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VOL. XXVI

October, 1918

No. 1

U. S. Permit Now Required Before Starting New Building

FARM BUILDINGS APPROVED IF IN THE PUBLIC INTEREST—PROJECTS UNDER WAY CAN BE FINISHED—NO PERMITS NEEDED FOR REPAIRS OR ALTERATIONS

THE War Industries Board authorizes the following:

Because there seems to be doubt in the minds of builders and users of building materials as to the extent of restrictions to be thrown about non-war construction, under plans of the War Industries Board to conserve material, capital, and labor for war work, Bernard M. Baruch, chairman of the War Industries Board, authorizes publication of the full text of the Priorities Division circular, bearing on the subject, which will form the basis for detailed instructions to be sent to the State Councils of National Defense that are to assist the board in carrying out its plans.

Text of Circular

That all interested in the manufacture and sale of building materials as well as those interested in building projects of every character may have a clear definition of or a ready means of ascertaining the uses to which such materials may be put, and be advised of building projects which may be prosecuted during the war with the approval of the War Industries Board, this circular is issued.

Structures, roads, or other construction projects

falling within the following classifications are hereby approved, and no permits or licenses will be required therefor:

- (1) After having first been cleared and approved by the War Industries Board those undertaken directly by or under contract with the War Department or the Navy Department of the United States or the United States Shipping Board, Emergency Fleer Corporation, the Bureau of Industrial Housing and Transportation of the United States Department of Labor, or the United States Housing Corporation;
- (2) Repairs of, or extensions to, existing buildings involving in the aggregate a cost not exceeding \$2,500;
- (3) Roadways, buildings, and other structures undertaken by or under contract with the United States Railroad Administration or a railroad operated by such administration;
- (4) Those directly connected with mines producing coal, metals, and ferro-alloy minerals; and
- (5) Public highway improvements and street pavements when expressly approved in writing by the United States Highways Council.

No building project not falling within one of the

foregoing classes shall be undertaken without a permit in writing issued by or under the authority of the chief of the nonwar construction section of the Priorities Division of the War Industries Board.

Should one contemplating building conceive his proposed project to be in the public interest or of such essentiality that under existing conditions it should not be deferred, then he will make a full statement of the facts in writing, under oath, and present same to the local representative of the Council of National Defense, applying to such representative for his approval of the proposed construction. Should such local representative approve the construction project, he will promptly transmit the application, stating clearly and fully his reasons for approving same, to the chief of the nonwar construction section of the Priorities Division of the War Industries Board, Washington, D. C., for consideration, if need be further investigation and final decision. Should the application be finally approved by the Priorities Division, a construction permit will issue, which will constitute a warrant to manufacturers and dealers who have taken the pledges of co-operation to sell and deliver building materials required in the construction of the licensed building project.

Policy of the Government

While it is not the policy of the Government to interfere unnecessarily with any legitimate business, industry, or construction project, it must be borne in mind that there is an imperative and constantly increasing demand for labor, material, and capital for the production and distribution of direct and indirect war needs, to satisfy which much nonwar construction must be deferred. A full realization of this fact by all loyal and patriotic citizens, including State and municipal authorities, is all that is required to postpone such constructive activities as interfere with the war program. The State and local representatives of the Council of National Defense are with confidence depended upon to fully acquaint the whole people of these United States with the pressing need for the most rigid economy, measured not only in terms of dollars, but in terms of labor, materials, and transportation service. The construction projects which must be now deferred may be undertaken when we shall have won the war and will then furnish employment to the returning artisan now on the battle front, as well as those who will then be released by strictly war industries.

Yours, very truly,

EDWIN B. PARKER,

Priorities Commissioner.

BERNARD M. BARUCH,

Chairman War Industries Board.

Approved:

Only Projected Buildings Are Involved in Priority Ruling

Under a ruling made Sept. 12 by the War Industries Board, practically all buildings under way may be completed and dealers in building material may continue to supply needed material.

Regarding new building projects, representatives of the State councils are to investigate each of them and report on each operation separately, with recommendations as to the essentiality considered in connection with war needs, to the nonwar construction section of the War Industries Board, of which D. R. McLennan is head. Until these reports have been received and considered, the Priorities

Division states it is not in a position to pass intelligently on various applications now made for priorities for building material.

Text of Statement

Judge E. B. Parker, Priorities Commissioner, authorized the following explanatory statement:

"Circular No. 21 (as quoted above) issued by the Priorities Division of the War Industries Board under date of Sept. 3, 1918, dealing with nonwar construction, applies only to projected buildings and not to those already begun. Where a substantial portion of a building has already been constructed, manufacturers and distributors of and dealers in building materials may continue to furnish such materials for the completion of such building, pending further action by the War Industries Board. The local representatives of the Council of National Defense are requested to make surveys of all building activities in their respective territories and report same as promptly as possible to their State chairmen, together with their recommendations concerning the necessity for the continuance of such construction or deferring same until after the war. The State chairman will in turn forward such reports, with their recommendations, to D. R. McLennan, chief of the nonwar construction section of the Priorities Division of the War Industries Board, Washington, D. C."



Farm Buildings in the Public Interest

THE AMERICAN BUILDER is firmly of the opinion that most farm building improvements will be promptly approved under the above regulations and the necessary permit will issue. The farmer is asked to keep his food producing factory running full time and at top efficiency; for "Food will win the war." Certainly he will not be denied the new corn crib or granary he needs to keep out the rats and the mold, nor the hog house that would permit him to double

"THE man who under fire abandons his trade-mark or allows his business to shift for itself is a business slacker who is helping the enemy to win."

—W. O. RUTHERFORD,

Vice-President B. F. Goodrich Rubber Co.

his pork production, nor the modern dairy barn that cuts in half the labor of caring for his milch cows.

The local representatives of the State Councils of Defense, with whom rests the responsibility of receiving all applications for building permits and passing first judgment on them, may be certain that no farmer will want to build, this year or any other year, unless he has a real compelling reason for building. He doesn't invest his money for the fun of it, but to produce more marketable surplus on his farm.

For this reason practically all proposed farm building improvements will be "in the public interest" as contemplated by the War Board in issuing these regulations.

Retail lumber dealers and the rural builders will patriotically co-operate in the program of regulation which the war has made necessary for the building industry. The less essential projects must wait so that all our efforts can be centered on the more essential. In all farming communities this means improved barns, granaries, implement sheds, silos and out buildings of every sort to house the crops and protect the livestock; also it means farmhouses and tenant houses.

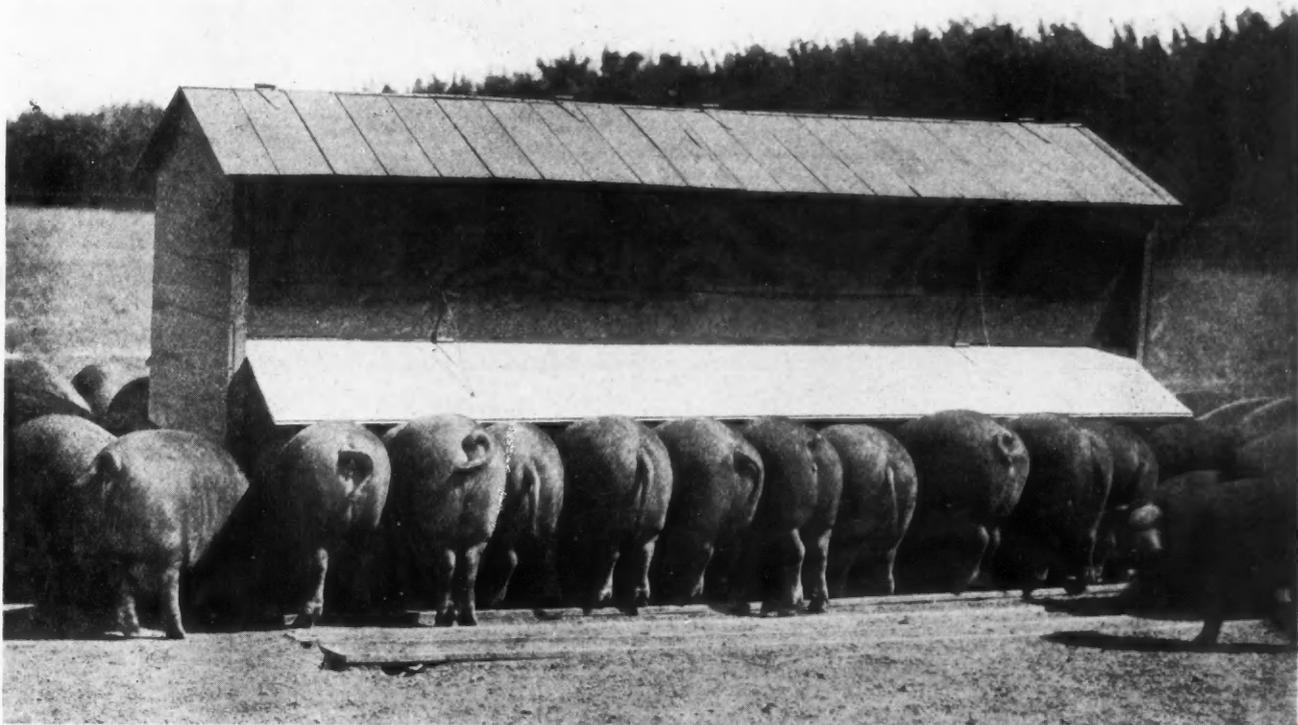


Because This Scene Is so Common on American Farms Makes It no Less a Crime. Millions of Dollars go to Ruin Every Year Just for the Want of Farm Implement Sheds. Lumber Dealers and Builders Are to Blame, for They Ought to Get Out and SELL These Buildings to Every Farmer. Now Is the Time to Put the Farm Machinery Away for the Winter. Start a Machinery Shed Campaign NOW.

Self-Feeder Saves Work and Makes Bacon

It is in line with war plans to build farm structures which will add both to production and conservation.

The self-feeder for hogs here shown should be built for every farmer. Mr. Pig knows what is good for him better than any other feeder. Pasture, however succulent, should be supplemented by mixed feeds, corn feeds, tankage and mineral feeds, and they should always be accessible and the hog will balance his own ration.



If Farm Help Is High Priced and Hard to Get. Make the Pigs do More of the Work Themselves. This Self-Feeder Is Easily Made of Short Stuff Around the Lumber Yard. It Brings Home the Bacon.

The Duty of the Employer in the Reconstruction of the Crippled Soldier

By Douglas C. McMurtie

Director Red Cross Institute for Crippled and Disabled Men, New York City

WE must count on the return from the front of thousands of crippled soldiers. We must plan to give them on their return the best possible chance for the future.

Dependence cannot be placed on momentary compensation in the form of a pension, for in the past the pension system has proved a distinct failure in so far as constructive ends are involved. The pension has never been enough to support in decency the average disabled soldier, but it has been just large enough to act as an incentive to idleness and semi-dependence on relatives or friends.

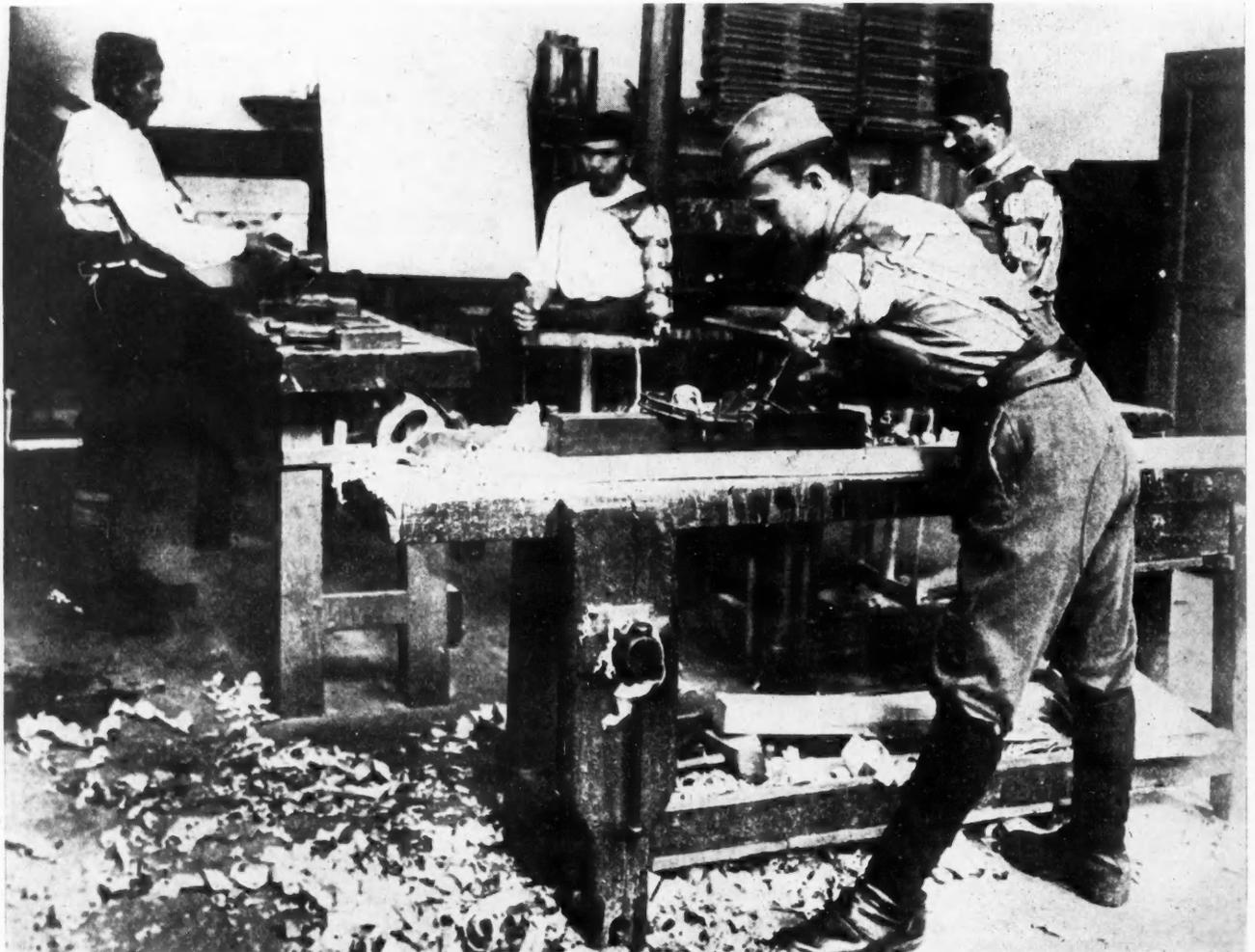
The only compensation of real value for physical disability is rehabilitation for self-support. Make a man again capable of earning his own living and the chief burden of his handicap drops away. Occupation is, further, the only means for making him happy and contented.

Soon after the outbreak of hostilities the European countries began the establishment of vocational training schools for the rehabilitation of disabled soldiers. They had both the humanitarian aim of restoring crippled men to the greatest possible degree and the economic aim of sparing the community the burden of unproductivity on the part of thousands of its best citizens. The movement had its inception with Mayor Edouard Herriot of the city of Lyons, France,

who found it difficult to reconcile the desperate need for labor in the factories and munition works while men who had lost an arm or a leg, but were otherwise strong and well, were idling their time in the public squares. He therefore induced the municipal council to open an industrial school for war cripples, which has proved the example and inspiration for hundreds of similar schools since founded throughout France, Italy, Germany, Great Britain, and Canada.

The disability of some crippled soldiers is no bar to returning to their former trade, but the injuries of many disqualify them from pursuing again their past occupation. The schools of training prepare these men for some work in which their physical handicap will not materially interfere with their production.

The education of the adult is made up largely of his working experience. The groundwork for training in his past occupation must under no circumstances be abandoned. The new trade must be related to the former one or be, perhaps, an extension or specialization of it. For example, a man who had done manual work in the building trades may by instruction in architectural drafting and the interpretation of plans be fitted for a foreman's job, in which the lack of an arm would not prove of serious handicap. A



Crippled Serbians Working in the Carpentry Shop, Hospital No. 4 of the Orthopaedic Center at Lyons, France.



THE HOUSE THAT IVAN BUILT.

This model more than 5 feet high was constructed by a Russian laborer who enlisted in the British Army and was disabled in battle. He made it during the first month of his re-education as a carpenter at Whitby, Canada. It is significant because other men like him, with no previous experience in woodwork, will for the first time in their lives become skilled artisans.

trainman who had lost a leg might wisely be prepared as a telegrapher, so that he could go back to railroad work, with the practice of which he is already familiar.

Whatever training is given must be thoro, for an adult cannot be sent out to employment on the same basis as a boy apprentice. He must be adequately prepared for the work he is to undertake.

The one-armed soldier is equipped with working appliances which have supplanted the old familiar artificial limb. The new appliances are designed with a practical aim only in view; they vary according to the trade in which the individual is to engage. For example, the appliance for a machinist would be quite different from that with which a wood turner would be provided. Some appliances have attached to the stump a chuck in which various tools or hooks can interchangeably be held. The wearer uses these devices only while at work; for evenings and holidays he is provided with a "dress arm," which is made in imitation of the lost natural member.

An important factor in the success of re-educational work is an early start, so that the disabled man shall have no chance to go out unemployed into the community. In even a short period of exposure to the sentimental sympathy of family and friends, his "will to work" is so broken down that it becomes difficult again to restore him to a stand of independence and ambition. For this reason, therefore, the plan for his future is made at as early a date as his physical condition admits, and training is actually under way before the patient is out of the hospital.

In the readjustment of the crippled soldier to civilian life, his placement in employment is a matter of the greatest moment. In this field the employer has a very definite responsibility.

But the employer's duty is not entirely obvious. It is, on the contrary, almost diametrically opposite to what one might superficially infer it to be. The duty is not to "take care of" from patriotic motives, a given number of disabled men, finding for them any odd jobs which are available, and putting the ex-soldiers in them without much regard to whether they can earn the wages paid or not.

Yet this method is all too common. A local committee of employers will deliberate about as follows: "Here are a dozen crippled soldiers for whom we must find jobs. Jones, you have a large factory; you should be able to take care of six of them. Brown, can you not find places for four of them in your warehouse? And Smith, you ought to place at least a couple in your store."

Such a procedure cannot have other than pernicious results. In the first years of war the spirit of patriotism runs high, but experience has shown that men placed on this basis alone find themselves out of a job after the war has been over several years, or, in fact, after it has been in progress for a considerable period of time.

A second weakness in this method is that a man who is patronized by giving him a charity job, comes to expect as a right such semi-gratuitous support. Such a situation breaks down rather than builds up character, and makes the man progressively a weaker rather than a stronger member of the community. We must not do our returned men such injury.

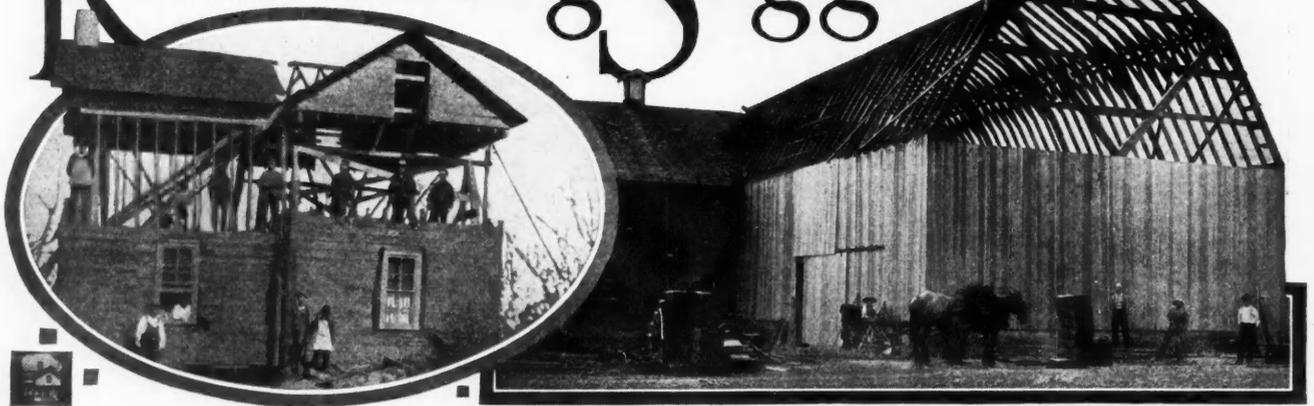
The third difficulty is that such a system does not take into account the man's future. Casual placement means employment either in a make-shift job as watchman or elevator operator such as we should certainly not offer our disabled men except as a last resort—or in a job beyond the man, one in which, on the cold-blooded considerations of product and wages, he cannot hold his own. Jobs of the first type have for the worker a future of monotony and discouragement. Jobs of the second type are frequently disastrous, for in them a man, instead of becoming steadily more competent and building up confidence in himself, stands still as regards improvement and loses confidence every day. When he is dropped or goes to some other employment, the

(Continued to page 116.)



This Crippled French Soldier Has Taken Up Cabinet Making and with help of Mechanical Arm Device Is Rapidly Becoming proficient.

Remodeling Suggestions



How to Build on Additions

PART III OF A VERY TIMELY SERIES

By Charles G. Peker, Architect

WHEN additional room is desired the extra room is usually had by building on an addition. Care should be taken to get this to harmonize with the rest of the house. As a usual thing, in order to get it good looking, the line of windows (especially the tops), belt courses, roof lines, etc., should be in line with those of the older part of the house.

It is very necessary that the same size and kind of material be employed as near as possible—it looks absurd to see a clapboard extension on a shingle or

U. S. Wants Buildings Kept in Repair No Permit Required for Repair or Remodeling Up to \$2,500.00

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“(2) Repairs of, or extensions to, existing buildings involving in the aggregate a cost not exceeding \$2,500.”

there be no straight line joint. The same is true of shingles, brick or stone and stucco; get it all to match.

We give some illustrations of the right and wrong way of making an extension to an existing building that are self-explanatory.

One must not make the mistake of mixing the architecture; you must carry it out on the lines of the old building if you want to have it look right.

The hardest part sometimes is the roof; in some cases it takes quite a bit of figuring to get it to look well, as some parts may cut off awkwardly; our illustrations show some of these problems and how they have been met.

Of course when an extension is roofed it should be with the same material as the original roof.

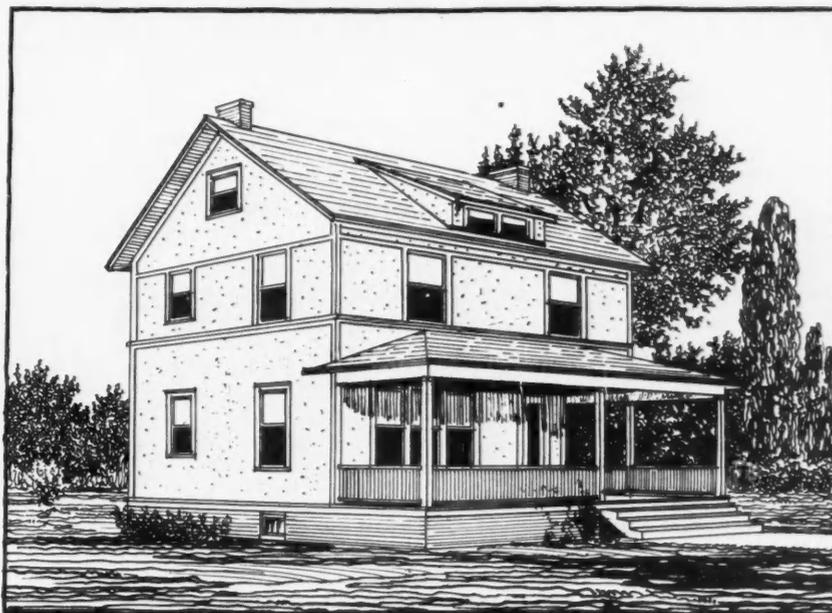
Sometimes a flat roof is used in connection with a pitched roof, and it can be made attractive at that by some simple means—a railing or balustrade joining the original roof often is the solution.



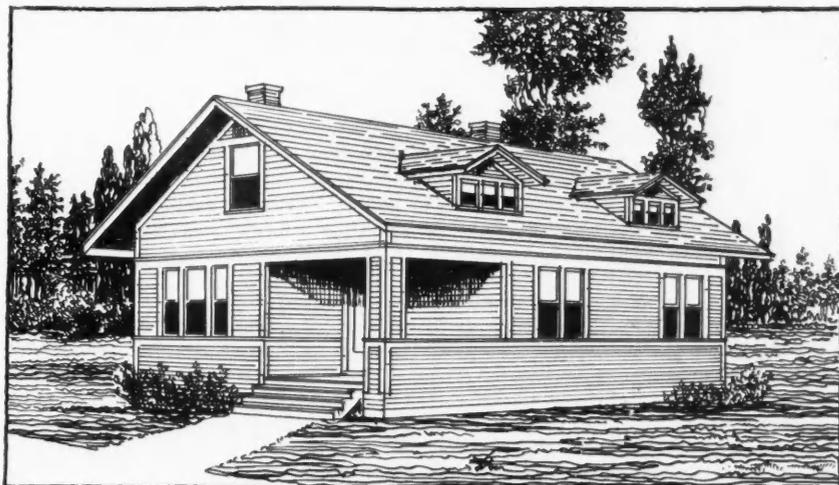
Flat Dormer on Gambrel Roof Continues Upper Roof Slope Without a Break.

To get light to an additional room placed in an attic a dormer is the solution; this should be so made that it will not spoil the appearance of the roof, or, in fact, the entire house design. In these different illustrations are shown various types of dormers that can be readily built on existing roofs; each dormer illustrated is well suited to the roof it is shown on.

As a general rule it is well to have a hipped dormer on a hipped roof and a gable dormer on a gable roof. A flat dormer can be either on a gable end roof or a hipped roof with ridge. There is no hard and fast rule to be followed; there are many good examples of a gable dormer on a hipped roof, etc. A very interesting case is where a good deal of room is required and it would cut up the interior too



Broad Flat Dormer on a Gable Roof.



Two Gable Dormers on a Gable Roof.

natural than to have that additional room downstairs, with a bathroom or even just room for a water closet and lavatory? At the same time an additional bedroom or so is perhaps added to the second floor.

One point to be looked out for is privacy; a house or extension should be so planned that it will not be necessary to go thru one bedroom to reach another. The bathroom should also be located so that one does not need to go thru a bedroom to reach it; just a little thought given to the planning will get it right.

To get the bathroom properly located there perhaps will be some

much to have separate dormers, and it would spoil the outside appearance to have one big dormer; the difficulty can be overcome by making a combination of a flat and gable dormer as shown. To form some break a slight recess or extension of a few inches is all that is necessary.

To get the necessary headroom in the attic, if nearly the whole floor space is to be taken up by rooms, it may be necessary to raise the roof; this is not such a hard thing to do.

The most frequent reason for adding an extension is to gain one or more bedrooms; quite often a bedroom is desired downstairs; mother is growing older and it will be easier for her to be "downstairs." So what is more



Hipped Dormers on Hipped Roof.



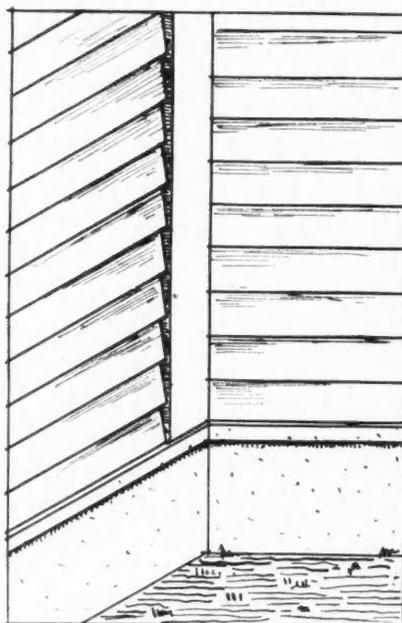
An Attractive Dormer Group That Gives a Large Amount of Room Space.

waste space, but that can always be used for another closet, since the house with too many closets has never yet been invented.

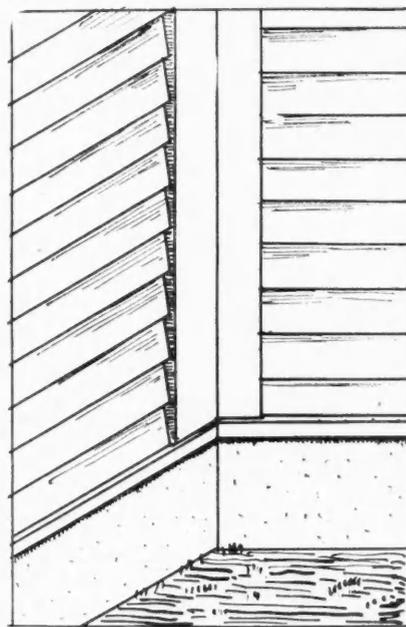
Of course one can add on for sun parlors and sleeping porches, and these will be described shortly, but here we are describing the bedrooms, kitchens, etc.

The old house may have simply a living room and kitchen and no separate dining-room. If one is desired it can be had by an addition and using that as the dining-room, or using the old kitchen or living room as the dining-room and using the new addition as the kitchen or living-room.

Care must be taken to get the floor level in the extension the same as that of the older part. A slight variation is apt to occur; but use a wide



Old Section. New Section.
Saving a Piece of Corner Board.



Old Section. New Section.
The Better Way—Using Another Corner Board.



Composite Double Dormer to Give Large Room Space.

threshold and have the one edge rabbeted so it will fit over the joint level on both sides and the difference will never be noticed.

In the illustrations given here a good many "before" and "after" floor layouts are given, so that one can obtain an idea of what may be done to improve an old house.

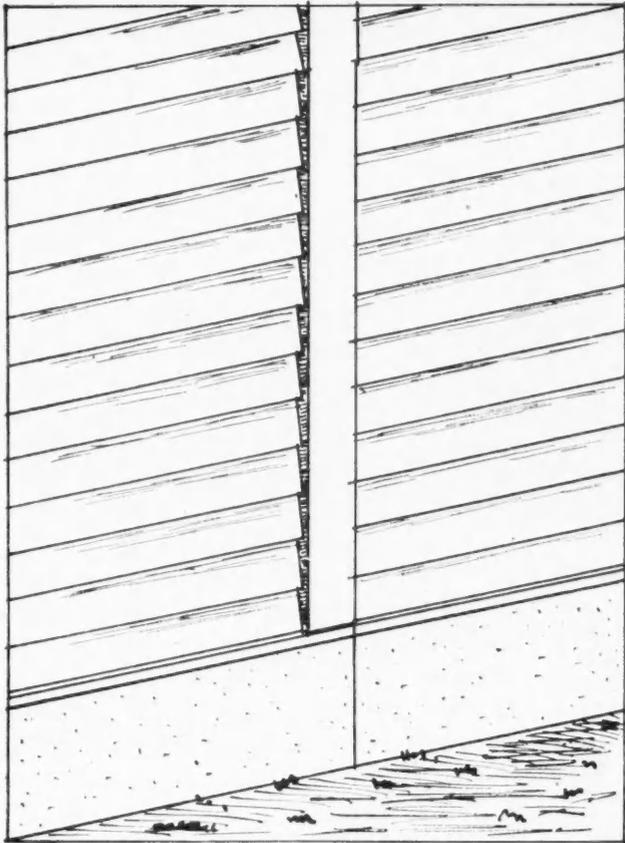
A few words can be said about the proper planning of a bedroom that will give one an idea of what to aim for, also what to avoid.

One of the most important accessories to a bedroom is closet space, but don't arrange the closets so that they spoil the appearance of an otherwise nicely laid-out bedroom.

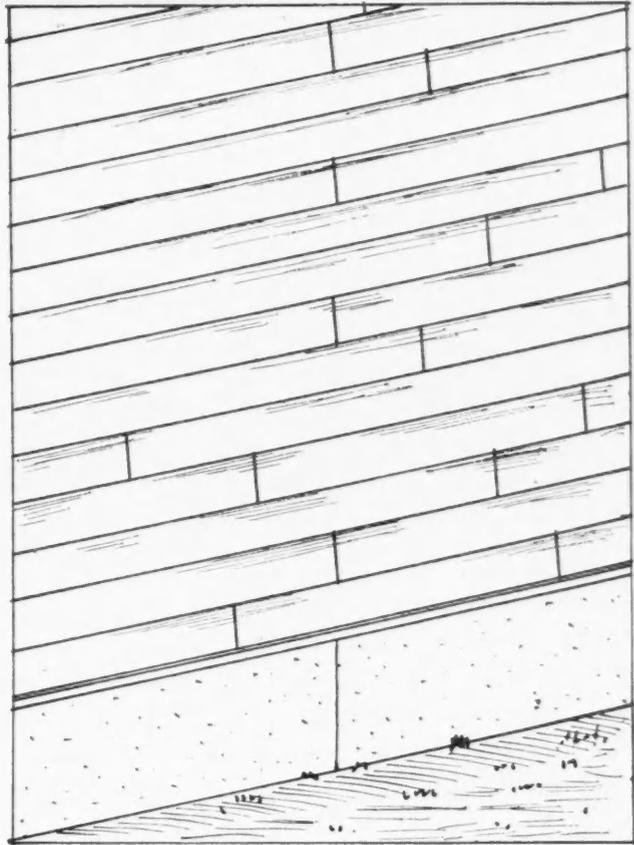
One must take care when ordering where the windows and doors are to be so as to get enough blank wall space so that a bed can be conveniently placed; also room must be left for dresser, chiffonier or other large pieces of furniture that are likely to be used in the room.

It is a very nice thing to get an arrangement so that a bed can be placed in at least two positions in a room without interfering with anything else. This sounds simple (and is simple); nevertheless this is a small point that is often overlooked.

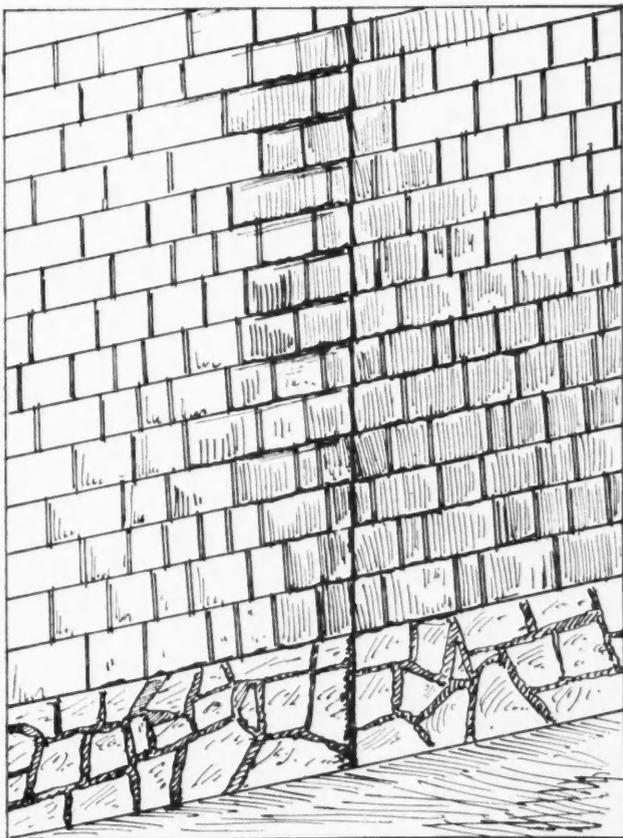
Another little point in room arrangement is to keep the bathroom and sleeping-rooms as widely separated



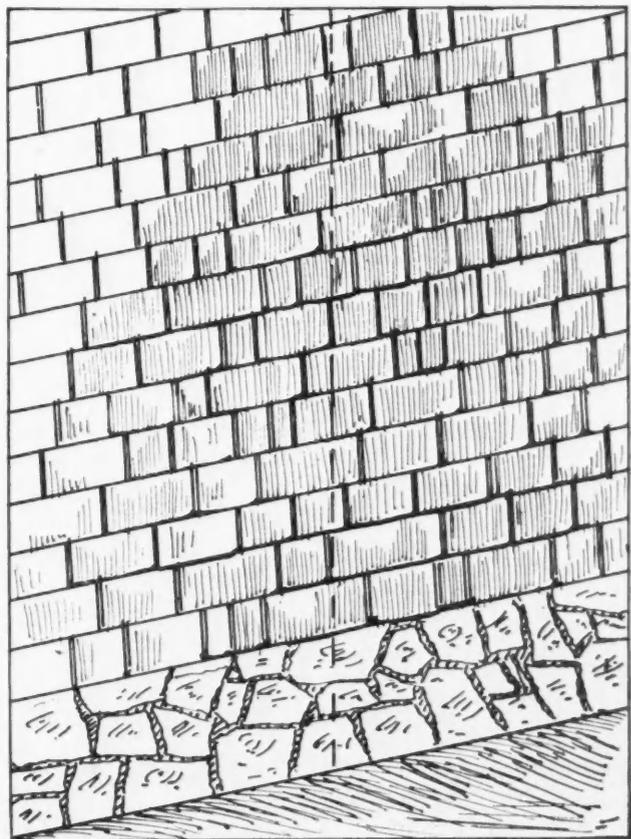
Old Section. **New Section.**
The Poor Way of Siding an Extension, Leaving the Old Corner Board in Place.



Old Section. **New Section.**
The Better Way, Removing the Corner Board and Cutting Away Pieces of the Siding.



Old Section. **New Section.**
The Poor Way of Shingling an Extension; the Joint of the Old and New Part Shows All the Way Down.



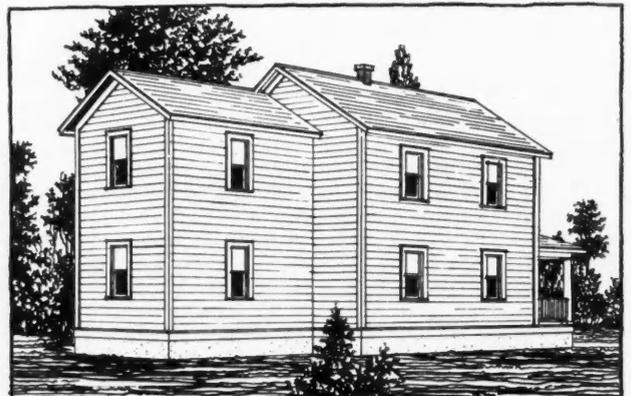
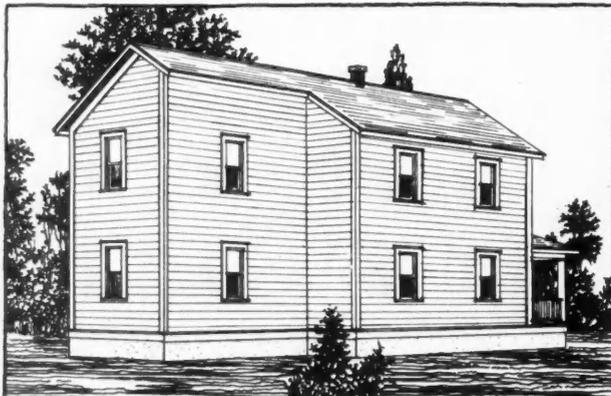
Old Section. **New Section.**
The Better Way, a Few Shingles Removed from Old Section and New Ones Woven In; Foundation Stones Intermingled in Like Manner.



A Hipped Roof Can be Changed to a Gable-End Roof, Gaining Needed Light and Room.

from the living and cooking rooms as possible. This applies especially to bungalow and two-family or apartment construction and has been well taken care of in some cases by arranging the sleeping-rooms and bath on one side of a structure and the other rooms on the opposite side, with a connecting hall between. This avoids having the bathroom or bedrooms open direct from any of the living rooms, and places the bedrooms

in a much quieter location than otherwise. A frame house can very easily have an opening made in the walls, but care must be taken so that there is plenty of support for the joists of the upper story walls; usually a couple of joists or a light truss will give all the needed support. Where a part of a stone, brick or concrete wall is to be removed the upper wall can be safely carried on a steel beam, but it must have sufficient bearing on the wall on either side of the opening. Sometimes it is desirable to have a cellar under a house that has none; where the house is supported on posts it is not such a hard thing to do. Several long timbers are put under the house and securely supported by cribbing placed as far away from the house as possible, so that the pressure on the earth will not force it into the excavation. When the excavating is finished the foundation is built like a new building up to the sill in parts, when the long supporting timbers are removed and the balance of foundation wall filled in.



Wrong Method and a Better Way of Roofing an Extension Built Onto the Rear.



A Poor Looking Method of Adding on an Extension, But a Method That Is Very Popular in a Certain Large Eastern City.

Where instead of being built on posts the house was built on a foundation wall going three feet in the ground the method shown in the illustration is used to get the depth necessary for the cellar without using underpinning and outside excavation; of course, it does not give as large a cellar on the floor, but it saves a lot of expense.

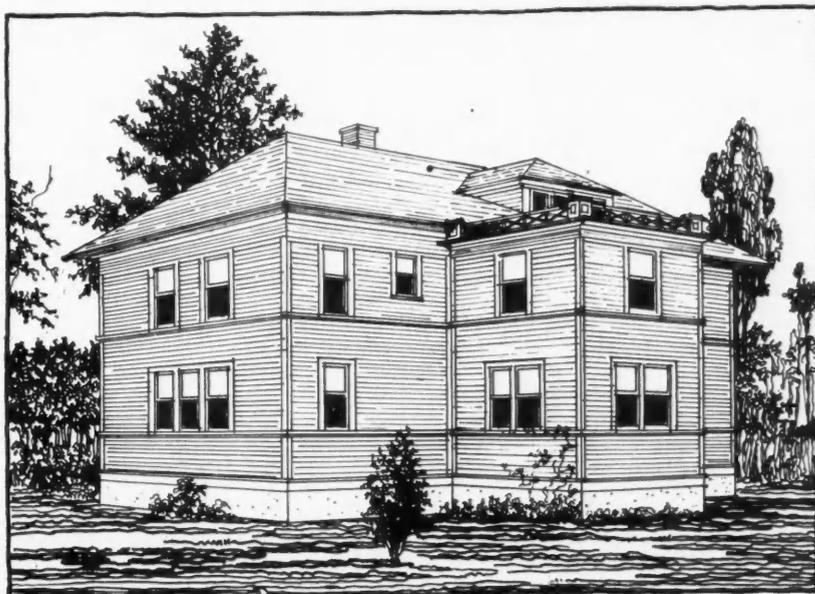
Adding a Kitchen Extension

The group of plans on page 30 illustrate the "before and after" of a small house of four rooms which was enlarged into a very convenient modern home of five rooms by building onto the rear a ten-foot extension, which is used as a kitchen.

The old kitchen was remodeled into an attractive dining-room. The old



Hipped Roof Extension to a Hipped Roof House.



Extension Neatly Roofed with Flat Balcony with Rail.

rear door is now the entrance to the closet; the rear window was removed and the space used as a doorway to the kitchen; the old left-side window was also removed and replaced by a double mullion window. Both old windows were used again in the new kitchen addition. A new chimney was built to serve the kitchen, and this was run on the outside of the rear wall of the old building.

The partition between the hall and the parlor was removed, making a large living-room, and a neat brick fireplace was built. A cased opening was made between the living-room and dining-room in place of the old small doorway, the other door was

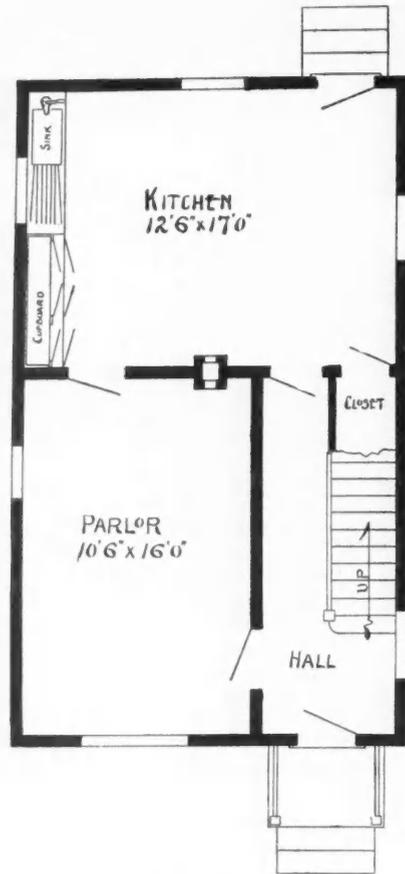
removed and the space walled up. The doors that were removed were used in the new part, so that nothing was wasted and but few new pieces of millwork had to be bought.

Both the dining-room and the living-room had all the old painted trim removed and new substituted, which was finished so that the grain of the wood came out prettily.

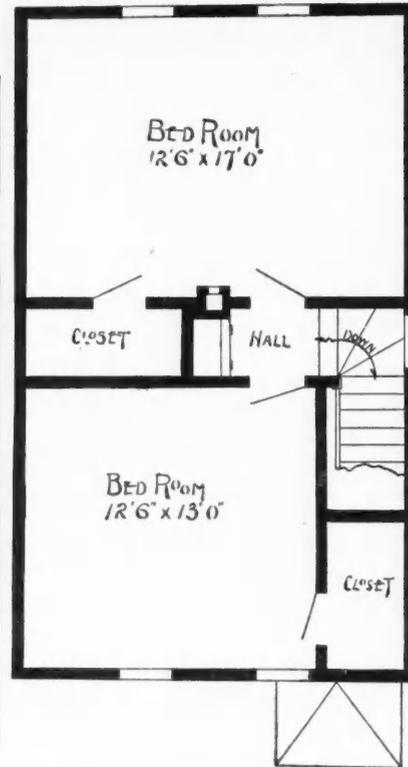
Upstairs the big rear bedroom was partitioned off, the studs from the torn-out downstairs partition being used for this purpose. In this way, securing a new bathroom required but little new material. The bathroom was a much desired improvement, and the rest of the space made a delightful little sewing-room.



An Improper Way to Roof an Extension to a Hipped Roof House.



Old First Floor Plan.



Old Second Floor Plan.

was the removal of the roof except the part that was over the porch; this was simply cut thru and the ends supported temporarily until the new side wall was in place.

The kitchen ceiling was supported by 2x4-inch joists or cellar beams that were supported directly on the wall plate. The ceiling joists were left as they were and new 2x8-inch floor joists set alongside of them to support the second floor. On the side studs the plates for the side walls were set.

For the rear wall a very novel construction had to be used. The bedroom was wanted a certain size and there was not enough space left for it when the necessary space was taken out for the bathroom. The difficulty was easily overcome by having the rear of the bedroom extend out over the rear wall of the first floor. To prevent an awkward appearance, as if one block was put unevenly on top of another, brackets were placed at each end, and this gave them the appearance of supporting the overhanging portion and, instead of being an

One improvement that was not made was the building of a new porch across the front; this the owner decided to leave for another time.

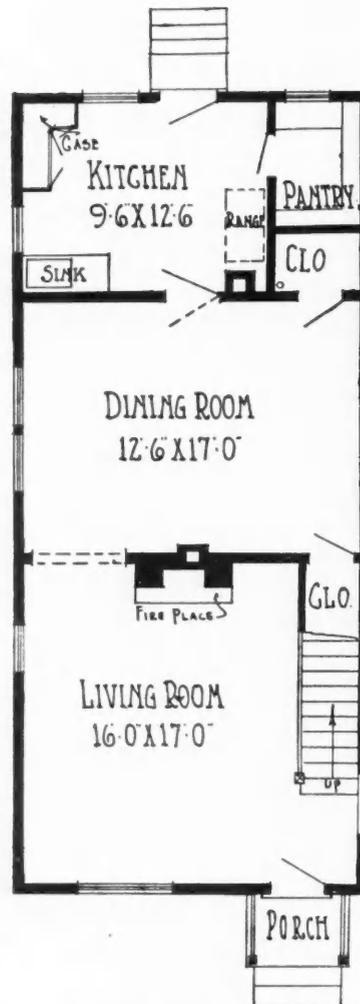
Adding a Bedroom and Bathroom Above a Kitchen Extension

Opposite is rather an interesting case of a remodeling job. Originally the house had but four rooms, and later the kitchen addition was built at the rear.

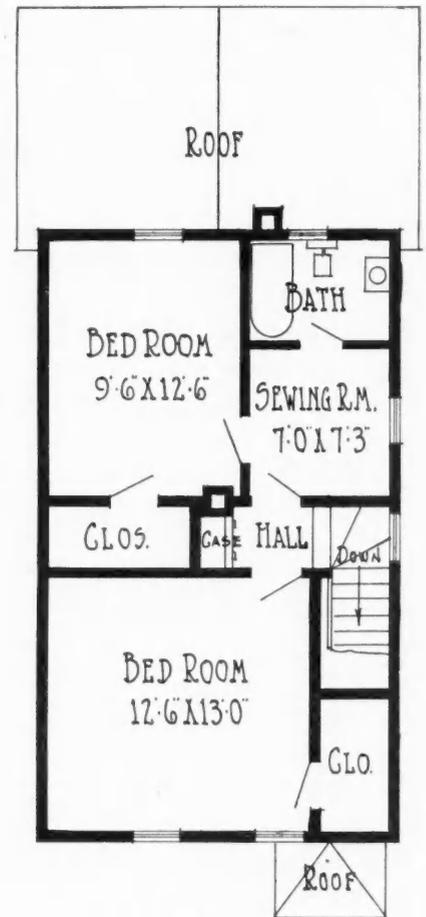
As the family grew larger an additional bedroom was required, and at the same time a bathroom was a convenience that was desired; and this was possible now since a pressure tank water system was to be installed in the cellar so that running water could be had.

The space over the kitchen was utilized for this new improvement; just how it was arranged is shown on the new second floor plan. The bathroom was located directly over the space where the kitchen sink is placed, so that the piping could be installed in a straight line, this being the most economical way.

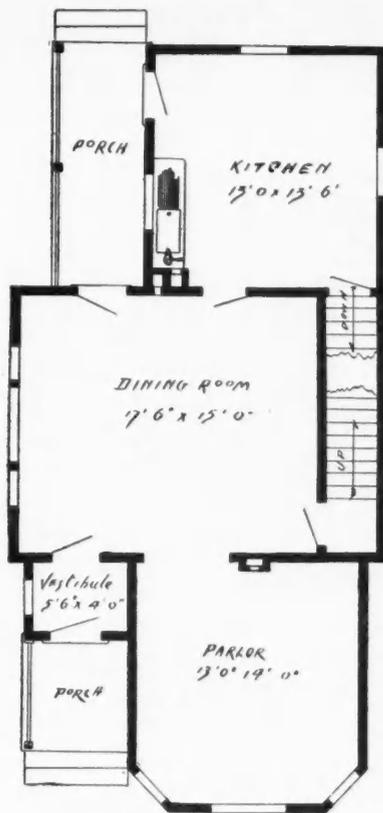
The first step in the remodeling



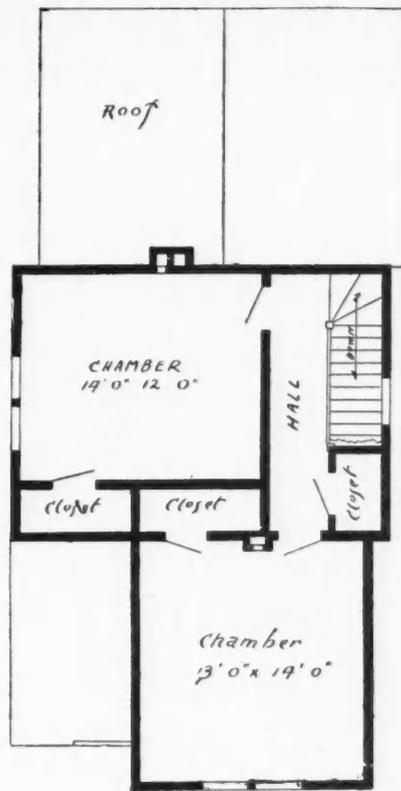
New First Floor Plan.



