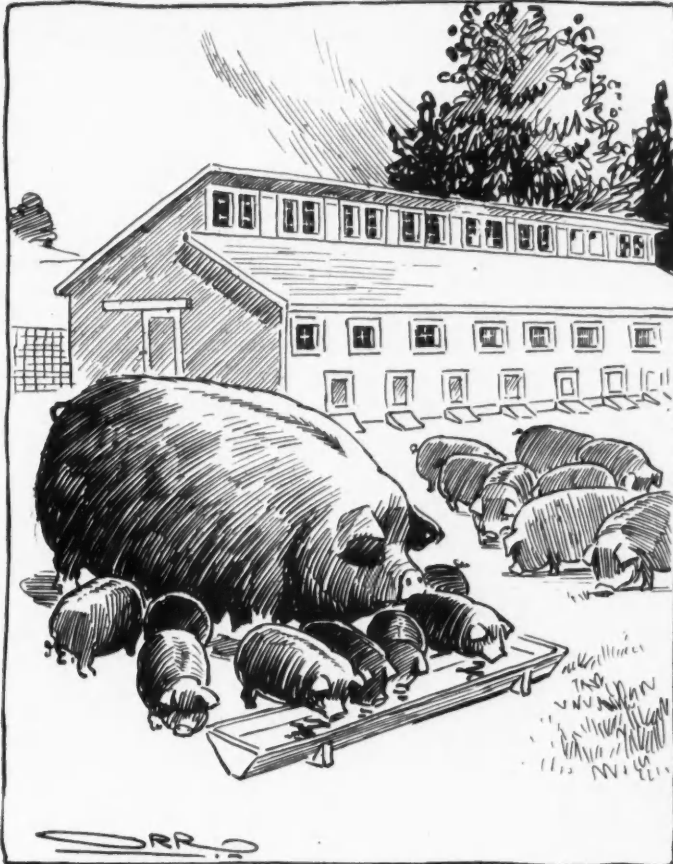


Magnitude in Present-Day Construction Work

SIZE and speed distinguish most of the present-day undertakings in the construction field. Contracting firms that four years ago would have looked upon a million-dollar contract as large are today as readily undertaking work that runs up into the tens of millions and are handling men by the thousand and material in



The Unhoused or Poorly Housed Corn Crop is a National Crime. Rats Destroy Each Year in the U. S. \$200,000,000 Worth of Poorly Housed Grain. Much More Molds and Is Neglected in the Shock, and Goes to Waste. Building Repairs and Improvements to Encourage Better Farm Management Will Often Double the Marketable Surplus of Corn and Grain Crops. Our Cartoonist, Mr. Carey Orr, of the Chicago Tribune, Tells a True Story in Three Sets of Companion Pictures on This and the Two Pages Following. In Each the Contrast Is Made Very Plainly Between How It Should Be and How It Actually Is, All Too Often, on the Average Farm. Mr. Orr Shows His Knowledge of the Connection Between Farm Buildings and Productive, Efficient Farming. It Is Interesting to Know That He Is the Son of a Lumber Man and Grew Up on the Farm.



Cause Two Good Litters of Pigs to Grow Where Only One Poor Litter Grew Before! The Winter Hog House Does This. It Permits Farrowing in Early Spring and Again in the Fall. The Hogs, Both Young and Old, Thrive in Snug, Sanitary, Well Kept Quarters. Give the Pigs a Chance and HELP UNCLE SAM SEND OVER THE BACON by Encouraging Necessary Improvements Around the Hog Yard of Every Farm.

heretofore unheard of quantities.

The following authentic figures regarding the largest destroyer plant in the world at Squantum, Mass., are, therefore, of peculiar interest. This plant, built by the Aberthaw Construction Company of Boston for the Bethlehem Shipbuilding Corporation, Ltd., was started in October of last year and the work carried thru to completion during one of the most severe winters that New England has ever known.

The site when the builders started work consisted of a marsh with a few areas of upland here and there that were slightly above high tide level. In order to make land on which to build buildings one and one-quarter million cubic yards of filling had to be deposited upon the land. About two-thirds of this quantity was dredged up from the harbor by the dredges which were forming the launching basin and channel that connects with the main ship channel. The remainder of the material was dug by steam shovels in various adjoining gravel pits. In order to move this amount of material a travel of 140,000 car miles was recorded.

Five thousand freight cars full of building material were brought to the job. The size of this can be gained if it is remembered that these cars placed end to end would

reach from Boston to Worcester, and in addition to this, 50,000 truck loads and team loads of material of various kinds were brought over the road.

Most of the buildings are built upon piles, about half a million lineal feet of wood and concrete piling being driven.

The steel framing of the buildings called for 11,000 tons. The area of the roofs of the buildings amount to 30 acres, and the perimeter of them is just under three miles. There is twelve acres of window glass in the job, requiring 110 tons of putty to fasten it in place. Six miles of standard gauge railroad track were laid around the building and in connecting to the main line of the N. Y., N. H. & H. R. R. In addition to this two miles of narrow gauge track and four miles of trolley line to connect with the Boston Elevated Railway were put in.

The wood roofs and wharves and docks and temporary buildings called for a total of 10,000,000 board feet of lumber, the bulk of which was cut in the South. Thirty miles of piping were needed in order to take care of the needs of water and sewerage, steam, compressed air, fuel oil, sprinkler lines, fire mains, etc., and 16,000 sprinkler heads to protect the buildings from fire. Eight

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 ment Departments.

thousand gallons of paint were needed for windows and steel woodwork, etc.

For carrying thru the great undertaking the Aberthaw Construction Company added quickly to their permanent organization enough men to make up a total of nearly 6,000. They have now under way for the same clients a far larger undertaking on the Pacific Coast that may eventually call for the work of 20,000 men.



Travel Less, Use the Printed Salesman More

IN a statement addressed to the public and sent broadcast Aug. 20, Director-General McAdoo asks that railroad travel be restricted as much as possible, as a patriotic duty, and explains that the over-crowded condition of trains in some sections is due to the necessity of using coaches and sleeping cars to transport troops. He adds that the increased demands upon track and terminal facilities for the transportation of the tremendous amounts of coal, food supplies, raw materials and other things required for military and naval operations, as well as for the support of the civil population of the country, force the largest possible curtailment of passenger train service.

"It was hoped that the increase in passenger rates recently made would have the wholesome effect of reducing unnecessary passenger traffic thruout the country," says Mr. McAdoo. "The smaller the num-

ber of passengers who travel, the greater the number of locomotives and cars and the larger the amount of track and terminal facilities that will be freed for essential troop and war material movements. Engineers, firemen and other skilled laborers will also be released for service on troop and necessary freight trains.

"Among the many patriotic duties of the American public at this time is the duty to refrain from traveling unnecessarily."

A good many manufacturing concerns that have been relying chiefly on "shoe leather" for their sales work, will now turn more to display advertising. They will find it will do the same work more efficiently and at lower cost.

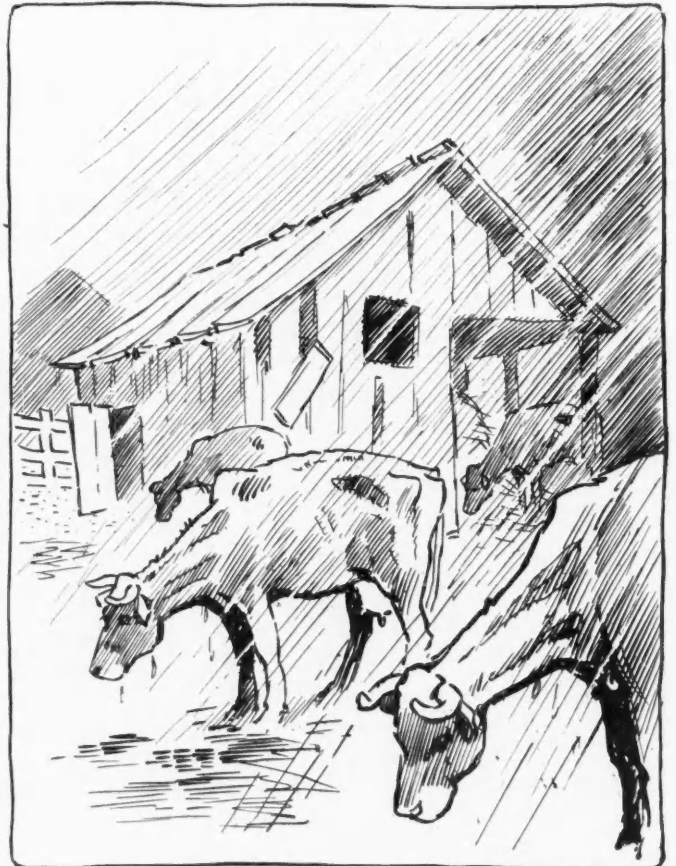
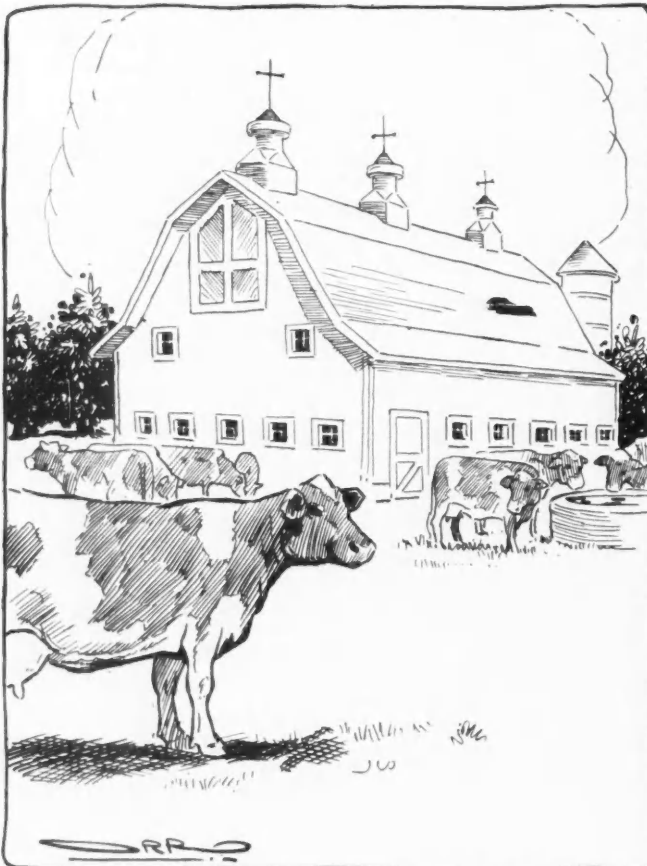


Install Storm Sash and Save Fuel

USE wood but do not burn it—thus you will aid in conserving coal this winter."

This is the central idea for a campaign among lumber dealers and builders to help save fuel this coming winter by making all houses more nearly storm-tight.

Just how wood is to be used to save coal without burning it is explained as meaning the installing of wooden storm sash on all windows and doors. They will do the work of many thousands of tons of coal, if they are generally adopted thruout the country.

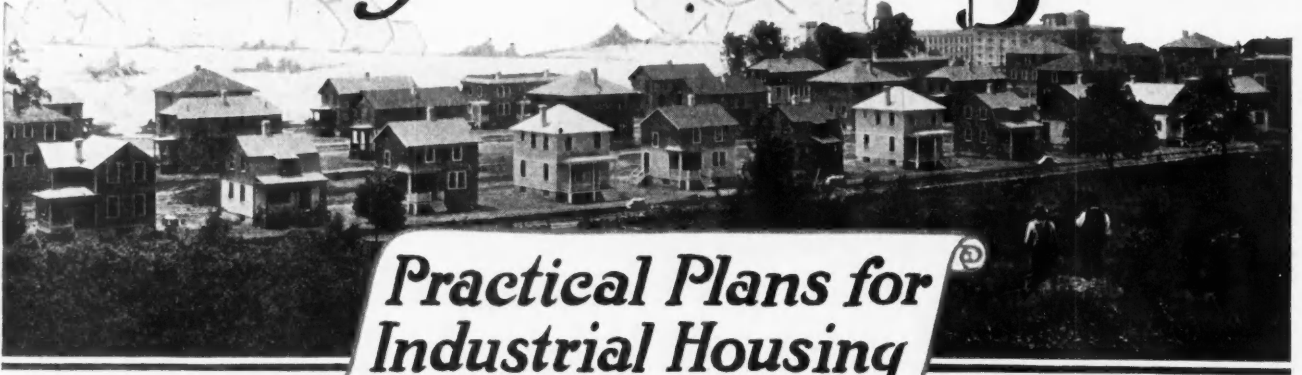


Dairy Cows and Also Beef Cattle Should Be Properly Housed in Order to Make the Farmer Any Money or to Increase the Nation's Supply of Beef, Milk, Cheese, and Butter. Our Cartoonist, Mr. Carey Orr, of the Chicago Tribune, Pictures the Situation Exactly in the Above Sketches. A Good Stable with Modern Conveniences Saves Farm Labor, Encourages Better Dairying Methods, Conserves Feed, and Soon Puts the Run-Down Farm on a Paying Basis.



LIEUTENANT WILLIAM A. RADFORD, JR.
Son of the President and Editor-in-Chief of the American Builder.
Military Aviator Recommended for Pursuit Work, Commissioned July, 1918, at Dorr Field, Arcadia, Fla.

Homes for Workingmen



Practical Plans for Industrial Housing

Varying Designs for Group Housing

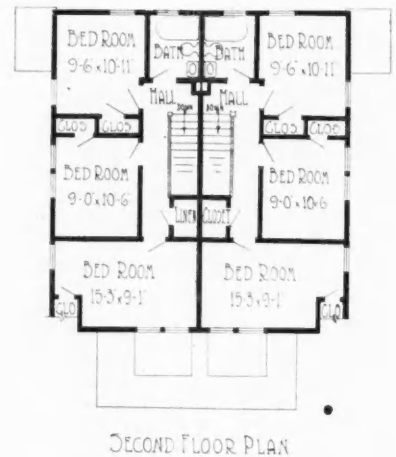
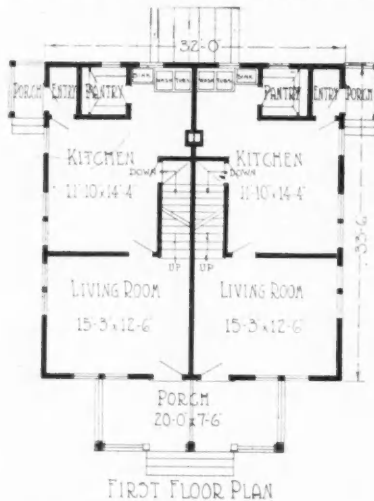
HOW THIRTY-TWO INDIVIDUALIZED INDUSTRIAL HOUSE DESIGNS WERE WORKED OUT FOR THE CHENEY BROS. DEVELOPMENT AT WATERBURY, CONN.

By Peter F. O'Shea

PEOPLE during these days of cantonment building and shipyard dormitory building on a gigantic scale of multiple units would be more interested in building in lots of a dozen or a score of houses in a group, if it were more generally realized what savings result, not only when all the houses have the discouraging monotony of the old-time factory huts, all alike and all painted pink, but also where the houses are all either radically different or externally different in appearance. A better understanding by the public of the possibility of getting attractive and variegated groups of houses and a comprehension of the points at which saving is made by building more or less different houses in a group under a single contract, would stimulate such wholesale building either by factory owners for housing or by loan associations and other clubs for residences. A lot of thirty-two houses recently built by the Lynch Construction Co. of Waterbury, Conn., for the Cheney Brothers, owners of the large silk mills in South Manchester, happens to be available for description of the layout, methods and principles involved.

The houses are intended for the overseers and skilled operatives of the company, men drawing from \$20 to \$35 a week. The location is within four or five minutes' walk of the factory, which is itself in a pleasant environment. As men cannot be

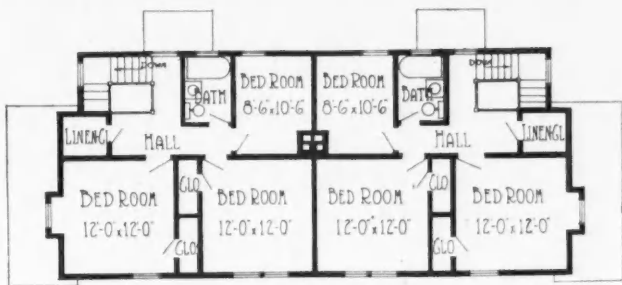
forced to live where they do not want to, and as self-respecting men never want to live in one of a row of houses where he must tie a red handkerchief in the parlor window in order to tell which house is his, the first requirement after shelter and sound building is that the houses be varied. This, however, does not forbid their being alike in a great many basic respects. Therefore, parts of some houses are duplicates of parts of others, and there are some complete duplicates of plan, tho these are widely scattered among the other houses,



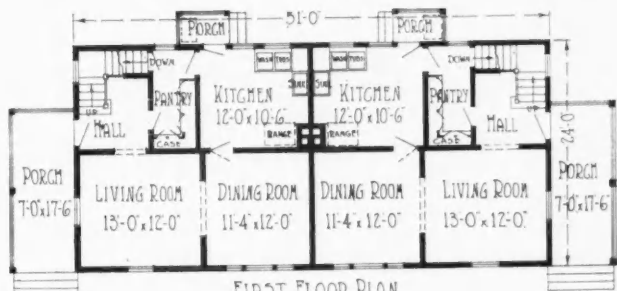
This is the "Oakdale," One of Thirty-two Houses Designed and Built at South Manchester, Conn., for Cheney Bros., by the W. G. Lynch Construction Co., of Waterbury, Conn. This is a Double House, Size on the Ground 32 by 33½ Feet, Five Rooms to Each Family.

so as to be invisible from each other. The houses include those of from one apartment to four apartments, and the duplications of floor plan may be summed up in the following table:

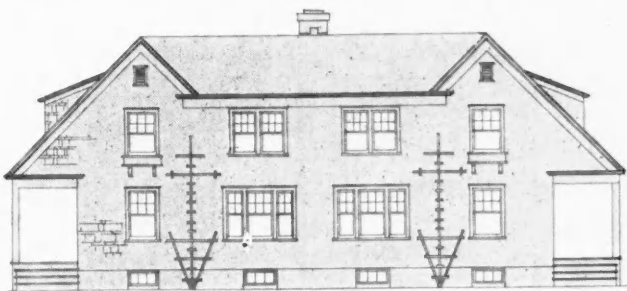
- 6 four-apartment houses on same floor plan.....A
 - 7 two-apartment houses on same floor plan.....B
 - 6 two-apartment houses on same floor plan.....C
 - 4 three-apartment houses on same floor plan.....D
 - 3 one-apartment houses on same floor plan.....E
 - 2 one-apartment houses on same floor plan.....F
 - 4 one-apartment houses on same floor plan.....G
- All thirty-two houses therefore comprise living quar-



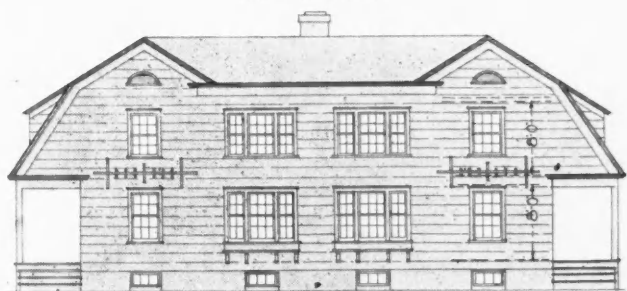
SECOND FLOOR PLAN



FIRST FLOOR PLAN



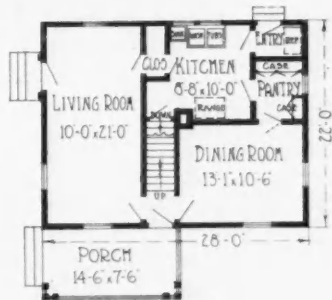
FRONT ELEVATION A



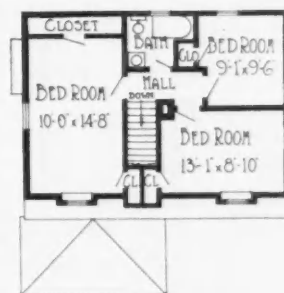
FRONT ELEVATION B

This "Semi-Detached Cottage" to House Two Large Families, Shows an Interesting Variation in Exterior Design. Notice the Front Elevations, "A" and "B."

ters for 73 families. It will be noticed that the single houses are more varied than the multiple apartment houses. They are also intended to rent at a higher figure, the estimated rental being \$26 a month for them,



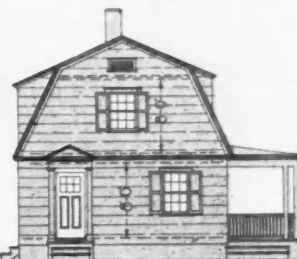
FIRST FLOOR PLAN



SECOND FLOOR PLAN



FRONT ELEVATION



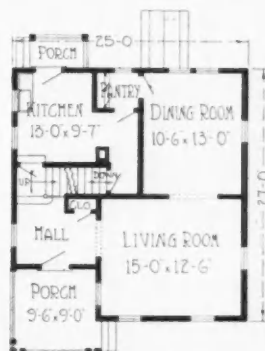
SIDE ELEVATION

This Cottage Designated "Eastview" is a Dutch Colonial Gem. Occupying 28 by 22 Feet of Ground, It Gives Six Well Arranged, Modern Rooms.

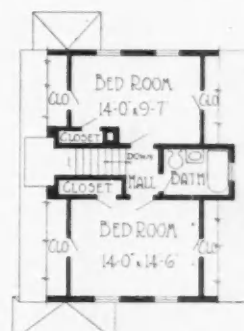
while it may go as low as \$17 or \$18 for apartments in the four-unit houses.

The ground plan of the four-apartment houses is along modern lines, not the straightaway row of segments, but with the two end units, each of five rooms, built like cottages and the middle units of four rooms inserted lengthwise between.

Tho the table shows only seven general plans, the actual variation in appearance is much more than that, due to the changing of external structure. Gambrel and gable roofs are scattered to best advantage, being arranged in the multiple unit houses, some along and some across the axis. The porches and verandas are combined with different plans, on this house a lattice



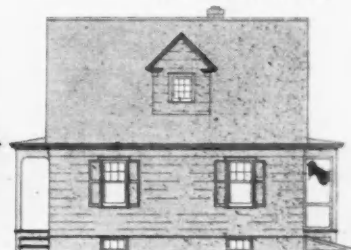
FIRST FLOOR PLAN



SECOND FLOOR PLAN



FRONT ELEVATION



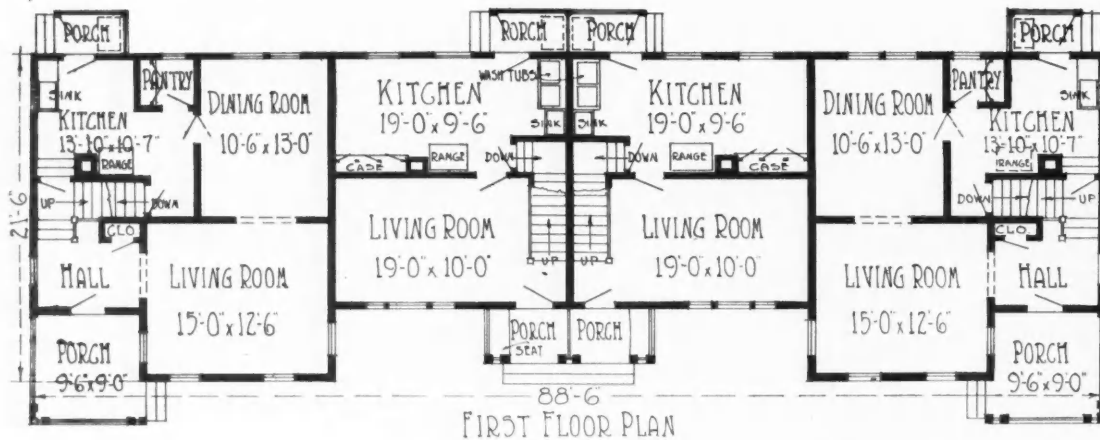
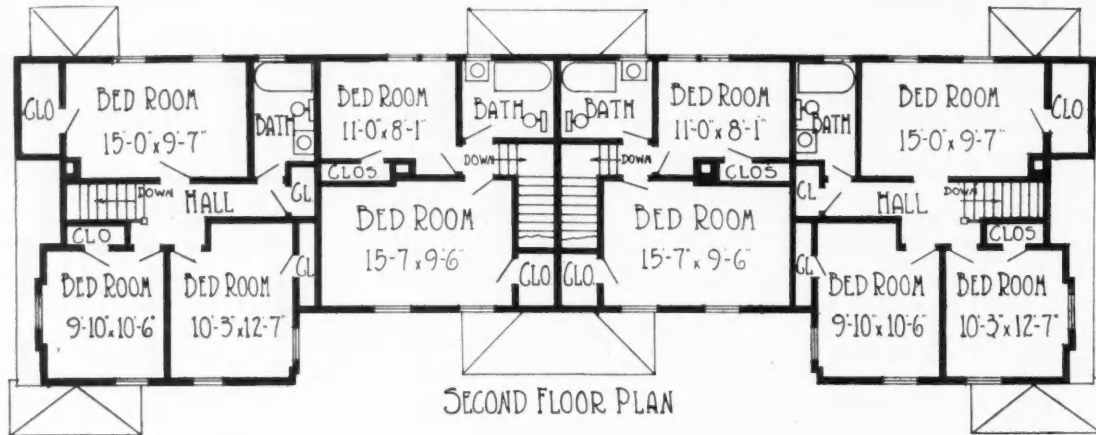
SIDE ELEVATION

The "Sycamore," as the Lynch Construction Co. Call This Design, Makes a Neat, Inexpensive Five-Room Cottage.

porch, on that a fancy design, and on the middle apartment of one triple house is a neat little 6-foot square porch with a curved roof. Selections of these porches are shown in the accompanying sketches. The roofing is varied—on one house shingles, another slate, and on a third asbestos slate with its squares lapping down over one another cornerwise. The exterior finish on the side walls is also varied—clap-boards, novelty siding, shingles, double-shingles, stained shingles, etc. Even the ventilators under the peak of the roof have different twists. One is a little rectangle lying on its long side, another practically the same rectangle standing up the long way. It is surprising what a difference in appearance such a little thing makes to the house.

A third ventilator is framed in a semicircle. These, combined with gable and gambrel roofs judiciously, with an eye to the neighboring houses, give quite a number of combinations.

The different forms of windows are another source of variety. When an attractive little semicircular red-roofed dormer looks out from the roof above an attic room, there is no need for a red handkerchief on the doorknob. Some of the houses also, especially on the corners, are set at an angle to the streets. All in all, considerable variety is attained even in the form of the houses. When the variations in paint and trimming are added, it is easy to see that no one can tell at a single glance that many of the neighboring houses



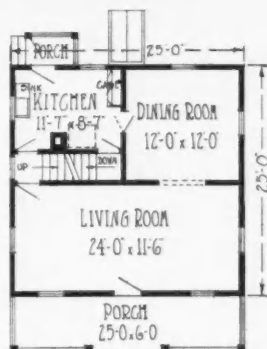
FRONT ELEVATION

The "Elms Cottage" is a Four-Family Building. The End Units contain Six Rooms, Three Downstairs and Three Upstairs, and the Inside Units Four Rooms, Two on the First Floor and Two Above. This is a Very Practical Type of Industrial Housing Structure, Being Economical Both as to Construction Cost and the Amount of Land Occupied, as Gauged by the Number of Families Provided For.

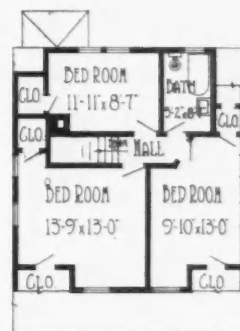
are practically the same. A view thru the territory shows to the casual observer an orderly grouping of well-built distinctive houses.

The saving in building the group can nevertheless be great even for an extreme variation. The plumbing layout in all types is made as nearly as possible the same, so that tho his elbows may be facing differently, the plumber's cutting plan will look very much alike for most of the work, and his men can work faster. The plumbers are quick to recognize the value of this. The company was not satisfied with the original bids, but when they drew the attention of the bidders to the essential sameness of the layouts, they secured bids from four hundred to five hundred dollars off the original bids.

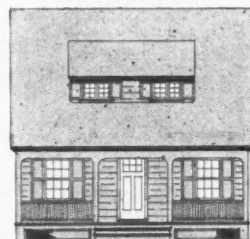
The heating layout is also the same. Therefore the hot air conduits were able to be made wholesale at the



FIRST FLOOR PLAN



SECOND FLOOR PLAN

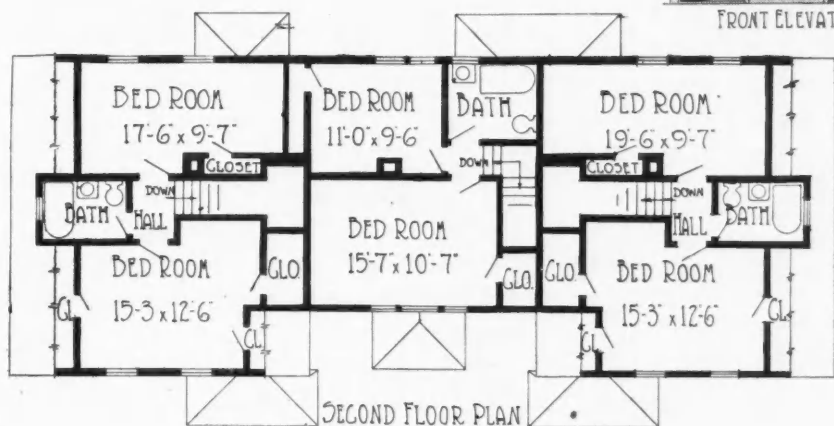


FRONT ELEVATION

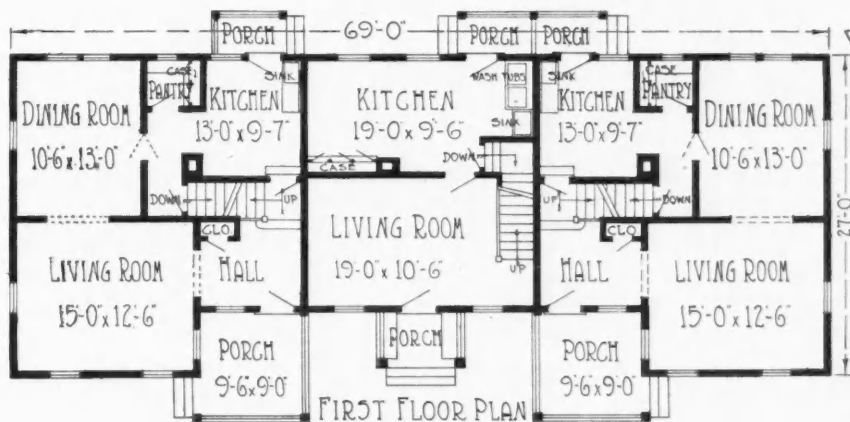


SIDE ELEVATION

The "Brookdale" is a Good Looking Six-Room Cottage 25 Feet Square, Not Including Front Porch.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

factory and shipped to the job by carloads. The work of putting them up was correspondingly easier, since once the gang got into the habit of the layout, the work almost scheduled itself. The same make of furnace, of the moist air type, was bought for all the houses, the only variation being in the size of the fire box, which was in three different sizes, but all of the same height. The discount on furnaces when 37 are bought at once is respectable.

The electric fixtures thruout the group of houses are all identical, and the general plan of the wiring is the same except for a few slight variations due to difference of floor plan which radically affect the wiring, of which differences there are not many. The saving in buying fixtures by the wholesale is at once



FRONT ELEVATION



SIDE ELEVATION

The "Crescent" is a Three-Family Building, the End Units Containing Five Rooms; the Middle Unit Four. This Is One of the Popular Designs Used by the Lynch Construction Co. for the Cheney Bros. Dedevlopment at South Manchester, Conn.



"Crestview" is a Conservative Six-Room Design, Size 25 by 25½ Feet, Not Including Porches. Notice That in All of These Designs the Height of Both First and Second Stories is 8 Feet.

seen to be great, and the electric wiring executive immediately saw the saving in labor cost of work so often repeated, and was willing to share the reduction with the owner.

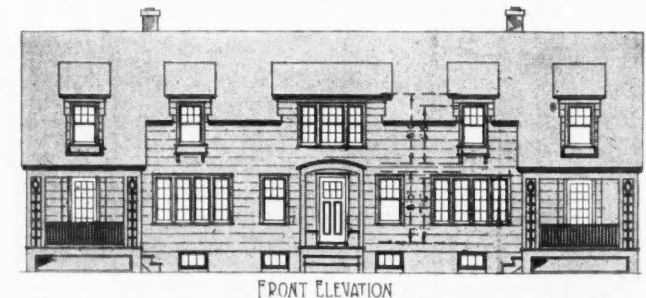
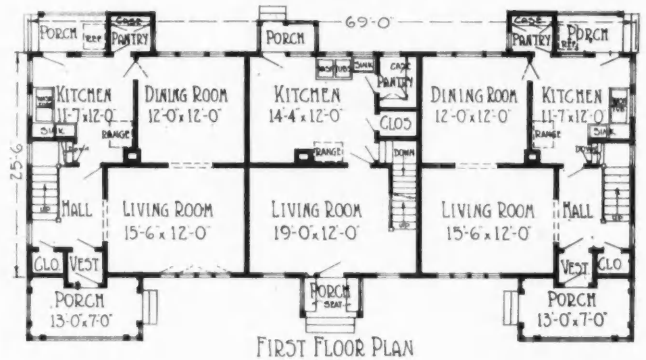
Hardware was bought at a great saving, because that also is all alike thruout the group. The owner was able to compare his hardware price on this job with the price on another smaller job completed a year earlier, and found that the unit price was less on the big job, tho the hardware was appreciably better—and this in spite of the general increase in prices meanwhile.

Grading and excavating can be seen at once to be much simplified where it takes in such a large plot.



"The White Oak" is a Very Popular Six-Room Detached Cottage Design.

In the ordinary town, grading one residence lot at a time, each lot has to be carefully smoothed to join well and look well with its neighbor, no matter what difficult angles are involved. But where the dirt from cellar excavation can be spread wherever needed, all the lawns brought to grade at once, and the sidewalks and roads be cared for at the same time, the cost per yard of the whole is immensely reduced. The amount of work done per man and per team is also increased, because the right number can be hired to make the job a steady one for all during a considerable period of



The "Forest" Three-Family Building Illustrated Above is an Interesting Variant of the "Crescent" Design on Page 27. The Size on the Ground is Practically the Same, and the Middle Four-Room Unit is Very Similar. The End Units Are Changed in a Way to Get Six Rooms Each Instead of Five.

time, and the loss of odds and ends of hours in going to and from odd assignments is eliminated. Eight teams are kept busy excavating and grading on this contract.

All these savings, added to savings in labor cost due to group organization, aggregate a considerable proportion of the usual cost of 32 separate houses of the same grade, all of which saving is shared with the owner. Or, to put it another way, the owner gets several of the houses for nothing.

The organization of the construction work to secure
(Continued to page 112.)

Cartoon Movies Urge Farm Building Repairs

MORE than one hundred thousand persons saw and laughed at the animated "Concrete" cartoons displayed on 108 films at motion picture houses during one week, recently, according to the weekly letter of the Portland Cement Association.

"Concrete for Permanence" is the subject of the films, which present clever scenarios with characters conceived in the brain of a cartoonist with a well developed sense of humor.

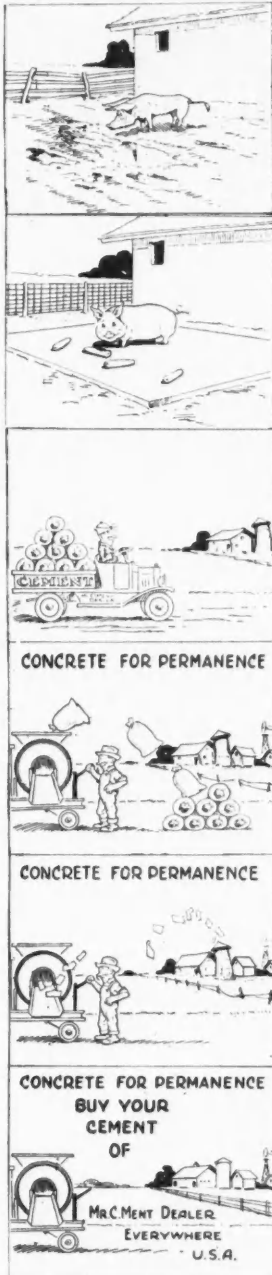
Dealers in increasing numbers are making use of this comic film service. Each film presents to the audiences of the motion picture theater using it, a card of the cement dealer under whose auspices it is exhibited, and it has proved to be a very effective business getter.

"Routing the Rat" is the title of one of these animated cartoons. The humor is afforded both by the pictures and by the verse, which accompanies them. The name of the dealer appears upon the last picture in the series. In these the verse is "not so worse," as you will all agree. Just take a look—right in this book. The verse is good, you see.

"Mr. Rat was very fat. The reason you will see. He lived on corn From night till morn In this old granary But Farmer Blys Was purty wise So this is what he did: Down town he went And bought Cement To build a brand new crib. The word CONCRETE Has spelled defeat For me and my relation; So see this man Soon as you can For CONCRETE information."

Another film shows a slim porker, who roots in the mud for his feed; and his fat, contented relative, who sips his swill—or grabs his grub—from off a cement floor. There's a lesson with every laugh, in this film.

Still another film presents one of those foolford owners, who, feeling that his farmstead needs a few touches of concrete magic, fans a permanent home into being.—The Medusa Co-Operator.



Necessary and Patriotic Farm Building Improvements Are Brought to the Attention of Movie Patrons by Cartoon Strips Like These.

Loans to Farmers

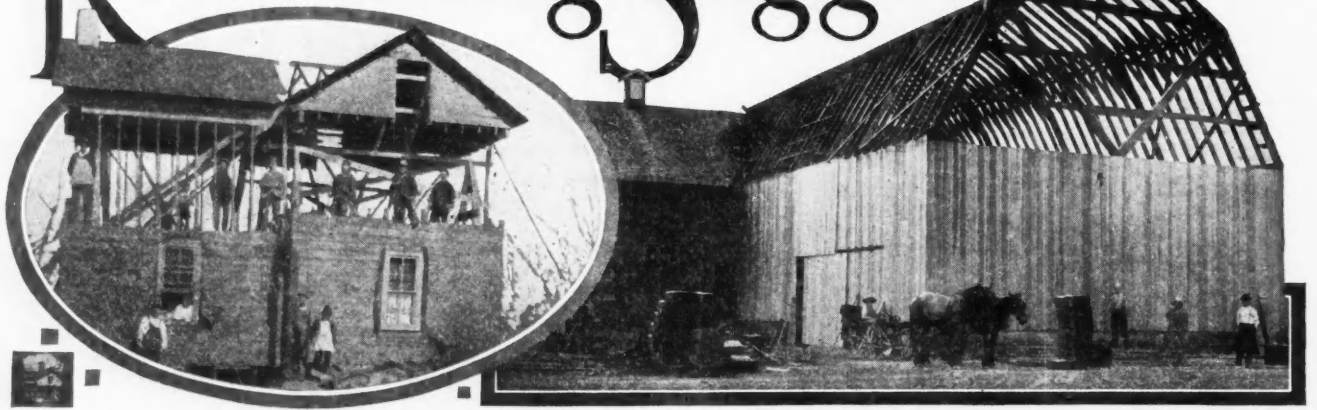
President Wilson has placed at the disposal of the Treasury and Agricultural Departments \$5,000,000 to enable them to furnish aid to wheat growers in certain sections of the West who have lost two successive crops by winter killing and drought. The federal land banks will act as financial agents of the government to make and collect the loans.

This fund is not intended to be lent to farmers who have banking collateral; the action of the War Finance Corpora-

tion in urging the banks to finance such farmers and its promise to support them in such financing, it is believed, will amply provide for them.

Loans from this fund will be made to individuals who have not banking collateral, and only where it is necessary to enable a farmer to continue to grow food products. The money will be advanced upon the crop of wheat or substitute grains planted on the land, and no loan will be in excess of \$3 per acre and no applicant financed beyond 100 acres.

Remodeling Suggestions



Modernizing the Exterior

PART II OF A VERY TIMELY SERIES

By Chas. G. Peker, Architect

THERE are several different reasons for making an alteration to a house. It may be that more room is required, the outside may look shabby and be out of style and additional porch room may be desired, or some part of the house may be damaged and need replacing, etc.

The exterior appearance of the house may be changed in many different ways. If more room is required an extension of some sort may be added. This may be on any side of the house desired and space permits. An additional story may be added or rooms placed in the attic by getting extra room there by means of adding a dormer; or if it is a low roof it may be raised and an additional story sandwiched in between.

The appearance of the entire building is sometimes altered by a slight change in roof design—a little more overhang or a hipped end changed to a gable end, etc.

A new porch can be added and this will largely change the exterior appearance of the house; or a portion of the old porch can be glassed in for a sun parlor. A sleeping porch can be added or part of the walls removed and additional windows put in to make the sleeping porch, etc.

The body of the house itself can be altered in appearance and at the same time preserved by recovering the outside. The old shingles, clapboards, etc., may be in bad condition and these may be removed and a new covering put on of wide or narrow clapboards, shingles, stucco, brick veneer, etc. These materials may be used either singly or in combination so as to produce an artistic effect as well as being of practical use in covering the building.

Perhaps an open fireplace is desired in some room. It can be built partly inside and partly outside of the wall, where it can be made a very picturesque part of the exterior design.

To preserve the house from the weather a good roof

is essential. The existing roof may be in a bad state and the best thing to do is to put on a new roof and this also can be made an artistic feature, adding greatly to the appearance of the house.

Even a very plain building can be made rather attractive by the simple adding to it of a little ornament—a few well-made pieces of lattice work, a little cornice, etc., will give it an artistic look that it lacked before.

The final and one of the most important points in keeping a house well preserved is the painting of the exterior parts and a good deal of the attractiveness of the house will depend on the selection of the proper colors for the painting.

Chipped Slate Asphalt Roofing Used for Siding

A very neat, cheap and satisfactory way of overcoating a building is by using the chipped slate asphalt roofing that can be bought in strips by the roll, usually 32 inches wide and 48 feet long. Red and a grayish green seem to be the most common colors. It is useful in producing half timbered effects in gables, etc., at but slight expense and even at a close view it is taken for stucco work.

Where a little stucco work is desired the effect can be had by the use of this material as it saves the trouble and expense of mixing up a small quantity of stucco, which would be rather expensive.

A very interesting example where this material has been used for siding is shown in the illustrations of a little cottage which was first built as economically as possible without sheathing, but having building paper under the drop siding and against the studs.

This little cottage looked very neat, as the owner kept it well painted, but it was not what one would call artistic and it was rather cold in winter. It was changed as shown in the second picture and one would hardly know it was the same house. Nothing on the

inside was changed as that exactly suited the needs of the occupants.

The changes to the outside were made as follows: First, a piece of tar paper was tacked over the drop siding to a height just a little above the window sills, then a piece of 2x2-inch finishing lumber was nailed as a belt course on the drop siding at the same height as the window sills and in reality forming a continuation of them, also continuing as the porch rail.

Above this belt course strip the ready roofing was applied directly nailed on the drop siding, and as the material is thick and weather proof, it certainly keeps out the wind. Care must be taken to break the joints so that they would all be covered with the wood strips. The window casing and corner boards were pried off so that the roofing would be covered when they were nailed back in place again.

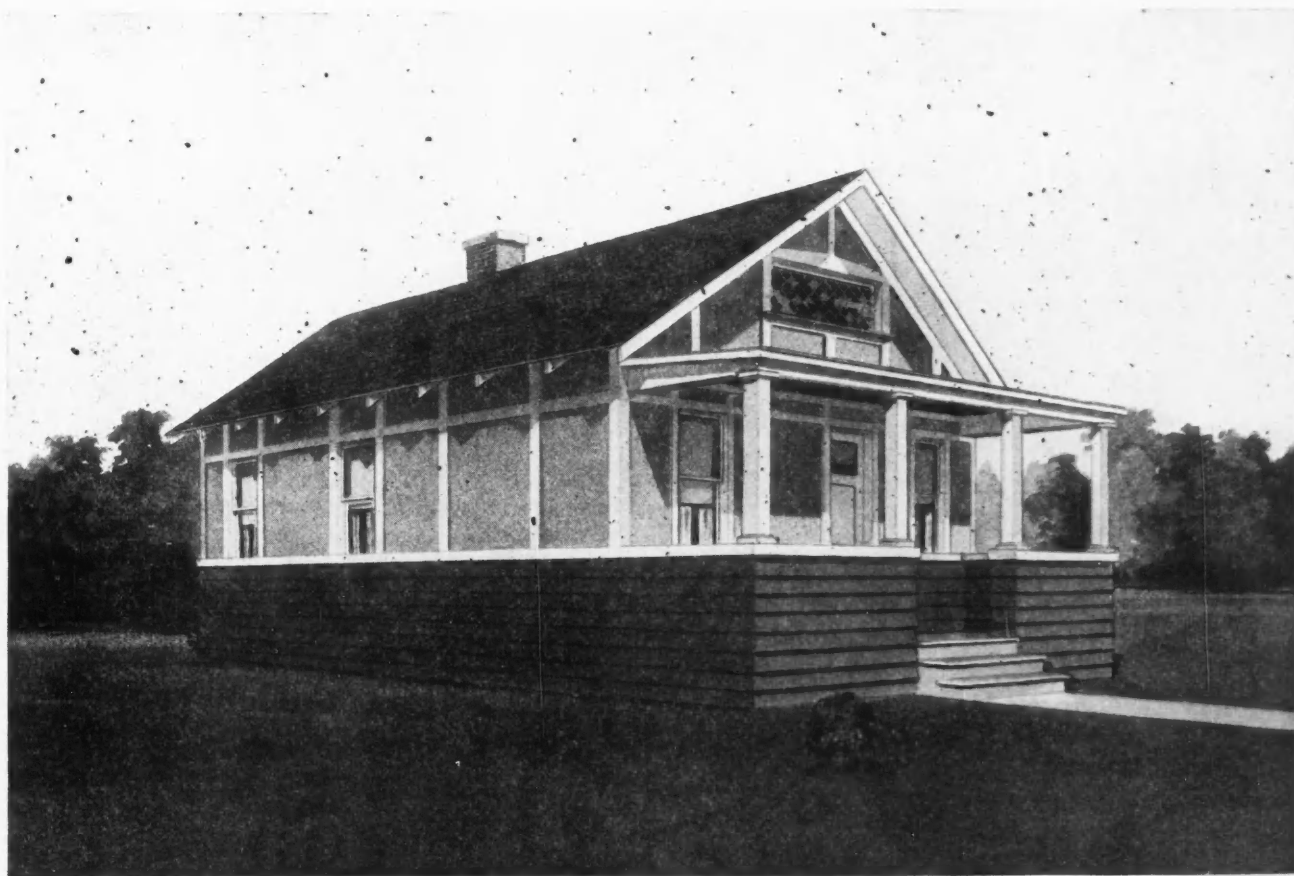
The wood strips are of 1x4-inch dressed finishing lumber. At the bottom between the panel strips and window casings pieces of $\frac{7}{8}$ -inch quarter round are inserted to finish it off neatly and cover the tacks at the bottom edge of the roofing.



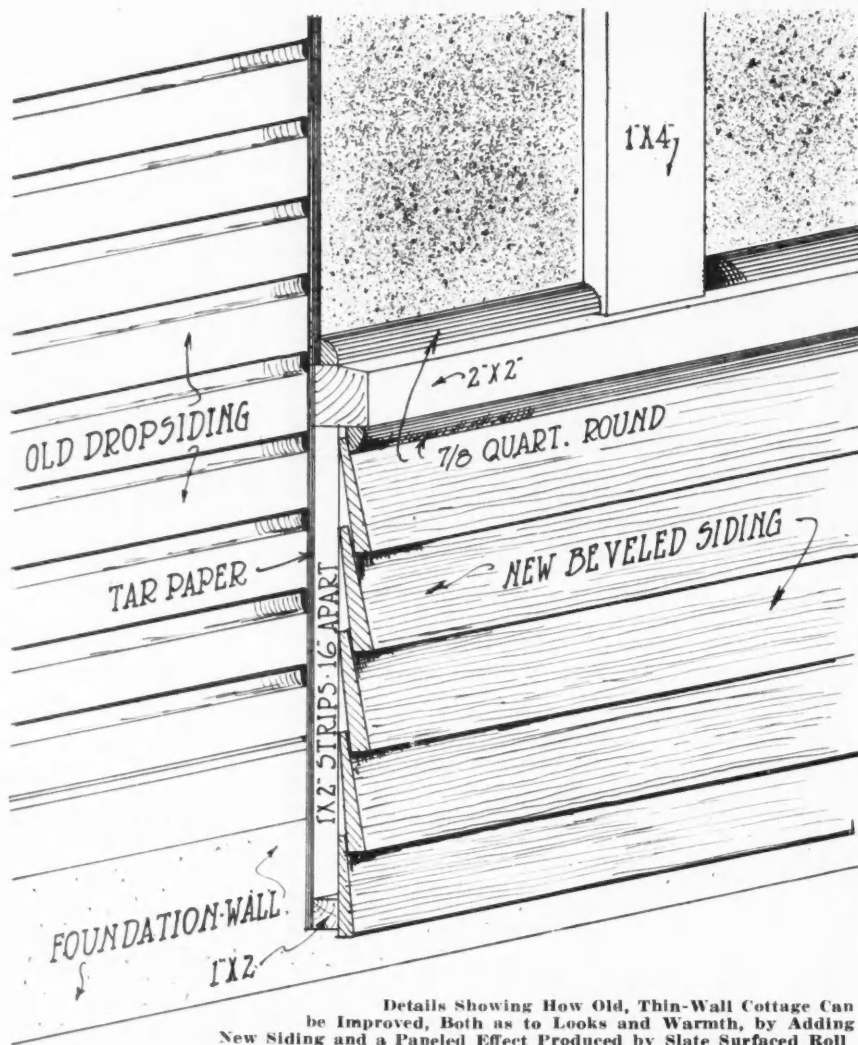
How the Little Cottage Looked Before Altering.

Below the belt course 6-inch bevel siding, lapped 2 inches, has to be used and it will be noticed that the bevel siding goes down near to the ground and it was lapped over the foundation wall. By nailing 1x2-inch furring strips securely to the drop siding with here and there a spike thru the strips into the foundation walls made a secure nailing surface for the bevel siding.

The old porch rail and columns were removed and



After Altering: What a Little Bevel Siding, Slate Surfaced Asphalt Roofing, Some Wood Strips and a Gable Window Will Do to Make a Little Cottage Warmer and Better Looking. What Was Done Here Can be Done on Hundreds of Other Houses.



Details Showing How Old, Thin-Wall Cottage Can be Improved, Both as to Looks and Warmth, by Adding New Siding and a Paneled Effect Produced by Slate Surfaced Roll Roofing or Stucco.

the siding continued out; being nailed to a frame work of studs. The top rail is a piece of finished 2x6-inch and the columns plain 4x4-inch, with a little mitered moulding at the top and 5/8-inch quarter round at the bottom, this was more in keeping with the design than the round columns if they were cut off. To give

of little homes, adding greatly to one's comfort and pride. Of course different materials may be made use of and the design carried out differently. This simply gives one an idea of what can be accomplished to make one's house more comfortable and better looking at a very small sum.

New Houses for Old

A TIMELY SUGGESTION FOR UTILIZING AND PRESERVING THE EXISTING OLD STYLE HOUSES.

By Kenneth C. Cardwell

MOST observing men, in the building trade as well as in other lines, have had occasion to note that business can frequently be found in the most unlikely-looking places, if only the right man goes after it. The commendable and profitable work which has been done lately by a certain builder in a good-sized city illustrates this point admirably. Inasmuch as similar work is undoubtedly available in many other places, it may be worth while to tell about it, especially as it has points which ought to appeal to the creative and conservative instincts of every good builder.