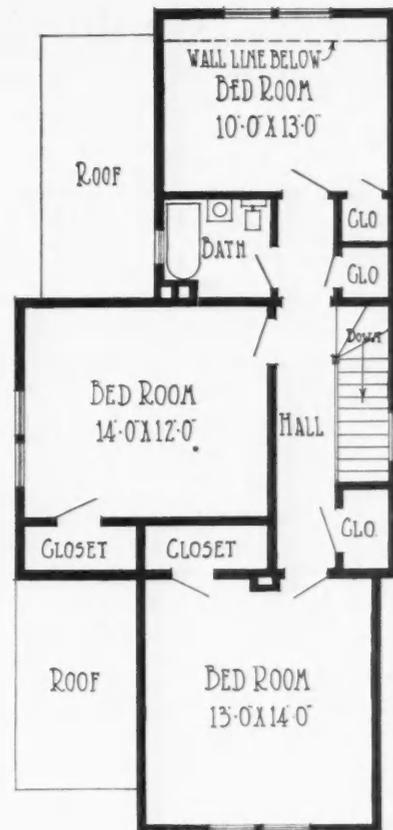
New Second Floor Plan.



First Floor Plan Not Changed.



Old Second Floor Plan.



New Second Floor Plan.

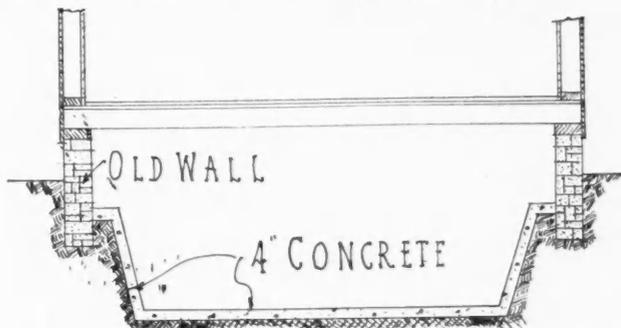
eyesore, it added to the appearance of the house.

The construction was very simple—pieces of 4x4-inch were spiked to the place, and on this the 2x8-inch joists were placed, being notched down. The under part of the projecting portion was sheathed, then covered with tar paper and beaded ceiling put on as a finish. The space between the joists of this overhang were filled with shavings so as to insulate it against the cold.

Repairing Farm Buildings

By John Upton

WITH the present prices of lumber there will be many farm buildings to repair, and as this class of work is new to some of us, a few hints may be of help. Some of these old buildings are right down on the ground, and the first step is to get them up and put new sills under them, and perhaps a wall. To raise the building you will want one or more jack screws, unless it is small enough so that you can use



Method of Making a Cellar Without Disturbing Foundation Wall.

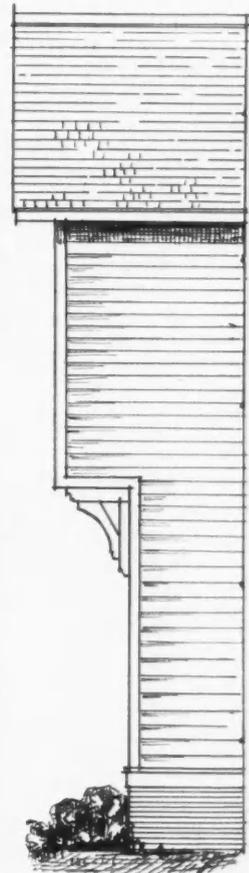
pries. Good long pries weighted down with stones will help a lot in lifting a building even tho you have jacks.

In some cases you will want to get the building blocked up and put the wall and concrete floor in before you put the sills in, or you may build a cement wall and floor just at one side or one end of the building, and when this has set move the building onto it.

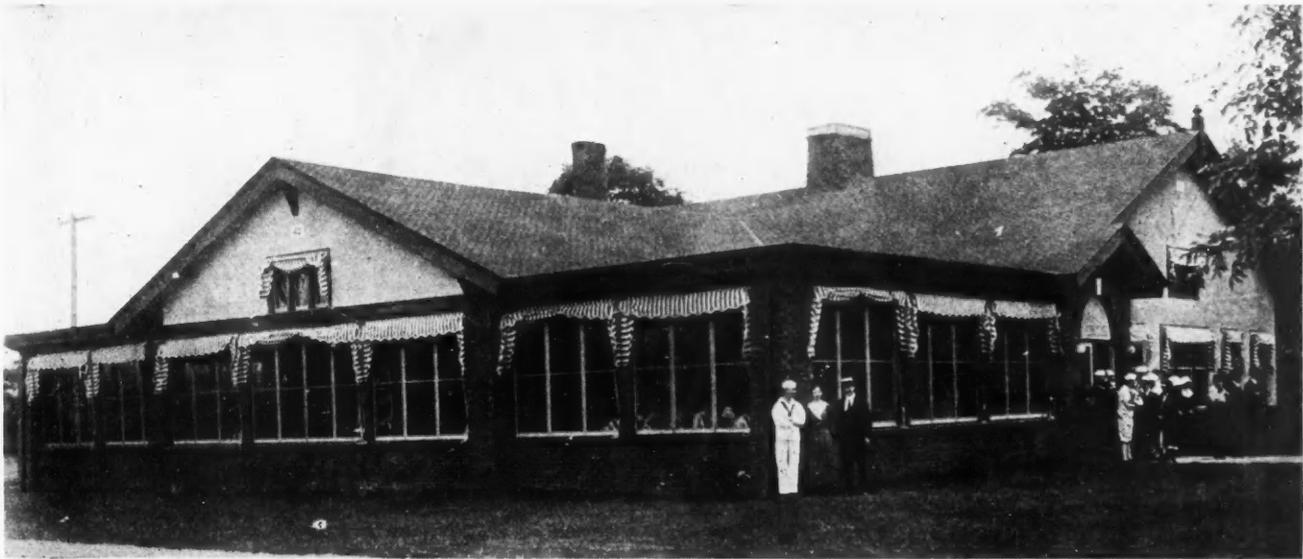
The sills can be made of plank, doubled if needed. It is not difficult to move a small building a short distance, if one has a few round sticks for rollers and some plank for them to roll on.

To cover the sides it may be best to use the old boards put on horizontally and then shingle over them, putting the shingles six inches to the weather. By putting on sheathing paper this makes a good tight wall, and the shingles can be painted so as to give a good-looking building at

(Continued to page 114.)



How a Part of Upper Floor May Extend so as to Provide Needed Room.



Hostess House at Great Lakes Naval Training Station

Important Buildings at the Camps

The Hostess Houses! What a wealth of joy and comfort they have brought to countless army and navy men and to their families. Simple of architecture, furnished with a quiet elegance, possessing all of the comforts of one's own home, they fill in splendid fashion a crying need in the camps throuout the continent. To the Young Women's Christian Association belongs the credit for these hostess houses —forty-six of them being open now and twenty-four more building, in army camps, aviation fields, naval stations and marine barracks. Included in this group are nine for the colored troops, these under the supervision of colored women. The houses were designed and built for the comfort and convenience of mothers, wives and sweethearts, to say nothing of other relatives of our boys in service. Aside from the cheeriest

of living-rooms with its broad fireplaces, there is a cafeteria and nursery in connection with each. This splendid work of the Young Women's Christian Association has full Government sanction and no hostess house is built in any camp except at the direct request of the commandant.

MILDRED JOHNSON.

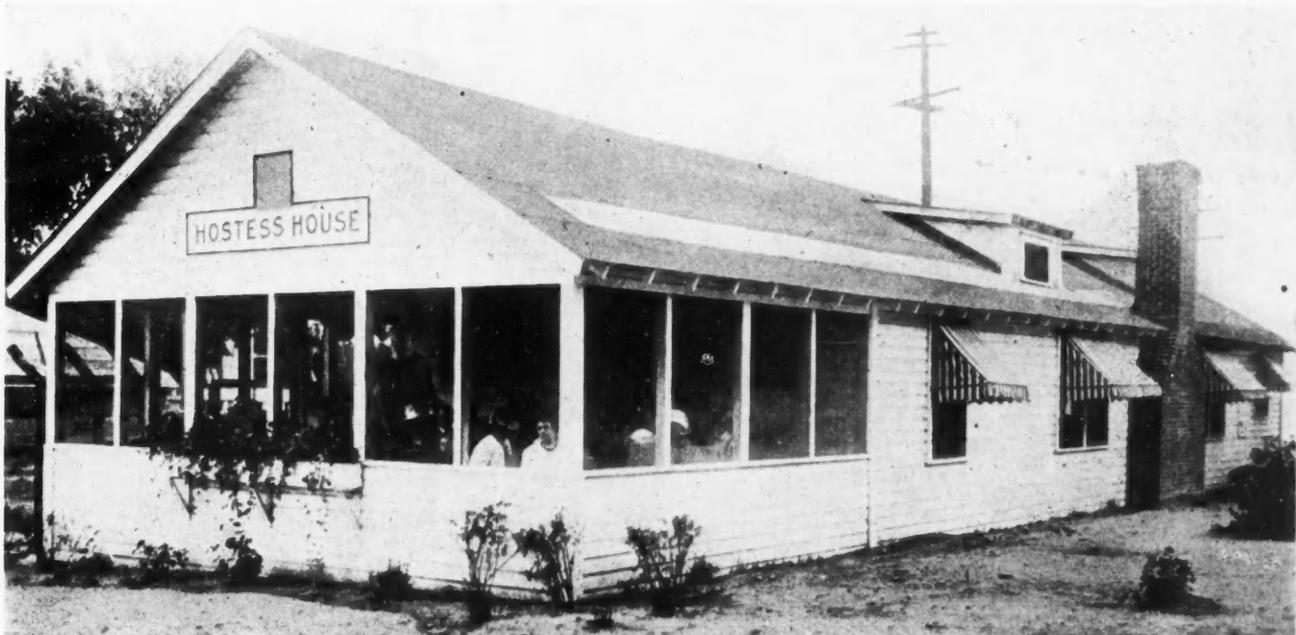


FOR artillery, automatic rifles, and small arms, and for ammunition for them, we have spent over \$3,700,000,000.

Every Liberty Loan subscriber helps to arm our soldiers.

We have spent over \$120,000,000 just for staple supplies for our army, such as flour, bacon, rice, etc.

Every subscriber to the Liberty Loan helps feed our soldiers.



Hostess House at the Aviation School, St. Paul, Minn.

AMERICAN BUILDER BUILDING PLANS



Blue Prints of Dutch Colonial Home

FOUR FULL PAGE PLATES GIVE WORKING DRAWINGS TO SCALE OF THE WELL DESIGNED, MODEST SIZE, DUTCH COLONIAL DWELLING ILLUSTRATED BELOW

IN the simple Dutch Colonial home good looks are had at no extra cost. It is impossible to plan more economically than the rectangular layout devoid of projections or angles and all covered by one straight roof.

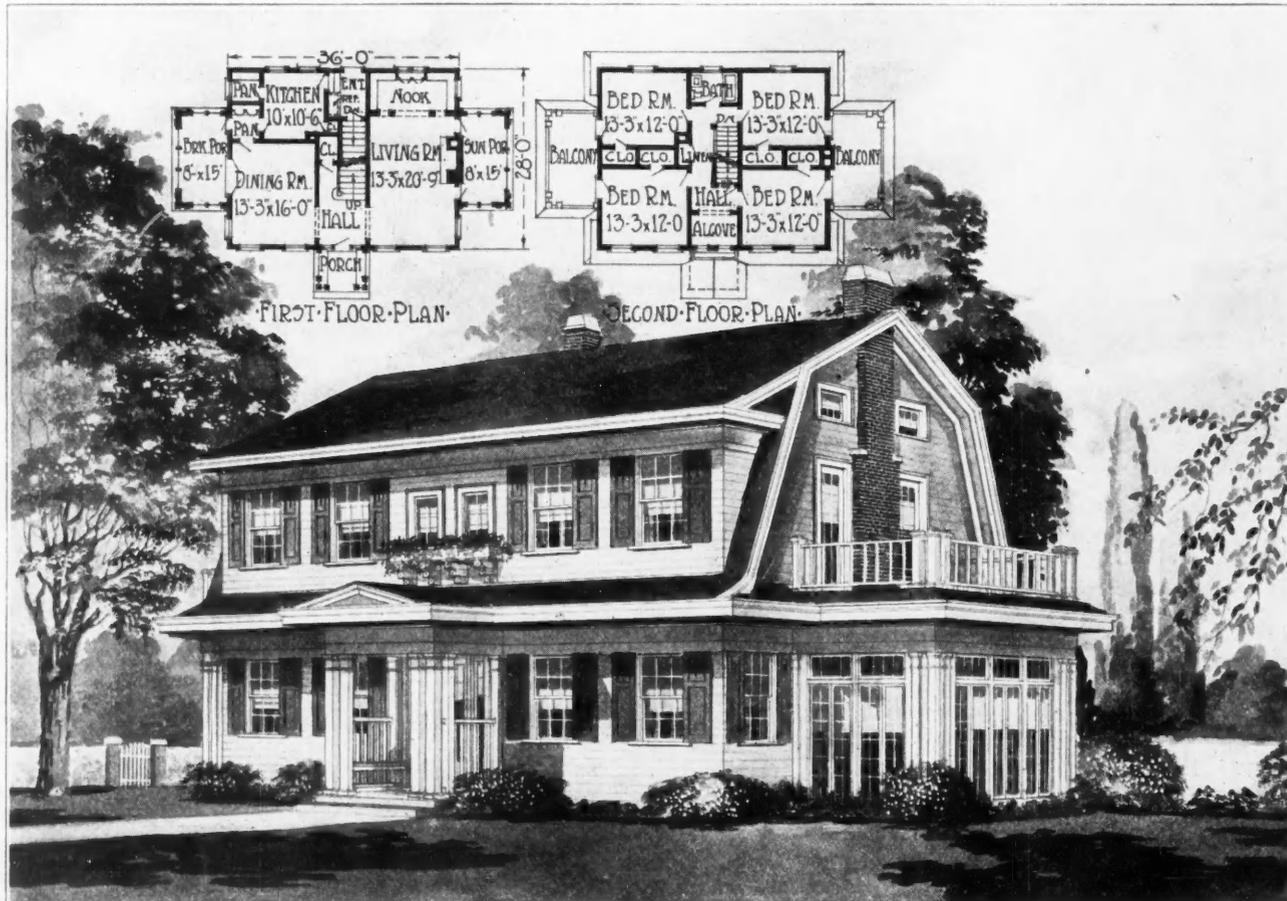
Ignoring for the moment the two glassed-in porches, this Dutch Colonial design is entirely contained within the four walls of a 28 by 36-foot box. The second story is practically the same size, but the gambrel roof with multiple dormer on each side cuts down the height so that there is quite a saving in expense, without loss of space.

The secret of the architectural success of this is, of course, its symmetry. Draw a center line cutting the front door, and you will find that every architectural element, every window, shutter, flower box, and

porch detail, is exactly balanced by a similar element on the other side. This well-balanced arrangement is naturally pleasing and restful.

The interior carries out also this balanced arrangement; with the stair hall thru the middle, big living room on one side, and the dining room, pantry, kitchen group on the other. One porch is designated sun parlor; the other a breakfast room or outdoor dining room. On the second floor are four bedrooms and bath. The stairway goes up to the third floor, which is just high enough to work in a maid's room comfortably.

The four blueprint sheets following give all the information needed to build this house. We are pleased to offer these plans to our readers, feeling confident that they will be able to build direct from them.



Architect's Perspective Showing How the Dutch Colonial Home Will Look When Built. Working Drawings For This Dwelling Are Presented in the Blueprint Supplement Immediately Following.

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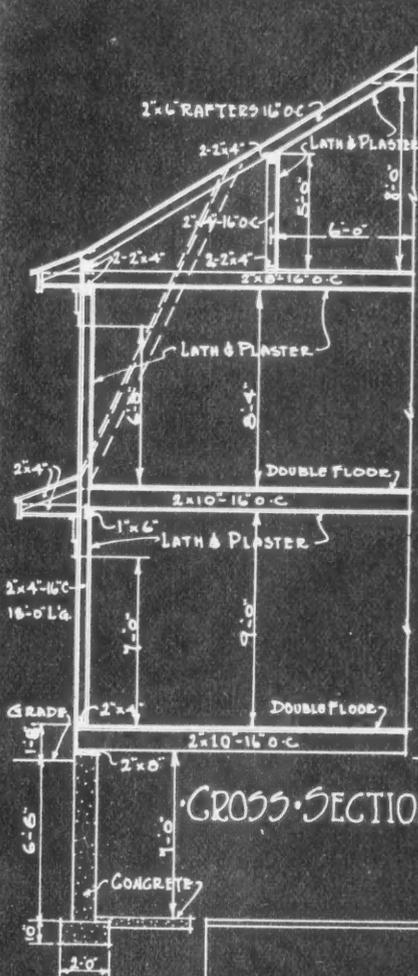
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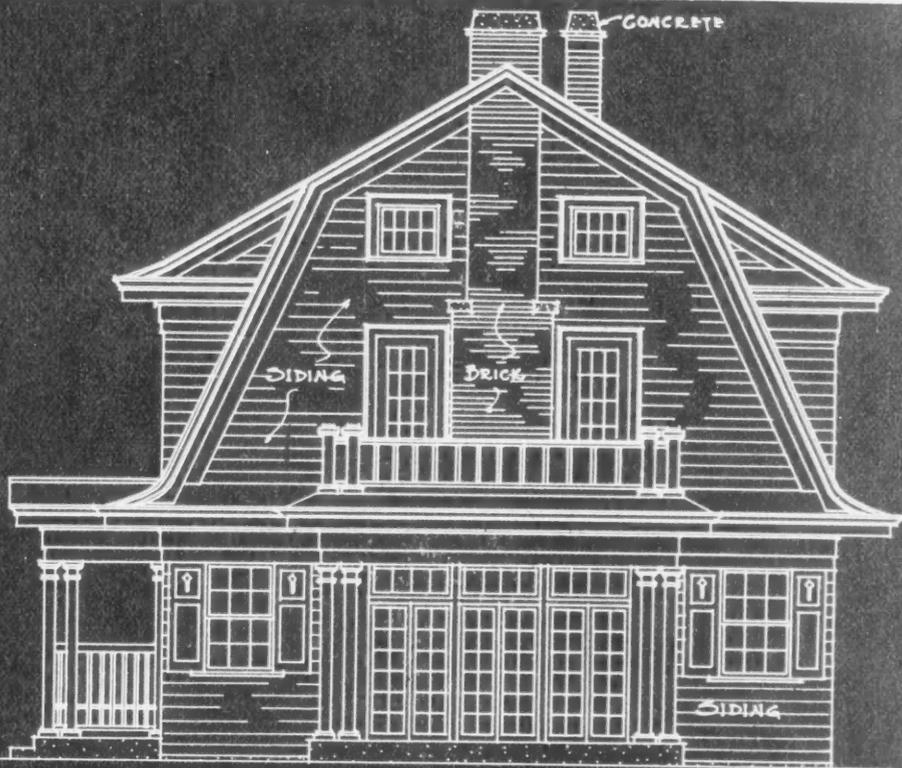
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AMERICAN BUILDER BUILDING PLANS

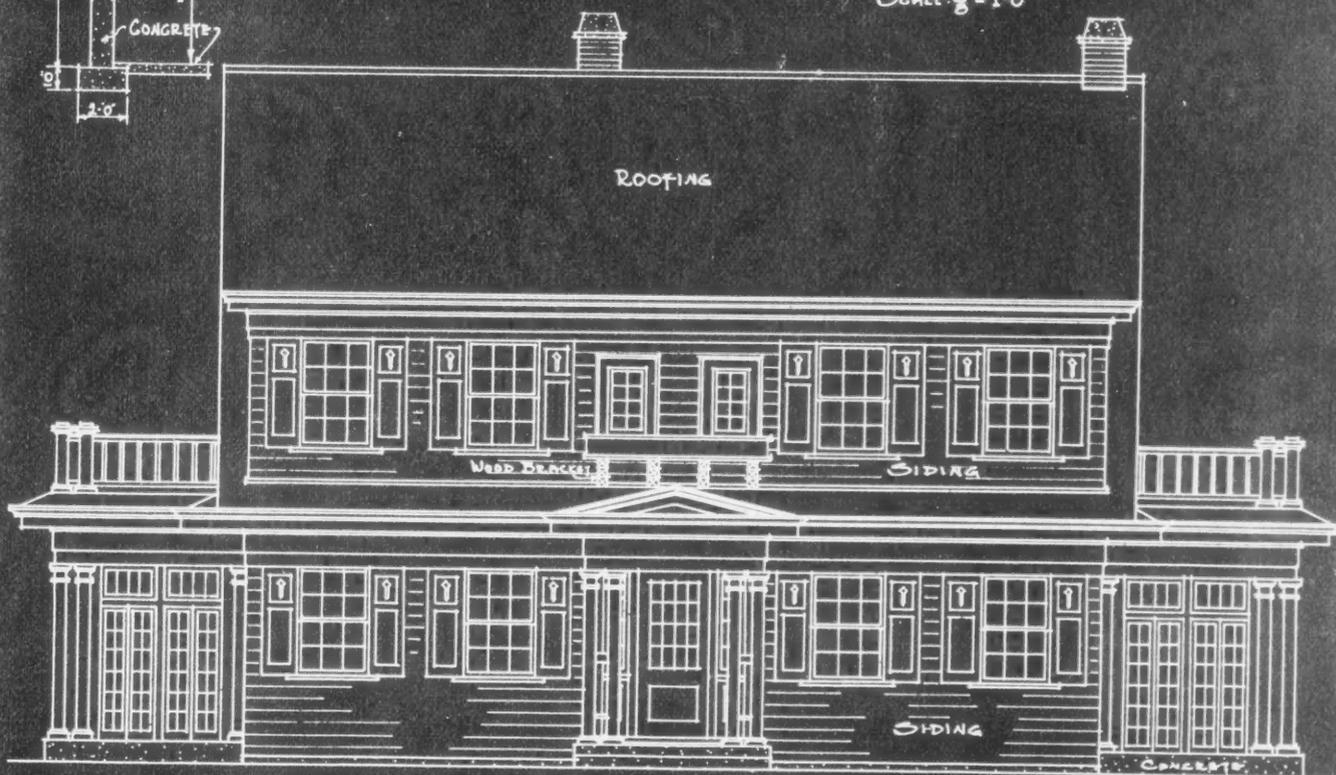


CROSS SECTION



SIDE ELEVATION

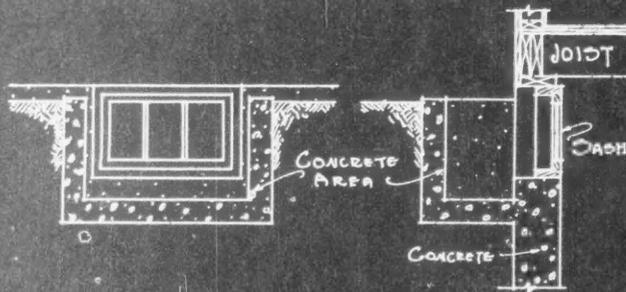
SCALE: $\frac{1}{2}$ " = 1'-0"



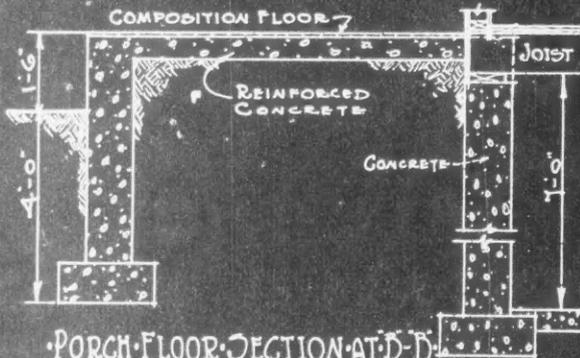
FRONT ELEVATION

SCALE: $\frac{1}{2}$ " = 1'-0"

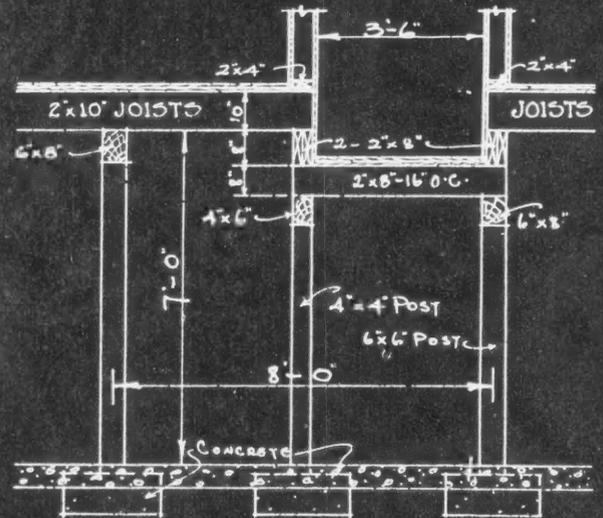
AMERICAN BUILDER BUILDING PLANS



DETAILS OF AREAS FOR CELLAR WASH.

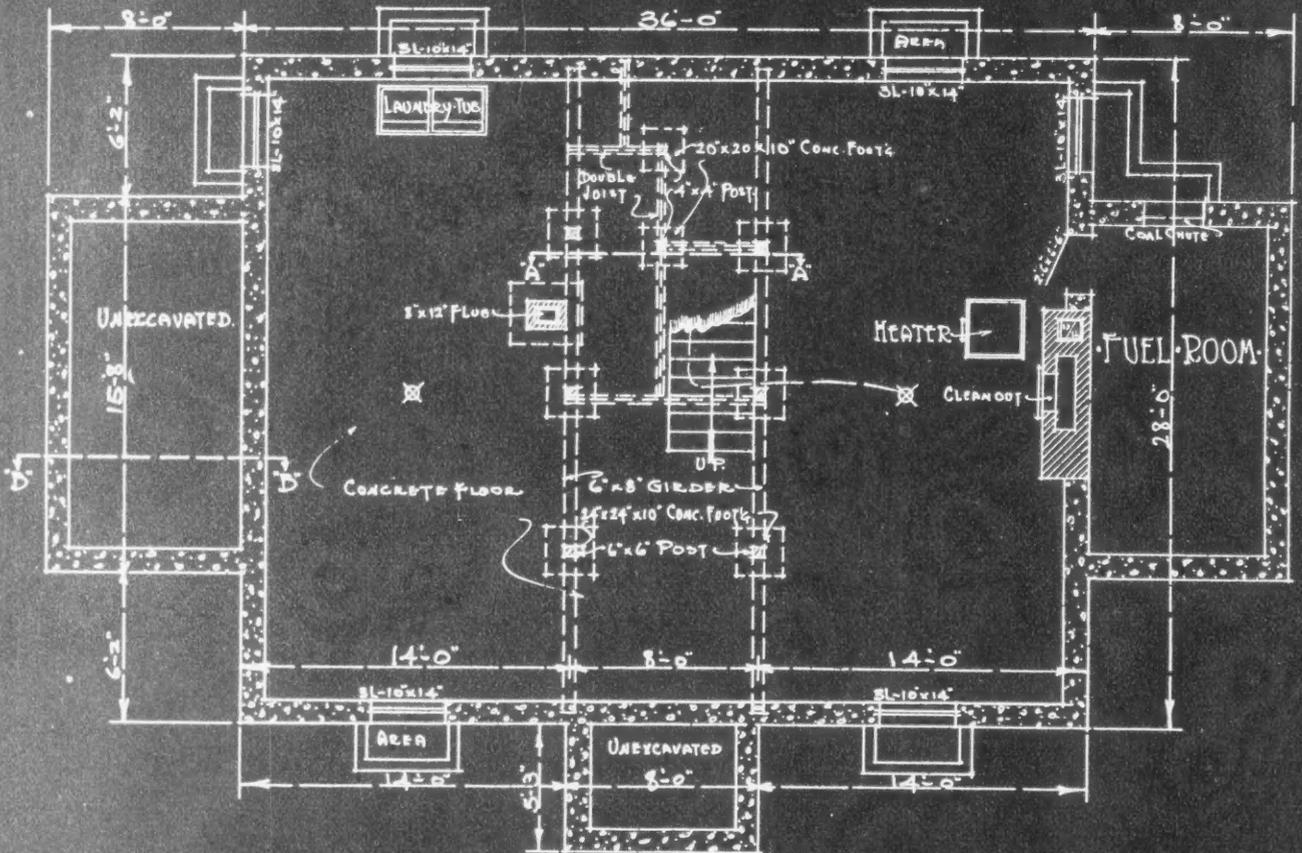


PORCH FLOOR SECTION AT D-D



FLOOR SECTIONS AT A-A

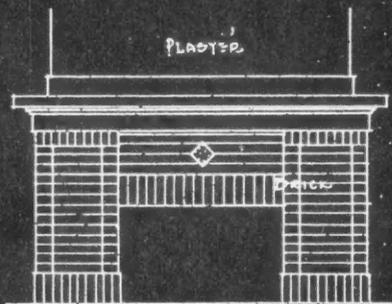
BASEMENT DETAILS
SCALE: 1/4" = 1'-0"



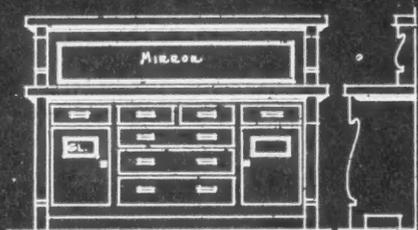
BASEMENT PLAN

SCALE: 1/8" = 1'-0"

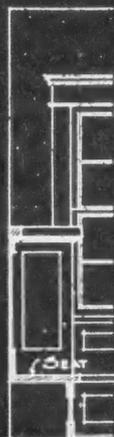
AMERICAN BUILDER BUILDING PLANS



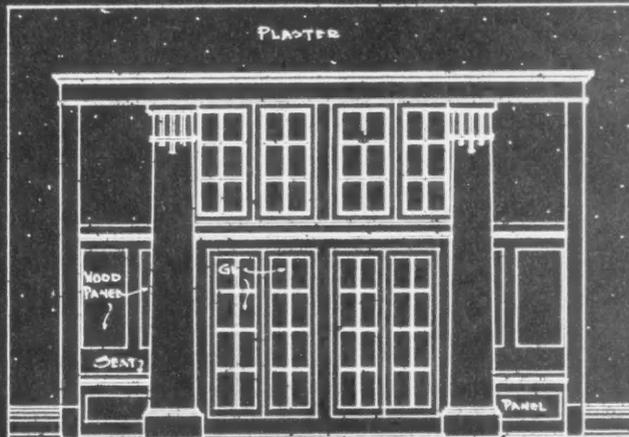
FIRE PLACE



BUFFET SIDE



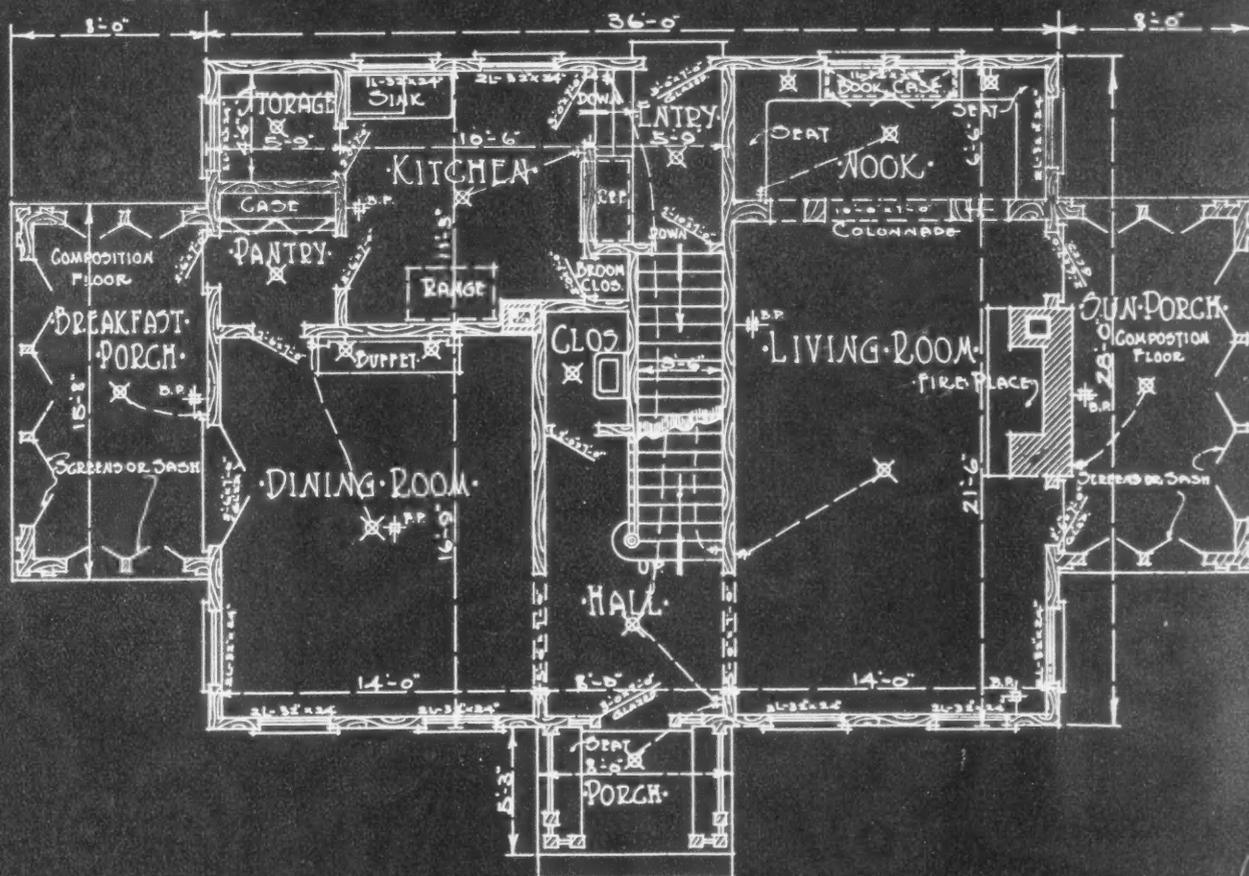
SECTION



VIEW OF NOOK FROM LIVING ROOM

INTERIOR DETAILS

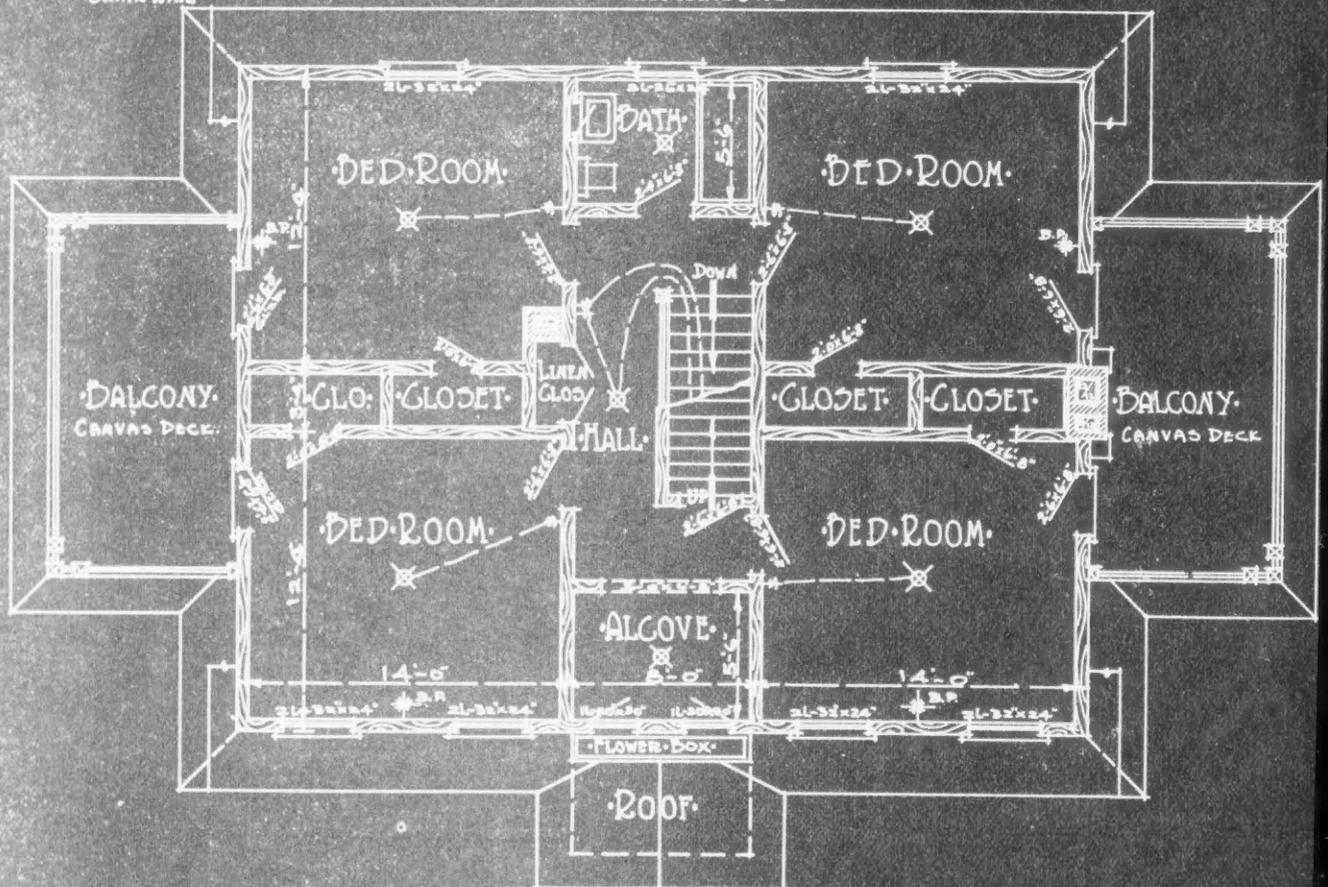
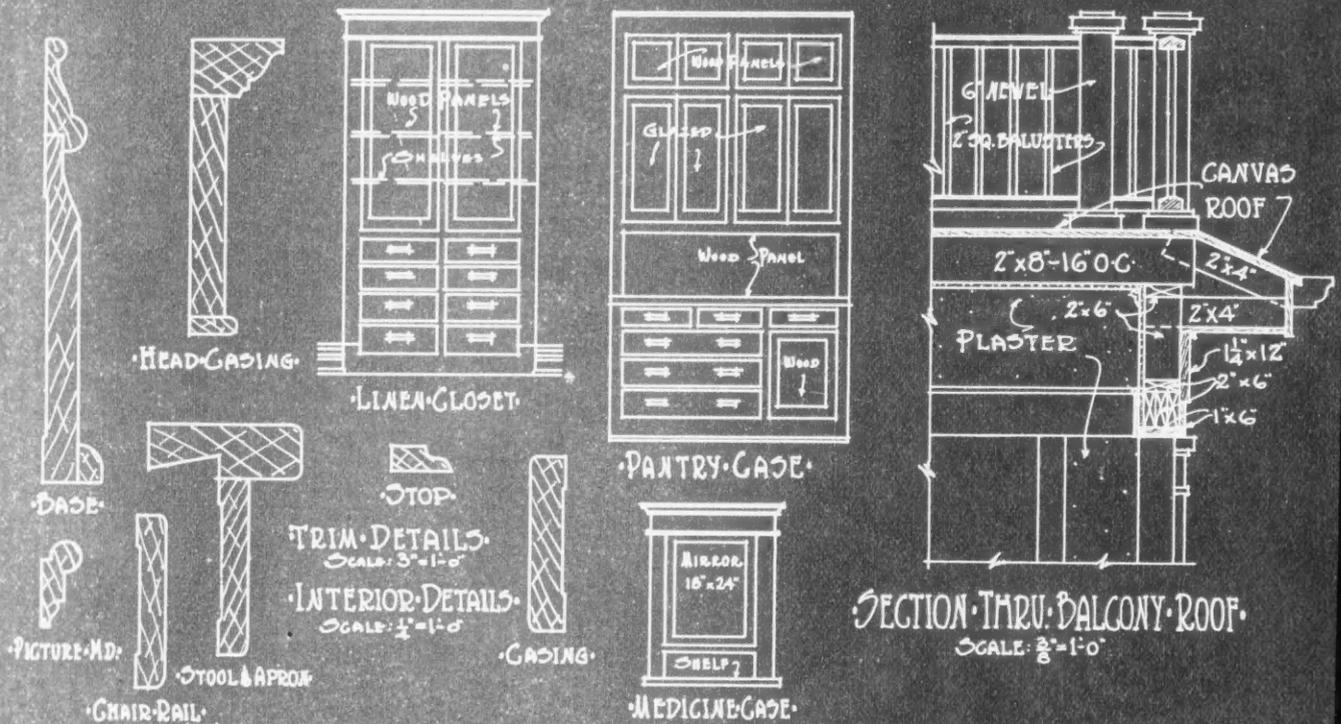
SCALE: 1/4" = 1'-0"



FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

AMERICAN BUILDER BUILDING PLANS



SECOND FLOOR PLAN
SCALE: 1/2"=1'-0"

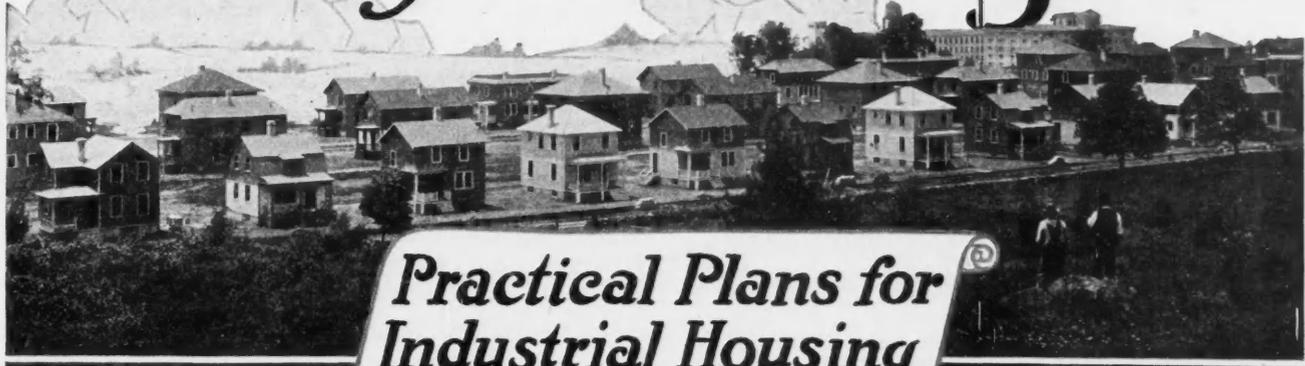


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Homes for Workingmen



Practical Plans for Industrial Housing

Government Housing Project at Quincy

A TYPICAL EXAMPLE OF HOW THE UNITED STATES HOUSING BUREAU OPERATES

By Allen Chamberlain

In the Boston Evening Transcript

JUST on the eve of this country's entering the war it was estimated by a group of well-posted investigators that in the several industrial centers of the country at large there was, all told, a shortage of something like forty thousand houses of types acceptable to workmen. Meantime the situation has become even more aggravated in many places owing to the phenomenal expansion of plants engaged on armament contracts. For instance, Quincy, Mass., affords a notable example of a great shipbuilding plant that in a few months' time has grown under the stimulation of war necessities far beyond what was anticipated even as late as September, 1917. In talking with Mr. Powell at that time—he was then president of the Fore River Company—he stated that his normal force of four thousand men had been doubled since war was declared, and that he expected to treble it within another six months. The housing situation was not then regarded as acute in connection with that plant. Thru private activity new houses had been provided within reasonable reach, and others were in contemplation. Moreover, transportation facilities had been rearranged and extended so as to make it possible for men to live at a considerable distance from the works. Mr. Powell is certainly a far-seeing man in most things, but in view of what has lately transpired at Quincy his estimate that he might eventually need perhaps three times his ordinary force appears to have been somewhat myopic. That was not a miscalculation on his part, however. It was merely an example of his characteristic conservatism of statement. Since then the yard has been greatly enlarged, so that the payroll is already nearly four-fold that of pre-war days, and the present management expects that it will be five times as great in the near future.

As a result Quincy presents a very real housing

problem today, and one quite beyond an economic solution in these times thru any possible intervention of private investors, or by any juggling with transportation. Since, as someone has said, the workman does not carry a house with him, turtlewise, when he moves to a new job, Uncle Sam's Bureau of Industrial Housing, a war-time adjunct of the Department of Labor, has gone to his rescue in Quincy, as it has already done in other places wherever the welfare of army and navy contracts was concerned. Even now a village of temporary dormitories, to house a thousand or more single men, is well under construction, but the real job of setting up some forty-five acres of permanent, modern houses for the use of upward of four hundred self-respecting families, is only now about to be undertaken.

Ever since early spring the government housing authorities have had this project actively in hand, and now that the contracts for the construction are about to be let their carefully considered plans will be given speedy realization, so that it is expected that the houses will be ready for occupancy, in part at least, in time for Christmas. Once the plans have been perfected on one of these government undertakings their execution is a relatively simple matter for a competent contractor. It is stated that not long ago, on a prospect in New Jersey, five up-to-date houses were erected, complete from cellar to roof-tree, and finished inside and out, in thirty-six hours. And it is safe to assume that the Housing Bureau does not tolerate any slap-dash structural work. It is investing government money on a long-time basis, and skimpy construction will not pay. The men who are managing the housing enterprises for the government are not mere idealists. They are also men of high standing in the building world, and in the professions of architecture, landscape design and engineering. It

is their evident aim to turn out a product which shall in every way be worthy of the trade-mark of the United States government—something not merely made to sell—caveat emptor—but made to suit the users, and made on honor.

What the Bureau Stands For

The published standards of design and construction adopted by the bureau for the guidance of architects and engineers engaged upon the projects certainly indicate that the ideals are far from the class of jerry buildings. The policy of the bureau was succinctly expressed by its director, Otto M. Eidlitz of New York, when he stated his conviction that "The Housing Bureau must not bend the knee to the Utopist with his plans for the City Beautiful, nor to the profiteer who would charge exorbitant rents for unsanitary houses at the peril of his country. The policy of the Housing Bureau is rather to help the worker to find a satisfactory home thru its Homes Registration Service, or thru transportation, and when these methods fail it is to build, as soon as possible, a sufficient number of wholesome homes to house the workmen not otherwise provided for."

Making Haste Slowly

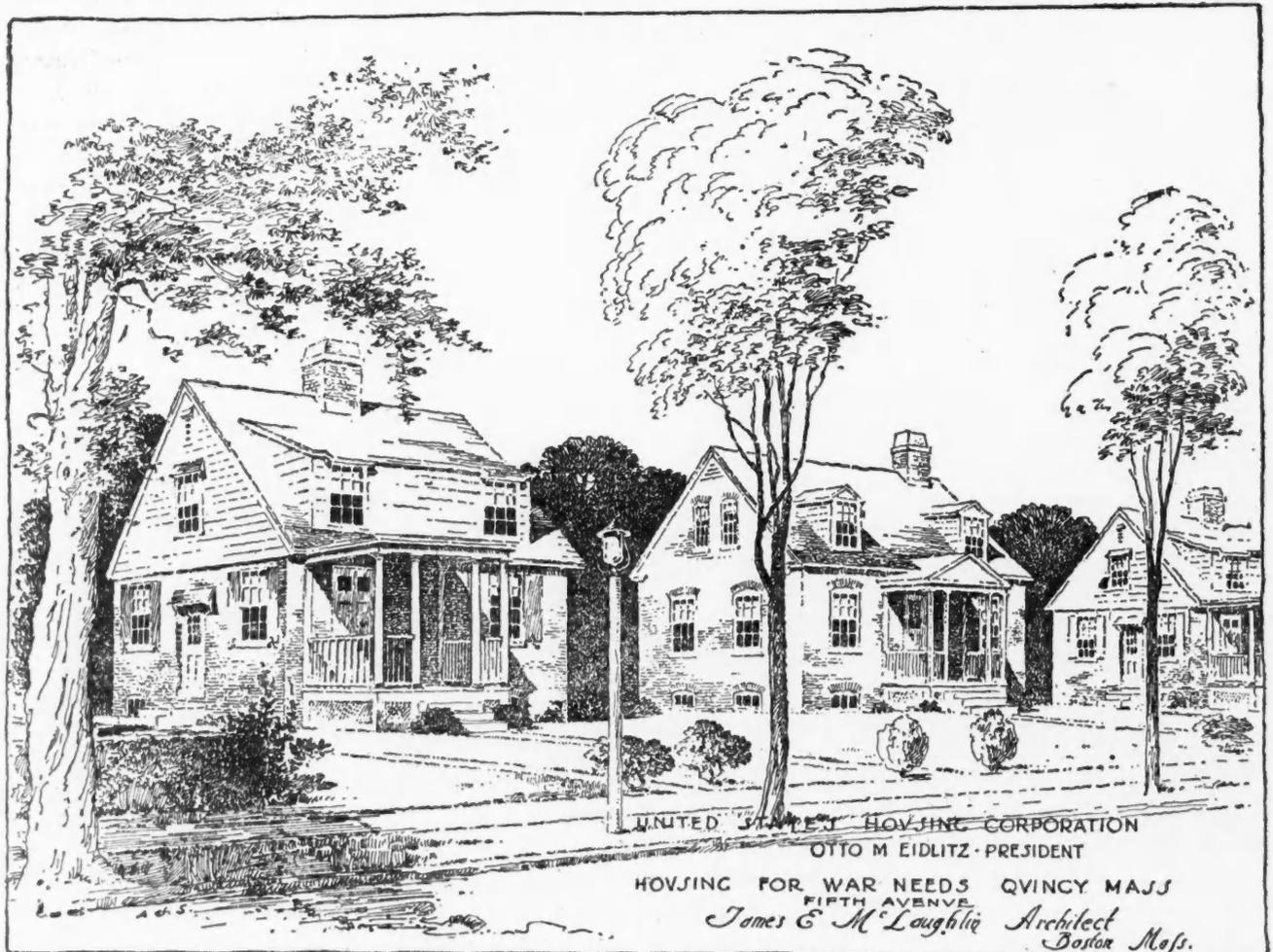
Altho the necessity for government aid became apparent some months ago, the bureau was unable, for

various reasons, to afford instant relief. Until Congress remedied the matter, along in the middle of July, it had neither authority nor funds to enable it to act in this emergency. Anticipating favorable legislative action, the bureau endeavored to expedite matters so far as it might, and sundry essential preliminaries were pushed so that the main activities might move expeditiously once the authority was received. In a public enterprise of this nature, involving the expenditure of large sums for land purchase and construction, and the careful engineering of the project so that it will harmonize fully with local development schemes, and at the same time serve its primary purpose, the greatest care must naturally be taken at every step to insure against fraudulent dealings, and to preclude the possibility of serious errors. Thus the work of looking up sites, and generally investigating the necessities began early in April, and once Congress gave the word the negotiations for the purchases, and the plans for the development moved steadily along.