In the city referred to there is a suburb which had its boom many years ago. In those palmy days it

was a highly aristocratic section, within comparatively easy reach of the city, yet not too easy, thus making it an ideal home for some people of ample means who desired fresh air and a certain seclusion, while its distance kept out an element which might have proved undesirable. In short, it was built up with handsome homes, of an imposing and substantial nature, standing in spacious grounds. Many a carpenter of twenty and thirty years ago put in some of his best licks on these old homes, all of which, by the way, were frame; in evidence of which they are standing today, many of them as sound as they ever were.

However, in the course of time the old families

the inside of the porch a finished appearance, the siding was continued around the inside as well.

The little gable window divided diagonally is just a little touch that adds to the attractiveness of this design as it is in harmony with the timbered work effect. The window also serves a very practical purpose, as when it is opened in the summer time it allows the air to circulate and keeps the house cooler.

In this particular house the siding was placed rough side out and stained a light brown, as were also the roof shingles; green chipped slate roofing was used, and all the strips and other trim were painted white, and it certainly made a very wonderful change in the appearance of the little home, and, best of all, it was so much warmer in the winter, as besides being covered with another thickness of material a number of closed air spaces were made. While the expense of the improvement was nominal it added several hundred dollars to the value of the house.

The same sort of an improvement can be applied to a number

dropped off, one by one, the younger members moving away, marrying and making their own homes, frequently in distant cities, until in many cases only a single lonely old man or woman was left in one of these big houses. In the end, therefore, in spite of the increasing number of neat little bungalows built up on the big lots, many of the fine old houses built by the first residents were left deserted, standing, year after year, without tenants in their beautiful surroundings. We are getting to the carpenter's part of the story, altho it may seem a little roundabout.

The loneliness and the waste represented by this state of affairs struck many a passerby, driving thru the suburb on a fine summer day; but it seemed that nobody thought of doing anything about it until the thing just sort of happened. The property was on the market, and was shown to an occasional inquirer who was attracted by the beauty of the place; and it was a young couple viewing one of these old places, half out of curiosity and half because they really wanted a suburban home, that started things.

"Isn't it a shame for a fine old house like this to stand here and just fall to pieces for want of a ten-



The Contractor Is Just Beginning the Remodeling Process by Tearing Off the Old Porch.

ant?" exclaimed the young woman, after peering about in dark closets and cubby-holes all over the house. "Why, this place must have cost thousands of dollars to build, and the grounds are simply wonderful; and yet nobody wants it. Is anything the mat-

(Continued to page 118.)



Removing the Old Style Front Porch and Building a Large Living Porch Out at the Side, and Overcoating the House with Stucco, Changed the Old Fashioned Dwelling Into a Modern Residence and Made It a Warmer, More Comfortable, and More Salable Home.

AMERICAN BUILDER BUILDING PLANS



Blue Prints of an Industrial Housing Cottage

FOUR FULL PAGE PLATES GIVE DETAILS OF THE POPULAR FIVE-ROOM HOUSE ILLUSTRATED BELOW — FOUR DIFFERENT EXTERIOR TREATMENTS SHOWN

HERE is a whole industrial village in one set of plans. An entire street can be built up with houses pictured in these blueprints without any monotony or dreary sameness being apparent.

Four different exterior designs are presented, and four different kinds of building material are suggested, all to go with the same floor plans. If one wanted to carry each of the four changes in the exterior design all the way thru the four selections of material, wood, brick, stucco, and tile, he would have sixteen different houses all based on the one floor plan. This would give a great variety of appearance that would benefit any subdivision; at the same time keeping the cost down by taking advantage of all the savings possible in the quantity production of cottages following one standard floor plan.

The floor plan followed in these plans meets the needs of American standards and customs for the modest home. It is only 22 feet wide, and so will go on a narrow lot if necessary. There is a comfortable porch across the front. A good sized living room takes up about half of the main floor, and a wall bed with two wardrobe closets occupies one end of this room, providing a third bedroom. The dining room and kitchen are well arranged. A stairway to the second floor, and also the cellar stairs, work in well both for economy and convenience. On the second floor are two large bedrooms, bathroom, and ample closet space.

In exterior design, this house is trim, neat, and well proportioned. The four styles of roofs illustrated seem equally good—the straight gable, the gambrel, the bungalow roof, and the modified hip.

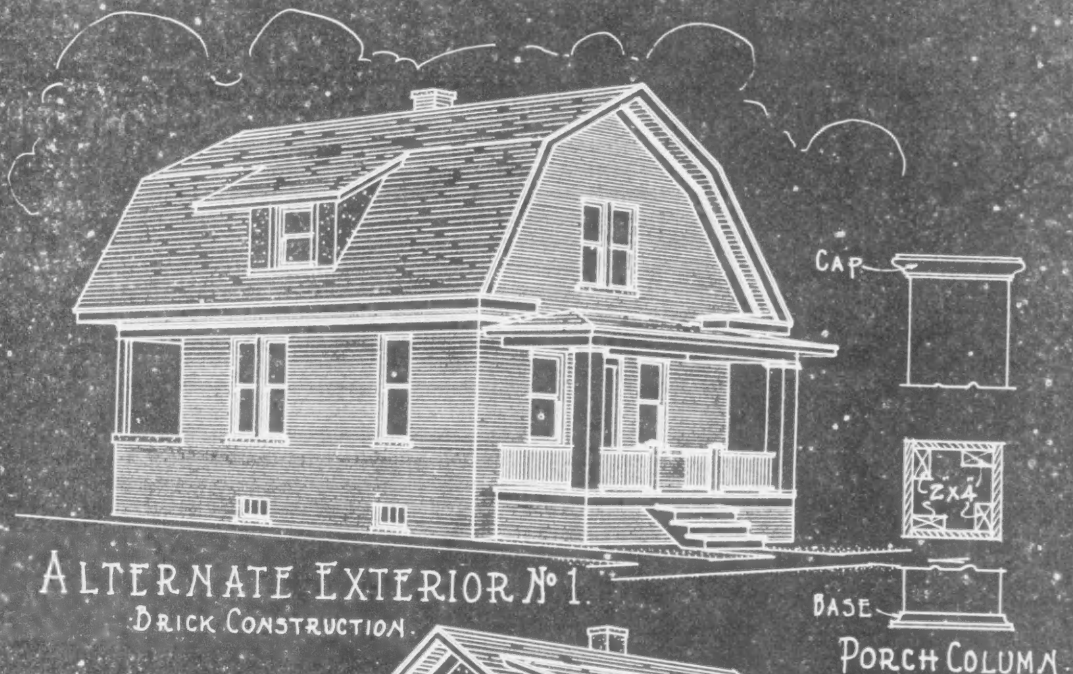


Architect's Perspective Sketch of Industrial Housing Cottage. Complete Working Plans for Which Are Presented in the Blueprint Pages Following. This Rendering Shows Wood Construction with Wide Boards and Beveled Siding. Three Alternate Exterior Designs Featuring Other Materials of Construction Are Shown on Sheet No. 1.



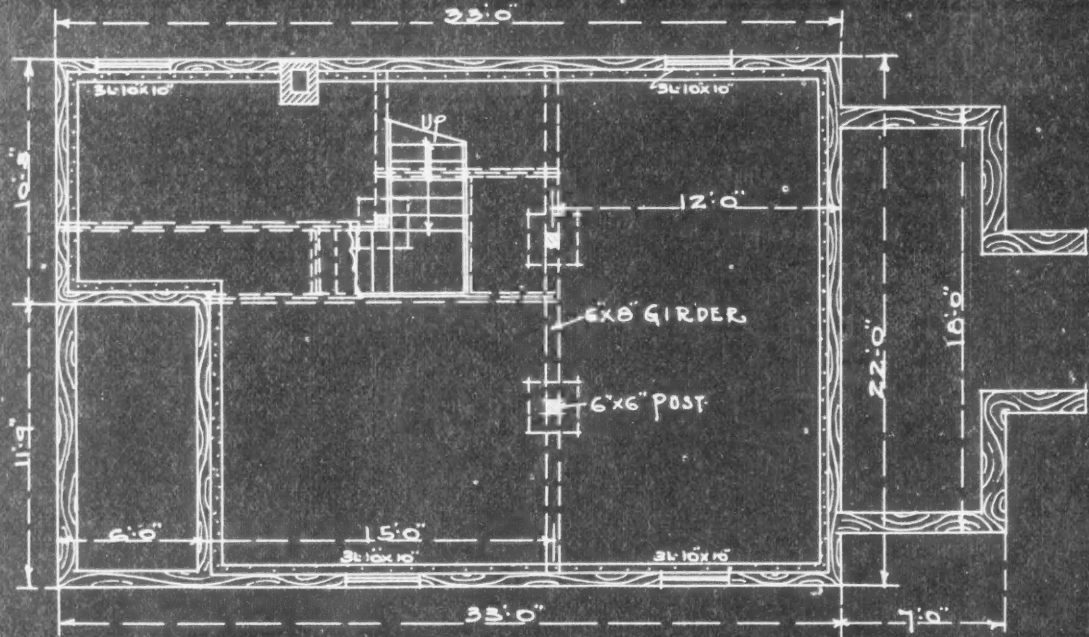


AMERICAN BUILDER BUILDING PLANS

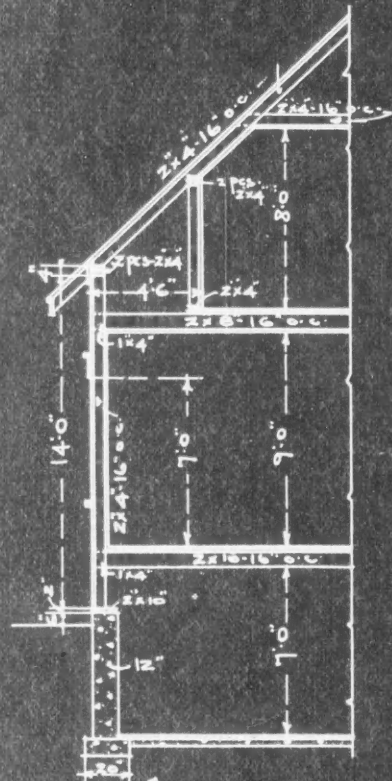


INDUSTRIAL HOUSING COTTAGE SHEET No 1

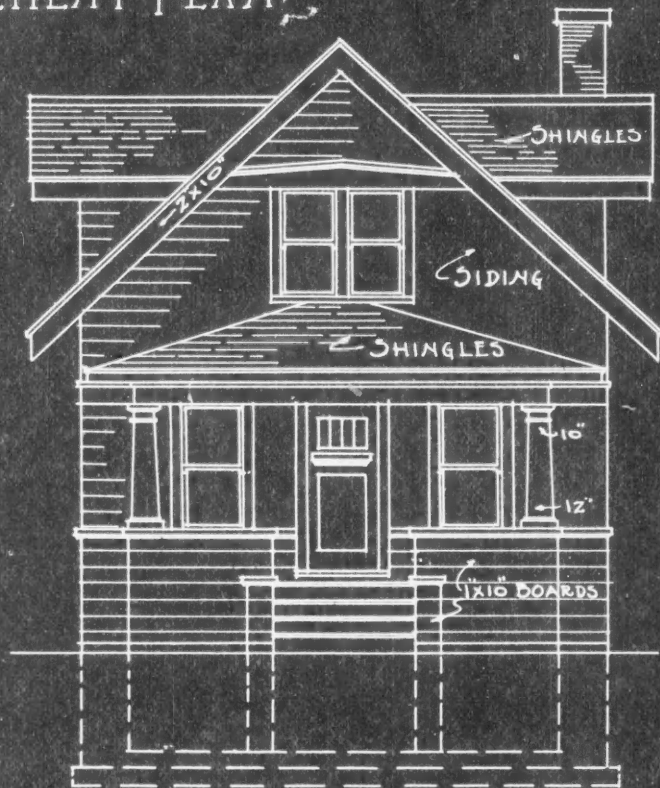
AMERICAN BUILDER BUILDING PLANS



BASEMENT PLAN

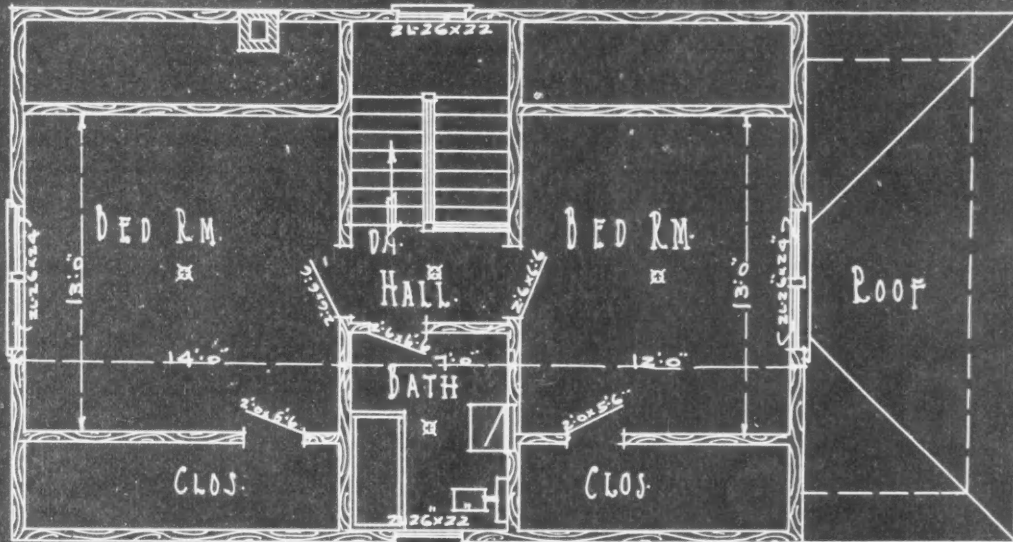


SECTION

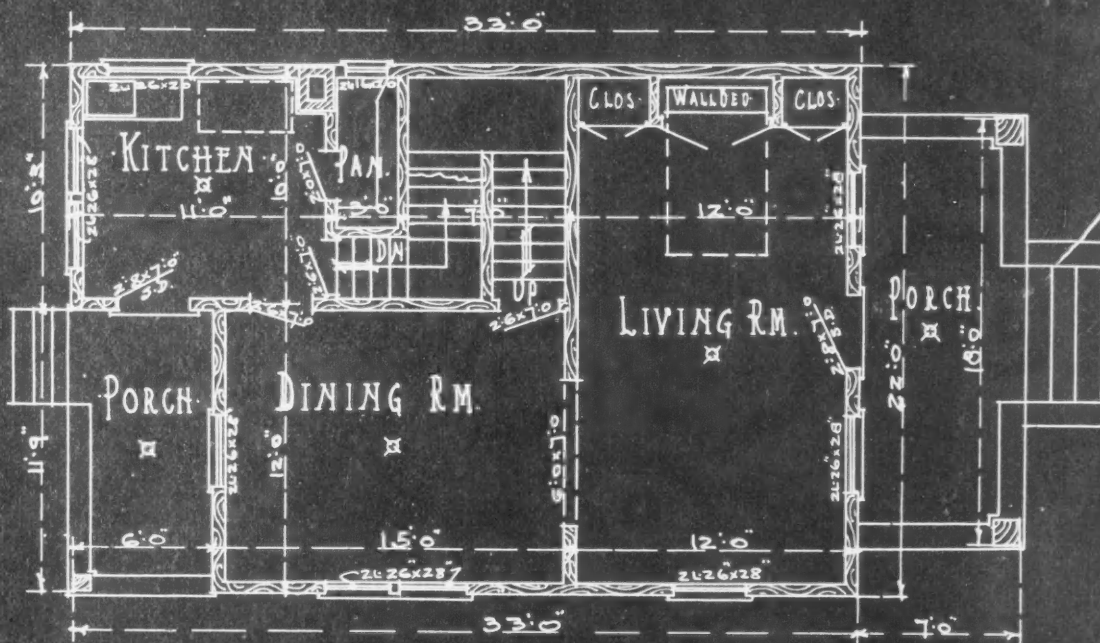


FRONT ELEVATION.

AMERICAN BUILDER BUILDING PLANS

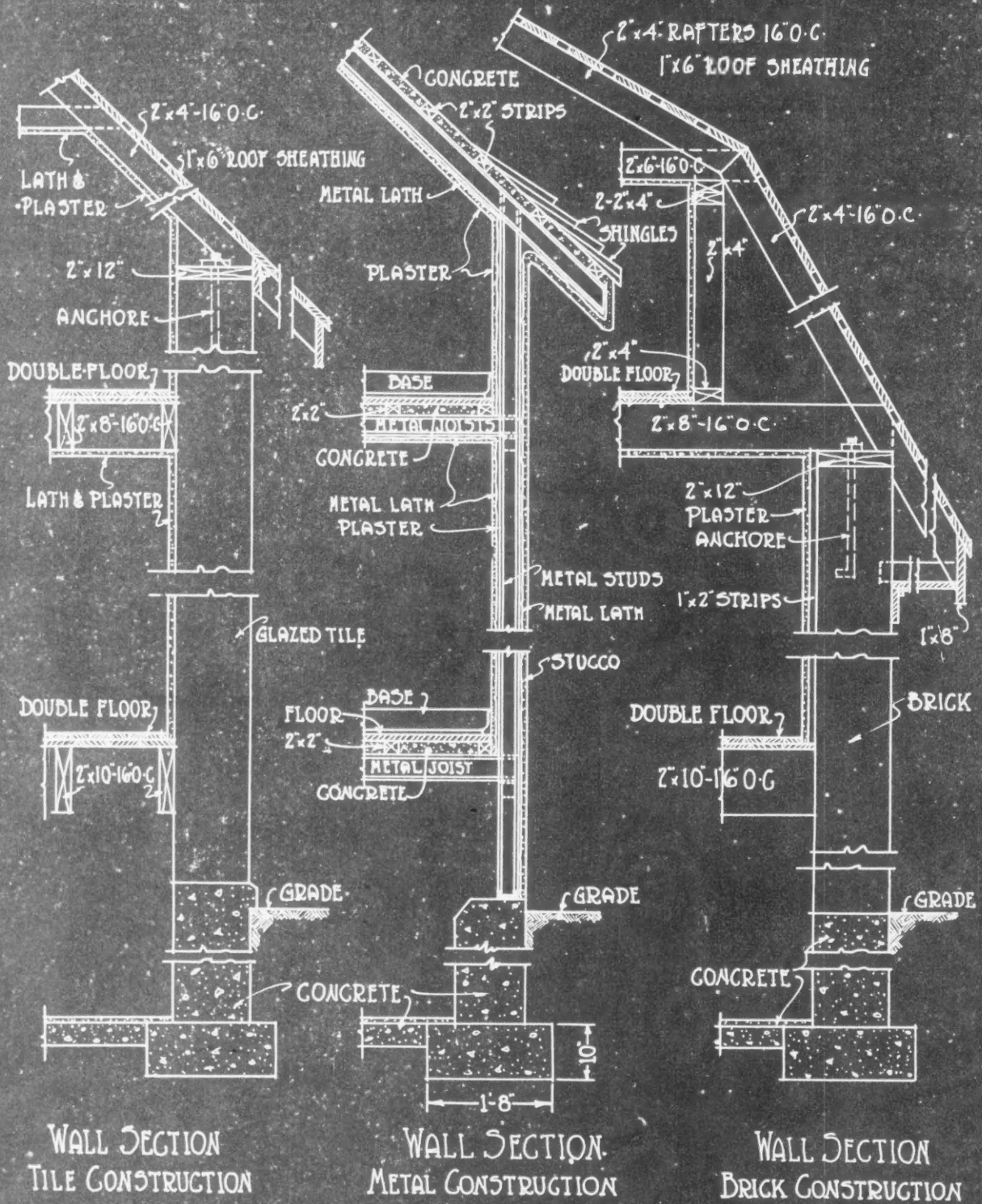


SECOND FLOOR



FIRST FLOOR

AMERICAN BUILDER BUILDING PLANS

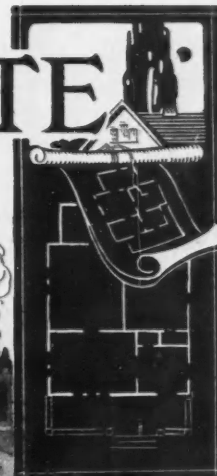
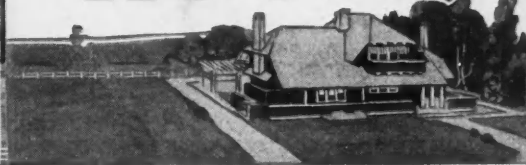








UP-TO-DATE FARM HOUSE



Following the Farmhouse Blue Print

HOW TO BUILD FROM THE AUGUST SUPPLEMENT PLANS.

By John Upton

IF we were called to build that small house shown in the August issue, or a similar one, what would be the right way to begin? This would depend a little on the conditions, but in most cases the first step is to stake out the lot for excavation.

The plan is quite simple and we can work from the blue print without redrawing it. It is reproduced so as to scale correctly, which some do not.

Being out in the country, there is no sidewalk or street grade to be followed or measured from. The owner will tell where he wants it and the drawing shows how high it is to be above the ground.

I do not like the idea of starting the siding down so close to the ground, but as the drawings call for this we will follow them. It makes less wall to build; but this must be laid out the same as tho higher.

Having the house face the east, lay out the rectangle 25x28 feet, getting the corners square, and running the lines level and marking the height of the wall at each corner. With a transit this would not take long, but you may need to use a level and square the lines by the 6-8-10 rule.

Next set out the lines for the front porch, as this is to be dug out like the cellar, which seems to be a good idea, as it gives more room.

For this run a line 6 feet from the front line and make it 3 feet shorter at each end. Then there is the cellarway at the rear. The pier is cut 5 feet from the wall and it is 10 feet from this to the farther wall. For the other measurements one may scale the drawing and get 17 feet, from the corner of the wall to the wall of cellarway.

Before the excavation is begun it will be necessary to drive a stake back each way from the corners so they will not be disturbed. And as you will want more

lines, for the inside of the walls and for the footings and perhaps a center line, it will be best to drive two stakes and put a board on them to hold these lines. You may as well get these boards level and the same height, so that the lines will serve as guides for the faces of the walls and also for the height and depth.

While the cellar is being dug you will want to get some material on to the job for the forms for the concrete wall and material for the wall.

The owner may attend to some of this, but someone must anyway.

We will suppose that the wall forms are to begin at the bottom and are to be on both sides of the wall. Let us see what we can use of the stuff for the house without hurting it. The floor joists will be 12 and 16 feet long, 8 and 10 inches wide. These will work nicely for the long sides on the outside and can be used on the short sides by letting them run by.

We must not cut these joists, but shall need some shorter stuff for the inside of the walls and for the studs of the forms. The joists at the ends of the stairs will be shorter and can be cut, also those sills on the porches. There will be short joists on the porches, tho the front ones seem to be shown full length, we will hardly run them 22 feet.

The wall being low the studs for the forms can be most any length we have at hand, or can get without waste, even tho they stick up above the forms. There are the rafters and ceiling joists for the porch and rafters and plates for the rear porch and dormer, and some studs for the lower part of the front porch. Then there are the partition studs and some collar

beams in the attic, all of which may be worked in for forms. It will be safe to cut up a few 2x4s if needed for they will be used later for headers and

**Turn to the August American Builder
and Find Complete Set of Blue Prints
of Farm Tenant House Referred to.**

under and beside windows and doors and at corners. Notice the size of the windows and cut them long enough for two headers, or to go up at the side. A 15 or 16-foot stick makes three.

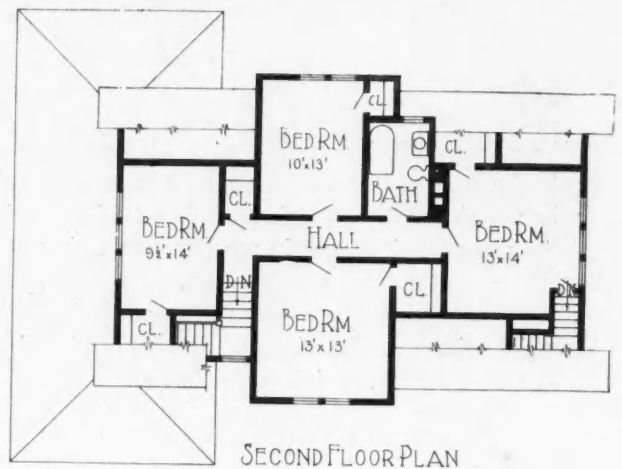
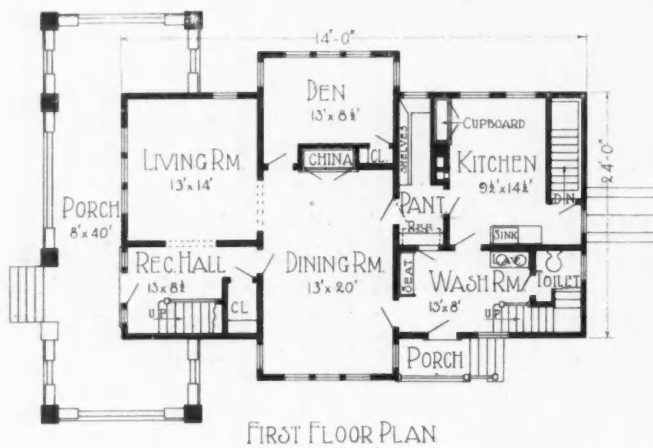
The roof boards can be used and may be cut as needed. The cellar windows are above the forms and at the door the boards can run across and need not be cut. Some short pieces will be used in the cellarway and under the porch, but you may put some of these on end and so save cutting.

There will no doubt be some lumber used in the forms which cannot be used later, but by a little care and thought this can be made a small item.

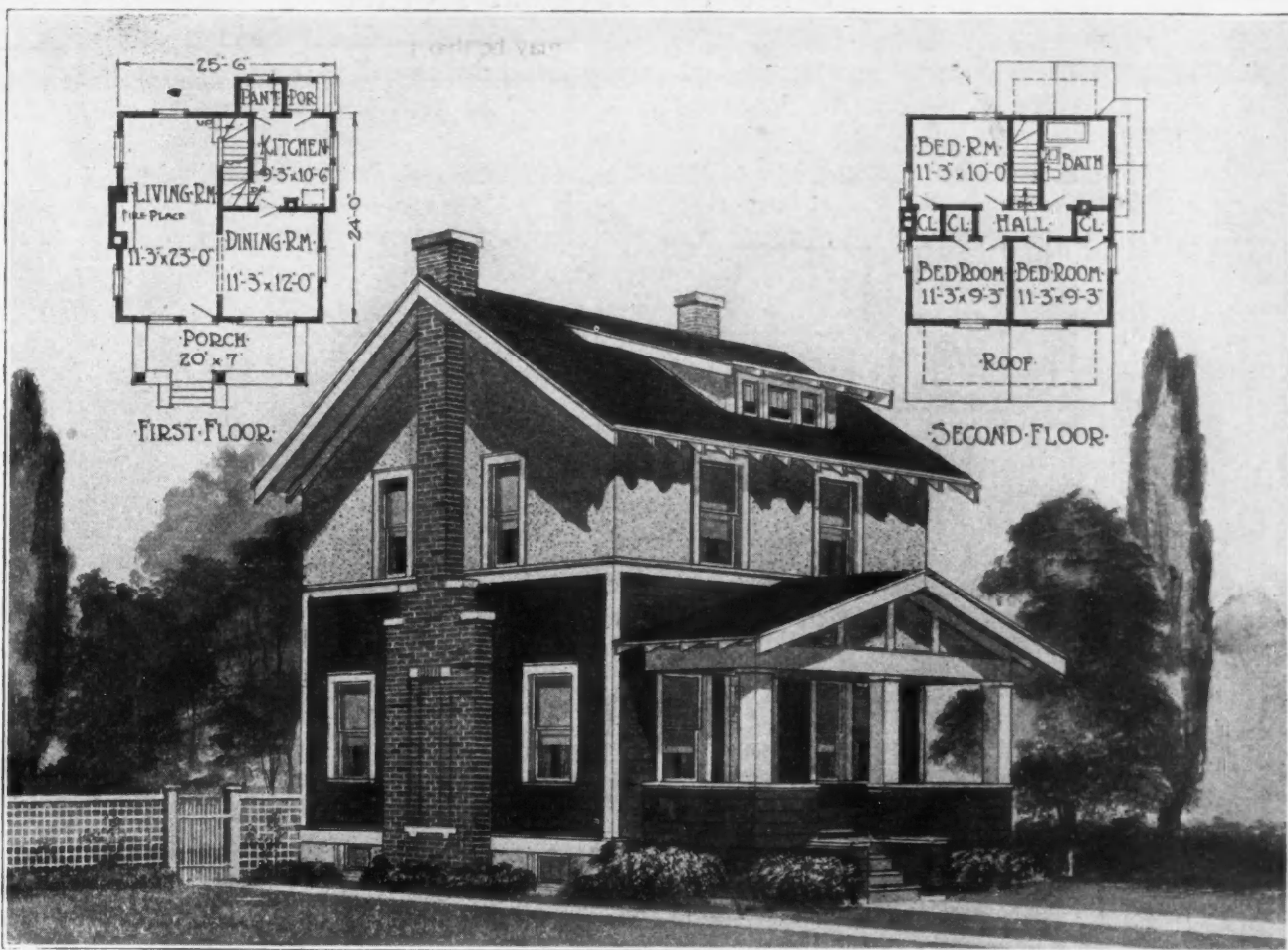
Some of the boards can be used in the coal bin, for bridging, for the forms for the piers and chimney base, and in other places and save cutting long boards.

It may be that the owner will have some old lumber which you can use for forms and so not have to get so much of the new stuff mused up with concrete. Where material is used which is to be framed or cut to a length as joists, studs, sills, it is well to cut them first where it can be done and so avoid framing or sawing them after they are covered with concrete. Of course, this cannot always be done, but it can sometimes and is a good point to remember.

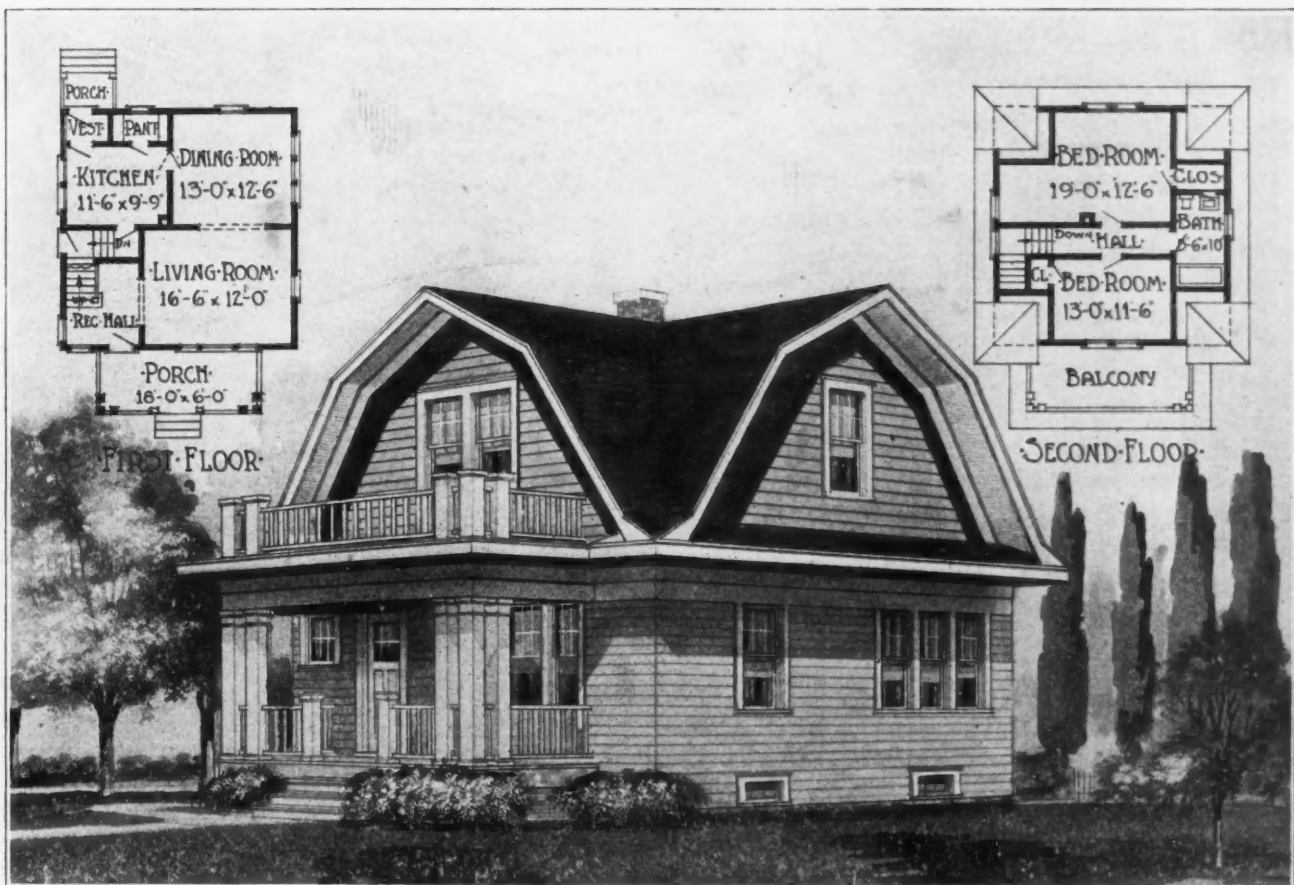
I have forgotten the cellar drain. This may not go in as shown, but it should go somewhere, and it may be that if the soil is wet there will be one needed under or outside the wall. In this section we would put a cistern in one corner of the cellar so as to provide soft water for wash purposes, and it may be that there will be a sewer pipe in addition to the drain.



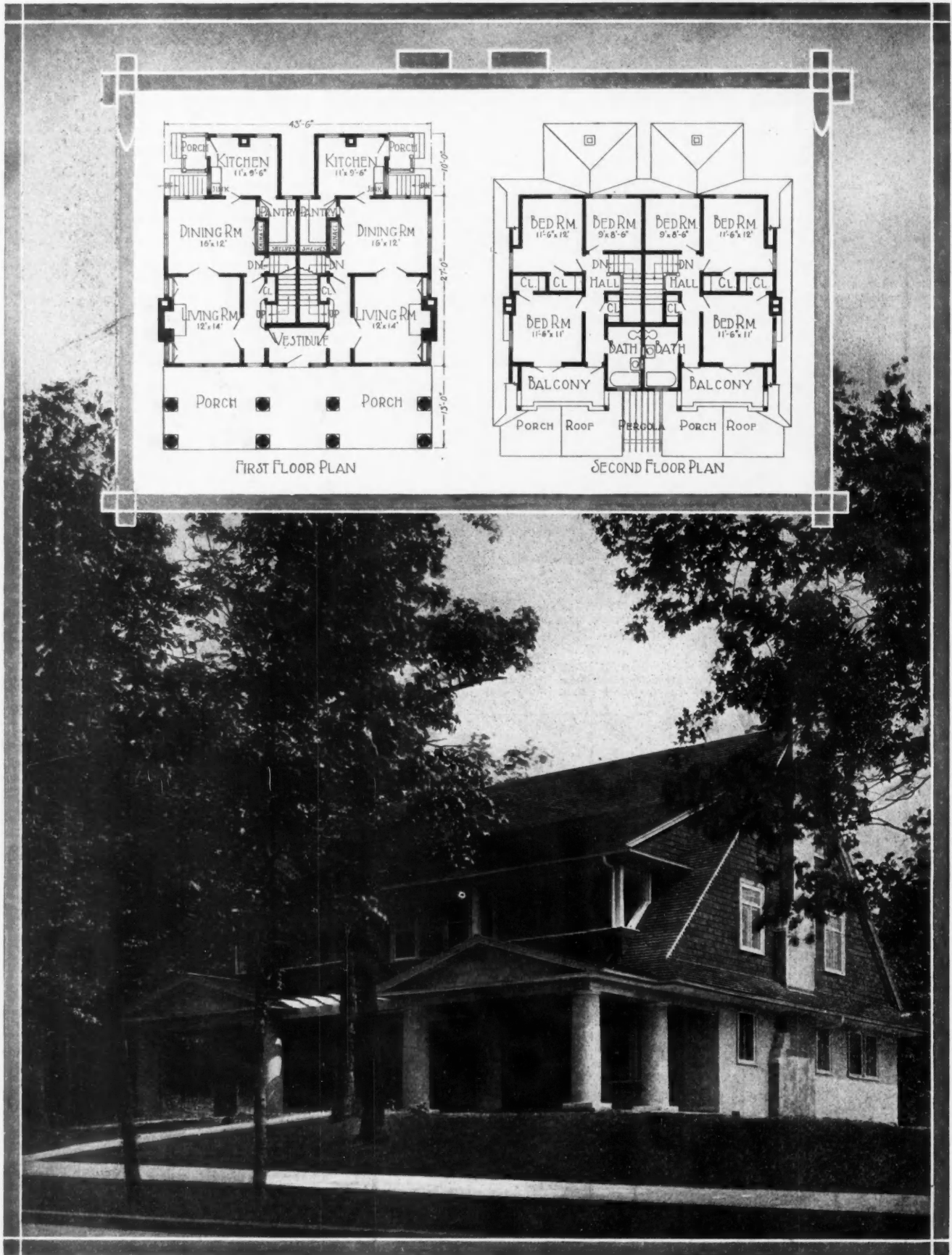
Photograph and Floor Plans of a Modern Farmhouse of Exceptional Comfort and Convenience Near Indianapolis, Ind. Living Room, Dining Room, Den or Farm Office, Kitchen, Pantry, and Wash Room Occupy the First Floor, While Upstairs Are Four Good Bed Rooms, Bath Room and plenty of Clothes Closets. The Back Bed Room for the Hired Man, with Its Own Stairway Down to the Wash Room, Is an Appreciated Feature. The Big Front Porch Means Comfort for the Family in Hot Weather.



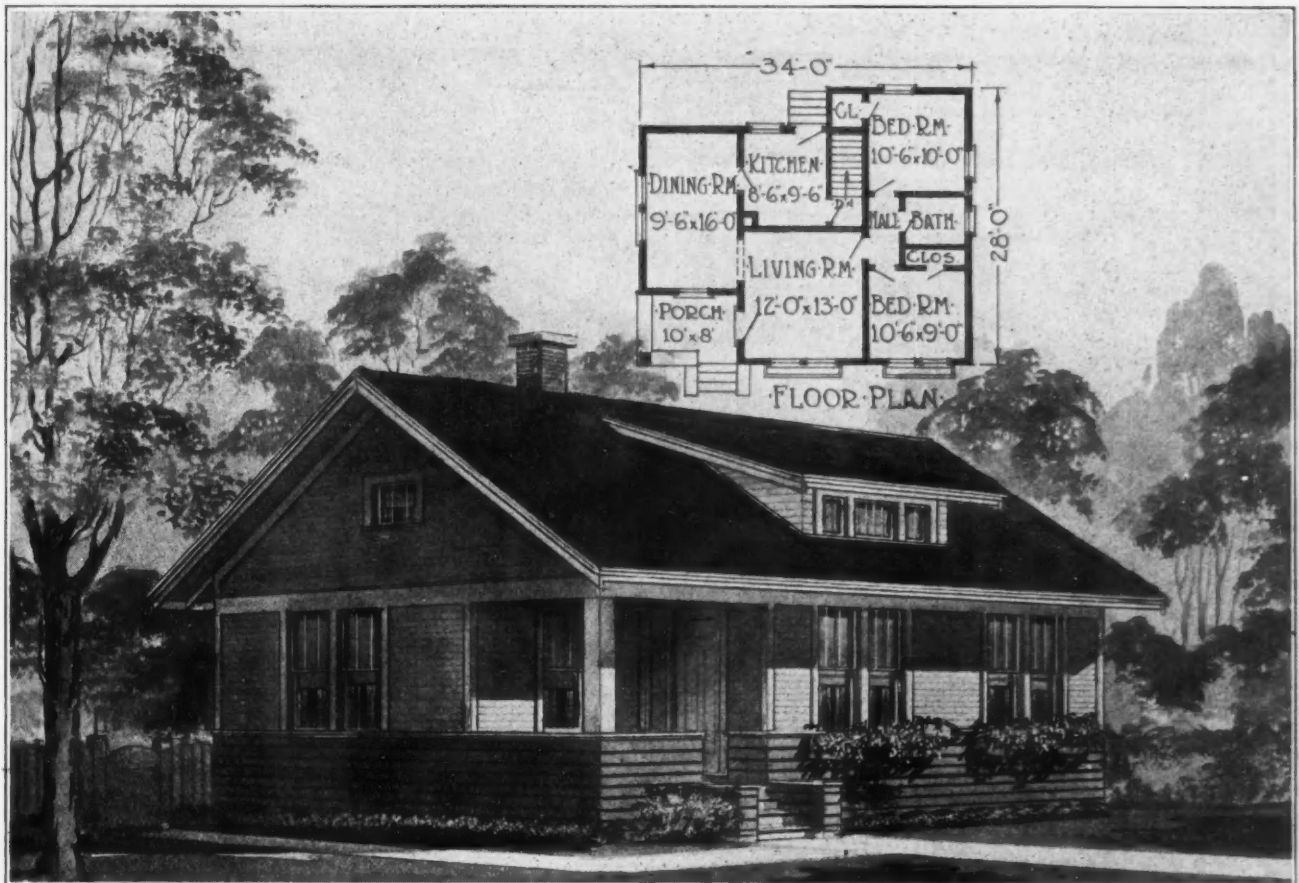
TWO-STORY RESIDENCE WITH EXPOSED RAFTERS. This good looking modern house occupies a width of 25½ feet and is 24 feet long from front to back, not including porches. It has six rooms and bath. The extra large living room and the compact arrangement of the rest of the design are well liked. The exterior is attractively finished in wide board siding and stucco.



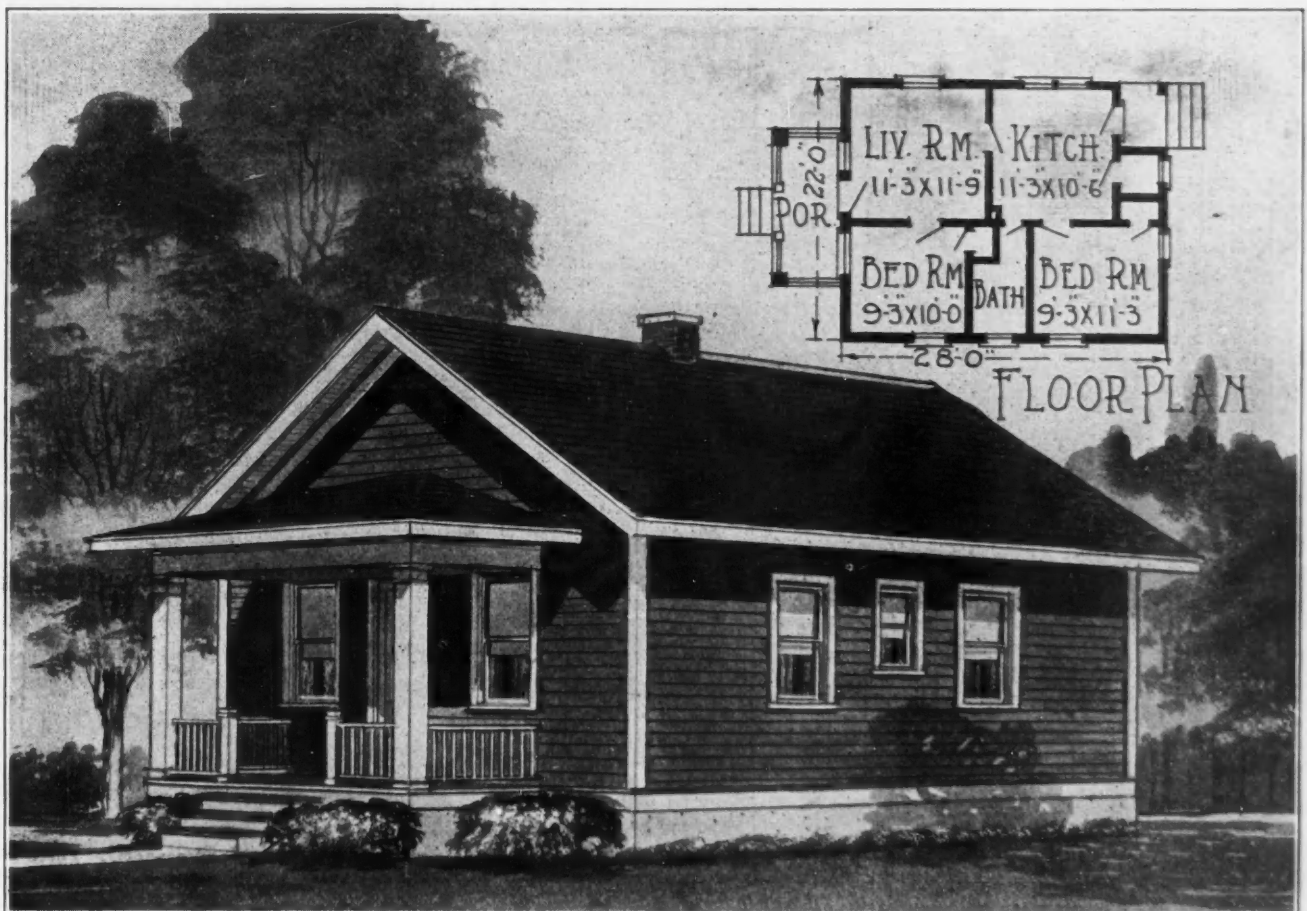
GAMBREL ROOF DWELLING OF FIVE ROOMS. This design savoring of the Dutch Colonial goes well. A surprising amount of usable space is contained upstairs "under the roof." This is a thoroly modern home design.



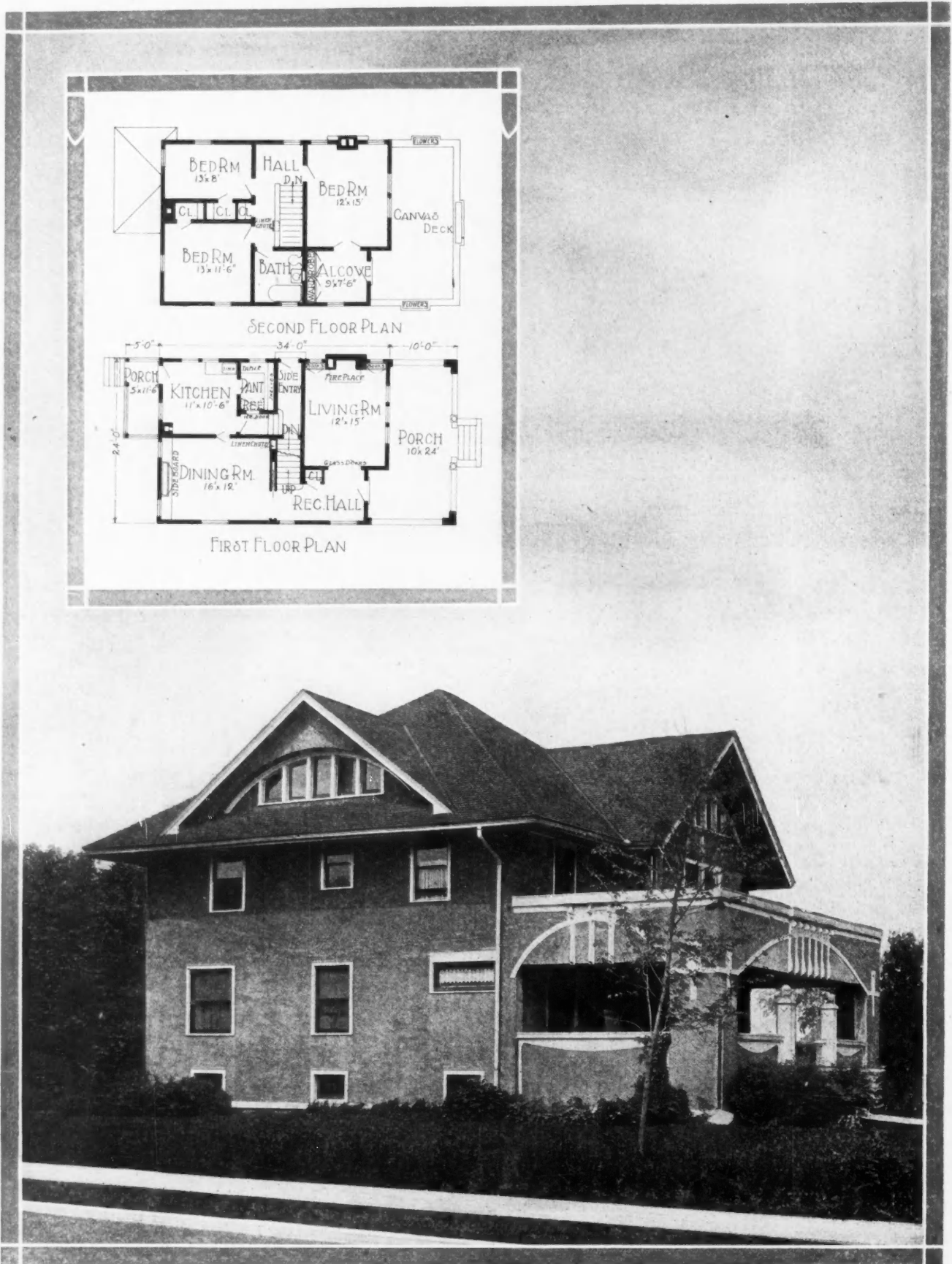
DUTCH COLONIAL DOUBLE HOUSE. Here we have a superior type of dwelling combining good looks and economy. There is little about this building to suggest it is a double house; yet two six-room units are contained within its four walls. The porches with second-story balconies are special features.



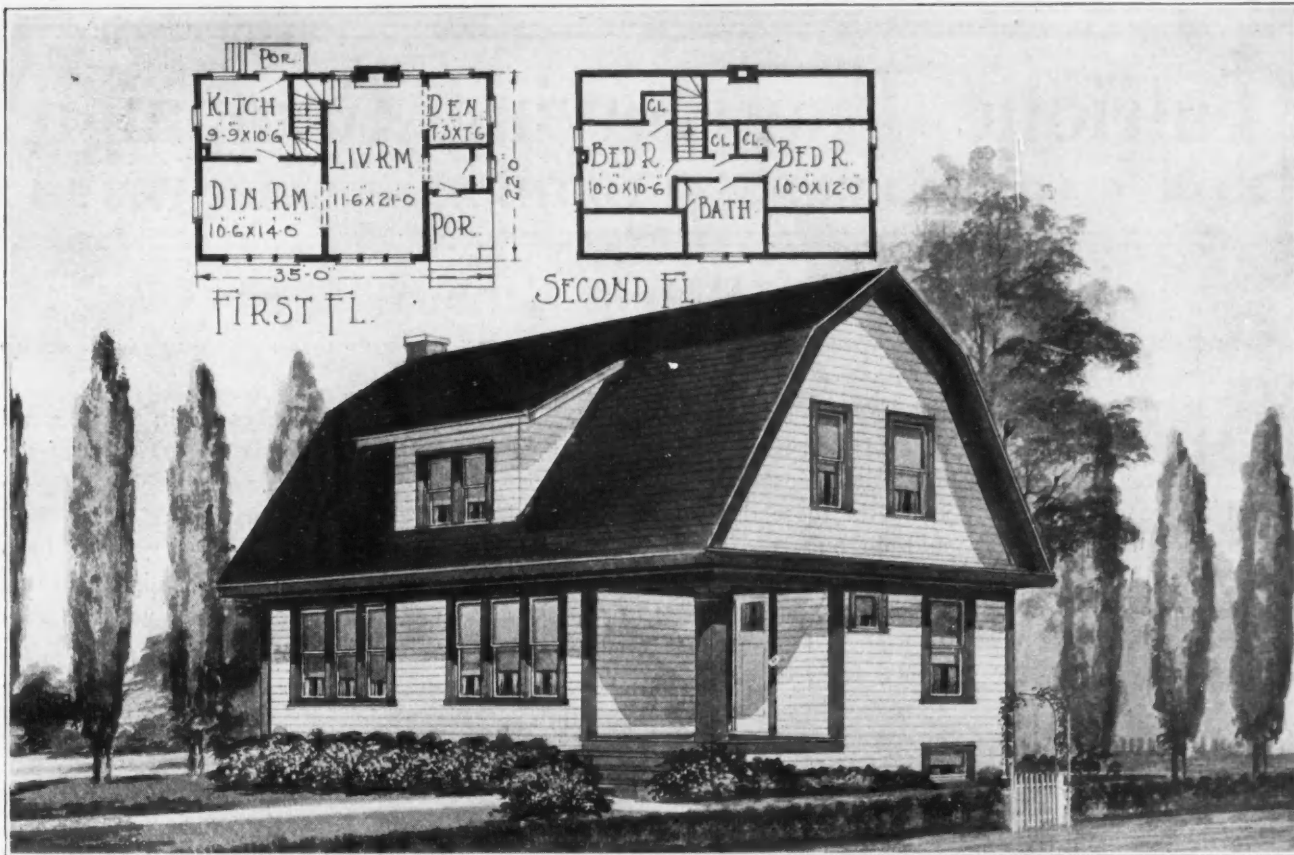
FIVE-ROOM BUNGALOW. A very pretty, convenient home is represented in this bungalow design, 34 by 28 feet in size. These are living room, dining room and kitchen, and somewhat separated, the chamber group containing two bedrooms, clothes closets, bathroom and inside hall.



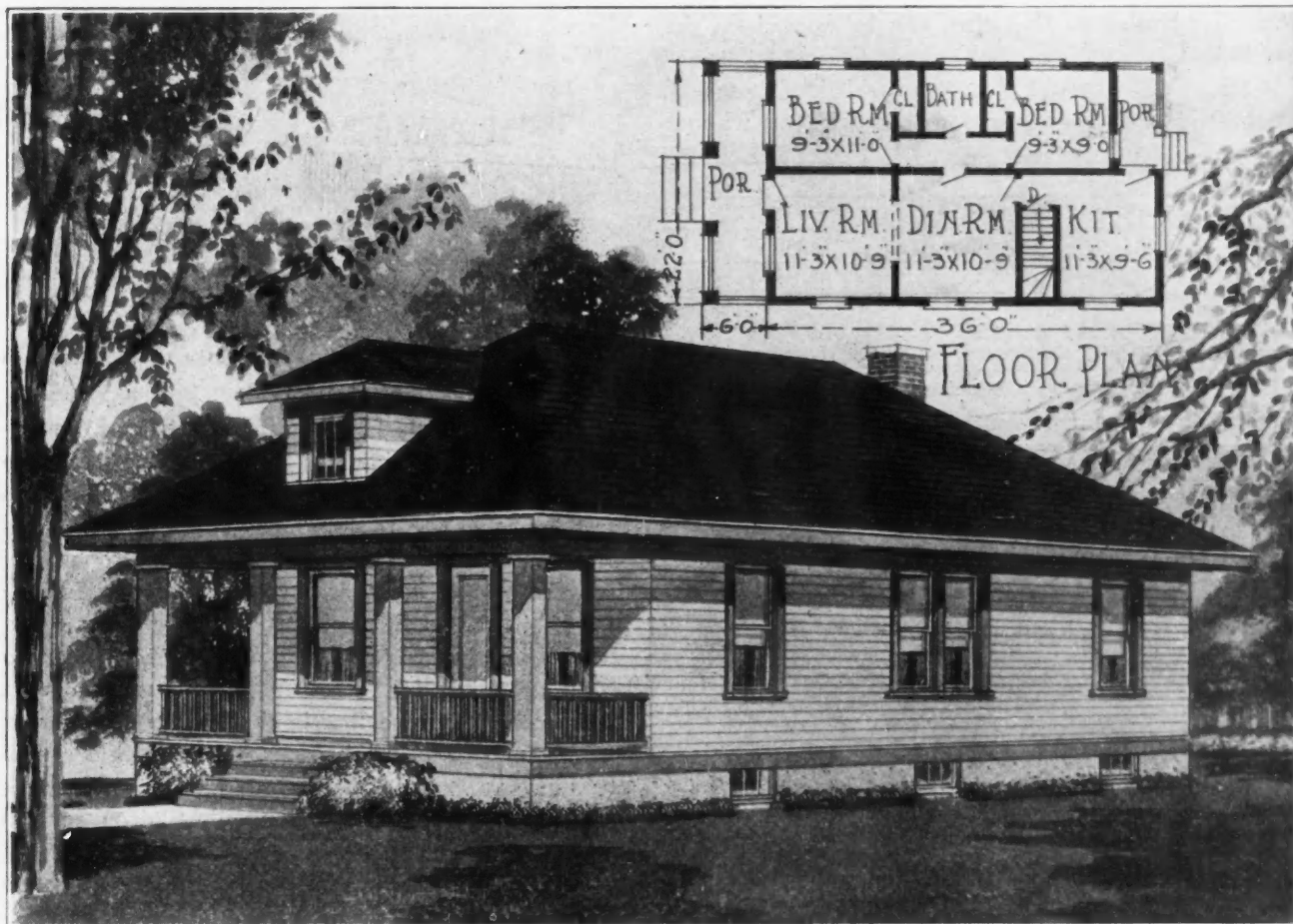
ECONOMICAL FOUR-ROOM COTTAGE. This little home, size 22 by 28 feet, is ideal for farm tenant house, workingman's cottage or in fact, a modest home for anyone. Living room, kitchen, pantry, two bedrooms, bathroom and two clothes closets, apportion the interior space for greatest usefulness.



ATTRACTIVE SUBURBAN DWELLING. This house measures 24 by 34 feet, plus 10 feet more for the front porch extension. Six exceptionally commodious and well laid out rooms are contained. The exterior, while plain and dignified, carries just enough ornament to give it character.



GAMBREL ROOF COTTAGE FOR NARROW LOT. This house, 22 feet wide by 35 feet long, has three rooms downstairs and two rooms and bath upstairs. The entrance vestibule and the den alcove in connection with the large living room are special features. The exterior has a well-balanced, neat and harmonious appearance.



A NARROW LOT BUNGALOW COTTAGE. Here is a modern five-room bungalow designed for a narrow lot. It is 22 feet wide by 42 feet long. The room arrangement is the approved standard and can't be improved upon for a plan of this size.

Patriotic Fuel Saving Campaign

FOR CARPENTERS, BUILDERS AND DEALERS

Making the House Storm Tight

HOW BUILDERS CAN HELP THE NATION'S FUEL SAVING CAMPAIGN BY PROVIDING STORM SASH, STORM DOORS AND VESTIBULES.

ONE of the most important things is to make a house storm tight. It is surprising the amount of leaks for the heat there are to be found in the ordinary house, and in these days of fuel conservation we all should do our best to so improve our houses as to keep out the cold.

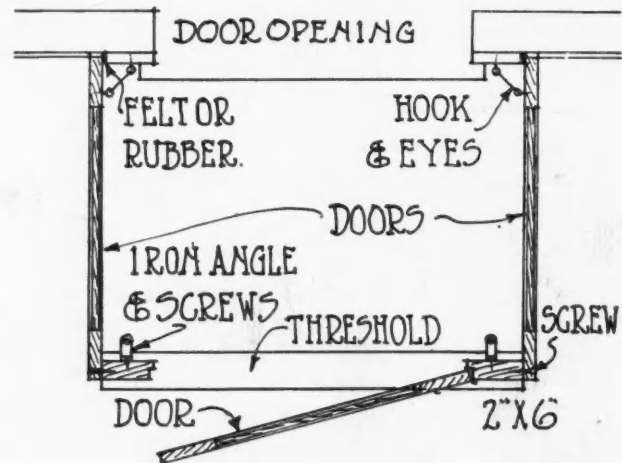
One great source of loss of heat in a house is the windows. This can be greatly remedied by the use of storm sash, which will enclose a layer of air, and as this is a poor conductor, when confined it makes a good insulator. In cold climates every window on a house, including the cellar windows, should be provided with storm sash. In mild climates it is quite a help to have storm sash on the north side of the house, especially if there are a number of windows on that side. Storm sash usually have little ventilators at the bottom and should be provided with some sort of adjuster so that they can be opened on the mild days.

Storm doors should also be provided. These can be had in different designs, either with or without

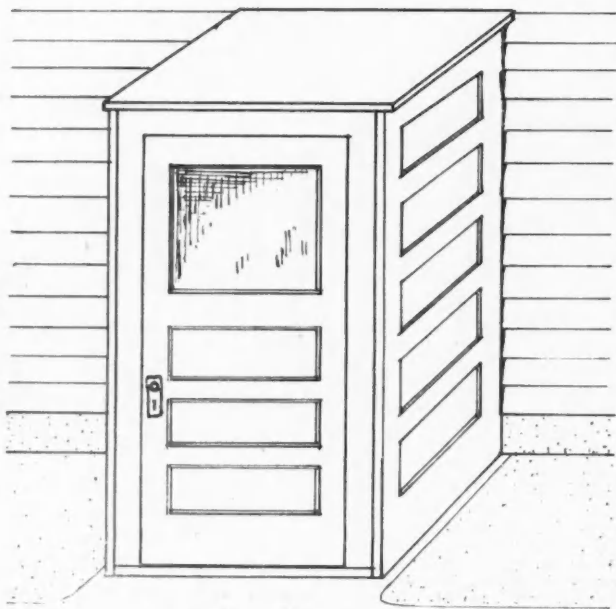
glass. They should be $1\frac{1}{8}$ inches thick, as a general rule, for frame houses, as that is the thickness of the outside casings—a thicker door cannot be hung so neatly and is entirely unnecessary.

Weather strips are very useful; they not only keep out the cold wind and dust, but also keep in the heated air. Ventilation can be accomplished without such a loss of heat as occurs at so many windows.

Storm sash, storm doors and weather strips are worth many times their cost, not only in the fuel they save, but in the greater comfort to the occupants of the house.

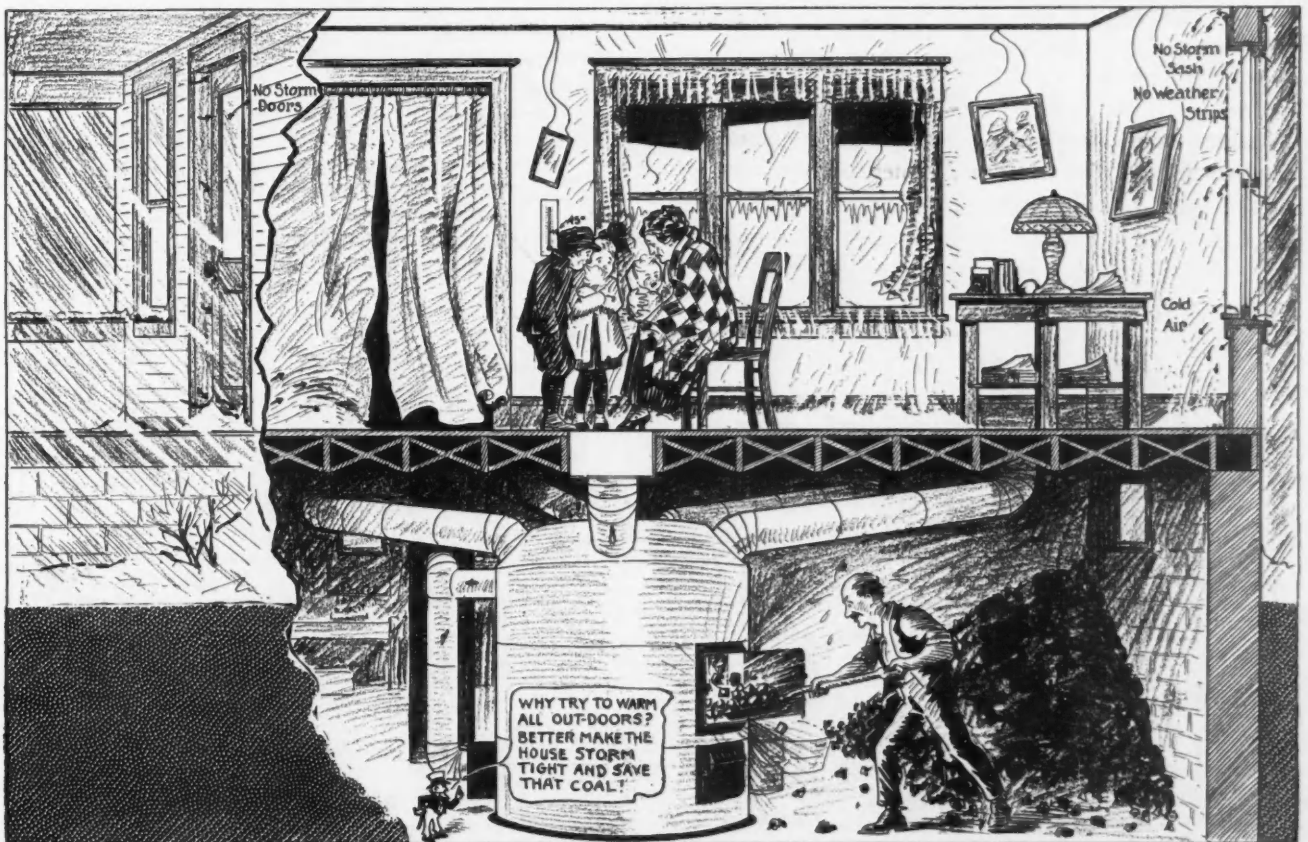
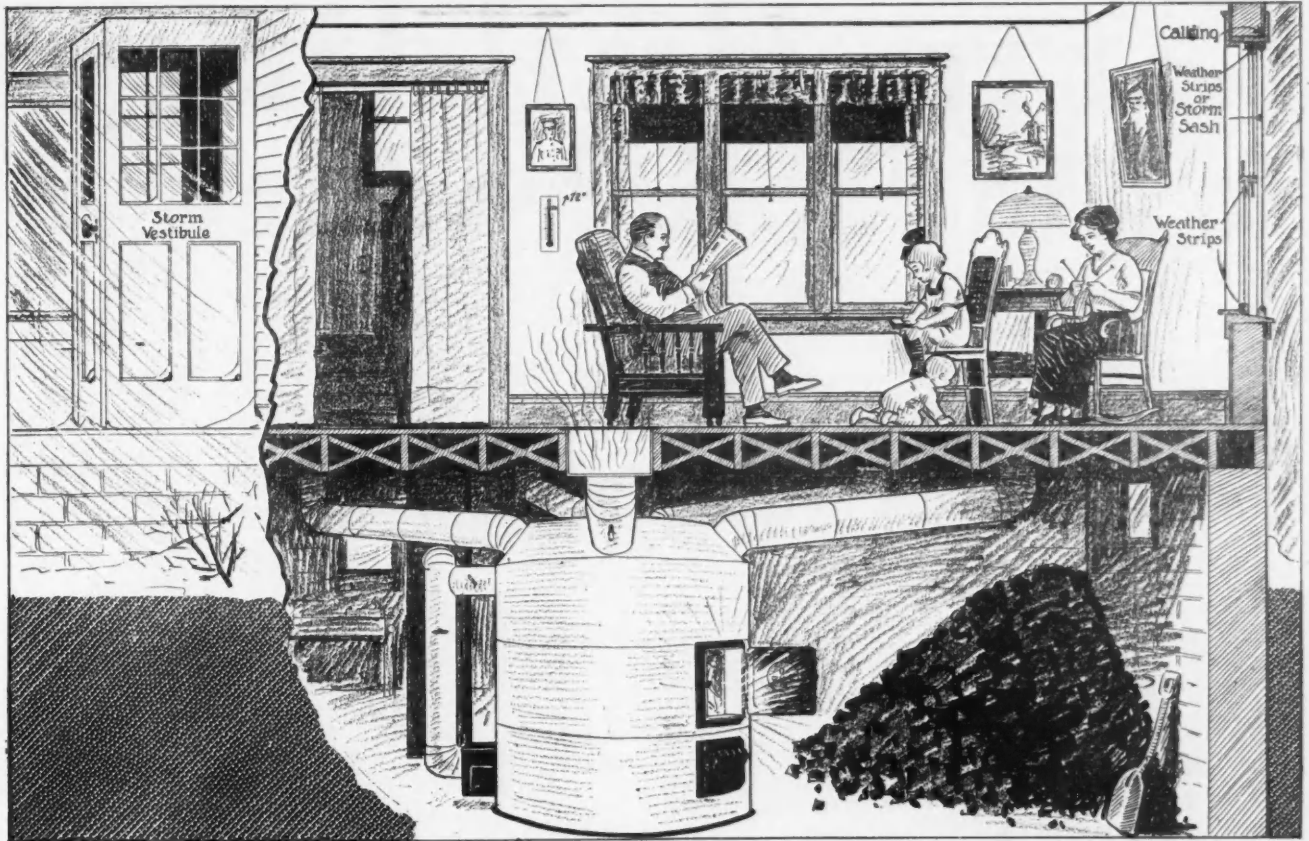


Floor Plan of the Portable Vestibule, Showing How the Different Sections Are Hooked and Screwed Together.



The Portable Storm Vestibule Is Easily and Cheaply Made Out of Three Storm Doors—One of Them Glazed—and a Little Finishing Lumber.

A storm vestibule is a convenience that will be appreciated on many houses; the plan shows how to make one from three doors and some rabbeted strips for the frame; the roof is made from a few boards covered with canvas or ready roofing. Drop siding may also be used without any other covering for the roof if there is a little pitch. The side doors are a little higher than the front glass door, as they are to be cut on a slant for the roof. The front door is set in its frame, and the threshold at the bottom serves to hold in position the bottoms of the side pieces of the frames. The side doors are screwed to the frames and hooked to the door casing. Small iron corners are screwed to the frame and porch floor. The roof is laid on top and hooked down. Battens on each side hold the roof boards in place; also hold the sides in their proper positions.



THE BUILDERS' PATRIOTIC FUEL SAVING CAMPAIGN AND HOW IT WORKS. Our artist shows by these two sketches the difference between the ordinary cold, drafty house and the home-made snug and warm by means of Metal Weatherstrips or Storm Sash and Storm Doors. The conditions may be just a little exaggerated in these pictures, but not much. Anyone who has experienced the change represented,—from cold, drafty discomfort, and the never-ending, tho fruitless, stoking of fuel into the heater—to snug comfort and the saving of fuel, as illustrated above, thru the installation of storm sash and doors or metal weatherstrips, will fully indorse these pictures. In the present nation-wide campaign to save fuel, Carpenters, Builders, and Supply Dealers can do no better than to get right busy with weatherstrips and storm sash, and make sure that every dwelling house, office building, and school is made storm tight.

Farm Buildings To Aid Food Production

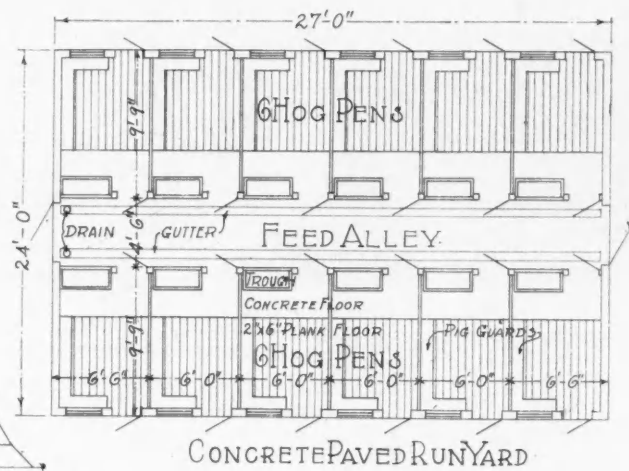


A Building to Make Two Litters Grow Where Only One Grew Before

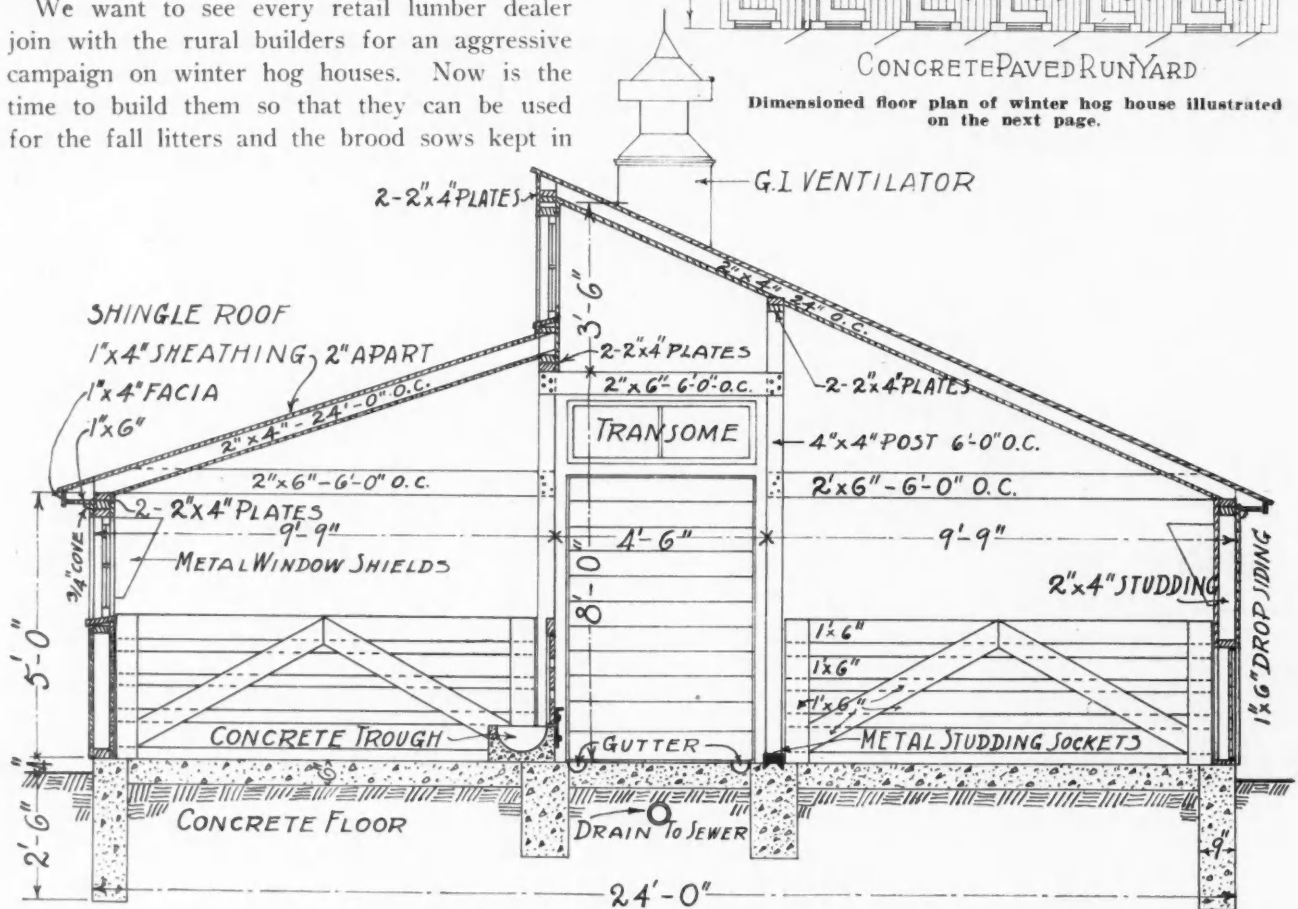
A WINTER hog house properly built will permit the farmer to double his pig production and profits.

We want every rural builder and every lumber dealer to realize what this means. Consider it first from the patriotic angle and see what it will mean to the Nation and to our Allies if our production of pork can be doubled, or even materially increased. Next look at it from the farmer's angle and see what it will mean to his profits, with hogs selling at better than \$15.00 per hundred weight, if he can raise two litters a year instead of one.

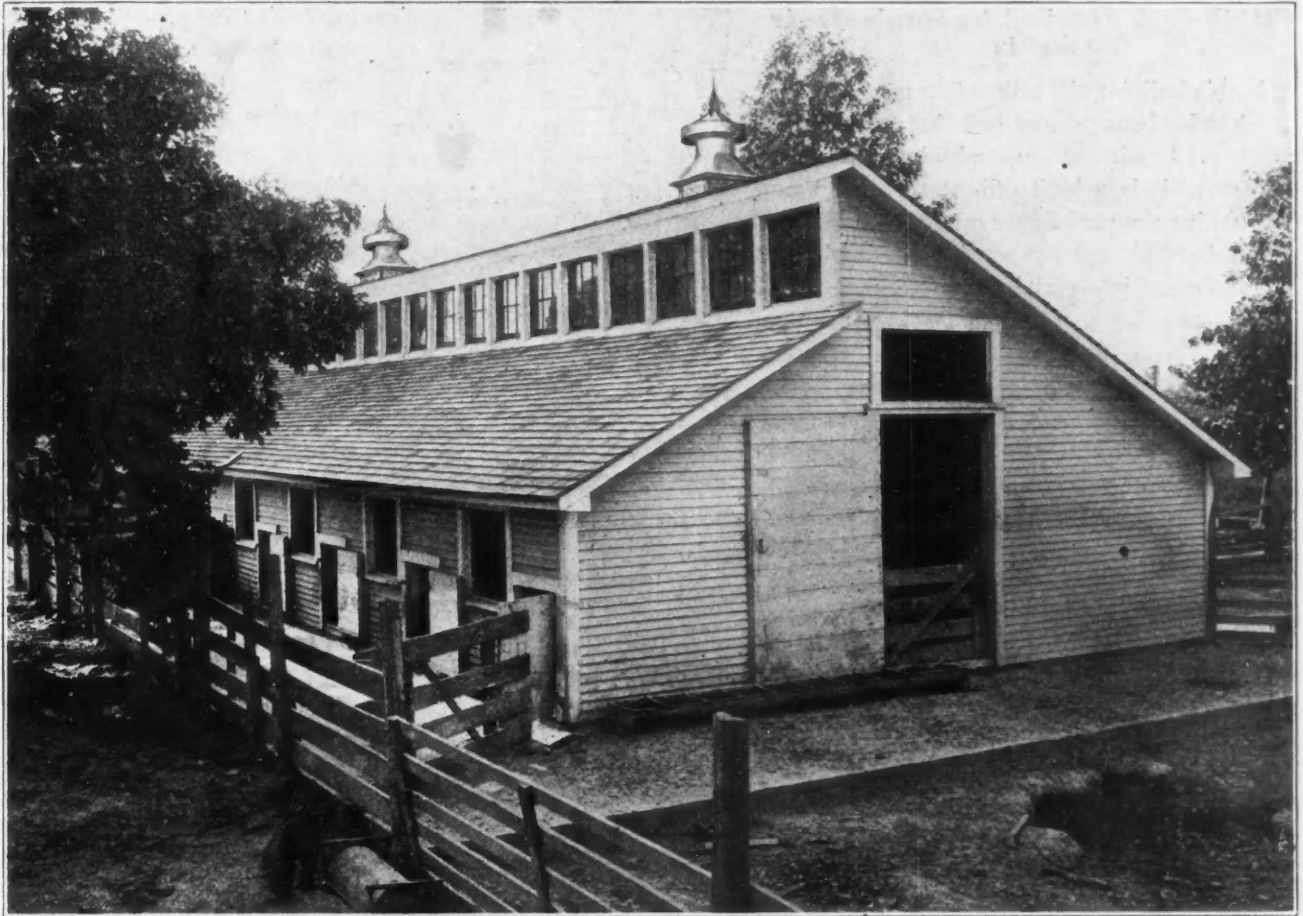
We want to see every retail lumber dealer join with the rural builders for an aggressive campaign on winter hog houses. Now is the time to build them so that they can be used for the fall litters and the brood sows kept in



Dimensioned floor plan of winter hog house illustrated on the next page.



Cross section of half monitor or saw-tooth roof type of hog house, 24 feet wide, containing two rows of pens with space of 4 feet 6 inches for feed alley down the middle.

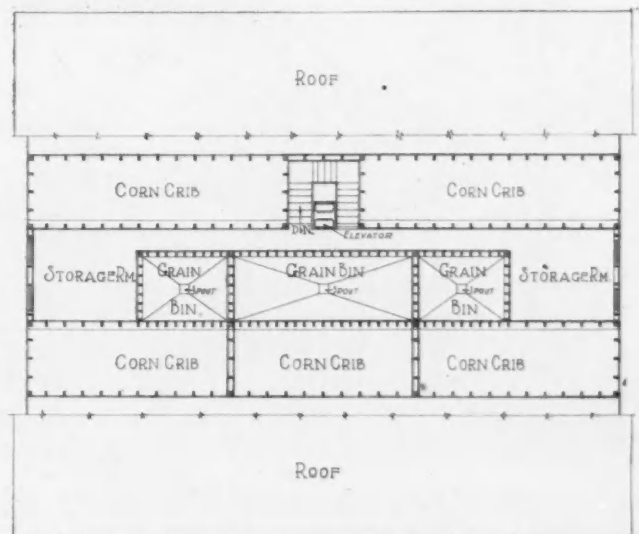
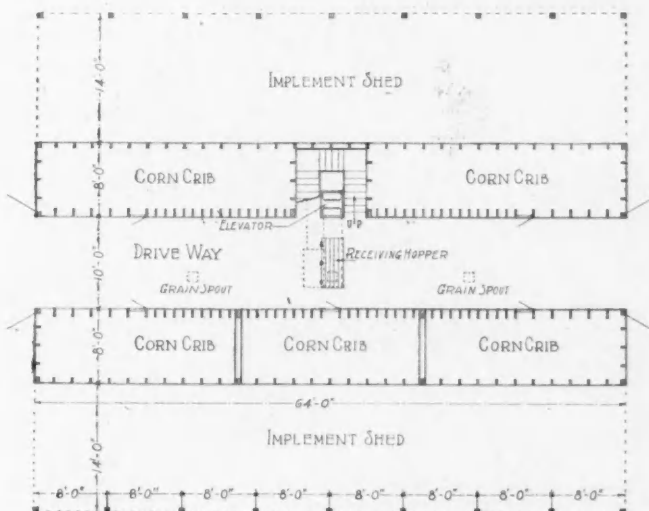


Photograph of well built Community Hog House, containing twelve pens. For plan layout and method of construction see opposite page.

comfort and in the best of health thruout the winter in preparation for early farrowing next spring. This field is ripe for builders and dealers right now, as the farmer knows that there is a market for all the hogs he can raise; and he also knows that the better his hog buildings, the more hogs he will be able to raise at better profit.

The photograph and drawings presented herewith, show a hog house of the half monitor or sawtooth roof type, size 24 by 27 feet, containing twelve in-

dividual hog pens arranged in two rows with a feed alley down the middle. Place this building so that the upper windows face the south. They let direct sunshine into the back row of pens. At the same time the side wall windows brighten and warm the front row. The outside run yards, as well as the floor of pens and feed alley, are of concrete laid like a cement sidewalk. Keep the porkers and their food up out of the mud and filth, and you will avoid numerous ailments which too often cut down the pork production on the average farm.



First and second floor plans of practical type, combined high corn crib and implement shed, as illustrated on next page.

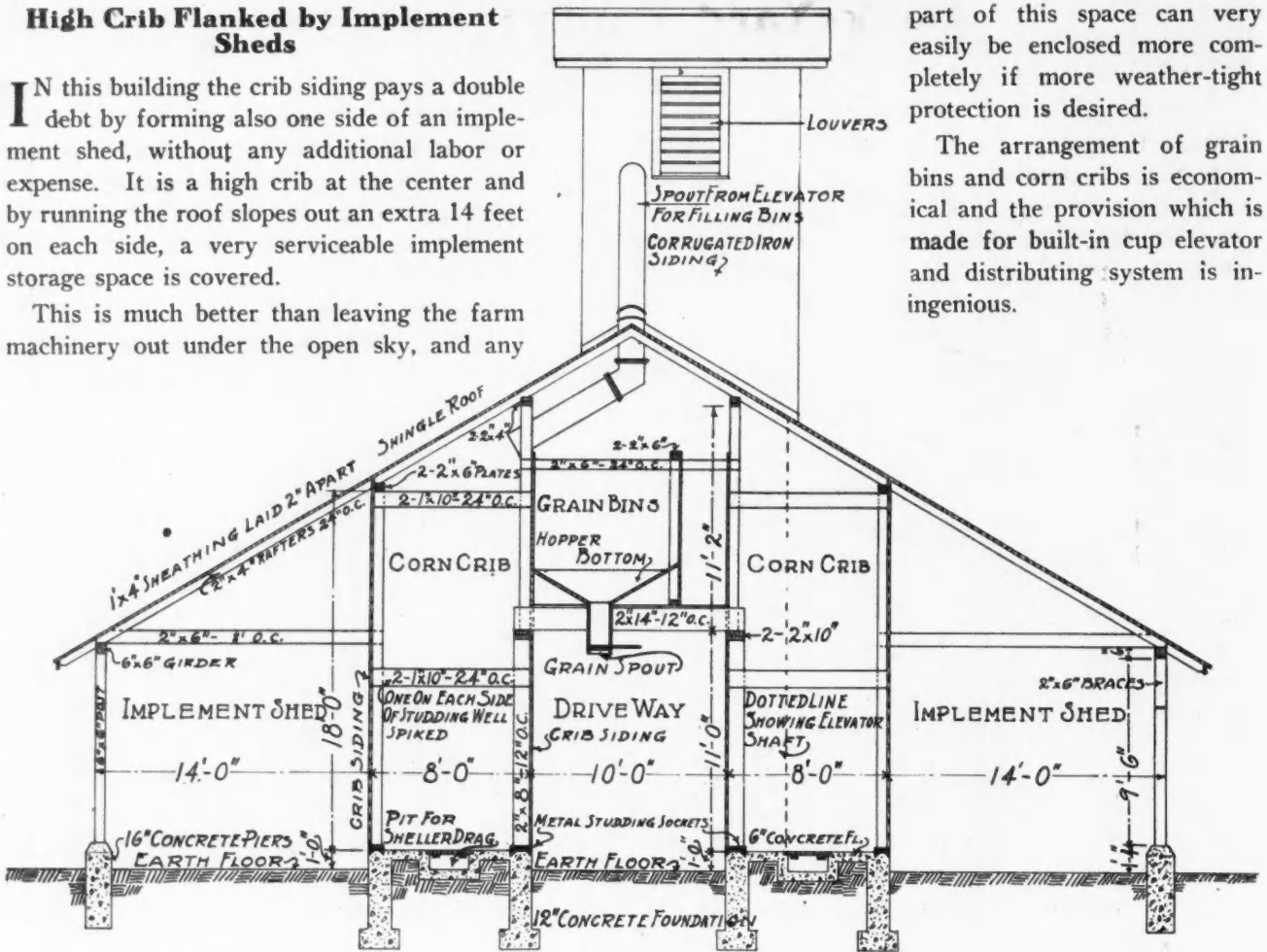
High Crib Flanked by Implement Sheds

IN this building the crib siding pays a double debt by forming also one side of an implement shed, without any additional labor or expense. It is a high crib at the center and by running the roof slopes out an extra 14 feet on each side, a very serviceable implement storage space is covered.

This is much better than leaving the farm machinery out under the open sky, and any

part of this space can very easily be enclosed more completely if more weather-tight protection is desired.

The arrangement of grain bins and corn cribs is economical and the provision which is made for built-in cup elevator and distributing system is ingenious.



Photograph and cross section, showing construction of a very interesting farm structure near Greensburg, Ind. In center portion it is a two-story corn crib and granary, and on each side the roof has been extended out 14 feet to a line of posts to form an implement shed. This gives partial protection to farm implements at a very nominal cost. Additional protection can be easily had at any time by boarding up either or both ends and a part of the exposed side. The high cupola at the center contains the distributing head of built-in cup elevator. The two galvanized iron pipes carry the grain to the ends of the building, which is 64 feet long.

Back-Yard Poultry Keeping

IN THREE PARTS—PART I

By Rob R. Slocum

Animal Husbandry Division United States Department of Agriculture

THE keeping of a small flock of laying hens on a town or village lot or in a city back yard is an important branch of poultry keeping. Tho the value of the product from each flock is small of itself the aggregate is large. The product of such a flock, both in the form of eggs and fowls for the table, may be produced at a relatively low cost, because of the possibility of utilizing table scraps and kitchen waste which would otherwise be thrown away. A small flock of hens, even as few as six or eight, should produce eggs enough, where used economically, for a family of four or five persons thruout the entire year, except during the molting period of the fall and early winter. By the preservation of surplus eggs produced during the spring and early summer this period of scarcity can be provided for. The keeping of pullets instead of hens also will insure the production of eggs at this time. Not only will the eggs from the home flock materially reduce the cost of living, but the superior freshness and quality of the eggs are in themselves well worth the effort expended. Eggs are a highly nutritious food and are so widely used as to be almost indispensable, and an occasional chicken dinner is relished by everyone.

Where conditions render it feasible and cheap small flocks of poultry should be kept to a greater extent than at present by families in villages and towns, and especially in the suburbs of large cities. The need for this extension of poultry raising is particularly great in those sections where the consumption of poultry products exceeds the production, with the result that prices are high.

Overcoming Objections to Keeping Poultry in the City

Objection is frequently raised to the keeping of poultry in towns and cities because of the odor which may result and also because of the noise which is made by roosters crowing, particularly in the early morning.

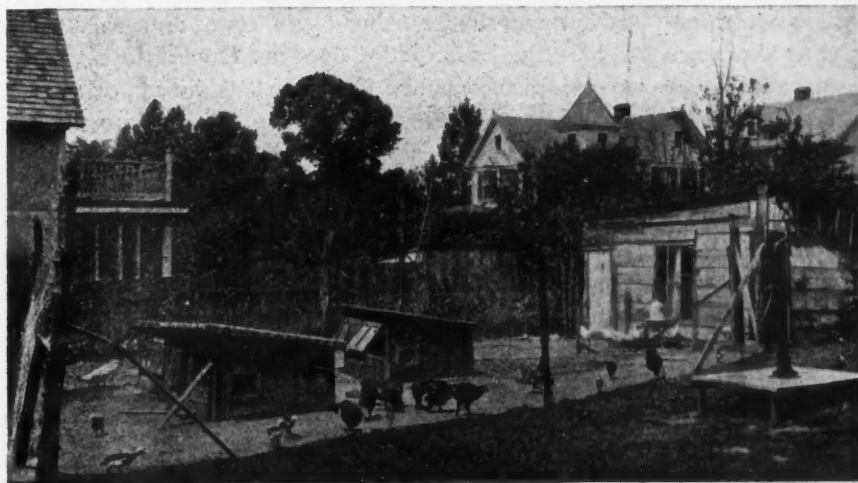
In some cases city regulations have been formulated to prevent or to control poultry keeping. Where there are city regulations it is necessary to find out their provisions and to conform to them. There is no necessity for the poultry flock to become a nuisance to neighbors. If the dropping boards are cleaned daily and the houses and yards are kept in a reasonably clean condition there will be no annoying odors.

The male bird need not be a nuisance. Unless it is intended to hatch chickens from the flock it is unnecessary to keep a male bird. The fact that there is no male in the flock will have absolutely no effect on the number of eggs laid by the hens. If it is desired to mate the hens and to hatch chicks the male bird should be sold or eaten just as soon as the hatching season is over. This is desirable not only for the purpose of eliminating noise, but also to save the feed that would be eaten by the male and for the reason that the eggs produced after the male is disposed of will be infertile. Since these eggs are incapable of chick development they keep much better than fertile eggs and consequently are superior for preserving or for market.

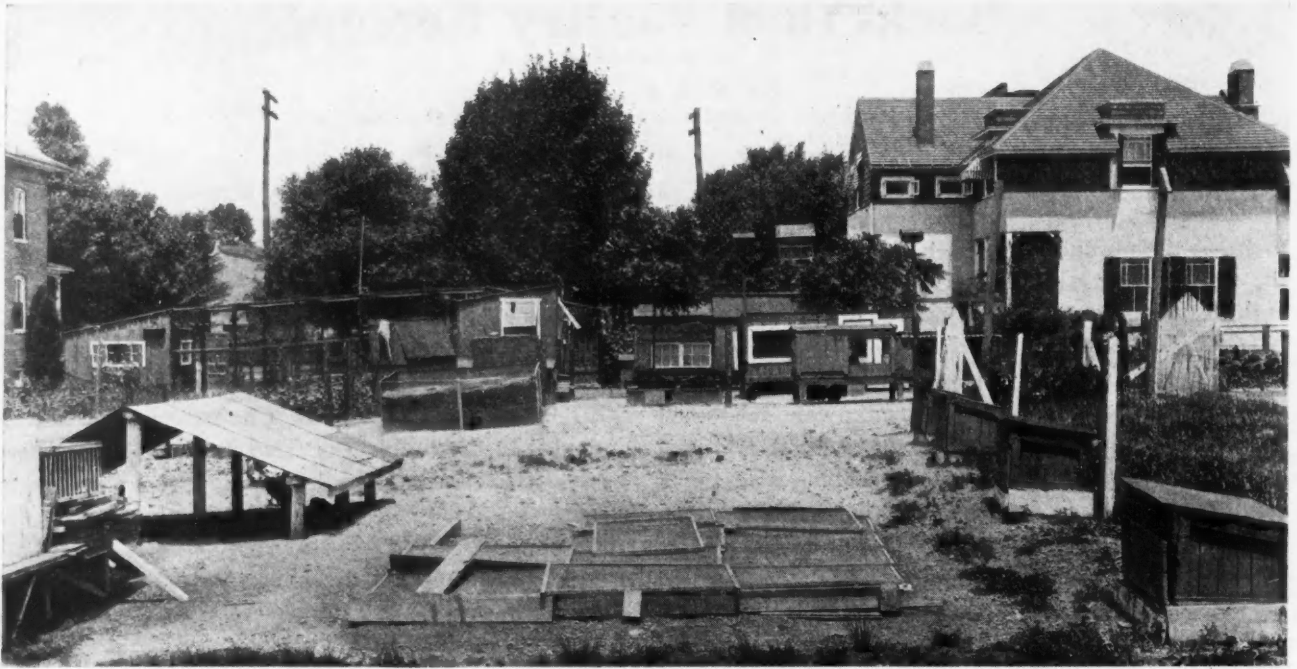
The flock must be kept confined; otherwise the hens will stray into neighbors' yards and gardens, where they may cause damage and are almost sure to cause ill feeling.

Kind of Fowls to Keep

Householders usually desire not only eggs for the table and for cooking, but also an occasional chicken to eat. For this reason one of the general-purpose breeds, such as the Plymouth Rock, Wyandotte, Rhode Island Red, or Orpington, is preferable to the smaller egg breeds, such as the Leghorns. Not only do the mature fowls of these breeds, because of their larger size, make better table fowls than the Leghorns, but the young chickens for the same reason make better friers and roasters, whereas chickens of the egg breeds are only suitable for the smaller broilers. The general-purpose breeds are also "broody" breeds, the hens making good sitters and mothers, which is a decided advantage when it is desired to hatch and raise chickens, since the hens of the egg breeds seldom go broody and are in any event rather unreliable sitters and mothers. If, however, the production of eggs outweighs the desire for an occasional table fowl, the lighter egg breeds undoubtedly will be found better, because they lay as many eggs and do so on less feed, with the result



Poultry House and Run in a Back Yard.



A Back Yard Poultry Plant. In the Background Are the Poultry Houses Set Up Off the Ground on Account of Rats. At the Left Is a Shade Made of Wooden Strips and Roofing Paper. At the Right Are the Coops for the Hens and Chicks. In the Foreground Outs for Green Feed Are Being Sprouted Under Wire Screens.

that they produce the eggs more cheaply. It is by all means advisable to keep some pure breed or variety. Where this is done, sales at a profitable figure can often be made of breeding stock which it is intended to market or of eggs for hatching.

Size of Flock

The size of the flock which can be most efficiently kept will depend first of all upon the space available and, secondly, upon the amount of table scraps or other waste which is available for feed. It is a mistake to try to overstock the available space. Better results will be obtained from a few hens in a small yard than from a larger number. The back-yard poultry flock rarely will consist of over 20 or 25 hens and in many cases of not more than 8 or 10, or occasionally of only 3 or 4. For a flock of 20 to 25 hens a space of not less than 25 or 30 feet should be available for a yard. Where less space is available, the size of the flock should be reduced, allowing on the average 20 to 30 square feet per bird. A few hens are sometimes kept successfully with a smaller yard allowance than this, but if the space is available a yard of the size indicated should be used.

Procuring Stock

The best way for the city poultry keeper to procure hens is to purchase them in the fall. An effort should be made to obtain pullets rather than older hens, and the pullets selected should be well matured, so that they will begin to lay before the cold weather sets in. Evidences of the maturity of pullets are the development and red color of the comb and a size and growth which are good for the breed or variety. Hens will lay little or no eggs during the fall and early winter, while they are molting. Well-matured pullets, however, should lay fairly well during this period, so that

an immediate return is realized from the investment. The purchasing of pullets in the fall is preferable in most cases to purchasing day-old chicks or to hatching chicks in the spring. Usually there is little space available for the raising of chicks, and, moreover, many city dwellers have had no experience in raising them. Under these conditions the results are apt to be very poor. Hatching and rearing chicks also necessitates broody hens for this purpose, or else investing money in artificial apparatus such as incubators and brooders. Such an investment is often too great to prove profitable with the average small flock. If chicks are raised, they must be fed thruout the summer and no return will be obtained until the pullets begin to lay in the fall, except that the males can be eaten or sold.

When pullets are to be purchased, it is well if possible to go to some farmer or poultryman who may be known to the prospective purchaser. In some cases it may pay to make arrangements with the farmer to raise the desired number of pullets at an agreed price. Where the householder does not have an opportunity to go into the country for his pullets, he can often pick them out among the live poultry shipped into the city to be marketed. The advice of some one who knows poultry should be sought in making such a purchase, to make sure that pullets or young hens are obtained, and that the stock is healthy. Often the local poultry associations are glad to help the prospective poultry keeper to get stock by putting him in communication with some of its members having stock for sale. Sometimes the local board of trade or chamber of commerce is glad to help to bring together the prospective purchaser and the poultry raiser.

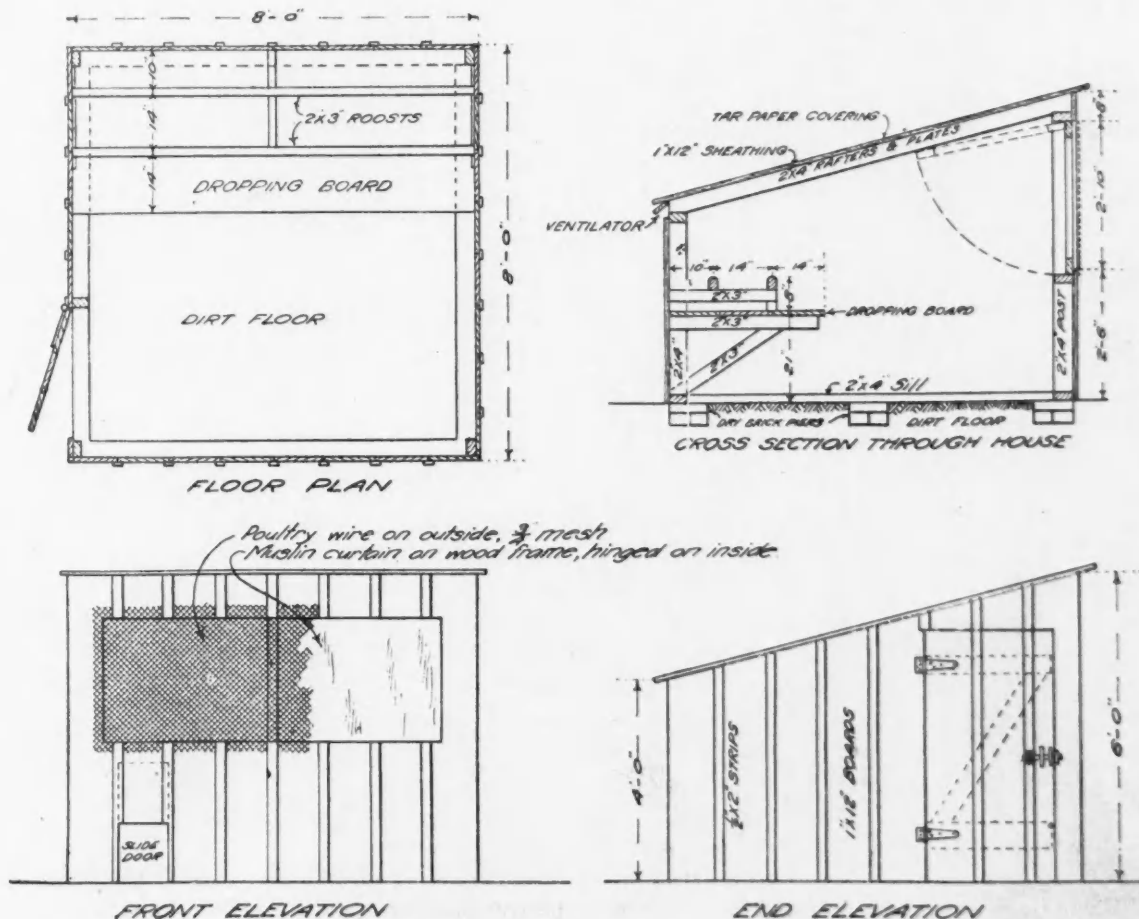
The flock should be comfortably but not expensively housed. A house which provides a floor space

of 3 or 4 square feet per bird is ample for the purpose, and fowls are often successfully kept with an allowance no greater than 2½ to 3 square feet. Houses must be dry and free from draft, but must allow ventilation. Often there is a small unused shed or building on the place which can easily be converted into a chicken house. The front of the poultry house should be faced toward the south, if possible, so that the sun will shine into it. Perfectly satisfactory houses can be made cheaply from piano boxes or other packing cases. Two piano boxes with the backs removed can be nailed together and a door cut in the end. These boxes should be covered with a roofing paper in order to keep the house dry and to make it wind-proof. A portion of the door should be left open or covered with a piece of muslin, so as to allow ventilation. Similar houses can be constructed of packing cases at a relatively small cost. A small amount of 2 by 4 or 2 by 3 lumber can be purchased for framing. The box boards can be applied for siding or sheathing, and then covered with roofing paper. Where there is a board fence it is sometimes possible to take advantage of this by building the poultry house in the corner of the fence, and making the fence itself, with the cracks covered by strips or battens, serve as the back and one side of the house.

A cheap house 8 by 8 feet square can be made of 2 by 4-inch pieces and 12-inch boards. Plans for such a house are given. The 2 by 4 pieces are used for sills, plates, corner posts and three rafters. No studding is required except that necessary to frame the door and window space. The boards are run up and down and add sufficient stiffness to the house. They are used also for the roof and covered with roofing paper. The back and sides of the house also can be covered with roofing paper, or the cracks can be covered with wooden battens or strips 1½ to 3 inches wide. In the front of the house there should be left a window or opening which can be closed, when desired, by a muslin screen or curtain which serves as a protection against bad weather but allows ventilation. In the side a door should be provided which will allow entrance. A shed or single-slope roof is best because easiest to build. A height of 6 feet in front and 4 feet in the rear is ample. If desired, the house may be built higher, so that it is more convenient to work in; the increase in cost will be slight. The ventilator in the rear is not needed in the northern part of the country, but is desirable in the South where summers are very warm.

Such a house would be ample for a flock of 20 to 25 hens. It can be built quickly and easily and is cheap

(Continued to page 126.)



Working Details of Simple Back Yard Poultry House, Size 8x8 Feet on Ground 4 Feet High at Back and 6 Feet in Front. This Construction Is Recommended by the U. S. Department of Agriculture for the Average Back-Yard Flock.

Blue Prints of Fine Dairy Barn

COMPLETE WORKING DRAWINGS TO SCALE PRESENTED ON FOUR-PAGE SUPPLEMENT FOLLOWING ILLUSTRATE CONSTRUCTION OF MODERN BARN FOR THIRTY-EIGHT COWS AND TEN HORSES

The AMERICAN BUILDER blueprint feature continues to excite the wonder and admiration of builders and building material dealers. Some write that they are building direct from these plans; others use them as convincing sales talk material to get the interest of farmers in needed improvements.

Some are using them for study, as models of what well-drawn working plans should be like.