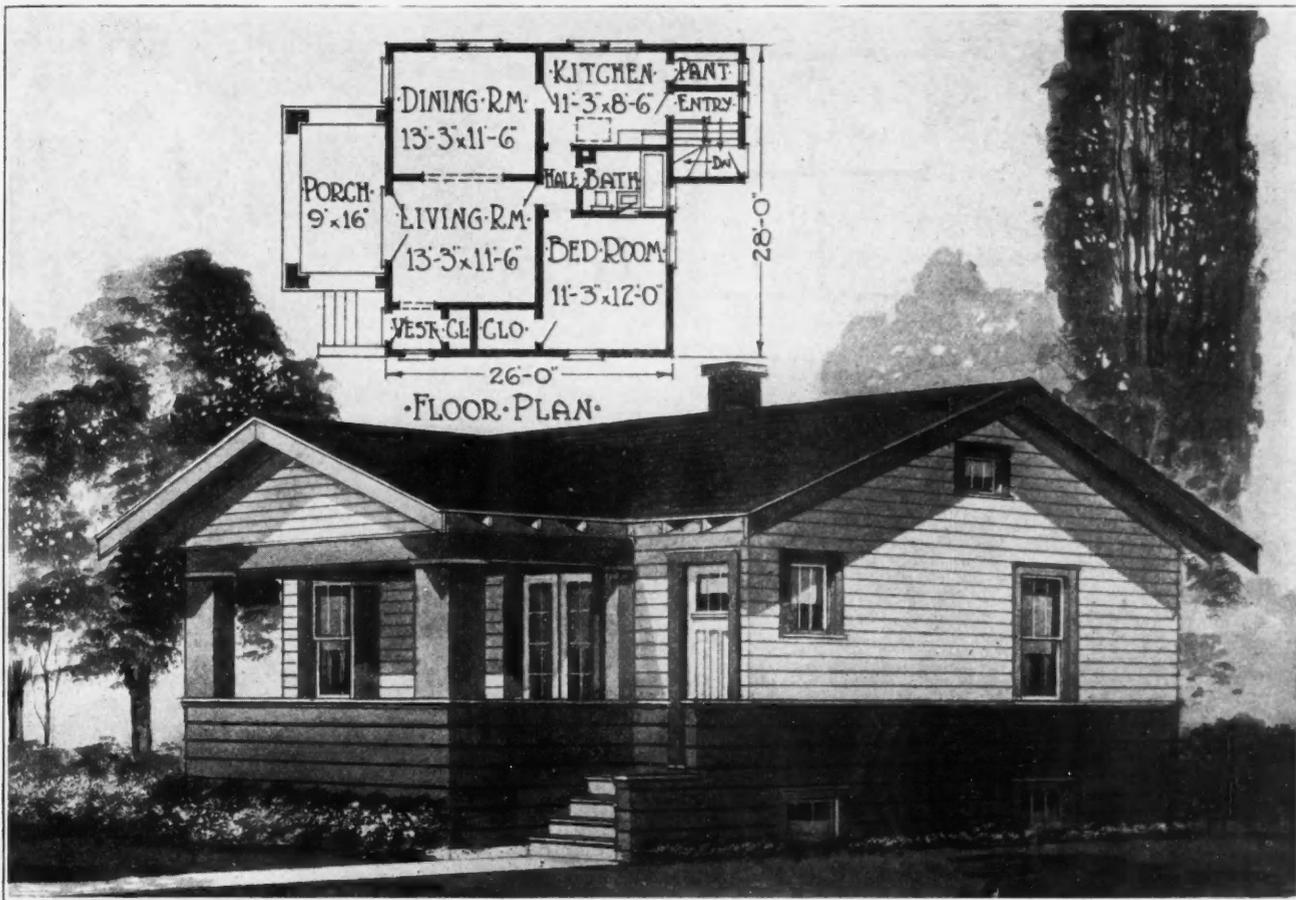
Houses to Please the Tenants

Having looked over the available land within a given radius, the value of the lots had to be appraised by a number of qualified local and governmental repre-

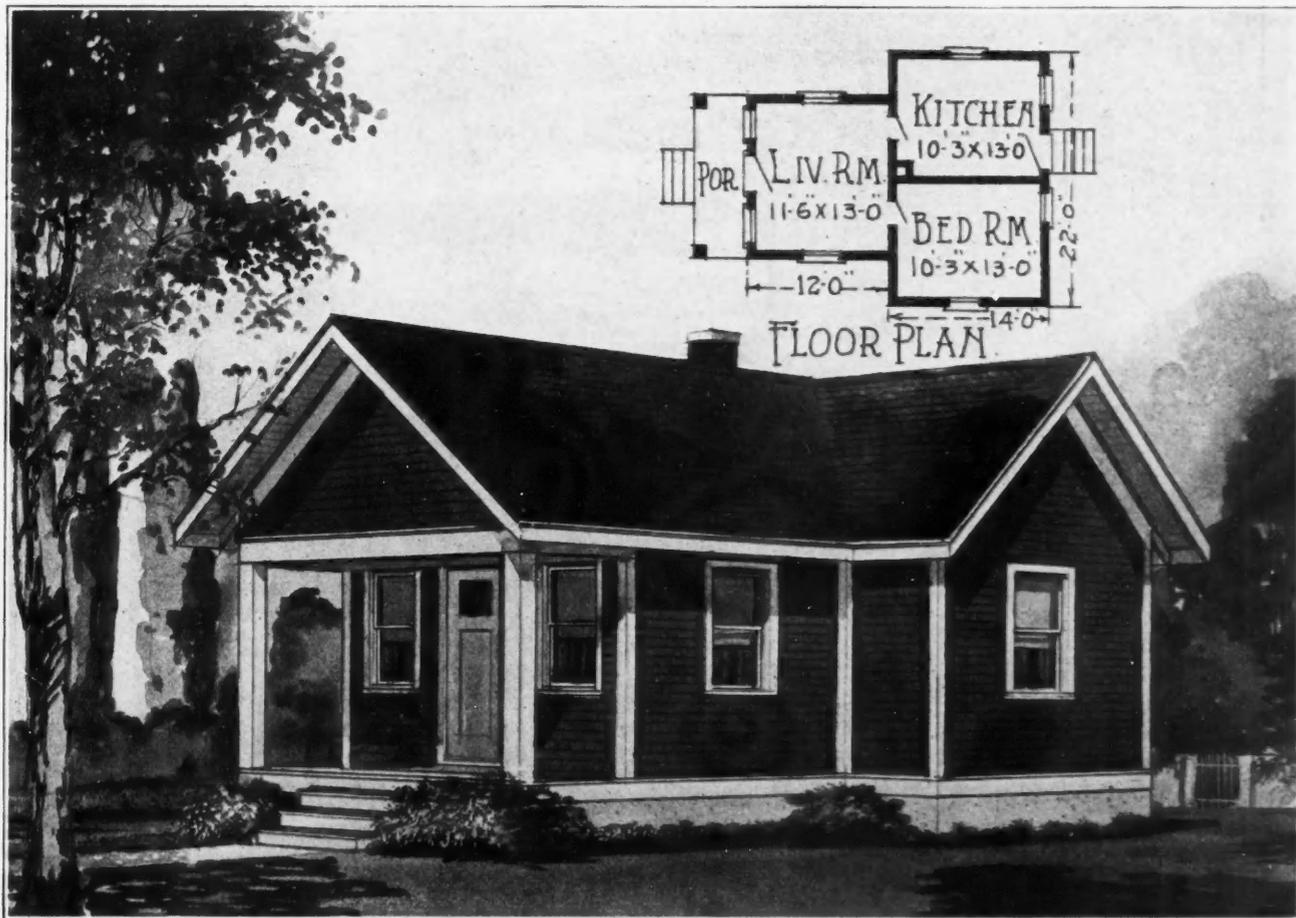
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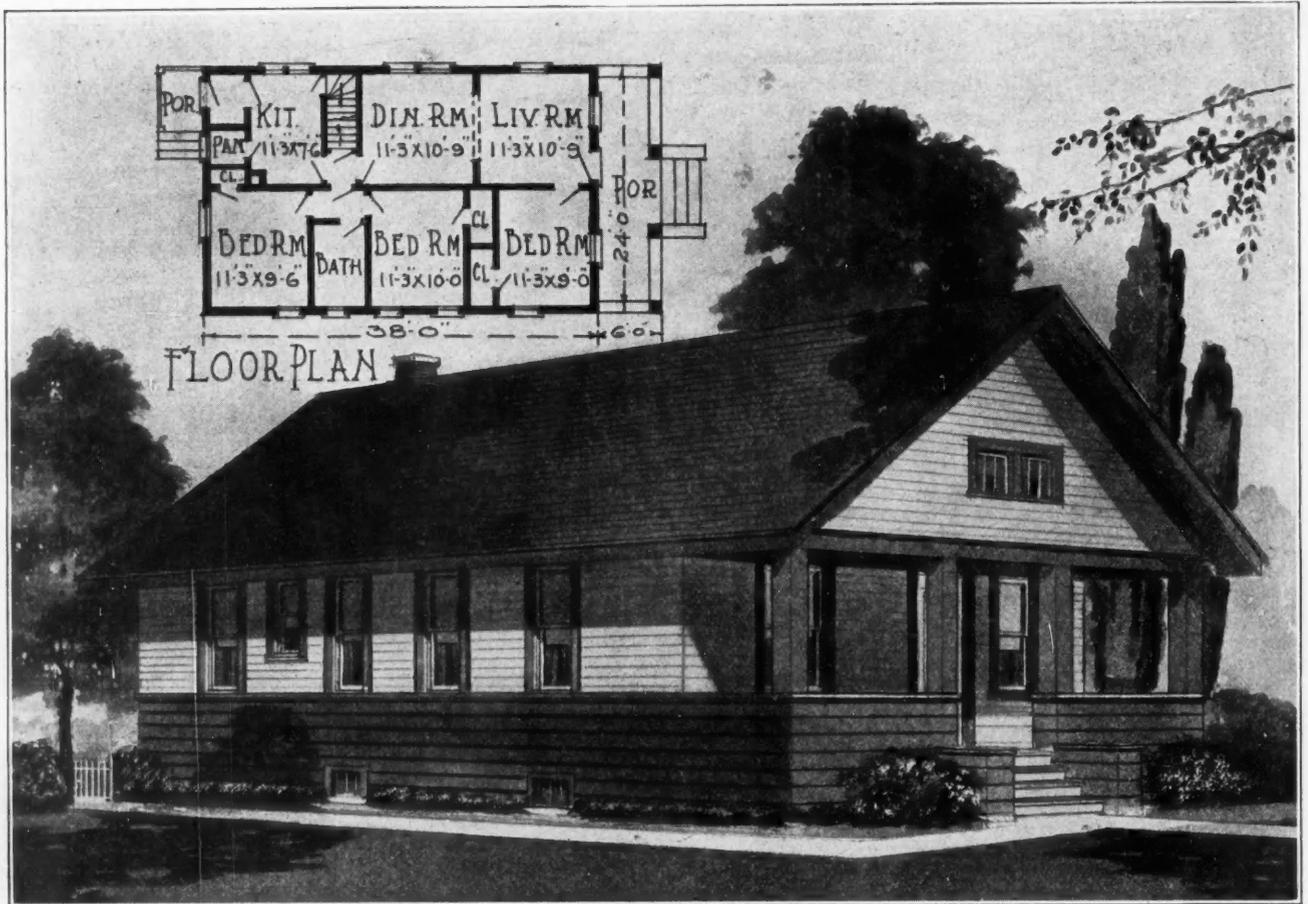
A Few Types of the Many in the Government's Housing Plans for Quincy, Mass.



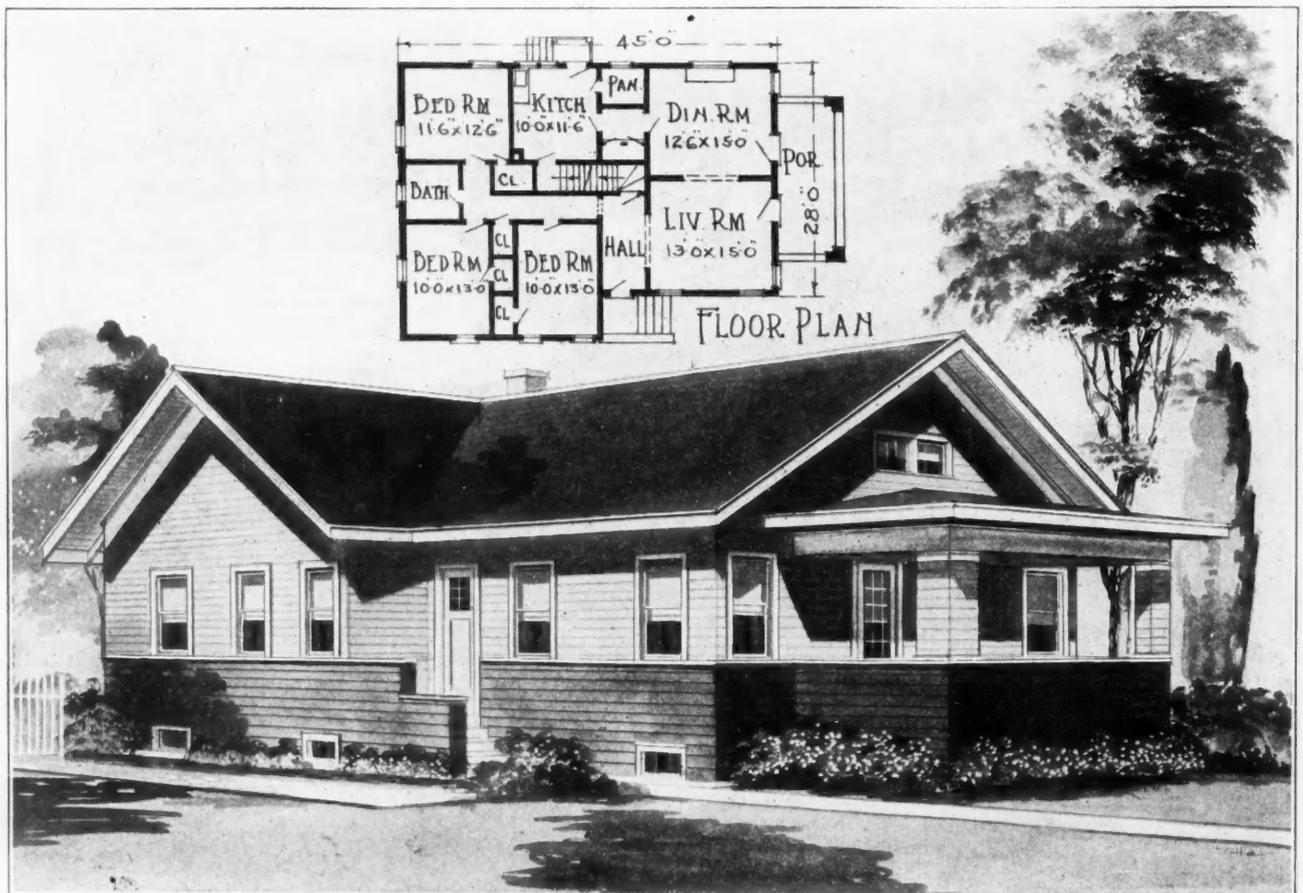
FOUR ROOM BUNGALOW. This stylish little dwelling has all the modern features—private front porch with French doors opening from living room, kitchen convenient yet separated from the rest of the plan, and the bedroom occupying a quiet corner. The size is 28 feet across the front by 26 feet in depth, not figuring porch or rear entry extension.



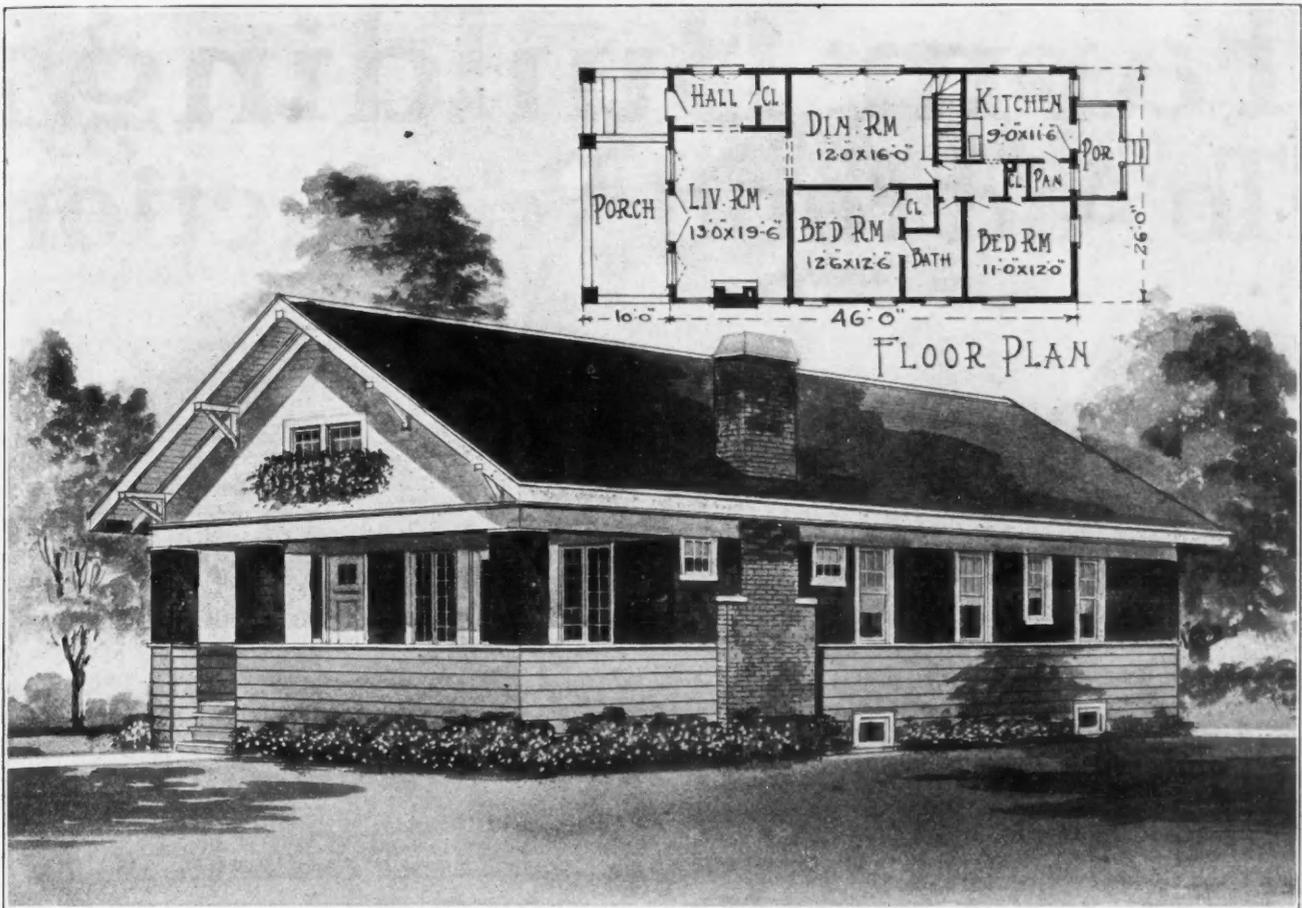
THREE-ROOM BUNGALOW. The design of this structure makes it look larger than it really is. Three rooms are contained in the upright and wing. For industrial housing cottage or farm tenant house this will be a popular design.



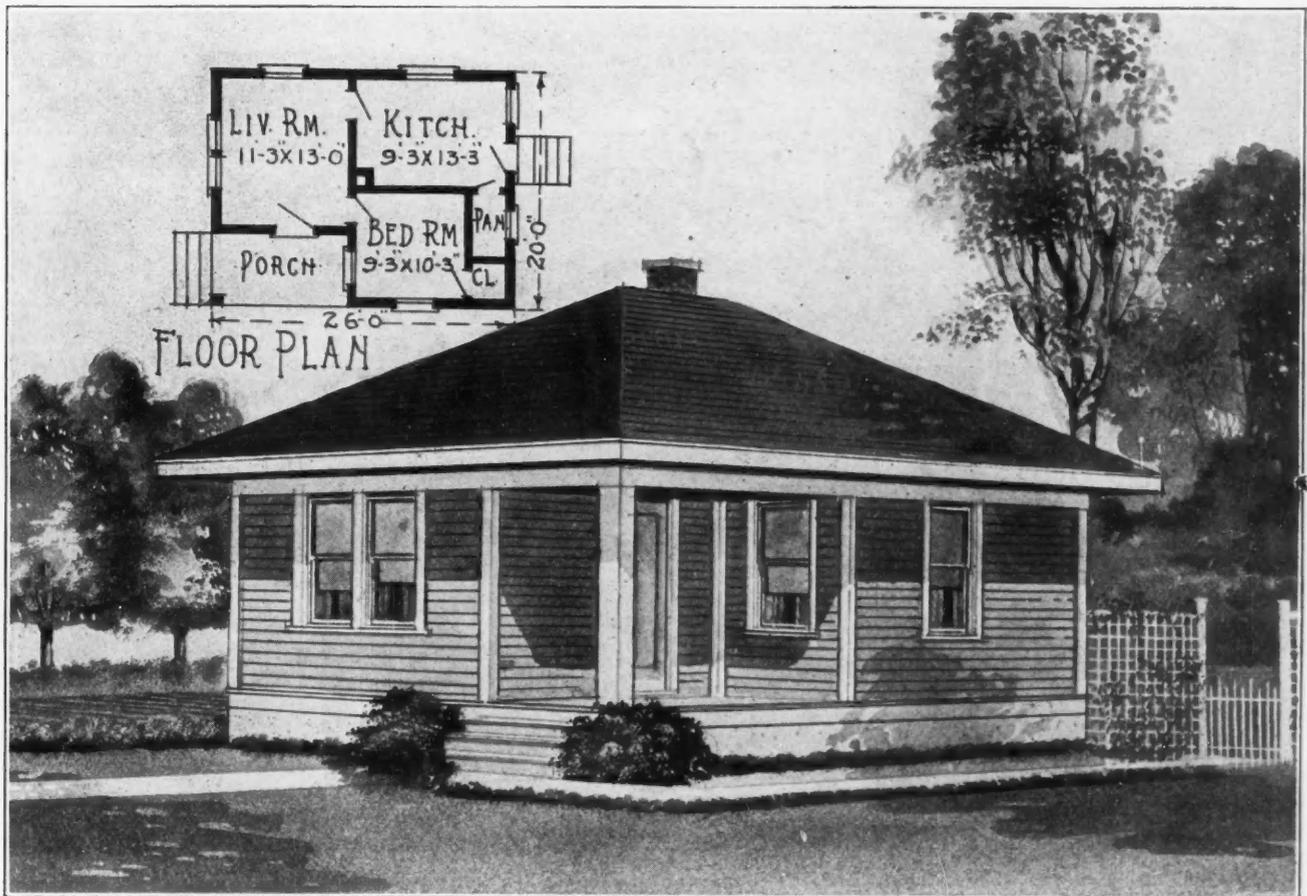
NARROW LOT COTTAGE. Six rooms and bath all nicely arranged are provided in this cottage, size 24 by 38 feet. The rooms are small, but very convenient. Three bedrooms are provided. Some use can also be made of the attic space. The stairway goes up from the kitchen.



SIDE ENTRANCE BUNGALOW. It would be difficult to devise a better six-room bungalow than this. The three bedrooms and bath are well separated from the front of the house. The living room, dining room and big private porch make a very pleasant group.



THE IDEAL FIVE-ROOM BUNGALOW. Years of planning have not produced any better five-room city bungalow arrangement than this. The side hall in connection with the living room, the front porch which can be glassed in and screened, and the placing of the bedrooms, all are ideal in this design. The exterior is good-looking, the economical.



THREE-ROOM SIMPLICITY. This square little house contains living room, good-sized kitchen, a pantry, one bedroom and a clothes closet. It is the modest home reduced to its simplest terms. This makes a good, inexpensive farm tenant house.

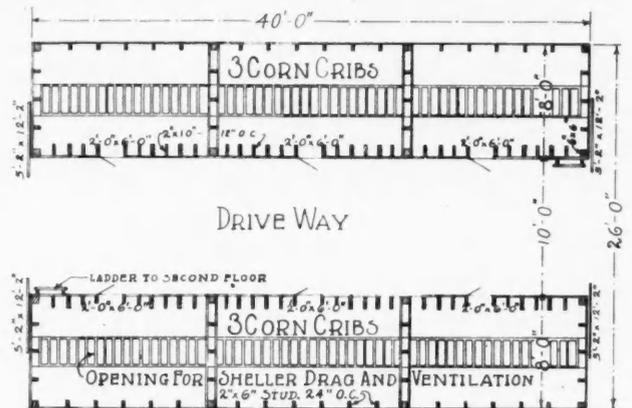
Farm Buildings To Aid Food Production



High Corn Crib for Portable Elevator

THE portable cup elevator for handling ear corn or small grains into the high bins is a full brother to the built-in type which we have often illustrated in these pages. It operates by gas engine or horse sweep power. It is mounted on a trestle truck resting on small iron wheels; and so, by taking down the long carrier, is easily moved from one building to another or to a neighbor's barn—wherever there is grain elevating to be done.

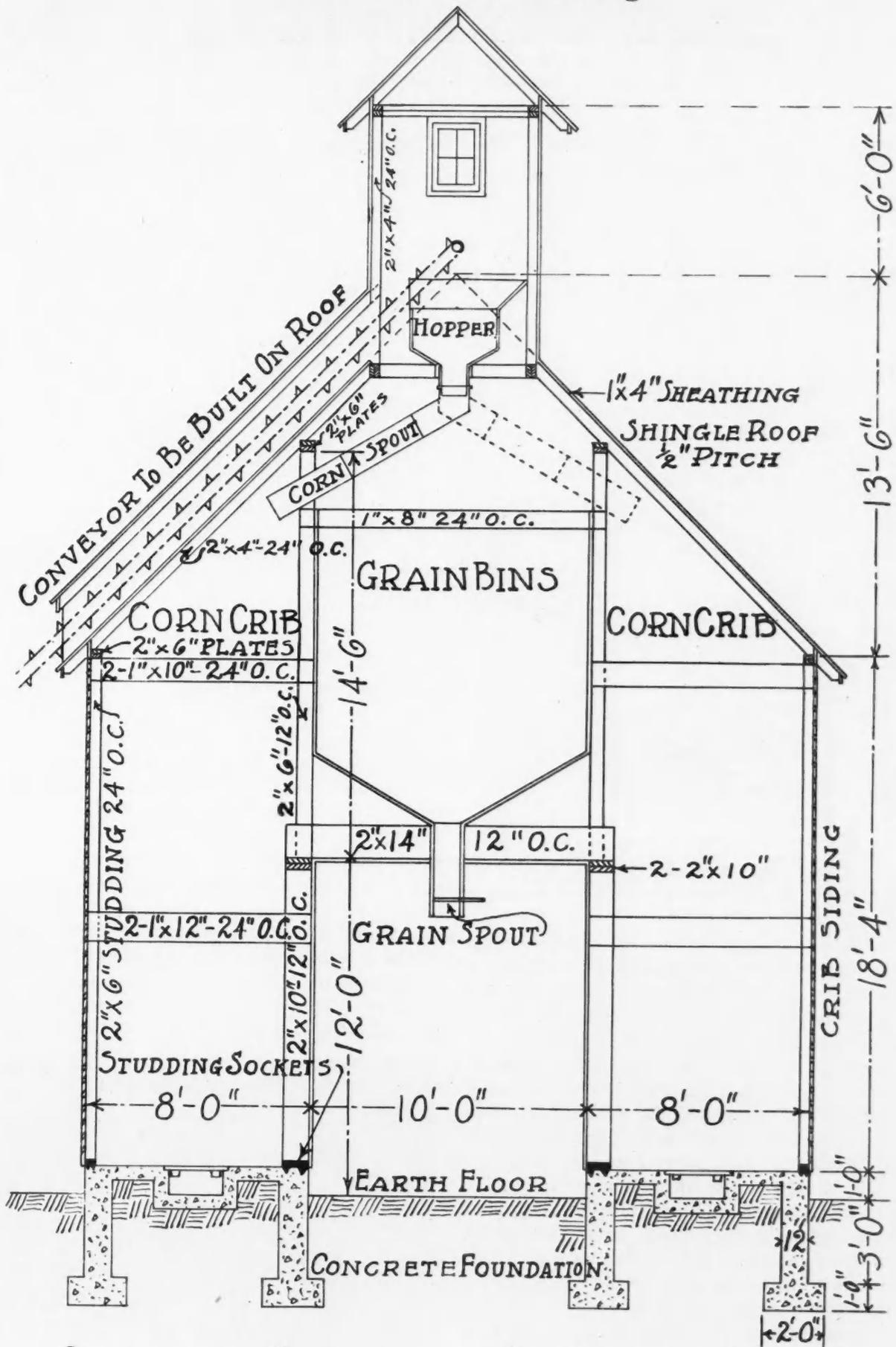
The building for this style equipment needs but a small cupola with side opening for the carrier. A distributing hopper inside deflects the grain to the several bins.



FLOOR PLAN OF CORN CRIB



Modern High Corn Crib and Granary Arranged for the Use of a Portable Cup Elevator. Some Farmers Prefer This Equipment to the Built-In Type Operating from the Driveway. This Building Is 20 by 40 Feet. Has Corn Cribs on Each Side Clear to the Plates, and Grain Bins in the Middle Over the Driveway.



CROSS SECTION OF CORN CRIB

Details of Construction of High Corn Crib and Granary Illustrated on Opposite Page. Note how the distributing hopper is arranged in the cupola.

Back-Yard Poultry Keeping

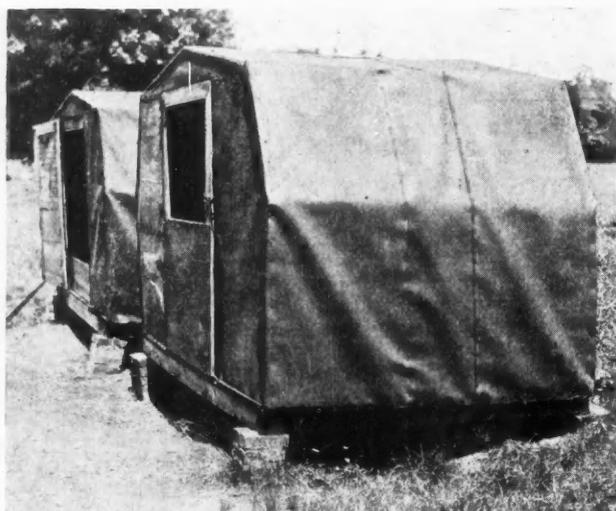
IN THREE PARTS—PART II

By Rob R. Slocum

Animal Husbandry Division United States Department of Agriculture

(Continued from September Issue)

The yard should be inclosed by a board or wire fence. Wire fencing is preferable, as it is cheaper and the hens are less likely to fly over it. If cats prove troublesome, where one is raising young chickens, it may be necessary to cover the top of the yard with wire also. A board should not be used at the top of a wire fence, as this gives the hens a visible place to alight and tends to teach them to fly over. A 5-foot fence is high enough for most conditions, but if the hens show a tendency to fly over such a fence the flight feathers of one wing should be clipped. The larger the yard which can be provided the better the hens



Poultry Houses, Each of Which Is Made Out of Two Piano Boxes. The Two Boxes Are Placed Back to Back, 3 Feet Apart, the Back and Top of Each Removed, a Frame for Roof and Floor Added, and the Part Between the Two Boxes Built in with the Boards Removed From the Boxes. The Whole Is Covered with Roofing Paper.

will do, as it not only gives them greater opportunity to exercise, but also makes it possible to maintain a sod on the yard. In most cases not enough land will be available so that sod can be maintained.

If the yard is fairly large, it can be divided into two parts and green crops, such as oats, wheat, rye, or dwarf essex rape, allowed to start in one yard while the hens are confined to the other. The green crops should be sown very thick, and the following quantities will be found satisfactory for a yard 25 by 30 feet: Wheat, $2\frac{3}{4}$ pounds; oats, $1\frac{1}{2}$ pounds; rye, $3\frac{1}{4}$ pounds; rape, 5 ounces. When the growing stuff reaches a height of 2 or 3 inches the hens can be turned upon it and the other yards be similarly sown.

Where it is inadvisable to divide the yard, it is possible to keep a supply of green stuff growing by using a wooden frame 2 or 3 inches high, covered with 1-inch mesh wire. A frame made of 2 by 4 lumber, 6 feet long and 3 feet wide, with an additional piece across the center to support the wire when the hens stand on it, will be found desirable for a small yard. A part of the yard as large as this frame is spaded up

and sown, the frame placed over it, and the material allowed to grow. As soon as the green sprouts reach the wire the hens will begin to pick them off, but since they cannot eat them down to the roots the sprouts will continue to grow and supply green material. This frame can be moved from place to place in the yard, and in this way different parts cultivated.

The yard should be stirred or spaded up frequently if not in sod in order to keep it in the best condition. This will not only tend to keep down any odors which might arise, but also allow the droppings to be absorbed into the soil more readily and therefore keep the yard in better condition for the hens.

Altho it is necessary to keep the hens confined to their yard most of the time, it is sometimes possible to let them out where they may range upon the lawn for an hour or so in the evening when some one can be at hand to watch them, or at certain seasons of the year to allow them to run in the garden plot. This will be enjoyed greatly by the hens and will be very beneficial to them.

Feeding

In feeding the city flock an effort should be made to do so as cheaply as possible, consistent with the production of eggs. To accomplish this, all table scraps, kitchen waste, etc., should be utilized. Scraps of meat or left-over vegetables which cannot be utilized in any other way make excellent feed. There are also many other waste products, such as beet tops, turnip tops, carrot tops, potato parings, onion tops, watermelon and cantaloupe rinds, the outside leaves of cabbages, waste lettuce leaves, bread and cake crumbs, etc., all of which are relished by the hens and can be used to the best advantage. In saving the scraps and waste it is well to separate the portions adapted for feeding to the flock and place these in a receptacle or pail of their own. Decomposed waste material or moldy bread or



Rear View of Piano-Box Houses Shown Above. The Openings at the Rear Are Provided for Ventilation and Coolness in the Hot Weather. Windows Could be Used Instead of Solid Shutters and Would Make the Houses Lighter When Closed.

cake should never be saved to feed to the hens, as it is harmful to them and may cause serious bowel trouble. Sloppy material, such as dishwater, should not be thrown into their pail. It is also useless to put in such things as banana peels or the skin of oranges, as these have little or no food value. Any sour milk which is not utilized in the house should be given to the chickens. This should be fed separately, however, either by allowing the hens to drink or by allowing it to

of 20 or 25 hens. By handful is meant as much as can be grasped in the hand, not what can be scooped up in the open hand. By scattering it in the litter the hens will be compelled to scratch in order to find the grain and in this way to take exercise, which is decidedly beneficial to them. If the house is too small to feed in, the grain can be scattered on the ground outside. A good grain mixture for this purpose is composed of equal parts by weight of wheat, cracked



A Typical Back Yard Poultry Establishment in a City Suburb. "Kill the Roosters and Keep the Hens Confined," Is the Rule for Success.

clabber on the back of the stove and then feeding it in that condition. When the family's table waste is not sufficient for feeding the flock, it is usually possible to get some of the neighbors who keep no hens to save material suitable for feeding. Many people are glad to do this if a small pail in which to place the waste is furnished.

Table scraps and kitchen waste are best prepared for feeding by running them thru an ordinary meat grinder. After the material has been put thru the grinder it is usually a rather moist mass, and it is well to mix with it some corn meal, bran, or other ground grain until the whole mass assumes a crumbly condition. The usual method is to feed the table scraps at noon or at night, or at both times, as may be desired, in a trough, or on a board. All should be fed that the hens will eat up clean, and if any of the material is left after one-half or three-quarters of an hour it should be removed. If allowed to lie it may spoil and would be very bad for the hens.

With the table scraps it is well to feed some grain. Perhaps this may be given best as a light feed in the morning. Four or five handfuls of grain (about $\frac{1}{2}$ pint) scattered in the litter will be sufficient for a flock

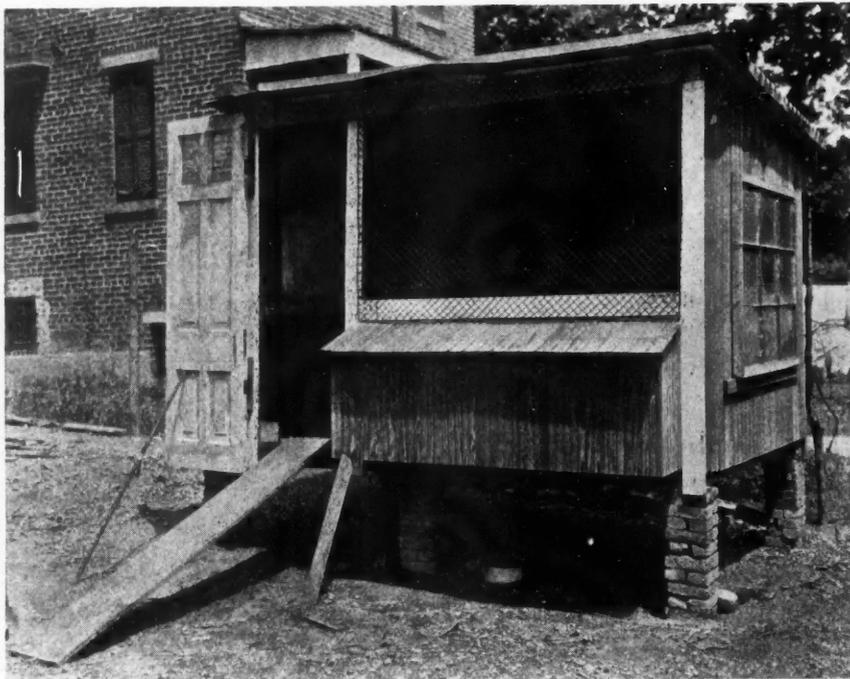
corn and oats. Another suitable grain mixture is composed of 2 parts by weight of cracked corn and 1 part oats.

In addition to the grain and the table scraps it is well to feed a dry mash. This dry mash is composed of various ground grains and is placed in a mash hopper or box from which the hens can help themselves. The advantage of feeding such a mash is that the hens always have access to feed, and this tends to make up for any faulty, inexperienced, or insufficient feeding. The hens do not like the dry mash so well that they are likely to overeat, but it will supply a source of feed in case they are not getting enough. The dry mash also provides a suitable medium for feeding beef scrap, a certain amount of which may or may not be necessary, depending upon the amount of meat scraps available in the table waste. If the hens show a tendency to become overfat it may be desirable to close the mash hopper during a part of the day and allow them access to it only during a certain period, preferably the afternoon. A good dry mash is composed of equal parts by weight of corn meal, wheat bran, wheat middlings, and beef scrap. Another good mash is composed of 3 parts by weight of corn meal and 1 part beef scrap. Still a

third mash, which has given excellent results, is composed of 1 pound of wheat bran, 1 pound of wheat middlings, 6.5 pounds of beef scrap, and 16.5 pounds of corn meal. The beef scrap used in the dry mash is usually the most expensive ingredient, but it is a very essential part of the mash and very efficient for egg production. It should not be eliminated or reduced unless the quantity of meat in the table scraps is considerable or unless some other product can be substituted for it. Fish scrap, when available, may replace the beef scrap, or cottonseed meal can be used to replace one-half the beef scrap in the mash. No attempt should be made to replace more than half the beef scrap with cottonseed meal, as the results in egg

The hens should have access at all times to a supply of grit or stones of a size small enough to be swallowed readily. Grit is used by the hens to help in grinding in their gizzards the hard grains which they eat. A supply of ordinary gravel will answer the purpose of grit very well. Crushed oyster or clam shell also should be given to the hens and be kept before them at all times. If this is withheld the hens are likely to lack sufficient shell-forming material in their feed, with the result that they lay many soft-shelled or thin-shelled eggs. Grit or shell can be purchased in small quantities at any feed or poultry supply store.

A plentiful supply of clean, fresh water must always be available to the hens. The fowls drink freely, especially when laying heavily, and should not be stinted of such a necessary and cheap material as water. The water pan or dish should be kept clean. If it is not washed out frequently a green slime will gather on its inner surface. This should not be allowed to happen. It is well to keep the water pan outside the house and in the shade in the summer, but in the winter, when the water may freeze, it is best that the pan be left in the house, and it should be raised about a foot above the floor so that the hens will not kick it full of straw or other litter when scratching for their feed. When nights are cold enough so that the water is likely to freeze the pan should be emptied each night and refilled in the morning.



A Good Type of Open-Front Poultry House for a Small Flock. The Front Can be Closed with a Muslin Curtain on Cold Nights. The House Is Set on Brick Piers so as Not to Afford a Refuge for Rats. Notice the Nests Built Out on the Front of the House Where the Eggs Can be Reached by Raising the Hinged Cover.

production and in the quality of the eggs will be unsatisfactory.

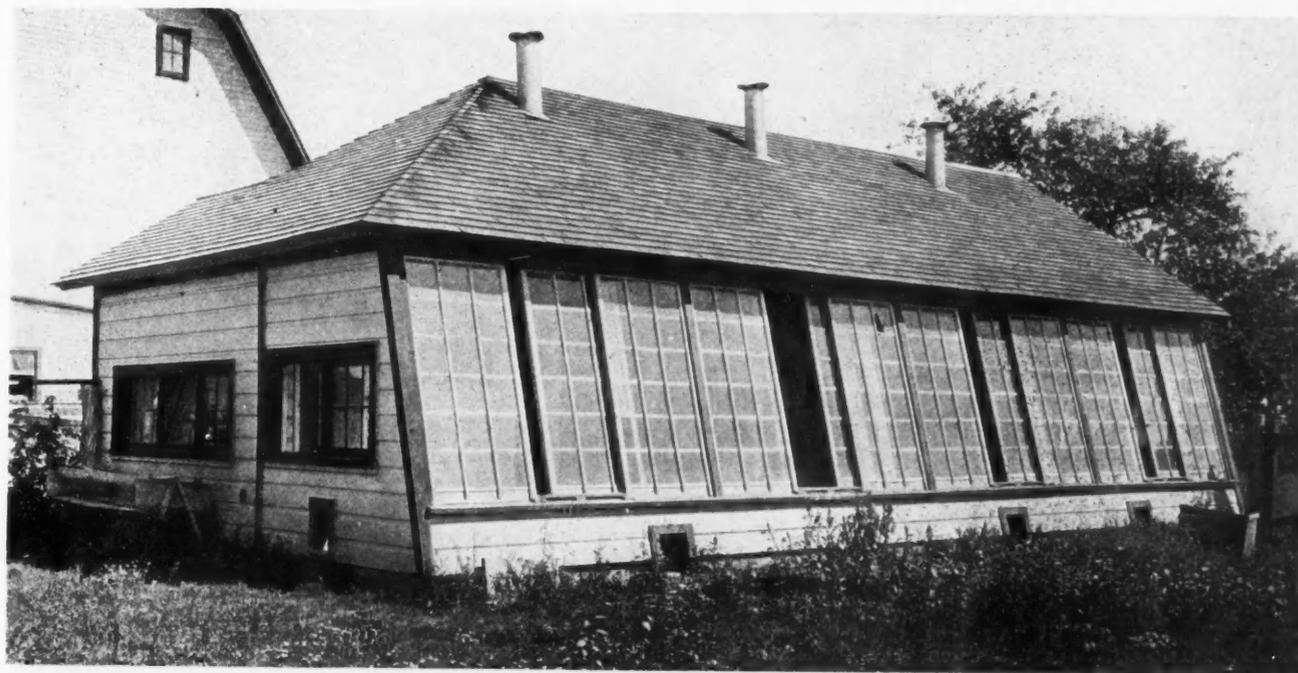
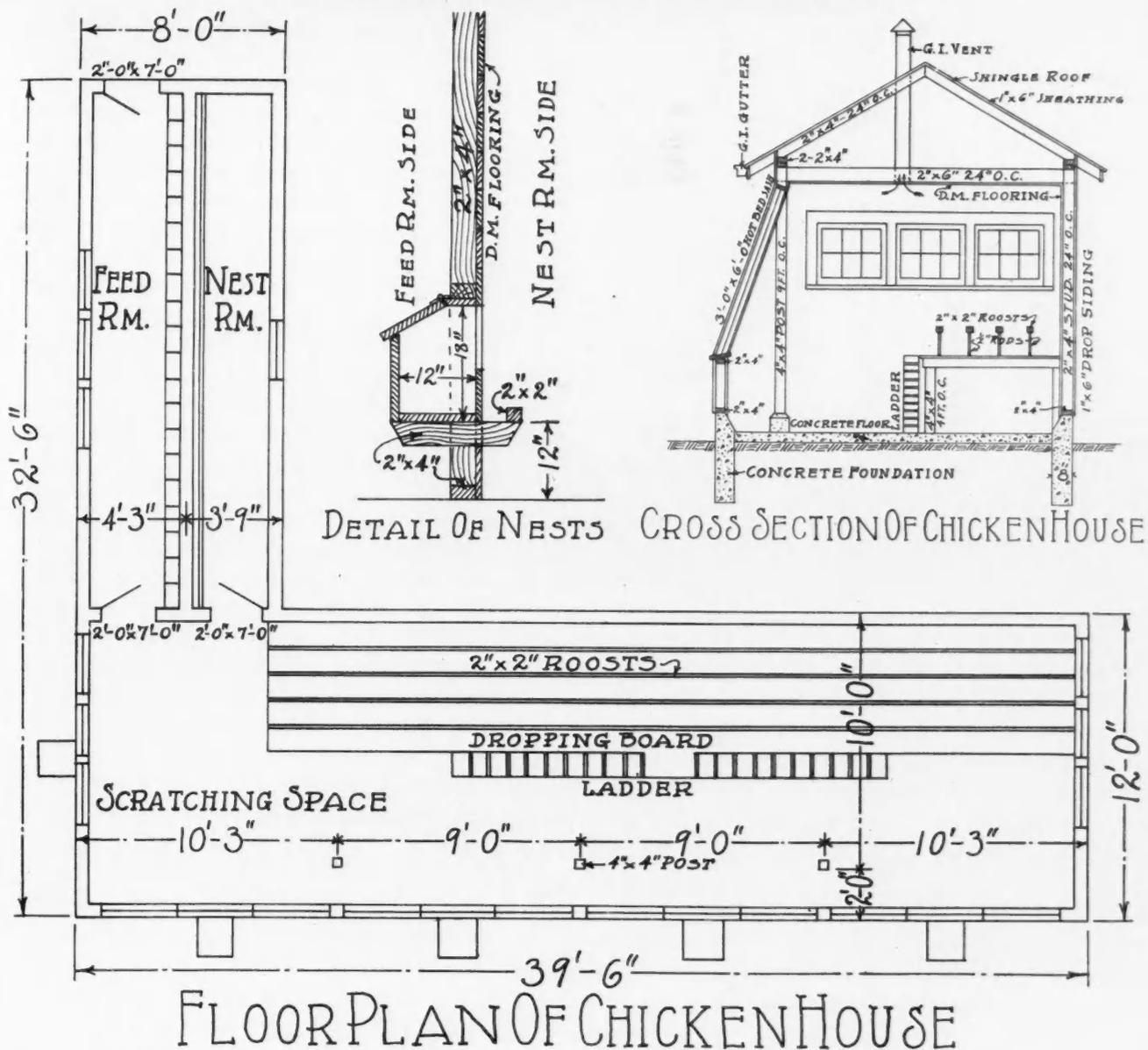
Green cut bone can often be purchased from the butcher. This material when procured fresh makes an excellent substitute for beef scrap. It should be purchased in small quantities, as it cannot be kept fresh for any length of time and when spoiled may cause severe bowel trouble. It is best fed in a trough not oftener than ever other day, allowing about one-half ounce per bird. Should severe or continued looseness of the bowels follow the feeding of green cut bone it should be discontinued or the quantity reduced.

Vegetable tops, parings and other vegetable refuse supply a valuable and very necessary green feed for the hens. Lawn clippings also are a valuable green feed. They can be fed as soon as cut, or they may be dried or cured, stored in bags and saved until winter, when they can be soaked in warm water and fed in that condition or be mixed with some of the mash or with the table scraps.

Lice and Mites

If the best results are to be expected from the flock, the hens must not be allowed to become overrun with lice or the house with mites. Usually there will be a place in the yard where the hens can dust themselves in the dry dirt. If such a place is not available, a box large enough (about 2 feet square) for the hens to get into it should be provided in the house and a quantity of dust such as ordinary road dust or fine dirt placed in it to allow the hens a place to dust themselves. A dust bath aids the hens in keeping lice in check and therefore adds to their comfort. Usually the lice are not present on the birds in sufficient number to prove particularly harmful. However, it is better to keep the hens as free as possible from this pest, and if they are not able to keep them in check by dusting themselves, other measures can be undertaken.

To rid the hens of lice, each one can be treated by placing small pinches of sodium fluorid, a material which can be obtained at most large drug stores, among the feathers next to the skin—one pinch on the head, one on the neck, two on the back, one on the



Glass Front Poultry House Which Guarantees Winter Eggs. The Front Is Built of Hot-Bed Sash Set Slanting to Catch the Direct Rays of the Sun. The Main Section Is the Scratching Floor and Roosting Space. The Nest Room Is in the Wing.