The design illustrated below, which is the subject of the set of blueprints immediately following, makes a barn that looks bigger than it really is. Because of the proportions of the different parts, the length and height are emphasized, and a very fine appearing barn is the result. The main section is 36 feet wide by 84½ feet long. This accommodates thirty-eight dairy cows in two rows facing in. A wing extending out at the back 36 feet wide by 41½ feet long stables the horses. This part of the barn is entirely closed off from the cow department by a tight partition and sliding doors.

It is a convenience to be able to do all the work under one roof, but for sanitary reasons the horses and cows should be kept entire separate. A good many have commented on the effective placing of the two silos in connection with this barn.

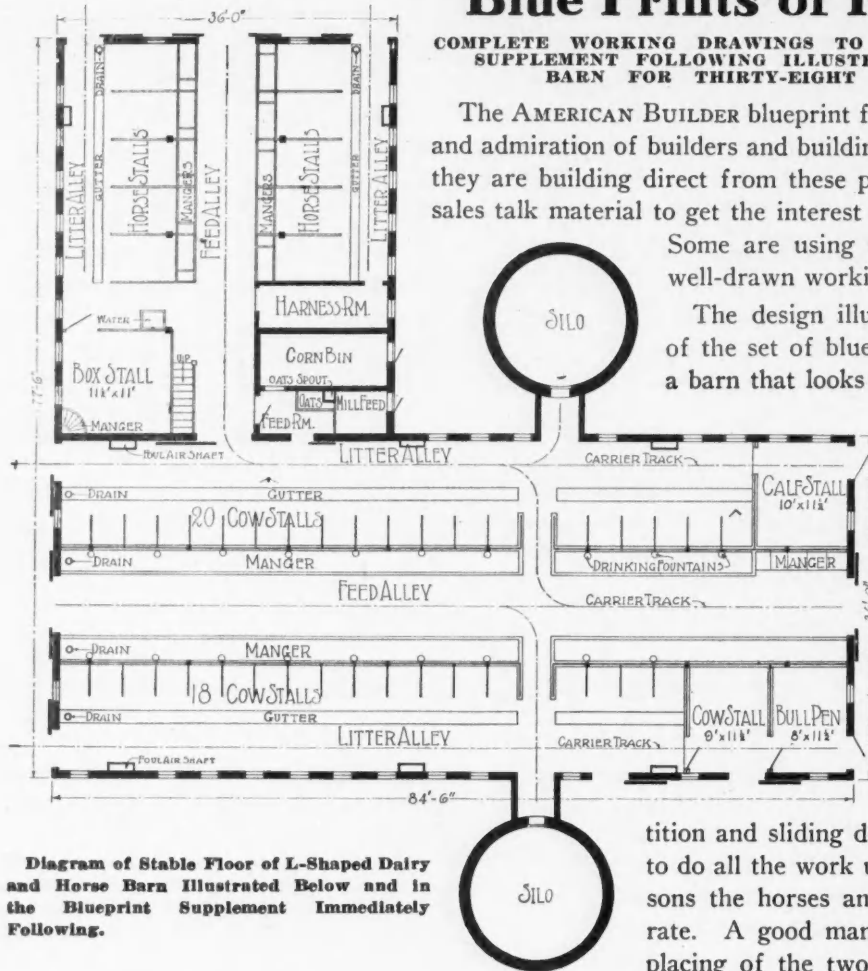
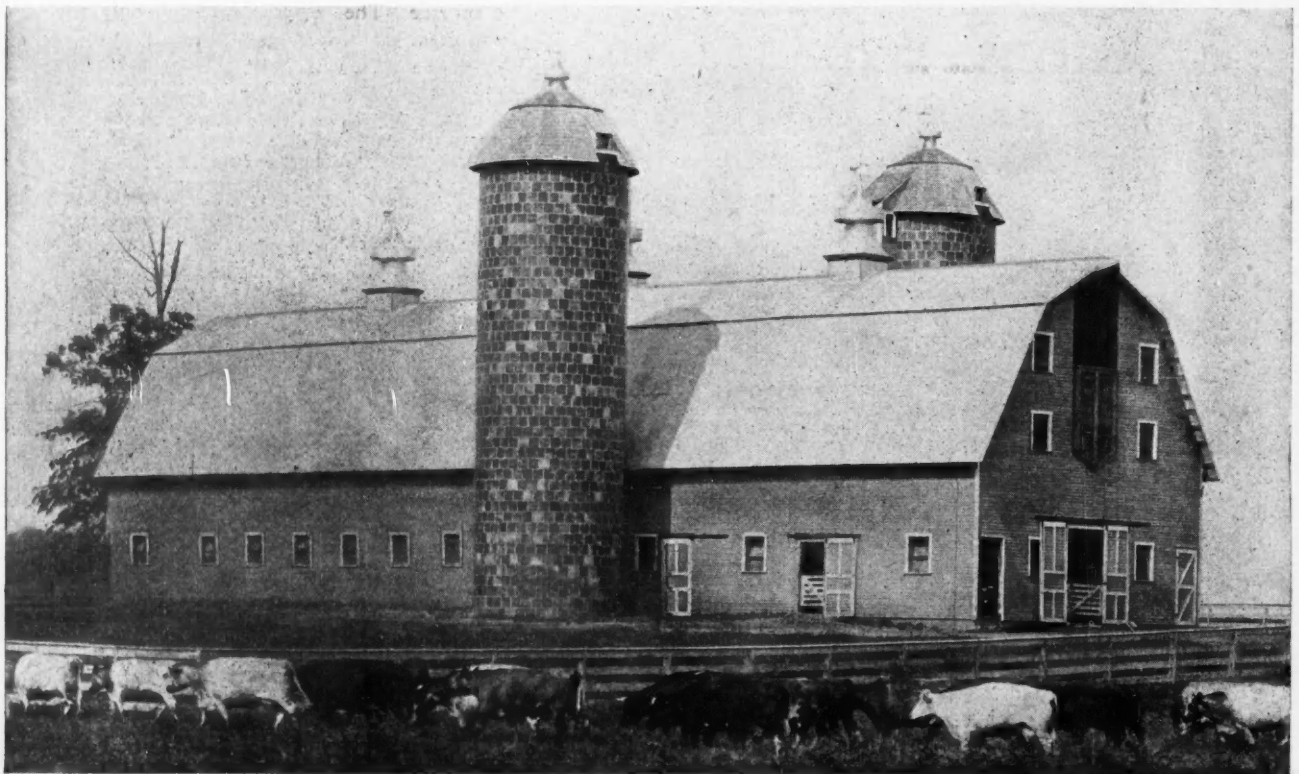


Diagram of Stable Floor of L-Shaped Dairy and Horse Barn Illustrated Below and in the Blueprint Supplement Immediately Following.



Photographic Perspective of Fine Modern Cow Barn with Horse Stable Wing. Blueprint Working Drawings Showing How to Build This Fine Barn Are Presented.

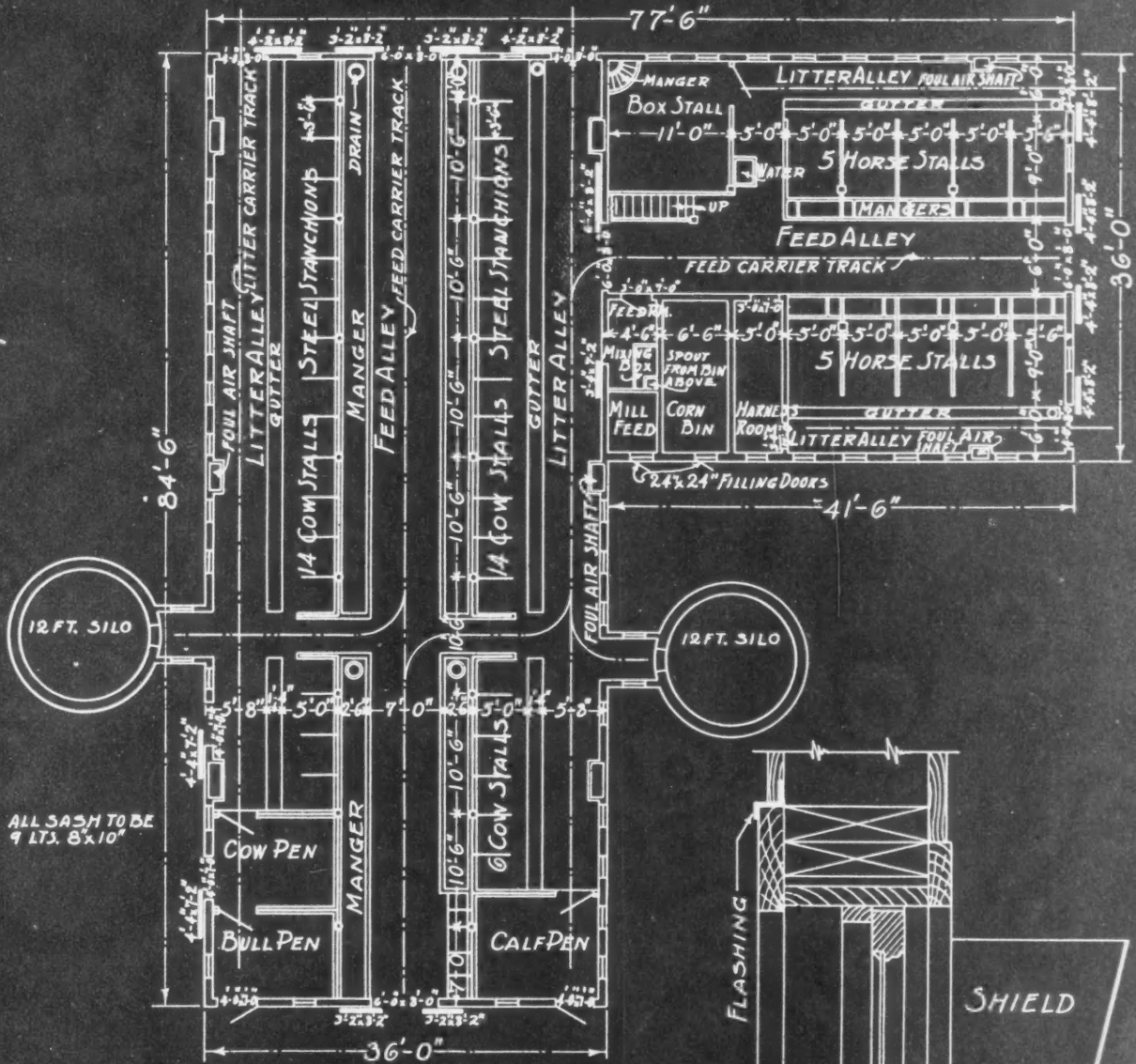
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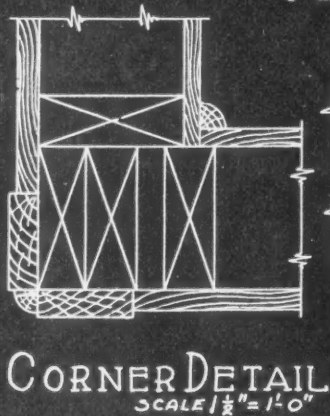


AMERICAN BUILDER FARM BUILDINGS

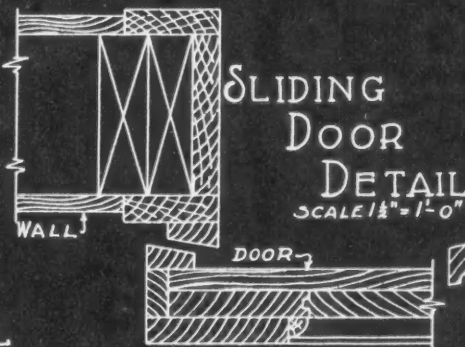


ALL SASH TO BE
9 LTS. 8x10"

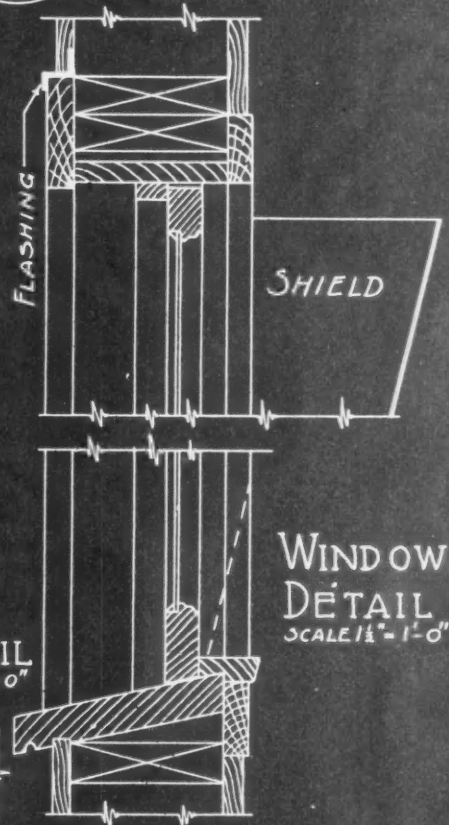
FLOOR PLAN
SCALE $\frac{1}{8}'' = 1'-0''$



CORNER DETAIL
SCALE $\frac{1}{2}'' = 1'-0''$



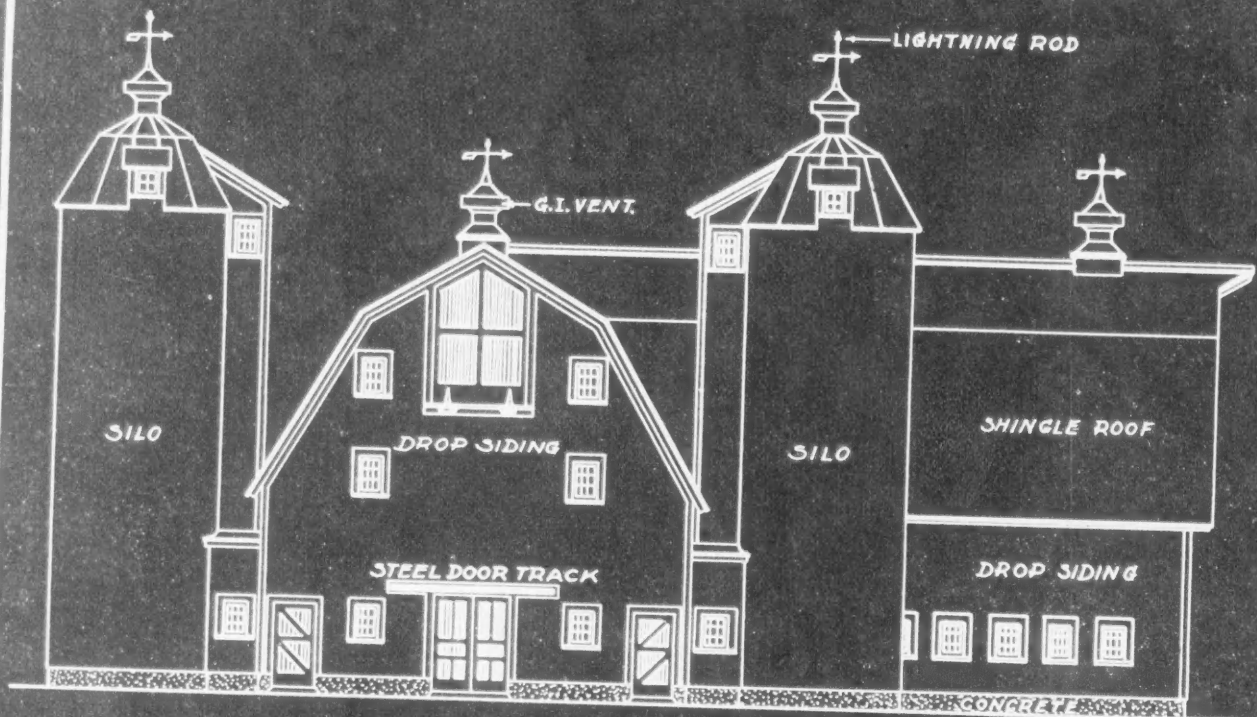
SLIDING
DOOR
DETAIL
SCALE $\frac{1}{2}'' = 1'-0''$



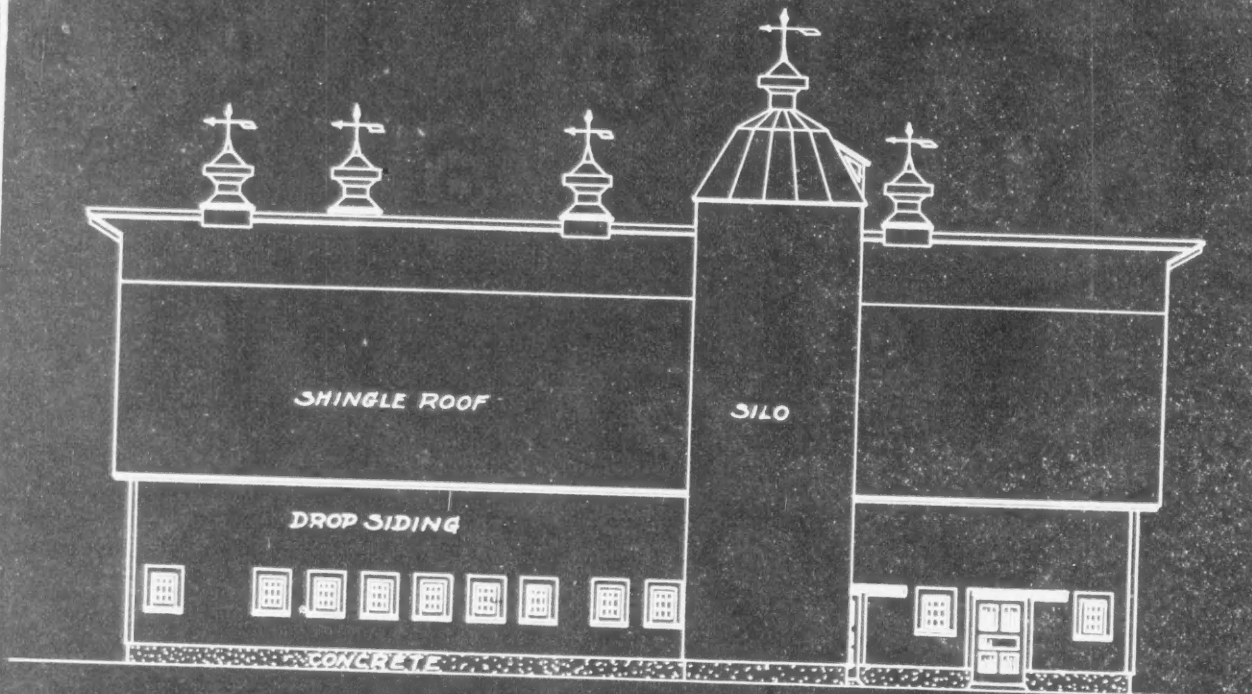
WINDOW
DETAIL
SCALE $\frac{1}{2}'' = 1'-0''$

DRAWINGS OF MODERN DAIRY & HORSE BARN

AMERICAN BUILDER FARM BUILDINGS



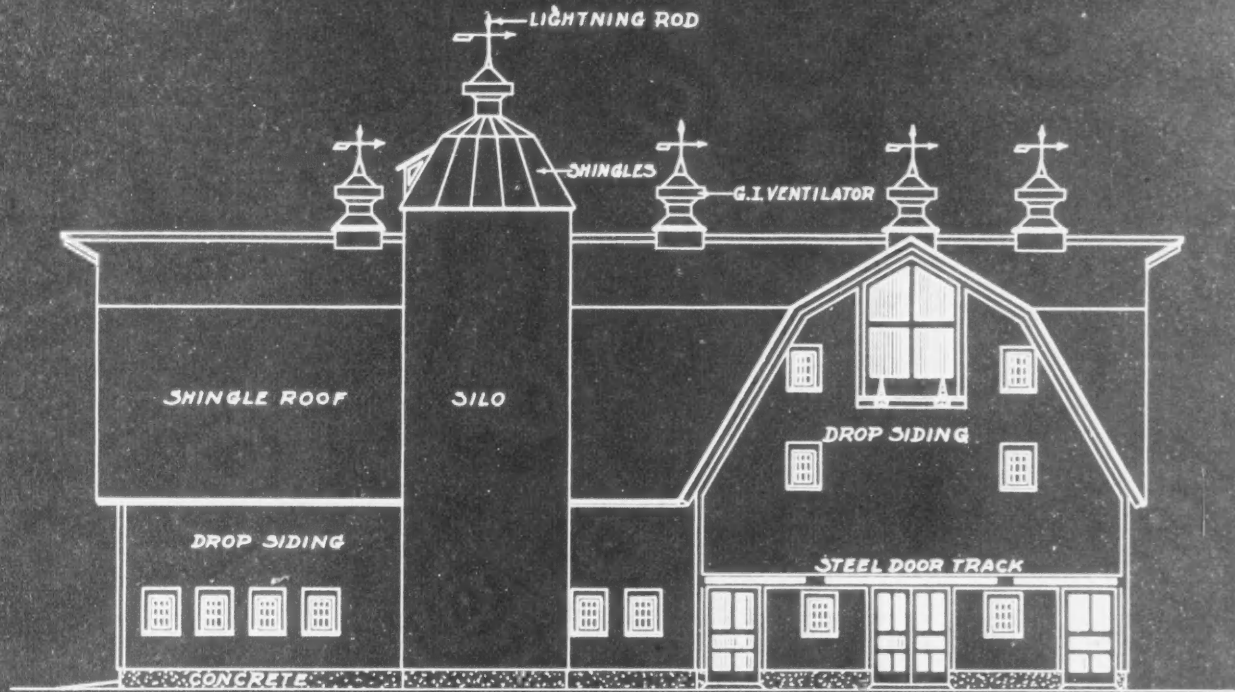
FRONT ELEVATION
SCALE $\frac{1}{16}'' = 1'-0''$



LEFT SIDE ELEVATION
SCALE $\frac{1}{16}'' = 1'-0''$

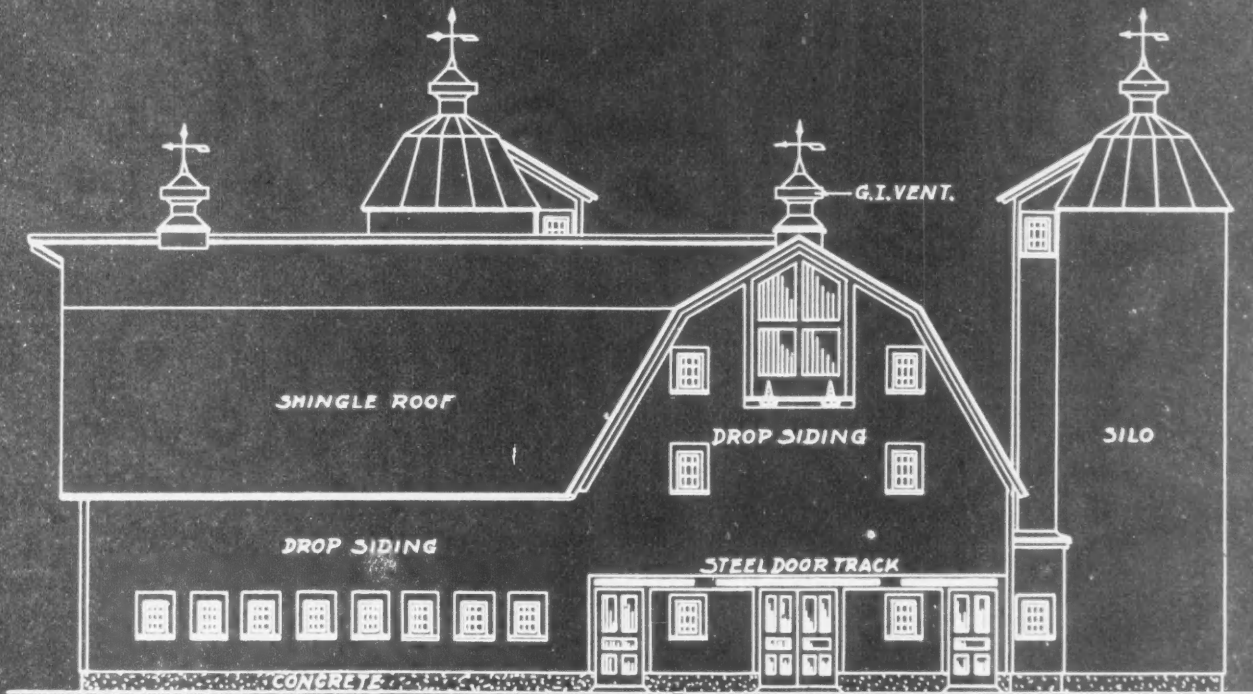
DRAWINGS OF MODERN DAIRY & HORSE BARN

AMERICAN BUILDER FARM BUILDINGS



RIGHT SIDE ELEVATION

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

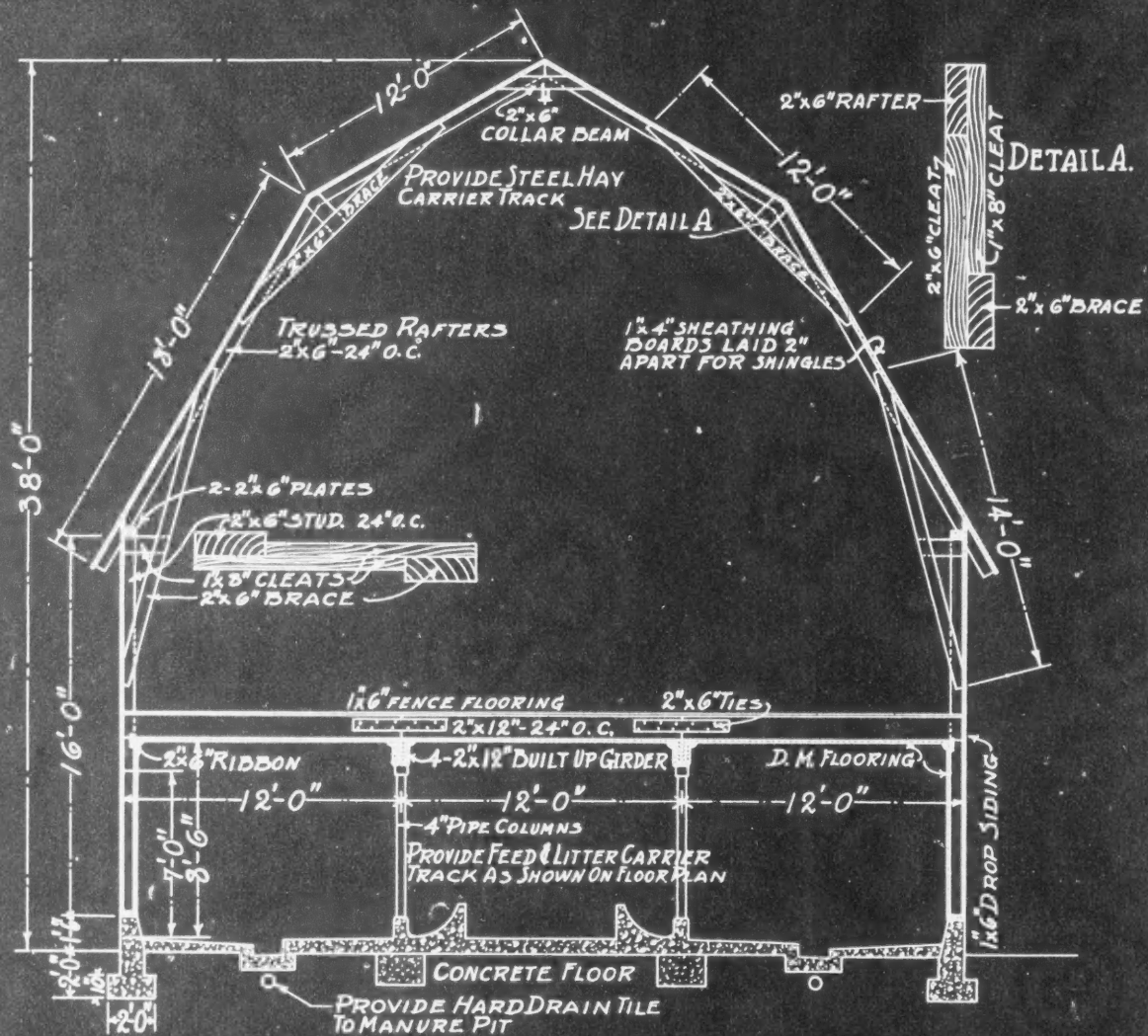


REAR ELEVATION

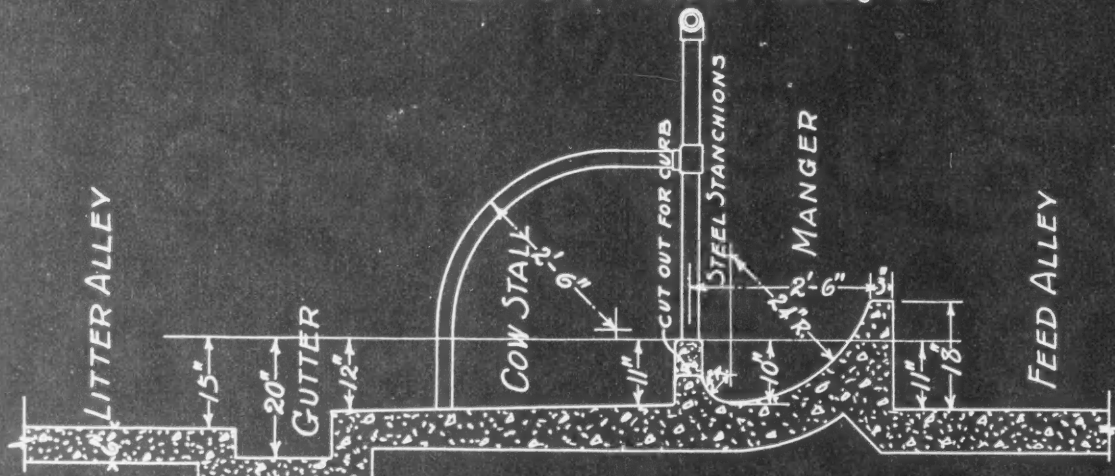
SCALE $\frac{1}{8}'' = 1'-0''$

DRAWINGS OF MODERN DAIRY & HORSE BARN

AMERICAN BUILDER FARM BUILDINGS



CROSS SECTION SCALE $\frac{3}{8}" = 1'-0"$



SECTION OF COW STALLS SCALE $\frac{3}{8}" = 1'-0"$

DRAWINGS OF MODERN DAIRY & HORSE BARN

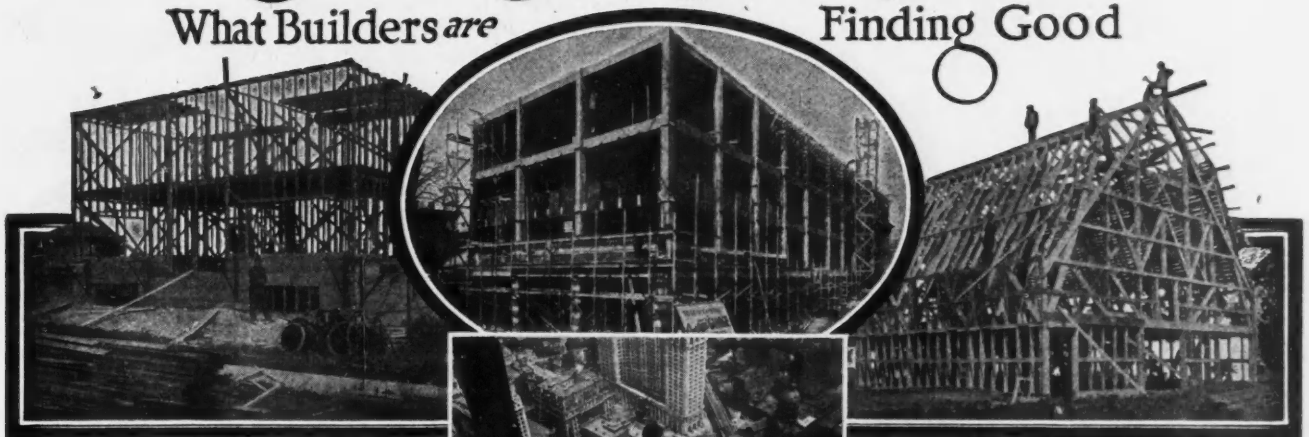




OUT ON THE JOB

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.

Felt for Built-Up Roofs Now Slate Surfaced at the Factory

A new idea of saving labor and time on the job thru additional use of machinery at the factory is illustrated in a construction roofing for the weathering surface of a built-up roof, that is slate surfaced at the factory. Of the 213½ square feet of material it requires to lay one square, it is necessary to mop by hand only 113½ square feet. The second "mopping," and also the slate surfacing, is mechanically applied at the factory, and is in place on the roofing when it



As applied, one continuous slate surfacing is produced

reaches you, thus providing an unusually smooth and even finish.

No nails are exposed, and the use of hot asphalt compound makes of the entire roof one continuous or monolithic unit.

A comparison will indicate that this construction roofing is, in proportion to protection given, one of the simplest, most compact and most easily and economically applied built-up roofings. Its first cost is very moderate.

Here is how it comes:

Width of sheet, 32 inches, of which 15 inches lengthwise is saturated, asphalt coated and slate surfaced, and 17 inches lengthwise is saturated only. Color, red only. Material furnished as one square, 213½ square feet, totaling 80 lineal feet. Shipping weight about 100 pounds, applied weight about 130 to 135 pounds. Asphalt compound supplied in 350 to 450-pound drums.



Road Finisher Produces Denser Concrete

A concrete road finishing machine that eliminates the voids in concrete and by the use of which the proportion of coarse aggregate may be increased considerably is the newest addition to road building equipment.

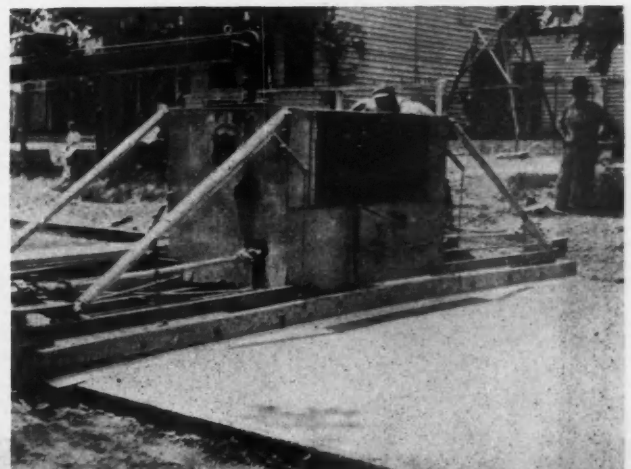
The device moves forward under its own power at a speed of about 7 feet per minute and backs up at a speed of 28 feet per minute. As the machine travels forward the strike-off spreads the concrete to the necessary height and proper crown. The tamper, located just back of the strike-off, tamps the con-

crete the first time over with a long hard stroke. The second time over a short, rapid, up and down movement is used, which may be decreased until it is subjecting the concrete to continuous agitation without applying pressure to the mixture. The stroke of the tamper is regulated by the operator and may be varied for different consistencies of concrete as well as for different stages of progress. The float, located at the rear of the machine, produces a smooth finish by sweeping a belt across the surface at a comparatively slow speed.

By subjecting the mixture to the continuous agitation caused by the tamper, the concrete is compacted and the air in it is brought to the surface. The larger stones and only enough mortar to cement them are brought together. Because of the agitating action of the tamper, a drier mixture can be used with this finisher than would be possible where the work is done by hand.

This, of course, results in a stronger concrete and produces a surface free from laitance, silt and light particles which float to the surface of a wet mixture.

The views show this concrete road finisher in use on the 15-foot Belleville (Ill.) Scott Field road in St. Clair County,



Road Surfacing Machine in Use on the Scott Field Road, Belleville, Ill.

where its use has been attracting considerable attention from engineers and contractors. On this work a 1-2-3½ mixture is being used. This type of machine has been used on the construction of about 400 miles of California's famous highways.

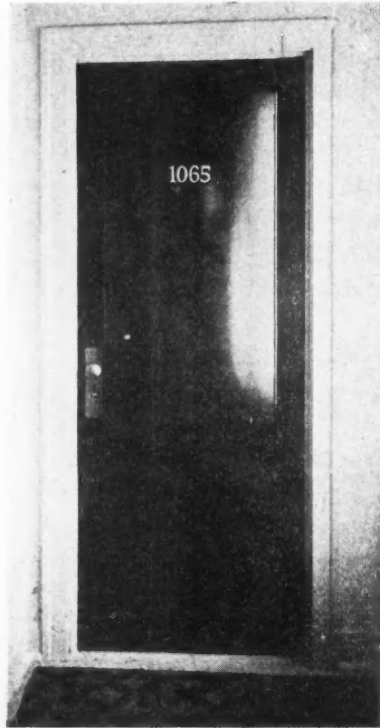


The Latest in Hotel Doors

This door is one of the latest in hotel improvements and has proved a great success in many hotels. Its purpose is to afford privacy and seclusion to the guest.

To use it one simply telephones the operator, when anything is placed in it or when one desires anything sent to the room, clothes to be cleaned and pressed or shoes to be polished, are placed in the door and the hotel operator notified by phone.

All deliveries are placed in the door from the hall side by the service man. A signal inside appears and the guest is thus served silently and without inconvenience or interruptions.



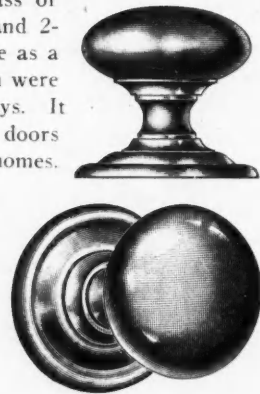
There Is Nothing Unusual About the Appearance of the New Style Door for Hotel Rooms When Closed.



The Outside and Inside of New Style Guest-Room Door for Hotels. At the Left the Bell Boy Is Depositing Pressed Suit and Laundry in the Door Package Receiver. To the Right This Improved Door Is Viewed From Inside the Room, Guest Removing Parcels.

New Colonial Bronze Knob

One of the eastern builders' hardware manufacturers has added to their line a 1¾-inch brass or bronze knob with slender shank and 2-inch rose, made in the same outline as a hand-wrought knob and rose which were high in favor in early Colonial days. It is especially suited for the inside doors of Colonial and Dutch Colonial homes. The screws which attach the rose to the door are concealed in a recess beneath the end of the knob shank. The spindle is 3/16 inch in diameter and is not adjustable. The thickness of the door must be known to properly fill an order.



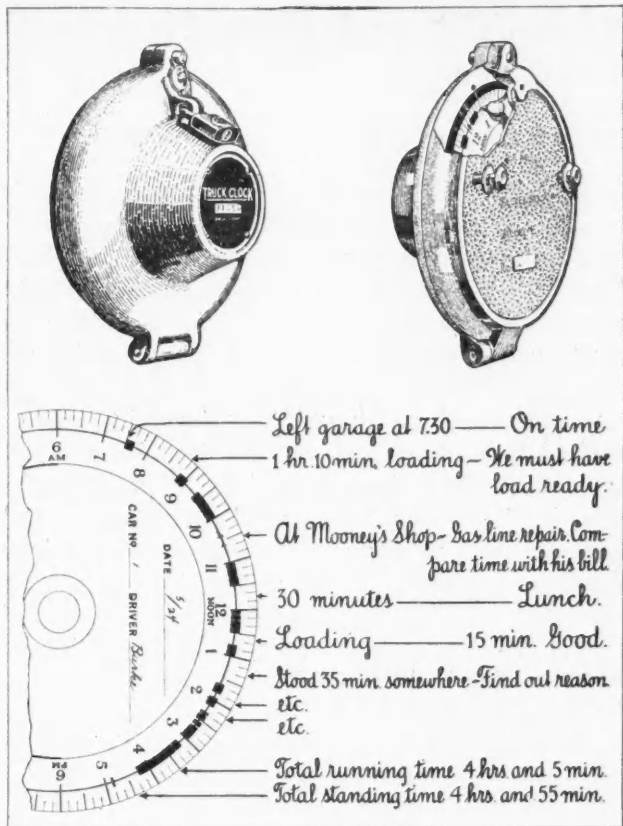
Making Your Motor Truck Patriotic

Why is this? Once more it's the familiar problem of man power. A three-ton truck is worth as much as half a dozen men. And when that truck is standing still, *needlessly*, not only is your able-bodied driver idle, but five or six men besides—a corporal's squad!

"How can I keep my trucks busy?" That's what thousands of truck owners are saying today. The problem is difficult, for the motor truck does most of its work out on the road, out of sight of supervision.

Science has met this problem squarely by providing a mechanical means for recording the movements of motor trucks every minute of the day and night. The service recorder is the name of this little device, and a sketch of it is presented herewith.

"Keep motor trucks busy," says Uncle Sam. "How?" says the merchant. "I'll show you," says this little mechanical historian, and right away it begins to jot down such facts as:



Sketch of Truck Clock and Typical Record for One Day with Explanation.

when the truck reported for work, how long it took to load, how long to make various trips, when each delay occurred and the length of each delay, how long it was held up at the freight station, or at the shipping dock, or in the yard, and many other interesting facts, including when the truck turned in at night, and whether it was used during the night.

It gives this information every day on a little paper disc. This disc is laid on the desk of the dispatcher, superintendent, or sometimes even the president of the company. And when he comes to glance over it, he finds out, wonderful to relate, that in nine cases out of ten the driver is not to blame for expensive truck delays, but instead some department of the business. Then he gets busy and revamps his shipping department, puts in quick loading devices, arranges his routes on a scientific time schedule and perhaps saves an hour a day. And how much is that hour worth? More than \$500 a year!



A New Idea in Casement Window Hardware

The rapidly developed popularity of sleeping porches and sun parlors has called for a hardware fixture that would make the installation of casement windows for this purpose a success.

"Air-way" hardware for multiple casement windows is the new word in window hardware for any multiple window which is wanted to open entirely. It affords perfect ventilation and light—closes weather-tight, shutting out wind and rain—operates easily and positively.

The fact that the windows are open inside the building permits their being washed readily and removes the danger and inconvenience connected with washing windows from outside the building. This hardware is applied with equal advantage to any number of windows the builder may want to place in a row and is manufactured in stock sizes for windows having panes of various widths. It gives opportunity to throw open the entire window frame, or one sash at any particular point in the string of sash

or any number of sash desired. The windows may be constructed with stationary mullion or moving split mullion, part of them moving to the right and part to the left; or they may be arranged to move all in one direction. The sash fold together when wide open and at an angle against the casing at the edge of the window, leaving practically all of the window opening clear of obstruction.

This hardware consists of patented sash links which connect sash at top and bottom, and metal tracks for top and bottom guides, butts for sash adjacent to fixed jamb, a combination fastener and handle, brass chafing plates, rubber stops and safety locks for each sash. Two types of fasteners and handle are carried in stock, one with bow handle and one without.

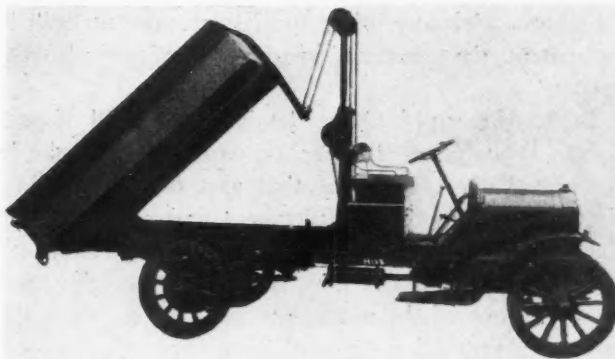


Dumping Body Rig for Any Truck

A new design end dump hoist and body for motor trucks and trailers is offered in sizes from one to five tons capacity.

The hoist is hand operated, and photo shows the body in raised position. Hoist and body is furnished complete, and can be mounted on any truck chassis by one man in less than one hour's time.

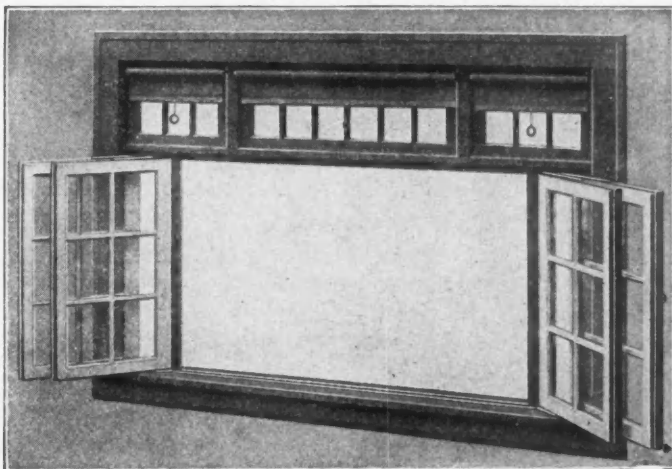
This hoist and body has been designed with the elimination of all complicated parts, and makes an ideal end dump outfit



Practical Dumping Body Rig Which Can Be Applied to Any Truck.

for truck users hauling stone, gravel, sand, refuse, coal and other loose materials. Simplicity and sturdiness of construction were foremost in view in the design of this outfit, and consequently upkeep costs due to repairs and delays are entirely eliminated.

Body can be held stationary by ratchet wheel at any angle desired, and dumping is easily and speedily accomplished. The body is also equipped with double operating tail gate, with special slide gate arrangement in center, allowing operator to spread materials over any area.



These Multiple Casement Windows, so Popular for Porches, Are Hung with Special Hardware Which Makes Them Very Satisfactory.

Logical Methods in Architectural Drafting

By Franklin G. Elwood, B. Ar.

Instructor of Architecture, Bradley Polytechnic Institute

PART IV.—Development of Details

AFTER the working plans and elevation have been drawn, it will be found necessary to draw certain smaller parts to a larger scale in order to show more clearly their shape, material and methods of construction.

These larger scale drawings or details come fourth in the logical steps and may be drawn either at one-fourth, one-half or full size.

The common typical details, which are required in every house, may be classified as exterior and interior. Exterior details consist of sill or water table construction, cornice and window construction, porches, bay windows and dormers.

The interior details consist of stairs, fireplaces, doors, buffets, kitchen cabinets, pantry cupboards, work table, etc., also any other special features of built-in equipment, the construction of which requires explanation.

In drawing any building details the method of procedure is to follow the same steps one would take in the actual construction of that part of the building. Start with the principal members first and build up the skeleton before putting in the details. For example, take the typical box sill and water table construction, one of the most common details. In drawing it up, proceed in the following manner: Lay off the width of the foundation wall, which, if brick, averages thirteen inches in width (Fig. 1). Next draw the bed plate, which is a 2x8 or 2x10 timber, placed flat on top of the foundation wall and one inch from

the outside face. Then indicate the header, which is of a similar size as the bed plate, and is placed even with the outer edge of the plate, as in Fig. 2. Now draw floor joist of the same size, but running at right angles to the header. On top of the joists indicate the rough under flooring and the 2x4 sole piece for the studs to rest upon.

Draw the stud and sheathing, as shown in Fig. 3.

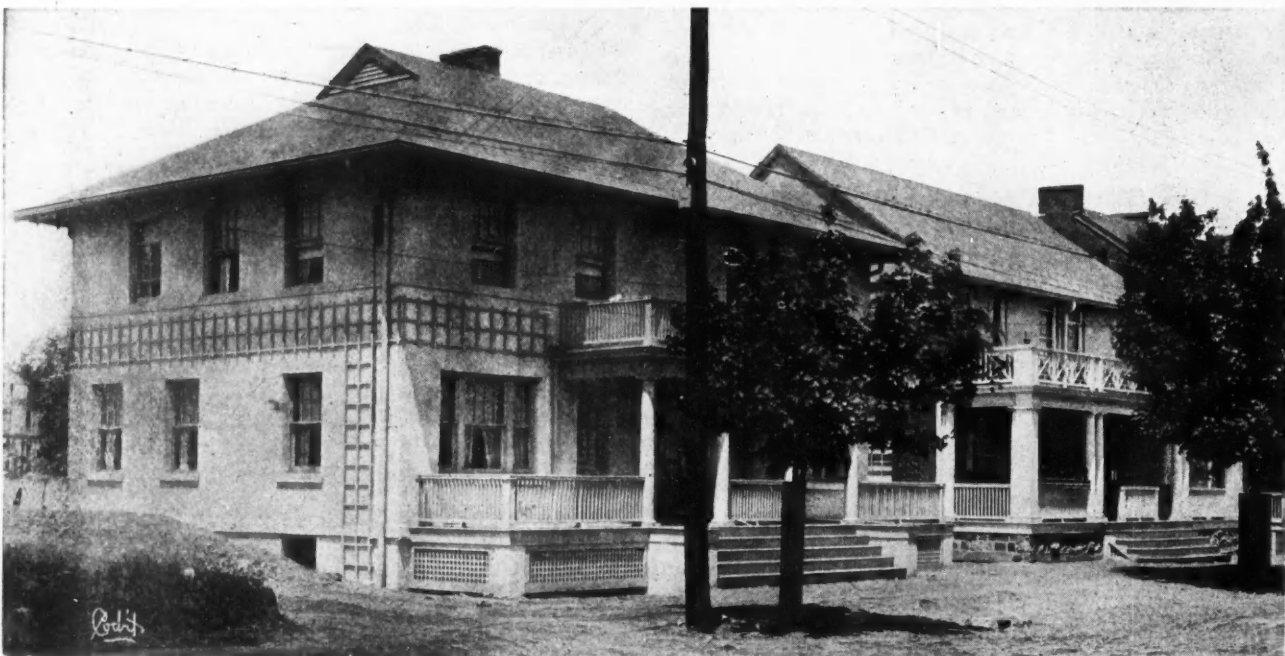
The building paper between the sheathing and siding is shown by a single heavy line. Next the water table is drawn complete, with base, drip cap and quarter round moulding. The bottom of the base should be beveled, as shown in Fig. 4, and set out a small distance from the foundation wall by means of a thin furring strip, as indicated. The finish of beveled siding is drawn with the correct exposure to the weather.

The inside finish, the lath and plaster, finish floor and inside base with quarter round are now drawn (Fig. 4).

In like manner note the method of procedure in the drawing of the box cornice. First draw the 2x4 stud in elevation, and on top of it show the plate, which consists of two 2x4's laid horizontally, as in Fig. 1.

Secondly, draw the main rafter, a 2x6, giving it the required pitch, its length beyond the plate to be determined by the desired amount of projection of the completed cornice.

(Continued to page 124.)



An Example of Varying the Style of Exterior Details Made Use of by Architect Alfred C. Bossom, on the Industrial Housing Work at Bridgeport, Conn. The Two Double Houses Shown in the Photograph Have Identical Floor Plans.

DEVELOPMENT OF DETAILS

BOX SILL CONSTRUCTION

SCALE
12" 6" 2' 0"

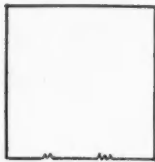


FIG. 1

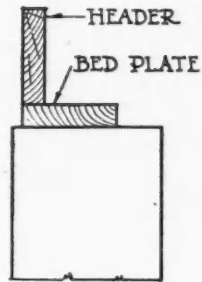


FIG. 2

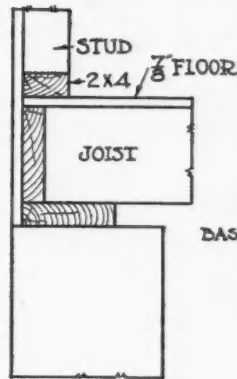


FIG. 3

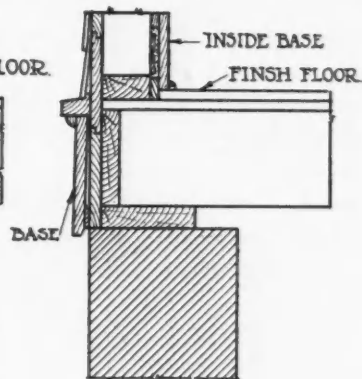


FIG. 4

BOX CORNICE

CONSTRUCTION



FIG. 1

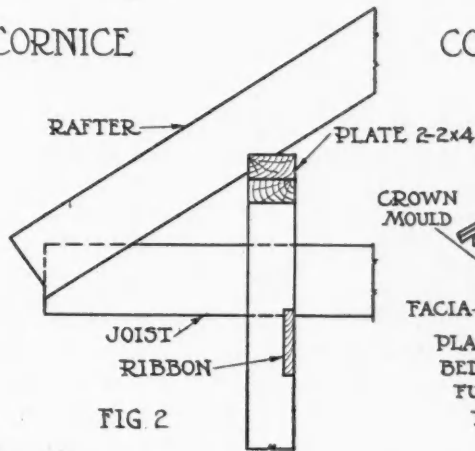


FIG. 2

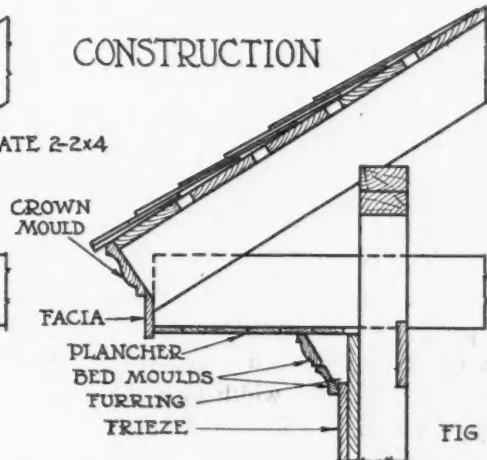


FIG. 3

DOUBLE HUNG WINDOW CONSTRUCTION

SCALE
6' 3' 1' 0"



HEAD SECTION

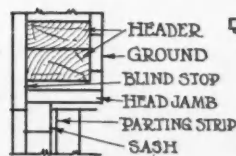


FIG. 1

JAMB SECTION

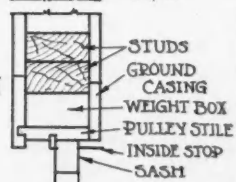
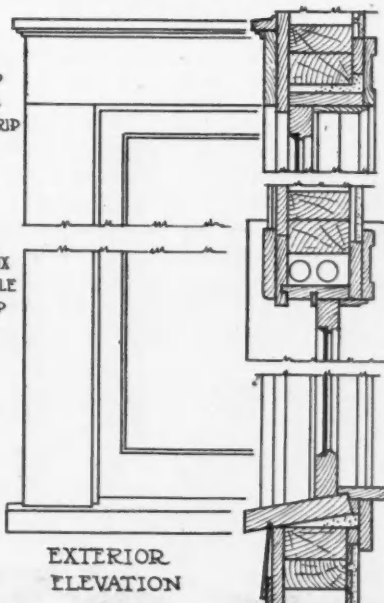
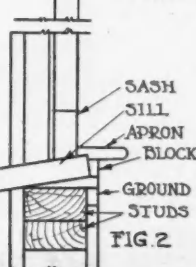


FIG. 2

SILL SECTION



EXTERIOR ELEVATION

FIG. 3

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

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

Red Cross Playhouse Nets \$500.00

To the Editor:

Pikeville, Ky.

As I have been a subscriber to the AMERICAN BUILDER for some years and have never written you in regard to it, as everyone who reads it should, will say that it is one of the best a man can read. You spoke of the blue prints in your last issue, and I for one say, "Keep it up and put them in every month."

Inclosed you will find a picture of a small house I built for the Fourth of July with my crew. Our company fur-



This Little House Built for a Fourth of July Parade, Was Donated to the Red Cross and Sold for \$500.00.

nished us all of the material, and after we had it in the parade we gave it to the Red Cross, who sold it for a child's playhouse, and it brought them the sum of \$500.00.

Hoping everybody will do all he can in this line and others to help the cause; for I know you all are doing your part; and wishing you all good luck and keep coming with your blue prints—as it gives a man a chance to learn something every time, I am,

W. H. STATEN,

Superintendent Pikeville Supply and Planning Co.



Urges Study of Forestry

To the Editor:

Athens, Ga.

In this war emergency it is very important that the lumbermen, and particularly the journals interested in this great industry, lend their assistance in keeping up the forest schools of the country. Trained men in lumbering and milling are needed as never before and the after-war demand will undoubtedly be greater still. Now is the time to prepare for the coming commercial competition. No longer is it possible for a lumber company to train its own mechanics; they must turn to the professional schools for experts, just as do large

machine shops and factories. Efficiency experts are in demand in all great industries. The lumbering industry is perhaps the slowest to recognize the possibilities of increased efficiency in labor and machinery.

The Georgia State Forest School of the State University is the only professional forestry school of the South and the only one in the United States prepared to train men thoroly for Southern conditions. Will you assist the government at this time by bringing to the attention of your readers the wonderful opportunities in forestry of our young men and the peculiar advantages of forestry and logging training at the University of Georgia?

JAS. B. BERRY,

Dept. of Plant Pathology and Forestry, State College of Agriculture and Mechanic Arts, University of Georgia.

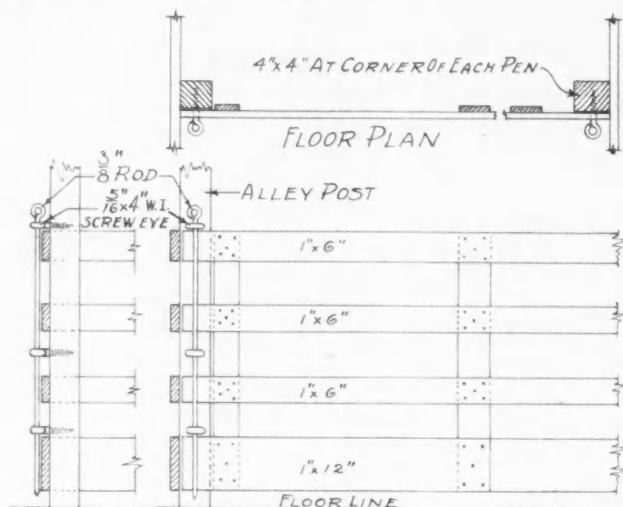


Good Way to Fasten Removable Hog House Partitions

To the Editor:

Coleridge, Neb.

After farrowing season it is sometimes desirable to remove pen partitions in hog house and give pigs full run of same. I have never seen a satisfactory way of fastening such partitions. The sow will root off or open hooks. Dropping par-



END ELEV.

SIDE ELEVATION

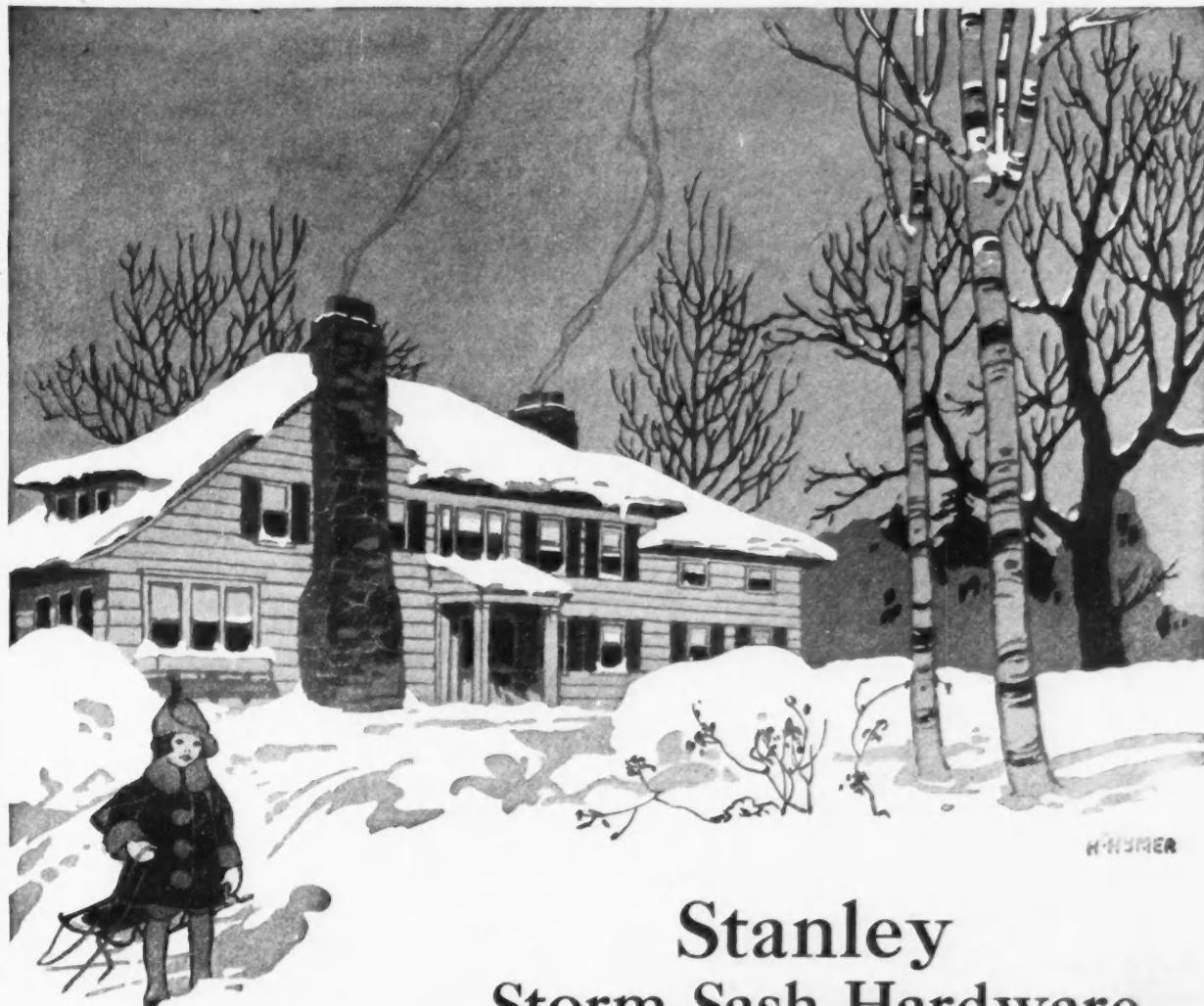
A Hog House Partition Fastened This Way Can't Be Rooted Off; But the Farmer Can Easily Remove It When Desired.

titions into a slide is not satisfactory, as frequently the back side of house is not high enough to allow partition to be lifted out.

I inclose detail sketch of one that will prove satisfactory. One of the pens could be used for feeding the pigs and partition raised and fastened at any height so as to keep out old hogs.

T. B. BARBER.

(Correspondence Department Continued to page 66.)



Stanley Storm Sash Hardware

WHEN you're building a new house or fixing over an old one, don't forget that this year it's vitally important to have the windows tight.

Every loose drafty window is a coal eater and we must save coal! For coal conservation, comfort, economy and perfect construction recommend Stanley's Peerless Storm Sash Hangers and Fasteners.

They are well made, satisfy every requirement, and give perfect service without breaking or getting out of order.

Write today for latest catalog giving full information. Free on request

THE STANLEY WORKS

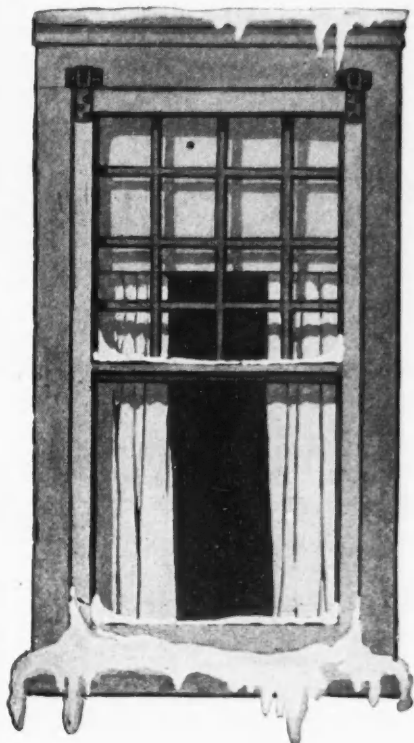
NEW BRITAIN, CONN., U. S. A.

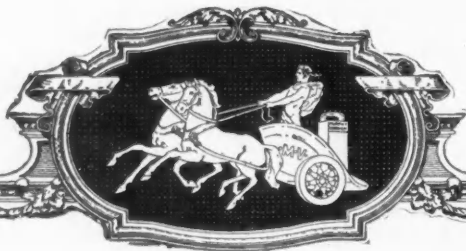
New York
100 Lafayette Street

Chicago
73 East Lake Street

Manufacturers of Wrought Bronze and Wrought Steel Hinges and Butts of all kinds, including Stanley Bal. Bearing Butts. Also Pulls, Brackets, Chest Handles, Peerless Storm Sash Hangers and Fasteners; Screen Window and Blind Trimmings; Furniture Hardware; Twinrolled Box Strapping, and Cold Rolled Strip Steel

Stanley Garage Hardware is Adaptable for Factory and Mill Use





Finish Your Floors Well

About the best service you can render your Clients is to give them good floors—floors that stand up under years of wear and tear. And floors are made lasting with

Murphy Transparent Floor Varnish

"the varnish that lasts longest"

The beautiful finish it imparts makes wood last and last. It is impervious to scuffing feet and the moving of heavy furniture. It holds its lustre and smoothness—never cracks or scratches white. Never gets slippery.

Give your clients floors made beautiful and durable with Murphy Transparent Floor Varnish.

Other Murphy products are:

Murphy Transparent Interior
Murphy Transparent Spar
Murphy Nogloss Interior
Murphy Semi-Gloss Interior
Murphy Univernish
Murphy White Enamel
Murphy Enamel Undercoating

Murphy Varnish Company

Franklin Murphy, jr., President

Newark

Chicago

Dougall Varnish Company, Ltd., Montreal, Canadian Associate

ANA

Correspondence Department

(Continued from page 64.)

Uses Ads When Writing Specifications

To the Editor:

Hamilton, Ohio.

I inclose check in sum of \$2.00 for renewal of my subscription to AMERICAN BUILDER. I have canceled subscriptions to several trade papers owing to depression in business. I would just about as soon close my office as to give up your paper.

I enjoy the practicable talks and your high-class advertisements. When writing specifications and in need of any special equipment for building, I turn to the ads in your paper and as a rule I can get all needed information. While you do not treat high-class design, you give a good line of practicable information which has helped to make me a proficient architect and superintendent.

GEO. BARKMAN, Architect.



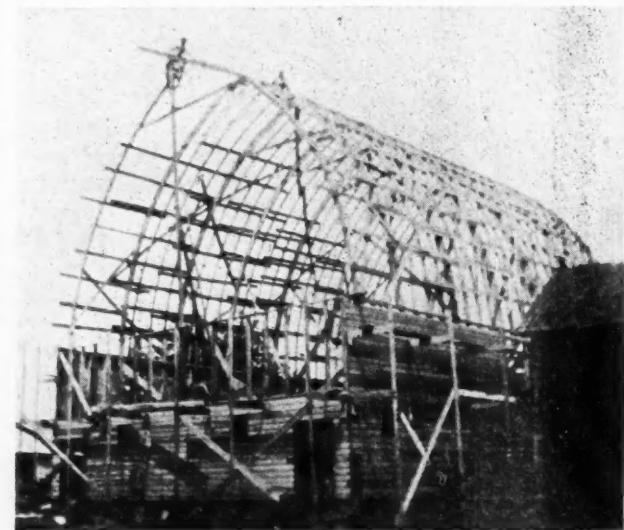
The Croakers Stayed to Dance

To the Editor:

Belle Plaine, Ia.

Here is a photo of a Gothic roof barn that we built this summer on the farm of A. J. Koch, two miles southwest of Keystone, Ia.

We built the main rafters of 10-inch shiplap 4-ply, sawed in a circle on a power rip saw, and the small rafters are built of 1x2 strips. The main rafters are 8 feet apart. The barn is 36x52 feet. The rafters are 27½ feet raise (the cornice is a reverse curve) to an 18-foot run.



A Good Looking Gothic Roof Barn Frame, 36-Foot Span, Near Belle Plaine, Iowa.

As we started to build it everybody said it was too weak and that the butts of the shingles would stick up, and I don't know how many other faults, but when it was finished we gave a Red Cross dance, and we never had so many compliments on a piece of work. It was the men who found fault in the start that thought it the finest at last.

SCHUCHERT BROS.



Wants Log Bungalow Designs

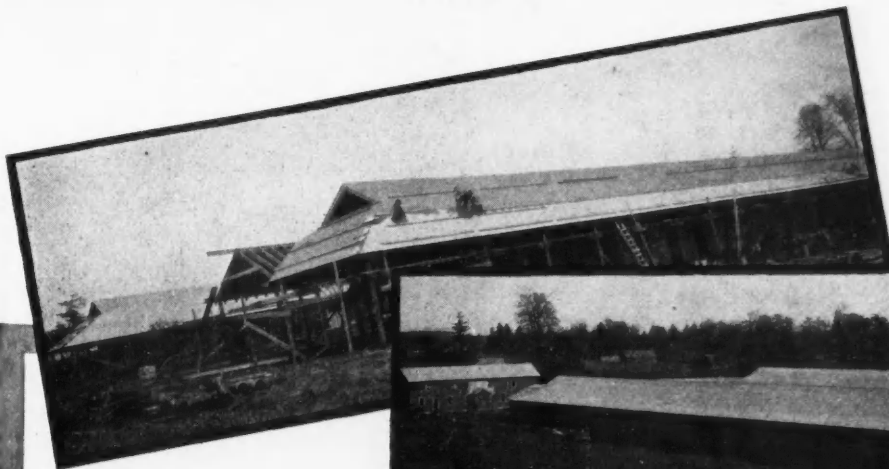
To the Editor:

San Francisco, Cal.

I enjoy the AMERICAN BUILDER very much and would like to see a few plans published on log bungalows. Several times I have been asked whether you publish such plans from people who are taking up government lands.

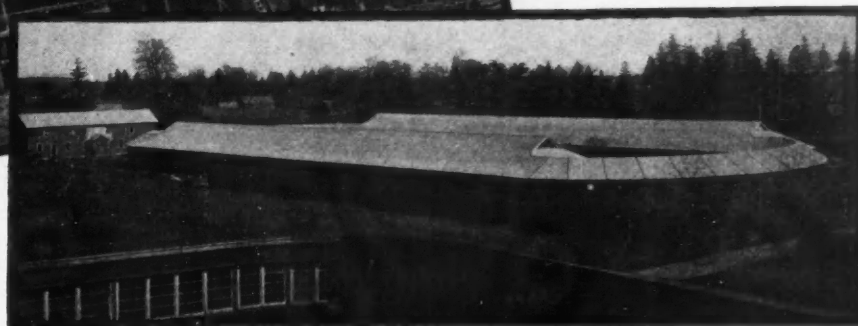
JAMES M. A. BORGLE.

(Correspondence Department Continued to page 68.)



Workman putting on Ambler
Asbestos Shingles, Westchester
Racing Association, Belmont
Park, Queens, L. I., N. Y.

Another view of same
building completed



AMBLER Asbestos Shingles

the economical roofing

A roofing material that constantly needs attention, painting or repairing, cannot by any means be considered economical. The first cost may be lower, but the cost of upkeep soon makes it expensive. Ambler Asbestos Shingles are economical because the first cost is the only cost entailed. Once put on they never need attention—never need painting or repairing.

The above reproductions are of the Westchester Racing Association, Belmont Park, Queens, L. I., N. Y. The buildings were covered with Ambler Asbestos Shingles and the following table gives an idea of the comparatively low cost of application:

The men were paid	\$5.50	per day
	.50	transportation
	.50	insurance
	\$6.50	per day for labor

total cost \$700.00 in all for the application of 460 squares of the shingles. Considering that this is the only cost, Ambler Asbestos Shingles are truly an economical roofing.

Write today for more information, facts and figures.

Keasbey & Mattison Company, Dept. B-1, Ambler, Pa., U. S. A.

Manufacturers of Ambler Asbestos Shingles, Ambler Asbestos Corrugated Roofing
85% Magnesia Pipe and Boiler Covering



Neff Bros. and Gang on a Good Looking Bungalow Job at Redfield, Iowa.

A Good Line of Work

To the Editor:

Redfield, Iowa.

I am inclosing draft for \$2.00. Please mail me the AMERICAN BUILDER for one year; also a copy of your book on Estimating and Contracting. The AMERICAN BUILDER strikes us it is just what we need.

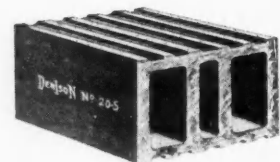
We have had a fine year here. We have built 22 houses, barns, elevators, garages, etc. Will inclose a few post cards, so you can see the kind of buildings we are putting up.

Wishing you plenty of success, I am. M. P. NEFF,
Of Neff Brothers, Contractors and Builders.

(Note: Two additional photos accompanying this letter appear on page 70.)

Fire Proof Construction For Farm Buildings

Help win the war. Insure the proper housing of your food crops and stock. Use Denison Hollow Clay Tile for all farm buildings. The permanent reliable building material. Its worth has been proven by thousands of users. Denison Hollow Clay Tile is Fire Proof, Rat Proof, and Decay Proof. Time or weather conditions do not affect Denison Hollow Clay Tile.



Denison No. 20 Tile



Very Well Constructed Hollow Tile Barn and Silo Near Mason City, Ia., showing the use of Structural Tile for Farm Buildings

Lower Cost! No Painting!

Denison Hollow Clay Tile costs less than any other fire-proof construction. It is made from the best quality of blue shale clay by a special process developed through 30 years of experience.

Contractors — specify Denison Hollow Clay Tile on Farm Building Construction.

Our Catalog is FREE—Write for it!

Mason City Brick and Tile Co.

900 East 8th St.

Mason City, Iowa

What good are housing plans if the town goes up in smoke?



THE very necessity for constant production, which suggested industrial housing, demands permanent building construction—comfortable security for the workmen—safety from the danger of a town-wide conflagration. There is no place where the scourge of roof-communicated fire should be more guarded against than in those communities which have sprung from our industrial war-activities.

Johns-Manville Asbestos Roofings make it possible to eliminate this fire peril. They form a roofing that will not ignite though heaped with blazing brands, and that will stand up equally well against time and weather. They are made of pure asbestos and compounds of Trinidad Lake and other natural asphalts—the product of 60 years' experience in fire-resistant roof coverings.

Johns-Manville Asbestos Roofings are superior to other forms of roofing from every point of comparison—fire-safety, durability, low upkeep, protection against every climatic or atmospheric condition. There is a style for every use: Asbestos Built-Up Roofing for flat roofs; Asbestos Ready Roofing for steeply pitched roofs or sidings; Corrugated Asbestos Roofing for skeleton construction.

Johns-Manville Transite Asbestos Shingles, made of Asbestos fibres and a binding cement, are proof against fire, time and weather. They form a roof which actually improves with age, and with practically no upkeep expense, are cheapest, when length of service is considered. The blending of their soft shades permits a pleasing harmony with every architectural scheme.

H. W. JOHNS-MANVILLE CO.
New York City
10 Factories — Branches in 61 Large Cities

JOHNS-MANVILLE ASBESTOS ROOFING



Big Economy in Metal Lath Construction

The man who builds will appreciate the reasonable cost at which you can construct modern, strong, fire-proof homes by utilizing our metal lath products. You can save the owner time, material and labor expense.

Use Hy-Rib and Rib Lath—and you save forms, stiffening channels and labor. The metal lath is so stiff and rigid that supports may be placed a greater distance apart—saving in the cost of supports and the labor and time necessary to attach the lath. Moreover, streaked and cracked plaster is prevented.

Hy-Rib furnished in four depths of ribs and various gauges.



Hy-Rib

A steel sheathing, stiffened by rigid deep ribs. Manufactured from a single sheet of steel. Its use is decidedly simple. The easily handled sheets are fastened to the supports and the plaster or concrete applied. No forms, stiffening channels nor wiring required.

Rib Lath

A superior metal lath with beaded ribs that span between the studs, making it exceptionally stiff and rigid and permitting the wider spacing of studs. Provides a perfect clinch for plaster and prevents cracking or streaking. Saves time, labor and material in erection.

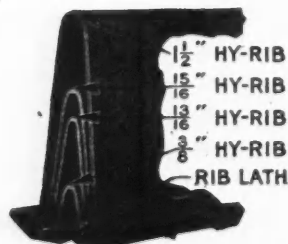
Begin now to build with Hy-Rib and Rib Lath. The line is complete, including Diamond Lath, Channels, Studs, Corner Beads, Base Screeds, etc.

Write today for free copy of Hy-Rib Handbook, with specifications, tables, illustrations, etc. Very valuable to builders. Address Dept. H-14.

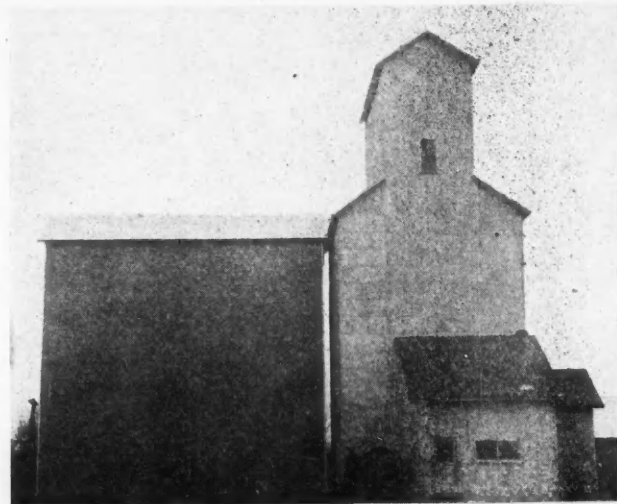
Truscon Steel Company
(Trussed Concrete Steel Co.)
YOUNGSTOWN, OHIO



Representatives in
Principal Cities



(Correspondence Department Continued from page 68.)



A Large Grain Elevator and a Public Garage at Redfield, Iowa, Put Up by N. J. Bros., Contractors and Builders.



How Does He Swing His French Doors

To the Editor:

Gloversville, N. Y.

In the August number of the BUILDER, in answer to a question from D. A. Hoff, regarding French doors, Mr. John Upton seems to recommend an even number of doors to fill the opening. Perhaps he would go a step farther and tell how he swings four doors in pairs and gets a perfectly satisfactory job.

In French doors and accordion hung garage doors, one door is always used to pass either in or out of the room while the opening is closed. In a case like this when the full opening is wanted, how does he hang the doors so as to fold compactly against the side wall? Some job unless he fastened two doors together to swing as one door.

I fancy an odd number of doors to any opening which requires more than two doors would give better satisfaction.

ERWIN J. DYE.



Wants Blue Prints Perforated

To the Editor:

Englehart, Ont., Can.

A word in appreciation of the AMERICAN BUILDER. It is in my estimation the best paper of its kind I have ever seen, either in this country or the old country in which I was born. I find great pleasure in its talks, advertisements, suggestions and house plans, but what I admire more than anything else is its elasticity (to borrow a new war term). I mean the power of changing over from one set of plans to another set, making rapid decisions, in thinking out new problems that

(Continued to page 72.)

CON-SER-TEX



CANVAS ROOFING

A perfect covering for porch floors, sun parlors, halls, sleeping balconies or flat roofs

Perfect Porch Covering

As a covering for porches, roofs, floors, sleeping balconies, etc., Con-Ser-Tex has no equal. It is durable, sound-proof, non-heat radiating. Deadens the noise of the wind and rain, and is a non-conductor of heat and cold.

Water Proof, Wear Proof, Rot Proof

Con-Ser-Tex is a special, chemically-treated cotton fabric which is not subject to the deteriorating effects of oil in paint—dry rot nor mildew. It makes a neat, smooth, solid surface and remains so under severest wear.

Inexpensive

Con-Ser-Tex is economical to put on and lowers the cost of building.

Generous samples and illustrated descriptive book giving details on laying of Con-Ser-Tex, sent upon request.

WILLIAM L. BARRELL COMPANY
8 Thomas Street New York City

Chicago Distributor:
George B. Carpenter & Co.
430-40 Wells Street

California Distributor:
Waterhouse-Wilcox Company
San Francisco Los Angeles



**Cold Weather
Is Coming—Tell
Your Patrons That**

Cornell-Wood-Board

Excels for Walls, Ceilings and Partitions
Repairs, Alterations or New Work

Contractors and builders should emphasize to their customers the importance of making building improvements now, before winter weather comes on. Cornell-Wood-Board resists cold and moisture, and where it is used as an interior finishing material, aids in fuel economy.

Will not warp, crack, chip or buckle and nails right to the framework or over the old walls. Because it comes in convenient sizes, in 32 and 48 inch widths, Cornell-Wood-Board is easily and quickly handled. Requires less paint or calcimine than other wall and ceiling materials.

Our Department of Design and Decoration will gladly furnish you with Free Panel Suggestions on request. Among the many uses for which Cornell-Wood-Board excels are the walls and ceilings of Homes, Garages, Stores, Offices, Churches, Theatres, Farming Communities, Industrial Buildings, Army Campments, etc.

Write for Free Samples of Cornell-Wood-Board, also full details regarding Our Co-operative Service and Selling Plans.

CORNELL WOOD PRODUCTS CO.
Dept. 109
173-175 West Jackson Blvd., Chicago

Correspondence Department

(Continued from page 70.)

will be presented, etc. I sincerely congratulate the Editor of the AMERICAN BUILDER for the high class of his product.

A suggestion, if it is worth anything. Why not give us the blue printed working plans and the industrial housing plans as in the first pages of the July and previous issues, with the leaves perforated as in a postage stamp, then all or part can be removed and filed as desired. I use a standard perforator and file them on a bill file; they are then handy for reference and removal.

Englehart is 138 miles north of North Bay, on the Temiskoming & Northern Ontario Railway. Am I your most northerly subscriber?
W. Y. GRAY.



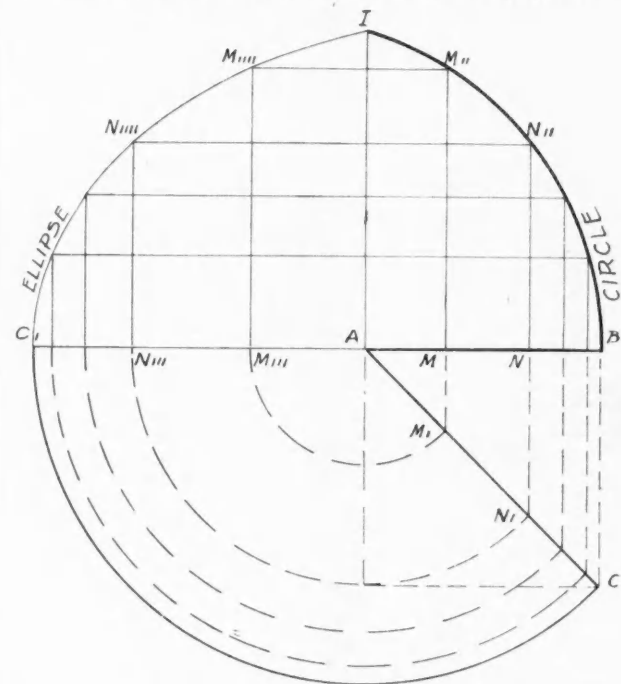
To Lay Out Gothic Roof Hips

To the Editor:

Seattle, Wash.

In your July issue of AMERICAN BUILDER Mr. Thompson, Estelline, S. D., asked for advice regarding how to get the proper curve for hip and valley rafter in a Gothic roof. Inclosed is a sketch showing how to find the curve for hip and valley rafter according to request.

In the sketch A-B represents the horizontal projection of



Sketch Showing Layout of Hip and Valley Rafter in Gothic Roof.

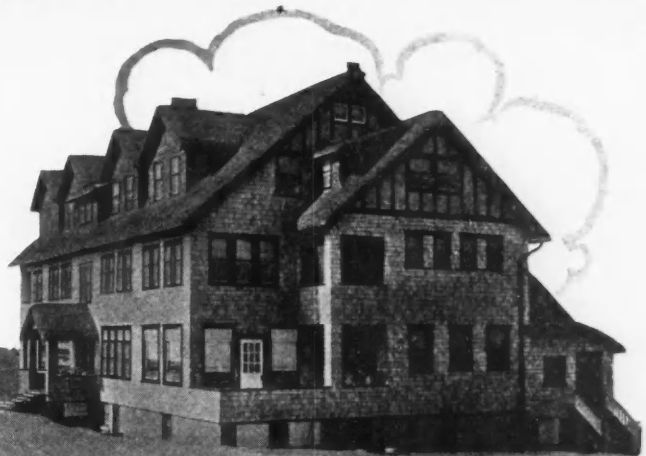
the common rafter, A-C represents the horizontal projection of the hip or valley rafter, B-I is the common rafter's outline seen laid down on the horizontal plan. These three factors are known from the plans and elevations of the building. To find the curve for the hip A-C, take point M N, etc., arbitrary, to suit the purpose, on A-B; the more the better. Project these points on A-C and B-I as shown on the sketch. Swing A-C with its points M₁ N₁, etc., into position A-C₁ in line with A-B and erect perpendicular lines at M₁₁₁ N₁₁₁ on A-C₁ corresponding to M and N on A-B. Draw thru M₁₁ N₁₁ on the curve B-I lines parallel to A-B. The intersections M₁₁₁₁ N₁₁₁₁, etc., are points on the required curve at hip or valley rafter. This later curve is an elliptic arc wherever the common rafter is a part of a circle.

There is no general rule for the radius of the common rafter except it should be larger than half the span.

The layout shown in the sketch is general and holds good for any kind of roof, curved, broken or straight.

KNUT A. WESTHOLM.

This beautiful
Long Island home
does credit to
its builder

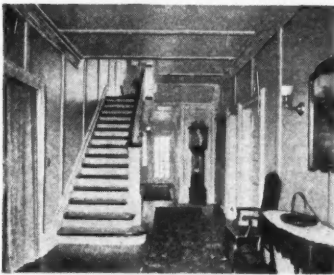
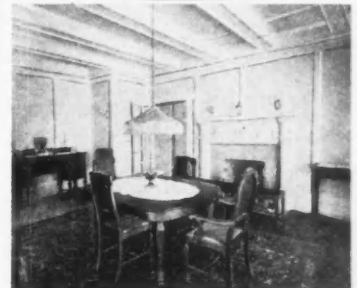


Home of Mr. James H. Barr
West Hampton Beach, Long Island
Architect: L.L. Bishop
Contractors: Gould & Rogers



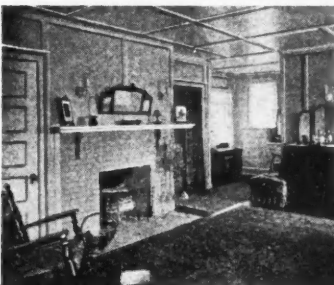
A HANDSOME home without—a charming home within—is “Sandso-bar”—the residence of Mr. James H. Barr at West Hampton Beach, Long Island.

And from its spacious paneled living rooms to the dainty bedrooms, every wall and ceiling owes its charm and beauty to Black Rock Wallboard.



The builder was wise. He knew that Black Rock Wallboard would produce the cheerful, artistic effects that were desired. He knew that it would endure without warping and cracking as long as the building itself.

If you are a builder it will pay you to get in touch with the exclusive Black Rock Wallboard dealer in your town. Write for a specimen panel and details of our free plan service to builders.



Black Rock Wallboard Co.

1505
Ontario Ave.



Black Rock,
N. Y.



BLACK ROCK
BLACK CENTER
WALLBOARD

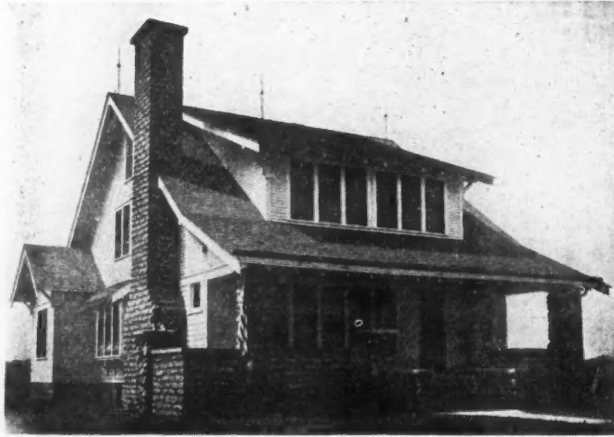
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

This Design Looks Familiar

To the Editor:

Kingston, Mo.

I am sending a photo of the farm home of Geo. Waggoner, Kingston, Mo., built by Ben Henricks & Son. The plan for



We'll Say That This Is a Good Looking Residence. The Builder Says He Got the Design Out of the American Builder.

the house was taken from a last year's number of the AMERICAN BUILDER. BEN HENRICKS.

✦

Economical Housing

To the Editor:

LaFargeville, N. Y.

Now that we are hearing so much about industrial housing and the experts are telling how to build houses in the most economical manner when several are built in one place, perhaps it will be well for us to see if we can get a few ideas regarding the economical construction of houses.

First, the foundation may generally be made of concrete

at less expense than of other material and at the same time give more room, as a thinner wall may be used.

Even on small jobs one can save money by using a concrete mixer, and as one is to be used anyway, it will be well to do all the concrete work at one time as much as may be, that is the foundation, cellar floor, cistern, porch floor and steps.

Perhaps I should have said something about the basement. The idea of a cistern in the cellar may not suit some people; but for houses not supplied with water it seems the proper thing. It takes up some room and to offset this I would have the space under the front porch excavated nearly or quite as deep as the cellar and use it for a coal bin.

The porch floor would be of concrete, reinforced as much as need be.

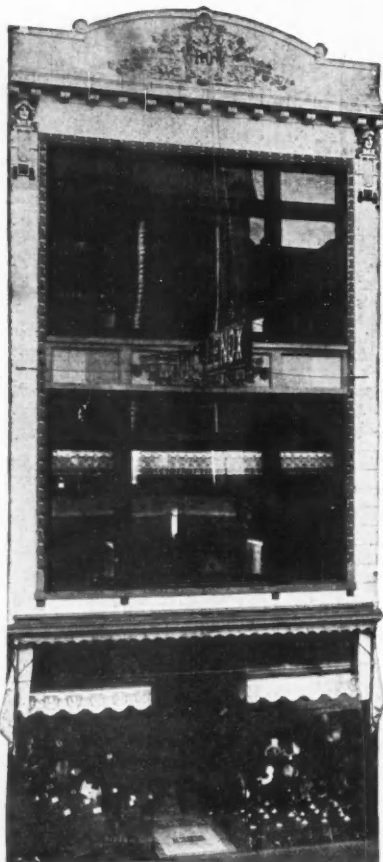
The chimney can often be built of concrete for less cost than brick.

I notice that many of the industrial houses are only one story high. While the bungalow makes a very convenient home, if one is looking for economy in building and in heating and future upkeep, it is not desirable; for a roof will cost the same whether it covers one floor or two.

There is not much difference in the amount of side walls in a bungalow or a two-story house with the same floor space. The difference might be in favor of the bungalow, if the second story was to be full height; but this need not be for the style called a story and a half. Where the side walls run up four or five feet above the second floor gives practically the same room as the full two-story house and at considerably less expense.

There is another reason for the second story. Tho there is a cistern in the cellar, there is no reason why all the water need be pumped. Have a galvanized iron tank over the kitchen and let the water from one side of the house run into it. As this can be put under the eaves in one corner, the

(Continued to page 78.)



MIDLAND

Made
TO ORDER

Carried
IN STOCK

Delivered
ON TIME

Standard Enamel
Polychrome

==

Suite 1515

Lumber Exch.

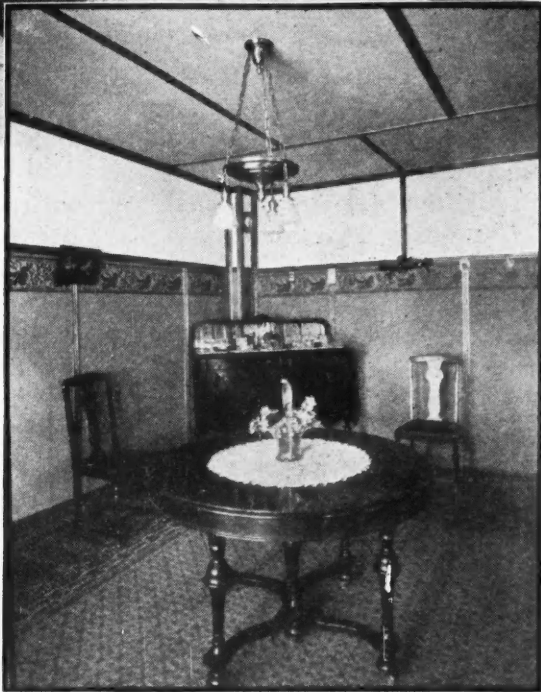
Chicago

TERRA COTTA

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

AMERICAN BUILDER

A street of Beaver Board houses built by the Corona Typewriter Co., Groton, N. Y., for the company's employees. Architect, L. D. Townley.



What Beaver Board has accomplished is well illustrated by the dining room shown here. If space would permit, a hundred other rooms equally attractive could be included.



You can't expect Beaver Board results unless this trademark is on the back of the board you buy.

Industry Needs More Houses Here's Your Opportunity

"More houses, build them quickly!" is the war-time call of industries everywhere. Speed comes first, then permanency and beauty.

Meet this demand by eliminating lost motion at every turn. Stop waiting for plaster to dry, use Beaver Board instead. Keep every carpenter on the job from start to finish. The building of substantial Beaver Board walls and ceilings can be quickly followed by paint and trim. All with the absolute assurance that walls and ceilings will never crack.

An Industrial Housing Example

The attractive houses shown above were recently completed for the Corona Typewriter Company, Groton, N. Y. Each one a Beaver Board house, each one attractively built, quickly built and *well built*.

This is a noteworthy example of industrial housing. To meet the rapidly increasing demand for Corona Typewriters, more houses were needed. They were needed quickly, but permanency, sturdiness and beauty were equally important. Beaver Board met these requirements.

With other forms of building somewhat curtailed, industrial housing represents exceptional opportunities for contractors and builders. There are many good Beaver Board jobs under way now with many more to come. Are you getting your full share?

Let us tell you more about Beaver Board war-time opportunities.

THE BEAVER BOARD COMPANIES

39 Beaver Road Buffalo, N. Y.

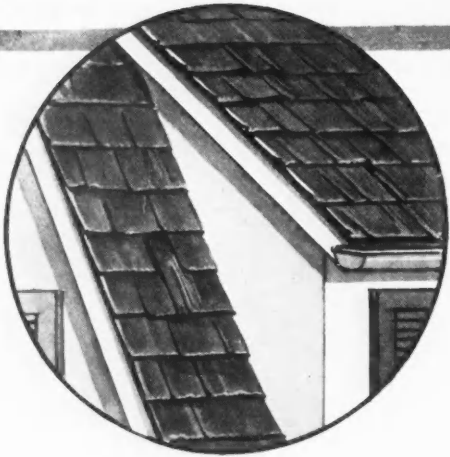
Branches in Boston, New York, Baltimore, Cleveland, Detroit, Chicago, Minneapolis, Kansas City and San Francisco

Manufacturers also of Beaver Greenboard & Beaver Blackboard
Distributors in Principal Cities Dealers everywhere

BEAVER BOARD

FOR BETTER WALLS & CEILINGS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



A War-time Opportunity

No Contractor Can Afford to Miss

ABOUT one house in every three is an immediate prospect. Where is the carpenter or builder who says business "is going to the dogs"?

Mr. House Owner is just waiting for the right chance to fix his roof. Chances are it either leaks now or looks as though it would never go through another winter. But he hesitates about paying the war-time price for a new wooden shingle roof.

Here's your opportunity, Mr. Contractor: Tell him about the new thrift method of laying NEPONSET Paroid Roll Roofing which saves the cost of ripping off the old wooden shingles.

In our National Advertising we tell your customers how this money-saving thrift method of laying NEPONSET Paroid right on top of wooden shingles gives a first-class roof at half cost of a new shingle roof.

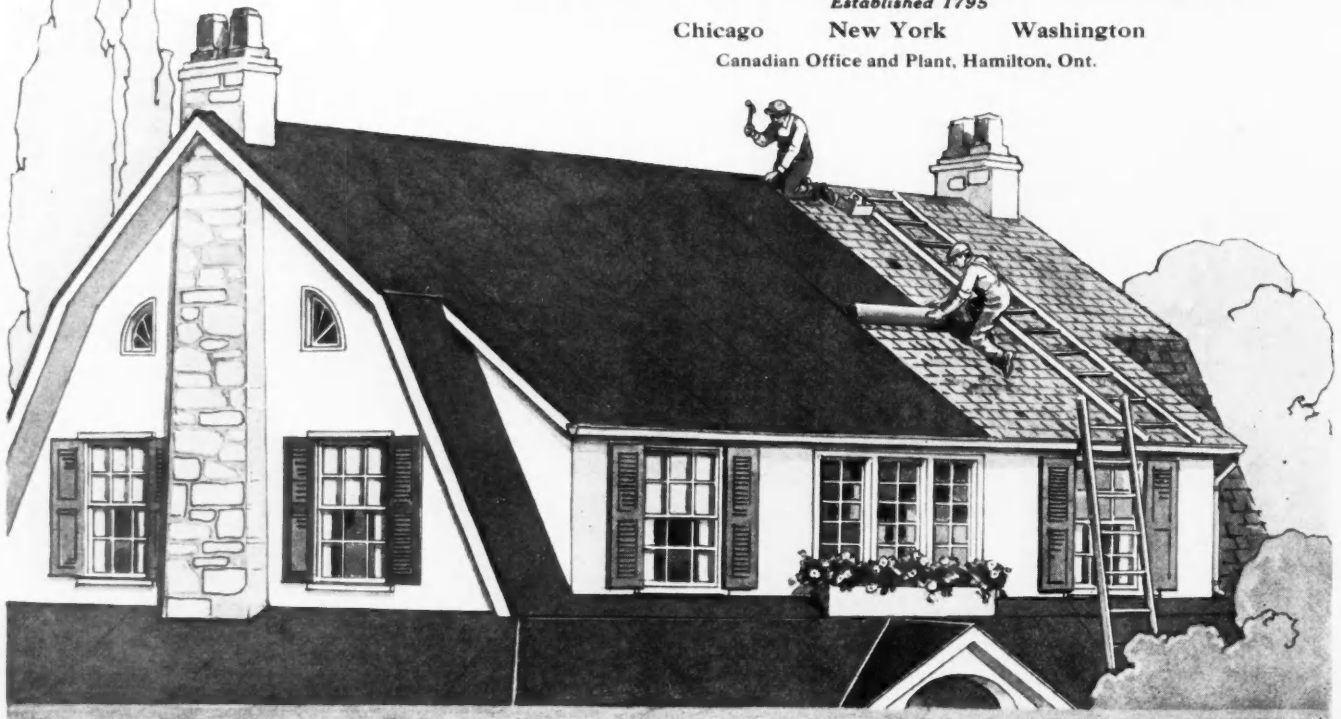
You will get a first-class job every time by following a few simple directions. We will help you make sales. Send today for our Selling Plan and folder of directions.

BIRD & SON, INC., Dept. C, East Walpole, Mass.

Established 1795

Chicago New York Washington

Canadian Office and Plant, Hamilton, Ont.



NEPONSET ROOFS

Send me, without obligation, free Selling Plan folder and directions for the war-time method of laying NEPONSET Roofings.

Name

Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



right over old roofs

More Art Craft

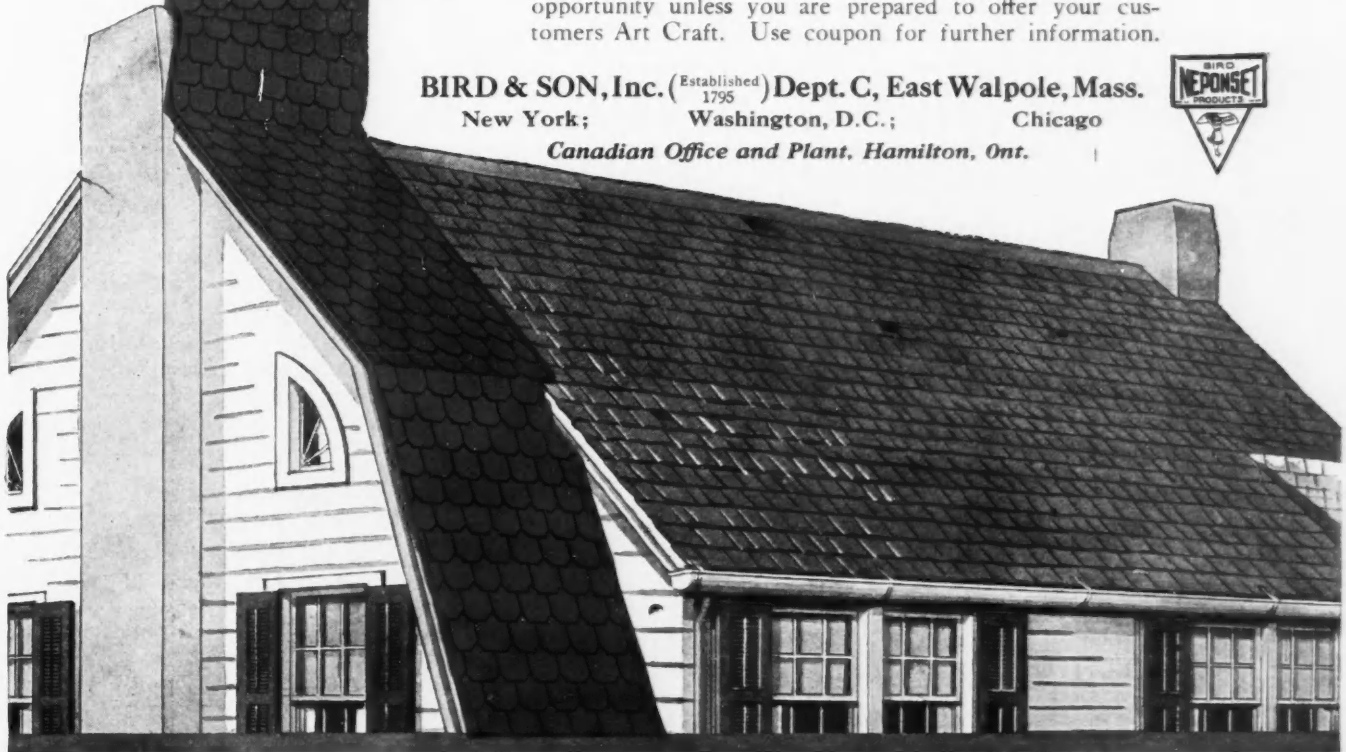
THE call from all quarters is, "more Art Craft." Carpenters and builders report doing a rushing business on Art Craft. Here's why!

Art Craft appeals to the owner's *purse*. It costs one-half as much as a new wooden shingle roof at present war-time prices. Art Craft appeals to the owner's *eye*. It looks mighty attractive in permanent colors of red, green, or silver grey, in plain or tile design. Art Craft appeals to the owner's sense of *safety*. It is fire-safe.

Where does the carpenter and builder come in? In handsome dollars-and-cents profit. You can sell ten Art Craft Roofs just now to every single order for a new wooden shingle roof. You keep busy on jobs that build prestige and good-will for you among your customers.

You are probably missing out on a real and timely business opportunity unless you are prepared to offer your customers Art Craft. Use coupon for further information.

BIRD & SON, Inc. (Established 1795) Dept. C, East Walpole, Mass.
 New York; Washington, D.C.; Chicago
 Canadian Office and Plant, Hamilton, Ont.

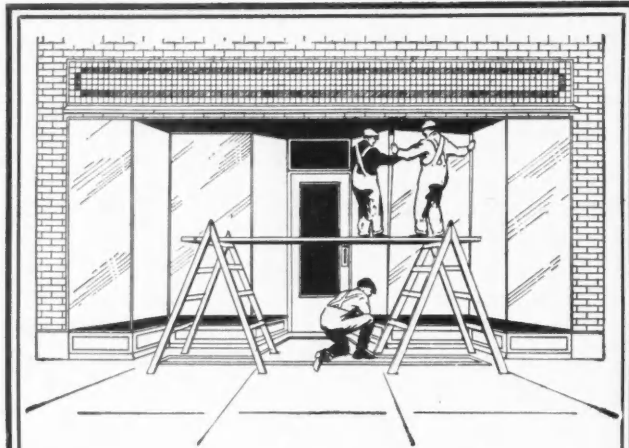


Art Craft Roof

I want to know how Art Craft will bring me more business. Send complete information.