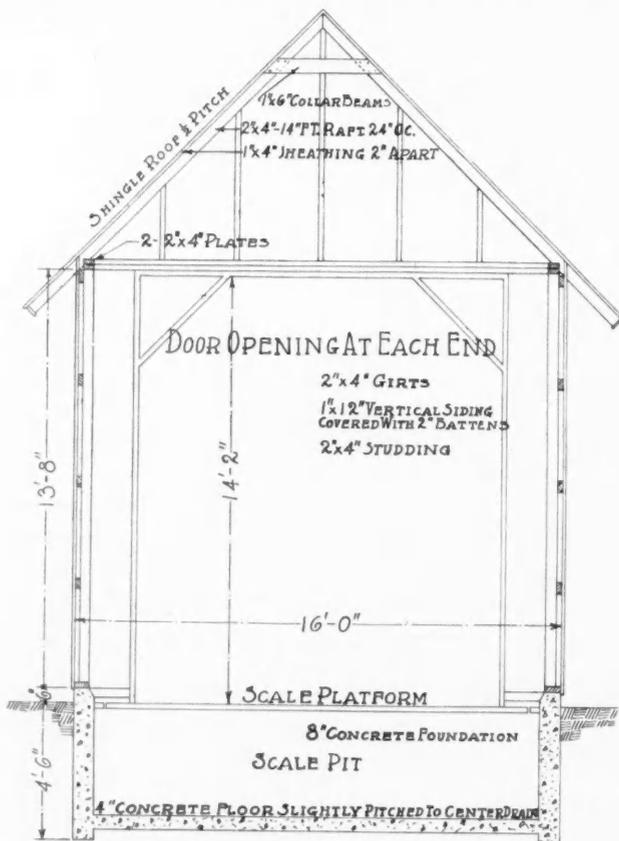
Well Built House for Farm Platform Scale. Every Farmer Should Have a Scale and Should Protect It from the Weather by Means of a Suitable Building. The Doors Enclosing the Platform, and the Fencing Leading up on Each Side, Make It Easy to Weigh Live Stock Either Singly or in Flocks.

breast, one below the vent, one at the base of the tail, one on either thigh, and one scattered on the underside of each wing when spread. Another method is to use a small quantity of blue ointment, a piece about as large as a pea on the skin 1 inch below the vent. If

mercurial ointment, it should be diluted with an equal quantity of vaseline. Any of these methods will be found very effective in ridding the hens of lice and should be employed whenever the lice become troublesome. Two or three applications a year usually prove sufficient.

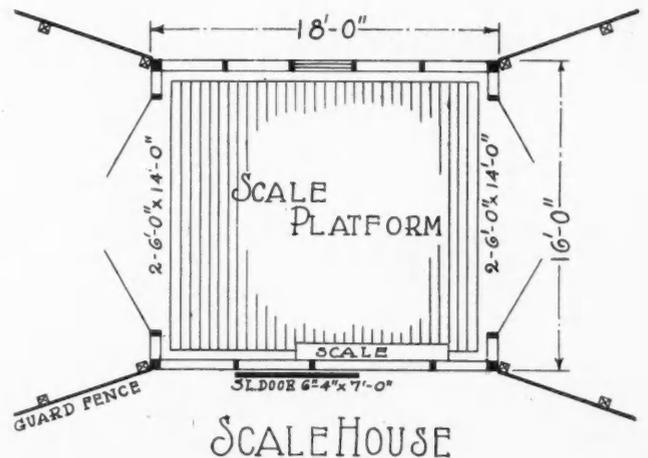
Mites are more troublesome and more harmful than lice. They do not live upon the birds like the lice, but during the day hide in the cracks and crevices of the roosts and walls of the house, and at night they come out and get upon the fowls. They suck the hen's blood, and if allowed to become plentiful—as they certainly will if not destroyed—will seriously affect her health and consequently her ability to lay eggs. They may be eradicated by a few thoro applications of

kerosene or some of the coal-tar products which are sold for this purpose, or crude petroleum, to the interior of the poultry house. The commercial coal-tar products are more expensive but retain their killing power longer, and they may be cheapened by reducing with



CROSS SECTION OF SCALE HOUSE

The Concrete Scale Pit Serves as Foundation for the Scale House. The Door Openings Should be High and Broad Enough to Pass the Biggest Load of Hay.



Ground Plan of Scale, Showing Position of Fencing for the Approaches.

an equal part of kerosene. Crude petroleum will spray better if thinned with 1 part of kerosene to 4 parts of the crude oil. Both the crude petroleum and the coal-tar products often contain foreign particles, so should be strained before attempting to spray. One must be sure that the spray reaches all of the cracks and crevices, giving especial attention to the roosts, dropping boards and nests, and the treatment should be repeated two or three times at intervals of a week or 10 days.

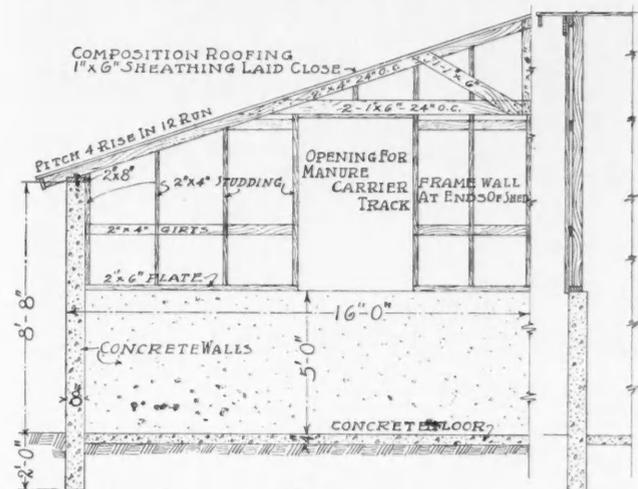
(To be continued in the November American Builder)

Remodeling a Barn
By John Upton

The farmer who needs a good dairy barn will sometimes do well to put a new roof on his old barn and add the new part in the form of a tee.

I recently helped on such a job. The old barn was 30x50 feet, and the new part was 34x60 feet. The main plates of the new part were put up as high as those on the old one. And as the old one was narrower, the new roof was a little steeper, to bring the peaks even.

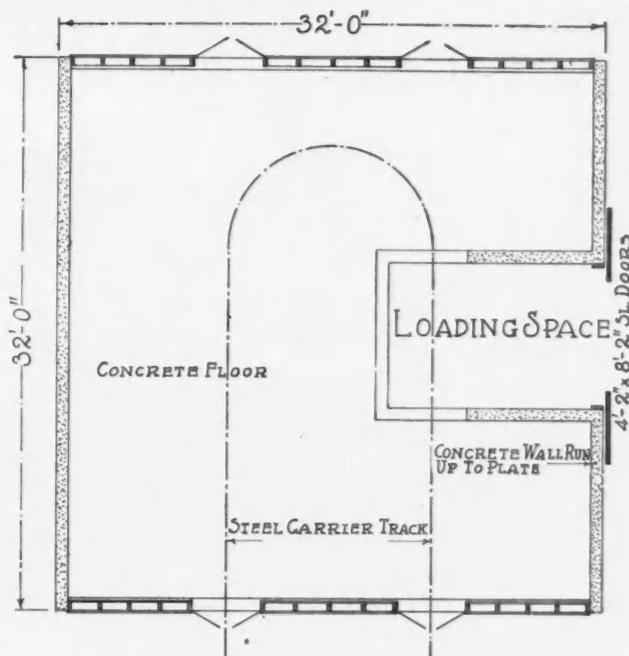
There was a drive floor across the old barn, and the plan provided for a floor in the new part next the old. This makes a very convenient plan.



CROSS SECTION OF COVERED MANURE PIT

The Manure Shed Has an 8-Inch Concrete Wall 5 Feet High Across the Ends, and 8 Feet 8 Inches on the Sides.

Hay may be taken in on either floor, and a threshing machine can be set up to run the straw over the stable or onto a scaffold over the new floor.



FLOOR PLAN OF COVERED MANURE PIT

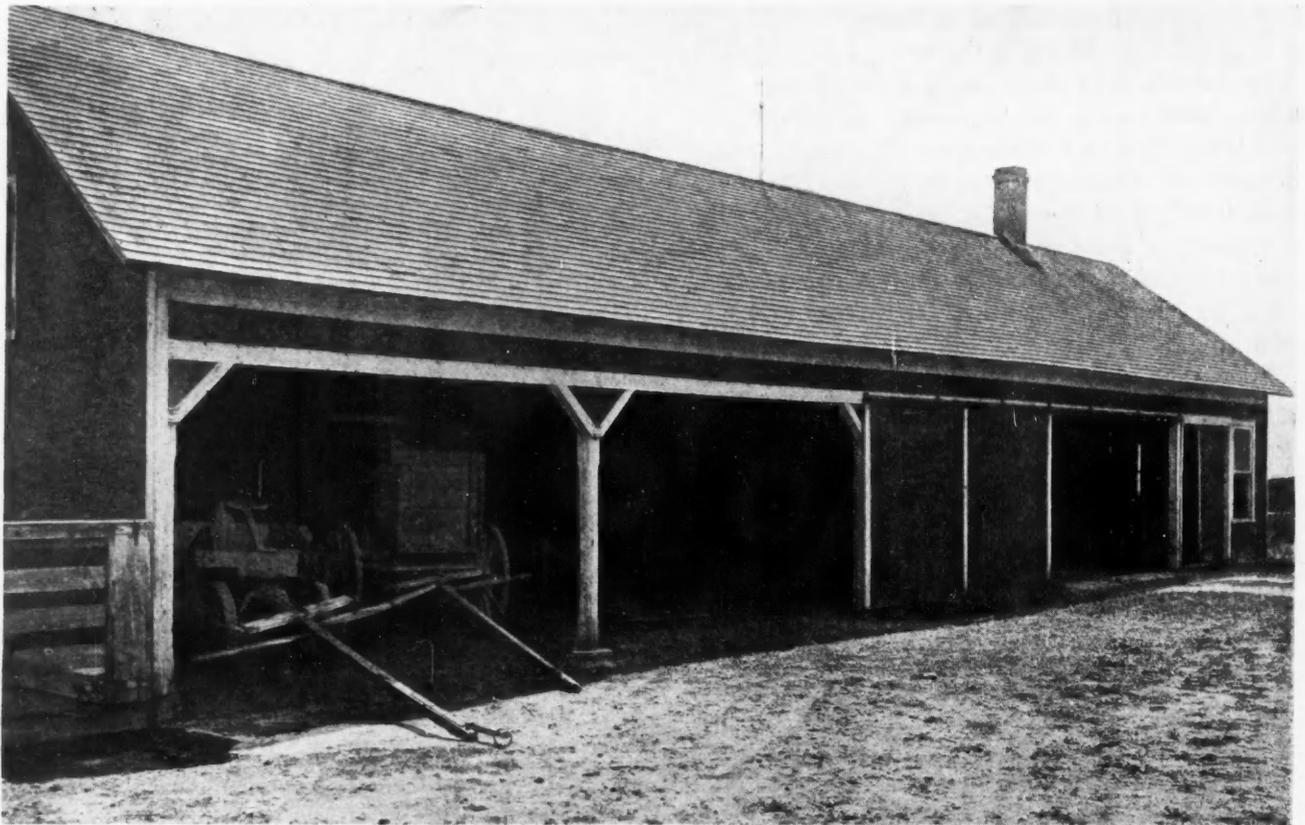
The Overhead Carrier Track Is Built on a Slope so That the Tubs Make the Circuit in and Out Again, Automatically Dumping Inside Wherever Wanted. Gravity Does the Work.

The roof on the old barn had been quite flat, so the purlin work was taken down and in place of the posts, eight feet long, others were set up fourteen feet long, and a gambrel roof was put on to match that on the new.

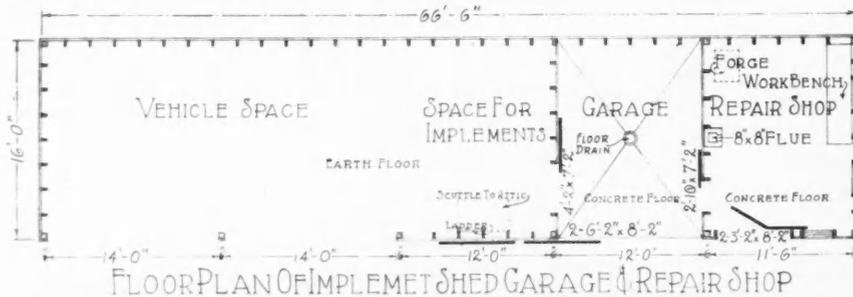
To raise the frame of the new the tackle was hitched to the old part, and then to set up the purlin work on the old part it was hitched to the new frame, the plates being put on the purlin posts first. This saved some climbing and lifting.



A Sanitary Manure Shed of Concrete and Frame Construction. The Litter Carriers Run Out from the Nearby Stable on an Overhead Track and Dump and Return Automatically. Periodically the Manure Spreader Is Backed Into the Loading Space and the Accumulation Drawn Out to the Fields. This Promotes Neatness and Sanitation Around the Barnyard, and Also Pays for Itself by Preventing the Leaching Away of the Fertilizer Content. The Farmer Is Able to Pick His Own Time for Drawing Out the Manure When It Is Most Convenient.



Here Is a Practical, Money-Saving Farm Building, Combining Implement Shed, Garage and Repair Shop. It Is 16 Feet Wide by 66½ Feet Long, Height 10 Feet to the Plates. The Space up Under the Roof Is Floored Over, Making a Dry Storage Space for Hand Tools, Farmer's Lumber Supply, Etc. The Shop in the Far End Is Equipped with Forge, so That the Farmer Can Take Care of a Good Deal of His Own Blacksmithing and Repair Work.



Shelter for the Farm Imple-ments

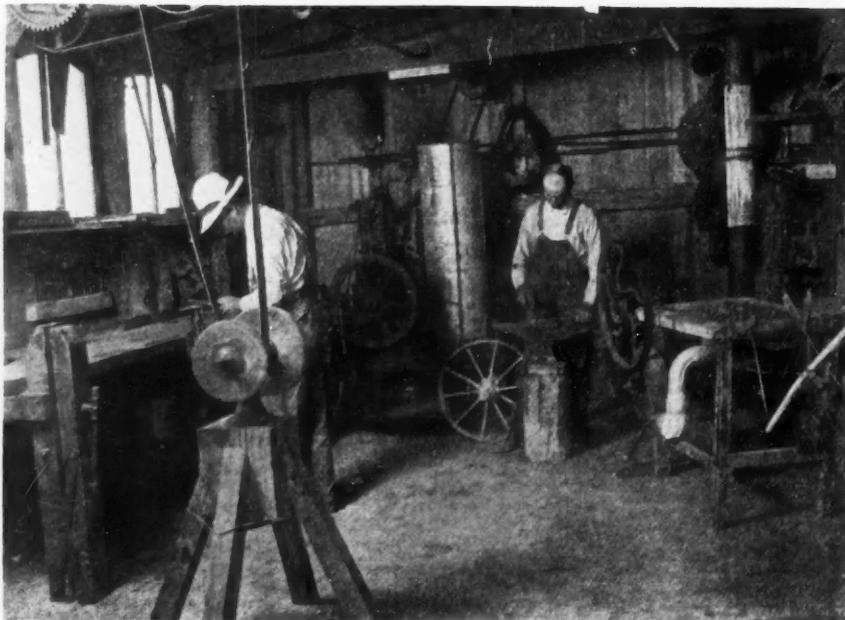
TIMELY AND PATRIOTIC FARM MACHINERY SHED CAMPAIGN

Lumbermen and Builders Line Up for a Nice Fall Business on Implement Sheds

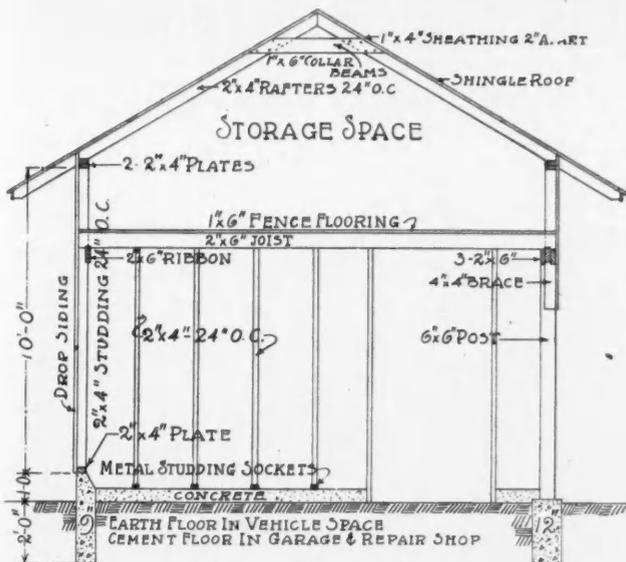
Now is the time to see that every farmer makes provision for putting away his machinery and farm implements into safe storage for the fall and winter. Farmers have invested heavily this year in new tools and appliances to save labor. If properly housed, these will serve year after year, and pay for themselves over and over again. But if left out to rust and weather, they are soon worthless.

There are very few farmers who have as much good implement storage space as they really need. Practically every farmer is a fair prospect when it comes to machinery sheds.

The lumber dealers and their "traveling salesmen," the rural carpenters and builders, should get together on a thoro-going campaign to make sure that every farm implement or piece of farm machinery is properly housed.



The Farm Shop is Equipped with Forge, Anvil, Power Grindstone, Practical Workbench, and a Good Selection of Blacksmithing and Woodworking Tools.



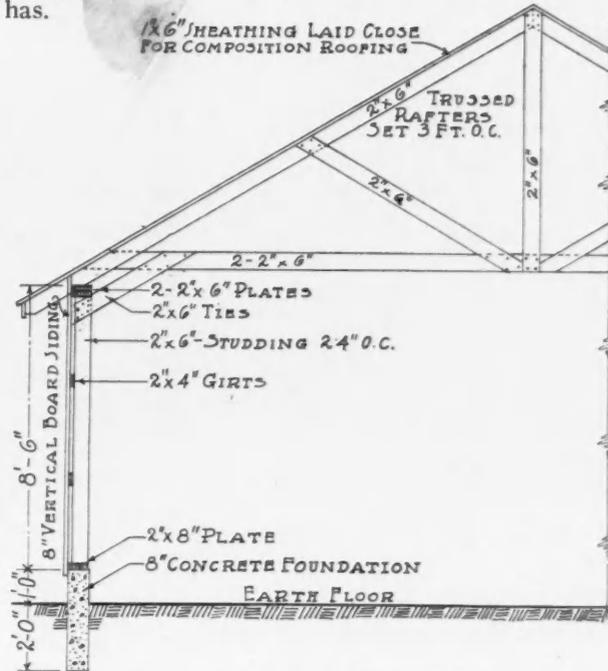
CROSS SECTION

Cross-Section of Combined Implement Shed, Garage and Shop Illustrated on Opposite Page.

There are too many farmers who are just shiftless enough to put a thousand dollars, more or less, into a farm tractor and then let it stand out in all kinds of weather.

Such waste is a crime, and builders and dealers will not be doing their patriotic duty this year if they permit it to continue. A new shed doesn't cost much and is easily built. Get out and sell and erect implement sheds, and so help Uncle Sam.

Garage, Tractor and Carriage Shed
 THE time has come when a fairly sizable garage building is needed on a great many farms. Frequently two or three autos have to be put under cover, and then there is the tractor to be housed. There is always a feeling of extra fire risk about gasoline powered machines, which makes the farmer choose to put up a new building somewhat separated from the barns, rather than to use some part of the buildings he already has.



CROSS SECTION OF 28'x30' MACHINE SHED



Inexpensive Implement or Carriage Shed, Size 28 by 30 Feet. It Should Have a Well Drained, Hard Packed Earth or Gravel Floor, and be Built Weather-Tight All Around.

Blue Prints of Roof Window Winter Hog House

"RAISE more pork," the Food Administration says; and the American farmers are responding valiently by putting their hog-raising quarters into first-class shape for doubling up their production without hiring an extra man.

Most important is to have a winter pen house where the first litters can be safely farrowed in February and early March; and then repeat in the fall.

The design illustrated below and in the complete set of blueprinted plans presented herewith is the special AMERICAN BUILDER type of modified saw-tooth as designed for roof windows. These are placed in such a way that the direct rays of the sun shine directly into the nests at farrowing time.

There are several different makes of these special roof windows—all constructed on much the same principle. They have galvanized sheet iron frames which carry their own flashing, and so can be easily set in place on the roof and made

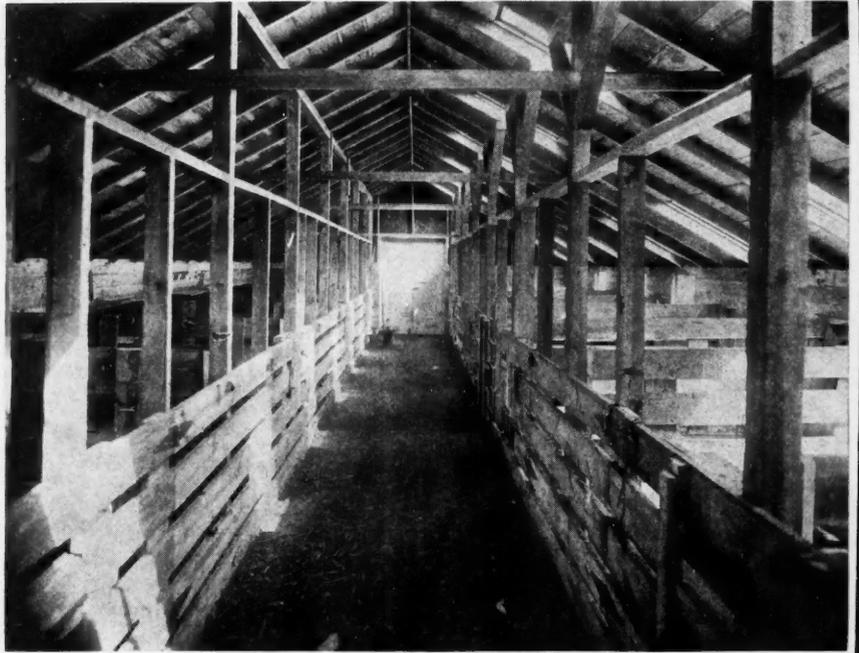
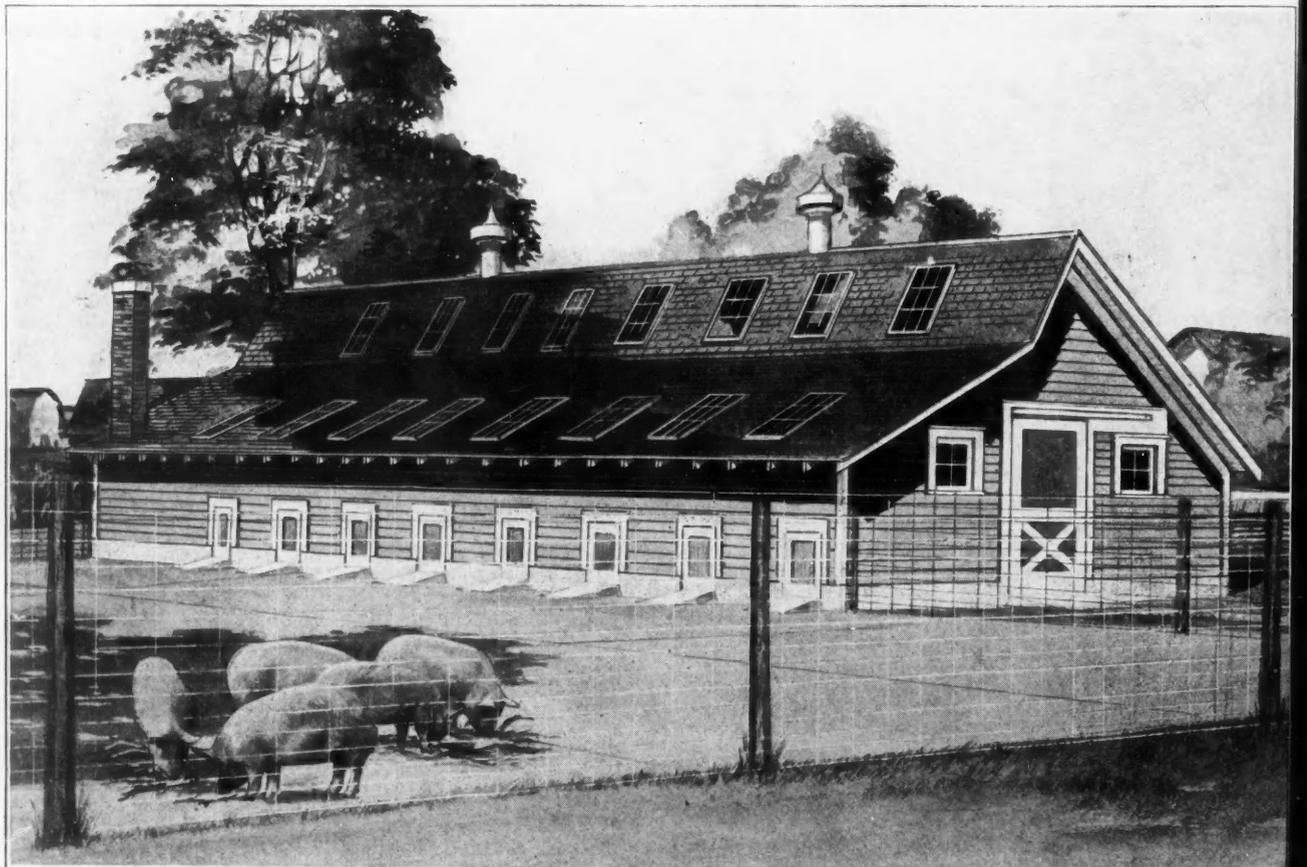


Photo Taken Inside a Hog House Lighted Thru Roof Windows Which Shows Clearly the Direct Sunshine Falling Into the Pens on Both Sides of the Feed Alley.

water tight.

For the sake of sanitation, saving of feed, and the lessening of labor the pen floors and also the outside run yard are constructed of concrete.



Photographic Perspective of Modern Efficient Community Hog House Where Two Litters a Year Are Raised. Note Arrangement Roof Windows. Complete Working Plans of This Essential Farm Building Are Presented in the Blueprints Following.

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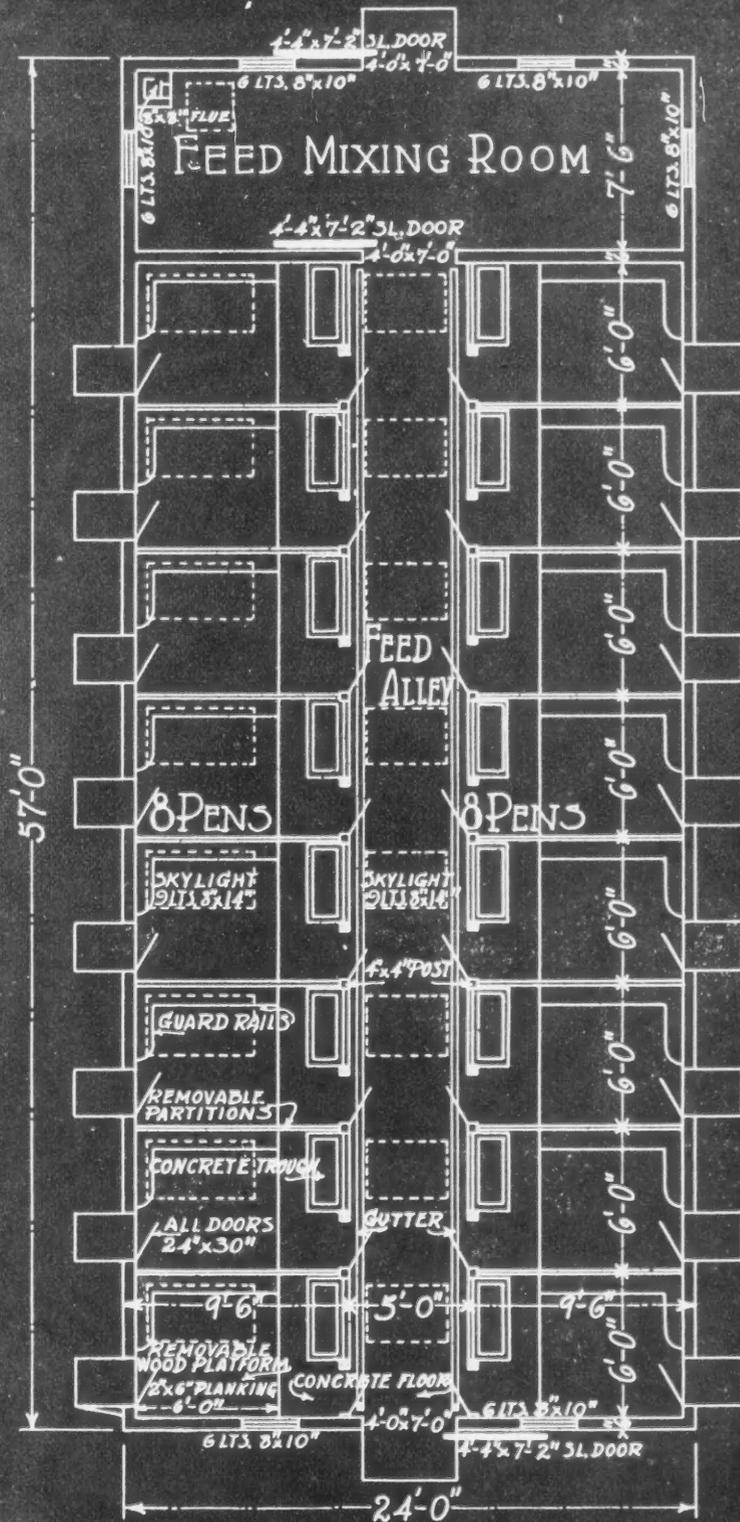
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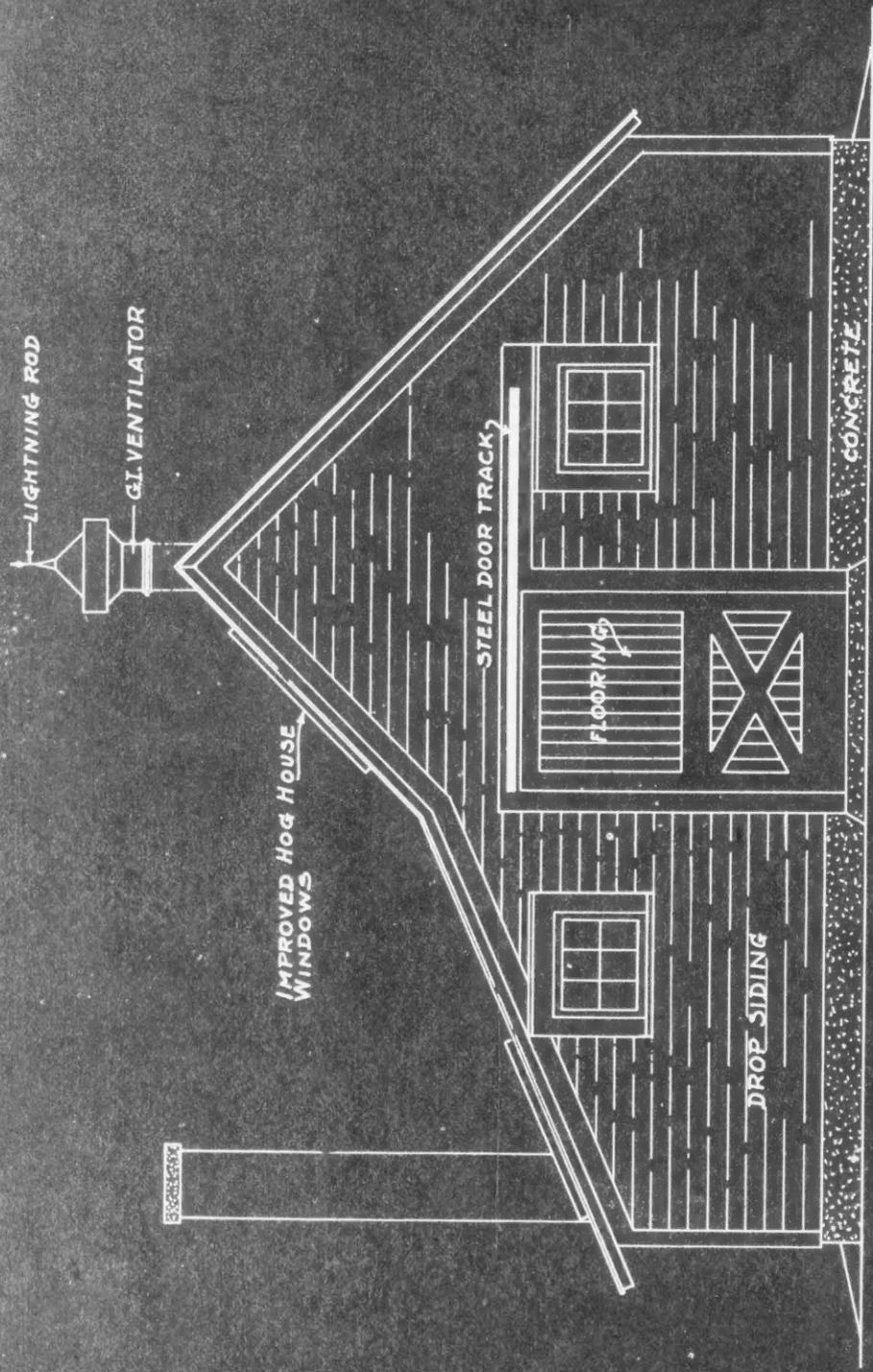


AMERICAN BUILDER FARM BUILDINGS



FLOOR PLAN OF MODERN HOG HOUSE

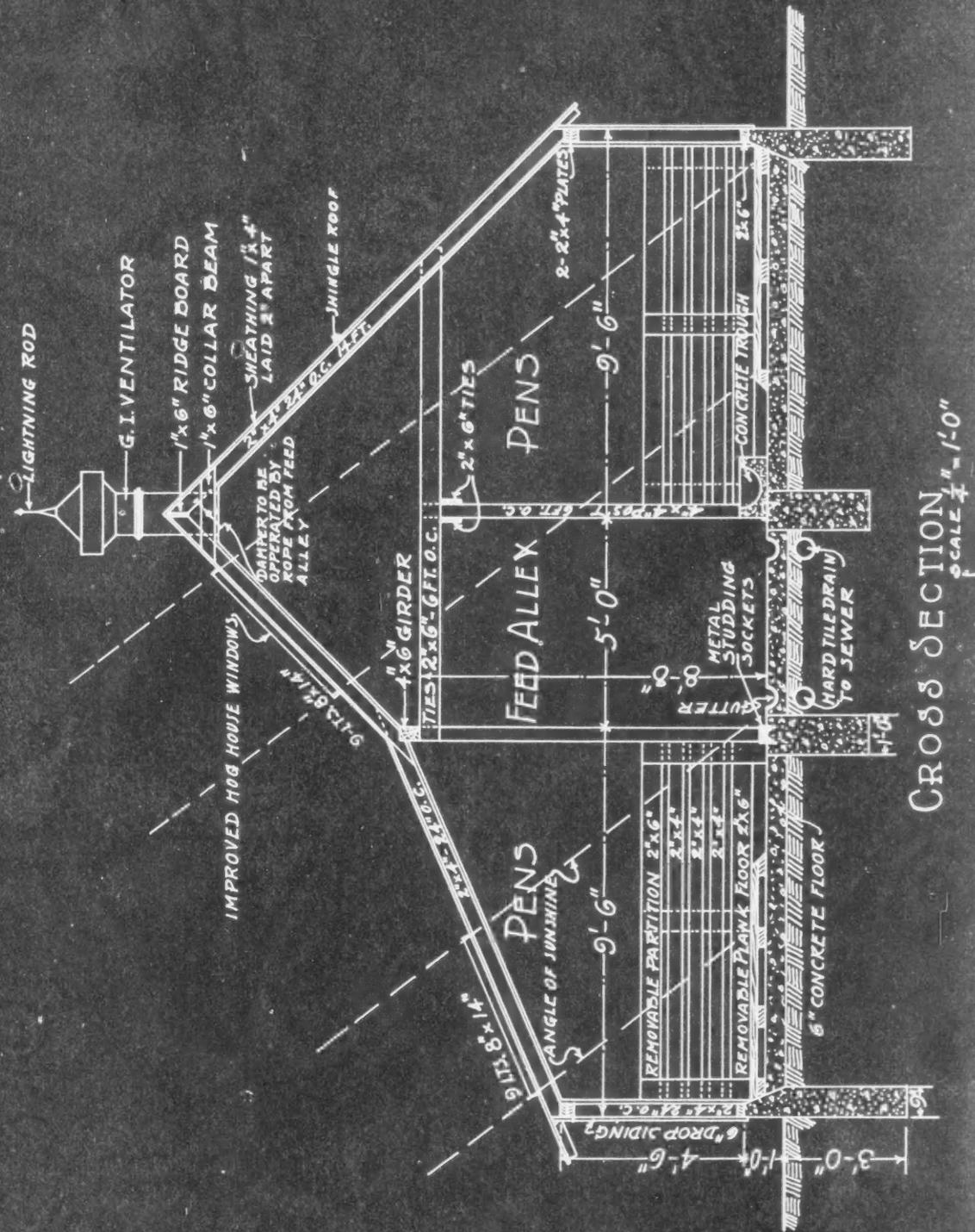
AMERICAN BUILDER FARM BUILDINGS



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

END ELEVATION OF MODERN HOG HOUSE

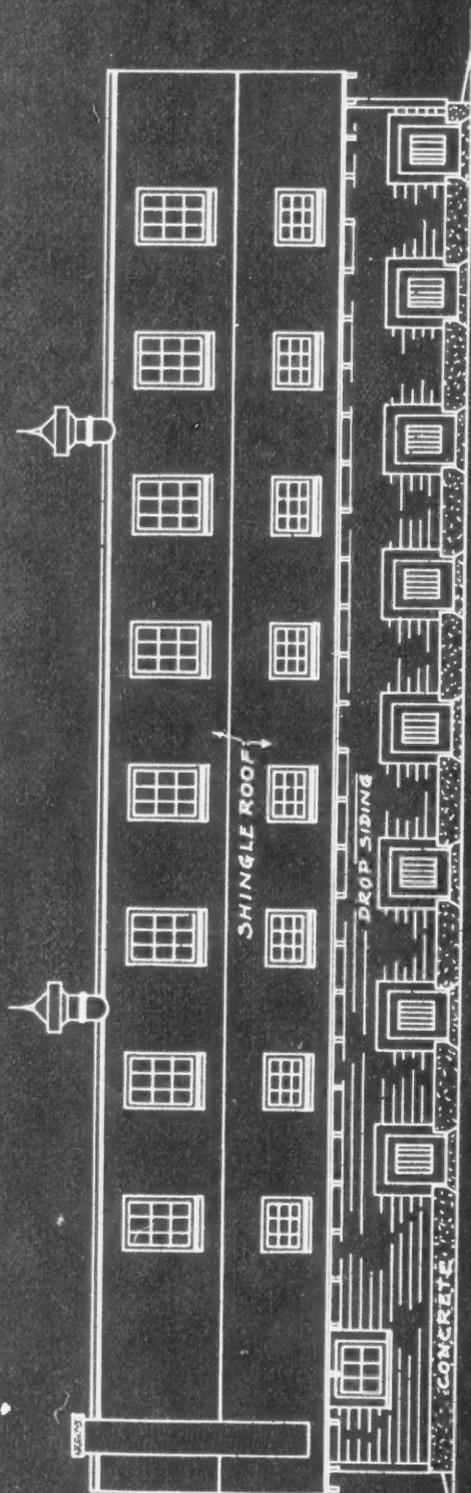
AMERICAN BUILDER FARM BUILDINGS



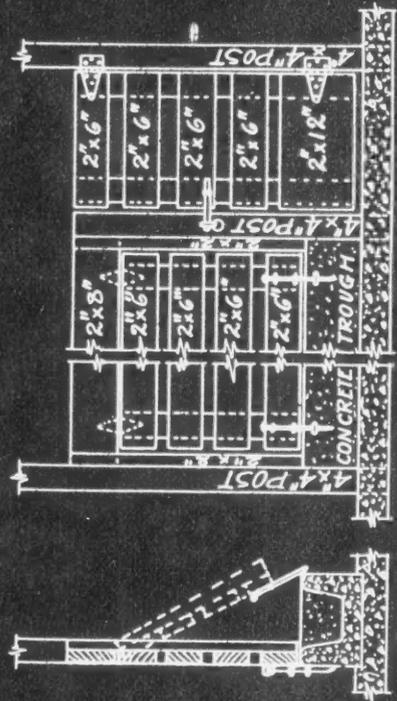
CROSS SECTION
SCALE 1/4" = 1'-0"

CROSS SECTION OF MODERN HOG HOUSE

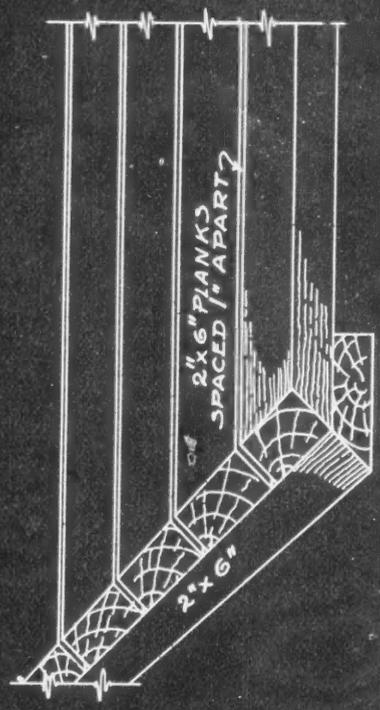
AMERICAN BUILDER FARM BUILDINGS



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



DETAIL OF FEEDING TROUGH & GATE
SCALE $\frac{3}{8}'' = 1'-0''$



REMOVABLE PLANK FLOOR



ELEVATION & DETAILS OF MODERN HOG HOUSE

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

Pre-Cost Permanent Homes for Alpha Workmen

To the Editor:

Easton, Pa.

Here is a photograph that may be of interest. This is one of the new workmen's homes that we are building at two of our plants—Manheim, W. Va., and Cementon, N. Y.

This is not a beam-and-plaster house, as its appearance might indicate. The exposed beams are solid concrete and serve to hold together the pre-cast panels. The house was built according to the "Simpson-Craft" system, which permits the construction of reinforced concrete practically without forms, the greater portion of the work being pre-cast of minimum sections, made with the idea of using common labor in erection. In some types of buildings, erected by this system, no plaster or stucco is used, tho the appearance of the exterior can be varied by the use of large plane surfaces stuccoed. For the miscellaneous small houses, outside of the dwelling houses, no plaster is used for the exterior, but for dwellings it has been found that the continuous air spaces within the outside walls of the building, together with the introduction of heavy waterproofed felt helps to make the building dry and warm in winter and cool in summer.

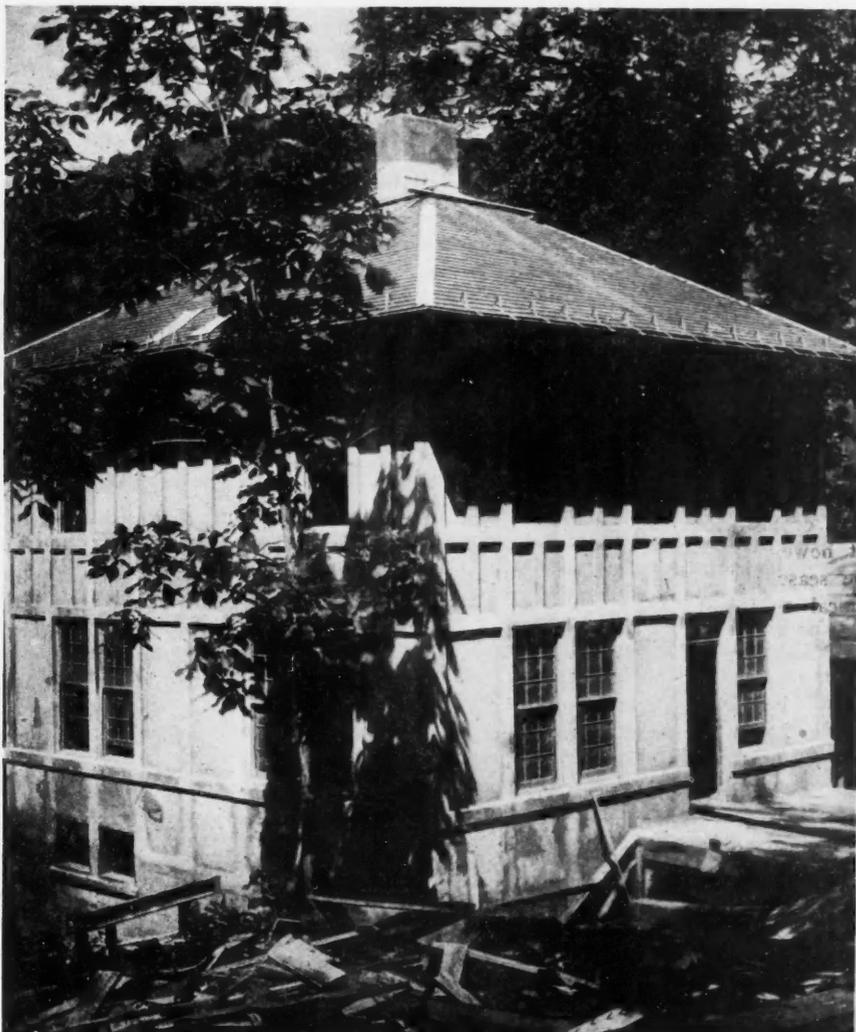
The construction consists of wall and floor slabs, together with belt and sill courses, floor beams and roof rafters made of standard sections and sizes for individual pieces. They may be assembled in any combination desired, so that while each building is made up of standard units, the general design may be varied, making it possible to produce a large number of buildings, using the standard units, but varying the exterior treatment.

The pre-cast sections of the buildings are made on casting tables or in moulds. This may be done either at the building site or in the yard or shop, and shipped to the site. If they are shipped, the sections may be packed in fine broken stone, sand or gravel, and the latter may be used at the site as an aggregate forming the studs, which are field-cast and form the binding element for the buildings. All of the pre-cast members entering into the construction are so designed that the metal with which they are rein-

forced projects beyond the end or edge of the pieces. In assembling the pre-cast sections in the buildings, they are spaced at intervals on the walls, leaving a space between the two sides of sections, and are then clamped together temporarily by means of channel shaped wood or metal forms covering the two open sides of the intervening spaces and forming a pocket into which reinforced bars are placed. The inside face of these pockets has a series of holes spaced about 7 inches on centers, into which are placed large wire hairpins. The pockets formed by the forms are filled with concrete, forming the studs of the building and binding all parts together

S. ROLAND HALL,

Advertising Manager Alpha Portland Cement Co.



Precast Concrete Dwelling Used in the Alpha Industrial Villages at Manheim, W. Va., and Cementon, N. Y.

Hydrated Lime in Concrete Roads

To the Editor:

Pittsburgh, Pa.

The attached bulletin entitled "Hydrated Lime in Concrete Roads" gives the results of the first test that has been conducted to show the effect of hydrated lime in concrete when placed under actual field conditions.

The effect of the hydrated lime seems rather remarkable, but when one considers the detrimental effect that excessive quantities of water have on the ultimate strength of concrete and that any decrease of excess water manifests itself by an increase in strength, the results are quite logical.

The progressive increases in strength can undoubtedly be assigned to two reasons:

First, as the hydrated lime was increased, the flowability and workability of the mixture was improved to such an extent as to permit it being placed with a lesser quality of mixing water than that required for the concrete without lime.

Second, hydrated lime is of an hygroscopic nature and ab-

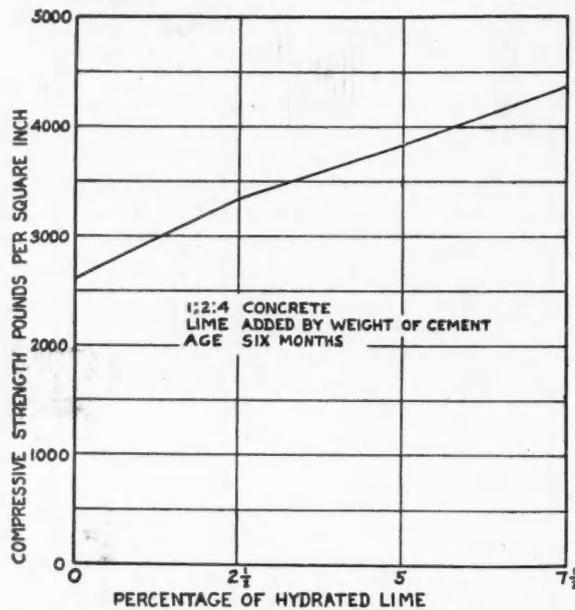


Diagram Showing the Effect of Hydrated Lime on the Strength of Concrete Specimens Stored Under Actual Working Conditions. The Percentages of Hydrated Lime Shown Were by Weight of the Cement Content, the 7 1/2 Per Cent Being Equivalent to 7 1/2 Pounds of Hydrated Lime Added for Each Bag of Cement. From Field Tests Made by the State Highway Department of Delaware.

sorbs water at the time of mixing. This water is held mechanically by the lime, but it cannot be utilized in any chemical combination while the lime is hardening. The cement, however, has a chemical attraction for moisture during the seasoning period which is much stronger than the mechanical attraction of lime. The moisture is therefore drawn from the lime and utilized by the cement in the process of more nearly complete hydration, thus resulting in increased strength.

With these two statements the increases in strength shown are explained. The Highway Department of Delaware are large users of hydrated lime in concrete, hence the reason for conducting the investigation.

Other facts relating to the field test are embodied in the booklet, and we are confident that with the steadily increasing interest being shown in the subject, the engineering profession, together with all others interested in concrete construction, will be only too glad to see the matter covered in your columns if you can see your way clear to do so.

Your particular attention is called to the statement from the Spackman Laboratories where the specimens were broken, that failure of the coarse aggregate occurred in every case.

As mentioned above, this is the first test published on this subject which indicates the performance of hydrated lime in field practice, and this makes the information so much more valuable. It has been the contention of those who have closely studied this subject that the true value of hydrated lime in concrete is not so pronounced in laboratory work, the reason for which is fully covered on the last page of this pamphlet, but, in field practice, the conditions being vastly different than in the laboratory, the possibility for improvement is much greater, and a material having the properties of hydrated lime has a much greater opportunity to do its work.

NORMAN G. HOUGH,

Director, Construction Bureau, The Lime Association.



Concrete Ship "Faith" Performing Well

To the Editor:

Chicago.

The reinforced concrete cargo steamship "Faith" which left a California port some weeks ago for a west coast South American port was, a few days ago, reported as having arrived safely and in first-class condition. The "Faith" is discharging her cargo of lumber and is expected to reload for an Atlantic port, which she will reach via the Panama Canal.

H. COLIN CAMPBELL,

Director, Editorial Bureau, Portland Cement Assn.



Fears to Miss Some Good Ad

To the Editor:

Byron, Illinois.

I find your AMERICAN BUILDER a great help in a great many ways, especially the new feature, namely, the blue prints.

As to the matter of placing the blue prints in loose leaf form so they could be bound separate if desired, it would not be a bad idea; but as to my own ideas they suit first rate as they are.

As to the advertising being placed separate from the reading matter, I very much object to it, preferring the arrangement you now use, as I believe where a paper is gotten up as yours is not only are you able to dispose of the space more readily, but the readers are not so liable to miss some good ad.

I am pretty well satisfied to leave the matter of getting up the AMERICAN BUILDER to you, as that part of the business is out of my line.

FRED HALL,

Carpenter and Builder.



Opitz Builds Another Gothic Barn

To the Editor:

Paynesville, Minn.

Enclosed find snapshots of frame-work of a barn built practically the same as the one I described in the April issue. This barn is designed for those who want genuine strength. When the hay loft in a roof of this style is compared with the loft in the average gambrel roof, I cannot see why some still build the gambrel. Buildings of beauty and distinction set off a farmstead and give the builder a reputation. This style of Gothic combines beauty, strength and distinction.

E. G. OPITZ.



Comments on the September Blue Prints

To the Editor:

LaFargeville, N. Y.

The plan shown on the blue print for September could be built of logs if desired and the stairs could be arranged so that the kitchen could be brought in even with the dining room to make the rear end straight. Of course, the upper story might be left off in a bungalow, but I am wondering just what per cent it would save in any of the four styles

(Correspondence Department continued to page 66.)

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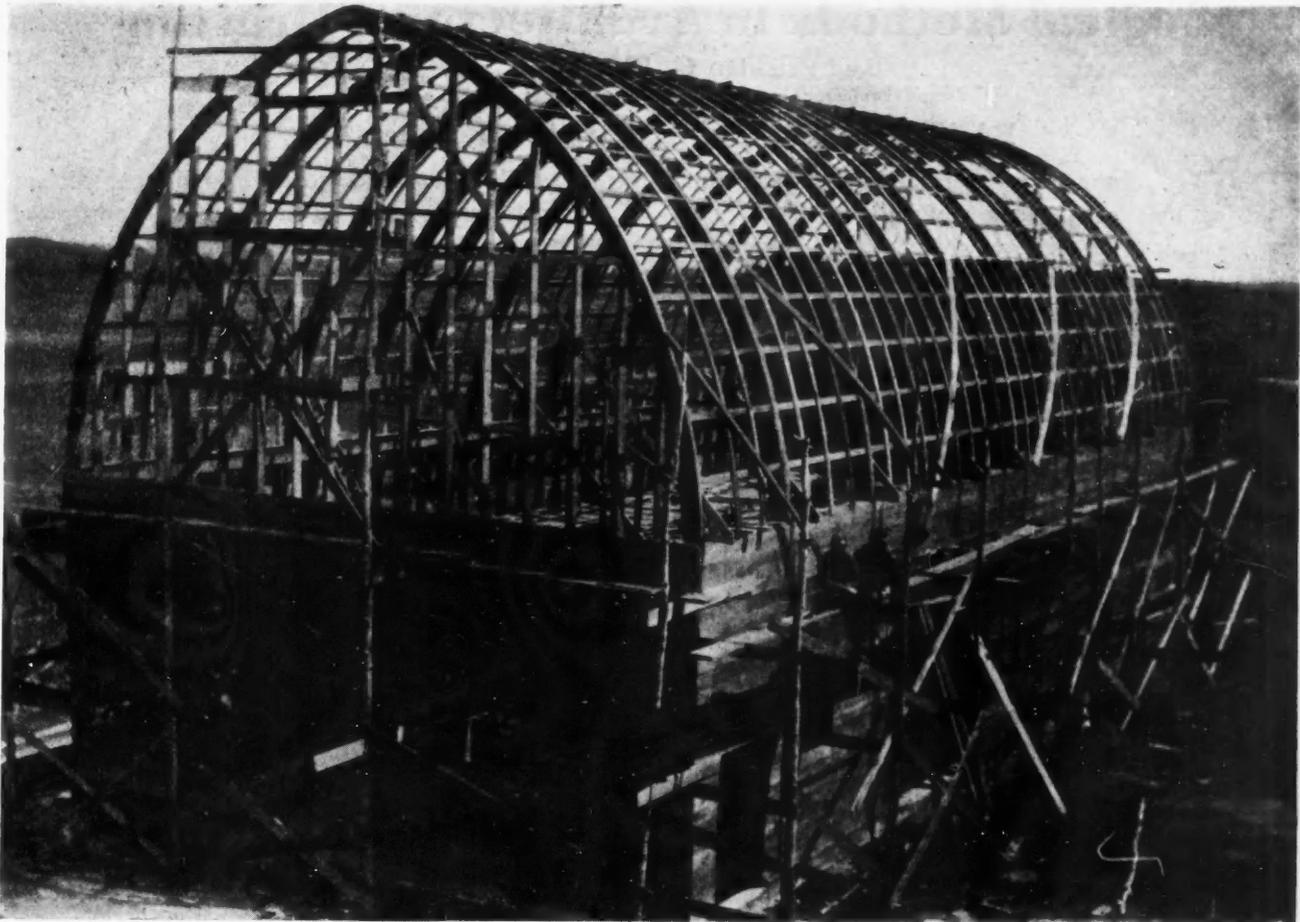
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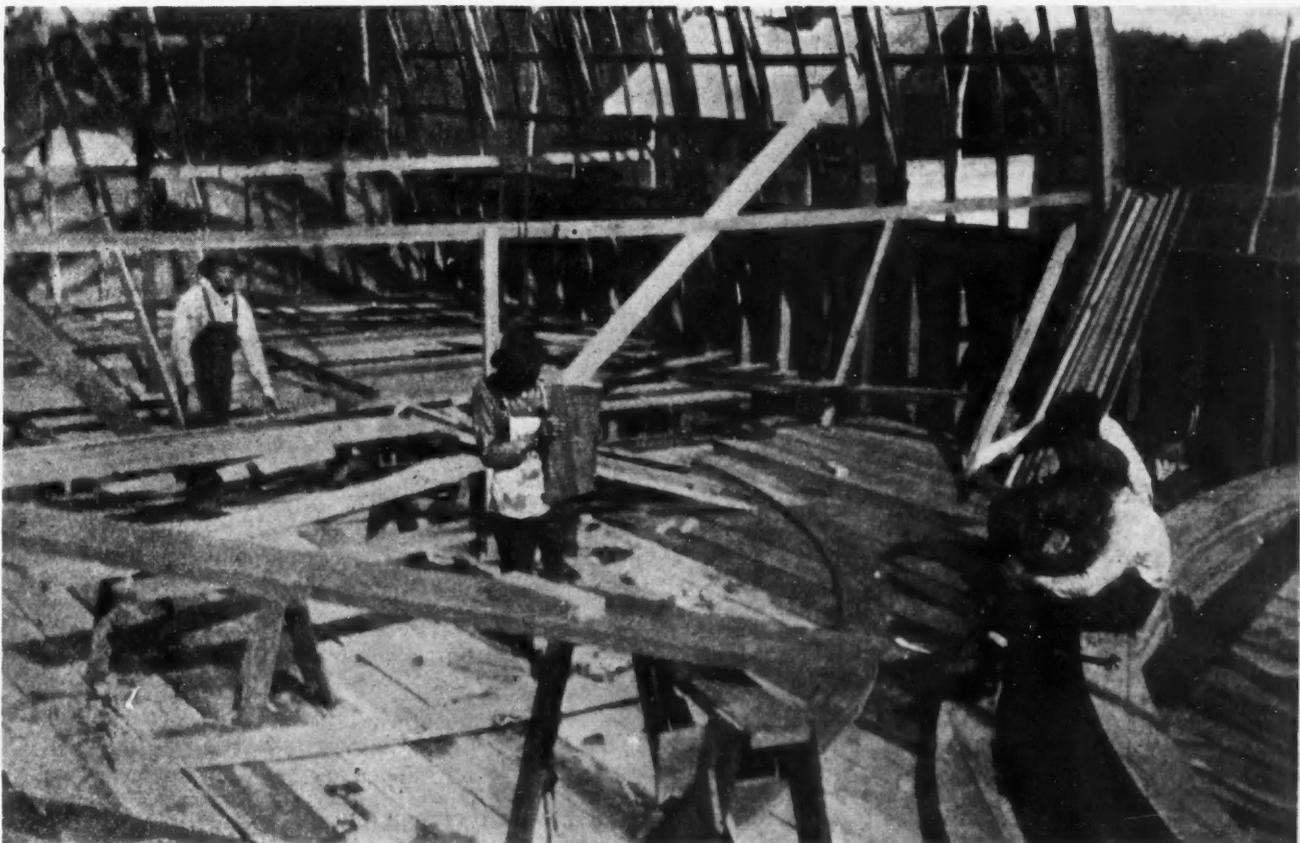
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Good Looking Gothic Roof Frame Put up by Barn Builder E. G. Opitz, Paynesville, Minn.



Snapshot Showing the Men at Work Building up the Big Curved Rafters for the Gothic Barn.

Logical Methods in Architectural Drafting

By Franklin G. Elwood, B. Ar.

Assistant Professor in Architecture, Bradley Polytechnic Institute

PART V.—Development of the Perspective

FIFTH of the logical steps in the development of the drawing for any building is the mechanical perspective which ordinarily depends for its development upon the working plans and elevations. However, if preliminary or exhibition drawings have been made the perspective may be worked up from these.

A correctly developed mechanical perspective gives an accurate picture of the building, as it will look from one point of view, when completed. It is for this reason that the perspective proves especially valuable to the owner or client, who cannot readily visualize the completed structure by means of only the working drawings.

Preliminary competition drawings stand a far greater chance of being selected when accompanied by a well-rendered perspective than a similar set without one.

The phenomenon upon which perspective is based is so familiar that it is not necessary to go into a detailed explanation. Briefly, the science of perspective is based on the fact that objects appear to grow smaller as they recede from the eye.

There are two kinds of perspective, namely, angular, and parallel or "one-point perspective. Ordinarily when viewing a building we see it in angular perspective; that is, more than one side is visible. When only the front or the side is seen it is in parallel perspective.

Perspective is worked on planes of projection in a similar manner to orthographic projection or mechanical drawing. Comparing the elevation and the perspective of an object, as illustrated in Figs. 1 and 2, we can readily see the relation as well as the difference between the two. We may consider the picture plane, which corresponds to the vertical plane in orthographic to be a transparent plane of glass; then lines which represent rays of light connect points of the object with the eye and intersect the glass at points. These if joined would give an exact representation of the object.

The plane of the horizon (Fig. 2) is always located at the height of the observer's eye and corresponds to the horizontal plane in Mechanical Drawing. A third upon which the object rests is called the ground plane.

Considering these planes as being revolved into the plane of the paper, the vertical plane is then shown by a line H. P. P. (Horizontal Picture Plane) or its trace on the plane of the horizon. The plane of the horizon is indicated by V. H. or its trace on the vertical plane. The plane of the ground is V. G., Fig. 3.

After having carefully considered these funda-

mental principles, proceed to develop the perspective of the house as follows: First, secure a large-sized sheet of paper and a long straightedge. Take either the first floor plan or a tracing of the two outside walls of the front and side which you wish to place in perspective. All that is necessary is the width and position of the openings, porches and projections.

Pin this tracing or plan near the upper edge of the sheet and with the sides making angles of approximately 45° to the horizontal. If it is desired to show more of the front the angle may be changed.

Locate and draw H. P. P. so that it will pass thru the near corner of the plan. Then locate V. G. four or five inches up from the bottom of the sheet. Place V. H. for the ordinary perspective 6' 0" at the 1/4" scale above V. G. If a bird's-eye view is desired, place it about 20' or 30' above. If, on the other hand, a worm's eye view is preferred, place it 6' or 8' below V. G.

Locate the observer's eye or S. P. as far from the picture plane as possible or near the bottom edge of the drawing board. Locating it too close to the picture plane or H. P. P. will give a distorted view.

To obtain the vanishing points draw lines from S. P. parallel to the sides of the house, and where they intersect H. P. P. drop perpendicular lines to V. H., locating V. P.¹ and V. P.² (Fig. 3).

Next determine the height of the near corner of the house, this height to be taken from the ground to the underside of the cornice. Now, since this corner lies in the picture plane it is seen in its own true height. Hence the perpendicular line from A to V. G. is called the measure line. Then a-b the height of the house may be laid off or projected on it.

From the top and bottom of a-b draw converging lines to V. H.¹ and V. H.².

To obtain the outside corners B and C in perspective, draw lines converging to S. P., and where these lines intersect H. P. P. drop perpendicular lines locating the corners (Fig. 3).

Now, having the perspective developed to the stage shown in Fig. 3, with the body of the house and porches indicated by rectangular blocks, proceed with a further step, as illustrated in Fig. 4. Here the roof lines are shown. In order to obtain these it is necessary to draw on the first floor plan, the plan of the roof, showing the projection of the cornice, the ridge and hip lines and the location of the dormers.

The height of the cornice must be taken on a separate measure line, which is determined by the intersection of the cornice line in plan and H. P. P. and is a perpendicular dropped from this intersection to

(Continued to page 116.)

DEVELOPMENT OF THE PERSPECTIVE

FIG 1

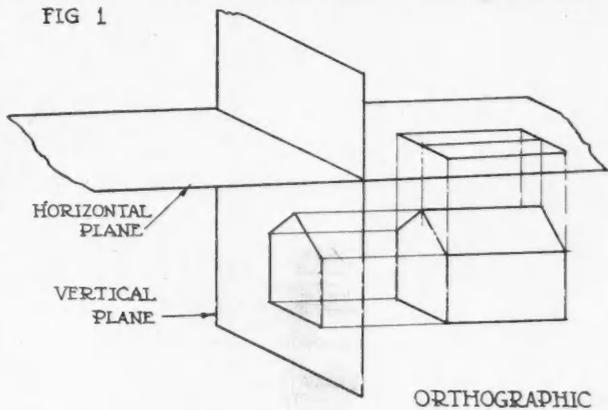


FIG 2

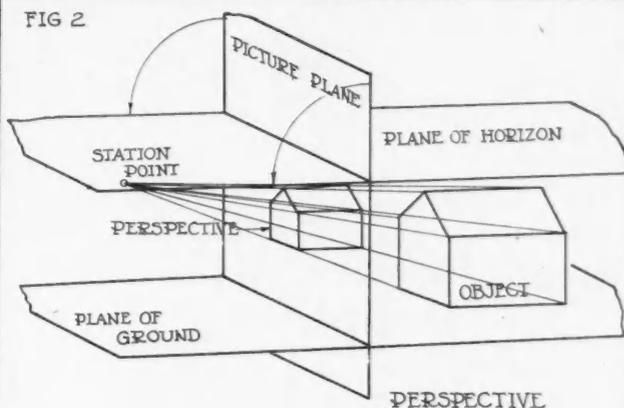


FIG 3

FIRST FLOOR PLAN

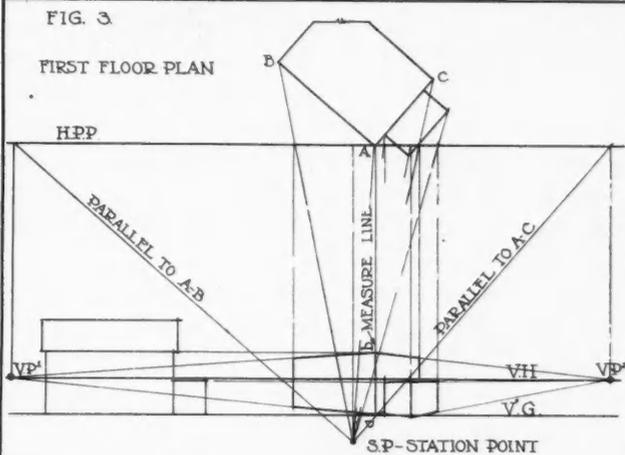


FIG 4

LINES OF ROOF

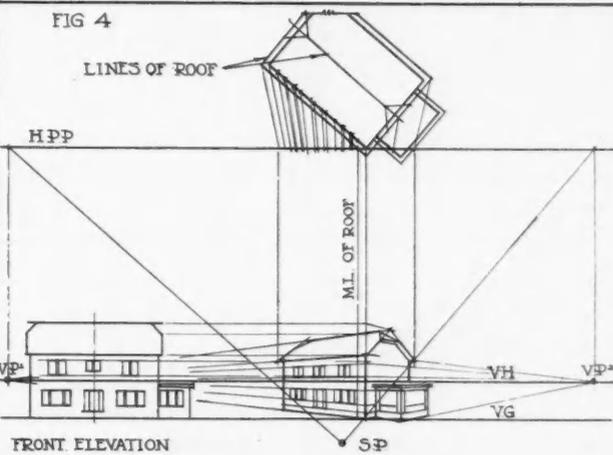


FIG 5

FLOOR PLAN REVOLVED TO ANY ANGLE DESIRED

NOTE
STATION POINT IS TAKEN
76'-0" AT SCALE BELOW HPP.
OR IN FRONT OF PICTURE
PLANE.

HPP

A CONVENTIONAL METHOD OF RENDERING



Fixing up the Farm

Plumbing in the Country Residence

PART I. SEWAGE DISPOSAL

By Harrold L. Alt, Engineer

THE modern builder often has a difficult matter on his hands when it comes to the question of taking care of the sewage from houses erected in undeveloped territory in a manner which will be safe, sanitary and at the same time inexpensive. The American public of today have to a large extent become wakened to the fact that the common cesspool is not only undesirable, but that it is a positive menace.

Every builder is familiar with what is commonly termed the "leaching cesspool" which is illustrated in Fig. 1. This cesspool is generally constructed below the grade line G and is built with open joints between the stones. This results in the sewage which comes in thru the sewer S gradually soaking, or leaching, out of the pool into the surrounding soil E and thru the broken stone B which forms the bottom of the pool. This pool is a dangerous affair to have around one's home and has been used in the past largely on account of lack of knowledge both as to its dangers and of a better substitute.

The water passing thru such a cesspool becomes a source of contamination liable to poison nearby wells and to cause epidemics; in fact, in some of the modern cities the use of the "leaching cesspool" is for-

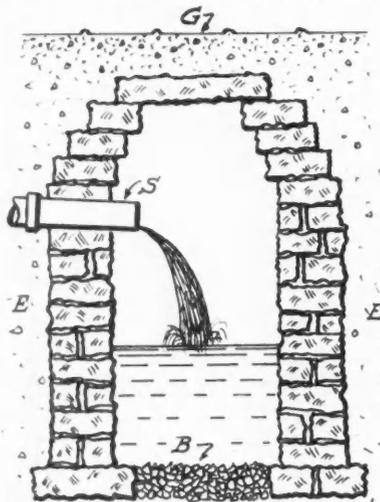


Fig. 1. Leaching Cesspool.

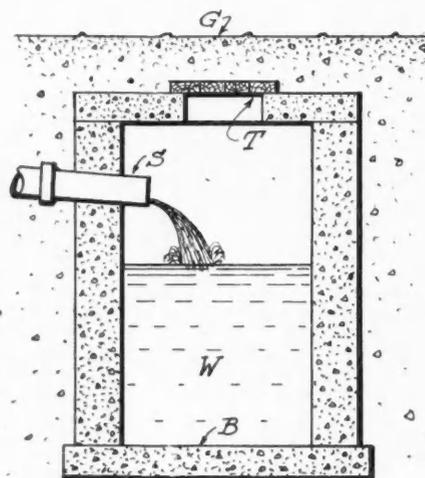


Fig. 2. Tight Cesspool.



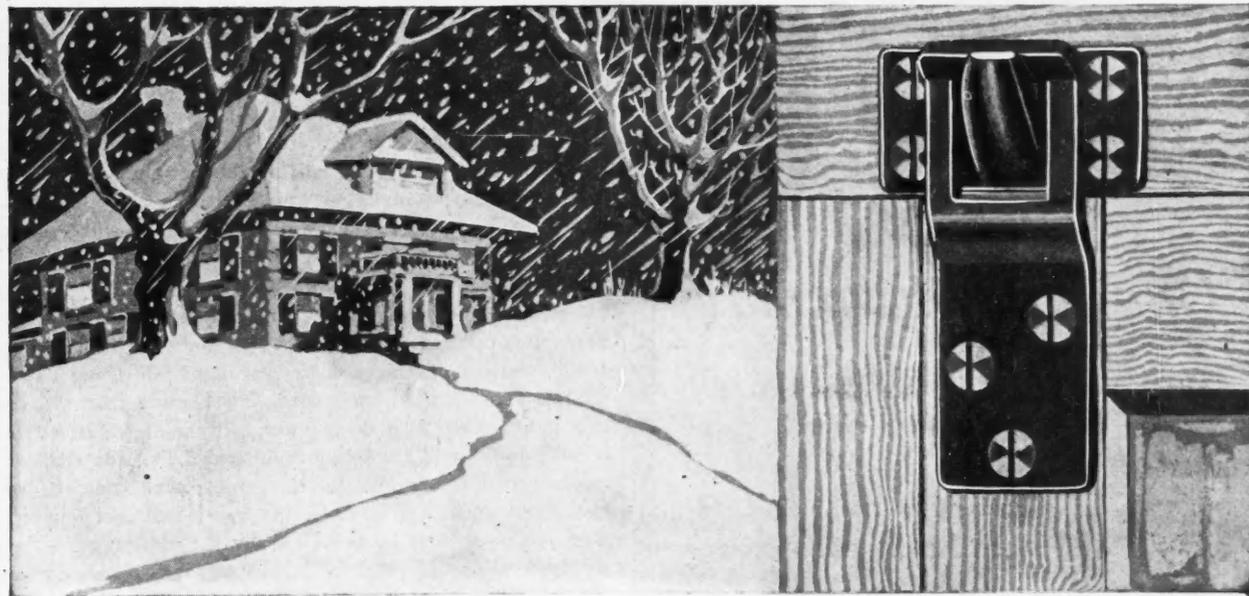
bidden by law. All cesspools are required in such localities to be what are known as "tight cesspools" similar to that illustrated in Fig. 2. This pool is also set below the grade G, the walls being built of concrete with a reinforced concrete top and a plain concrete slab, B, for the bottom. A manhole is left in the top, this being covered by the boards T, and the sewer S is brought in thru the side, the sewage spilling into the contents of the tank W and being permanently retained in this receptacle.

With the "leaching cesspool" first described, the water or liquid part of the sewage is to a great extent absorbed by the soil, while the solid contents gradually accumulate in the bottom, requiring cleaning only after certain rather long intervals.

With the "tight cesspool," shown in Fig. No. 2, none of the liquid is presumed to escape and such cesspools, therefore, fill up and require emptying much more quickly owing to the proportion of water being very great in the common sewage received by a pool. The objections to the "tight cesspool" are so great that many builders have been compelled to build them as shown, have them inspected and passed by the local authorities and then knock a hole in them to allow the liquid to gradually drain away, in this way avoiding over-frequent cleanings which would otherwise be required.

With the ordinary suburban house there is usually sufficient ground surrounding it to make all of these unpleasant operations unnecessary. At the same time the sewage can be disposed of in a scientific manner

(Continued to page 118.)



STANLEY Storm Sash Hardware

“I’LL tell you, Johnson,” said a commuter to the man who built his home, “I’m mighty thankful that you got that Stanley Storm Sash Hardware on my house. My coal bills are much lower than I expected and I attribute this coal economy to a great extent to this convenient Stanley Hardware.”

Are **you** familiar with STANLEY Storm Sash Hardware? Do you know how **well made** it is, how admirably it serves its purpose, and how nicely it takes care of troublesome **ventilation** and **keeping-cold-out-and-warmth-in** problems? Write for our latest catalog today.

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"Quality is Economy"

Whether you estimate your varnishing cost by the square-foot or by your painter's daily wages, you want to be sure that your work is done *economically*. And the best way to be sure is to use

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It has great space-covering capacity per gallon. It is uniform in quality and every drop in every can is usable.

It is easily applied and requires fewer strokes than other varnishes. It enables finishers to increase their daily output.

Make sure that your finishing is well and economically done by using these *longest-lasting* products.

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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 60.)

shown or what per cent it adds to the cost of the first floor to get these two bed rooms and space for the bath room. Of course there is the flooring, which would be one of the largest items, unless it was the extra height of the side walls; but the same roof, except the dormers, would cover it and the same foundation would be used and as these are about the most expensive parts of a house I will venture a guess that the second floor adds 25 per cent to the cost.

Perhaps others will say differently and someone may figure it out, but I should judge it added something like three times as much value as its cost. I have an idea that one could improve on this house at a slight additional expense. As two bedrooms are well worth much more than they cost, two more might also be a good investment for some more money, as there is ample width, provided the side walls were made a few feet higher. The front rooms could be made two feet wider, that is, make the house two feet longer and then not need long joists or the front bedroom need not be divided. It would make a fine large room if left full size. There are partitions on the first floor at the back to help support the upper partition. I know from experience that it is somewhat dangerous to tamper with a house plan and when once a man begins there is no telling where it will end, but if one resolves to remain on the same foundation and not molest the first floor he can add to the height and put in a partition or two, provided he plans to hold them up and still live thru it.

The plan shown on the second blue print is certainly some barn, both for looks and utility and if anyone wants a little more either at the time of building it or some years later it is a simple matter to extend either end according as to whether room is needed for more cows or young stock, as the silos are so placed that they are not in the way. Another wing could be put on the other side for young stock when needed. If conditions seemed to indicate that the barn should be enlarged it might be well to make one of the silos larger, especially the one on the side opposite the horse stable.

JOHN UPTON.



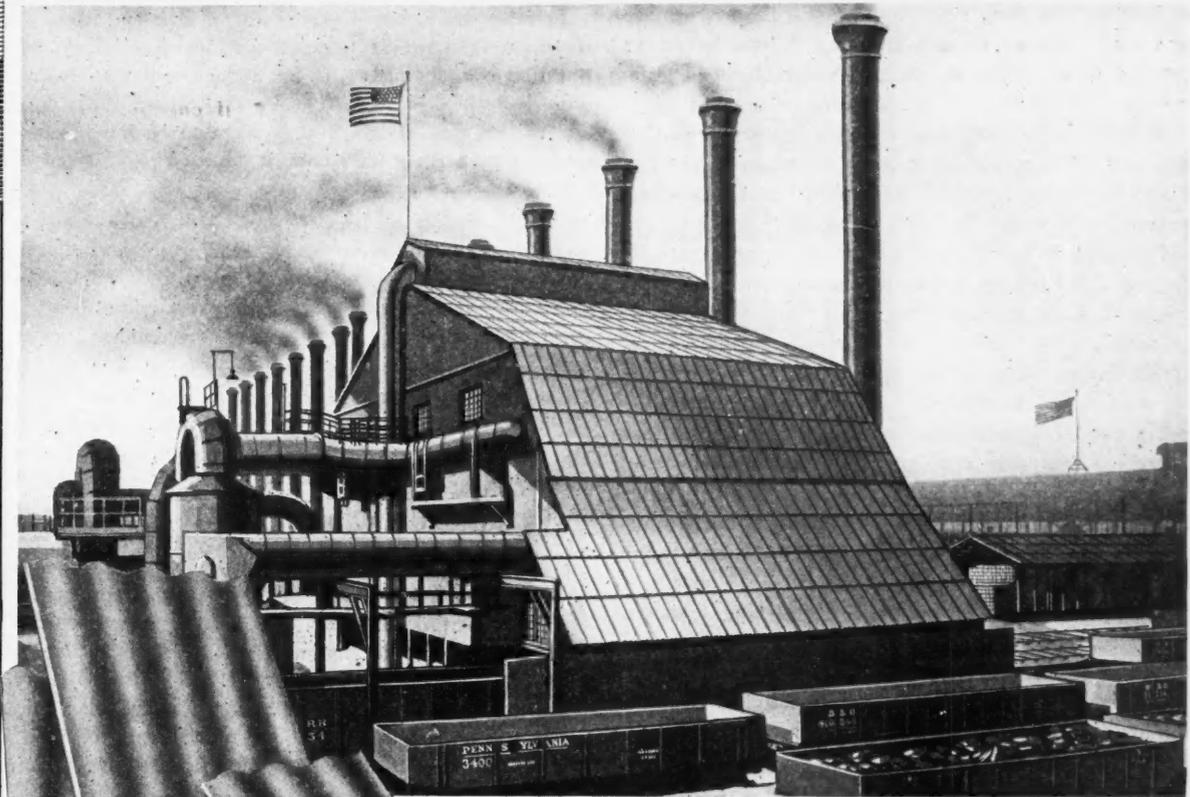
Who Has File of Back Numbers for This Man?

To the Editor: 354 Hunter Street, Ossining, N. Y.

I trust you will pardon the liberty I am taking in writing you this letter, as I am prompted in doing so thru the medium of your great publication, the AMERICAN BUILDER. It is the finest and best trade journal I have ever come in touch with during my life. The various subjects it deals with and contains, such as trade notes, information and descriptions of difficult problems are very instructive; and the plans of general building conditions, ever changing in scope and improvement, increase one's knowledge and keep him enlightened as to the latest points of this line of work. I enjoy also with much pleasure the correspondence and query columns, and the exchange of practical and actual experience by one another which is much welcomed, judging from the sentiments of your pleased subscribers. Such information creates new ideas and strives to inspire our efforts toward the advancement and ideals of perfection. And the shop kinks, of constructing small useful articles of household and other furniture are to be encouraged, to say the least.

I have had the good fortune to get some old back numbers of your valuable journal, and I assure you with much appreciation that I enjoyed the interesting material they

(Continued to page 68.)



In the Front Line Trenches of Industry

Generating plant of Jones and Laughlin Steel Co., Hazelwood, Pa. Roofed with Ambler Asbestos Corrugated Sheathing.

Here, as well as in the trenches "over there", there is danger—danger from fire. In all the large industrial centers where men are working day and night there is the constant menace of fire due to increased activity.

Thousands of buildings and manufacturing establishments are protected from this menace by

Ambler Asbestos Corrugated Roofing and Siding

But there are many new structures that will be exposed to the danger of fire unless they are so protected. Contractors and builders who protect the buildings they have in their charge by specifying Ambler Asbestos Corrugated Roofing and Siding are doing a patriotic service. Loss by fire now not only means the loss of the building burned but also thousands and often millions of dollars worth of munitions and other supplies that would be saved if the building were properly protected.

Ambler Asbestos Corrugated Roofing cannot burn because it is made of non-burnable materials—Asbestos and Portland cement. It never needs repairs. Never requires paint and is not affected by weather conditions.

The Ideal Skylight

We have manufactured exclusively for us a Corrugated Wire Glass to be used for skylights in conjunction with Ambler Asbestos Corrugated Roofing. It makes a non-leakable, fireproof skylight. Easily put into place and is much more economical than other types of skylights.

Write today for more information.

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Dept. B-1 Ambler, Pa., U. S. A.

Manufacturers of Ambler Asbestos Shingles, Asbestos Corrugated Roofing and Siding, 85% Magnesia Pipe and Boiler Covering, and Asbestos Building Lumber.

(Continued from page 66.)

contained. Thru unfortunate circumstances, I am an inmate confined here in Sing Sing Prison, and I still have two more years and some months to remain here. I have made, as others are apt to do, a mistake toward better objects in life. None of us is infallible. The inevitable sometimes takes place unexpectedly. I am employed here at my occupation as a carpenter. I have extracted many clippings from your journal and used some ideas to good effect and advantage. The greatest misfortune that now confronts me is that I have lost out and have no further way to get any more of your journals. I have no means to subscribe, or any such prospects, until I am released, but assure you that it is my greatest ambition to subscribe when the opportunity presents itself. In one old number I saw a letter from a brother carpenter who stated that he had a lot of back numbers he would be pleased to send to anyone who desired them, but unfortunately I lost that clipping. If I am not imposing upon your good nature, would you mind inserting this letter in one of your future editions? It may appeal to some kind-hearted brother to assist one who is pulling hard against the stream. It would be very much appreciated. I am here without kin or friends. The only and best friend I had in life was my mother, and she died June 6 last. You can no doubt realize what this means to me. I hope and trust that you will receive this letter in the spirit that it is written in and favor me in this request. You will never regret it.

Wishing you all the success you and your journal deserve,
I am,
ANDY KRAMER.

Simpler Way to Lay Out Gothic Hip Curve

To the Editor:

LaFargeville, N. Y.

In reply to Erwin J. Dye, who asks about those French doors in the August issue, I did not stop to consider the question of hanging them, but if one will turn back to the June issue he will see that D. A. Haff asked for a design for four doors and told how they were to be hung, and I suggested that, as they were narrow, he used two instead of four.

It is a poor rule which doesn't work both ways and having received a little friendly criticism, I will return it and try and show that the rule given by K. A. Westholm, for getting the curve of the Gothic roof is good enough to work both ways and that he used more paper than really necessary to get results. Turn to the drawing in the September issue.

Draw the outlines of the common rafter and two lines to represent the rise and run, both continued beyond the ends of the outline. When you get the length of the line A—C, which you can do by placing a 45-degree triangle on the drawing so its base is on line A—B with point at B and with dividers or compass to get the distance on the slanting side from B to the vertical line representing the rise, mark this distance on the line A—B continued beyond B. In other words, swing the slant line A—C up to the right hand side of the drawing instead of the left. Then draw several lines parallel to this one, beginning at the vertical line and on each one mark the distance represented by the 45-degree line when the base of the triangle is on that particular line. That is, do just as you did to get line A—C, or to tell it in a few words, imagine the drawing folded on the line I—A so the

(Continued to page 72.)



Owner's dining room in 2-flat building of Wm. J. Strom, 7616 Rogers Ave., Chicago.
An attractive example of the wise use of **birch**.

Permanent Satisfaction

Intrimming with "Beautiful **birch**" there is not only the satisfaction of giving your customer what he ought to have and of doing a good and profitable job in a wood which ranks with the imported hardwoods; there is also the satisfaction of making a permanently satisfied owner who will be a standing advertisement for YOU. For "Beautiful **birch**" has a beauty that wears well. The longer you live with it the better you like it.

FREE: For your convenience in showing the stunning effects possible in "Beautiful **birch**" we will gladly send you a set of finished panels and a handsome illustrated book.

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IN handling Asbestos Roofing you will find that the easiest man to sell is the prospect who comes in with roofing price first—and fixed—in his mind.

His first query, "How much?" proves that he has thought little or not at all about roofing quality, roofing differences, or roofing services.

He puts undue emphasis on first cost because he thinks he is practising economy.

Yet it is really a question of time rather than money. If he is putting on a temporary roof, for a matter of months, let him have the kind he thinks he wants. But if it is for five, ten or twenty years, it is easy to swing him to Asbestos on his own argument: "I want the most for my money." The Asbestos roofing story could find no more receptive listener than this type of buyer—

When he is once shown the reasons for its long service against weather and time.

When he is shown that Johns-Manville Asbestos Roofing is highly fire-resistant—taking Base Rates of Insurance.

And when he learns the difference between Trinidad and other natural Asphalt used as a base in Johns-Manville Roofings, and those commonly employed.

He believes what you say, too, because he knows how much the Johns-Manville name on a commodity means.

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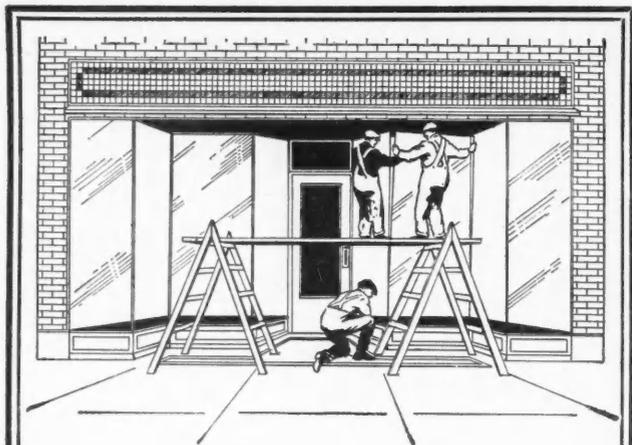
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Demand in Every City and Town

While existing conditions have largely curtailed the erection of new store buildings, there is considerable (or could be easily developed by you) activity in store front remodeling work. If you are not enjoying the profits from that class of work you only have yourself to blame. More than ever before retailers need new, modern, attractive fronts. And there is no reason for not having them. Materials for this class of work are comparatively easy to secure.



Use this coupon and let us send you our new book of store fronts. It contains a large number of suggestions which will help you to line up business. Go after this work—there's lots of it to be had. Talk with the live retailers in your town.

Desco Costs Less

"Desco" construction costs less than you have been accustomed to pay. It is easy to order, easy to install and it protects the glass. Fill in this coupon now and go out after this profitable business.

Detroit Show Case Co.

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DETROIT SHOW CASE CO.,
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GENTLEMEN: Please send me store front suggestions and information, details of "Desco" and prices, without obligation.

Name.....

Address.....

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

Correspondence Department

(Continued from page 68.)

horizontal lines agree and then it is clear that there is no need for the lower part.

As to the charcoal burning plant wanted by J. A. Bodden, my idea would be a hole or pit dug in a side hill, then pile the wood by standing it on end and cover with earth, except on the lower side and top, so as to get a draft. After it is burning well, cover the opening with earth and let it smoulder. I have never made charcoal, but have been informed by older men, who seemed to know. One could try this on a small scale.

For those worms in oak about which W. E. Ware asks, try a strong brine as a simple remedy.

J. A. Borgle asks for log bungalow designs. I think that some of the more simple plans of the industrial houses or some of those in the recent issues would be adapted to log construction. It might be well to make them somewhat smaller than shown.

JOHN UPTON.

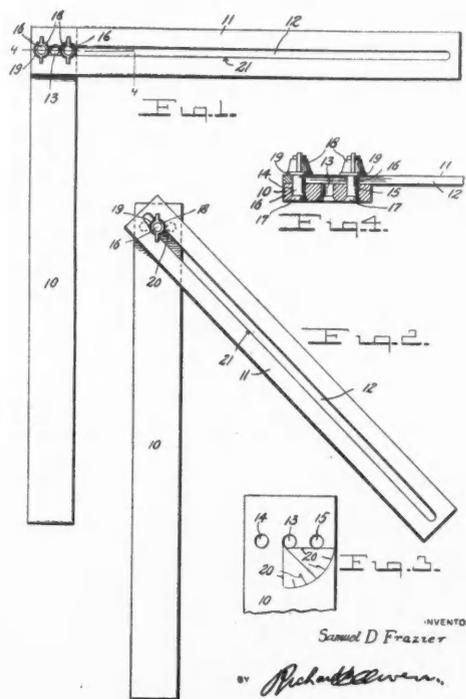


Invents a Take-Down Square

To the Editor: Carrizo Springs, Texas.
I am enclosing money order for \$2 for subscription to the AMERICAN BUILDER, and also copy of my Patent Square, which will explain itself.

I think you can see that this is the best square that has ever been invented, as it is very simple and has but few parts, and is a square at once for anything a square is needed for. As a take-down, it is the only one that will last. It can be adjusted at once for any purpose any square is adapted to. It is a good T square for drafting table. Simply slide the slotted blade or tongue to the center and you have it in the same combination. It is the best and handiest finisher's square that can be made, as it can be used on either edge of plank without changing in the hand, and as the

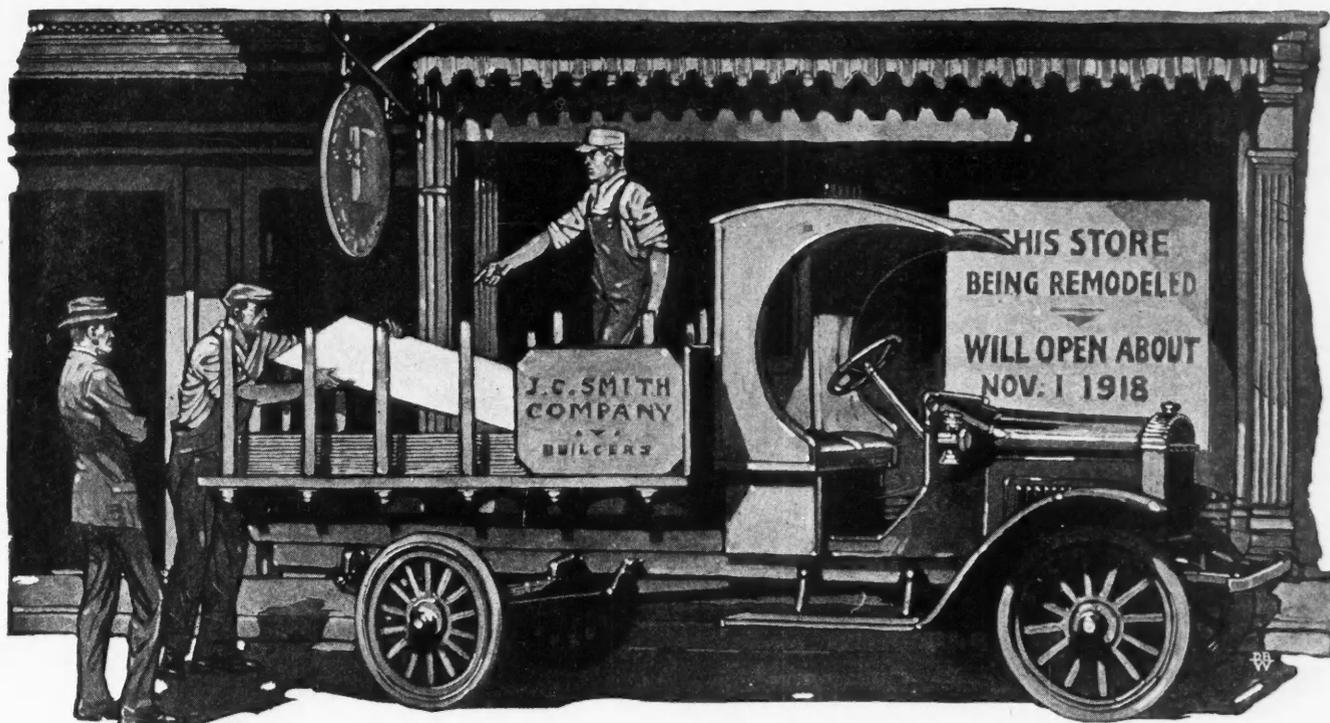
(Continued to page 74.)



INVENTOR
Samuel D. Frazier

BY [Signature]
ATTORNEY

Patent Drawing of Bro. Frazier's Improved Take-Down Steel Square.



“The boss was wise to pick good wallboard”

When a builder finishes a job with Black Rock Wallboard, he plays safe.

His reputation—worth more than the profit on a hundred jobs—will not suffer in one year or ten.

Because—good wallboard makes a good-looking, satisfactory interior—and Black Rock Wallboard will generally outlast the building itself, without cracking or warping.

Builders who take advantage of our Free Plan Service find that it frequently enables them to land desirable contracts. Write today for details and free sample panel of Black Rock Wallboard.

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BLACK ROCK BLACK CENTER WALLBOARD

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

(Continued from page 72.)

tongue lies on top of blade, the blade will lie square against the edge of material and tongue will lie flat on material. This is a great advantage over other squares as the bevel on the edge of any material will not effect the range of tongue. Many other advantages it has over other squares can be seen at a glance. The patent is for sale.

SAM D. FRAZIER,
Contractor and Builder.



Wants Plans for Sanitary Grocery Counter

To the Editor:

Karnak, N. D.

I have been a silent reader of the AMERICAN BUILDER for about eight years. I receive a great deal of information by reading its pages, especially the Correspondence Department.

I have a friend that wants a sanitary grocery counter made. Will you please tell me thru the correspondence columns how they are made? Perhaps some of the brother readers have plans and will answer.

H. G. RISING.



Advertising as a Banker Sees It

To the Editor:

Edina, Missouri.

In the current issue of the BUILDER you seem to take issue with the reader who desires the "reading" pages free of advertising matter, for my part I cannot see the benefit of having the advertisements sandwiched thru the reading matter unless it should be the cover pages where it would first catch the eye.

I was a reader of *The Iron Age* for several years, the leading publication in the hardware and iron trades at the time, and the advertising matter was classified; which made

it simple to look up anything that you might be interested in, and the make-up of the paper was pleasing to the eye; in fact, I believe that "Printer's Ink" awarded them the prize for the best and neatest publication in America for a year or two.

That is my idea of a neat publication, classified advertising and clean-cut reading matter; and the fellow who wants to throw away the advertising pages let him do so, and the fellow who is interested in some particular branch of the trades if he wishes can file what he desires for future use.

As for the advertising pages, they carry a message that is vital to the working contractor concerning material, machines and appliances pertaining to his line, and incidentally give the casual reader a magazine that is instructive from cover to cover.

In the advertisement of Lansing Company on page 133 is some short and pithy expressions as to the merits of the machine shown; they are gathered from a large territory and perhaps the views of the writers are correct as far as their knowledge goes, but it is possible that it is limited to this one machine and has no value comparatively where others are concerned.

The view of the average buyer is that some sales manager has fixed up the testimonials, had the parties sign them up, pass around the cigars and the job is done.

If it were possible for manufacturers of different lines of machinery, where the number was not prohibitive, to get together a "Bureau of Standards" which would be absolutely impartial and classify the lines in capacity, durability, and performance, it would enhance the sale of many labor saving appliances that are neglected to a great extent by the smaller contractors and builders; since, while the goods may be well

(Continued to page 78.)



This Kawneer Store Front Brought 25% Increase in Sales

War
Conditions
Call for
Remodelling

The
Kawneer
Way is the
Profitable
Way



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.

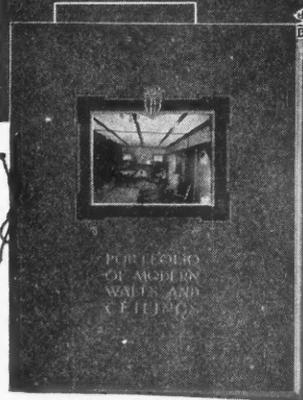
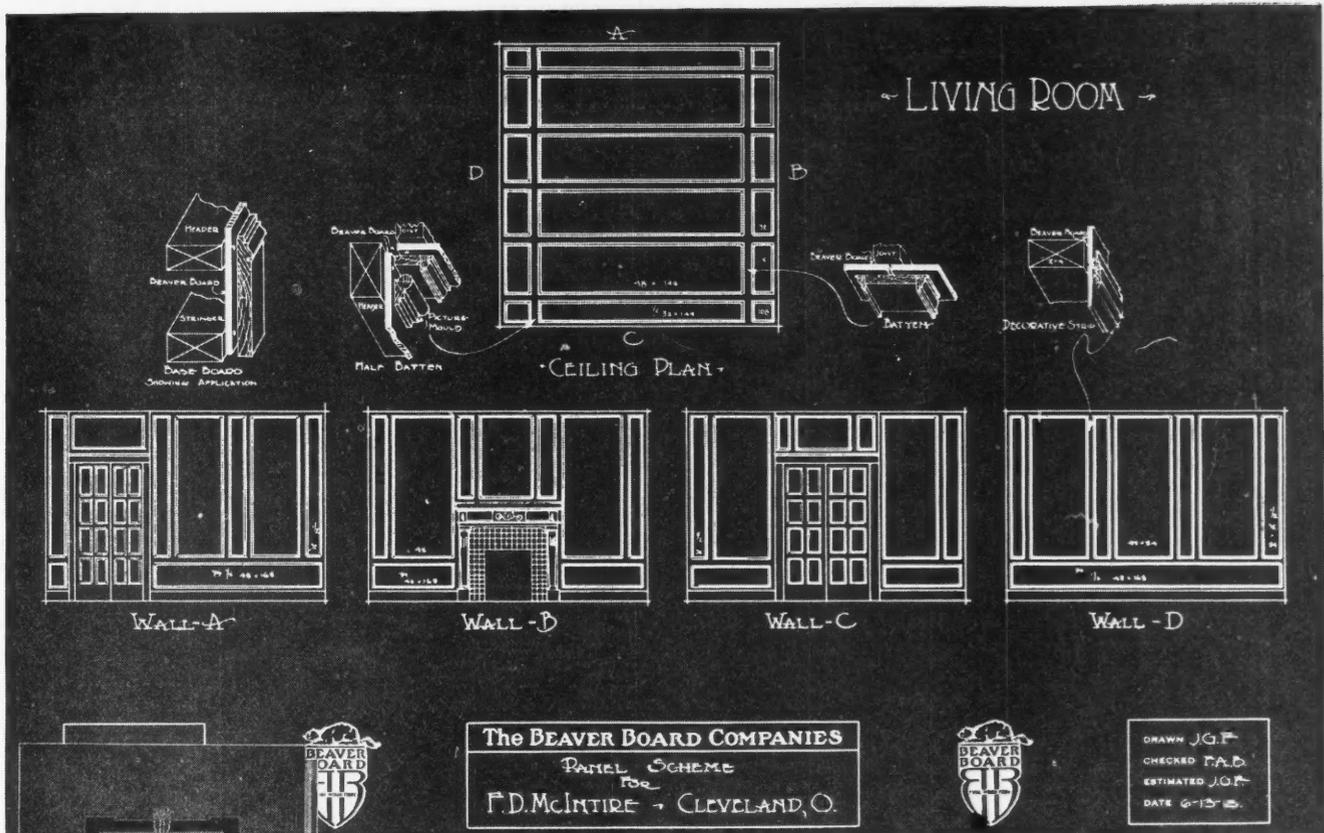
Kawneer

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.



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

Probably You Too Can Use This Free Design Service

Study this drawing for just a moment. It shows very clearly how our Department of Design and Decoration is helping Builders and Contractors all over the country.

It indicates the way in which paneling suggestions for each room, hall or auditorium are made, and shows the basis upon which exact estimates are prepared.

Along with specially prepared drawings and blue-prints of this kind, complete color combinations are offered. These decorative plans in portfolio form accompany each set of suggestions.

Estimating and planning your Beaver Board contracts is a task you can easily refer to this department without the slightest obligation. Our Draftsmen and Designers are always at your service. They are thoroughly familiar with all contract work—new

or remodeling—and can quickly prepare a plan and give you a reliable estimate ready to be used in placing your order for the correct amount of Beaver Board and trim.

They have made special study of large ceiling dimensions and can give you suggestions that will harmonize with the architectural details of the building.

Beaver Board is daily finding new uses for itself. The large boards of this knotless, crackless manufactured lumber are now indispensable as a building material. Beaver helps give you steady work from foundation to completion of interior trim. By displacing plaster it speeds up the work, too.