Name..... Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



There's Store Front Remodeling Work in Your City

During the lull in the erection of new store buildings, many of the progressive retailers in your city are interested in the remodeling of their store fronts. You can develop a number of such jobs if you will go after them. Select a list of the retailers who need modern fronts, go to them and talk it over. Show them the various styles of fronts (large and small) that are illustrated in our newly published book of Store Front Suggestions. You'll find it highly profitable, and the materials for the work are comparatively easy to secure.

Desco
METAL
STORE FRONTS

Thousands of contractors and builders use "Desco" store front construction because it is so easy to order, easy to install and because it costs less, even though it is of high quality. "De co" users say the steel reinforced corner and division bars account for the safety to the glass. Then, too, the creosote-dipped blocks in the sash offer a cushion for the glass. For strength, simplicity, rich appearance and complete satisfaction "Desco" dominates. Fill in this coupon right now—don't put it off—and get your copy of the valuable store front book and "Desco" details with prices. Remember, we sell direct to you. There are no branch offices. Buy "Desco" and deal direct with the manufacturer. There are 29 years' of fair dealings back of every order you send us.

Detroit Show Case Co.

491 Fort Street W. Detroit, Michigan

-----COUPON-----

DETROIT SHOW CASE CO.,
491 Fort St. W., Detroit, Mich.

GENTLEMEN: Without obligation I would like your new book of "Store Front Suggestions" and "Desco" details with prices.

Name.....

Address.....

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

Correspondence Department

(Continued from page 74.)

space will not be missed much and the convenience will be well worth the cost.

For economy build square houses or as nearly so as can be done. Of course, where the width is limited as in cities and village, it will be economy to make a house long since the ends will cost the same whatever distance apart, but where conditions will permit a square house gives the most space for the money.

Some money may be saved on the roof by using prepared or roll roofing. Some people will object to this; but really there is no good reason for not using it, providing one gets a good grade and it is put on right. The best sort looks good and gives good service.

In locating the windows a slight saving may be made by using double or triple frames as this will save some cutting and fitting of clapboards and some work on the inside, as a man can cover a given surface more quickly if it is in one piece than if it is cut up.

It may be well to have the doors come up next the windows for the same reasons and often a sash door will give sufficient light and save most of the cost of a window.

If the modern chemical closet is used there is no sewage to be considered, and some of the cheaper houses may not have a bath room, but there should be some means provided for bathing and hot water will be needed.

Even if there is a tank on the second floor, it may not be desirable to put in a regular range boiler for heating water. If not, a very satisfactory substitute may be arranged by using an open tank placed on a shelf or stand, the nearer the stove the better, and connected to the water front. The bottom of this tank should be nearly as high as the top of the stove and then the water can be run in it from a tank above or pumped up from the cistern, and can be piped to the sink and bath tub. This tank and the stove as well as the bath tub may be installed so as to remain or not as there would not need to be much cutting done, simply a hole for the bath tub waste and one thru a partition for the hot water pipe.

If wall board is used instead of plaster, it may save something on the cost and give as good or better walls. Where the floors are to have rugs they need not be finished except a border around the room.

The open cornice may be used and a little saved here, and if the stairs are planned so as to go between two partitions there will be no ornamental work, and both time and material will be saved. These small savings count on the entire house.

JOHN UPTON.



Suggests Blue Print Ads

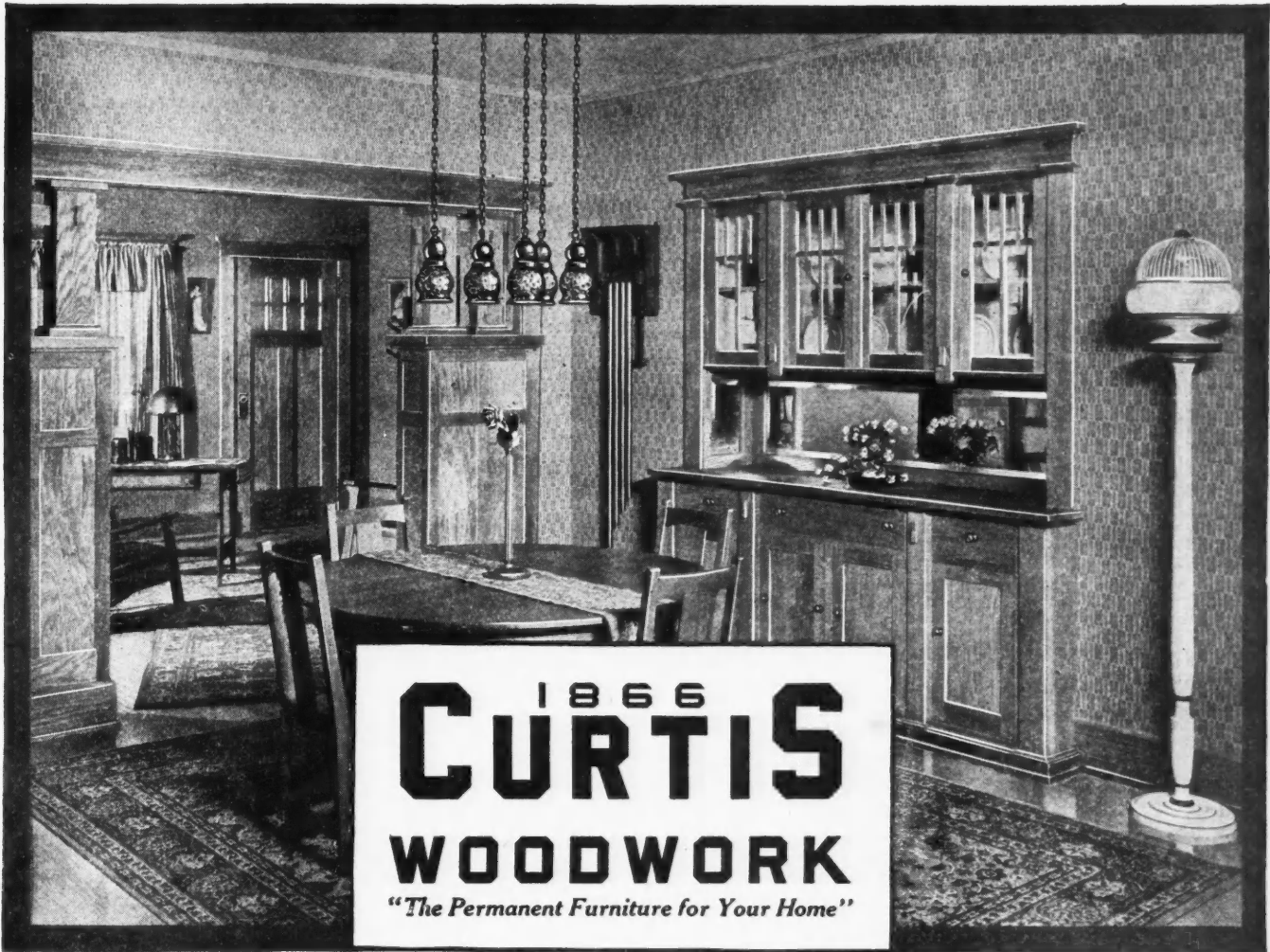
To the Editor:

Bridgeport, Conn.

I think H. W. Brockmann hits the nail on the head right when he suggests margin strip on blue prints. It would be a great convenience to have them all together; also the advertisements in a separate section so that we could bind the reading matter by itself. Advertisers may kick a bit because they are placed by themselves, but readers come first—no readers, no advertisers—savvy? Moreover, if the blue prints can be detachable for future reference, why not the blue print on one side of the paper only with the back side used for advertising the materials essential to the class of structure shown. This should bring better rates as they would occupy special positions.

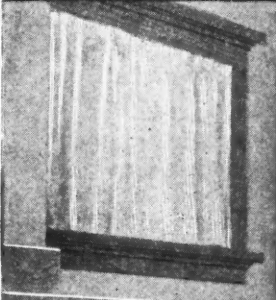
Why worry about the zone postage law? We only get a nickel change from the quarter we put down to buy the AMERICAN BUILDER. Put the price to 25c and pay the extra charges yourself, and that will also help pay for some of the "improvements" your readers call for.

GEO. MITCHELL.



1866
CURTIS
WOODWORK

"The Permanent Furniture for Your Home"



CURTIS Woodwork is advertised in nineteen strong National and State Farm Paper.

- Doors
- Windows
- Window and Door Frames
- Storm Doors and Windows
- Screen Doors and Windows
- Stairways
- Window Seats
- Newels
- Wall Panels
- Sideboards
- Ceiling Beams
- Colonnades
- Mouldings
- Bookcases
- Porch Rail
- Mantels
- Arch Columns
- Porch Balusters
- Everything in Woodwork

Are You Short of Help?

SHORTAGE of man power limits your work and your profits. You can discount the loss of your men by using standard sizes and designs of **CURTIS** Woodwork.

You can get quicker deliveries of standard sizes and designs.

CURTIS Woodwork reaches you smooth and clean, ready to install with very little preparatory work. We make certain at the

plants that the various pieces of such units as cabinetwork and stairways will fit without additional work on your part. We sand-paper all house bills—still further cutting down your labor costs

On even such a simple job as adding storm doors and sash to an old house it will pay you in time and satisfaction to have your customer buy only woodwork bearing this trademark—**CURTIS**

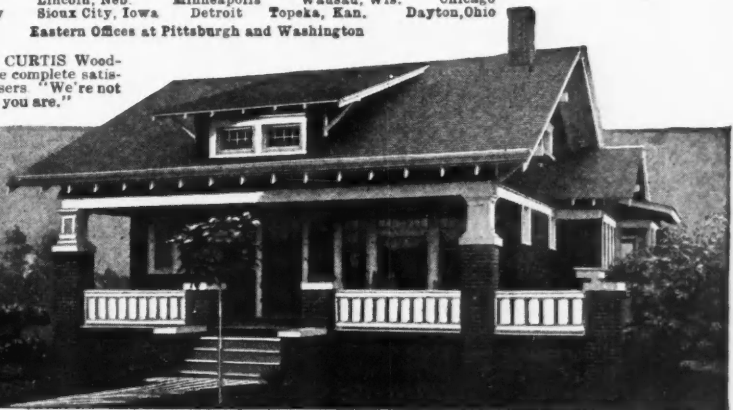
The Curtis Companies, Service Bureau, 1869-1969 S. Second St., Clinton, Iowa

Manufacturing and Distributing Plants at

- Clinton, Iowa
- Lincoln, Neb.
- Minneapolis
- Wausau, Wis.
- Chicago
- Oklahoma City
- Sioux City, Iowa
- Detroit
- Topeka, Kan.
- Dayton, Ohio

Eastern Offices at Pittsburgh and Washington

The makers of **CURTIS** Woodwork guarantee complete satisfaction to its users. "We're not satisfied unless you are."



Wants Ideas of Charcoal Burning Plant

To the Editor: North Toronto, Ont., Can.
 Would you please let me know thru your columns how to go about the construction of a charcoal burning plant. Can any book be had on same?
 J. A. BODDEN.



Handy File for Blue Prints

To the Editor: Philadelphia, Pa.
 In regard to the blue prints in each issue of the AMERICAN BUILDER, I think the system you use is the best or a very good one, unless the pages were perforated to be torn out easily; but I think they should be bound in tight, as they are sure to reach their destination straight and in good condition, whereas, if loose and they should become shifted, that part would be all creased and mussed up.

Now this is the way I file my prints, which I think is practical as well as handy. I take a sharp knife and cut far enough back to leave the same margin all around, also cut out the page with the illustration and description, take each set and put them together with a paper clip, and then file them away in an ordinary letter file. This is as cheap as a binder could be gotten up and as handy, as they can be indexed, can be found in a hurry and taken out separately when needed without disturbing anything else and put back in the same way. A letter file is just the right size for the prints.

J. EDWARD MOORE.



Wants Some Furniture Designs

To the Editor: Newark, N. J.
 Now in regard to the AMERICAN BUILDER, I would like to say I find it a great help in many ways, but one thing I have looked for and have not found, is drawings of office furniture, as that is more in my line of work.
 CHARLES R. GIBBONS.

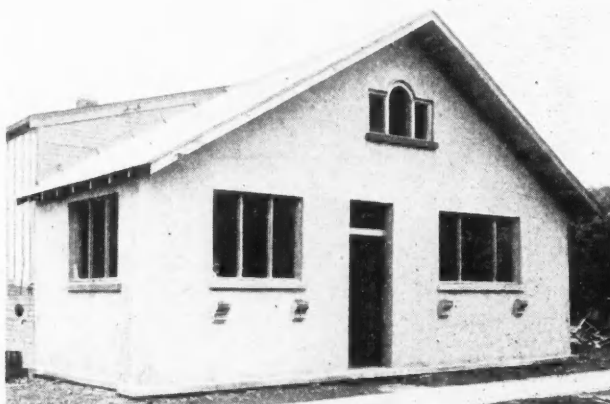
Blue Prints in Loose Leaf Holders

To the Editor: Sherman, Texas.
 Having been a reader of your journal for about eight years, I take a great interest in its development, as shown by the changes for the good.

I think your blue print plans are fine, and believe if you would make them loose, as has been suggested by some readers, and fitted for a loose leaf holder, you will have one of the epoch-making features in the history of trade publications.

As you will see by this stationery, I am connected with the Landscape Department of the Texas Nursery Company—one of the largest and strongest companies in the South. In the near future I will send you photos of some work that is out of the line of the work done by most of your readers.

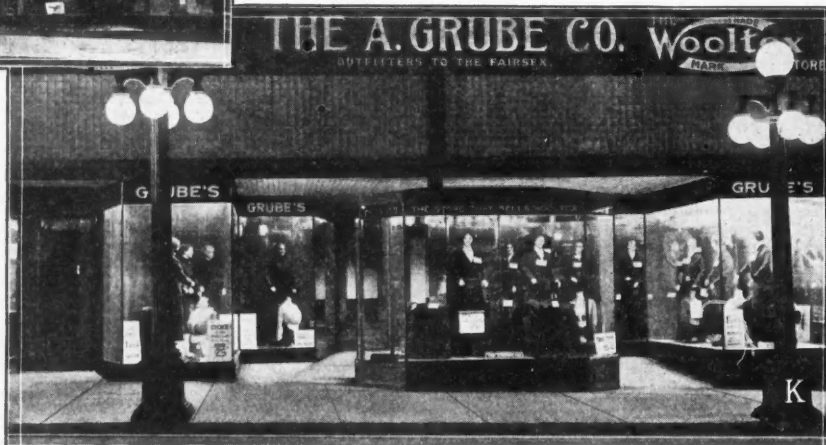
W. A. BROWN.



Front View of Newly Constructed Office in Front of Plant, Wiederheld Lumber & Mfg. Co., Park Ridge, Ill.



This Kawneer Store Front Brought 25% Increase in Sales



By installing a modern Kawneer All-Metal Store Front this merchant was able to boost his sales without increasing his advertising.

60,000 other merchants vouch for the value of the Kawneer way of modernizing store buildings.

War Conditions Call for Remodelling
 The Kawneer Way is the Profitable Way

Kawneer STORE FRONTS

Write today for Catalog and Portfolio of Designs.

Let us show you how you can make money as the store front expert in your locality.]

Kawneer Mfg. Company, Niles, Mich.



Help Save Coal—and Increase Your Fall Business

THE Director of Fuel Conservation of the Fuel Administration says: "The National Fuel Administration realizes that a large amount of coal can be saved by the installation of storm doors, storm windows" . . . "and advocates such installation the same as we do proper firing methods and proper attention to boilers."

Everyone is wondering how to save coal this winter. And in this situation lies your chance for a good fall business. There is no better or surer way to save coal than by equipping a house with

Storm Windows and Storm Doors

A house with storm windows and storm doors requires from one-third to one-half less coal—a saving that pays for them in one or two seasons.

They increase the comfort and healthfulness of a house by making it possible to keep warm in the coldest winter weather and by permitting perfect ventilation without dangerous cold floor drafts.

We are telling more than four million readers of metropolitan newspapers about the advantages of storm windows and storm doors. Lumber dealers everywhere are telling the story in their local newspapers.

Get in touch with your lumber dealer, talk storm windows and storm doors to your customers—and cash in on the nation-wide movement to save coal.

Wholesale Sash & Door Association, Chicago



Clinton

Mortar Colors

Accurate and careful selecting of materials and a most modern manufacturing process have given to these Mortar Colors a reputation for permanency and durability.

Clinton Mortar Colors have stood a test of over 35 years and are recognized as thoroughly reliable. Specified by leading architects, contractors and builders.

Send for illustrated booklet together with color card showing wide variety of shades and tones.

Clinton Metallic Paint Company



Factory Office
Clinton, N. Y.

New York Office
101 Park Ave.

BUY WAR SAVINGS STAMPS

CALCIMINES AND WATER PAINTS

These materials are so much cheaper than wall paper and oil paints, and are so much better than lime wash that every wide-awake builder and owner should investigate them fully, learn which are the most practical, and find out how much they will help to reduce costs.

Calcimines are glutinous compositions intended for decorating ceilings and walls of residences, offices, schools, churches, theatres. The best are called **MURALITE** and **CALCITINE**.

Water Paints are caseinous compositions intended for whitening ceilings and walls of factories, mills, sheds, garages. The best are called **PERMANITE**.

Our products are more practical than any similar ones on the market, and are sure to please you.

Send for descriptive cards and prices

M. EWING FOX COMPANY

Manufacturers

240 East 136th St.
NEW YORK

1501 So. Peoria St.
CHICAGO, ILL.



NEWS OF THE FIELD

A Gold Star in the Starrett Flag

Captain Edward H. Phillips, E Company, 104th Infantry, an employe of The L. S. Starrett Co., of Athol, Mass., was killed in action in France on the 25th of July. Captain Phillips was an example of the finest type of young American manhood. Last spring he received the Croix de Guerre from the French Government. He was a sergeant when the company was formed and was rapidly promoted to second lieutenant, first lieutenant and captain. The L. S. Starrett Co. has one hundred and twenty-four employes in the military or naval service of the United States and Great Britain.



Williamson Co. Wins in Patent Case

The suit brought by the Excelsior Steel Furnace Company of Chicago against the Williamson Heater Company of Cincinnati, alleging that its patents and trade rights had been infringed by the Cincinnati defendant has been dismissed.

The decree adjudges that the Excelsior Company's patent on sheet metal forming wheels has not been infringed by the Williamson Company; that the Excelsior patent for a sheet metal cutter is invalid; that the Williamson Company has not engaged at any time in unfair competition against the Excelsior Company nor attempted unlawfully to gain knowledge of Excelsior Company secrets and shop practices—things which were alleged in the suit against the Williamson Company.

The Scherer sheet metal cutter patent is held invalid, in the view of the court, for not containing the complete disclosure of the machine and invention required by the statute. The injunction and accounting asked for against the Williamson Company is denied and the suit dismissed. The court also dismisses the counter-claim of the Williamson Company



Conferences on Use of Trucks Announced

As announced by Harold P. Gould, chairman of the Truck Owens' Conference, Inc., plans have been laid for nineteen two-day conferences in as many cities during the next ten months. The opening conference will be held in Detroit, Sept. 19 and 20 at the Board of Commerce Building. The official program will consist of Detroit speakers, each a well-known truck expert in his particular field. Special films of a few of the more efficiently operated truck fleets in Detroit and Chicago will be shown.

Addresses by both large and small truck operators on their experiences in using methods that reduce operating expense and general discussions on the facts thereby brought out will feature all conferences. The purpose thruout is to secure greater efficiency in truck operation the country over. The subjects discussed range from "Loading and Unloading Methods That Save Time" and "Hauling More Goods With Fewer Units" to "Simplicity and Advantages of Keeping Costs on the National Standard Truck Cost System."

Everything spoken at these conferences represents absolute knowledge on the part of experienced operators, some of whom will travel a thousand miles to give the assembly the benefit of all new and good features they have developed. The

(Continued to page 84.)



DWIGHT JAMES BAWM - ARCHITECT
STUDIO - RIVERDALE - ON - HUDSON
NEW YORK CITY

April Twenty-fifth
1 9 1 8

Devoe & Reynolds Co., Inc.,
101 Filton Street,
New York City.

Gentlemen:

I have specified for the greater percentage of my work, your enamels and other finishes. In all of my work there is found some place to use your eggshell enamel, Holland enamel and Velour wall finishes.

For exterior special trim and all blinds and shutters, I use your several shades of Mitis Green, which I think are in a class by themselves for both permanence and brilliancy.

The best expression of approval for the above finishes, is that they were all used in the residence I recently completed for myself.

The walls of the complete service quarters, children's rooms and nursery were done in your cream Velour finish. The dining room and main hall, which are pannelled in white, and all the trim in the main rooms are finished with Holland enamel, hand rubbed, while the eggshell enamel is used throughout all bedrooms.

Assuring you that I will continue to specify your products, I am

Sincerely yours,

Dwight James Baum

DJB/LD



DEVOE

The oldest paint manufacturing concern in the United States
Founded in New York in 1754

DEVOE & RAYNOLDS CO., Inc., New York—Chicago

Conferences on Use of Trucks Announced

(Continued from page 82.)

conferences are open to all interested truck users—no fee of any kind being asked.

The various cities scheduled for conferences extend from coast to coast and each has been chosen because of a central location whereby as many cities as possible, especially in that locality, may be represented at each conference. Former conferences held in New York City, Chicago and Detroit have been such unqualified successes that the outlook for successful conventions in the nineteen conference cities is most promising. It is expected that hundreds of truck operators, both large and small, will be in attendance at each convention. Further information may be obtained by addressing the Truck Owners' Conference, Inc., at 327 South LaSalle Street, Chicago.



Important to Keep Books on Motor Truck

Without a doubt the time has arrived when every truck owner is keeping as accurate a cost system on the operation of his motor trucks as he does on the operation of his business. Such a cost system is not only a patriotic duty, but one that is vitally necessary to determine fair rate to the shipper.

Up to a short time ago a peculiar tendency on the part of motor truck owners which was in direct contrast to the principles practiced in other departments of their business was that of laxness in keeping accurate figures on what their motor trucks were costing them.

It was natural that when a business concern was considering replacing their horse-drawn equipment with motor trucks, they first wanted to know how much it was costing present

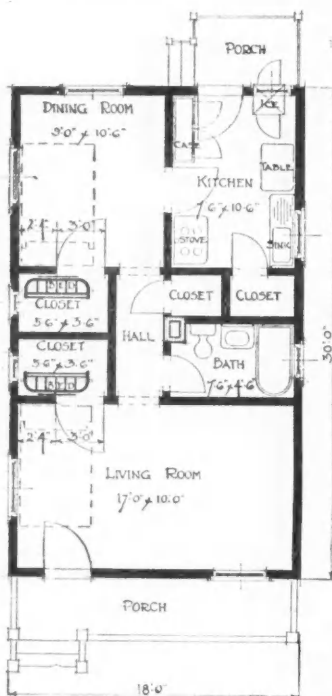
truck owners to haul and deliver their goods. Time after time we have not only sent letters with questionnaires to truck owners, requesting information on the upkeep and cost of delivering their goods with motor trucks, but have made personal investigations, and outside of a very small percentage these owners were not keeping any record of their cost whatsoever.

Looking up the reason for this condition of affairs, it appears that in the early stages of the truck business the cost of operation was considered extremely important, and practically every firm that changed its horse-drawn equipment to motor trucks carried out a complete and accurate record of expenses in order that they might determine whether trucks were more efficient than their former equipment.

These records of cost showed conclusively that there was no comparison between the two. The evidence was so overwhelmingly in favor of motor trucks, that the cost records were soon neglected and considered unnecessary.

This same condition is true in a great many instances at the present time where the change from horses to trucks is made. An owner of a truck starts out with the best of intentions to keep an accurate record of the cost of operating, but as in the past, he is so surprised by the enormous work his truck accomplishes, in comparison with his former equipment, that he tries to forget the inefficient manner in which his business had been operated for so many years. The owner only requires a short time for his figures to show that he cannot afford to operate in the old way.

But today, owners realize that it is a business essential to know to a penny how much it is costing to deliver a load of goods or haul a ton of supplies. Consequently every item in the operation and upkeep of his motor trucks is being as accurately kept as the operating costs of any other department.



Three - Room Cottage with Perfect Five-Room Accommodations

Murphy In-a-Dor Beds Solve the Industrial Housing Problem

Bedrooms completely eliminated without loss of comfort or convenience.

Full size all metal bed concealed during the day in a clothes closet behind a door only three feet wide. At night the bed is swung out of the closet and lowered for use in the adjoining room. (See plan.)

Old style bedrooms are used only a few hours at night. All day long they stand idle, yet they cost practically as much to build as any other room. The MURPHY IN-A-DOR BED makes every room do double duty. Every room is available twenty-four hours every day.

Construction Costs Reduced 25% to 40%

Instead of building a house with many small rooms, build fewer and larger rooms. The workman will appreciate the change because he has less rooms to furnish, heat, light and keep clean. Build the modern way.

FULL INFORMATION ON REQUEST

Murphy Door Bed Company

CHICAGO BROOKLYN ST. LOUIS CLEVELAND KANSAS CITY TULSA, OKLA.
Majestic Bldg., 24 W. Monroe St. 7 East 17th St. 462 Chemical Bldg. 661 Leader News Bldg. 390 Glendale Bldg. 17 East 5th St

Get these Practical ALPHA service sheets on Concrete Construction

Head Sec. Typical Detail

Head Sec. Inexpensive Form

Detail for Casing

Door Head Sec.

Door Sill Sec. For Wood Floor

Door Head Sec. Without Casing

Concrete Roof Section Fireproof Roof

Frame Roof

Concrete Floor Doorsill Sec.

Water Table or Belt Course

Continuous air space

Finished Grade

Footing Section

Jamb Sec.

Sill Sec.

Corner Plan

Showing Double Walls

Working Men's Homes American Steel and Wire Co. Donora Pa.

Poured Wall House With Single or Double Walls
 This type may be quickly and economically erected with any one of several systems of forms. Exterior finished with surfacing machine or with stucco coat shot on. In double wall type, interior surface is left rough for thin finishing coat put on without furring. Provision is made for either concrete or wood floors. Single houses illustrated above have 6 rooms and bath.
 Ask for complete sheet of details

The above gives an idea of the timely information afforded by the ALPHA Service Sheets. In addition to separate sheets on workmen's homes of (1) Gunite and Frame type, (2) Poured Wall type and (3) Precast Slab and Beam type, sheets or bulletins are available on the following concrete improvements:

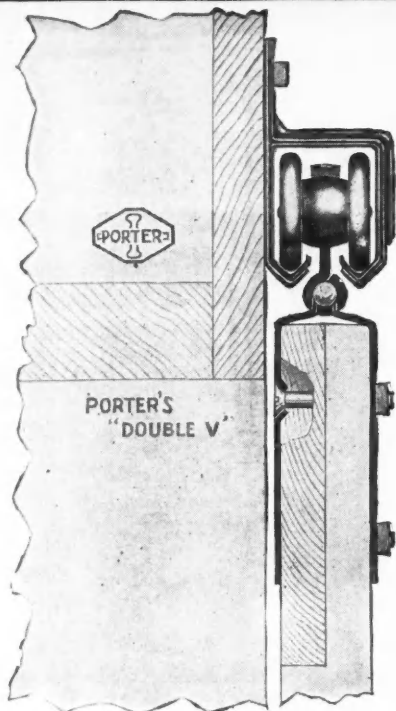
Walkway	Storage Cellar	Tennis Court	Dipping Vat	Gate Posts
Driveway	Spring House	Concrete Roof	Tanks	Walls
Roads	Small Dam	Silo	Piers for Small Boats	Sills
Small Bridges	Milk House	Corn Crib	Garden Furniture	Lintels
Culvert	Ice House	Smoke House	Greenhouse	Garages
Foundation	Manure Pit	Ho ^o House	Storage House	Porch, Cellar and
Gutter and Curb	Septic Tank	Poultry House	Fence Posts	Stable Floors

Any one of these service sheets that interests you will be sent free if you live east of the Mississippi. Ask also for a copy of the handbook ALPHA CEMENT—HOW TO USE IT, 96 pages illustrated and for recent issues of our magazine ALPHA AIDS devoted to storage and other conservation buildings, municipal hog houses, the overcoating of old dwellings, etc.

ALPHA PORTLAND CEMENT COMPANY
 General Offices: Easton, Pa.
 BRANCH OFFICES: NEW YORK BOSTON PHILADELPHIA PITTSBURGH BALTIMORE SAVANNAH

Concrete for Permanence

PORTER'S
"DOUBLE V"
DOOR TRACK AND HANGER



HERE'S a superior Porter Track which is shaped to form a "Double V." This novel shape brings four needed features. The shape of the tread gives maximum strength. It permits the least contact or friction with the hanger wheel. It is self-centering and self-cleaning; also bird and storm-proof

Every carpenter knows what these advantages mean.

The track is made of 14-gauge special steel, and obtained in 6, 8 or 10 foot lengths.

**The "Double V" Goes Big
 Wherever Shown**

Specify the "Double V" Hanger with the **RED STRAP—A ROLLER BEARING** product.

Note that there are no projecting bolt heads on the side next the building—a close fit assured.

Special wrench for lag screws furnished.

WRITE FOR DETAILS.



J. E. Porter
 282 Guion Street
 Ottawa, Ill. (22)

J. E. PORTER CO., 282 Guion St., Ottawa, Ill.

I am interested in your line of door hangers, hay carriers, tools, etc.

Please send me catalogs and full information.

Name

Address

City

State

The Builder Poet

It's fun to be a lumberman
 When things are running well,
 But now in these chaotic times,
 Say, ain't war Hell?



Lumber-Yarding It in War Times

It's tough to be a lumberman now in these warring times,
 When things are topsy-turvy and pennies look like dimes.
 A dime looks like a dollar and a dollar looks like ten;
 But Saturday of every week you've GOT to pay the men.

They can't exist without a raise, their living won't permit it.
 If you don't come across with more they'll go where they can get it.

"Our kids must buy some Thrift Stamps, the price of gas has soared,
 And a car wont run without it—not even a little ford."

My two best men enlisted in the ranks of Uncle Sam
 And I had to replace them with some swarthy sons of Ham;
 I had my own sweet troubles a-settling their scraps,
 And when I wanted them right bad, they were somewhere shooting craps.

I figure on some fine big barns to help conserve the food,
 For Uncle Sam's long-headed and admires this attitude;
 I wire my order to the mill, reply comes back collect,
 "Embargo on, ship sixty days, answer if correct."

So it's tough to be a lumberman now in this stirring day—
 Liberty Bonds to pay for, support Y. M. C. A.
 War Savings Stamps to buy each week and Thrift Stamps
 by the card.

It's fierce to be the owner of a retail lumber yard.

But, after all, it's not so bad, we've got to whip the Hun;
 The World's not safe to live in 'til that man-size job is done.
 And when the job is finished and PEACE on Earth's declared,
 There'll be some JOY and PROFIT in a Retail Lumber Yard.

THE AMERICAN BUILDER POET.



The Soldier's Chance

Great as the danger and large as the losses in the aggregate, the individual soldier has plenty of chances of coming out of the war unscathed, or at least not badly injured.

Based on the mortality statistics of the allied armies, a soldier's chances are as follows:

Twenty-nine chances of coming home to one chance of being killed.

Forty-nine chances of recovering from wounds to one chance of dying from them.

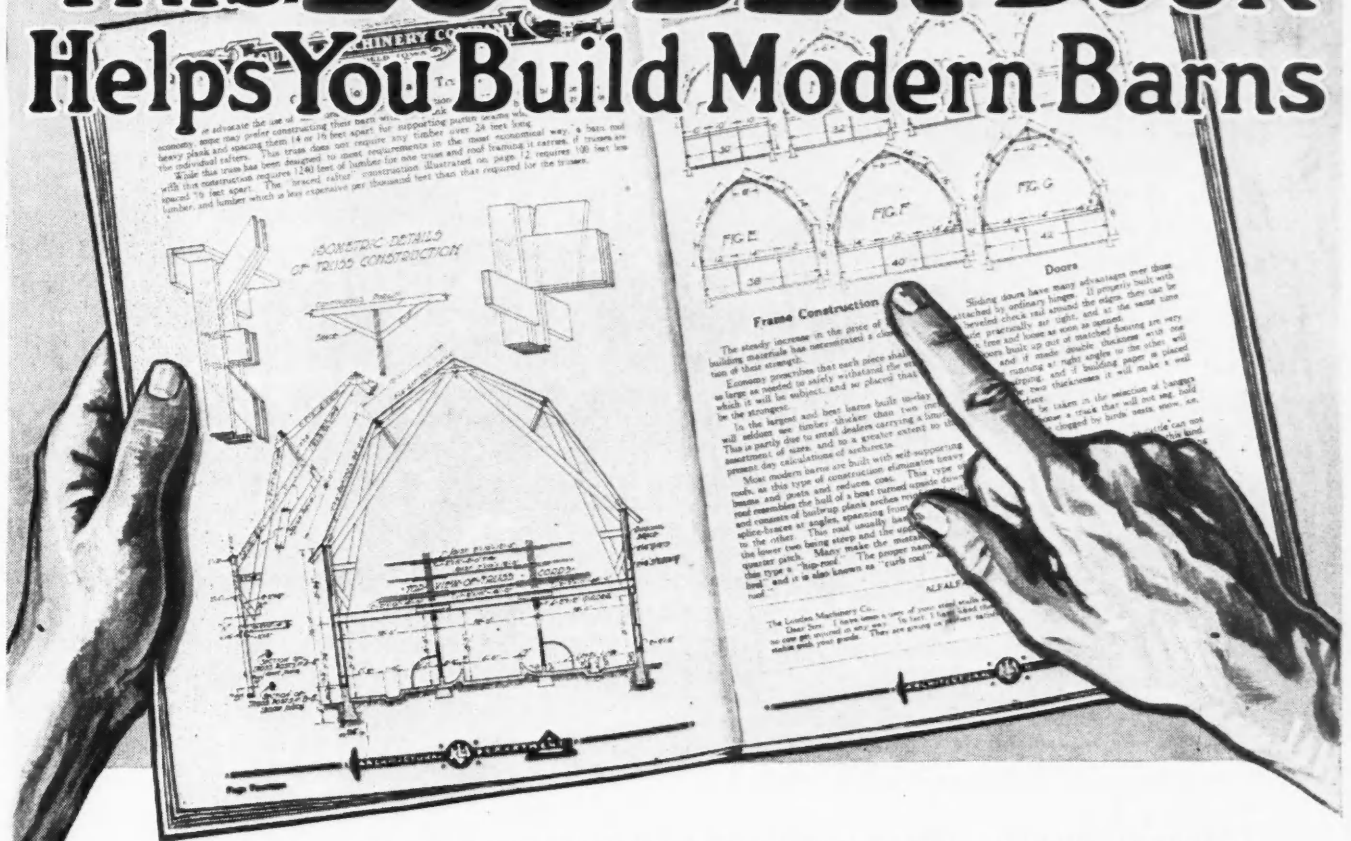
One chance in 500 of losing a limb.

Will live five years longer because of physical training, is freer from disease in the army than in civil life, and has better medical care at the front than at home.

In other wars, from 10 to 15 men died from disease to one from bullets; in this war one man dies from disease to every 10 from bullets.

For those of our fighting men who do not escape scathless, the Government under the soldier and sailor insurance law gives protection to the wounded and their dependents and to the families and dependents of those who make the supreme sacrifice for their country.

This LOUDEN Book Helps You Build Modern Barns



SENT WITHOUT CHARGE OR OBLIGATION TO CARPENTERS AND BUILDERS



WM. LOUDEN
Recognized Leading Authority
on all Barn Building Problems.

112 pages of scientific barn building facts and structural details, together with illustrations descriptions and estimates of 74 barns and other farm buildings—all designed by the Louden Architectural Department, the greatest corps of exclusive farm building architects in America. Not a catalog, but devoted entirely to barn building problems.

We will send you this book on receipt of the attached coupon or a post card giving the names of one or more prospective farmer-builders in your locality. This authoritative treatise will save you time, trouble and money in planning farm buildings.

Every farmer in America is in a better position to build today than ever before. Increased value of bigger crops and needed care of larger herds with less help call for more adequate farm buildings and more labor-saving equipment in barns.

We Furnish You the Plans and Service Which Get You the Business

Give your customers the benefit of our money-saving, trouble-ending Service Department. Under the direct supervision of Mr. Wm. Louden, for 50 years America's leading barn-building authority. Our specialists in farm architecture will advise you, offer suggestions and submit preliminary sketches without charge. At nominal cost they will supply complete working plans and carpenter's specifications and estimates covering any farm architecture for which you hold the builder's contract.

Send Also for the FREE Louden Barn Equipment Catalog 224 illustrated pages of valuable information covering the entire Louden Line. Stalls and Stanchions, Feed and Litter Carriers, Water Bowls, Hay Unbading Tools, Horse Stable Fittings, Animal Pens, Ventilators, Cupolas, Power Hoists, Barn and Garage Door Hangers—"Everything for the Barn."

All this information and aid given free and promptly upon receipt of the names of one or more building prospects. Send them at once to Main Office and we will help you get the business.

The Louden Machinery Company
(Established 1867)

5522 Court Street, Fairfield, Iowa

Branches: St. Paul, Minn. Albany, N. Y. Chicago, Ill.

The Louden Machinery Company
5522 Court Street, Fairfield, Iowa

Please send me, without charge or obligation, the books checked below:

Louden Barn Plans
 Louden General Catalog

Prospective builders in this vicinity are:

My Name _____

P. O. _____ State _____

An Interview on Hardware Finishes

By W. R. Hill

MR. AND MRS. JOHNS were at breakfast when the telephone bell rang.

"Hello!" said Mr. Johns, "who is this speaking?"

"This is the Builders' Hardware Man of 'Knowem & Showem's Hardware Store.' You were in two weeks ago to talk about hardware for the house you are thinking of building. Since you were here I have visited Mr. Edwards' office, have gone over the plans and, if you have the time, I would appreciate it very much if you could stop in at our office some time during the day and go further into the question."

"How is it with you, my dear," said Mr. Johns to his wife, "can you spare the time this afternoon?" She said: "Yes, I'll be ready about 3 o'clock."

"All right," said Mr. Johns, "we will drop in at your store about 3 o'clock this afternoon and bring Mr. Edwards with us."

Shortly after three Mr. and Mrs. Johns and Mr. Edwards stopped in at the store and the young man took them into the sample room.

"When you were here before," said the young man, "we went quite thoroughly into the question of the butts, and I am interested in knowing if you have made up your mind as to what you have decided upon."

"We have talked it over," said Mr. Edwards, "and Mr. and Mrs. Johns have decided to follow your recommendations as to the metal and as to the type of butt we will use. The finish, of course, will have to be held in abeyance as we have not yet decided on the electric fixtures and on the finish of some of the woodwork.

"For instance, I have covered the specification by an allowance (see issue of the May AMERICAN BUILDER). In addition to this, I have started making a memorandum of what Mr. and Mrs. Johns desire and on the butts I have noted your recommendation for all exterior doors, namely:

"That they must be of bronze or brass, extra heavy in weight.

"They must have self-retaining pins.

"They must have self-lubricating steel washers set in the knuckles.

"They must be 5 inches high for doors 13/4 inches thick and over.

"Doors 6 feet and over must have three butts to each door.

"Where the doors swing into a hall or a room, they must be sufficiently wide to carry the door around the base block unless the door opens against a wall.

(Continued to page 90)

It is now so easy

for any Carpenter or Farmer to quickly construct a strong and substantial wagon bed or hay rack by using our new

Hay Rack and Wagon Bed Hardware

SEND FOR DETAILS
Today Without Fail

SOLD BY LEADING
DEALERS

ALLLITH-PROUTY CO., Danville, Ill., U. S. A.

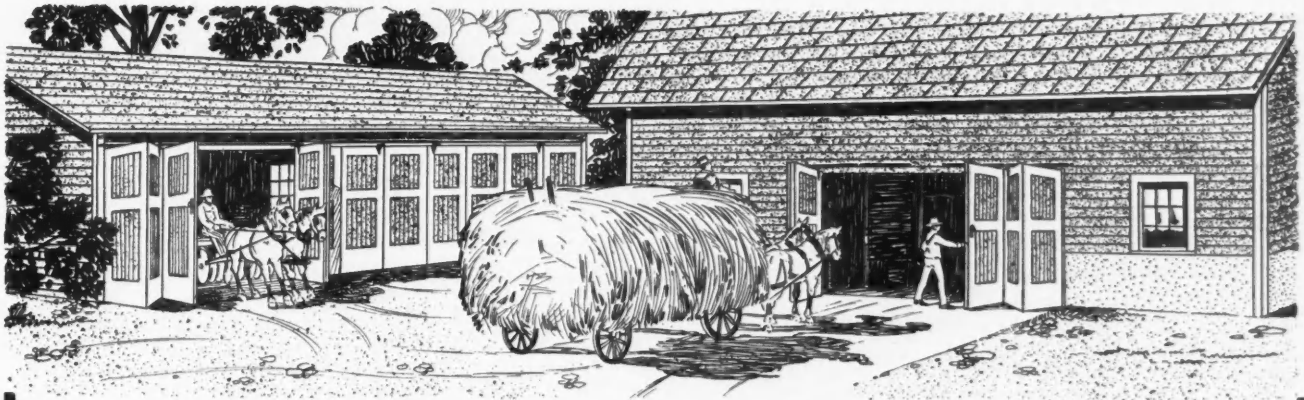
Chicago New York Boston Philadelphia San Francisco Los Angeles

And Representatives in All Principal Foreign Cities

PRODUCTS: Door Hangers and Tracks Rolling Ladders Overhead Carriers Light Hardware
Spring Hinges Fire Door Hardware Garage Door Hardware Hardware Specialties

Catalogs, blue prints and special information promptly furnished

OUR ENGINEERING SERVICE IS AT YOUR DISPOSAL WHENEVER DESIRED



FARM BUILDINGS SHOULD HAVE WEATHER-TIGHT DOORS

Good farmers now recognize the fact that there is a better way of ventilation than open cracks about doors and windows to admit cold blasts. Good, tight, snug-fitting, weather-proof doors are demanded for barns, tool-sheds, granaries, garages and other buildings where a wagon-size opening is necessary. For just such requirements there isn't a better hanger in the world than the

WAGNER CLOZTITE HANGER

With Self-Cleaning, Bird-Proof Track



The Wagner Cloztitle is a ball-bearing swivel hanger designed exclusively for folding-sliding doors.

In using this hanger two or three doors are hinged together and operate as one large door. When open, the doors fold up compactly and are entirely out of the way. When closed, the door fits just as snug and tight as an ordinary hinged door in your home. No sagging, no chance for trolley to come off track, no sticking of doors.

Doors are hinged together and hung to the jamb, being supported at the opposite side by one Wagner Cloztitle Hanger operating in Wagner self-cleaning, bird-proof track. In four, five or six door openings, two hangers are used—one hanger for each set of two or three doors hinged to either side of jamb.

Very little clearance room is required when track is placed on the inside of building—not more than the width of one single door. By putting the track on the outside, no clearance room whatever is required. The hanger and track work as well on the outside of buildings as on the inside.

Wagner Cloztitle Hanger is simpler, stronger, easier to attach than any other hanger or device designed for folding-sliding doors. It has a decided advantage over the extended track or adjustable bracket method in that it is much simpler and there are no adjustments to get out of order. There is less strain on the track and brackets, for the track is fastened directly to the wall at all points the same as for ordinary sliding doors. When attaching there is no complication or difficulty adjusting brackets. It has a simple vertical adjustment that cannot get out of order.

The Wagner Cloztitle Hanger is simply and substantially constructed of malleable iron. Has roller-bearing trolley wheels and the hanger bolt revolves on a heavy-duty ball bearing swivel, insuring silent and easy operation of the doors at all times.

Wagner tracks are so constructed that dirt and trash cannot lodge—nor can birds build nests. Trolley can't jump track, stick nor freeze up. Wagner Hangers and Wagner Tracks always make a smooth, easy-working, trouble-free combination.

TWO SIZES

No. 58—Cloztitle used with Wagner Leader Track No. 10 or No. 15 for two or three doors having a combined weight not exceeding 60 lbs.

No. 78—Bigger and heavier for two or three big doors having a combined weight not exceeding 100 lbs. Used in connection with Wagner Hawkeye Leader Track No. 25.

Write for catalog showing entire line of Wagner Door Hangers and Tracks for every purpose.



WAGNER MFG. CO.

Dept. N

CEDAR FALLS, IOWA



Profit-Making Barns For Both Owner and Builder

Milk is an "essential" of life. **More** milk is the imperative need and demand. More and better dairy barns are absolutely necessary—for **better dairy barns result in more and better milk.** That's why there should be a great increase in **better** dairy barn building.

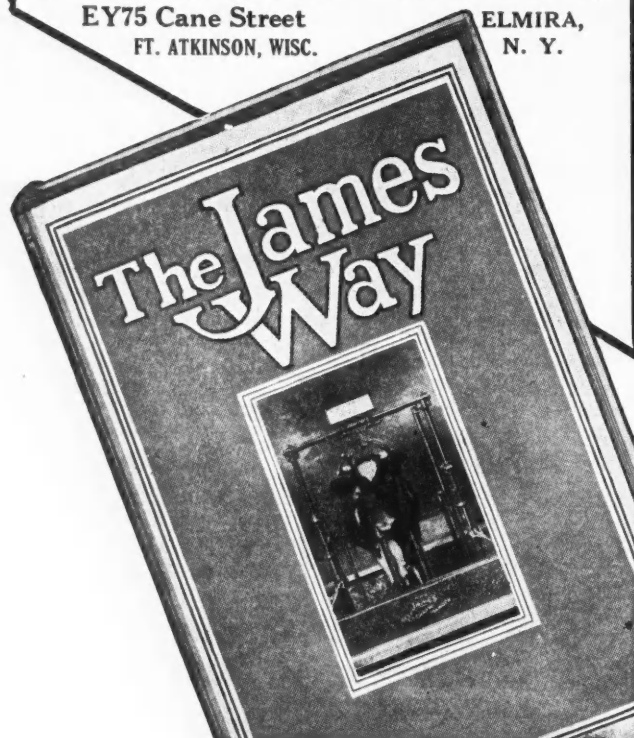
Why not get your share of the contracts for these barns?

We are in position to help you do this very thing.

Write Us For A Free Copy Of That Famous Book "The Jamesway"

When writing send us the names of farmers who are thinking of building or remodeling barns and give us the size of their herds. We will send advertising literature to those farmers which will bring their building contracts into your hands. Co-operate with us and you will make more money.

JAMES MANUFACTURING CO.,
EY75 Cane Street
FT. ATKINSON, WISC. ELMIRA,
N. Y.



An Interview on Hardware Finishes

(Continued from page 88.)

"For all casements or other hinged windows, the butts must be of cast bronze or brass, tight pin, steel lubricating washers set in the knuckles, of medium weight, three to each sash of 5 feet and over, 4x4 inches high for 1¾ inches, 4½x4½ inches high for 2 inches thick and over.

"For the main part of the first floor, interior butts should be cast bronze, medium weight, loose, self-retaining pin, self-lubricating steel washer, 4½x4½ inches for 1¾-inch thick doors, 5x5 inches for 2-inch and over. These butts to each door 6 feet high and over.

"For all cupboard, dresser and small doors, a butt of the same type, of size sufficient to do the work to the satisfaction of the architect and owners."

"The weight, machining of the knuckles, the metal and the name of the manufacturer must be satisfactory to me."

"That's fine," said the young man; "you have made a good start. I do believe, however, that you will find such an important article as this is really non-competitive and, after you have satisfied yourself a certain manufacturer makes the material that you are after and a certain dealer can deliver that material, it will be economy for you to deal with him just as it is economy for an owner to engage an architect after an examination into his ability without regard to the percentage of commission he charges.

"The point that you have mentioned in regard to butts, namely, that you could not decide absolutely upon the color of the metal until the electric fixtures and the woodwork trim had been selected, reminds me that the question of finish is one of the most important for you to consider, and it is one that it would be well for us to discuss now."

"I like," said Mrs. Johns, "this old polished bronze that one sees on the houses down in New England and the old Southern colonial homes in Virginia."

"I think you mean brass, do you not?" said the young man.

"Oh, yes," said Mrs. Johns, "I do mean brass. It is a lemon yellow color."

"The difference between brass and bronze," said the young man, "is that bronze carries a much higher percentage of copper in the mixture than brass. For instance, if you were in a brass foundry and picked up a brass casting, you would find it highly crystallized. These crystals are easily seen before the casting goes to the polishing room. The first operation, that is, of polishing, covers the crystals.

"Under the succeeding operations of polishing with a finer wheel and buffing with the rag wheel, the crystals entirely disappear.

"After the casting is highly buffed, the casting is cleansed and then dipped in a transparent protective

(Continued to page 92.)



THE TELEPHONE AND TELEGRAPH BUILDING

NEW YORK CITY

WILLIAM WELLES BOSWORTH, *Architect*

MARC EIDLITZ & SON, *Contractors*

This building is equipped throughout with Corbin Template Hardware for steel doors, sash and frames. The Corbin Three-Point Lock is used on doors to vaults. Corbin Door Checks, Corbin Fine Office Locks, Corbin Heavy Template Butts, Corbin Special Transom Fixtures, self-closing in case of fire, and Corbin Monogram Knobs form an equipment in harmony with the excellence of other portions of the building.

We satisfy exacting conditions.

P. & F. CORBIN

American Hardware Corporation, Successor

NEW BRITAIN, CONN.

CHICAGO

NEW YORK

PHILADELPHIA



Residence of Mr. Harvey Seward, Petersburg Va.
Architects - Corneal & Johnston - Richmond Va.

When You Build a Country Home

WHEN you build a country home or isolated public institution, be sure that the biggest problem of all—water supply—is solved.

That is the way to win the confidence of your customers—to lay a real foundation for bigger business.

WATER SUPPLY SYSTEMS

always give the perfect service that means absolute satisfaction. For more than twenty years thousands of enthusiastic users have known the comforts that a perfectly operating system of water supply brings.

At the turn of the faucet there is running water under strong pressure anywhere in house or barn.

No matter what the size of home or institution, there is a Kewanee System that meets every need.

Electric Lighting Plants

Kewanee Electric Lighting Plants make all the comforts of electricity possible for everyone. The engine in any of the 28 different types and sizes will give power direct from the engine to run labor-saving machines as well as furnish light and power for every purpose.

Sewage Disposal Systems

Kewanee Sewage Disposal Systems bring health and comfort to every country building. Modern plumbing may be installed and all waste is taken care of in the most sanitary way.

Write for the co-operation of our engineering and drafting departments and for bull tins on *Running Water, Electric Light and Sewage Disposal Systems.*

Kewanee Private Utilities Co.

(Formerly Kewanee Water Supply Co.)

424 S. Franklin St.

Kewanee, Ill.

An Interview on Hardware Finishes

(Continued from page 90.)

lacquer. That is the shape in which the pieces of brass hardware from the dealer's shelves are shown you and are generally used.

"In due time the transparent lacquer wears off, the brass surface discolors and it is then necessary to use polish to brighten it up again.

"One of the most beautiful finishes is called 'crystallized brass.' This is obtained by dipping the unlacquered brass in a jar of acid, which eats off the highly polished surface, thus uncovering the crystals. This you can see for yourself in any piece of old brass that has not been handled for a while. The moisture of the last hand that touched the brass and the action of the atmosphere tends to eat off the highly polished surface and uncover the crystals and these crystals, thus exposed, will remain unless the handle, or knob, is used continually, which polishes the surface and again covers the crystals.

"To many people this crystallized surface is considered very artistic and, in my opinion, it is very beautiful. It has another advantage in that if one does not like it or becomes tired of it, it is very easy to polish the pieces without removing them from the door and make them again a bright brass.

"It is not possible to obtain this crystallized brass in wrought brass except with a surface imitation, which is neither durable nor very good. The reason for this is that wrought brass is, of course, made from sheet brass and the sheet brass has all of the crystals crushed in the rolling.

"Old bronze is also very beautiful if it is purchased unlacquered and allowed to discolor gradually from the handling. Old bronze should only be wiped off with a rag that has just a drop or two of linseed oil. If this is done, it will get a perfectly beautiful rich old brown.

"I always recommend unlacquered brass or unlacquered bronze because they are 'honest stuff,' always turn into such beautiful finishes and, if the owner desires, can always be brought back to either bright brass or bright bronze if desired.