THE BEAVER BOARD COMPANIES

40 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 Idea in Roofing

THE new Neponset war-time method is simply this: lay Neponset Paroid Roll Roofing (red or green, slate surfaced) right on top of old wood shingle roofs that leak.

Why is this a war-time idea?

It cuts the cost one-half. It's the thrift method. Saves the expense of tearing off old shingles. Gives a double roof that is beautiful, fire-safe, and one that makes a house cooler in Summer and warmer in Winter. It's the method that fits exactly into the war-drained purse of Mr. House Owner. It's the one way to get in on the present roofing business on the right basis. It is paying carpenters and

builders handsomely. It will pay you. We help you make sales.

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

Mail the coupon for Selling Plan and folder giving directions.

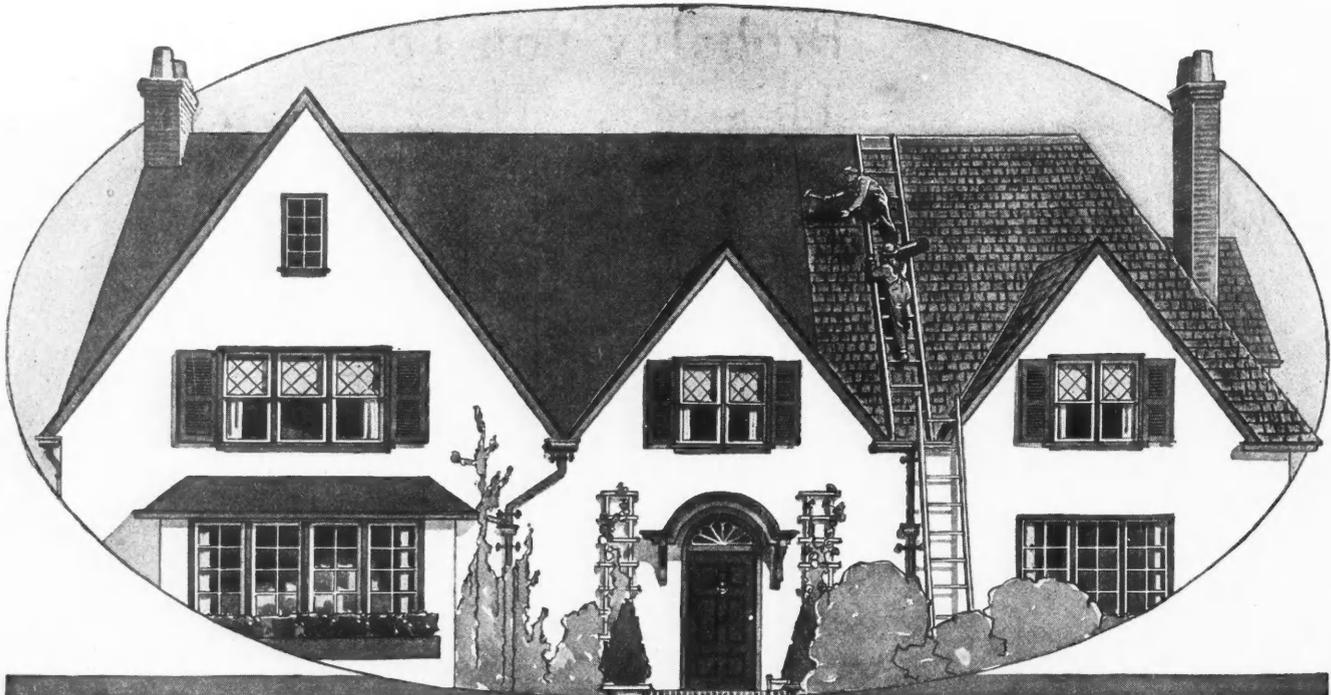
BIRD & SON, Inc., Dept. C, East Walpole, Mass.
(Established 1795)

Chicago

New York

Washington

Canadian Office and Plant, Hamilton, Ont.

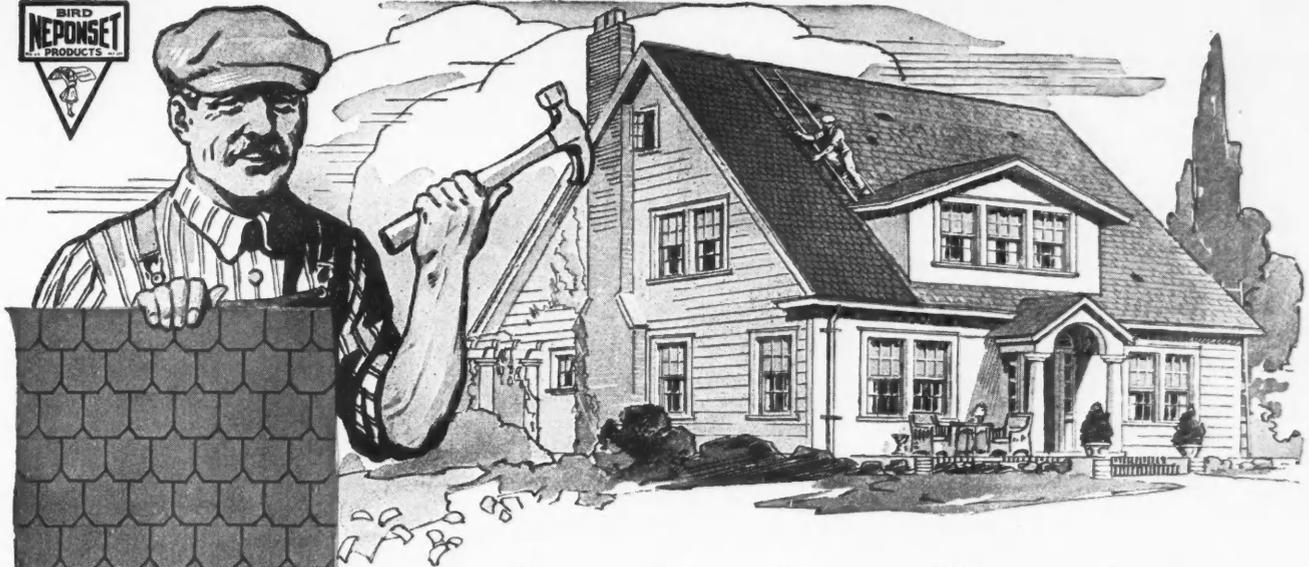


NEPONSET ROOFS

Bird & Son, Inc. (Write to the nearest address given above.) Send me, without obligation, Selling Plan and directions for laying NEPONSET Roofing over wood shingles.

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Art Craft is Keeping Carpenters on the Jump

Business is fine, thank you, with hundreds of our carpenter and builder friends. They are working full time with orders piled ahead.

They are pushing Art Craft—the handsome, fire-safe roll roofing that fits perfectly into the country's war-time needs.

Art Craft is put on over old shingle roofs or over roof boards on new buildings. Some carpenters tell us they land ten Art Craft jobs to every single order for a *new wooden shingle roof*.

One house in every three is said to have a worn-out shingle roof. How many customers does this mean for you

in your town? Count them up. Every one is a prospect for Art Craft.

The standard Art Craft roll contains 108 sq. ft. and is 32 in. wide and 40 ft., 6 in. long. It gives extra years of satisfaction because it has an extra heavy felt base. Tile pattern in three colors—red, green, and silver grey.

Fill out coupon and mail today. It will bring full information and facts that you ought to know.

BIRD & SON, Inc., Dept. C, East Walpole, Mass.
(Established 1795)

Chicago New York Washington
Canadian Office and Plant, Hamilton, Ont.



Art Craft Roof

BIRD & SON, Inc. (write to nearest address given above). I want to learn how Art Craft will bring me more business. Send complete information. Name.....Address.....

Local Home-owners will thank you

If You Recommend and Install MORGAN Storm Protection before Cold Weather

Anything you can suggest that will help local home-owners beat the high price of coal this winter will win their hearty appreciation.

MORGAN Combination Storm and Screen Doors, and MORGAN Storm Sash prevent cold houses, drafty rooms, insure perfect ventilation and comfort wherever installed. They keep the cold *out* and the heat *in*. They make for *lower fuel costs* and *better health*. Cash in on the season's opportunities NOW.



Stands Back of Your Satisfaction Guarantee

Like every MORGAN Product—Morgan Storm Doors and Storm Sash are thoroughly built—of selected, well-seasoned stock. And they carry the regular MORGAN guarantee.

There is a wide array of standard design to offer your prospective customers.

Write for the name of the Morgan Dealer nearest to you. You can depend on him to give you all the particulars and prompt service.

Morgan Sash & Door Company

Dept. 78

Chicago, U. S. A.

Morgan Co., Oshkosh, Wisconsin
Morgan Millwork Co., Baltimore

Members of the

Wholesale Sash & Door Association

Correspondence Department

(Continued from page 74.)

advertised, yet a record of performance is lacking in their particular case and they do not invest. The mere knowledge of the advertised article does not put the sale over, as they have no ready means of getting first hand information as to the real merits of the article and it may be the best in the line, or just built to sell.

Advertising is lacking in that it carries only a knowledge of the thing to the prospective buyer, leaving out quality and performance, the thing he most desires. This applies more especially to specialties that are brought out from time to time and new inventions that are put on the market; and the buyer pays for the mistakes of the manufacturers.

This is the opinion of the man "from the farm."

J. J. HONAN,

Cashier, Banking House of T. J. Lycan.



Spain Builds Concrete Ships

To the Editor:

Chicago, Ill.

A firm in Barcelona, Spain, known as Construcciones & Pavimentos, has for some time been building small concrete vessels and expanding its yards in order to enable the construction of large ocean-going reinforced concrete ships.

On August 24 the following cablegram was received by the Portland Cement Association, Chicago, from the firm mentioned:

"First Spanish reinforced concrete seagoing ship built by us arrived successfully Barcelona harbor. Best greetings American friends."

As this Spanish firm was preparing last spring to build 6,000-ton concrete ships, it is likely that this message refers to the successful trial trip of the first of these large reinforced concrete vessels completed.

H. COLIN CAMPBELL,

Director Editorial Bureau,
Portland Cement Association.



Table of Exact Rafter Lengths

To the Editor:

Williamstown, N. Y.

On page 86 of your August, 1918, number in "Some Rafter Dope," I find a very valuable table giving much information for the workman who is not up-to-date on laying out rafters for gable roofs and others. This article by Bro. Upton is fine all the way thru, but by a slight mistake or misprint, the diagonal measurement of 12 and 6 ($\frac{1}{4}$ pitch) is given as 13.89, where it should be 13.41.

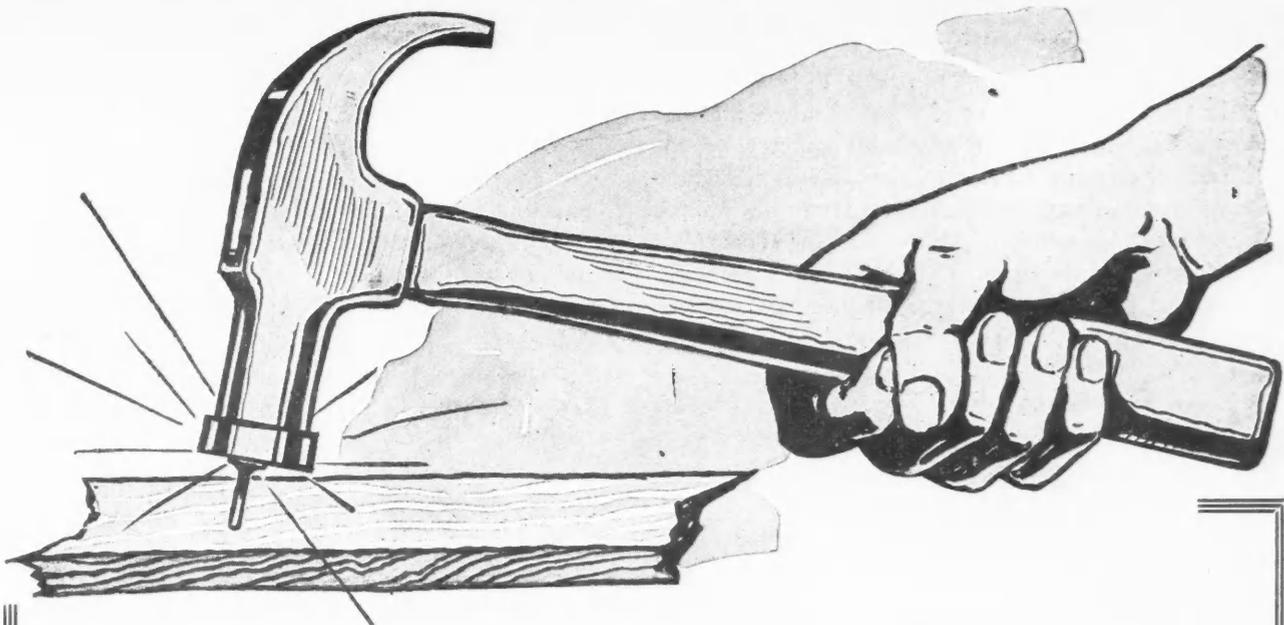
I have taken pains to figure twelve different pitches by square root to the ten-thousandth part of an inch, and thinking that they might help some brother in his work, I send a copy.

Pitch	Rise per foot run, in inches	Multiply run by	For each foot of run, add inches
1/24	1	12.0415	.0415
1/12	2	12.1655	.1655
3/24=1/8	3	12.3693	.3693
1/6	4	12.6491	.6491
5/25	5	13	1
1/4	6	13.4164	1.4164
3/24	7	13.8924	1.8924
1/3	8	14.4222	2.4222
3/8	9	15	3
5/12	10	15.6204	3.6204
11/24	11	16.2788	4.2788
1/2	12	16.9705	4.9705

Yours for success.

EMMANUEL A. GARCIA.





Get in the Drive
 for the
 Fourth Liberty Loan

 BUY LIBERTY BONDS

1866
CURTIS
WOODWORK

"The Permanent Furniture for Your Home"

THE CURTIS COMPANIES, SERVICE BUREAU
 1868-1968 So. Second St., CLINTON, IOWA

Manufacturing and Distributing Plants at

Clinton, Iowa Lincoln, Neb. Minneapolis Wausau, Wis. Oklahoma City Chicago Detroit
 Sioux City, Iowa Topeka, Kansas Dayton, Ohio Eastern Offices at Pittsburgh and Washington

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

It Is Worth the Price

SOME WAR FIGURES AND THE FOURTH LIBERTY LOAN

THE stupendous cost of the war is now being impressed upon the people of this country by the call for the Forth Liberty Loan, which will be the greatest floatation of bonds ever made at one time by any nation. Our country is now spending about \$50,000,000 a day, or one and one-half billions a month, with the expenditures so far mainly in the way of preparation. With our forces fully launched on the road to Berlin, the costs will be even greater.

The work of preparation has meant catching up with Germany, which prepared for the world war for forty years, in less than half as many months. All the tremendous work of building a modern fighting force from the foundation up has been concentrated into a few months, and the result has amazed the world. Cantonments, warehouses, army and navy depots, aviation camps, shipyards, ammunition and ordnance factories, and other supply factories, have sprung into being as if by magic. An army of 3,000,000 men, with 150,000,000 fighters now in France, and 500,000 men in our first line of defense, the American navy, testify to the fact that we have obtained the worth of our money.

Uncle Sam spent \$227,000,000 as an initial outlay in the building of cantonments, army depots, aviation

camps, and similar work. The transporting of 1,500,000 men to France has cost \$180,000,000, to say nothing of the sums for preliminary work in France, and to pay for the great army of non-combatants.

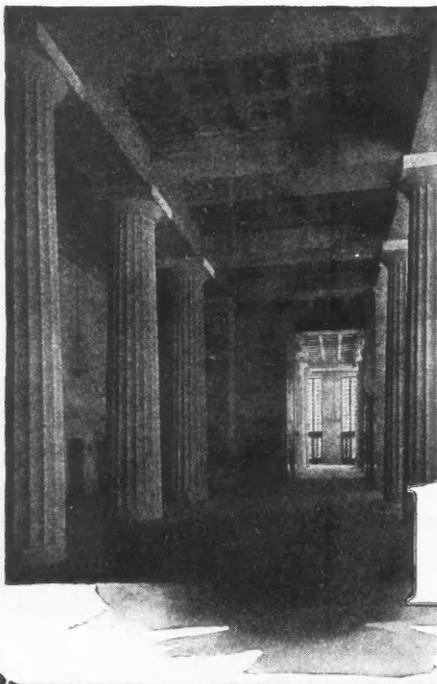
To equip, maintain and pay a soldier for one year, including transportation to France, costs approximately \$2,040, or for 3,000,000 fighting men, \$6,150,000,000. Congress has appropriated \$12,951,000,000 for ordnance supplies and equipment and for tanks. We are now making shells at the rate of 90,000,000 a year, costing all the way from \$1 to \$1,000, the appropriation for shells alone this year amounting to \$2,650,000,000.

More billions have been appropriated for the purchase and building of an untold number of armed ships for the navy and for transports for both men and supplies. Warehouses, railroads, and rolling stock in France have been provided at immense cost, and in addition to existing yards being enlarged, 106 new ship yards have been built and are in operation, beating the submarine and building a merchant marine that will make the United States the foremost maritime nation of the world.

The price of having the treaty of peace signed at

(Continued to page 82.)

EXCELSIOR Wire Products



Western Union
Building
New York

Interior Construction

In planning an interior such as that shown here—the magnificent Western Union Building—many intricate problems are involved, not the least of which is the support for the plaster. It is significant that for this purpose

EXCELSIOR WIRE LATH

was selected, proving as in thousands of former instances, the superiority of this standard construction material.

Irrespective of the size of the building or the use to which it is to be put, Excelsior Wire Lath will meet all requirements. Just how—Just why—will become apparent upon reading our little booklet (ask for Booklet F) which we will gladly send upon request.

While government orders of course take precedence, we will continue to fill other orders just as far as we are able.

WRIGHT WIRE COMPANY
WORCESTER, MASS.

Architect, W. W. Bosworth; Builders, Marc Eidlitz & Son, Inc., New York; Photo by Wurts Bros., New York



Getting Business Out of the Coal Shortage

THE shortage and the high price of coal have opened up a profitable business for every contractor. People are wondering how they are going to keep warm this winter.

The surest solution of this problem is to have all houses equipped with

Storm Windows and Storm Doors

And this solution is a profitable investment for every householder. Storm windows and storm doors cut down coal bills one-third to one-half. This saving alone pays for them in one or two seasons.

But more important still—they assure a warm house in the coldest winter weather. They make the house comfortable and healthful by permitting perfect ventilation and by eliminating cold floor drafts.

There's no better investment a householder can make at this time.

The Director of 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"

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

Get in touch with your local lumber dealer, talk storm windows and storm doors with your customers and you will cash in on the demand we are creating.

Wholesale Sash & Door Association, Chicago



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-44.

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



Representatives in
Principal Cities



It is Worth the Price

(Continued from page 80.)

Berlin is high, but the United States has the price, and the people will pay it. Moreover, the benefits accruing from the fabulous expenditures in the main will be of a permanent character. We will have in the first place a wonderful war machine that will forever be a guarantee against attack by unscrupulous and barbarian autocracies, the foremost navy in the world, and leadership in the high seas trade. War factories will be turned into the products of peaceful commerce and make the country forever independent of other countries for essential products. Above all we will have taken our rightful place of responsibility and leadership among the nations of the world, with our people welded by the fires of patriotism, common sacrifice and common efforts, into one glorious, self conscious commonwealth.

The fabulous sums of money required to pay for Uncle Sam's part in the war call for co-operation, support and sacrifice of every citizen. Whatever the cost, whatever the sacrifice, the work will be done. It will be better to lend every dollar to the government and insure a glorious victory than to pay indemnity to the kaiser. The German war lords in their schemes for financing the war have based all their plans on having the price paid in blood money indemnities from their opponents. The United States with its resources still practically untouched, in defeat would be the logical source of payment. Is there any reason to doubt, reading the history of the last four years, that we would pay in every way that devilish and efficient ingenuity of Germany could devise?

If you want the magnificent national efforts already made to count and to count heaviest against the Hun for speedy victory, invest every dollar you can earn or borrow in Fourth Liberty Loan Bonds.

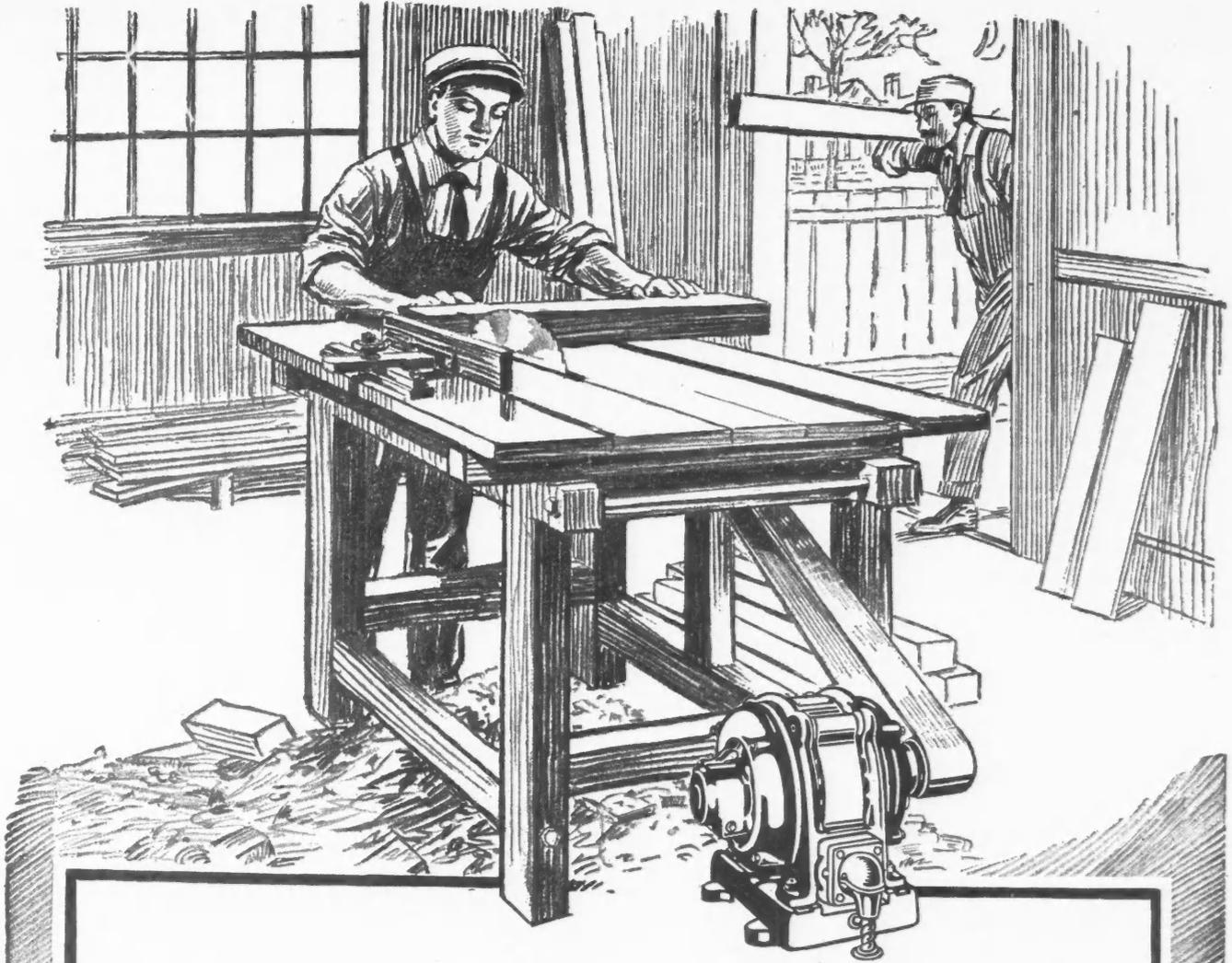
Lend while our men are fighting, give power to Uncle Sam's strong right arm, and insure the peace treaty being signed in Berlin.



Single Tree Yields \$11,000

Whitesburg, Ky.—A yellow poplar tree of giant size, which for years had stood in the hills of the Cumberland Mountains, where it was an object of unusual interest, has recently brought approximately \$11,000 as a manufactured product. The tree was cut down by a local lumber concern, and consigned to a firm in Cincinnati. When sawn, the product totaled nearly 7,000 feet of first class lumber with several hundred feet second class lumber thrown in.

It is declared that this was the largest tree marketed from the eastern Kentucky fields within a half century. It was so large that for a number of years the task of marketing it was a serious obstacle, there being few lumbermen who cared to try to cut it down.



An Electric Motor On The Job

is as good as an extra man, for it's the odd jobs and the special work that takes the time.

Put a portable electrically driven saw or buzz planer on your next construction job.

The cost for power is only a few cents an hour.

With motor driven outfits your men can rush work through with the same speed and sureness as in your own shop.

Tell your power needs to your electric company or your nearest motor agency.

General Electric Company

General Office



Schenectady, N.Y.

Sales Offices in All Large Cities

6970

The Holding Power of Screws

THE Forest Products Laboratory at Madison, Wis., has been developing the science of screws to specific data relating to the holding power of ordinary wood screws. The original object of some experiments conducted was to get at the relative holding power of screws driven with a hammer as compared to screws properly put in with a screw driver. The folks there, like most of us, had a general idea that a screw driven in with a hammer will not hold as well as one put in properly, but they wanted some exact figures on the subject. So they conducted some experiments with No. 12 screws, 1¾ inches long, in different kinds of wood, from which they deduced that a hammer driven screw is only about 60 per cent efficient as compared to one properly put in with a screw driver.

This is something of a warning against using the hammer for screw driving in hanging doors and similar work, tho the real object was to determine the holding power of screws in the making of boxes and cases. Perhaps the most important finding, however, and one upon which not much comment was made, is in the relative holding power of screws in different kinds of wood.

Four different woods were used in the tests: basswood, yellow pine, gum and birch, and here are the tabulated results of the holding power of each; that is

the pounds power required to withdraw the screws:

Kind of Wood	Pounds Required to Withdraw	
	Screw Driver	Hammer Driven
Basswood	478	281
Yellow Pine.....	1,144	681
Red Gum.....	687	403
Birch	788	484

Birch and gum, being hardwoods, would naturally be expected to hold stronger than basswood, or than poplar or any of the softer woods, but the surprising thing is in the showing made by yellow pine. This, tho a comparatively soft wood, shows up to hold screws mighty well, and it is a point well worth remembering.

There must be something in the nature or structure of the wood, and possibly we will find the same qualities to a greater or less degree in other conifers, including fir, western pine and spruce. The tests in this case are admittedly inconclusive, and somewhat limited in character, and other tests, taking in a wider range of woods, may produce a different set of figures. Still the pine stands out here so strikingly as to make it plain that it has screw holding qualities worthy of special note, not only for door framing and similar work, but also for timbering and bridge-tree work where lag screws are used for attaching machinery, etc.

J. CROW TAYLOR.

Less Men Required for Painting

when less men are to be had

The demands for best quality painting, finished up right on time, are increasingly harder to meet due to the shortage of men who can do fast and good work. How many contractors and others are successfully solving this situation is illustrated below. On the job partially pictured here, the one man actually spray-painted as much surface as five hand-brushers could have covered in the same time, and produced most satisfactory results. This was done with the thoroughly complete, practical and guaranteed to make good

Aeron System Finishing Portable Painting Equipment

WITH THIS EQUIPMENT any kind of paint can be spray-applied on wood, stucco and brick houses, both exterior and interior. The painting speed will average close to five times faster

than hand-brushing. A more thorough, protective coating is insured. There is no skimping, no dripping or other wastes. The paint is always at the nozzle ready to be sprayed simply by pulling a trigger—no continual dipping from pail to the work. Considerable time and labor is saved in simple operation and easy portability of outfit. The Aeron System is a practical investment for either large or small jobs, the time and labor saving soon paying for it.

Write and let us mail you further important particulars

The DeVilbiss Mfg. Co.
1276 Dorr St., Toledo, Ohio



Northwest
BUILDING MATERIAL EXHIBIT

Look Before You Build **SERVICE** It's Free to See

COME to this Exhibit when selecting materials for that new building of yours. It will give us pleasure to show you all the best materials to use.

If you cannot visit us, then write us. Our service is free to you.

Send us your plans and specifications and we will gladly secure such figures as you may desire. No obligation.

Many Exhibitors combine their Minneapolis City office with their displays, making this floor your time saver.

NORTHWEST BUILDING MATERIAL EXHIBIT
4th Floor First National Soo-Line Building
MINNEAPOLIS, MINNESOTA

Look before you build.

War is Forcing New Methods

Under its stress and strain the *speediest*, most *efficient* and *economical* methods and materials of building are supplanting all others. War necessities compel it. Peace will see it standard practice—for the era of waste is past.

Widespread use of *concrete* in Government and private undertakings, in war and industry, both here and abroad, has opened the eyes of all thinking people. They are using concrete for necessary buildings *now* and are going to use *more of it after we win the war.*

UThe farsighted engineer, architect or builder was ready. He is using concrete now for speed, efficiency and economy. He is prepared to take up reconstruction and expansion problems after the war in the light of what experience has developed as the fittest.

Whatever the Building, Use Concrete

UProof against fire, earthquake, explosion, rot, rust and rats; economical in first cost, lowest in ultimate cost, no painting, general repair or other maintenance; sanitary, permanent—whether the building be factory or warehouse, silo or grain elevator, dairy building or icehouse, dam or bridge, reservoir or power plant, garage or residence, school or church, shop or office building—concrete will make for saving in time, labor and transportation.

Were you ready—are you ready? If you are, you will be the man of the hour when the speed of peace follows the speed of war.

You Build Once Only With Concrete.

Portland Cement Association

Offices at

Atlanta	Detroit	Milwaukee	Parkersburg
Chicago	Indianapolis	Minneapolis	Pittsburgh
Dallas	Kansas City	New York	Seattle
Denver			Washington

CONCRETE
FOR PERMANENCE



Heat that HOME RIGHT

Use the

MODERN WAY FURNACE

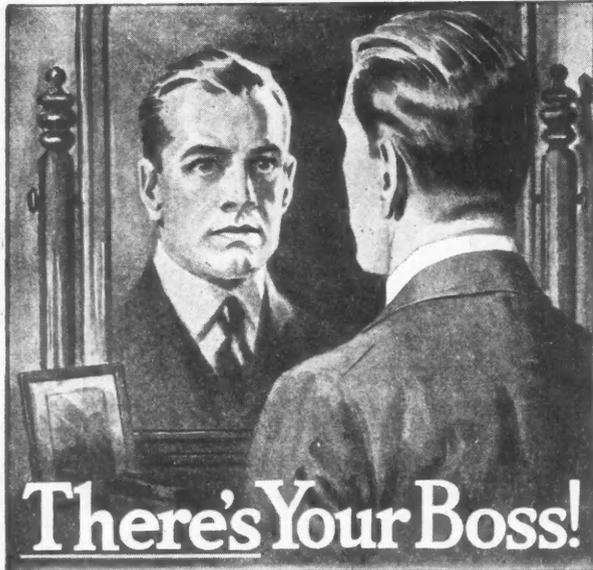
Up-to-the-minute improvements in Hot Air Heating Systems are found completely in the Modern Way Furnace. Burns Hard or Soft Coal, Coke or Wood. Heats, Ventilates, and gives added comfort to any home.

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.**





There's the only man who controls your future

Nobody else can push you ahead. Nobody else can hold you back. Money, position, power—the things you want—it's up to you to win them. *And you can do it.*

If you want a better job than the one you have, there's just one thing to do—get ready for it. Don't worry about opportunities. Employers everywhere are looking for men who can do things. Learn to do some one thing better than others, and there'll be plenty of them looking for you.

And you *can* get ready—for any work you choose—through the International Correspondence Schools. You can do it at home, in spare time, without losing a day or a dollar in your present occupation. More than 130,000 men are doing it right now.

Your future depends on yourself. Start to build it today and let the I. C. S. help you. Here's all we ask: mark and mail this coupon.

TEAR OUT HERE
INTERNATIONAL CORRESPONDENCE SCHOOLS
 Box 8159, SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

- | | |
|---|---|
| <input type="checkbox"/> ARC HITECT | <input type="checkbox"/> SALESMANSHIP |
| <input type="checkbox"/> Archi tectural Draftsman | <input type="checkbox"/> ADVERTISING |
| <input type="checkbox"/> Contractor and Builder | <input type="checkbox"/> Window Trimmer |
| <input type="checkbox"/> Building Foreman | <input type="checkbox"/> Show Card Writer |
| <input type="checkbox"/> Concrete Builder | <input type="checkbox"/> Sign Painter |
| <input type="checkbox"/> Structural Engineer | <input type="checkbox"/> BOOKKEEPER |
| <input type="checkbox"/> Structural Draftsman | <input type="checkbox"/> Steno grapher and Typist |
| <input type="checkbox"/> Ship Draftsman | <input type="checkbox"/> Higher Accounting |
| <input type="checkbox"/> Plumber and Steam Fitter | <input type="checkbox"/> COMMERCIAL LAW |
| <input type="checkbox"/> Heating and Ventilation | <input type="checkbox"/> Common School Subjects |
| <input type="checkbox"/> Plumbing Inspector | <input type="checkbox"/> Mathem atics |
| <input type="checkbox"/> Foreman Plumber | <input type="checkbox"/> GOOD ENGLISH |
| <input type="checkbox"/> Sheet Metal Worker | <input type="checkbox"/> ILLUSTRATING |
| <input type="checkbox"/> CIVIL ENGINEER | <input type="checkbox"/> Railway Mail Clerk |
| <input type="checkbox"/> Surveying and Mapping | <input type="checkbox"/> CIVIL SERVICE |
| <input type="checkbox"/> ELECTRICAL ENGINEER | <input type="checkbox"/> MINE FOREMAN OR ENGR |
| <input type="checkbox"/> Electric Lighting and Rys. | <input type="checkbox"/> Metallurgist or Prospector |
| <input type="checkbox"/> Electric Wiring | <input type="checkbox"/> Gas Engine Operating |
| <input type="checkbox"/> Telegraph Engineer | <input type="checkbox"/> Textile Overseer or Supt. |
| <input type="checkbox"/> Telephone Work | <input type="checkbox"/> TRAFFIC MANAGER |
| <input type="checkbox"/> MECHANICAL ENGINEER | <input type="checkbox"/> AUTOMOBILE OPERATING |
| <input type="checkbox"/> Mechanical Draftsman | <input type="checkbox"/> Auto Repairing |
| <input type="checkbox"/> Machine Shop Practice | <input type="checkbox"/> Navigation |
| <input type="checkbox"/> STATIONARY ENGINEER | <input type="checkbox"/> AGRICULTURE |
| <input type="checkbox"/> CHEMIST | <input type="checkbox"/> Poultry Raising |
| | <input type="checkbox"/> Spanish |
| | <input type="checkbox"/> French |
| | <input type="checkbox"/> Italian |

Name _____
 Present Occupation _____
 Street and No. _____
 City _____ State _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



NEWS OF THE FIELD

New National Lumber Secretary Appointed

President John H. Kirby of the National Lumber Manufacturers' Association has just announced the appointment of Dr. Wilson Compton of Washington, D. C., as secretary-manager of the association. John Lind who for several months has been acting secretary of the organization will continue as assistant secretary.

Dr. Compton, who since March of this year has been assistant chief dispatcher of the Emergency Fleet Corporation, has been a student and investigator in the lumber industry for nearly ten years. He is an attorney and economist by profession. At different times he was graduate student and instructor in economics in Princeton University, Columbia University and Dartmouth College.

For two years Dr. Compton was economist on the staff of the Federal Trade Commission, and at various times since 1911 has been associated with the work of the Forest Service, Bureau of Labor Statistics, and the Department of Commerce in Washington.

Dr. Compton is the author of two books on the lumber industry, one of them "The Organization of the Lumber Industry," published in 1916 being extensively known. He is also a writer of articles on economic and legal subjects.



Wooden Furniture to Save Steel

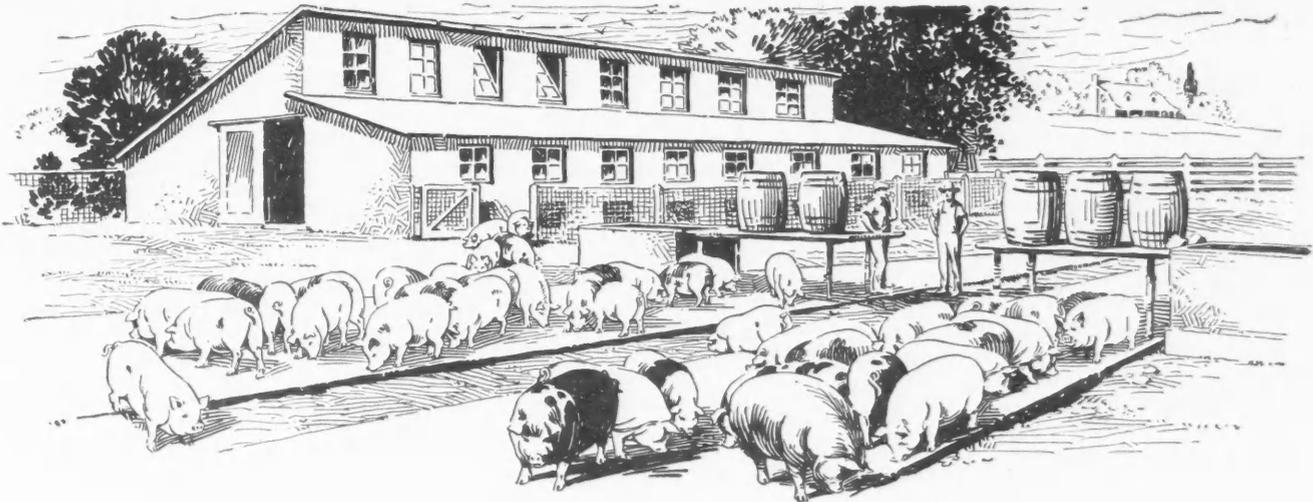
Good old fashioned wood, transformed into beds, may ease the sleep of America's vast armies, leaving steel available in larger quantities for the work of Hun destruction over there, if a plan presented to the government by Charles R. Sligh of Grand Rapids, Mich., is adopted. The Grand Rapids man has made a tentative offer to the authorities to furnish 1,250,000 wooden beds for the use of soldiers in cantonments.

Mr. Sligh's action was the result of a recent report that the government was seeking bids on 1,250,000 steel beds for the cantonments. He has perfected a design which will not be patented, and which can be made by any manufacturer who succeeds in getting an order from the government.

Mr. Sligh claims that by the substitution of wood for steel, vast quantities of the latter commodity can be released for munition purposes. His bed may be made from any of the hardwoods. He claims that the government can be saved 12,500 tons of iron and steel on this one order alone. The total annual consumption of iron and steel in the form of nails, screws, supports, and all other kinds of metal except springs used in the furniture industry in this country, says Mr. Sligh, is but 8,500 tons, which is considerably less than the amount of metal required to produce this one order of metal beds.

In support of the proposal it is argued that if the furniture men were given even this single order of beds there would be a saving in steel of enough to make one steel ship of 37,000 tons burden, or five steel ships of 7,500 tons burden, the latter being one of the standards most frequently built. The government is now using many iron chairs on steamships. The furniture industry is offering to put out a wooden chair for its use in many places at one-half the cost. The

(Continued to page 88.)



Turning Garbage Pails Into Boxes of Bacon

The September number of ALPHA AIDS, a publication issued by us regularly in the interests of engineers, architects, contractors, building material dealers and others interested in concrete construction, gives a summary of what several enterprising municipalities are doing just now in turning the town garbage into a larger supply of the bacon that Uncle Sam needs. Our city of Easton has purchased a farm for this purpose, after looking into the experiences of Worcester, Mass., and other municipalities.

ALPHA AIDS tells also how to build a number of different types of hog houses and yards. Some are entirely concrete; others are not. The descriptions are freely illustrated with photographs and working drawings.

If your own community has not started turning garbage pails into boxes of bacon, be the man to head this timely movement. Full information gladly sent, free of all obligation.

ALPHA PORTLAND CEMENT COMPANY
EASTON, PA.

Branch Offices: New York, Boston, Philadelphia, Pittsburgh, Baltimore, Savannah

Wooden Furniture to Save Steel

(Continued from page 86.)

iron chair weighs 14 lbs., which would mean a saving of a large car of steel for every 5,000 chairs made out of wood.

The furniture men also suggest to the government that it might well require the manufacture of all kinds of office furniture, especially desks and filing devices from wood, and not of metal during the war.



Lumber Dealer's Exhibit Attracts Attention at State Fair

Much interest was aroused at the recent Illinois State Fair at Springfield, by the novel advertising feature exhibited by the Springfield Lumber Company. Mr. J. A. Bryden, the president, had already installed a permanent branch office at the State Fair grounds, but inasmuch as this year is the Illinois centennial, he decided to do something extra to stimulate business.

For a long time Mr. Bryden has appreciated the importance of attracting prospects for repair work, even more than the new builders who naturally come to a lumber yard anyway. Accordingly he remembered the trouble that automobile owners have during the winter, keeping their garages warm and comfortable, and so he erected a portable garage, built in sections and lined thruout with Cornell wood board.

Each visitor who registered his name and address with the exhibit of the Springfield Lumber Company received a sample of Cornell wood board imprinted with the firm name and bearing a number which entitled the holder to a chance on the garage. On the last day of the fair, an unusually large crowd witnessed the drawing in front of the Springfield Lumber Company's exhibit, and the holder of the lucky number was found to be Mr. Wm. Dorsey of Perry, Ill.

Mr. Bryden's advocacy of the advertising and sales of lumber specialties is well borne out by his own experience, for during the last year he has moved over four cars of wall board and also a proportional amount of other specialties.



Black Walnut Wanted

Washington, D. C.—The Bureau of Aircraft Production of the War Department has announced that there is an urgent necessity for the immediate delivery of all the black walnut wood it is possible to obtain. This wood is desired for use in the making of airplane propeller blades and gun stocks.

The bureau says that black walnut trees are scattered thruout different parts of the United States, growing in small groups, and that in taking the necessary steps to see that these trees are made available to the government, the owners of them have an opportunity to demonstrate their patriotism in a most practical and effective way.

A part only of the lumber from each tree can be used, and the government, therefore, cannot buy the trees direct from the owner. When the trees are sold to a saw mill which has a government contract for lumber for propeller blades or gun stocks, this wood will be sorted out and put to the uses to which it is adapted.

No trees which produce logs less than 12 inches in

(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

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

Chicago New York Boston Philadelphia San Francisco Los Angeles

And Representatives in All Principal Foreign Cities

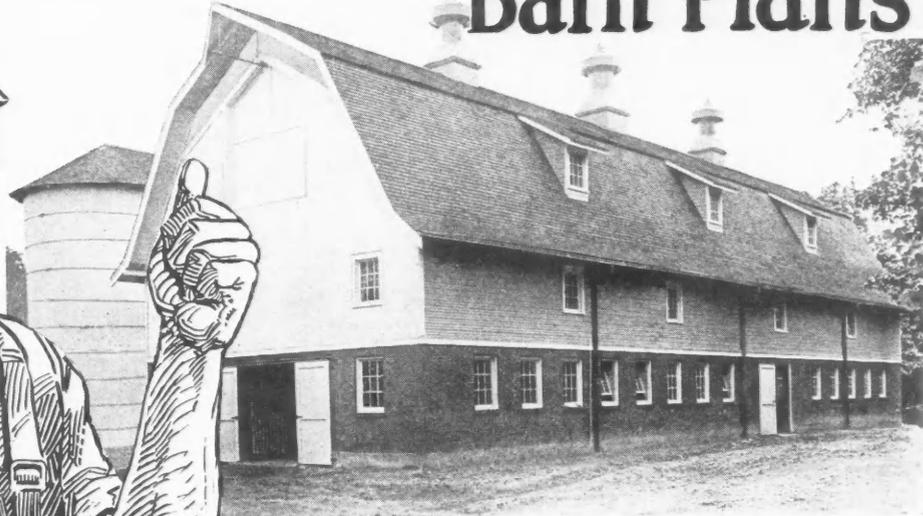
PRODUCTS: Door Hangers and Tracks Rolling Ladders Overhead Carriers Light Hardware
Spring Hinges Fire Door Hardware Garage Door Hardware Hardware Specialties

Catalogs, blue prints and special information promptly furnished

OUR ENGINEERING SERVICE IS AT YOUR DISPOSAL WHENEVER DESIRED

LOUDEN

Barn Plans



HELP ME GET THE BARN BUILDING CONTRACTS

We have placed "Louden Barn Plans" in the hands of many carpenters and builders and have helped them secure many a profitable barn building contract. "Louden Barn Plans" is a carefully written book of 112 pages in which every phase of modern barn construction is illustrated and fully described. You can appreciate its value as a practical guide from the following partial list of contents:

- 74 illustrations of barns of all styles and sizes and other farm buildings, with estimated cost and full description of each, including floor plans.
- Concrete work—foundation, floor materials necessary, cost.
- Locating floor levels for proper drainage.
- Superstructure with details of framing.
- Braced rafter construction for basement barns.

- Construction of plank trusses.
- Best form of roof for maximum loft capacity.
- Details of sliding doors and ventilating windows.
- Ventilating systems described with tables showing various sizes of vents.
- Tables of size and strength of materials.
- Approximate capacity of round silos.
- Modern sanitary bank barns.

No Charge for This Book to Carpenters and Builders

We will be pleased to send you this valuable book, postpaid, on receipt of the coupon or a post card giving the names of one or more prospective builders of barns in your locality. We will send them our literature and help you get the business. Many barns are going to be built or rebuilt this year, to care for bigger crops and herds. There's a big field for profitable work in every locality.

Our Barn Architectural Department is at your service without charge, for expert advice on any barn building proposition you may have in hand, or for complete working plans at small cost. We would like to send you also, without charge or obligation, the Loudon General Catalog, showing the complete line of Loudon Labor-Saving Barn Equipment—Stalls and Stanchions, Litter and Feed Carriers, Hay Unloading Tools, Water Bowls, Ventilators, Barn and Garage Door Hangers—"Everything For The Barn." Write us today. We will be glad to help you solve your barn problems.

The Loudon Machinery Company
 5523 Court Street (ESTABLISHED 1867) FAIRFIELD, IOWA
 Branches: St. Paul, Minn.; Albany, N. Y.; Chicago, Ill.

The Loudon Machinery Co.,
 5523 Court St., Fairfield, Iowa.

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

- Loudon Barn Plans
- Loudon General Catalog

Prospective builders in this vicinity are

.....

 My name.....
 P.O.....State.....



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

War Time Profits For Essential Work

THE war has restricted building operations throughout the country. Architects and builders are confronted with a business problem. That problem is profits. The surest way to keep up profits is to give to the buildings erected every detail of equipment that makes convenience and service. No farm home, small town factory or business place, remote from the city water mains and lighting and sewage facilities is complete without the installation of the Kewanee Water Supply System, the Kewanee Electric Lighting Plant and the Kewanee Sewage Disposal System.



are absolutely essential. They have been in use for more than twenty years and thousands of dwellers in the country have learned with enthusiasm to appreciate their value. They give to the country home every convenience of hot and cold running water that the city enjoys. In isolated factory buildings, country homes and in the barns and stock pens of the farmer, running water is indispensable. No matter what the size of the building, there is a Kewanee system to meet every demand.

KEWANEE ELECTRIC PLANTS

supply illumination from home-made power. Their light is abundant and of strong, pure quality. Plants of 28 different types and sizes create power not only for lighting purposes but to run various labor-saving machines.

SEWAGE DISPOSAL SYSTEMS

Kewanee Sewage Disposal Systems are models of up-to-date completeness. Installed with all the details of modern plumbing, they carry off all waste and insure to the home perfect sanitation.

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

Kewanee Private Utilities Co.
(Formerly Kewanee Water Supply Co.)

424 S. Franklin St.

Kewanee, Ill.

Black Walnut Wanted

(Continued from page 88.)

diameter can be cut, as they do not yield material suitable for government use.

It is desired by the bureau that anyone having information on the subject of black walnut trees get into touch with saw mill concerns in their communities, which may have government contracts, or communicate with the Ordnance Department, Production Division, Small Arms Section, Washington, D. C.



Re-roofing the Cradle of Liberty

Wood shingles have been decided upon for the re-roofing of old Independence Hall, in Philadelphia, by the local chapter of the American Institute of Architects. These are to be laid on shingle lath so they will be visible from the loft and nailed with copper nails.

The Philadelphia architect body made the decision after a long and exhaustive study of the subject, during which all sorts of roofing material was proposed. The work, which is to be finished in four weeks, has already been let for \$5,936. The specifications call for split all-heart shingles, seven by twenty-four inches, with butts not less than half inch.

When the work has been completed the historic building will be about as fully restored to its original condition as possible. Part of the work to be done on the contract is to move the skylights from the north side and place them on the south side, as they were originally.



A Screen Door Tragedy

AT a big construction camp doing government work where the men live in barracks built somewhat after the manner of those for the soldiers in training, one of the barracks buildings caught fire in the middle of the night when all the men were asleep. Panic followed when the men were finally aroused and a jamb at the door resulted in which a dozen men were injured, two losing their lives.

There was a screen to the door, hung to swing inside instead of outside, and it was this which impeded egress and caused or contributed to the tragedy. Evidently the doors themselves had been hung to swing outward as a matter of safety against just such jamming in case of fire, and it was naturally convenient to hang the screens on the inside. It being summer time the door was open, but the screen was closed.

Of course, this led to an immediate changing of the screens on other buildings, and the object of relating the tragedy here is to impress it so indelibly upon the mind of every reader that it will be there as a reminder when occasion arises inviting him to hang a screen door to swing inside.

J. CROW TAYLOR.



Kaustine Waterless Toilet Equipment

Eliminates Costly Delays in War-Time Construction

CONTRACTORS and builders no longer have to stop and figure on expensive water mains and sewers. They are no longer subjected to indefinite delays because of their inability to hire expert plumbers or because of the shortage of plumbing supplies. The problem of sanitary sewage disposal is quickly solved by the installation of Kaustine Waterless Toilets wherever sewer connection is not now available.

Kaustine Waterless Toilets offer every convenience of the city water closet, yet require neither water nor sewer connection. They are simple and easy to install and cost less than ordinary water toilets. There are now over 35,000 Kaustine Toilets in operation and entire villages have been completely Kaustine-equipped in less than a month's time.

Kaustine Waterless Toilets are endorsed by health and labor authorities as perfect, sanitary sewage

disposal. They are absolutely odorless and are guaranteed in every respect.

If you are bidding on war-construction jobs, or have in mind entering that field, or know of an 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.

Consult with Our Engineers

Our Engineers have successfully planned systems for industrial villages and manufacturing plants

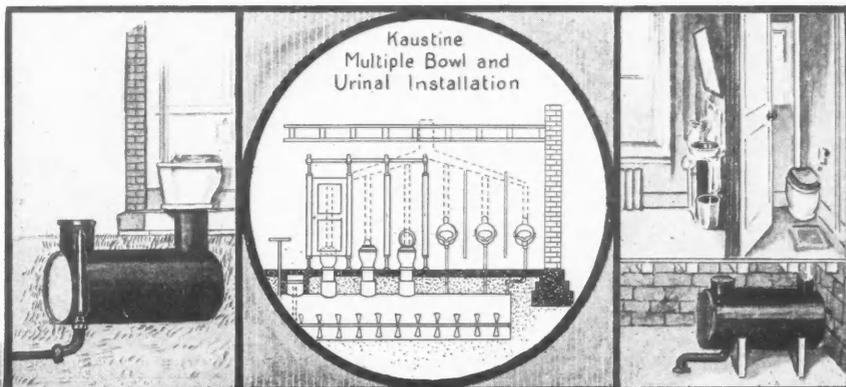
throughout the country. Write for plans to meet your needs.

KAUSTINE COMPANY, Inc.

Home Office: BUFFALO, N. Y.

General Agencies and related concerns: 353 Peoples Gas Building, Chicago, Illinois

Lansing, Mich.
Greenville, S. C.
Oakland, Cal.
Trenton, N. J.



Spokane, Wash.
Philadelphia, Pa.
Kaustine Co. Ltd.
Toronto, Ont.
Canada

Cost Keeping System for the Carpenter and Builder

By Wesley A. Fink

THE calling of the master carpenter and builder like all other kindred trades has its ups and downs, its successes and failures.

It is the common lot of all those who venture into business that they can only expect results commensurate with their endeavors and ideals. Every man stakes his time and talent with the firm resolve of winning; but all do not accomplish it. Steady plodding and persistent, patient effort will often bring a measure of success, but as for fortunes, we must not look for them under the present methods of competitive warfare.

The carpenter industry is one so simplified in its procedure that it is easy of access to almost anyone who has a smattering of knowledge and experience concerning the trade, hence, there are those who drift into its calling by their circumstances. Starting out with a few accessories incidental to the trade, they worm themselves into a more ignorant public, who are always anxiously looking for the cheap "guy." A small credit enables the beginner to procure the necessary material and install it in some fashion, to turn out a job of carpenter work; and, with a kit of tools, hatchet, saw, planes, brace and bits, nail punch, level, etc., a

new personal has dawned upon the business life of a community.

This is one of the circumstances that is a great factor in cheapening the trade and lessening the chance of the competent master carpenter toward the path of fortune.

Our calling, perhaps, more than others, is given to treading in the same old time-worn customs. Hence the road to accumulate wealth is very slow. But while it is well to remember the past, recalling its lessons, it is folly to live in it at the expense of today, meantime discounting tomorrow.

You can't hear the tick of yesterday's clock.

You can't measure today with yesterday's hour hand.

You can't use yesterday's sunbeams.

You can't grind corn with the water that flowed over yesterday's wheel.

You can't do today's work on yesterday's time.

Why live in yesterday?

Live in today. Today is the one day that you can call your own. Today is the biggest and best day that you have ever known. From today all the streams of the future flow full of promise and hope.

(Continued to page 94.)



*Make New Business
From Old Business*

**The Mark of Quality
in Plumbing**

In remodeling Homes, Schools, Business Houses, or Factories and for new buildings, insure Plumbing satisfaction by using Wolff products, the standard of Plumbing value for over 62 years.

L. Wolff Manufacturing Company

General Offices and Storerooms, 111 North Dearborn Street

CHICAGO

To suggest
Running Water in the Home
means
Larger PROFITS for YOU!

THE new house is not really a home until it has the conveniences and comforts of running water at the turn of a faucet.

The building contractor is in the most advantageous position to point out to his client the benefits of a water system, the simplicity of operation, and the timely opportunity for installing it.

It does not require long-winded selling arguments—merely suggest the improvement and see how easily the extra profit is picked up. Many a customer, misled by visions of complicated mechanism or expensive, troublesome installation work, is grateful for the information and assistance you offer.

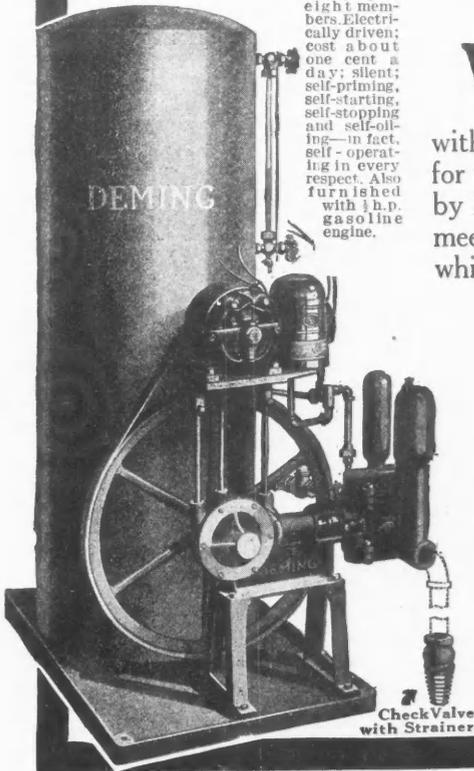
Co-operate with your plumber in making the installation.

General Distributing Agencies:

- Henion & Hubbell, Chicago
- Harris Pump & Sup. Co., Pittsburgh
- Ralph B. Carter Co., New York
- W. P. Dallett Co., Philadelphia
- Chas. J. Jager Co., Boston
- Sydnor Pump & Well Co., Richmond
- Barteldes Seed Co., Denver
- Crane Co., Portland
- Crane Co., San Francisco
- Crane Co., Spokane
- Revillon Wholesale, Ltd., Edmonton, Alta., Canada

Deming "Marvel" — Complete Water System, No. 2085

For wells 22 ft. or less. Especially adapted for the ordinary requirements of a family up to eight members. Electrically driven; cost about one cent a day; silent; self-priming, self-starting, self-stopping and self-oiling—in fact, self-operating in every respect. Also furnished with h.p. gasoline engine.



Deming

Water Supply Systems

with "over 1,000 hand and power pumps for all uses," are the safest for the contractor to recommend. Practically self operating and driven by hand, windmill, gas or electric power, there is a Deming pump to meet every condition, built with the expert skill which two-score years of pump building assures.

The Deming catalog will give you all the water facts you need, and we will gladly explain our co-operative proposition upon request.

Write or mail coupon, but do it NOW, so you can make the installation on your next job.

The Deming Company
 99 Depot St.
 Salem, Ohio

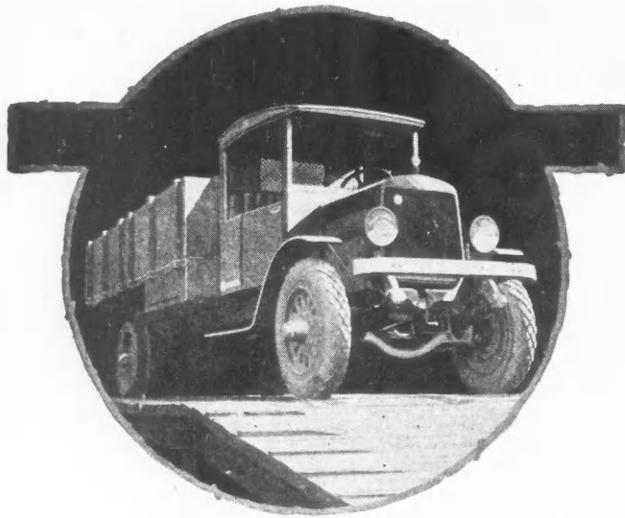


Send water supply catalog and explanation of your co-operative system.

Name.....

Address.....

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



Never before has the need of dependability and adaptability in motor trucks been so apparent in the building business as today.

KISSEL, realizing this, has incorporated in the vital structural parts of Kissel Trucks those engineering principles and construction features which ten years of motor truck designing and construction experience have proven to produce unlimited power, ability for continuous service and low operating cost and upkeep.

The ALL-YEAR Cab, an exclusive Kissel Truck feature, insures uninterrupted performance, no matter how severe the weather may be. **In summer, it is an open, cool cab; in winter, it is completely enclosed, increasing the driver's efficiency by giving him complete protection.**

There is the right size truck for your requirements. See your nearest Kissel Dealer, who has specifications, prices, etc. See him without delay.

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

**KISSEL
TRUCKS**

Cost Keeping System for Carpenters and Builders

(Continued from page 92.)

It is well to plan for days that are to come. He who does not plan his work will soon have no work to plan.

We will assume that no sane man will go into the carpenter and building business as a matter of charity to his customers, but that he is actuated by a desire to earn an honest livelihood for himself and family and lay by a competence for his support in his old age. But how many of our house carpenters are doing anything more than earning a bare living, if indeed they do that? Unfortunately, the average master carpenter has been brought up along mechanical lines and has had no opportunity for a business training until he finally starts in the contracting carpenter and building business for himself.

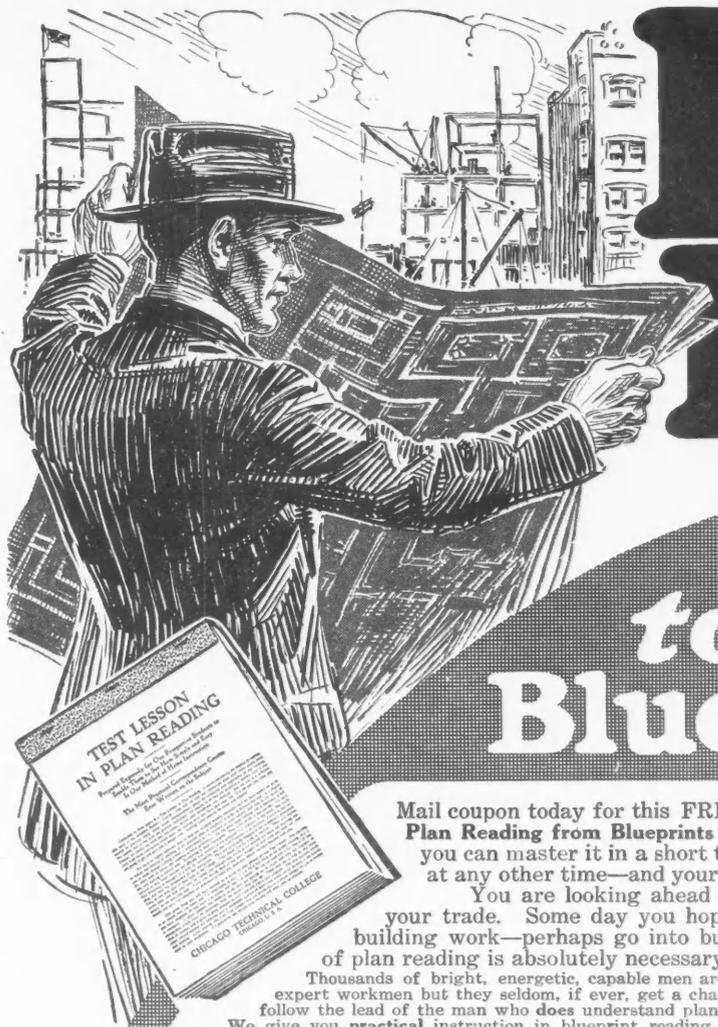
The fact that there is such a thing as cost accounting is utterly unknown to him. He has always supposed that the entire cost of a job of carpenter work was made up of the amount paid for materials, plus the wages paid out. He has never given a thought to such things as rent, superintendence, insurance (fire and casualty or compensation), advertising, telephone, team, wear and tear on hatchets, saws, planers, tools and equipment, heat, light, interest on cost of equipment, bad debts, services of bookkeeper, or time taken by the employer to keep his own books, and depreciation in value of plant and shop, and 57 other varieties of overhead expense.

Is it any wonder, then, that he has always thought his old boss was making a good deal more money than was actually the case. So when the new boss starts for himself, he figures close, yet allows himself what he thinks is a reasonable profit, not knowing that the price with which he is so well pleased is really less than actual cost.

A large percentage of businesses are run at loose ends without the proprietors knowing at any time whether they are making a profit or loss. Now, if this is the case with all lines of business, including those in which the proprietor has had the advantage of a mercantile training, how much more apt it is to be the case in a business like the carpenter and building trade, when the proprietors are almost invariably mechanics? Is there any wonder that price cutting is so prevalent in the mechanical trades? Is it any wonder that competition has cut prices below the living profit basis in so many cities and towns, and has educated people up to the belief that they ought to be able to get their carpenter work and building done for figures that are less than actual cost?

The Federal Trade Commission has suggested that business or trade associations should take up the matter of cost accounting and work out systems adapted to the use of their members. There could be no more

(Continued to page 96.)



Free Lesson

Learn to Read Blueprints

Mail coupon today for this FREE LESSON. It will positively convince you that **Plan Reading from Blueprints** is not at all difficult—that by our new, easy method you can master it in a short time. You don't pay a cent for this lesson—now or at any other time—and your request for it places you under no obligation at all. You are looking ahead to something better than working with the tools of your trade. Some day you hope to become foreman or superintendent in charge of building work—perhaps go into business for yourself. In any such case a knowledge of plan reading is absolutely necessary—and we want to show you how to get it.

Thousands of bright, energetic, capable men are being held back because they lack this knowledge. They are expert workmen but they seldom, if ever, get a chance to study the blueprints or have them explained. They must follow the lead of the man who does understand plan reading and directs their work.

We give you **practical** instruction in blueprint reading that you can apply to your everyday work. We place in your hands blueprints used in actual building work in Chicago and other cities, and send full instruction on every point. Every detail is carefully explained by practical contractors and builders—men in charge of construction work right here in Chicago. You get the benefit of their long years of practical experience. They give you the kind of knowledge that brings advancement and a fatter pay envelope.

Learn Builders' Course by Mail Easy Payments

Just a few hours of your spare time at home each week devoted to study will enable you to master this Course in a surprisingly short time. Our lessons come to you by mail in convenient form for spare-time study—during evenings at home or at any other convenient time.

Note the wide range of subjects covered in this thorough, comprehensive and practical Builders' Course.

Throughout the entire course your instruction is under the **personal guidance** of our experts. Every subject is handled in a plain, straight-forward manner in language that you can easily understand: You are taught the things **you need to know**—and taught in such a way that you will **remember** them.

And you can get all this training on easy monthly payments, so small that you will scarcely feel the cost.

Complete Course Includes:

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

Estimating Practical rules. Problems worked out from the plans. Brickwork and carpentry. Excavations. Labor and material for footings in brick, concrete and rubble stone. Methods of practical builders. Reinforced concrete—full plans and specifications for re-inforced concrete buildings. Estimates of labor and material required. Labor and material for brick work; figuring common and pressed brick walls of different thicknesses, etc. Chimneys, fire places and cisterns. Fire proofing, tile, tile flooring, arches, partitions, furring, terra cotta, etc. Lumber and timber; figuring board feet. Estimating posts, girders, sills,

joists, studs, bridging, rafters, etc. Estimating all kinds of roofs, floors, siding, cornices, etc. Labor for rough and finished carpentry.

Construction Estimating mill work. Labor and material for window and door frames, sash, blinds, base board, wainscoting and all kinds of closets, cupboards, etc. Lathing, plastering, sheet metal work, exterior and interior marble jointing and decorating, glazing, plumbing, heating, wiring, etc.

Brickwork Footings and foundation walls of brick, concrete and stone. Brick laying, joints in brick work, pointing, tuck pointing, etc. Brick and stone arches. Use of different kinds of stone.

Carpentry Kinds and uses of wood's, cornices, interior details, framing, roof construction, bridging, miter joints, butt points, etc. How plans are made. Complete instructions illustrated by working blueprints of all kinds of buildings, private, public and business.

Arithmetic A complete but condensed course in arithmetic expressly arranged for contractors and builders. Teaches all a man in this business needs to know.

SEND COUPON NOW—TODAY

A Better Job—More Money

Begin at once to prepare yourself for more responsible work and better pay. Mail the coupon and by return mail get the **Free Lesson** in Plan Reading together with full information regarding our Builders' Course which will prepare you to make more money. Remember, this places you under no obligation whatever. But get the **Free Lesson**, judge from it and the full descriptive literature we will send you, how easy it really is to master this course—and then decide about enrolling with us.

Chicago Technical College
1036 Chicago "Tech" Bldg.
Chicago, Ill.

CHICAGO TECHNICAL COLLEGE,
1036 Chicago "Tech" Bldg., Chicago
Without obligation on my part, send me the Free Lesson in plan reading, also information on your Builders' Course in Plan Reading, Building Construction, Estimating, etc.

Name.....
Address.....
City or Town..... State.....
Present Occupation.....



They're in to Win

If we are the same stuff, let us prove it. Let us get into the fight as they do—to the limit—for Victory!

Fair targets, every one of these men, for the German riflemen and machine gunners hidden behind the parapet.

But they are not thinking of the bullets whizzing past them; of the shells bursting over their heads.

They are intent on one thing---to scale that bank, take the bridge head, and *win the day*.

And these men are made of the same stuff as all true Americans who read these words.

*This Space Contributed to
Winning the War by*

WAGNER MANUFACTURING CO.

CEDAR FALLS, IOWA

Cost Keeping Systems for the Carpenter and Builder

(Continued from page 94.)

profitable thing for local and state associations to undertake than this matter of instructing their members in cost accounting, and then doing a little missionary work to bring the subject to the attention of those outside carpenters and builders who are often the greatest offenders.

You can put it down as a certainty that the men who are most prone to cut prices below living profits are those who do not know what the work they do actually costs them. Education is the real cure for this evil. A series of lessons by an expert accountant given for the local Master Carpenters and Builders' Association would be worth all they would cost and a great deal more besides. And they would be a strong argument in favor of membership in reply to that often asked question, "What will I get out of the association?"

The Federal Trade Commission has had many complaints from manufacturers that competitors were selling goods below cost and ruining the industry in which they are engaged. Now this is a very common complaint in the building business, altho we do not believe that, as yet, any master carpenter or any association of master carpenters has laid this matter before the Federal Trade Commission, altho there is no reason why it should not be brought to the attention of this body.

Now the commission has investigated a large number of complaints of this kind and they have found that, in almost every case, the reason for price cutting of this kind is because the offending manufacturer does not know what his goods have cost him to make and to market, and out of 60,000 corporations they found that 30,000 charged off no depreciation whatever, and that only ten per cent of our manufacturers and merchants know the actual cost to manufacture and sell their goods.

While carpenter work is a mechanical trade and the master carpenter must, first of all, be a trained craftsman, it must not be forgotten that at the same time it is a mercantile business in which the contracting carpenter sells labor and material, or, in other words, sells service. Unless he knows exactly what that service costs him, including all the overhead expenses of running his business, he necessarily prices his work by guess or makes a figure to meet the bid submitted by his competitor, without knowing whether the price is a fair one to himself or not.

The one great difficulty is that a good many carpenters have no system of cost accounting by which they are able to tell exactly what each job has cost them, including not only labor and material, but the overhead expense as well. Hence they figure largely by guess,

(Continued to page 98.)



The Tecktonius Silo is a monument of efficiency and convenience. It stands rigid and erect in defiance of all storm and wind conditions, due to its superior anchorage system which stoutly supports it at three vital points — base, top and middle.



The Tecktonius Self-adjusting Hoop Fastener which automatically cares for the contraction and expansion of Silo staves due to climatic conditions.

In On Silos" tells you why. Send for a copy today. It's yours for the mere asking.

A *SILO* with merit from base to roof. A silo with exclusive patented construction features that will make its superiority so obvious to the average farmer as to **sell itself, stay sold and sell others** in the surrounding community.

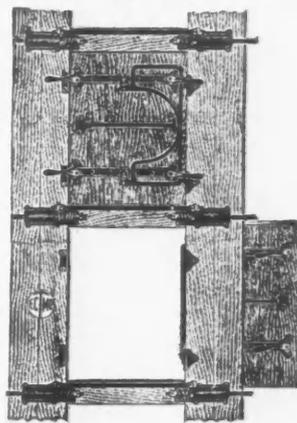
The Tecktonius Silo

readily embraces all of these factors. It enables you to sell a silo that stands supreme among all others—a better silo for less money and which not only nets you a substantial profit, but also adds an enduring prestige to your business.

Five Year Guarantee

The Tecktonius Silo is backed by an iron bound guarantee — a guarantee that protects your customer for five years against defective material and workmanship together with \$25.00 to boot in the event of Silo defying the superior Tecktonius anchorage system and blowing over.

This is the Proposition you've been wanting. It will protect your interest as no other silo will. Our comprehensive illustrated 28 page booklet "Cashing



The Famous Tecktonius perfect fitting hinged Silo Door which keeps Silo air tight at all times. Has four points of suspension and hangs perfectly, swings easy and without sagging, binding, warping, or sticking. Locks tightly on all four corners.

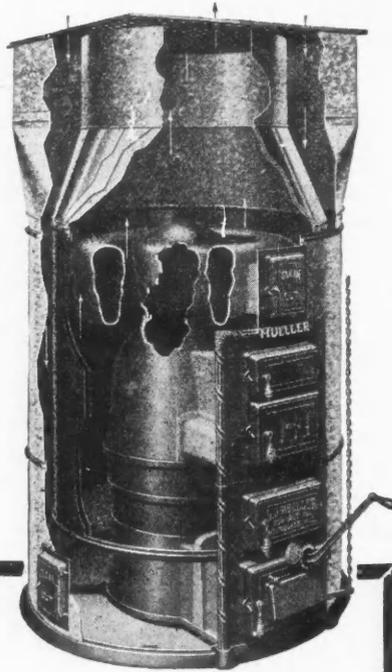
The E. C. Tecktonius Mfg. Co.

Racine

1324 Thirteenth Street

Wisconsin

**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.....

Cost Keeping Systems for the Carpenter and Builder

(Continued from page 96.)

and in their fear that some competitor may take a job away from them, they make it a rule to "guess low enough."

Now that prices for practically all building materials as well as labor have advanced because of conditions caused by the war, the contracting carpenter is up against a condition where he must advance the prices he charges above those formerly asked for the same work. With such a good excuse for advancing prices every carpenter should go a little further and in making up a new schedule of charges on which to base his estimates, he should see that he gets a liberal profit for himself and should refuse to accept any contract that is not going to yield it.

(The second of this series of cost-keeping articles by Mr. Fink will appear in an early issue.—EDITOR.)

The Ships That Will Win The War

By James J. Montague

They're launching 'em in Oregon; they're launching 'em in Maine,

They're launching 'em along the Jersey shore;
Every State that fronts the tide lets a couple of 'em slide

Every day or two, and starts a dozen more.
A million men are digging ore, a million smelting steel;

Another million working at the ways.
And the riveters are banging and the heavy hammers clanging

On the rivers and the harbors and the bays.

They're building 'em of timber; they're building 'em of steel,

They're moulding 'em of concrete made of sand;
And they'll all be strong and staunch when they've got in shape to launch

And all ready for the business that's at hand.
They soon will dot the ocean like the foam-flecks in a storm,

And they're going to go ahead and carry on,
Till the great big job is done and the great big war is won,

And the Kaiser and von Hindenburg are gone.
They'll find the men to man 'em everywhere that Yankees are,

Good husky lads who love a stand-up fight.
And the baffled submarines will depart for safer scenes,

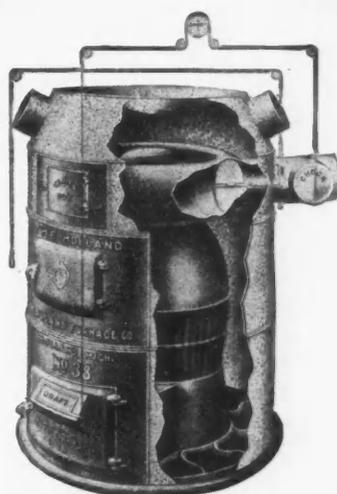
When confronted with their majesty and might.
They'll bridge the broad Atlantic with a bow-to-stern pontoon,

And the Teuton gang can read its own defeat
In the steady hammer, hammer, and the clangor and the clamor

That is turning out the mighty Yankee fleet.

EMERGENCY FLEET NEWS.

HOLLAND



—Heats Economically

It is more important now than ever before to install or recommend for your customers a furnace that burns the smallest amount of coal in proportion to the heat supplied. You can do this and at the same time add to your reputation as a reliable contractor, by installing **Holland Furnaces**. The Holland Guarantee and Holland Five Year Service Bond insures absolute satisfaction to every owner.

The Holland has a cone grate which breaks up the clinkers and compels the fuel to roll to the wall of the fire pot. Air is mixed with the gas—the fuel burns from the sides and over the top, compelling 100% heat radiation. All gases and soot are burned.

Free Heating Plans

Write us about your heating problems. Our Engineering Department will send you free plans and information. Get our catalog and special proposition to Contractors, Builders and Carpenters. Write us today.

Holland Furnace Co., Holland, Mich.

World's Largest Installers of Furnaces

Holland, Michigan 2 Factories Cedar Rapids, Iowa

Holland Furnaces Make Warm Friends—Ask Any Lucky Owner

Thirty-Six Million Cords of Wood Wasted Annually

There are more than 48,000 sawmills in the United States, and their output of waste in the form of sawdust, shavings, slabs, and other wood refuse is estimated as 36 millions cords per year. This is equal to over 4½ billion cubic feet of waste, which is the capacity of a bin one-half mile high with a base covering a forty-acre lot. Or, considering each cord to contain 80 cubic feet of solid wood with all the cracks and air spaces taken out, these 36 million cords would make a block of wood more than a quarter of a mile on each edge.

Perhaps one-half of this so-called waste product is not strictly speaking wasted, but serves a useful purpose as fuel under the boilers. Much of the remaining 18 million cords not only serves no useful purpose, but in most cases is a source of inconvenience and danger, and costs the mill time and money.

Sawmill waste is disposed of in various ways. Some goes to the local fuel market, some to pulp mills or to wood distillation plants. Shavings and hog cuttings, as well as other mill waste, are sometimes used to fill low places in the yard. However, the most common method of getting rid of waste is by burning either in a fire-pit having an open fire which sometimes has a protecting wall on the side towards the mill, or in a burner enclosed on all sides and having a spark-arresting screen at the top and a fire grate near the bottom. In both cases some kind of a conveyor is necessary to bear the waste from the mill to the fire. This is usually a sort of trough with a metal bottom along which a slowly moving chain or cable, equipped with cleats or buckets, carries the waste to the fire.

A closed burner and conveyor costs about \$12,000 for a mill of a hundred thousand feet daily capacity. Forty per cent

of the larger mills, cutting more than 55,000 board feet daily, are equipped with closed burners. Forty-five per cent have fire-pits. The remainder have neither and dispose of their waste in some other way.

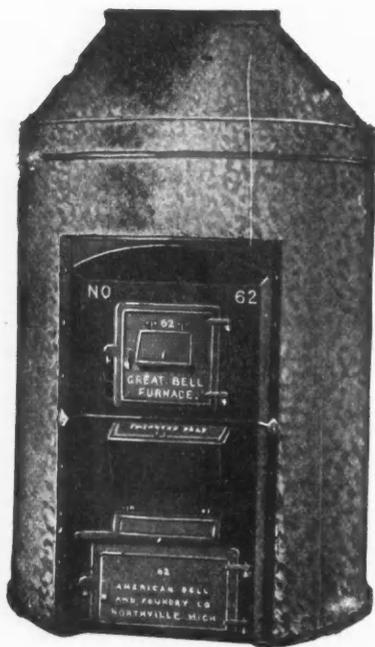
It is estimated that for a mill of one hundred thousand feet capacity the cost of conveying the waste from the machine where it is made and destroying it in a closed burner is 42 cents per cord or \$10.05 per day. Burners seldom bring in any revenue, altho in a few cases ashes are sold for fertilizer, and in a number of others the burner furnishes hot feed water for the boilers.

Both burners and fire-pits add to the insurance rates on lumber, and in the case of the pit on the mill itself. In order to reduce the fire hazard to zero, in the case of the burners, it is necessary to keep all lumber piles at least one hundred and fifty feet away from the burner. The matter is much worse in the case of pits, especially the open ones, which must be kept three hundred feet from the mill and five hundred feet away from any lumber piles. When nearer than these distances from the mill and yard, respectively, the insurance rates mount up rapidly with closer proximity until they become practically prohibitive when the fire-pit is nearer than one hundred feet.

No well-managed mill would produce waste if it could be avoided. This, however, is not possible, so the next best thing is to seek out some method of utilization of the waste so it will pay for its disposition. The Forest Service is working on this problem, but has not yet found a satisfactory solution.



WE have nearly two million men in France. Every subscriber to the Liberty Loan helped send them there.



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.

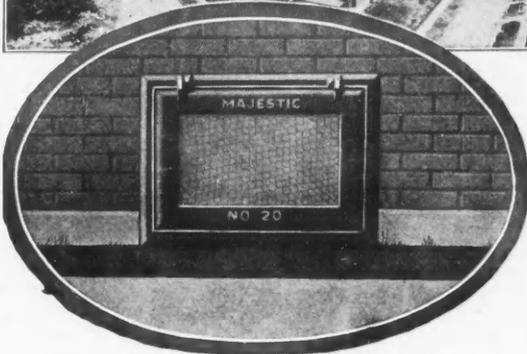
And we guarantee our furnaces to be and do all we claim for them in both catalog and correspondence. Write for our catalog, describing the various styles, prices and specifications of the Great Bell Furnaces.

American Bell & Foundry Co.

27 Cody Street, Northville, Mich.



A Town of Workmen's Homes—erected by the Morgan Park Co., of Duluth.



These Homes Protected By *Majestic* Coal Chutes

In a very short time, every *Majestic Coal Chute*—in every building pictured above—will have paid for itself in actual protection of property from damage and in the saving of repair bills.

More than that—from the minute the *Majestic Coal Chute* is installed—it increases the value of the property.

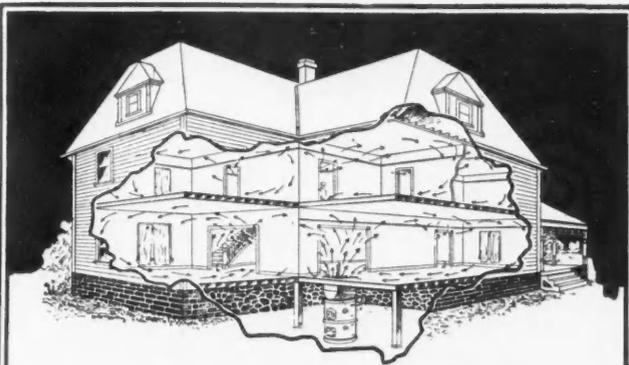
A *Majestic Coal Chute* in any building will protect the ground, shrubs, lawn, sidewalks and particularly the sides of the building from coal smudge and damage by the careless coal man. It will improve the looks and add to the value of the property.

A large glass window gives ample light to the basement—when closed it is absolutely burglar-proof.

Can be Installed in Place of Any Basement Window—Write for Catalog

You can easily install *Majestic Coal Chutes* in place of any basement coal window. Sure to please the owner. Give you good profit, one sale leads to a lot more. Write at once for catalog of the complete line of *Majestic Building Specialties*.

The Majestic Co., 800 Erie Street, Huntington, Indiana



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**.

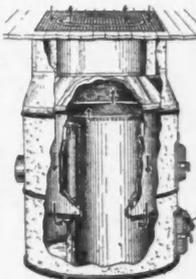
More heat—and just where you want it—always ready. To warm that cold room, just open the door. The

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.

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

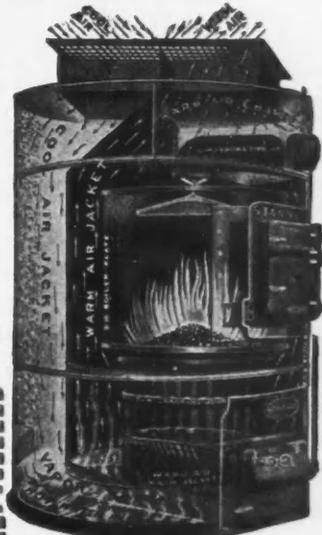
MAIL TODAY

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.

Easy Sold—Big Profits

Your opportunity is here now. A Booster of Profits! Big Profits are yours in return for a portion of your spare time.

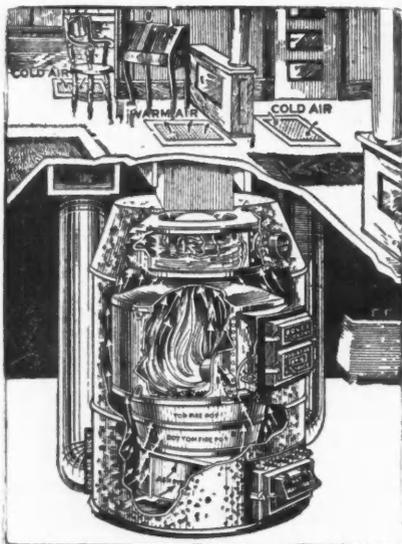
Needed by All

Every home is a possible prospect for Canton Sidewalk Doors and Coal Chutes. Give them a permanent coal window. The sale of, and installation of, every Canton Sidewalk Door and Coal Chute brings another sale with other repair jobs. They are burglar proof, made of the best materials, and stay rods and chains hold them in place either when open or closed.

Write for our catalog B-8.

Canton Foundry & Machine 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

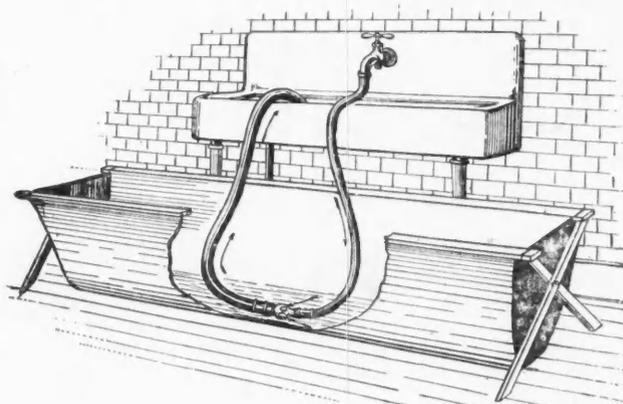
BOVEE FURNACE WORKS, 50 W. 8th St., Waterloo, Iowa



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Apparatus for Emptying the Bath Tub

Portable bath tubs are used in a great many rural homes and this apparatus solves the problem of "How to Empty the Tub" where they have water connections in the house. The tub can be used alongside of a sink or wash stand, as per illustration above. The hose can be used to fill the tub, by pushing faucet connection firmly against end of faucet and securely tightening chain over faucet. This faucet connection



Bath Tub Being Emptied Thru Automatic Device Operated by Water Pressure.

will fit any size or shape water faucet. Do not try to force end of large size faucet thru hole in rubber, as this is not necessary; if rubber is pushed sufficiently firm against end of faucet and fastened by chain, the air and water suction absolutely prevent leakage. The high pressure of the water from the faucet forces the water out of the tub thru the automatic device and up thru the large tubing into the sink, in this way emptying the tub in four minutes. The automatic device must be kept under water at all times, so when the water gets low in the tub, tip tub slightly to keep the device submerged in water. When the water is out of the tub turn off the faucet quickly. The price of the device, with 11 feet of inlet and outlet tubing and faucet connection is very nominal. It will no doubt be a leader with the builders and carpenters who act as agents for portable bath outfits.



This is the Device Thru Which the Water Is Forced by Water Pressure from the Tub Into the Sink.

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 furnace booklet on pipe and pipeless furnaces

HESS WARMING & VENTILATING CO.

1220 Tacoma Building, CHICAGO

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.

Watertable 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



Andrews Hot-Water Saves Heating 1/3 Fuel

Write For
Big Free Book

**More Profits
For Contractors**

Most economical and satisfactory for home owners. We furnish all estimates and erection plans. Complete systems of best quality or our famous steel boilers sold alone. Write for our Big Heating Book and Proposition.

Andrews Heating Company
1576 Heating Bldg. Minneapolis, Minn.

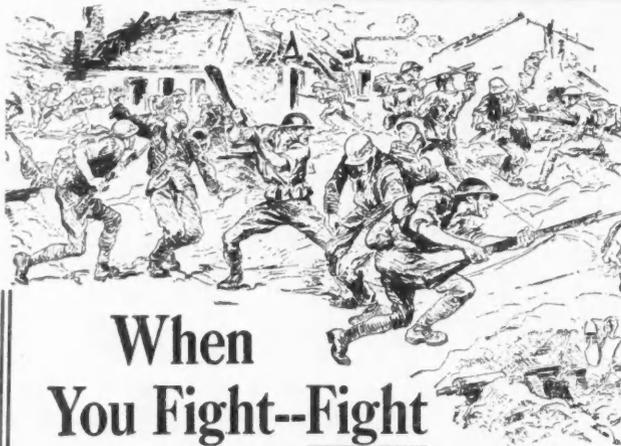


Cure Chimney Troubles with "Best" Revolving Chimney Tops



The only all cast iron ball-bearing revolving top. Protects chimney and keeps it clean. Produces better draft, easy to install, will last a lifetime. Legs have slotted holes and radical adjustment so that each size top will fit any size chimney up to the largest for which it is designed. Write for folder.

Sterling Foundry Co.
8 Ave. A. Sterling, Ill.



When You Fight--Fight

FIGHT as these American soldiers fought in the streets of Fismes. "They covered themselves with glory," the papers say. Of course they did—they are Americans.

They met the finest of the enemy's troops in a terrific hand-to-hand struggle. They used their guns—their bayonets—their bare fists. Every American soldier went after his man desperately, fearlessly, persistently, with one great driving purpose—to whip that Prussian Guard, to silence its machine guns—to win!

It's a pretty good way to fight—this American way. It wins battles over there, it will win a splendid victory over here—if we *fight* when we fight—if we buy Liberty Bonds to our utmost.

When you fight—fight! When you buy—buy!

Lend the way they fight—Buy Bonds to your utmost

This Space Contributed to Winning the War by
HERO FURNACE CO., 59 West Lake St., Chicago

Fun for the Berger Boys

Canton, Ohio, Sept. 19, 1918.

AMERICAN BUILDER, Chicago.

We have in our engineering department a man who is very original in his ideas and also has the talent to illustrate his thoughts.

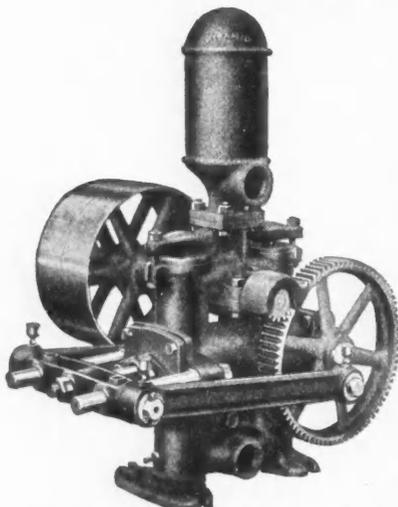


As you know, we are operating a system whereby each week all of our men in the service receive two or three letters from fellow employes. With these letters we usually enclose some original cartoon. A recent one is so good that the writer thought perhaps you would like to reproduce it.

Yours very truly,

THE BERGER MANUFACTURING CO.,
 R. M. NICHOLSON, Advertising Manager.

Another Big Seller for Farm Water Systems Goulds "Pyramid" Pump



Goulds Fig. 1531 "Pyramid" pump with pulleys for belt drive

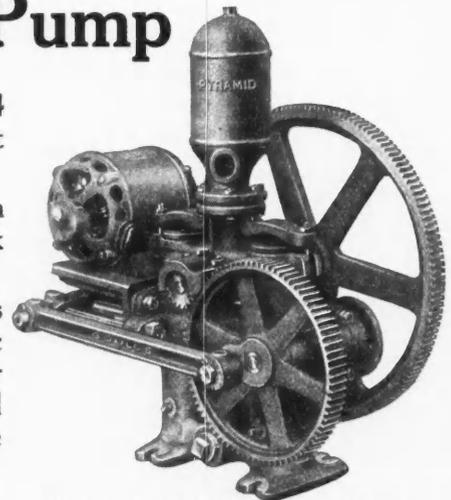
For capacities of 6 to 114 gallons per minute against pressures up to 75 lbs.

For use with either open tank or compression tank water systems.

Furnished with pulleys for belt drive from electric motor, gasoline engine or line shaft. Also furnished with direct connected engine or electric motor.

Bulletin 100 contains complete data.

Copy sent on request.



Goulds Fig. 1531 "Form Q" outfit consists of 6 G. P. M. pump with 110 or 220 A. C. or D. C. motor—or with 32 volt motor for operation on farm lighting systems. For pressures up to 43 lbs.

The Goulds Manufacturing Company Seneca Falls, N. Y.

New York 16 Murray St. Boston 58 Pearl St. Chicago 12-14 S. Clinton St. Philadelphia 111 North 3rd St. Pittsburgh 636 Henry W Oliver Bldg. Atlanta 3rd Nat'l Bank Bldg. Houston 1001 Carter Bldg.

It is the Direct Top Vent

that makes the PURITY JR. an odorless toilet. Unlike a toilet depending upon an elbow side opening, the PURITY JR. seat may be raised a hundred times without impure air entering the room.

An Outdoor Toilet

causes more distress in winter than the thoughtful father and husband is willing to permit his family to endure. Because the PURITY JR. can be bought for little money, it is being installed in many homes that formerly were denied such convenience thru excessive cost.



Fall is the Best Time

to sell indoor toilets. Right now each home is instinctively seeking to secure the thing that will add most to its comfort during the coming winter. The builder who has given them their other conveniences is the man to whom they turn for a better toilet.

Prepare to Meet this Demand by establishing yourself now as one of our agents. PURITY toilets create business.

Night Commander Lighting Company
Jackson, Michigan



Does Your Life Work Mean Anything to You?

You farmers who have worked hard—and no one works harder—to get together your property, what does it mean to you?

Your property—your farm and buildings, your crops, your stock, your farm implements and, too, your home—all of these represent years and years of work that you have done.

Everything that you enjoy as the result of your work comes to you and stays with you because the heroic soldiers and sailors of Uncle Sam are standing between you and the blood-thirsty, murderous Hun.

To keep the Hun away from you, Uncle Sam does not ask you to GIVE even a single penny. He simply asks you to LEND him your money at good interest and he guarantees on his word of honor—a word that has never been broken—to pay back every penny you lend.

What is your answer?

Have you bought all the LIBERTY BONDS you possibly can?

Buy Liberty Bonds Today

Any Bank Will Help You

This Space Contributed to Winning the War by

The Sheldon Concrete Mixer
Nehawka, Nebr.

Comfort Indoor Closet

ODORLESS SANITARY GERM-PROOF

Every home without sewerage, plumbing or running water needs one. Anyone can install in any room. Placed in any room in house. 10,000 in use.

U. S. HEALTH BUREAU APPROVES

Says: "Chemical Closet complies with requirements." Abolish fly-breeding closet. Germ-life killed by chemicals State Boards of Health endorse it. 10,000 in use.

Agents Wanted. Exclusive territory Catalog FREE.

COMFORT CHEMICAL CLOSET CO., 310 Factory Bldg., Toledo, Ohio



Agents \$60 Weekly



Robinson Folding Bath Tub. Big Seller. Costs little, no plumbing, little water. Weight 15 pounds, folds into small roll. Full length baths, far better than tin tubs. Guaranteed 10 years. \$10 a day easily made.

Write for free tub offer.

ROBINSON CABINET MFG. CO., 4891 Factory Bldg., Toledo, Ohio

Mr. Builder: Increase Your Income Right Now—This Month

Here's something right in your line—a Chemical Closet that you can sell to a home builder cheaper than a wooden privy and make a bigger profit for yourself. Here's something you can sell at odd times or turn over to your son or your foreman to sell.



RO-SAN Chemical Closet

An absolutely sanitary, odorless indoor closet that may be placed anywhere in the house. Abolishes the germ breeding outdoor vault. A comfort and convenience where there is no sewer connection. Germs killed by chemical. Easily emptied as the ash pit of a stove.

AGENTS WANTED

We want one live carpenter contractor in each town to act as our agent. Hundreds of builders are selling these fixtures. Good profit for little work. We help you sell them. Write today for complete details.

ROWE SANITARY MFG CO.
910 Rowe Building Detroit, Mich.
Ask about the Ro-San Washstand. Hot and cold running water without plumbing.

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.

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.

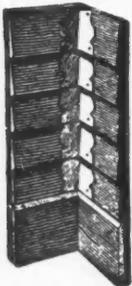
KEES (Gossett) Hinges for Storm Sash

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.

Chief Metal Building Corners

Warp-Proof—Rust-Proof—Fit Anywhere



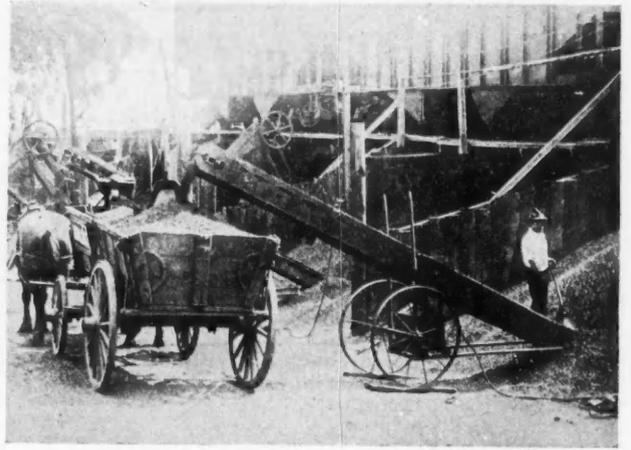
They make a corner with the smoothness and neat appearance of a "mitred corner" and save the time and labor of beveling down the siding. Made of heavy galvanized steel. Fit any corner—inside or outside and make a smooth corner that does not hold dust or moisture. Cannot warp or split, and prevents warping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



Conveyor at Work Loading Crushed Stone Into Contractor's Wagon.

A Unique Portable Scoop Conveyor

The accompanying illustrations show the method of operation of a new type of portable conveyor operated either by electric motor or gasoline engine. The conveying belt receives its material thru a scoop which can be pushed or completely buried into the material to be conveyed.

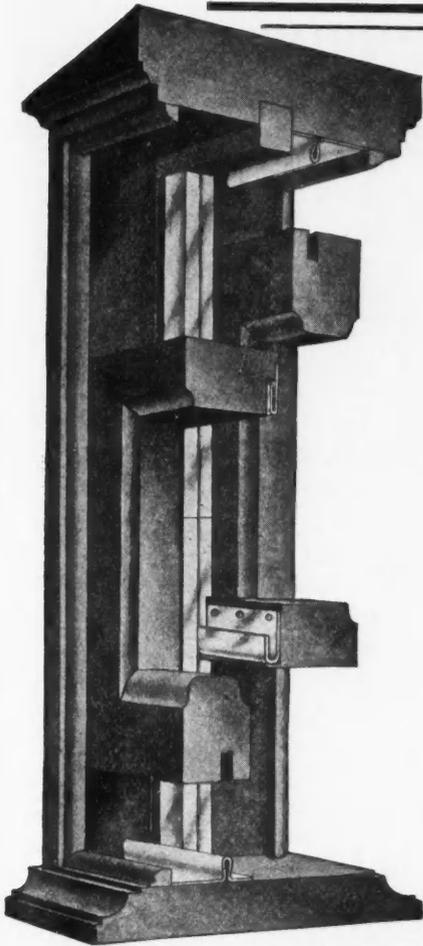
The object of the scoop conveyor is to provide a portable machine that can be readily handled by one man for the purpose of loading and unloading and stacking and reclaiming loose material such as coal, coke, ashes, crushed stone, sand, gravel, etc. One man and the scoop conveyor will handle loose material at the rate of one ton in one and one-half minutes.

In these war times keeping cars and trucks moving and cutting cost of hand shoveling is a necessity under present-day operating conditions and a large number of well-known contractors are already using from one to ten of these machines for this purpose.

This labor-saving device greatly cuts the cost of hand shoveling. Its weight is only 900 pounds.



Close Up View of Portable Scoop Conveyor.



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!*

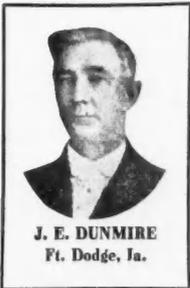
A weatherstrip that slides both sides of the sash—full height of frame—a feature found only with the "SHOGREN."

MAIL THAT LETTER NOW—ASK US ABOUT IT!

WRITE FOR CATALOG

Shogren Metal Weatherstrip Co.

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



J. E. DUNMIRE
Ft. Dodge, Ia.

What Is Your Proposition?

(Asked Mr. Dunmire of Ft. Dodge, Iowa.)

This was over two years ago. We submitted our regular Agency Proposition, the same as we are ready to submit to you. He accepted it, and in fifteen months, sold and installed 158,143 feet of DIAMOND METAL WEATHER STRIPS and 7,409 lbs. of DIAMOND CALKING and GLAZING COMPOUND. His sales amounted to **\$26,618.57**. He employed eight men almost constantly doing the installing. During this period he stripped and calked forty-eight school buildings, to say nothing of private residences and other public buildings. Up to August 1st, 1918, he has contracted to calk and strip sixty-seven school buildings and many residences, and will undoubtedly double his sales over last year.

WHAT HE HAS DONE, YOU CAN DO

We have many others doing nearly as well.

The U. S. Fuel Administrator is advising people to Weather Strip the windows and doors of their buildings **to save fuel**. Are you big enough to realize what this means toward creating a demand for them?

Get our Agency Proposition at once and be prepared to take care of this demand. Contractors, carpenters and builders should be especially interested.

The Diamond Metal Weather Strip Co.

626 Kerr Street, COLUMBUS, OHIO

Freak Housing Problem Solutions

By N. F. Hoggson

THERE is, and has been for some time, a shortage of houses for workmen. The situation has been serious—"acute" is the word most commonly used to describe it. It was necessary that adequate housing be provided for industrial workers. It appeared to be an "emergency" case.

Any emergency these days brings forth scores of freak solutions. The Patent Office is swamped with devices for winning the war. So with housing. All sorts and kinds of schemes for temporary shelter and permanent developments have been proposed. As to the dangers in temporary shack construction, I had occasion to address myself some time ago. But the danger in providing hastily thrown up shacks for workers is slight compared to the great danger of freak permanent developments.

I do not mean that we should avoid taking advantage of innovations and betterments. Leave it to the genius of this country to adopt the latest and best ideas—and enhance their value by improvements.

But, at the same time, this is not the moment for reckless experimentation. Industrial housing is fairly a new problem with us, but an old one in England. The British have solved their problem. While conditions here in America are somewhat different, the under-

lying principles are the same, so we have a firm basis on which to work. The preliminary experimentation has been performed for us. We have the results to work from.