"To me the usual imitation finishes are inartistic and not in good taste. I must modify that opinion, however, by saying that old silver, old gold, half polished iron and finishes like that are perfectly legitimate and, carried out by the proper manufacturer, are perfectly correct.

"There is a variation of brass which has been very popular with many people and is very popular today; that is, dull brass, or, as some people term it, 'brushed brass.' This is not an electro plating in the same sense as antique copper, or silver, as it is more delicate and, therefore, not so durable on hardware, but it is a very soft color and is liked very much by many. It also can be obtained unlacquered, and will eventually take on a

(Continued to page 94.)



How System Operates

Falling directly through the 12" drop tube, the sewage is at once enveloped in a pool of liquid chemical, which attacks it, and, aided by the effective propeller agitator, quickly reduces it to liquid form and utterly destroys the germs. Effective ventilation draws off any chemical gas, and at the same time creates suction in and down through the toilet bowl aerating its interior surfaces, and drying them as well as preventing any bacterial development. The ventilating pipe goes through the roof or to a chimney.

Sample Installations



Kaustine WATERLESS TOILETS
Solve That Sanitation Problem
 Economically — Speedily — Efficiently

WAR FACTORIES and industrial villages that are being constructed today or that are in contemplation require above all else—*proper sanitation facilities.*

The Government insists on proper sanitation because the winning of the war is dependent upon the health and morale of our industrial workers, while neglect of sanitation means low morale, low vitality and illness.

The big problem, then, is the furnishing of sanitation equipment that can be installed quickly—and yet be absolutely efficient and reasonable in cost—and it is those very features that have placed over 35,000 Kaustine Waterless Toilet Systems throughout the United States.

If you are bidding on war-construction jobs or have in mind entering this field—or know of any industrial housing project without sewers—we want to send you the full facts regarding the Kaustine System, because a Kaustine installation will save money on the job—will guarantee efficiency

of sanitation—and can be placed in operation in the shortest length of time.

Further than this, Kaustine Systems are free from flush valves, joints and traps; never clog, never get out of order and require little attention. Water mains and costly sewers are done away with. Freezing of pipes can't happen because there are no pipes. Plumbers' bills, etc., are absolutely eliminated after installation and the only care required is the infrequent draining of the tank which work consumes but a few moments.

We are in a position NOW to supply sewage disposal systems for from one to one thousand or more houses. While we can handle this work ourselves, we always prefer to work with the local contractor or builder and we will be glad to figure with you on either basis. Free consultation is given cheerfully.

Write our Engineers for Plans to Meet Your Needs

KAUSTINE COMPANY, Inc., Home Office: Buffalo, New York
 GENERAL AGENCIES: 353 Peoples Gas Bldg., Chicago; Lansing, Mich.; Greenville, S. C.; Oakland, Cal.; Trenton, N. J.; Spokane, Wash.; Philadelphia Pa.; Kaustine Co., Ltd., Toronto, Canada



Built for Truck Purposes Only

EVERY Kissel Truck chassis is a scientific achievement, perfectly balanced, of sturdy construction and mechanically right—to meet all trucking requirements. The perfected worm-drive rear axle, the Kissel-built power-plant and other Kissel mechanical superiorities, insure flexibility and economy.

Your transportation problems cannot be solved by trucks that have not demonstrated their mechanical superiority and adaptability. The wise truck buyer of today purchases on business lines only—he makes his choice only after he has “been shown.” That is why Kissel Trucks in the building business are proving a big paying investment from the start. The Kissel built-in quality predominates—a guarantee of dependability and economical performance.

An investigation of Kissel Trucks, in company with your nearest Kissel Dealer, will produce conclusive evidence that Kissel Trucks are the obvious trucks for you to invest in.

Kissel Motor Car Company
Hartford, Wisconsin, U. S. A.

An Interview on Hardware Finishes

(Continued from page 92.)

very beautiful color, but, to my mind, not so good as the bright brass will.

“You see,” said the young man, “the finishes on hardware have to be applied very differently from the finishes on electrical fixtures, and andirons, lamps, etc. The reason for this is because there is rarely any part of a fixture that is handled except the rubberoid button. Consequently, a finish can be ‘dipped’ on, or it can be painted to any shade of color desired. The reason why the finish on hardware is different is because the knobs, lever handles, sliding door cups, sash lifts, knobs or cupboard catches, etc. are all handled every time they are operated. The skin on the human hand has great abrasive qualities, and constant contact with a plating will wear any plating off, except the very expensive finish known as ‘fire gilt.’ All dull brass, oxidized brass, oxidized copper and oxidized silver will eventually wear off. Fire gilt is a very different thing in that an amalgam is made of mercury and pure gold, applied to the surface of the brass article with a scratch brush, then subjected to intense heat. The mercury, acting as an agent, volatilizes and introduces the gold into the surface of the metal, so that it becomes a part of the metal. For this reason it does not wear off.

“All plated finishes, other than the fire gilt I mentioned before, are applied thru the action of electricity and will wear. That is the chief reason why I like good, honest brass, or good, honest bronze.”

“Well, for my part,” said Mrs. Johns, “I want un-lacquered bronze thruout the main part of the first floor, including the front door, as I have made up my mind that I am going to have my own way and have a dark wood finish.”

“Hold on,” said Mr. Johns, “you forget that you told me you were positively going to have the dining room in ivory white, egg-shell finish.”

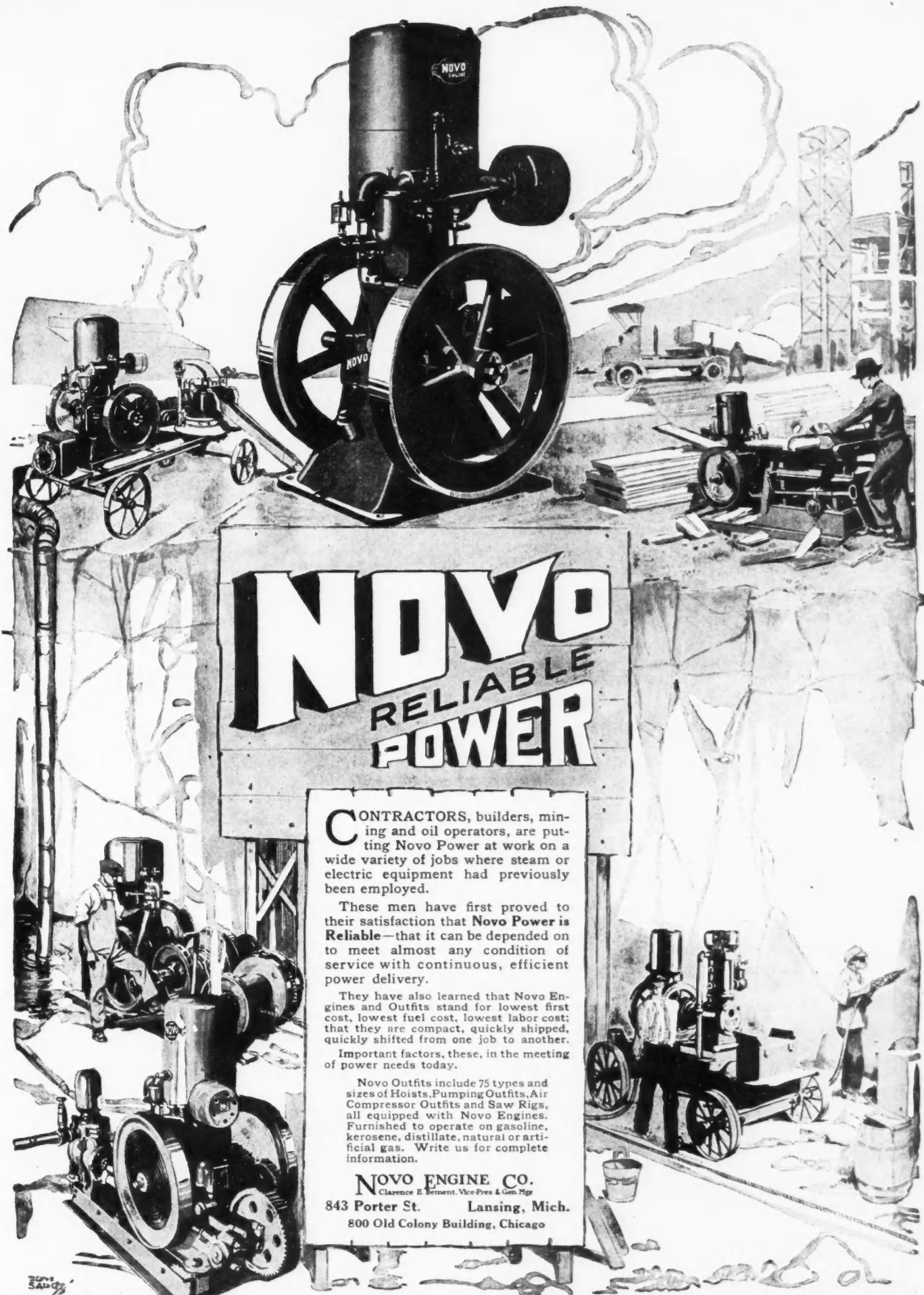
“Of course I am,” said Mrs. Johns, without acknowledging that she was in the least bit inconsistent, “and in that room I want old silver, to resemble this old Sheffield plate.”

“Fine,” said Mr. Edwards, the architect; “that will be just the thing, as it will go beautifully with the silver service and with that old English Sheffield platter.”

“All right,” said Mr. Johns, “that suits me to a T. Now, my dear, what are you going to have on the second floor?”

“The second floor,” said Mrs. Johns, “will be all white enamel, except in my sewing room, but the same finish will go in there very nicely, and I want to have the un-lacquered brass that this young man speaks of thruout the second floor, except in the bathrooms, where I want the hardware all heavily nickel-plated.”

(Continued to page 96.)



NOVO RELIABLE POWER

CONTRACTORS, builders, mining and oil operators, are putting Novo Power at work on a wide variety of jobs where steam or electric equipment had previously been employed.

These men have first proved to their satisfaction that Novo Power is **Reliable**—that it can be depended on to meet almost any condition of service with continuous, efficient power delivery.

They have also learned that Novo Engines and Outfits stand for lowest first cost, lowest fuel cost, lowest labor cost; that they are compact, quickly shipped, quickly shifted from one job to another.

Important factors, these, in the meeting of power needs today.

Novo Outfits include 75 types and sizes of Hoists, Pumping Outfits, Air Compressor Outfits and Saw Rigs, all equipped with Novo Engines. Furnished to operate on gasoline, kerosene, distillate, natural or artificial gas. Write us for complete information.

NOVO ENGINE CO.
Clarence E. Bennett, Vice-Pres & Gen. Mgr.
843 Porter St. Lansing, Mich.
800 Old Colony Building, Chicago

An Interview on Hardware Finishes

(Continued from page 94.)

"That suits me if it suits Mr. Edwards," said Mr. Johns.

"I congratulate Mrs. Johns on her taste," said Mr. Edwards, "and am sure that it will be very satisfactory indeed."

"Mind you," said Mrs. Johns, "I don't say that I am going to let that brass crystallize, but I want it the way it has been described because I can let it crystallize if I choose, and if I don't like it I will have the maid keep it bright brass."



"Lumber Store" Wins Trade by Displaying Goods

NEW methods and ideas for selling all sorts of merchandise are constantly being brought out. In the merchandising of lumber and building material, the "Lumber Store" is coming into prominence and is destined to displace the long-known lumber yard. Logan, Utah, is the one western city that can claim the honors. Anderson & Sons Company, one of the most progressive line yard firms of the West, with headquarters there, have just completed in Logan a Lumber Store, equipped with counters, cases and fixtures displaying building materials.

Instead of the usual clutter of the retail lumber

yard, the prospective home builder may walk into Anderson's modern lumber store from a clean, paved and parked street, over polished floors and up to counters, back of which are cases containing samples of finished and unfinished woods, hardware and other materials for the modern building. There are cases of plans, and reference books, magazines, all sorts of building plans and information, all in keeping with modern merchandising methods. Tables and comfortable chairs give the prospective customer every convenience and comfort.

Large plate-glass windows extending the whole front of the store give the passerby a view of a window display as attractive as the showing of fall styles in hats or gowns up or down the same street. The windows are specially illuminated at night.

Divided from the display or store part of the building by a glass partition is the stockroom where the lumber is kept. The prospective purchaser may see the actual goods he is buying. What is more, he can buy everything needed in the building of a home from nails to shingles right under this one roof.

The slogan of the store is "Modern Homes," and the material is what is supplied inside. The place is so attractive that women, on shopping tours downtown, seldom fail to include it in their lists of stores to visit.

REPUBLIC

INTERNAL GEAR DRIVE MOTOR TRUCKS

Builders and contractors in every line have proved Republic Trucks efficient and dependable. Regardless of length of haul or size of load, you will find a Republic to exactly meet your requirements.

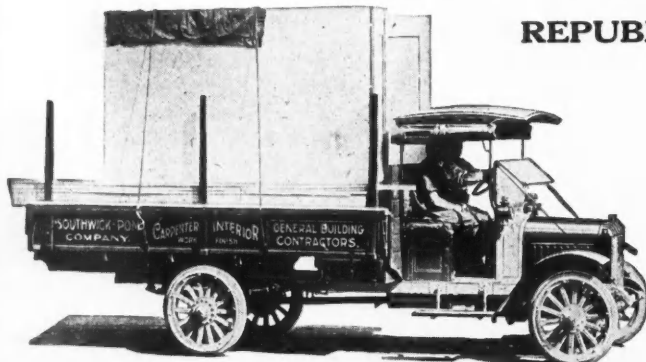
There are seven Republic models to fit all business needs—designed by engineers who specialize on trucks and truck problems. Nothing but trucks are built in the Republic factories, and last year more Republics were built and sold—by two to one—than any other make.

More than 1300 Republic Service Stations distributed all over the United States back up Republic quality.

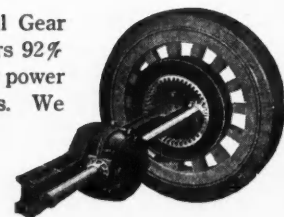
Seven Models:—3/4 ton to 5 ton

See nearest Republic dealer and write us for late booklet.

REPUBLIC MOTOR TRUCK CO., INC.
Alma, Michigan



The Internal Gear Drive delivers 92% of the motor power to the wheels. We know of no other drive that delivers as much





Abram Tools build the Road to Berlin!

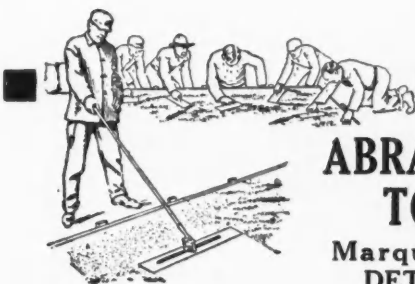
Slowly—relentlessly—surely, the Armies of Democracy are pushing the German back to the Rhine.

And with every push, the vast net-work of Army roads in France is extended—always reaching from the Sea to the Front line.

Uncle Sam is building those roads—building them with Abram Double-Action Tools. He's saving precious time—saving priceless man-power—by making one man with an Abram Long-Handled Tool finish as much surface as five men can finish with the old-fashioned tools.

That's why he chose Abram Double-Action Tools!

Abram Long Handled Tools are automatic in action—they actually pay for themselves in payroll reductions in a few days. Ask for our Cement Tool Circular.



**ABRAM CEMENT
TOOL CO.**
Marquette Building
DETROIT, MICH.

To my fellow readers of AMERICAN BUILDER

Let's finish this scrap quickly!

And get back to our regular jobs!

Let's pour a mammoth American Army into France and do this job **right!**

That takes men—it takes money. Let's all who can't shoulder guns

Buy Liberty Bonds

Not just what we can afford—more than we can afford. Let's pay for them out of our savings.

Your business may be dull—mine may be shot to pieces—we may be shy of money, but we can buy Liberty Bonds if we want to.

Remember, the boys "over there" are giving their **all**. Let's not be pikers back here where we're safe—where we get three squares a day and a dry place to sleep.

Let's back 'em **right!** Let's buy more Liberty Bonds this time than we ever have before. Talk won't win this war. Flag-waving won't do it. It takes **men and money**.

If you're on this side of the Atlantic—the comfortable side—**loosen!** Pledge yourself to buy Liberty Bonds—you'll get 'em paid for. You'll **have to!**

Joe Abram

Metal Weather Strip

We have in stock a complete supply of all lengths in zinc strips for sliding and casement windows, in 1", 1 $\frac{3}{8}$ ", 1 $\frac{3}{4}$ " widths. Spring bronze in four widths.

Brass thresholds, both wide and narrow, in any length up to 12 feet.

Automatic Door Bottoms in lengths up to 54".

Copper covered felt Door Bottoms in lengths up to 60".

Nails, screws and other supplies.

Write us for samples and prices.

We can ship most sizes the same day we receive the order.

George Angell Company
400 Penobscot Building
Detroit, Mich.

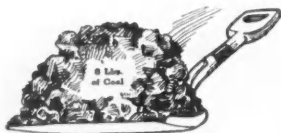
Why Do We Buy Anything

AS a rule we buy an article for one of two reasons—for it to make us money or for it to amuse us. Most purchases on the farm are for money dividends; these money dividends are then invested in other lines for more money dividends, etc. Money making, therefore, is the object for which most purchases on the farm are made. This idea has applied even to the farm home, the good wife being overlooked or neglected because purchases for the house do not pay money dividends. They do, however, pay more valuable dividends than do the most of the purchases for the farm. They pay in dividends of *satisfaction*, which, after all, is the final dividend we are or should be seeking.

Does the farm exist for the home or the home for the farm? Which then should receive first consideration? The home should be considered the center of all things in this country. It therefore should receive due consideration.

How has it been with you, and with your farmer friends and customers? Do you have in your home the three greatest conveniences for the home, viz., a lighting system, a water system and a heating system? Do you know that only about \$36 per year stands between you and these three essential improvements?

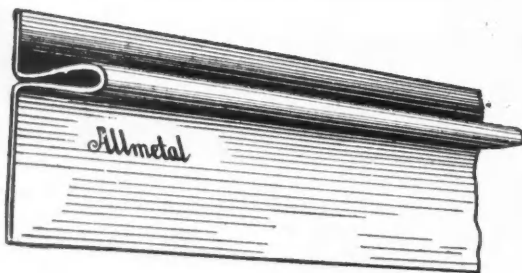
You can today in the ordinary farm home install a good lighting, water and heating system for \$600, or \$200 each. Money is only worth 6 per cent. Won't such an investment bring you many times that per cent in *satisfaction*? Won't such an investment also make you and your family more efficient and effective, etc., etc.? Isn't it, therefore, a good investment, the first to consider in order to make life comfortable and to get nearer to the end for which you are struggling?



Wasted Every Day

Just Think This Over!

You customers waste 6 pounds of COAL every winter's day. ALLMETAL WEATHERSTRIP will put a complete stop to this unnecessary waste and bring MONEY to you.



Carpenters! Builders!

Your Opportunity is Here Now!

MANY SALES BIG PROFITS

Easy to Sell—Easy to Install

Your customers will readily grasp this opportunity to reduce their fuel expenses. ALLMETAL WEATHERSTRIP will positively save twenty-five percent of the coal by keeping out the cold air and preventing the heated air from escaping.

ASK US NOW FOR INFORMATION

Get Started Early on an Unlimited Field of Prosperity

**Allmetal Weatherstrip Company, 230 West Madison Street
CHICAGO - ILLINOIS**

Spend a Profitable Day

among the one hundred fifty new and interesting displays at the permanent Building Material Exhibit. You will thoroughly enjoy every moment of your visit and will obtain building ideas of great value to you personally.

Building Material Exhibit

Entire Second Floor
Insurance Exchange Building
175 W. Jackson Boulevard
CHICAGO

We shall consider it a pleasurable privilege to answer any requests which you may make for free information or estimates on any building material subject.

SEND FOR OUR FREE
MAGAZINE

"LOOK BEFORE YOU BUILD"



Here is a Perfect Piece of Airplane Spruce, 6 by 24 Inches, 38 Feet Long, Containing 456 Board Feet, Produced by the Whalen Pulp & Paper Co., Ltd., at Their Swanson Bay, B. C., Mill. Another Big Stick Produced at the Same Time Measures 6 by 22 Inches, 38 Feet Long, and the Statement is Made at the Mill That These Are the Two Largest and Most Perfect Sticks of Spruce Airplane Stock Yet Produced. The Whalen Pulp & Paper Co., Ltd., Have Mills at Howe Sound, Swanson Bay, and Quatsino Bay, All in British Columbia.

Milling Spruce for 1000 Airplanes a Day

Production of spruce for the thousands of airplanes which are to materially aid the United States and its allies in winning victory over Prussian militarism, has already reached 1,000,000 feet a day at the government "cut-up plant" in Vancouver, Wash. Not only that, but strenuous efforts are being made to raise this production to 2,000,000 feet a day, and that it will be accomplished is a certainty.

Some idea of the enormous size of the work being done by the United States Government on behalf of the world war for democracy may be gained from these statements. Perhaps a few simple figures will help to elucidate the situation.

It is estimated that the average timber footage for the smaller types of airplanes is approximately 1,000. Of course, the larger types such as the bombing planes require around 10,000 feet. If the latter figure is taken it will be seen that material for 100 planes a day is being manufactured in this one government plant in Vancouver, Wash., with the brightest sort

of prospect for raising that production to material for 200 planes a day.

If the average footage for the smaller types of airplanes is taken, a little figuring will show that the production of a million feet of lumber a day by the Washington mill is in fact supplying material for 1,000 airplanes every day, with the prospect here also of increasing that figure to 2,000 airplanes a day.

The figures, of course, take in one government plant only. Scores of other plants are turning out huge quantities of timber for the same purpose.



Worms in Oak

To the Editor:

Colon, Mich.

Would like to ask a question for the boys to help me on.

I have some oak lumber cut two or three years ago and the worms are in it quite bad. Would like to know what to do to kill them.

W. E. WARE.

KEOKUK METAL WEATHERSTRIPS

Keokuk metal weatherstrips will reduce your clients' coal bills 25 to 40 per cent. Big profits to energetic contractors.

Installed in half the time at half the cost of old style weather strips.

Agents Wanted Now!
Write for information

Keokuk Metal Weather Strip Co.
KEOKUK IOWA

Carpenters Wanted

The Henry Airtight Weather Strip for bottom of doors and side hinged windows. A perfect protection against rain, cold, snow and dust. Approved by architects, carpenters and builders wherever known. Carpenters and others are making big money selling them.

Write today for our proposition

The Henry Airtight Weatherstrip Co.
Crawfordsville, Indiana



J. E. DUNMIRE
Ft. Dodge, Ia.



F. J. BRESEE
Detroit, Mich.



G. R. C. JOHNSON
Philadelphia, Pa.



H. W. POUST
Wilkesbarre, Pa.



J. R. CLARK
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W. H. VAN PETTEN
Salina, Kan.



H. PHILLIPPI
Piqua, O.



C. A. LINDGREN
Norfolk, Va.



J. J. WOOD
Lynchburg, Va.



R. W. CROSS
Dallas, Tex.



FRANK McGRATH
Frankfort, Ky.



C. W. MONTGOMERY
Richmond, Va.

Here Are a Few of the "LIVE WIRES" Who
Are MAKING GOOD, Selling and Installing

Diamond Metal Weather Strips AND CALKING COMPOUND

Most of these men started a number of years ago in a small way and by persistent effort have built up a permanent and profitable business, some making a clear profit of more than \$5000 per year with Diamond products.

We have hundreds of agents among contractors and carpenters who took up this work as a side line, gradually developing it into a large enough volume to justify making an exclusive business of it.

One of our agents Weather Stripped and Calked 52 School Buildings, amounting to over \$12000.00 besides doing other buildings and residences amounting to over \$14000 making a total net profit in fifteen months of more than \$9500 and yet some people think there is no money in selling and installing Weather Strips and Calking.

If you have the ability to sell and the mechanical training to know when work is properly done, we can put you in the way of earning more money than you have ever made before in any line.

We do not ask you to invest a dollar until you have actual orders and we tell you how to get them at a profit.



We furnish our agents with a complete selling outfit, contract forms, advertising matter, models, etc.

Our TRY OUT agency proposition will interest you and is yours for the asking, if we have no agency in your section.

We have some very valuable territory still open to the right man; perhaps you are the man we want. It won't cost you anything to find out.

We manufacture the most complete line made in this country with more practical, convincing selling points than all others.

Our line is High-Class and not in competition with cheap or inferior ones and commands higher selling prices because it costs more to make than others and your customer sees a reason why he should pay more for it.

If you are handling Weather Strips, why waste your time with the out-of-date, back number strips; get the kind that makes satisfied customers.

Our business methods are clean and we are thoroughly responsible.

INVESTIGATE .. WRITE TODAY .. NOW

The Diamond Metal Weather Strip Co., Columbus, O., U.S.A.



R. E. SHEARIN
Rocky Mt., N. C.



W. L. BARNHART
Atlanta, Ga.



J. J. KENNEDY
Geneseo, Ill.



J. F. RICHARDS
New Haven, Conn.



SPRAY HIATT
Indianapolis, Ind.



G. W. EWING
Akron, Ohio



J. S. FREY
Martinsburg, W. Va.



M. L. STERNS
Lansing, Mich.



R. B. SPENCE
Brownsville, Pa.



G. J. WAGNER
Canton, O.

Can Children be Interested in Fire Prevention?

THE UNITED STATES BUREAU OF EDUCATION AND THE NATIONAL BOARD OF FIRE UNDERWRITERS ARE TRYING AN INTERESTING PSYCHOLOGICAL EXPERIMENT OF GREAT IMPORTANCE TO PUBLIC SAFETY

CHILDREN are naturally interested in fire; can they also be interested in *fire prevention*? The United States Bureau of Education believes that they can, and to this end is sending to state and county superintendents, and to local boards of education thruout the nation, copies of a 91-page illustrated manual upon the subject that has just been prepared by the National Board of Fire Underwriters, with the suggestion that it be made a regular text book for use in the first half of the seventh grade work. This idea has been endorsed by many national and state officials. The booklet in question is entitled, "Safeguarding the Home Against Fire," with a sub title, "A Fire Prevention Manual for the School Children of America." It has been in preparation by The National Board for more than a year, and may be said to represent the consensus of opinion of the highest authorities as to practical methods by which the fire peril may be greatly reduced in millions of homes.

However, the real purpose goes much deeper than that of mere instruction. It is psychological. Fire prevention has of late years been coming to the fore with the growing recognition of the preventability of most fires, and is now undergoing an interesting development. Heretofore, the subject has been largely one of engineering—properly so—but engineering alone will not make people careful. Even good construction, with careless occupants, will still present a menace, and authorities have reached the conclusion that nearly all fires are directly or indirectly traceable to human carelessness.

Carelessness is a psychological problem. Can it be entirely eliminated? Probably not. Can it be greatly reduced? Most certainly it can. Will its reduction be accompanied by a

corresponding reduction in fire loss? Undoubtedly. How, then, shall this psychological problem be dealt with?

It is hard to change the habits of grown people. A thing which the child quickly perceives and assimilates often produces slight effect upon the person of middle age. Therefore there has long been a growing conviction that in order to strike at the base of American carelessness, which in turn is at the base of American fire waste, it will be necessary to educate the forming mind of the child.

Now, most people conceive of education as the *giving* of instruction. The word "educate," however, is derived from a directly opposite idea—that of *drawing out*, or developing from within—and the best teachers accomplish results by giving no instruction apart from an attempt to awaken the child's natural interest in the subject under discussion. For these reasons it can be seen that a manual of even the most practical fire prevention rules might still miss the mark. With this thought in mind, the authorities of The National Board of Fire Underwriters have sought to *make the subjects of fire prevention and of carefulness of genuine interest to children.*

Good Citizenship Versus "Kultur"

"Safeguarding the Home Against Fire," is, therefore, a serious attempt to develop in the coming generations an entirely new state of consciousness in the matter of public safety. Perhaps it may be said that it is an attempt to apply to good ends similar methods to those which the Hohenzollern dynasty applied to evil ends when it instilled the thought of conquest in the minds of its people from their earliest childhood.

"Safeguarding the Home Against Fire" recognizes that

(Continued to page 104.)

Help Win the War and Make Money at the Same Time

The U. S. Government has issued orders that coal **MUST** be conserved.

Every window and door not weather-stripped is an enemy within the household.

An army of weather-strip installers **MUST** be recruited at once.

Can we enroll you to install "Peace Strip" in your city or town?

Be your own commanding officer and take "orders" only from the consumer.

"Peace Strip" is easily sold, easily installed and backed by an **OLD RELIABLE** company.

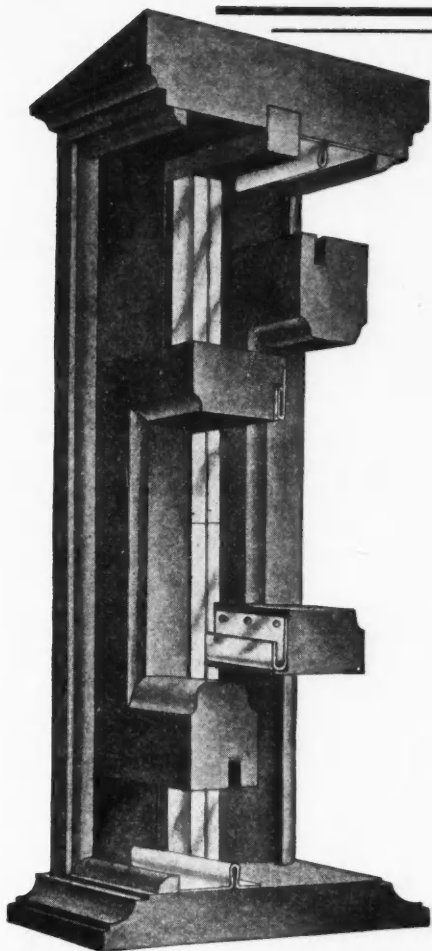
— Write for Catalogue and Agency Proposition —

Niagara Metal Weather Strip Co.

Manufacturers of "Peace" Metal Weather Strip

33 W. Tupper St.

Buffalo, N. Y.



WHY NOT— INVEST 3 CENTS?

OPEN THE GATES TO PROSPERITY !!

It costs only a 3 cent stamp to have us tell you about our Contractors' "Big Profit" Proposition.

A SAVING OF 20 PER CENT

on your client's Fuel Bill. Made possible by the installation of Shogren Metal Weatherstrips. Every home needs them.

PAY FOR THEMSELVES

SHOGREN METAL WEATHERSTRIPS pay for themselves in one year's time on fuel bill alone. They reduce doctor bills and increase the living comfort of any home or building. They are a permanent asset and last as long as the building itself. They are of simple construction, neat appearance, and 100% efficient. Something *positively new!*

A weatherstrip that slides both sides of the sash—full height of frame—a feature found only with the "SHOGREN."

MAIL THAT LETTER NOW—ASK US ABOUT IT!

WRITE FOR CATALOG

Shogren Metal Weatherstrip Co.

706-8 Townsend St. : : Chicago, Ill.

MAKE Hanging Storm Sash Easy, Quick Work



Done in a jiffy when your storm sash are equipped with KEES (Gossett) Hinges. Put on in no time. No tools or ladder needed. Simple, inexpensive, satisfactory. Millions in use.

KEES (Gossett) Hinges for Storm Sash

Made of either wrought steel japanned, solid brass, solid bronze or galvanized steel—screws to match. Our storm sash fastener makes opening and closing of sash easy. Holds sash open for ventilation. Windows can be raised or lowered to suit. A great combination. Write for FREE Samples for Trial NOW! Address.

F. D. Kees Mfg. Co., Box 552, Beatrice, Neb.

Screen, Weatherstrip Men, Contractors, Carpenters, Etc.

Write now for our agency proposition for the most complete line of Order-Made

Window and Door SCREENS

on the market. We have some good territory still open. Our agents are supplied with a complete outfit of samples, models, etc. We give exclusive agencies to those who make good. This is a splendid opportunity to add considerable to your income. No regular agencies established in towns of less than 10,000. Write now.

Address

STANDARD SCREEN COMPANY
1850-58 Hastings St. Chicago, Ill.

Protect Your

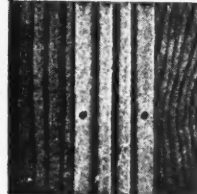
barns and buildings from weather and vermin. Line your grain bins or wagon boxes with

METALLIC BATTEN STRIPS

They allow for expansion and contraction of siding 5, 6, 7, 8, 9 and 10 foot lengths—interlocking joints. Easily cut; no waste. Nailed directly to siding.

Write for free sample

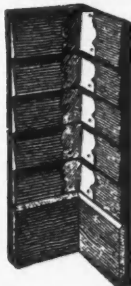
Metallic Batten Company
Owensville, Indiana



End View Showing Batten Open.—Pat.

Chief Metal Building Corners

Warp-Proof—Rust-Proof—Fit Anywhere



They make a corner with the smoothness and neat appearance of a "mitred corner" and save the time and labor of beveling down the siding. Made of heavy galvanized steel. Fit any corner—inside or outside and make a smooth corner that does not hold dust or moisture. Cannot warp or split, and prevents warping of the siding.

Chief Corners protect buildings from injury and are practically indestructible. Furnished ready perforated for nailing to the siding. Put on easily and quickly. Can be painted any color or left unpainted as desired.

Write for free sample and full information



SHRAUGER & JOHNSON : : 430 Walnut St. ATLANTIC, IOWA



Stop Those Leaks!

THE easiest and quickest way of repairing leaks in radiators, pumps, water jackets, motor head gaskets, hose connections, etc., is to use Johnson's Radiator Cement. This will stop the leaks in just a few minutes without laying up the car. No mechanical experience is required—all you have to do is remove the cap and pour the cement into the radiator.

JOHNSON'S RADIATOR CEMENT

Quick—Efficient—Harmless

Johnson's Radiator Cement contains no powders, cement or anything which can coat or clog the cooling system, and is absolutely harmless in every respect. It will ordinarily seal a leak in from two to ten minutes.

Johnson's Radiator Cement blends perfectly with the water until it reaches the leaks—just as soon as it comes in contact with the air it forms a hard, tough, pressure-resisting substance which is insoluble in water making a permanent seal.

Quarts. \$1.75 Pints. \$1.00 Half-Pints. \$.65
Write for our folder on "Keeping Your Car Young"—it's free.



If your dealer cannot supply you, use attached coupon.

S. C. JOHNSON & SON, Dept. ACB 9
Racine, Wis.

I enclose \$1.00 for which please send me, all charges prepaid, a pint of Johnson's Radiator Cement. Also send me, free your booklet on "Keeping Your Car Young".

Name

Address

City and State

My Dealer is

Children and Fire Prevention

(Continued from page 102.)

American school children are instinctive patriots. Its attractive cover bears a picture of two wholesome looking children, a school with the American flag flying, and several homes hidden among the trees. It also contains the following signed statement from the Commissioner of Education:

"Every boy and girl who would be a good citizen should learn to protect his community and his country against loss by fire."

Dr. Claxton has contributed a preface under the heading of "Good Citizenship," where the same idea is amplified.

"When we come to the question of fire prevention," he says, "there are three main points to consider. First, a good citizen will try in every way to avoid being a cause of danger thru permitting any of the practices that we have been warned about. Second, he will remove all dangerous conditions that he may find in his own home, and, third, he will train himself to recognize dangerous conditions in the community and will use his influence both to have them removed and to educate others to habits of carefulness.

"The correction," he adds, "must come not merely from better fire departments and better building laws, but from educating every family, and every member of every family, to recognize causes of danger, and to practice habits of consideration and carefulness. If this could be done, fire would almost cease to be a public peril."

Following the preface are eighteen lessons, each one with a pictorial heading and numerous thumb-nail marginal sketches of a nature to assist the understanding of the text. In all, the book contains 108 pictures and diagrams, so that it presents a profusely illustrated appearance.

Both the personal and the patriotic note are struck in Lesson I, which bears the title of "Our Country's Fire Loss." Calling up before the child's mind the picture of some fire which he himself has experienced, or has witnessed, it proceeds:

Fires and the Clock

"In order that such a terrible thing may never happen thru our carelessness, let us try to learn some things about fire, and especially about the ways in which it may be kept from becoming dangerous.

"Here is a good way to begin: Stand in front of a clock and watch the long hand creep steadily from minute to minute. Every time it passes a minute mark, say to yourself: 'Another fire has broken out; perhaps somebody's dearly-beloved home is being destroyed or some child is being terribly burned'—then add, 'It could have been prevented.'

"Watch that clock hand for ten minutes or more—'another fire'—'another'—'somebody's home'—'some boy or girl'—'some hotel, with the people struggling to escape'—'some factory, with dozens of hands thrown out of work'—'another'—'another'—. That is the way it goes, minute by minute, night and day, thruout the year. When you wake up in the morning, you may be sure that there will be hundreds of fires somewhere in the United States before evening. If some minutes go by without a fire, others may have two or three, for there are 1,440 minutes in the twenty-four hours, and each day has an average of more than 1,500 fires.

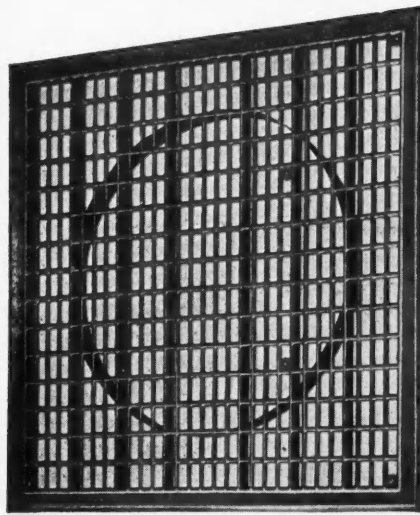
"There will be 1,500 more fires tomorrow, another 1,500 day after tomorrow, and so on, sometimes a few more, and sometimes a few less, but averaging pretty close to 1,500 for each day. Think of it—these fires haven't yet occurred, and they wouldn't occur if people only would be careful."

A vivid picture of the nation's fire loss in life and property is then presented and the lesson continues:

(Continued to page 106.)

H & C No. 260 Gratings

For Pipeless Furnaces



Front View

Manufactured especially to meet the needs of pipeless furnace installation.

Strong, Durable. A Complete Line.

Registers for Warm Air Heating, Ventilators, and Grilles. Our products are designed to add to the beauty and durability of any building.

Ask us about them.

Write for catalog.

Large and complete stock carried at Branch Offices and Warehouses

73 E. Lake St.
Chicago

100 La Fayette St.
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The Hart & Cooley Co.
New Britain, Conn.

HORNET MANTELS

The salability of any house is doubled when you show the purchaser the beauty and comfort of

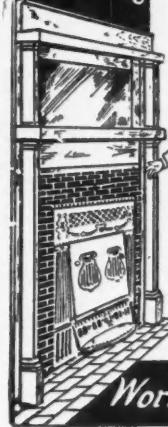
Hornet Mantels

They add 100% to any interior.

The model shown here gives an idea of our line and prices. It is offered in selected Oak or Birch, Mahogany finish, Piano Polish. Stands 7 feet high. Note beveled mirror, enameled tile and grate.

Below—
One of 40
styles
shown in
Our Big
FREE Catalog

Priced at Only \$29.00



Study our full line of Gas Logs, Firesets and Screens in helpful catalog. Gives directions for installing. Get this book for future reference.

Hornet Mantel Co.
1147 Market Street
St. Louis, Mo.

World's Largest Mantel House



Specify The HERRICK Outside Icing Refrigerator

On All Your Buildings

No ice is needed in Fall or Winter. Filled from the outside in Summer. Progressive builders put their Refrigerator problems up to us.

OUR FREE PLANS

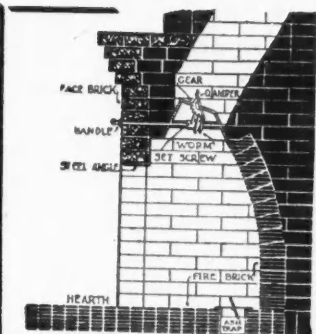
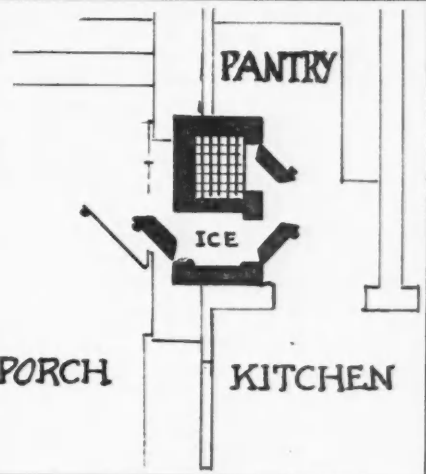
will be sent to you on request. Build up your reputation by suggesting and specifying the

Herrick Refrigerator

Scientifically constructed. Assures perfect air circulation. Keeps foods clean and fresh. The Herrick requires no ice in cool weather.

Write for free plans and catalog

HERRICK REFRIGERATOR CO.
WATERLOO, IOWA



Build the Fireplace Right

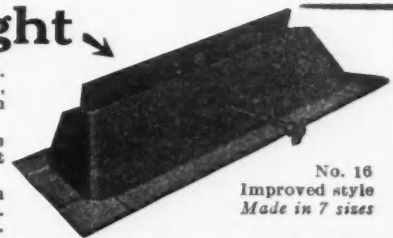
Don't try to reduce the cost by leaving out a good damper. It results in an expensive fireplace to operate and allows rain, wind, birds, and other objectionable things to enter the room when the fireplace is not in use.

Stove Dampers support the brick work, form a smooth throat, regulate the draft perfectly, and reduce the labor cost of erecting fireplaces.

The price is low enough so a Stove Damper can be used in every fireplace. Made in several styles for all size openings. The Improved style shown above is one of the most popular.

Send for catalog No. 1740 showing our fireplace fixtures and giving information as to the best fireplace construction.

We also make wind mills, feed mills, gasoline engines, hinges, pulleys, saw vises, latches, sink brackets, and other hardware.



No. 16
Improved style
Made in 7 sizes

Stover Mfg. & Engine Co.
Freeport, Illinois

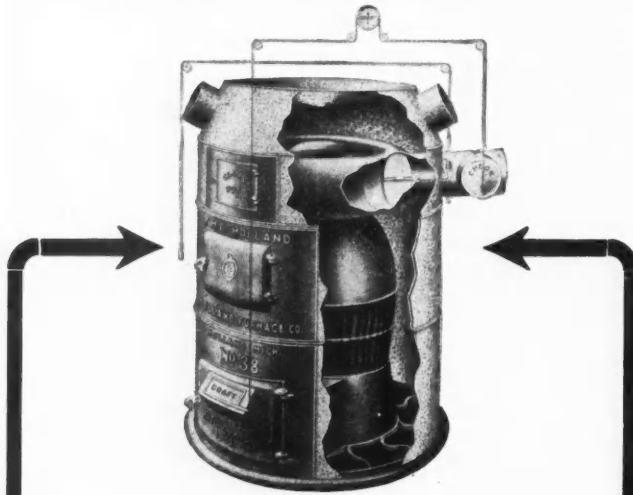
Stover Mfg. & Engine Co., 725 East St., Freeport, Ill.

Send us Catalog 1740.

Name..... Business.....
City..... State.....

Holland Furnaces

Make Warm Friends



A Contractor is a Good Judge of a Furnace

He knows the furnace is really the "heart of the home;" and he knows that if a man is absolutely pleased with his furnace he naturally is better satisfied with everything else that was done in the building or remodeling of his house.

Carpenters recommend the Holland Furnace because they not only know the advanced principles of its design and the dependability of its construction; but they know that the Holland Guarantee and the Holland Five Year Service Bond positively insures heating satisfaction to every owner.

The HOLLAND Leads in Sales In 125 Cities Where Now Introduced

The reasons are very plain to the man who knows. The Holland is built to burn scientifically—the cone grate breaks up clinkers and compels the fuel to roll to wall of fire pot. Air is mixed with the gas—the fuel burns from the sides and over the top in the only natural way to compel 100% of heat radiation. All gases and soot are burned. No internal explosions or "puffing." The Holland is clean, healthy,—efficient.

High test cast iron construction, with the fact that all castings are evenly heated prevent warping or burning out, and have given the Holland a certified reputation as repair-proof. The Holland fire-pot absolutely outlasts any other.

Contractors—Builders—Carpenters

Pass the word along. Write for our special proposition to you. We will also send you our free catalog, free heating plans and full information. Let us get better acquainted to our mutual advantage. Write today.

HOLLAND FURNACE CO., Holland, Mich.

World's Largest Installers of Furnaces

Holland, Mich.,—2 Factories—Cedar Rapids, Iowa

Ask Any Lucky Owner

Children and Fire Prevention

(Continued from page 104.)

"The buildings consumed, if placed on lots of 65 feet frontage, would line both sides of a street extending from New York to Chicago. A person journeying along this street of desolation would pass in every thousand feet a ruin from which an injured person was taken. At every three-quarters of a mile in this journey he would encounter the charred remains of a human being who had been burned to death."

Lesson II is entitled, "Preventing Fires." In a pictorial diagram it shows the startling comparison of American fire waste with that of foreign countries. Choosing the year 1913, the year before the outbreak of the war, it gives the American losses at \$2.10 per capita, in contrast to \$.49 in France, \$.33 in England, \$.28 in Germany, \$.25 in Italy and Austria, \$.15 in Switzerland, and only \$.11 in Holland. The visualizing of carelessness, its personal application, and the necessity for correcting it thru the formation of new habits is the purport of Lesson II.

Lesson III deals with "The Use of Matches." "The match is perhaps the most valuable and the most dangerous article made by man." "Nearly five hundred thousand flames are struck every minute on an average." "There is not one of these flames that would not develop into a destructive fire if it had a chance." This lesson familiarizes the child with the entire subject of matches; their nature and the rules for their selection; their story and their use.

In a similar way, the fourth lesson, that of "Lights," presents the theory and practice of safety in the use of candles, lamps and gas lights,

Saving \$70,000 Per Day

"Stoves and Furnaces" comes next. After a thorough understanding and interesting discussion of the necessary precautions and their reasons, the statement is made, "If the rules of this one lesson were always followed, it would save the people of the United States almost \$70,000 per day."

"Open Fires" starts with the picture of the family gathered about the grate, but deals with outdoor fires as well. Incidentally, it touches upon the interesting fact that the "bonfire," dear to the younger generation, is derived from "bonefire," and originally meant a fire of bones.

"Cooking and Cleaning" tells about the extinguishing of burning fat, and suggests the proper precautions for cleaning and polishing compounds.

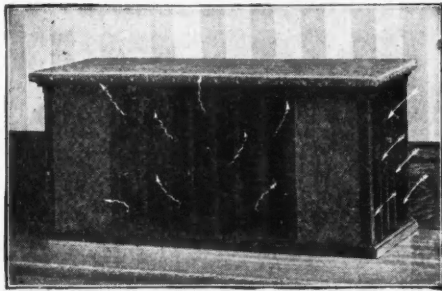
The lesson "Rubbish" begins with "A Test of Citizenship": "Tell me what you do with your rubbish," said the fireman, "and I'll tell you what sort of citizen you are. If you dispose carefully of every bit of your broken furniture, all your old newspapers, your oil rags, your wornout clothing, and all rubbish of that kind, you are a good citizen, but if you allow them to accumulate you not only are a bad citizen, but a menace to your neighbors."

Then comes the lesson upon "Kerosene"; one upon "Gasoline," the "Dangerous Giant," which is compared to the genie in "The Arabian Nights," which was harmless as long as his bottle was kept tightly fastened, but because a menace the instant he was allowed to escape; upon "Gas," with an earnest warning against low grade rubber tubes; and upon man's mighty servant, "Electricity," which is traced from the thunder cloud to the household light and electric iron of which the latter causes nearly one hundred fires per day.

"Acetylene," the "fog-piercing light," whose commercial use grew from the unsuccessful experiment in 1892 is made the subject of a special lesson.

"Smoking" is charged with the property destruction of \$165,000 per week and a shocking loss of life, all of which is due to carelessness.

(Continued to page 108.)



MAJESTIC DUPLEX REGISTER

A radical departure from the old, unsanitary and inefficient floor or wall register and is one of the greatest improvements ever made in warm air heating.

The large spacious front of the register permits the warm air to flow freely with the least possible friction and with full volume. The cold air is drawn from the floors through the sides of the register. This feature entirely overcomes cold draughty floors, or overheated ceilings—maintains even temperature and consequently saves coal. Currents of pure warm air constantly circulate through the rooms, insuring healthful air.

FITS ANY FURNACE

The Majestic Duplex Register can easily be fitted to any furnace—pipe or pipeless—and will furnish more heat with much less coal than any other register.

It has an attractive appearance—is solidly made of steel and hardwood, upholstered in Craftsman Leather to harmonize with interior furnishings—a handsome piece of furniture used either as a seat or a base for bookcases, etc. It is also frequently built into colonades. Can be placed anywhere—in any part of a room

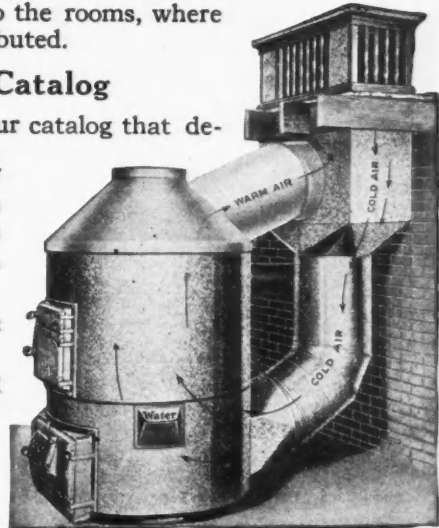
MAJESTIC Duplex Heating System

is an improved gravity system of warm air heating, which insures a uniform temperature, warm floors, pure air and economy of coal.

The Majestic Duplex Register draws the cold air down into the furnace, where it is heated and purified—then the full volume of warm humidified air is forced through the register into the rooms, where the heat is evenly distributed.

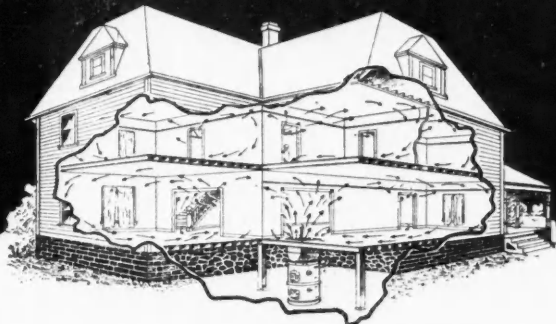
Write for Catalog

Write at once for our catalog that describes fully the Majestic Duplex System of warm air heating, tells the advantages of this system in residences, stores, schools, etc.



The Majestic Company

800 Erie Street
HUNTINGTON, IND.



Heat Your Entire House From One Register

SIMPLE — WARM — COMFORTABLE

Just this one large register. The hot air comes up through the center circle and the cold air goes down the other compartment between the circle and the border. It's right over the **Quaker Pipeless Furnace**.

More heat—and just where you want it—always ready. To warm that cold room, just open the door. The

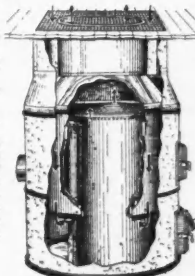
Quaker Pipeless Furnace

has no pipes, no bulky cold air returns. Your walls are not torn up, no cellar is too small.

Will burn any fuel. Particularly adapted to soft coal. Special humidifier keeps the air always moist.

The furnace is built of heavy boiler plate steel, no cemented joints to leak gas, dust or soot. Fire pot lined with high-test fire brick, capable of withstanding 3400 degrees of heat. An abundance of clean, pure warm air sent to every room. Simpler than a stove to operate, cleaner, more saving of fuel, and much more healthful.

Sends heat to every room in the house. Ventilates as well as heats. Changes and purifies the air to every room. Keeps the cellar cool for fruit and vegetable storage.



Arrows show direction of air currents

Quaker Manufacturing Co.

142 No. Dearborn St.

Chicago, Ill.

Heat that HOME RIGHT

Use the

MODERN WAY FURNACE

Up-to-the-minute improvements in Hot Air Heating Systems are found completely in the Modern Way Furnace. Burns Hard or Soft Coal, Coke or Wood. Heats, Ventilates, and gives added comfort to any home.

Contractors Attention!!

A special proposition to YOU. Big profits made specifying the Modern Way Furnace. Get into the game early and win your share of these profits! Now is the time—write for information today!



**The Modern Way
Furnace Co.**

Fort Wayne, Ind.

Children and Fire Prevention

(Continued from page 106.)

Under "Miscellaneous Materials" special consideration is given to common household articles of celluloid, fiberloid, pyralin and other similar compounds.

"Holidays" are studied in some detail with the plea that there shall be "No vacation for common sense." Incidentally, the results of education concerning the "Safe and Sane Fourth of July" are shown to have reduced the casualty list among our juvenile patriots from 5,466 in 1906 to 367 in 1917. On the other hand, Christmas has come to the fore as a day of widespread disaster, chiefly from the use of inflammable decorations and lighted candles.

After those, come an extended study of the more familiar forms of hazard and their appropriate precautions.

"Safeguarding the Home Against Fire" ends with two lessons of special importance. "The First Five Minutes" refers to those fires which have escaped preventive measures, but are discovered before they have had a chance to spread. Any child who thoroly absorbs these lessons will know exactly what to do in a sudden emergency of this kind; while the concluding lesson, "Serious Fires," familiarizes the children and grown people as well with what needs to be known about giving alarms, saving life and saving property in fires that are beyond control.

From start to finish, the manual has been kept within the understanding and interest of the child reader. In addition to its many pictures, it contains numerous illustrative incidents and anecdotes, and each of the lessons closes with a practical summary of rules, fitting it for text book use.

The potential future of America lies, of course, in the millions of children within its schools. Their adaptability, their enthusiasm, and their energy are forces which can be used

to almost incalculable advantage, if wisely guided. Perhaps no experiment has even been undertaken upon so large a scale for the purpose of creating habits of carefulness and conservation. If reasonably successful, it should result in the saving of life and property beyond calculation.



Paper From Sawdust

Newsprint paper from sawdust is a fact. Not only is the idea being worked out in the United States, but the London Times already is using the material. In a recent issue, just received in this country, the Times says editorially:

"Sawdust is a by-product produced in Britain. It takes the place of wood pulp, the importation of which is greatly reduced owing to government restriction. Sawdust paper is manufactured by the Donside Paper Mills, Aberdeen, where experiments have been in progress for a considerable time and are still being carried on in the hope of effecting further improvements."

The importance of the new process to the newspaper business cannot be overestimated. Sawdust news print paper, if entirely successful, means alleviation of the threatened famine. The war, as is generally known, had forced news print paper to new high rates, and actually has resulted in scores of small newspapers being forced out of business, either because of inability to buy enough paper for their needs, or inability to pay the prices demanded by paper makers.



Stark Rolling Mill Co., Man Volunteers for Training Course

Mr. B. A. Epperson, who for ten years represented the Stark Rolling Mill Company, Canton, Ohio, in Indiana, Illinois and the Southern States, joined the Central Officers' Training Camp at Camp Gordon, Ga., on September 1.



The Great Bell

-original-Pipeless-Furnace

Father of Them All

We have thousands in use. Sizes, styles and prices to suit all. **\$50.00 and up.**

Made for the building where a furnace is needed, but where the cost has been prohibited.

The GREAT BELL PIPELESS FURNACE will heat any one or two-story building in the most efficient manner with the least effort and the lowest relative cost. While **Cost** is secondary to **Service** in this furnace, our methods of production and sales have reduced the cost so low that no builder can afford to overlook our proposition.

And we guarantee our furnaces to be and do all we claim for them in both catalog and correspondence. Write for our catalog, describing the various styles, prices and specifications of the Great Bell Furnaces.

American Bell & Foundry Co.
27 Cody Street, Northville, Mich.

HESS FURNACES

AND THE

FUEL ADMINISTRATION

PULL NICELY TOGETHER



Special Terms to Contractors

Hess Furnaces burn any fuel and deliver all the heat. The fire-brick fire boxes, rectangular, and wide grate areas mean perfect combustion.

The big steel radiating surfaces distribute the heat rapidly.

The welded and riveted seams are absolutely and permanently tight against leakage of smoke, gas and dust.

You can burn anything that will burn — hard or soft coal, coke, slack, lignite or wood. **THAT'S WHERE WE HELP THE FUEL ADMINISTRATION.**

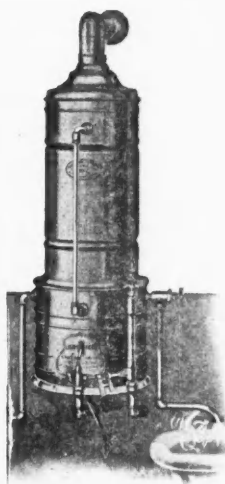
Ask for our booklet on Furnace Heating.

HESS WARMING & VENTILATING CO.

1220 Tacoma Building, CHICAGO

Real Hot Water Service

Cheap and Always Abundant
is readily provided to any bathroom by a



HUMPHREY

Instantaneous
Gas Water Heater

Simple to instal.
Durable and Ornamental, Heats Water instantly at any time and gives the cheapest Hot Water in the World.

GUARANTEED

Made by

HUMPHREY COMPANY

Div. of Ruud Mfg. Co.

KALAMAZOO, MICH., U. S. A.

50% Less Fuel Producing 100% More Heat

Guaranteed by Bond

The Only Furnace that Insures Clean Air

Big Money for You

Meets Abnormal
Costs of Material
and Labor

Simple to Install
Easy to Operate

We Want Good,
Active Men to
Represent Us.

Write today for our special
agency proposition

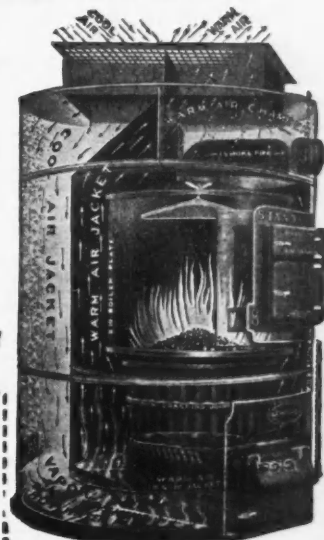
MAIL TODAY

Standard Heater Co.
438 W. Ontario St., Chicago

Send me your Special Agency
Proposition to Contractors.

Name.....

Address.....



STANDARD HEATER CO.

438 West Ontario Street
CHICAGO, ILL.

**Guaranteed
To Heat
Every Room
In the House
To a
Comfortable
Temperature**



THAT'S the guarantee that goes with every Mueller Pipeless Furnace. Builders or Contractors who recommend the installation of a Mueller can do so with the certainty that their customer will secure an absolutely efficient heating system.

MUELLER PIPELESS FURNACE

The Mueller has made a record for economy and efficiency which no builder can afford to ignore. It was specially designed and built for its purpose and is the only furnace which scientifically and correctly applies the laws of warm and cool air circulation for heating entire house through one register.

Over sixty years' experience in building warm air furnaces, steam, vapor and hot water systems qualifies us to give you expert advice on heating requirements for any type of building you are erecting. This advice is free and may prove valuable. Write us.

L. J. MUELLER FURNACE CO.

*Builders of Heating Systems
of All Kinds Since 1857*

MILWAUKEE, WISCONSIN

MAIL THIS COUPON NOW

L. J. MUELLER FURNACE CO.
218 Reed St., Milwaukee, Wis., U. S. A.

GENTLEMEN: Without obligating me in any way please send me your catalog fully describing and illustrating the Mueller Pipeless Furnace.

Name.....

Address.....

(A B) City..... State.....

The Liberty Loans

The United States entered the war on April 6, 1917. Eighteen days later by a practically unanimous vote Congress passed the Liberty Loan Bond bill.

On May 2 the First Liberty Loan was announced, on May 14 the details were made public, and on the 15th the campaign began and closed one month later. The issue was for \$2,000,000,000, the bonds bearing 3½ per cent interest and running for 15-30 years. The bonds carried the conversion privilege, entitling the holder, if he chose, to convert them into bonds of a later issue bearing a higher rate of interest. Four and a half million subscribers from every section of the country, representing every condition, race, and class of citizens, subscribed for more than \$3,000,000,000 of the bonds. Only \$2,000,000,000 was allotted.

The outstanding features of the First Liberty Loan were the promptness with which it was arranged and conducted, the patriotism of the newspapers, banks, corporations, organizations, and people generally in working for its success, and the heavy oversubscription of more than 50 per cent. Another notable feature was that there was no interruption to the business of the country occasioned by the unprecedented demand upon its money resources.

The Second Liberty Loan campaign opened on Oct. 1, 1917, and closed on Oct. 27. The bonds of this issue bear 4 per cent interest and run for 10-25 years. They carry the conversion privilege. It was announced that 50 per cent of the oversubscription would be taken. Nine million subscribers subscribed to \$4,617,532,000 of the bonds, an oversubscription of 54 per cent. Only \$3,808,766,150 of the bonds was allotted.

This campaign was marked with the same enthusiastic support of the public as its predecessor. The labor and fraternal organizations were especially active in this campaign, and the women of the country did efficient organized work which greatly contributed to the success of the loan. The men in the Army and Navy worked for and subscribed largely to the loan.

The Third Liberty Loan campaign opened on April 6, 1918, one year exactly after our entrance into the war, and closed on May 4. The bonds of this issue bear 4¼ per cent interest and run for 10 years, are not subject to redemption prior to maturity, and carry no conversion privilege. The loan was announced for \$3,000,000,000, but the right was reserved to accept all additional subscriptions. Seventeen million subscribed for \$4,170,019,650 of the bonds, all of which was allotted.

A great feature of this loan was its very wide distribution among the people and thruout the Union and the fact that the country districts promptly and heavily subscribed to the loan, in a great measure making up their quotas earlier than the cities. Secretary McAdoo pronounced this loan the soundest of national financing.

A little over a year ago there were some 300,000 United States bondholders; there are now somewhere between 20,000,000 and 25,000,000. Awakened patriotism has made the American people a saving people, a bond-buying people. The effect of the Liberty Loans on the national character, on our national life, on the individual citizen and our home life is immeasurable—of incalculable benefit. Not less incalculable is their effect on the destiny of the world as our ships plow the seas and our men and material in Europe beat back the Hun.

The Fourth Liberty Loan campaign will begin Saturday, Sept. 28, and close Oct. 19. No American doubts its success; no good American will fail to contribute to its success. The blood of our men fallen in Europe calls to us; our answer must be and will be worthy of them and our country.

Your Opportunity

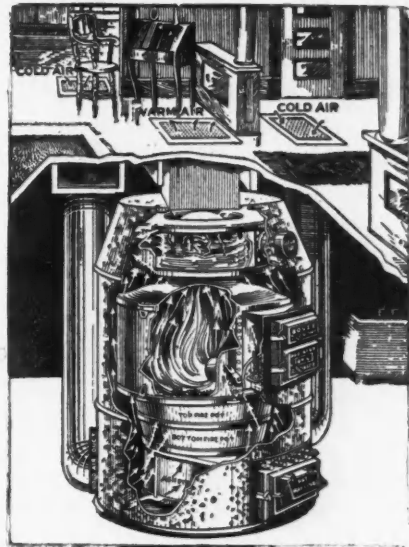
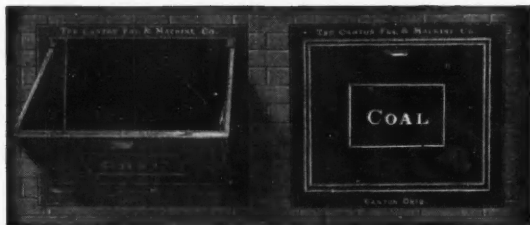
Every home a prospect. Easy sales—big profit. Your opportunity to bring in additional work.

100% IMPROVEMENT

Talk your clients into the New Coal Chute idea. They are 100% improvement over old coal windows. They are burglar proof. Made of best metal construction and are equipped with stay rods and chains to hold them in place—either when open or closed.

Write for Catalog B-9

Canton Foundry & Mach. Co.
CANTON, OHIO



BOVEE'S PIPELESS FURNACES

Central Heating and Regular Pipe Furnaces
Bovee's Pipeless Furnaces four sizes. One Register. Cool basement. Easy to install. Very economical of fuel and very durable.

Bovee's Central Heating System Furnaces
Six sizes. One large warm air register. Other registers can be added if found necessary. Separate cold air ducts. Aids in circulation of heat and removes cold air from warm air registers. Ordinary rugs can be used.

Regular Pipe Furnaces furnished where registers are desired in each room. Send pencil sketch of building for estimate.

Horizontal Furnaces for 4-ft. wood or coal with double doors 16x16-in. or 17x21-in. furnished with Central Heating or Regular Piping

Buy from Manufacturers and Save All Commission, one-third the cost of your Heating Plant.

FREE CATALOGUE

BOVEE FURNACE WORKS, 50 W. 8th St., Waterloo, Iowa

HERO

PIPELESS FURNACE

the great coal saver, it is a money maker for the contractor and jobber. Stove heated houses are all prospects for sales because of the big fuel economy.

Easily installed by any good mechanic in a day. Here is a chance to build a good business with liberal profits. Big commission and exclusive territory. Write for bulletin.

HERO FURNACE CO. 59 W. Lake St. Chicago

Waterloo Coal Chutes

are Burglar-proof (can be opened only from the cellar); lock automatically; are durable and of attractive appearance.

Watertight at the top of Chute prevents rain from entering between top of Chute and Siding. Most satisfactory for industrial housing. Write today for descriptive circulars and prices.

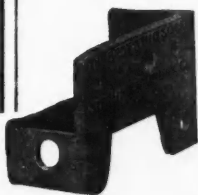
We also manufacture Side Wall and Floor Warmair Registers, Everlasting Cast Iron Smoke Pipe, etc., etc.

The Waterloo Register Company
Waterloo, Iowa



FOR CONCRETE FLOORS Use "Best" Stud Sockets

The only thing for buildings with concrete floors. The "Best" Stud Socket is made in three styles—Standard, Partition and Corner—One size of each. Any size timber can be used without cutting the timber. "Best" Stud Sockets are placed in the floor or foundation after the concrete has been deposited, while it is still soft and before it has started to set.



Sterling Foundry Co.

8 Avenue A, Sterling, Ill.

Standard Socket

Instead Of Overhauling Old Hot-Air Plants It Is Wiser To Install A New

HANDREWS HOT-WATER HEATING SYSTEM

FOR OLD OR NEW HOUSES

Easiest for Contractors to handle. Good profits and sure to please your clients. We assume risk. Most economical, durable, easiest to manage system. Steel Boiler sold alone if complete system not required. Write for Big Free Book.



ANDREWS HEATING COMPANY
1500 HEATING BLDG., MINNEAPOLIS-MINN.

Varying Designs for Group Housing

(Continued from page 28.)

the greatest results must be fitted to the various circumstances, trades and men involved, and to the size of the job. Just as no one plan would be profitable on all sizes of jobs, so no one plan would be profitable for all the different kinds of work on the same job. The methods must practically be studied out, fitted and tested for each job, the only general formula being: alertness and brains on a foundation of common sense.

On this particular job the same gang of cement men followed thru the six four-apartment houses of plan A. Likewise the same gang of carpenters followed thru all the houses of plan A. With the framing of these completed, that gang took up all buildings of plan C, finished them, and so on. The other gangs of carpenters worked in the same way, each doing the roughing or finishing of all buildings of a single type before they went on to another type.

Six houses of the same type gave the superintendent of carpenters quite a little leeway in distributing his men to the best advantage on work with which they were all the time becoming familiar. If work of one kind was a little behind in one house, men from others could be shifted to it, while the finishing gang that was to have worked on the backward house could temporarily be assigned to the other houses and still be on the same work which they could continue without any break. If extra men came looking for a job, they

could be utilized somewhere, which is very desirable in this time of labor scarcity when men cannot always be obtained when you want them. And again there is a wider latitude for putting men at the kind of work suited to their intelligence, which can scarcely be done on a small job where every man that comes on is theoretically equal to the rest and all are on a level as A 1 journeymen. On a multiple project, men fitted only for horse work can have horse work enough found for them, and men able to act as assistant foremen can be found useful.

The tinsmiths worked on the same plan as the carpenters whenever convenient, for the adjustment and assembling of the furnace systems was easier when taking the most similar houses in succession. However, there was not much difficulty in their shifting around to odd houses if necessary, since the heights were all the same and floor plans all alike in a general way.

Plumbers worked in a different way from the carpenters. One pair of plumbers took one house, and put in both roughing and finish plumbing. Each journeyman plumber was therefore responsible for the plumbing of that house, and the credit or blame would fall to him exclusively, so he did a good job. The houses were for permanent investment, and good plumbing was considered highly important, both from a sanitary and aesthetic point of view, and because a

(Continued to page 114.)



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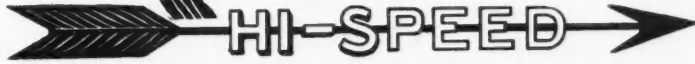
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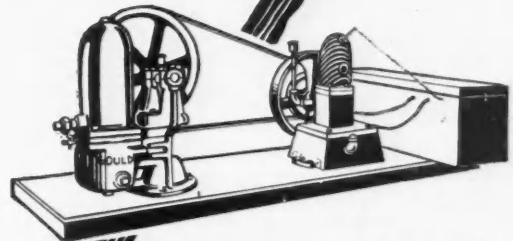
There's a gasoline-engine-driven outfit for homes where electricity is not available. And there is a 32-volt d. c. motor-driven outfit adapted for the farm lighting plant. Then there are 11 other outfits adapted for 110 or 220 a. c. or d. c. currents. Hi-Speed Pumping Outfits are being widely advertised to farmers and small-town people. They carry all the prestige of our seventy years' successful pump-making.

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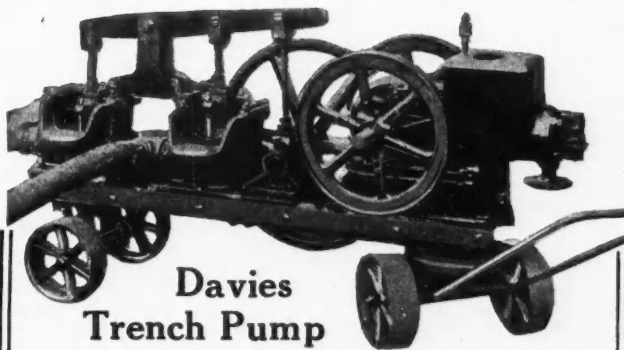
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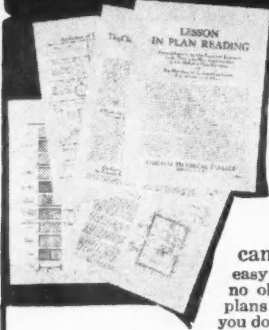
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Present Occupation.....

Varying Designs for Group Housing

(Continued from page 112.)

leak in the plumbing or the early breakdown of poor plumbing can spoil more carpentering and plastering than anything else. Three pairs of plumbers have been kept employed on the job.

Even if a plumber has to shift from one variety of house to another and then back, this method of securing integral responsibility for the work is followed.

Plasterers work a little differently. As many of them are put into a house as can work right—generally four to an apartment to do the roughing, and later four to do the finishing. The plaster is put on plaster board, so that it dried much quicker than on lath, consequently not so many arbitrary delays for drying are interposed in the scheduling of assignments of finish work, and the plastering foreman can assign his men to better advantage.

There is such a thing as a right or wrong number of plasterers in a group, regardless of the size of the total job. To get the advantage of being in wholesale, the number of men should be large enough so that the illness of one or two men for a day will not affect the work. On the other hand, the number should be small enough so that one foreman can look after the work, assign rooms and be his own inspector of workmanship. It was found on this job that from twelve to eighteen men would advantageously fill both conditions, sixteen being about the right number.

In order to make work enough to give this number of men a steady job, it was found advisable not to start them until the carpenters had a good start of them. Then the rough plasterers were given a three-house start on the finishers.

Tho the real basis of assigning plumbers and plasterers is different from that of distributing carpenters, they also get incidentally most of the advantages of working in duplicate houses. Since the houses are ready for plumbing and plastering in the order that they are finished by the carpenters, the latter workmen also work a good deal along type lines.

While the work was going on, by the way, the workmen were housed in comfortable two-story temporary dormitories with tar-papered side walls and roof, on a side hill overlooking the location. This was necessary because altho the location is in the middle of a town of 20,000, the same scarcity of houses which demanded the building of the group of thirty-two made it very difficult to lodge the workmen in the town.

The building of the group was not done to a speed schedule. That is, no schedule was considered iron-clad to be lived up to at all costs. For in general, living up to a time schedule under these extraordinary conditions nowadays does involve cost—so much that, in the opinion of the supervisors of the contract, they could either aim at economy of time or economy of money, but not both. A schedule was of course desirable, but one that had plenty of free play and could at all times be readjusted. This was fortunate, for

(Continued to page 116.)



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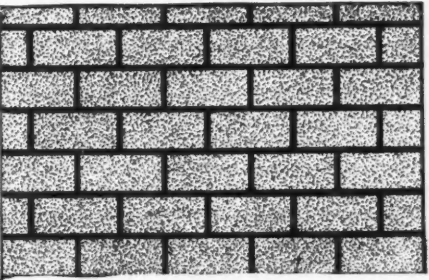
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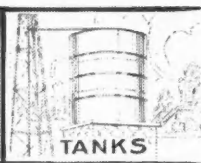
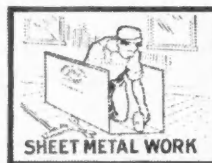
Varying Designs for Group Housing

(Continued from page 114.)

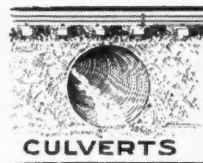
otherwise delays in shipment of materials and other unavoidable delays would have been very costly. Certain lessons were learned. One was, not to buy sash and frames in Maryland at any price if there was any prospect of a railroad embargo getting in between Maryland and Connecticut. It is better to buy in the locality, where, if necessary, delivery can be made by motor truck in a pinch. This winter there were other delays due to the severe cold. Rather than use the much-needed and nationally guarded coal, and use it in large amounts to raise the below zero temperatures of this last January and February to a workable warmth within the buildings, it was thought more reasonable to shut up shop for the winter and start again in the spring, a postponement which would have wrecked any elaborate schedule if allowance for such gaps had not been made.

Of course the primary reason for the establishment of a schedule remains in full force—the desirability of getting the correct gait on the work so that the gait will of itself tend toward economy in money also. There is a line where the plane of cost and the plane of speed intersect, and it is to secure the resulting economy that the contractor makes out his schedule. Only under extraordinary conditions it should be flexible enough to absorb accidents without breaking the economy and the contractor.

All in all, the contractor and the owner feel that they are getting in this group what they wanted—a number of permanent, attractive houses at the minimum cost possible at this time. The owners' problem was to build houses which would be good enough to help him hold his skilled workmen. The variation in appearance necessary to individualize them cost on an average of ten per cent of the total cost of the house over and above what it would have been if the houses were thirty-two duplicates (horrible thought). And even if they were built for sale rather than for retention, this added expense would be not only profitable, but imperative, because certainly no sane land agent would try to sell a customer a house in the middle of a clump of thirty-two exactly similar houses. The added expense, if it is added, is a necessary commercial layout which is more than repaid in the market. On the other hand, whether the basic plans are more or less similar or each entirely different from the rest, the construction of houses in groups in a single contract seems the only way of cutting the present high cost per house, the saving depending upon how nearly the framing plans of the houses are really alike. In this job, it will probably amount to ten or fifteen per cent. But even if the houses were all radically different, there would be some considerable saving from the fact that all the work is done in one locality and by a large enough number of men so that they act as a reservoir and supply system for each other.



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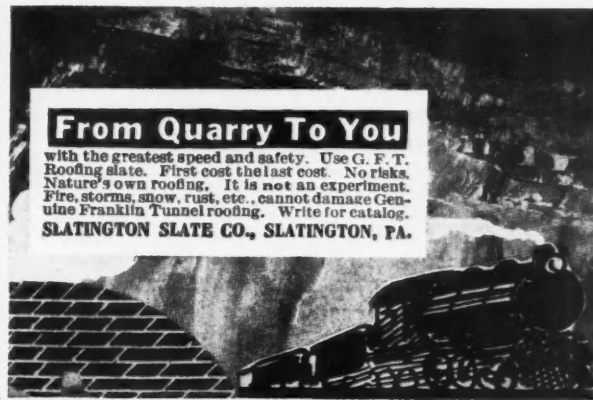
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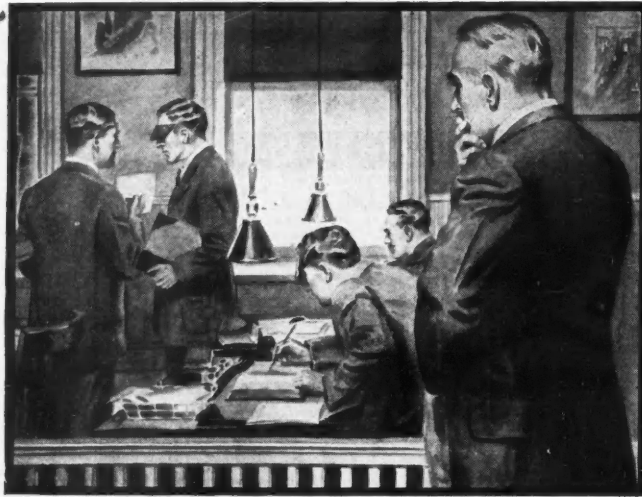
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 City _____ State _____

New Houses for Old

(Continued from page 33.)

ter with this suburb? Is it unhealthy? Why is it that these places are standing here without a buyer or a tenant?"

The situation was explained about as indicated above; and then the constructive minds of the pair who were looking at the house began to get to work, and they saw things. They looked here and there, and then nodded at each other, after exchanges of enthusiastic comments on certain possibilities; and the next day the man of the family was back, again this time with a contracting carpenter who knew his business.

"I want you to go thru this place with me," said the home-seeker to the carpenter, "and get a line on it sufficient to tell me, approximately at least, what it will cost to have certain things done. If the figure is within certain bounds, you and I can get together and make a regular house out of this. Get me?"

The carpenter, with a grin, indicated that he "got him" all right; and then for over an hour the pair of them wandered thru the house, literally from basement to attic. Rigorous search was made for weakness or decay of any sort. The contractor, with a large and practical knife which he carried, probed here and there in likely-looking spots to see what he

(Continued to page 120.)



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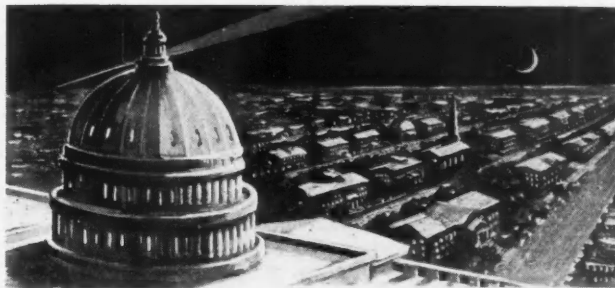


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New Houses for Old

(Continued from page 118.)

might find. The ends of floor joists, in the dark corners of the basement, did not escape him, nor did he omit cuts and jabs at the roof timbers; and he found a chance, while snooping around the outside of the house, for a vicious attack on the weatherboarding, especially at corners.

"Well, how about it?" inquired his prospective client, a trifle anxiously, when they were finally outside and on their way home once more.

The carpenter cleared his throat, looked wise and consulted some figures in his notebook.

"We-ell, I don't know," he began conservatively. "Of course, you know, it isn't a new house—"

"Oh, now, be a sport!" interrupted the house-hunter. "Come across and tell me what you think can be done with it."

"You won't let a man hedge around any, will you?" grinned the contractor. "Well, I'll tell you. For comparatively little money I can go in there and make a house out of that that will make your eyes stick out—because, mark, some first-class work and first-class materials went into it in the first place. If it had been one of these jerry-built affairs you find on the market so often it wouldn't be worth fooling with; but it was built right, and it's as sound as a dollar, except a few spots where a little new timber won't hurt. It will cost you very little to put it in first-

class shape to live in; it will cost more, but not a fortune, to improve it wonderfully. And, as I say, you'll have a sure-enough house."

That was all the other man wanted to know; and it was something less than a week when neighbors saw, thru the trees, that there was something doing and being done around the old house. Ruthlessly a pair of men were at work stripping the old shingles from the roof. The doors and windows were open, and the sound of saw and hammer was heard. And this went on for weeks. At first, as one of the old residents passing by regularly put it, it looked like destruction; and that, in fact, was what it was, as far as a part of the place was concerned.

For example, the old front porch, a narrow and befrilled structure, too small for modern ideas and too fussed up with grill and scrollwork to suit the tastes of today, was removed bodily. A partition wall dividing the old-fashioned front and rear parlors was torn bodily away, and, furthermore, an opening was made in the rear wall of the resulting big room, leading to a new sun porch. There was plenty of destruction, undoubtedly; but it was all paving the way to new construction, designed to make the house over into something new and livable.

Of course, the contractor called in his friends and colleagues, the painters and plumbers, before he got thru; but that was after the carpenter work, for the

(Continued to page 122.)

PUTTING PATRIOTISM INTO ACTION ★ ★

There is no turning back. This nation of ours is in the war against autocracy and militarism *to the end*—until the fight is won and peace is restored for all time.

This is not the time to count the cost. But whatever the price may be, it will be worth it. Hundreds of thousands of our noblest young men of all ranks are today on the firing line OVER THERE. Hundreds of thousands more are waiting and eager to go. And millions more will respond to any call that comes to uphold the principle of righteousness and peace in world affairs.

We who perform must stay behind "to keep the home fires burning" have a duty no less important to perform. This duty is right at hand—in factory and office and shop and field and home.

Words and good intentions accomplish nothing.

ACTION and action alone will win the war.

★ ★ ★ ★ ★ ★

It devolves upon each and all of us to do our part, willingly, gladly, quickly.

Buy Liberty Bonds.
Help the Red Cross.
Invest in Thrift Stamps.
Support the Y. M. C. A.

★ ★ ★ ★ ★ ★

Do whatever your Government asks at this crucial time and do it with a firm faith in the future.

In the measure that we today serve our Government and the holy cause to which it is pledged, we shall in future reap the benefits of peace and liberty and justice.

WRIGHT WIRE COMPANY ★ ★ ★ Worcester, Mass.

New Houses for Old

(Continued from page 120.)

most part, was completed. Keeping in mind the heart-felt injunction of the new owner to keep the bills within reason, the contractor saved where he could, and omitted some things which his artistic soul yearned to do for the betterment of the old place; and in the end he was able to go thru the rejuvenated structure with his delighted clients and show them wonders done.

"Now, you've got as fine a living-room as I ever saw in place of these old parlors," he commented. "Luckily the flue wasn't in the middle, as it might have been, or we'd have had trouble. And that sun porch, with the French doors leading out to it, will give you pleasure worth ten times the money, even if it was the most expensive bit of the job. The front porch, of course, is a 100 per cent improvement over the old one, and you know how much better the general outlines of the place look, now that we've snatched off all of that fool ornamental work that they put on, and left it plain and straight.

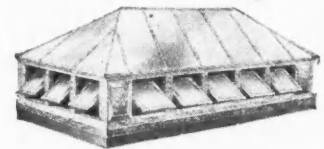
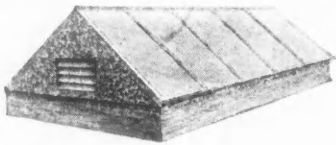
"The new bathroom is a humdinger, believe me—hard cement six feet high, marked off in imitation of tiles, and fixtures as good as you can buy. The roof will last you another twenty years, with luck—good shingles, stained green to match the outside trim. Take it as a whole, you've got a house that your chil-

dren will be proud of; and it hasn't cost you a respectable fraction of what a new one of similar quality would."

Which, of course, was the sole reason for the job, and its best recommendation. There are contractors who would turn up their noses at a piece of work like this, altho, time and material considered, there is plenty of money in it; but let it not be forgotten that conservation, in its best sense, has something of a claim on the trade, as well as construction, and it is something like a tribute to the fine craftsmen of the past generation to help in preserving their honest work for further worthy use.

At any rate, that is the way it impressed this particular builder; and, by the way, being a keen business man, he has taken options on several old places which are on the market at a very low figure, for the purpose of remodeling them and making a profit on the deal. He has proved to his own satisfaction that it can be done, and that is all he wants to know. Incidentally, he is working on several more jobs of the same sort, for people who had their eyes opened by what he did with the first old house, and he is justly proud of his work in turning old houses into new ones.

"New houses for old is pretty good business all around," he admits, and as long as he is picking the jobs judiciously—as he is—and making money out of it—as he is—nobody can deny that he is right.



How will you LIGHT and VENTILATE those rooms?
What is the best and most economical method?

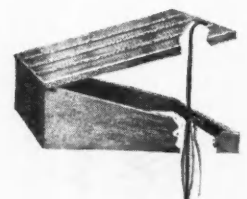
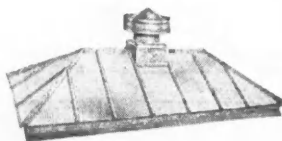
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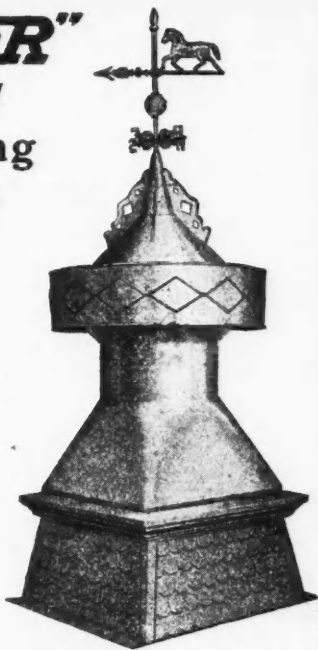
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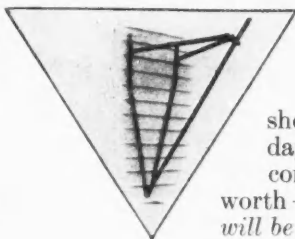


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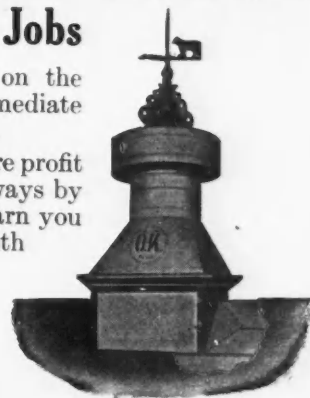


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Phillip Bernard Co.
2402 Floyd Avenue
Sioux City, Iowa

Development of Details

(Continued from page 62.)

Next draw the lookout, which in this case is the attic floor joist extended. Indicate the ribbon strip or ledger board, a 1x6-inch board, which is notched into the inner face of the stud and runs at right angles to the joists. Note that the joints should also be notched over the ribbon strip 1 inch, as shown in Fig. 2, and are spiked to the end of the rafter.

The skeleton work is now ready to receive the finish. Draw the roof boards as illustrated, spaced two inches apart. Show the sheathing attached to the outside of the stud. Next draw in regular order the plancher, fascia, crown mould, frieze and bed moulds. The size of these mouldings may be obtained from any standard moulding book.

Shingles should now be shown with desired exposure to the weather, and lath and plaster indicated on the inside of the studs and under side of floor joist.

The same method may also be applied to the detail of the double hung window. We have three separate sections here, two vertical and one horizontal. They are placed together so that by projecting from one section to the other their relation can be shown.

Since window openings are outlined or framed with double studs there will be two 2x4's in each section, as illustrated in Fig. 1.

In Fig. 2 proceed to block in the principal details as follows: Starting with the head section, note that the space or pocket for the outside sash comes even with the outer edge of the stud. Draw the outside stop or blind stop, which is the same thickness as the sheathing, projecting it $\frac{3}{8}$ of an inch to form the outside of sash pocket. The inner side of the pocket is formed by a thin $\frac{3}{8}$ -inch or $\frac{1}{2}$ -inch parting strip which separates the two sashes. The pocket for the inside sash is formed by the parting strip and the inside stop bead. Draw the head jamb, which is placed far enough beneath the header stud to allow for the lug of the side jamb, usually $\frac{1}{4}$ inch to 1 inch.

Draw the ground strip, parting strip and lath and plaster. Project lines of same to the other sections.

Now in the jamb section note that the space for the weights or weight box is formed on the outside by the jamb or pulley stile rabbeted into the blind stop, while on the inside it is closed in by the ground casing. Now we already have the width of the blind stop, ground casing and parting strip by projection, so allow 2 inches clear space for weights, and draw pulley stile, as illustrated. Show inside sash in section.

For the sill section start with the sill, which is either $1\frac{1}{2}$ or 2 inches in thickness, with a slope of about 1 inch to 11 inches. Draw same with proper width and pitch. Draw window stool and furring block. Indi-

(Continued to page 126.)

Increasing the Speed and Decreasing the Cost of all Building Painting

Whether painting new buildings or those remodeled; whether painting one building or a group; whether painting wood, plaster, stucco or concrete surfaces—either exterior or interior; the problem of how to do all building painting faster and at the same time hold down the cost has been solved.



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Portable Painting Equipment

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One Aeron operator spray paints as much surface, on an average, as 4 or 5 fastest hand-brushers.

Besides, he applies a more thorough, uniform protective coating of any material—filling all cracks and easily covering hard-to-reach places.

There is no skimping, no dripping and other wastes.

There is no constant and costly replacing of brushes.

The paint is always at the nozzle ready to be applied simply by pulling a trigger—no continual dipping from pail to the work.

The entire outfit is simple and convenient to operate, and is quickly and easily moved any place.

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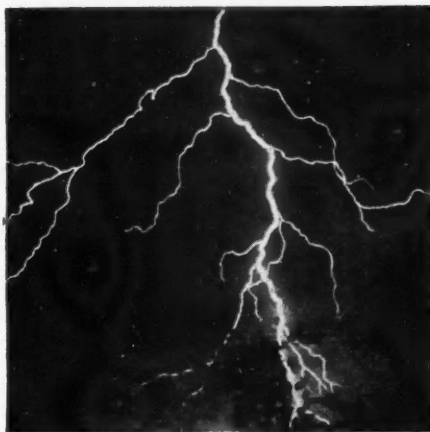
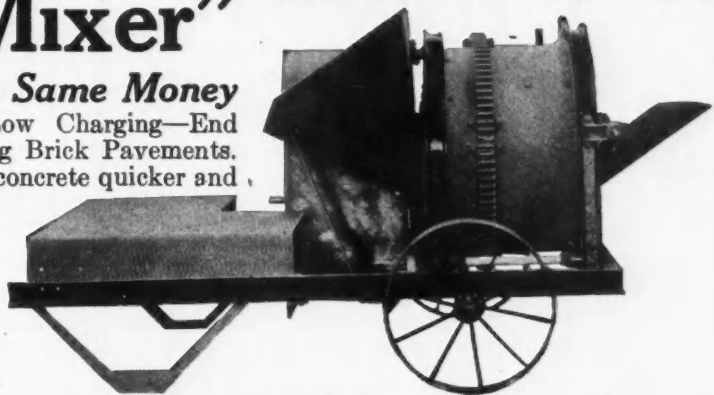
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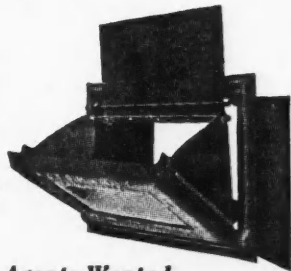
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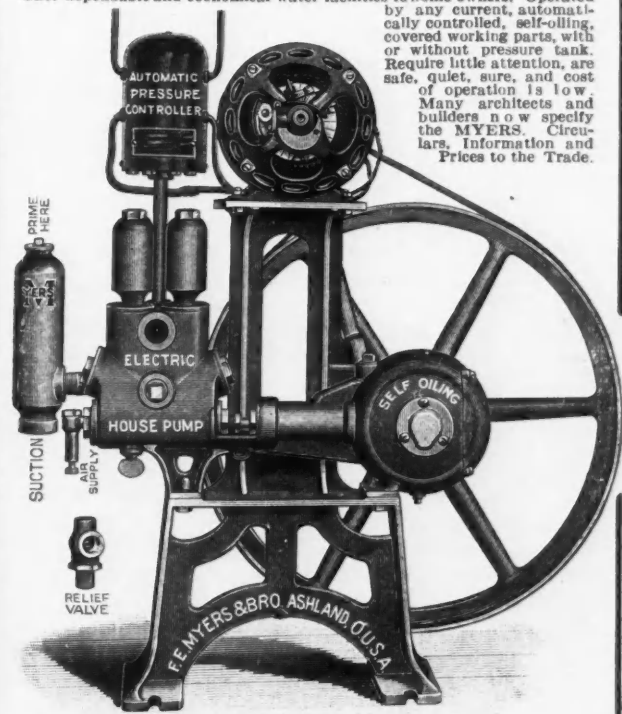
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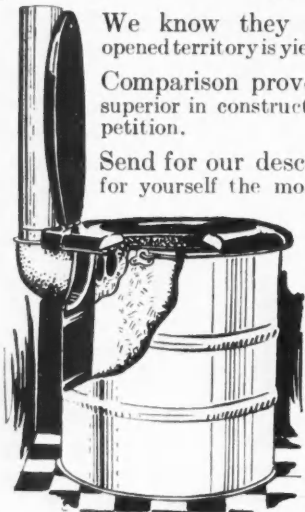


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W. C. Shinn Mfg. Co.
1635 Monadnock Bldg., CHICAGO

Development of Details

(Continued from page 124.)

cate bottom rail of inside sash. Project from jamb section for sheathing, lath and plaster, parting strip and stops.

In Fig. 3 we have the outside casing or architrave with drip cap, also the inside casing, apron and lath and plaster added. The outside elevation is obtained by projecting from the sections. In like manner an inside elevation might be projected from the inside of section.

In conclusion the method of procedure outlined in these three simple details may be applied to any detail, either exterior or interior. The essential thing is to start always with main structural members and work to minor details.



Back Yard Poultry Keeping

(Continued from page 53.)

in construction. The material required is as follows:

Bill of Material

Roof rafters, 5 pieces, 2 by 4 inches by 8 feet long.
Roof plates, 2 pieces, 2 by 4 inches by 8 feet long.
Sills, 4 pieces, 2 by 4 inches by 8 feet long.
Posts, 3 pieces, 2 by 4 inches by 6 feet long; 2 pieces, 2 by 4 inches by 4 feet long.
Stringer, 1 piece, 2 by 4 inches by 8 feet long.

Total pieces required to cut list:

7 pieces, 2 by 4 inches by 16 feet long.

1 piece, 2 by 4 inches by 12 feet long.

Total feet in board measure, 81.

ROOSTS AND DROPPING BOARD.

1 piece, 2 by 3 inches by 16 feet long.

1 piece, 2 by 3 inches by 10 feet long.

Total board measure, 13 feet.

2 pieces, 1 by 12 inches by 16 feet long.

Total board measure, 32 feet.

SHEATHING BOARDS.

Roof, 5 pieces, 1 by 12 inches by 16 feet long.
Two sides, 2 pieces, 1 by 12 inches by 10 feet long; 3 pieces, 1 by 12 inches by 12 feet long; 2 pieces, 1 by 12 inches by 14 feet long.

Front, 2 pieces, 1 by 12 inches by 10 feet long.

Back, 2 pieces, 1 by 12 inches by 16 feet long.

Total feet board measure, 216.

BATTEN STRIPS.

130 linear feet $\frac{1}{2}$ by 2-inch strips, 24 board feet.

24 linear feet $\frac{3}{8}$ by 2-inch strips, for curtain frame, 4 board feet.

ROOFING.

80 square feet roofing paper; nails and tins.

HARDWARE.

2 pairs 8-inch T hinges for door.

1 padlock for door.

3 pairs 4-inch T hinges for curtain frame and rear ventilator.

5 pounds 10-penny wire nails for framing.

10 pounds 8-penny wire nails for sheathing.

5 pounds 4-penny wire nails for stripping.

21 square feet poultry wire, $\frac{3}{8}$ -inch mesh, for front.

3 yards muslin for curtain.

32 rough bricks will build pliers.

FLOOR.

If floor is desired in house, add the following material:

2 pieces, 2 by 4 inches by 16 feet long.

4 pieces, 1 by 12 inches by 16 feet long.

Total feet board measure, 85.

TOTAL LUMBER REQUIRED.

Without floor, 370 board feet.

With floor, 455 board feet.

Lumber can be rough or dressed.

When the soil is well drained and consequently will remain dry no floor need be used in the house, the ground itself serving as the floor. Often a slight dampness can be corrected by filling up the floor several inches above the outside ground with sand, cinders, gravel, or dry dirt. Three or four inches of the surface of the floor, and of the run if a very small run is used, should be removed and replaced with fresh dirt two or three times a year. If the ground is so wet or damp that this condition cannot be corrected by

(Continued to page 128.)

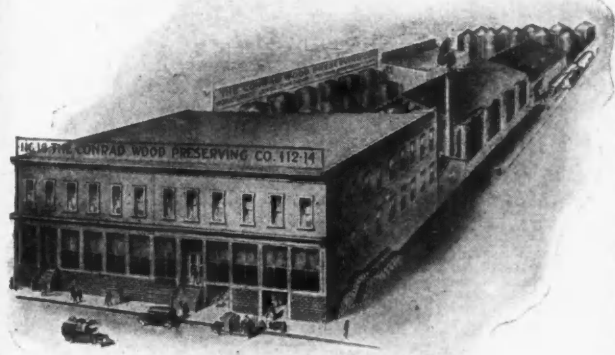
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Conrad's Creosote Stains



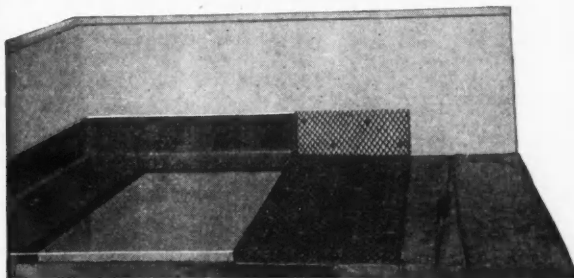
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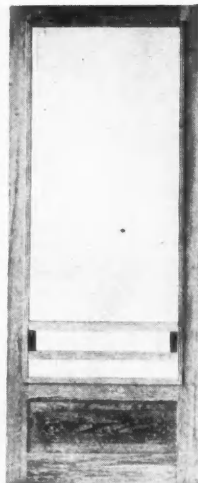
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Sole Manufacturers

Cadillac Lumber Co.
CADILLAC, MICH.

Back Yard Poultry Keeping

(Continued from page 126.)

filling it is best to provide a board floor, as this will help to keep the house dry, will allow easier cleaning, and will promote the general health and welfare of the hens. A house with a board floor should be set on posts or blocks, so that it is 5 to 12 inches above the ground. When this space is left the floor will not rot so quickly and rats are not so likely to take refuge under the house.

In order to keep the flock in a clean and sanitary condition, dropping boards should be provided and roosts above them. This makes it easy to remove the droppings each morning and helps greatly to keep the house free from objectionable odors. A little sand or ashes sprinkled on the dropping board after each cleaning will be found to make the cleaning easier.

The dropping boards and roosts should be placed against the back wall. Here they are out of the way and at the same time where they are least likely to be reached by drafts. The dropping boards should be about 20 to 30 inches from the floor, depending on the height of the building. This gives space enough under them so that the hens have room to exercise and is not too high for the heavier hens to fly up to. The roosts should be 3 or 4 inches above the dropping boards. If more than a single roost is used, they should be on the same level; otherwise all the hens will try to crowd upon the highest roost. A piece of 2 by 4 or 2 by 3, laid on edge and with the upper corners rounded off, makes a good roost. A pole, or even a piece of board 2 or 3 inches wide, may be used. If the roost is of light material and fairly long, it should be supported in the center, as well as at the ends, to prevent it from sagging badly. An allowance of 7 to 10 inches of roost space per fowl, according to the size of the birds, should be made. If more than one roost is used, they should be placed about 15 inches apart.

Nests must be provided and may be very simple. Any box about 1 foot square and 5 to 6 inches deep is suitable. An ordinary orange box with the partition in the middle serves this purpose very well, each box forming two nests. The top is removed, the box laid on its side, and a strip 3 or 4 inches wide nailed across the lower front. Nests can be fastened against the walls of the house or set on the floor. It is preferable to fasten them against the wall, as they take too much floor space if set on the floor. One nest should be provided for each 4 or 5 hens.

The straw or other material used in the nest should be kept clean and not be allowed to get so low that the eggs when laid by the hen will strike the board bottom of the nest, as this will cause them to break and will start the hens to eating the eggs, which is a very troublesome habit and one that is very difficult to break up once it is formed.

(Continued to page 130.)

Steel Barn Door Hanger

Our Catalog Tells the Whole Story



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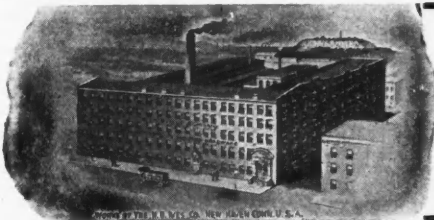
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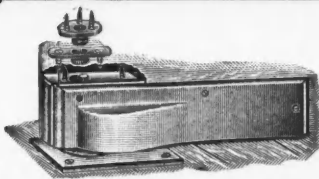
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Back Yard Poultry Keeping

(Continued from page 128.)

A litter of straw or the leaves raked up in the fall about 3 or 4 inches deep, should be used on the floor of the house. This material helps to absorb the droppings and also provides a means of feeding the grain in such a way that the hens are obliged to exercise by scratching for it.

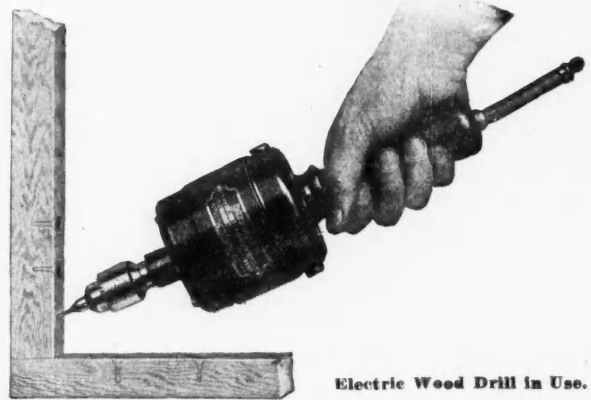
When hens become broody, they should be "broken up" as quickly as possible, for the sooner this is done the sooner they will resume laying. To break a hen of broodiness she should be confined to a small coop, preferably with a slat bottom. Give her plenty of water to drink; she may be fed or not as desired. Not much difference will be found in the time required to break her of broodiness, whether she is fed or made to fast. Usually from 3 to 6 days' confinement will break her, but some hens require 10 to 12 days. The broody hen will be recognized by her inclination to stay on the nest at night, the ruffling of her feathers and her picking at anyone who approaches her, and by the clucking noise she makes. The fact that her broodiness has been broken up can be recognized by the disappearance of these symptoms.

(Continued in the October American Builder)

Electric Wood Drill Speeds Production

The drilling and countersinking of small holes in wood has been slowing up production to such an extent that a new electrical tool to overcome this difficulty has been put on the market.

The accompanying illustration gives a good idea of the style



Electric Wood Drill in Use.

and size of the outfit. It is light and handy, yet powerful. It handles drills with a capacity up to 13/64 inch in wood. Weighs but 5 pounds. Its high speed prevents "stalling" and it will drill and countersink holes at any angle.

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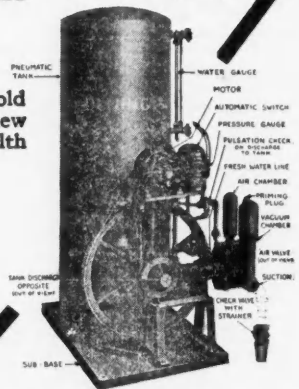
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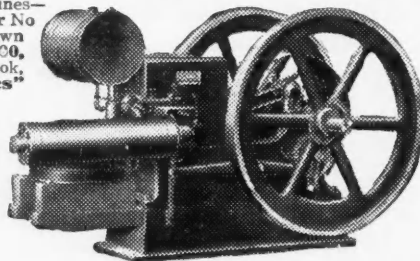
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