Therefore let us avoid freaks. There has been a suggestion advanced that model tenements be erected in these new industrial villages. Fancy, with all the land that is available in these small communities, enough room for every man to have a house and a yard and a garden, where a community can spread out, we are asked to build tenements, coops for humans, buildings going up with the air, with congestion, and all its evils.

In London, where congestion has ruled, the tenement has been doomed. The London slums are being done away with, and tenements are forerunners of slums. No, we don't want any tenements in these new industrial villages, nor do we want barracks. Well-planned community houses or group houses, yes. They have individuality, which is only one of their manifold advantages.

The government, assisted by some of the ablest architects, builders, welfare workers and industrial experts, has worked for months to formulate a definite

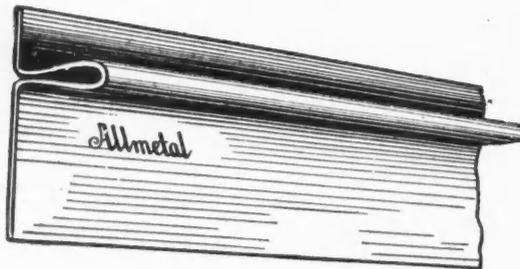
(Continued to page 110.)



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**

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.

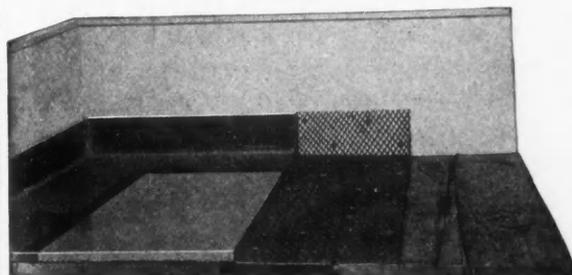
"Peace Strip" is easily sold, easily installed and backed by an **OLD RELIABLE** company.

Write for Catalogue and Agency Proposition

Niagara Metal Weather Strip Co.
 Manufacturers of "Peace" Metal Weather Strip
 33 W. Tupper St. Buffalo, N. Y.

OLD FLOORING AS A BASE FOR A NEW FLOOR

Any old floor, although splintered, torn and badly battered, furnishes the necessary underfloor or base for ASBESTONE.



ASBESTONE is easily spread with a trowel over wood or concrete, forming a tough, resilient, sanitary wearing surface, making a New floor out of an Old one. ASBESTONE is light weight and reinforces the underfloor, fills the cracks and if there are any holes these can be filled with ASBESTONE.

Agents wanted to represent us in every county, no experience necessary. Others are making big money, why not you? Write for particulars regarding this offer.

Franklyn R. Muller & Co.
 804 Madison Street WAUKEGAN, ILL.



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



Automatic Nail Feeder

Feeds nails to your hammer. Easy to attach. One-arm man can drive nails. Great time-saving device.

Price \$1.50—Write for circular
 Budnick Mfg. Co., 40-50 Market St., Grand Rapids, Mich.

Miller's Lock Mortiser

TWO MINUTES will cut an opening in a door for a mortise lock.
 IMPROVED AND UP-TO-DATE cuts true in any kind of wood for any size lock from 1/2" to 1 1/4" thick. Easy to operate; durable in construction. Builders use it everywhere.



Sent Subject to Trial
A. W. Miller Mfg. Co., Riverside, Calif.
 Cincinnati, Ohio
 Our Butt Mortiser and Rule Gangs for 75c., Postpaid

EDWARD LIPPINCOTT TILTON
ARCHITECT
32 VANDERBILT AVENUE
NEW YORK

June 13, 1918.

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

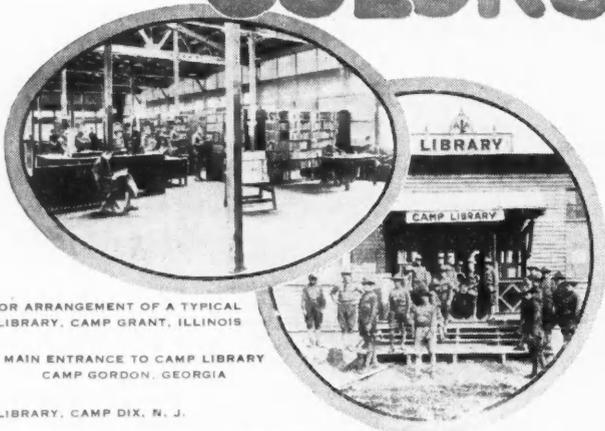
Dear Sirs:-

It will interest you to know that your ready-mixed Lead and Zinc Paint has been specified by my Office for the 32 Library Buildings of the Army Cantonnments and National Guard Camps throughout the Country.

I consider that Devoe first quality lead and zinc paints have excellent covering qualities and wear well. Furthermore, I have confidence in the well established and merited reputation of your house.

Yours very truly,
Edward Lippincott Tilton

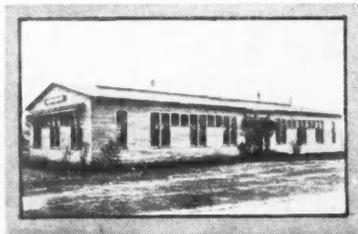
WITH *the* COLORS



INTERIOR ARRANGEMENT OF A TYPICAL CAMP LIBRARY. CAMP GRANT, ILLINOIS

MAIN ENTRANCE TO CAMP LIBRARY CAMP GORDON, GEORGIA

CAMP LIBRARY, CAMP DIX, N. J.



Libraries, theatres and other buildings in army cantonnments throughout the country are being painted DEVOE paint.

DEVOE Lead and Zinc Paint goes further and goes on quicker. Both less paint and less time and labor are needed. DEVOE keeps wartime building moving faster and more economically.

Look for the Guarantee of Purity on every can of DEVOE. It is plain and positive proof of 100% purity and full measure.

Back of this, the DEVOE Guarantee of Satisfaction specifically insures a longer lasting and better looking job.

DEVOE

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

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

Freak Housing Problem Solutions

(Continued from page 108.)

housing policy. A set of standards has been "recommended." Recommendations in these days, coming from official sources, generally may be construed as orders. With such an outstanding figure as Mr. Otto Eidlitz, the New York builder, in charge of a large part of housing work to be done by the government, or with the aid of the government, we may rest assured that the developments carried out under his responsibility will be on a high plane of practical, efficient idealism.

All other developments of a private nature should measure up to the same high plane. Freak plans, freak methods, will never do. After all, the man to be satisfied is the worker and his family. C. Stanley Taylor reports the result of an analysis of housing conditions which he made for the government in the Middle West. During his investigations he questioned the general manager of a munitions concern regarding the benefits which had accrued through providing houses for its workmen. The general manager said:

"The best mechanics who come here for jobs are married men who journey from distant towns and cities, attracted by the wage scale. They leave their families behind while they come to 'try out' the place. They are most usually good workmen. After finding a room for temporary quarters, they look around for a house to rent. There are none. The man likes his job. He likes us. But he computes the additional cost of living apart from his family, so he goes back, or seeks another place where he may find a home. We have lost nine out of every ten married men we have hired during the last year: the reason is simply because they were human and wanted to live 'at home' They are the best kind, the home-loving, steady-going, dependable workmen. We had to have them. That's why we build homes!"

Yes, that's why that concern is building homes and it was noticeable that the general manager said *homes* and not houses, and in that one word "homes" he laid

(Continued to page 112.)

Saves Coal



Use Arnold Automatic Damper

This simple device placed in your Stove Pipe or Furnace Pipe immediately gives your house 25% to 33 1/3% more heat from the same quantity of fuel—no matter what type of stove or furnace you use. A Proved Success! You can easily attach it yourself—simple directions on box.

NO WASTED FUEL

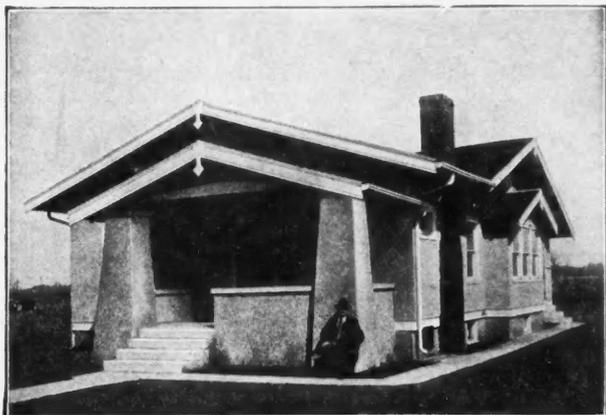
Automatic in operation—requires no attention after fire is started. Keeps your house at even temperature. No overheating with waste of fuel. No underheating with dangers to health.

Saves Its Cost on First Ton of Fuel

Thousands already in use. Every owner a booster. Price \$2.50 by parcel post, prepaid. Order today, stating whether for Stove or Furnace and give size of pipe. Agents wanted.

ROBINSON MFG. COMPANY

90 Factories Bldg. Toledo, Ohio



Built by Walker Brooks Realty Co., Indianapolis, Ind.

**Beautiful, Permanent
KELLASTONE BUNGALOWS
COST LESS**

Build for Permanency, eliminate painting and repair bills by using

KELLASTONE
IMPERISHABLE STUCCO

the world's greatest exterior stucco. Investigate carefully before deciding. Let us tell you where you can see and examine a Kellastone building near you. Send for "The Story of Kellastone."

Kellastone Composition Floors are seamless and sanitary

National Kellastone Co., 1330 Mallers Bldg., Chicago

Clinton
Mortar Colors

for over 35 years have withstood the severest tests. They are permanent colors because only the purest ores and ingredients are used.

Clinton Mortar Colors go hand in hand with Permanent Construction.

Send for booklet No. 11 offering a wide selection of tones and shades, which will add to the beauty of structure.

Clinton Metallic Paint Co.
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.

**Conrad's
Creosote Stains**

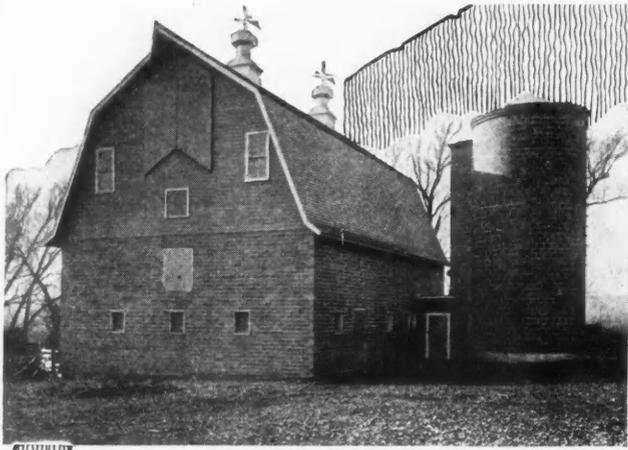


don't wash off or fade. Our Greens are superior to any in the market and our Bungalow Brown has no equal for staining smooth sidings as well as rough boards and shingles. Write for samples and prices to the world's largest Shingle Stain Plant.

The Conrad Wood Preserving Co.

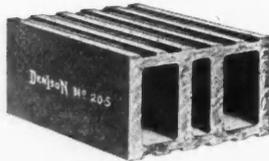
112-114-116-118-117-119-121 Plymouth Avenue
MINNEAPOLIS, MINN.

You can get Conrad's goods all over the country. Conrad's Brick Stains, Concrete Waterproofing and Stains, and Creosotone Wood Preserver.



DENISON Hollow Clay Tile

THE farmer has come to realize that it is true economy to build with Denison Hollow Tile. He knows that it is money in his pocket to keep his live stock warm in Winter. The cows give more and better milk; the chickens lay more eggs, the hogs weigh more when Spring comes, etc.



Farm buildings constructed with Denison Hollow Tile are warm in Winter and cool in Summer. The first cost is low and there is no after expense for upkeep. There is almost no depreciation in value to a hollow tile building. It is handsome in appearance and everlasting.

You can increase your profits and satisfy your customers by using Denison Hollow Clay Tile. Be informed so you can tell your customers all about it.

Write today for our free book of details and prices. It tells all about the advantages of building with hollow tile.



**Mason City Brick
& Tile Co.**

900 East Eighth Street
Mason City, Iowa

Freak Housing Problem Solutions

(Continued from page 110.)

bare the secret of success of industrial housing viewed from the standpoint of investment. Build homes—not merely houses!

And away with all freak theories!



The Community Spirit in Town Planning

WHILE the community idea in this country should not exactly be called a negative expression, its development to date hardly warrants terming it a positive enterprise. The Garden City and Town Planning Movement has reached the highest point of effectiveness in England and has proved something more than a successful experiment. The model villages of Letchworth, Port Sunlight, Bournville, which provide homes, real homes, for working peoples, are artistic creations of men possessed of splendid imagination and sympathetic understanding. Add to these, Hempstead Garden Suburbs, Fallings Park Garden Suburbs, the Garden Village near Cardiff, with their picturesque winding roads and vine-covered dwellings, and one may look in vain for their counterparts in America. They are nothing less than fairy-garden spots.

The difference between the Garden City and the Garden Suburb is that the first is a separate entity, a self-sustaining unit; the latter lies on the outskirts of large cities and becomes a part thereof.

There is no distinct and overwhelming element of philanthropy as a basis for the creation of these Model Towns. They are paying investments from the practical point of view. The plan has been for a number of manufacturers to co-operate in the founding and building of a Garden City, and these promoters have realized a fair profit from rentals. The enterprises have been divorced from the idea of charity as they have from the taint of paternalism, the rock on which certain developments in this country have come to grief.

The time has never been more opportune for American manufacturers to give serious thought to the furthering of the Garden City movement. The congestion in our large cities, contrary to all natural laws, has about reached its limit. We can no longer excuse ourselves for past errors in town planning on the theory that this is a young country. New towns are being laid out today with the same pitiful lack of constructive imagination as heretofore; paralleled streets giving the aspect of a great ugly checkerboard; no civic centers, no playgrounds, insufficient parks.

The Garden Cities that are destined to bloom in America and that are to be the result of a movement fathered by American industrial institutions should be lacking in no respect and should be equal, if not superior, to any like developments anywhere in the world.

Go Carefully Into the Comparative Cost of Sheldon's Slates and Artificial Roofings

You will find that you can have an attractive roof of **SHELDON'S SLATES** at the cost of a flimsy artificial roof. And the first cost will be the only cost—there will be no renewing, repairing or repainting.

Ask for Interesting Booklet "The Roof of Eternal Youth" Fully Describing Sheldon's Slates.

Roofers: You can make money laying Sheldon's Slates. Write.

F. C. Sheldon Slate Company
Granville, N. Y.



From Quarry To You

with the greatest speed and safety. Use G. F. T. Roofing slate. First cost the last cost. No risks. Nature's own roofing. It is not an experiment. Fire, storms, snow, rust, etc., cannot damage Genuine Franklin Tunnel roofing. Write for catalog. **SLATINGTON SLATE CO., SLATINGTON,**

MANUFACTURERS OF ROOFING
"SLATES OF QUALITY"

MOTTLED GREEN AND PURPLE - WEATHERING GREEN
UNFADING GREEN - MAMMOTH VEIN POULTNEY SEA GREEN
GENUINE BANGOR FROM OUR CELEBRATED BANGOR UNION QUARRY
BLACKBOARDS - STRUCTURAL SLATE
SLATER'S TOOLS - MACHINES & SUPPLIES

We furnish "SLATES OF QUALITY" in random widths, graduated thickness and in one or varied colors; SEE SWEET'S CATALOGUE.

THE AULD & CONGER CO.

ESTABLISHED 1870.

We publish a handy book "THE SLATE ROOFER" **CLEVELAND, O.**

Dry Foundations!

are assured by having the walls treated with

Carey
PERCOPROOF
DAMP-PROOFING COMPOUND

Applied with a brush direct to foundation walls, concrete construction, masonry, or stucco surfaces. Percoproof forms an unbroken elastic surface, fills every crack and pore and prevents moisture from penetrating.

Unlike ordinary waterproofing materials, Percoproof contains no oil and requires no thinning. It comes ready for use and is equally satisfactory in all climates and seasons.

THE PHILIP CAREY CO.

136 Wayne Ave., Lockland, Cincinnati, O.



Vendor
VENDOR SERVICE

ROOFING
REPUTATION BUILDERS

That's what everybody calls our roofing Slate. It is reliable, and when you order any particular brand, you get just what you have ordered. That is a big thing in the Roofing Slate business, and worth a whole lot to you, isn't it? You know that as well as we do. Having between forty and fifty quarries from which to ship, our service is most prompt. That is why we are the largest shippers of Roofing Slate in the world. We still have open territory, ask us.

The United States Government is a satisfied user of Vendor Roofing Slate. That speaks well for its quality and our service, doesn't it?

VENDOR SLATE CO.
INCORPORATED
BANGOR, PENNSYLVANIA

Largest Shippers of Roofing Slate in the World

USE

MIDLAND TERRA COTTA

The beauty and richness attained through the use of MIDLAND terra cotta has given many a building its individuality.



Apartment Building Chicago
Grossman & Proskauer, Archts.

MIDLAND TERRA COTTA COMPANY
Lumber Exchange Chicago

Cornell-Wood-Board

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

For war-time repair and alteration work, show your customers that Cornell-Wood-Board is unequalled. Will not warp, crack, chip or buckle and nails direct to the framework or over the old walls. Easily put up and lasts a lifetime. Resists heat, cold and moisture and is ideally adapted for the walls and ceilings of Homes, Garages, Stores, Offices, Farm Buildings, Industrial Housing, Cantonments, etc. Increase business and make friends by recommending Cornell-Wood-Board.

Write for Free Samples, sent on request

Cornell Wood Products Co. 173-175 W. Jackson Blvd.
Dept. 1010 CHICAGO



Nearly Twice as Strong as Other Wall Boards!

You can apply a third more of Upson Board a day than of soft, punky boards. It works like wood; doesn't pull from the nails. No come-backs!
Better than Plaster for Walls and Ceilings

UPSON PROCESSED BOARD

The Most Dependable Board Made in America
Upson Board is made good to make good. It is not like other Boards! It is stronger, harder, stiffer—holds the record of not one complaint to every 2,000,000 feet used. Write for all the facts.
THE UPSON COMPANY Fibre Board Authorities
56, Upson Point, Lockport, N. Y.



Repairing Farm Buildings

(Continued from page 31.)

a less cost than pine siding and also a better and tighter wall than single siding will be after a few years.

With the barns there are two ways to increase the storage room without covering more ground with roof. One is to put on a gambrel or Gothic roof, the other is to raise the barn up some distance from the ground, say, two feet or more, and put a wall under.

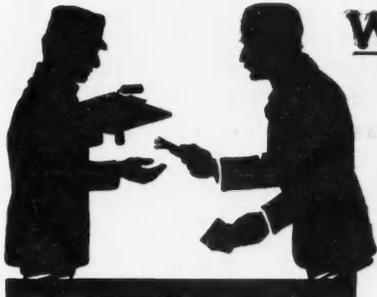
When one wishes to make a barn wider, instead of adding a lean-to, as it is called, a better way is to put the plate of this addition up even with the other plates and then splice out the rafters on one side and put new ones on the other side, or put on a new roof. A gambrel roof would be best.

On some farms it is the house which needs the repairing. Generally the cellar is not what it should be, and the house should be jacked up several inches and a good wall put in and a good drain made. Then put in large windows to let in the sun and air. An old house which has not sheathing boards under the clapboards should have them put on, and the outside casings made new or covered over. If clapboarded with paper under, it will be quite comfortable in winter. Once fixed it should be kept well painted and it will last for years.



Substantial Performance of Contract

In an action for a balance of \$70 alleged to be due as a balance on a contract for repairing and altering a house for \$2,070, it appeared that the contractor agreed to "give a finished job" and to do the work "in good faith and workmanlike manner." It was shown that when the job was finished the floors buckled for want of support so that the grooves broke. The floors, instead of being of good southern hard pine, were made of short pieces of sea rift flooring, and the testimony was that such pine is one of the poorest grades of southern hard pine, and that it is not suitable for house floors. The dado in the dining room in the space of three widths of the sheathing had 15 knot holes and 12 pitch holes. The skylight in the sun parlor had no bedding for the glass. The gable room window was nailed together instead of being mortised and tenoned. Some of the glass was not puttied, but held in place by brads. The finish was rough; the joints were bad; the floors were marked by hammer blows; the roof leaked, and the finish did not match the finish in the part of the house not repaired, as agreed on in the contract. It was held that the work was not done "in a thorough workmanlike manner" or "in good faith," and did not constitute a substantial performance of the contract. The defendant was held entitled to damages, which, in this case, wiped out any claim the plaintiff had growing out of the contract or for extra work and materials. *Kenney v. Pitt*, Maine Supreme Court, 87 Alt. 480.



Why Divide Profits with the Plasterer?

Recommend Carey Wall-board, then apply it yourself or have your cheapest men apply it. Thus you save the plasterer's profit for yourself while your customer gets a better and more attractive job, all of which means future business for you.

Carey
WALL BOARD

is a better wallboard. It is twice as strong as pulp boards, hence a more suitable building material. The plies are cemented together with asphalt, making it waterproof. You can buy it in attractive wood finishes in addition to plain gray and tan.

You owe it to yourself to write for free samples and full information.

THE PHILIP CAREY COMPANY

General Offices:

1021 Wayne Ave., Lockland Cincinnati, Ohio

Strength for Every Requirement

THE more your building problems demand of Compo-Board, the stronger is the proof of the superiority of its wood core construction.

So rigid that it won't buckle, warp or shrink—so tough that it can't chip, crack or mar—



Trade Mark Registered, U. S. Patent Office, No. 94746

No other wall board gives such satisfaction for remodeling and repair work, because no other has the stiff wood core.

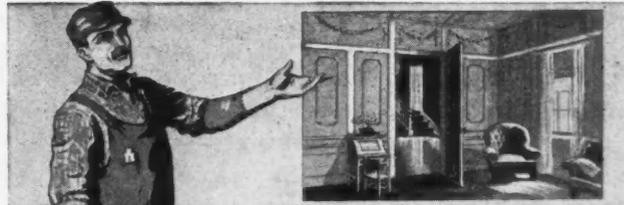
Saws clean and smooth, no shrinking or warping to allow for when you are nailing it on. Always lies flat and straight.

Sold by dealers everywhere in strips four feet wide and in lengths of one to eighteen feet, as desired.

Write For Interesting Booklet and Sample

The Compo-Board Co.

5777 Lyndale Ave. N.,
MINNEAPOLIS - MINNESOTA



"I'll stake my reputation on

PLASTERGON
TREATED WOOD FIBRE
WALL-BOARD

YOU needn't dodge any questions at all in recommending this heavy, tough Wall-Board. Goes up easily and quickly.

Once up, Plastergon's up to stay.

Your work will stand as long as the building stands.

Because sturdy Northern Spruce fibre, solidly united and chemically saturated makes Plastergon warp-proof, water-proof, permanent.

It's a pleasure to work with Plastergon Wall-Board — so stiff, firm, cuts so easy. Saves your customers more money, too. Plastergon is not merely sprayed — it's saturated with sizing. All ready to paint.

The Government knows the difference in wall boards. 90% of Uncle Sam's new buildings at Washington are "Plastergoned."

Write for your free sample. Plastergon Panel and Builder's Book

Plastergon Wall-Board Company

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Fiberlic

Wall

Board

Fiberlic

Wood Grain

Panels

The material from which it is made, the fact that the pulp is chemically cleansed and that the fibre lengths give the finished product that natural reinforcement that is lacking in ground wood boards, is in itself a guarantee of the superiority of Fiberlic from strong, permanent, economical and sanitary construction.

McAndrews & Forbes Company

200 Fifth Avenue, New York City

Factory: Camden, N. J.

The Development of the Perspective

(Continued from page 62.)

V. G. The height of the ridge may be worked from the measure line of the house as illustrated in Fig. 4.

The corners of the cornice and points on the roof may be determined in the same manner as the corners of the house in Fig. 3.

Next on the measure line of the house lay off the height of all doors and windows. Connect these heights by light lines with vanishing points.

Locate the width of openings from plans according to method previously shown.

Now, having all the main projections of the house carefully worked out, draw the details: window sash and trim, cornice moldings, water tables and column caps and bases (Fig. 5). Many of these minor details need not be located from the plan, but may be drawn directly on the perspective and spaced with the eye.

A simple and easy method of rendering the perspective is shown in Fig. 5. First ink in all the lines of the perspective with a ruling pen. Then determine the main shadows, namely, those cast by cornice and porches.

It is best to find the depth and location of the shadows in elevation, and then transfer them by means of the measure lines to the perspective.

Shadows in perspective are as a rule determined more by judgment than by actual construction ac-

ording to theory. Close observation of actual shadows on a building on a bright day will aid greatly in indicating shadows in perspective.

The shadows are shown by light vertical free-hand lines put in with the ordinary pen. The shadows on the window glass below the line of the shades should be kept very dark.

Foliage outline in the background assists very greatly in making a pleasing perspective.



Fear Loss of Loose Plans

To the Editor:

Sturgeon, Pa.

I am very well satisfied with the BUILDER and always look for it to come. I think the plans are fine, prefer them bound in, as my July issue was minus the barn plans which were supposed to be in, and I think this would happen pretty often were the plans loose leaf. I would prefer more of the small cottage house plans, as they would suit the small town fellows the best.

JOS. GARDINER, JR.



Reconstructing the Crippled Soldiers

(Continued from page 23.)

job will have had for him no permanent benefit.

Twelve men sent to twelve jobs may all be seriously misplaced, while the same twelve placed with thought and wisdom and differently assigned to the same twelve jobs may be ideally located. If normal workers require expert and careful placement, crippled candidates for employment require it even more.

(Continued to page 113.)



TRICO HUMIDIFIER

An Effective Humidifier—air moistener—will positively save its cost, by its fuel saving ability, in one season alone.

It transforms an otherwise ugly radiator into a beautiful piece of furniture that has innumerable uses besides that of heating.

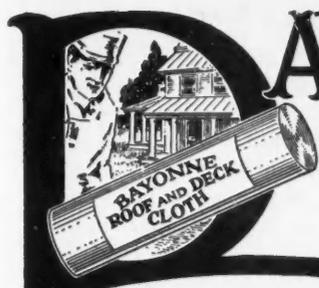
The radiator can be used as a shelf and the TRICO is in itself the very best kind of a shield, deflecting the heat so that all hangings are protected. If the radiator is a low one the TRICO becomes an ideal window seat.

65° or 75° Which?

TRICO HUMIDIFIERS make 65° of moist heat as effective as 75° of dry heat. Medical authorities agree that humidifiers are absolutely essential. They are safeguards of health. They save furniture and plants.

Let us tell you all about the savings they effect in your coal bill. Write us.

ART METAL RADIATOR COMPANY 133 W. WASHINGTON ST. CHICAGO, ILLINOIS



BAYONNE

ROOF AND DECK CLOTH

BAYONNE

Roof and Deck Cloth

BAYONNE is specified by leading architects because it has proved to be the ideal covering for low-pitch or flat roofs, verandas, sleeping porches, sun parlors, conservatories and all floors exposed to the weather or to constant wear.

The Chas. DeJong Building Company, of Paterson, N. J., writes: "We have been using Bayonne for the last four years, and recommend it most highly, as it has proved satisfactory in every instance."

Bayonne outwears other materials of its kind, is laid on dry boards (an easy and inexpensive job), and is painted afterwards—any color desired. It is absolutely water-proof, cannot crack or buckle, and fits perfectly into nooks and corners. It is kept clean by sluicing with water. A Bayonne Roof or Deck never leaks.

Our Free Sample Book "N" shows texture and gives prices and directions for laying. Write for it today.

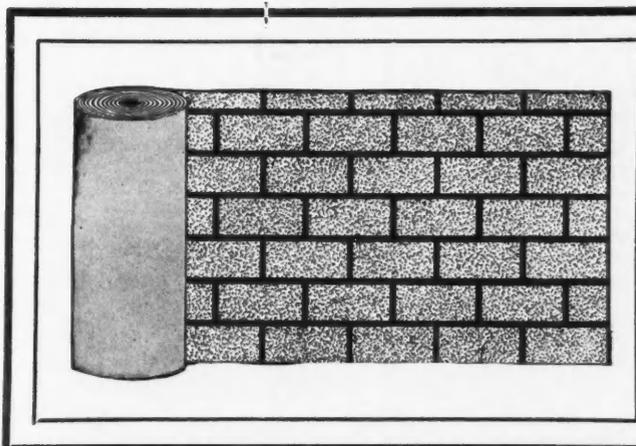
JOHN BOYLE & CO., Inc.
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 St. Louis Branch—202-204 Market Street

CON-SER-TEX



is the ideal roofing material to use for porch roofs and floors—on sleeping balconies—as a lining for gutters—as a covering for valleys and hips it's most satisfactory. It makes a most durable flashing. ¶Con-Ser-Tex is a specially prepared heavy cotton fabric, chemically treated so that it will not crack, stretch, peel, shrink, rot or leak. It's easy to lay—saves time, money, trouble.* It makes a neat, smooth, durable surface which will last as long as the house itself. ¶Send for booklet "Roofing Facts and Figures"—it will interest you.

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 California Distributor:
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A Logical Roofing Material for Industrial Housing

Because of its speed in application and its resemblance to actual shingles, at about half the cost, **Rex Shingle Roll Roofing** is particularly well adapted as a roofing material on moderate price houses for quick erection.

It Gives Maximum Efficiency At Minimum Cost.

Write for Catalogue and Special Booklet

The Flintkote Company, 90 Pearl Street
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Makes a Perfect Roof

BECAUSE

- The convenience and lightness of wood.
- All the protection of asphalt.
- Easy to lay—low in cost.
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WINTHROP
TAPERED
ASPHALT SHINGLES
 The Only Kind Tapered Like Wood

Thick at the butt—thin at the top. Tough, pliable and resists fire and weather. Easy to lay, like wood shingles, with ordinary shingle nails. Ask for a sample shingle.

Beckman-Dawson Roofing Co.
 Asphalt Shingles Factory, Argo, Ill.
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REMODEL!

KRAGSTONE

AMERICAN MAGNESIA PRODUCTS CO., CHICAGO

STUCCO

Big Profits This Fall

Any old frame or brick house can be made better than new with Kragstone Stucco.

Beautiful and fire-proof. Does not check or crack. 300% stronger than ordinary stucco.

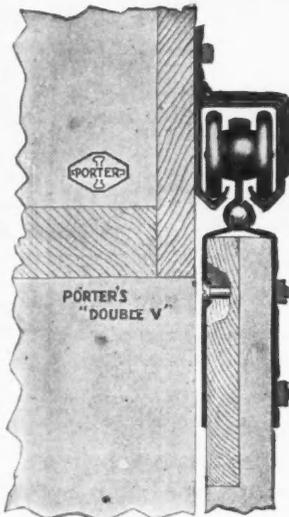
Write for free book, which tells all about Kragstone—for remodeling, for new buildings, etc. **Every builder should have it. SEND POSTAL.**

American Magnesia Products Company
 3 North La Salle St., Chicago



Dealers Wanted

Porter's "Double V" Door Track and Hanger



End View
Note V-Tread



Roller Bearing



Complete Catalogs of
All Porter Products
on Request

Note the "Double V" tread. This novel shape brings four important features — features which make this outfit win wherever shown.

The shape of the tread insures maximum strength. It permits the least contact or friction with the hanger wheel. It keeps the hanger in perfect alignment at all times. And—it is self-cleaning.

Strongly Made—Bird and Storm Proof

Porter's "Double V" track is formed on a huge press to insure uniformity. It is made of 14 gauge special steel. Furnished in 6, 8 and 10 foot lengths.

The tread has the same shape as the famous Porter "Hummer" so popular with farmers and builders everywhere. Years of use have proven this tread the most durable and practical ever designed.

Brackets close the ends, making it positively bird and storm proof.

Roller Bearing Hanger

The "Double V" hanger is made with double tandem trucks and the axles turn on roller bearings. The door trap is painted a bright red. The back of the strap next the building is designed so that there are no projecting bolt heads to interfere with the free rolling of the door. This means a close fit. Think of the advantage for cold and stormy weather.

"Double V" hangers are packed one pair complete in an attractive carton.

Makes Satisfied Customers

You are safe in specifying the "Double V" for all your jobs. It will make good anywhere.

Farmers have known and used Porter products for fifty years. You'll find they want this line.

Send for full details of the "Double V" and other Porter products.

J. E. Porter Co.
283 Guion, St.,
OTTAWA, ILLINOIS

DISTRIBUTED BY

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(25)

Reconstructing the Crippled Soldiers

(Continued from page 116.)

The positive aspect of the employer's duty is to find for the disabled man a constructive job which he can hold on the basis of competency alone. In such a job he can be self-respecting, be happy, and look forward to a future. This is the definite patriotic duty. It is not so easy of execution as telling a superintendent to take care of four men, but there is infinitely more satisfaction to the employer in the results, and infinitely greater advantage to the employes. And it is entirely practical, even in dealing with seriously disabled men.

A cripple is only debarred by his disability from performing certain operations. In the operations which he can perform, the disabled man will be just as efficient as his non-handicapped colleague, or more so. In the multiplicity of modern industrial processes it is entirely possible to find jobs not requiring the operations from which any given type of cripples are debarred. For such jobs as they can fill the cripple should be given preference.

Thousands of cripples are now holding important jobs in the industrial world. But they are men of exceptional character and initiative and have, in general, made their way in spite of employers rather than because of them. Too many employers are ready to give the cripple alms, but not willing to expend the thought necessary to place him in a suitable job. This attitude has helped to make many cripples dependent. With our new responsibilities to the men disabled in fighting for us, the point of view must certainly be changed. What some cripples have done, other cripples can do—if only given an even chance.

The industrial cripple should be considered as well as the military cripple, for in these days of national demand for the greatest possible output there should not be left idle any men who can be made into productive workers.

With thoughtful placement effort, many men can be employed directly on the basis of their past experience. With the disabled soldiers who profit by the training facilities the government will provide, the task should be even easier.

This, then, constitutes the charge of patriotic duty upon the employer:

To study the jobs under his jurisdiction to determine what ones might be satisfactorily held by cripples. To give the cripples preference for these jobs. To consider thoughtfully the applications of disabled men for employment, bearing in mind the importance of utilizing to as great an extent as possible labor which would otherwise be unproductive. To do the returned soldier the honor of offering him real employment, rather than proffering him the ignominy of a charity job.

If the employer will do this, it will be a great factor in making the complete elimination of the dependent cripple a real and inspiring possibility.



Plumbing in Country Residences

(Continued from page 64.)

against which no objections can be offered. This is accomplished by the use of the "septic tank." Many persons think that when one says "septic tank" it means a massive structure of concrete more suitable for a municipality than for a private residence. This is not so, as can be seen from the tank shown in Fig. 3, which indicates how an ingenious builder can construct a little septic tank suitable for residence work at small

(Continued to page 120.)

WALTER'S & COOPER'S METAL SHINGLES

*The
Shingles
That
Last*



*The
Shingles
That
Last*

The Most Complete Line of Designs The Best Quality Workmanship and Finish
Made in Painted Tin or Genuine Re-dipped Galvanized Tin

SOLD AT THE RIGHT PRICE

May we send you full-size samples and prices?

NATIONAL SHEET METAL ROOFING CO. 339-345 GRAND STREET
JERSEY CITY, N. J.

For the outer covering of
a building no other wood
gives such long and satis-
factory service as

WHITE PINE

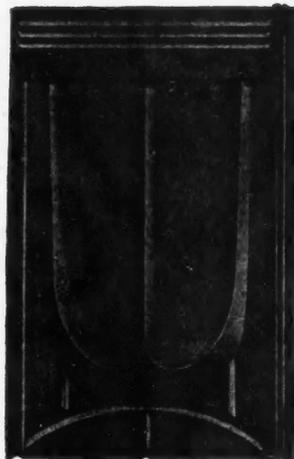
THE BEST LUMBER
FOR THE OWNER OR THE INVESTOR TO PAY FOR IS
THE BEST LUMBER
FOR THE CARPENTER AND BUILDER TO USE.

Don't Forget That Good Reputations are Built on
Good Recommendations. USE AND RECOMMEND

CYPRESS

(OF COURSE)
BECAUSE IT'S "THE WOOD ETERNAL"
& LASTS & LASTS & LASTS & LASTS & LASTS & LASTS

Look for this on every board—
Accept no Cypress without this mark



**Edwards
Metal
Shingles
Will Out-
last Your
Building**

**Rot-Proof
Fire-Proof
Lightning-Proof**

We want a good, live man to represent us in each
locality—to push our surpassing line of Metal
Shingles and other up-to-minute metal roofings.

WRITE US TODAY ABOUT YOUR TERRITORY. Our busi-
ness is growing so rapidly that it is necessary to have an agent
in every community. The territory is going fast. One day's
delay may mean that some one else will be given your territory.
Don't delay. Write today for our special Agents' Proposition.

THE EDWARDS MANUFACTURING CO.

"The Sheet Metal Folks"

401-417 Eggleston Ave., CINCINNATI, OHIO

World's Largest Manufacturers of Metal Roofing, Metal Shingles,
Metal Spanish Tile, Metal Ceilings, Metal Garages, Portable Build-
ings, Metal Lockers, Rolling Steel Doors, Partitions, etc. 2

CORTRIGHT METAL SHINGLES

*Bring in Profits
from Two Angles*

Not only will you make your regular profit
for *laying the shingles*, but you will also make
a good margin on their sale.

Our policy of protecting contractors and
builders assures you a lower price and a higher
profit than can be made from handling other
types of roofing.

Of special interest to you at this time is
our ability to ship promptly "Cortright's" in
all four styles—Red Painted Tin, Green Paint-
ed Tin, Galvanized Tight Coat and Galvan-
ized Tin.

Be in a position to make these two profits.
A postal will bring full particulars.

Cortright Metal Roofing Co.

PHILADELPHIA CHICAGO



Plumbing in Country Residences

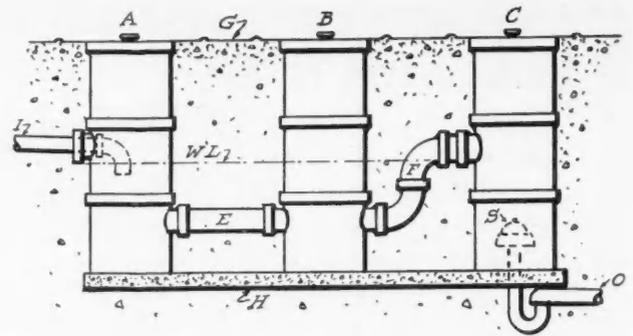
(Continued from page 64.)

cost, employing nothing more complicated than common tile pipe.

In the tank shown the sewage enters thru the inlet I, passing into tank A (which is a settling basin), midway between the water line WL and the bottom and the lighter or buoyant portion floating on the top. This leaves the clearest portion of the liquid about midway between the water line WL and the bottom slab H. At this level the connecting pipe E is installed, which allows the clear liquid to flow into the septic chamber B, where the septic action largely takes place.

When the tank is first put in use putrefaction starts in due course in chamber B, the bacteria gradually breed and multiply and a sort of mat forms on top of the water, which serves to facilitate the increase and growth of these bacteria. They attack, break up and dissolve almost everything which is not metal or mineral matter; for instance, they destroy bone, flesh, etc., but will not attack stones, brass or metals. All substances not proof against their action are speedily dissolved and since the normal sewage contains little, if any, mineral or metal (except what may get in by accident), this means that practically everything is reduced to a state of solution.

As more sewage flows in thru the inlet I the water line raises in F and overflows into chamber C



Country R.C. Plumbing - Fig. 3 - Septic
Septic Tank Made of Tile Pipe.

so that this chamber gradually fills until the syphon S is brought into action; this syphon discharges the chamber with a rush thru the outlet O. The connection F is taken from chamber B at approximately the same level as E in order not to break up the mat which forms at the top of the septic chamber and also not to disturb the sediment which may settle to the bottom. In other words, clear water in both chambers lies midway between the water line in the bottom and this is what we wish to draw off, allowing the bacteria to continue their work on the other materials which do not respond to their attacks as readily as the substances which are more easily dissolved. The desirable reasons for employing the syphon and what is done with the sewage after it leaves the outlet will be taken up in the next article.

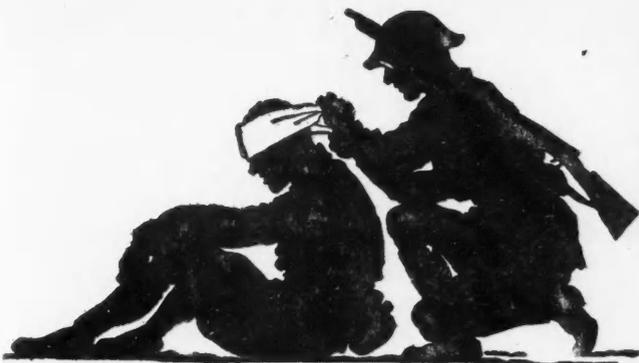


EVERY Farmer should prepare himself to raise two litters of Hogs a year. This can be done by providing comfortable winter quarters. Place WILLIS HOG HOUSE SKYLIGHTS on the south slope of the roof to transmit the warm south sun. Install sufficient WILLIS VENTILATORS to keep the air within pure and fresh.

Write today for our catalogue and complete information.

WILLIS MFG. CO.
Galesburg, Illinois





The Boy From Next Door

YOU used to see him swing gaily down the street, radiant with the vigor of his sturdy young manhood. One day he came home in khaki; then his father told you, with mingled pride and forboding that he had "gone across" with his regiment.

Yesterday his name was on the casualty list—"slightly wounded"—and your face grew grave as you thought of the sorrow and suspense of his father and mother.

From every city street, every village, every community, the boy next door has gone to war.

Think of these thousands of splendid young Americans, reared in comfort, peace and security, now suddenly plunged into that roaring inferno of battle with the hardened hordes of a determined foe.

What are you doing to help them?

What are you doing to arm and protect them, and bring them home in safety? Have you bought Liberty Bonds? Have you bought all you possibly can?

Has it occurred to you that one more bond, bought with a little additional effort, may save the life of the boy from the next door.

BUY ANOTHER BOND

This Space Subscribed to Winning the War by

The Security Lightning Rod Co.
Burlington, Wisconsin

RESULTS THAT COUNT

Profits
Sure



TIP TOP (roof) Ventilators and **TIP TOP** More Sun (hog house) Windows directly increase food production and insure greater profits for sellers and users.

It is impossible to get these results without proper ventilation and sunlight.

Dealers and contractors should write today for our plan of co-operation.

Anderson Mfg. Co., Des Moines, Iowa

There's More Profit for You in O K Cupolas

Equip the barns you build with this modern ventilating device and thus build your reputation and good will for the future. Also you make more profit on the present jobs. Owners realize the importance of good ventilation, and every O K Cupola owner boosts for you.

O K Cupolas solve the barn ventilation. They sell themselves. Are made of heavy galvanized steel; bird, storm, rot and rust proof. Neat in appearance. Are easy to erect—shipped ready to install. Farmers want them. You cash in big by supplying this necessity.

Write for full particulars and our special discount to builders and contractors where we are not represented.

Phillip Bernard Co.
2402 Floyd Ave., Sioux City, Ia.



Economy

This illustration shows the economical use of metal in the construction of

"GLOBE" VENTILATORS

"GLOBE" Ventilators are favored by contractors and builders because they are so economical. They are trouble-proof—no moving parts—and there is nothing that CAN get out of order—no upkeep cost, beyond a coat of paint when you paint the building and they are so well made they will last as long as the building itself.

"GLOBE" Ventilators are the simple suction type that operate perfectly in a 5-mile-an-hour breeze; you would call it a dead calm. They are storm-proof—absolutely noiseless and are ornamental. Made with efficient fire retarding damper if desired. But above all "GLOBE" Ventilators have an exhaust capacity as great as any and greater than many and are *always efficient and economical.*

For Catalogue and price list please address Dept. F.

GLOBE VENTILATOR COMPANY
TROY, N. Y.



Furnish The Best

The farmer knows that contented cows insure bigger profits; they give more and better milk when housed in comfortable ventilated barns.

Badger Cupolas

satisfy because they do what a cupola should do—ventilate. They're strong, handsome, durable and highly efficient. Light in weight and shipped complete ready to erect. No need to build framing of any kind. Made of high grade galvanized steel—rain, rust and snow-proof. Screened to exclude birds.

Write for free catalog and prices.

Badger Corrugating Co.
La Crosse, Wis.



CHIEF ALL-STEEL CUPOLA

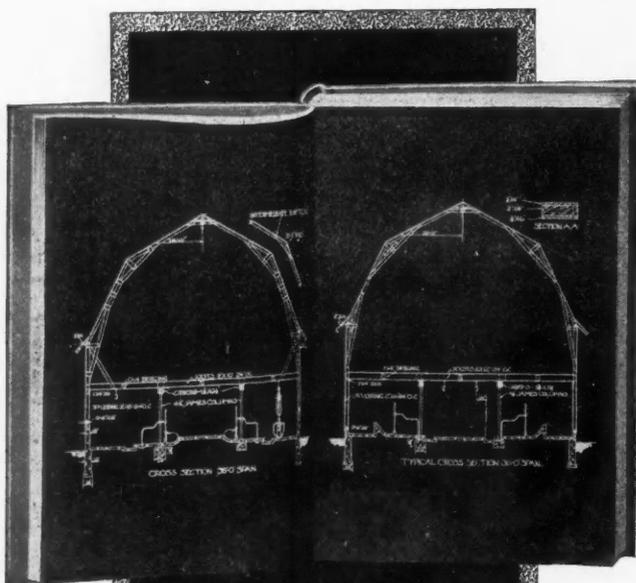
New-improved, scientifically designed ventilating cupola for all buildings. Up-to-date in design, material and construction. Used and approved on hundreds of farms. Made of heavily galvanized steel with base strongly braced. Can't rust, rot, or blow off. Absolutely storm-proof and bird's-nest proof.

Easy to Install—Sure to Please Your Customers

Chief Cupola saves time and labor installing—base bolts directly to roof and cupola bolts to the base. Only six bolts needed. Meets all requirements—insures adequate ventilation—satisfies all users. Write for full description, prices, etc.

Shrauger & Johnson Co.
430 Walnut Street, Atlantic, Iowa





Bigger Profits For Barn Builders

BACK your building skill with the scientific knowledge of our barn experts. "The James Way" Book gives the practical, helpful suggestions for better barns and barn equipment. It advises as to the best location. Basing its advice on drainage, ventilation and best distance from other buildings.

Complete Dairy Barn Information

From cover to cover "The James Way" is filled with the best, most modern dairy barn facts. Including blue print plans for complete barns, floors,

windows, ventilation, etc. Showing **James Barn Equipment** the equipment used by thousands of dairymen and installed by leading builders everywhere

Write for this Book TODAY!

Just send us the names of farmers who intend to build or remodel, and for how many cows. James reputation added to your skill will do more to increase your income. Dairymen everywhere know the

name "**James**" to stand for the **best** in barn equipment. Get in touch with us as quickly as possible. We have some barn information that will help you land jobs and **beat competition**. Write us **now**.

James Manufacturing Company
 EB75 Cane Street, Ft. Atkinson, Wis. Elmira, N. Y.

Cashing in on the "For Sale" Sign

(Continued from page 32.)

of the big business men of the city. This business man was very much interested in the manner in which the carpenter solicited business. After listening to the carpenter's story, he suggested that instead of personal calls the carpenter use letters to get business. He offered to write a letter for the carpenter, which he could mail to the people who advertised their home for sale in local newspapers.

Here is the suggested letter :

You want to sell your home. You want to sell it at the highest possible price. If I can tell you how to increase the value of your property, are you willing to listen?

I am a carpenter. I do all sorts of carpenter work, from replacing a few boards to building a house.

I have always found that when a man buys a house, he judges it to a great extent by its outward appearances. I know of one instance where the screening in of the porch increased the value of the home by \$500.00.

Your home may be everything that is desired. But still you may be able to make some great improvements at a comparatively small cost.

I am not asking that you allow me to do a great deal of carpenter work that would not mean anything. I am simply asking that you allow me to take a look at your home.

If I can make suggestions as to how, at a small expense, you can greatly increase the attractiveness and the salability of your home, I know that you will consider them. And you can then decide whether or not you think the changes or additions worth while.

Allowing me to make these suggestions will not cost you a penny—and it will not place you under any obligations.

But there is a possibility that it may result in mutual benefit.

It is not necessary to write me. Simply phone me. Tell me I have your permission to examine your dwelling and to suggest improvements. That is all I ask. My phone number is

Very sincerely yours,

(Signed in ink)

This letter was mailed to all property owners who advertised property for sale. The letters did not produce results in every instance, but the business that did come made the effort highly profitable.

One unexpected feature developed. In many instances, while the property owners did not give the carpenter the work asked for, they offered work of another nature. The letters put the contractor in touch with many extensive property owners who offered him work on various buildings.

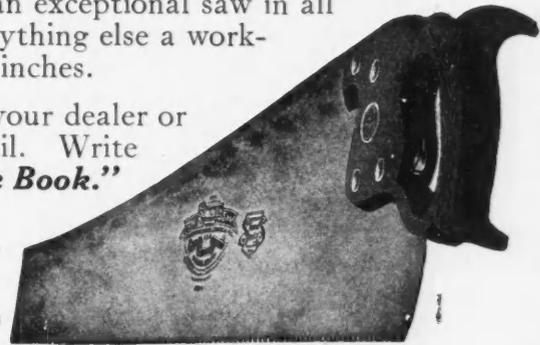


Simonds Saws on Every Job

On Every Industrial Housing Job YOU will find Simonds Saws doing their "bit." The World's Record Simonds \$3.00 Saw leads them all.

Every true mechanic can judge a good saw in a minute. Simonds has passed all tests successfully. Have YOU tried one? It is an exceptional saw in all respects, proper balance, weight, temper and everything else a workman requires. Straight or sway back. 24 or 26 inches.

\$3.00 buys this excellent hand saw. From your dealer or direct from us. Simonds Saws never fail. Write for our free book "*Carpenter's Guide Book.*"



Simonds Mfg. Co. "The Saw Makers"
Fitchburg, Massachusetts

17th St. and Western Ave., CHICAGO 5 Factories and 11 Branches



THE H. B. IVES CO.

NEW HAVEN, CONN., U. S. A.

ESTABLISHED 1876

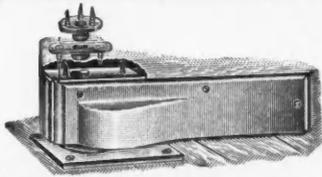
INCORPORATED 1900

MANUFACTURERS OF

BUILDERS' HARDWARE

HIGH GRADE WINDOW AND DOOR SPECIALTIES

Write for Illustrated Folder



The "Shelby CHIEF" Floor Hinge WITH IMPROVED PIVOT AND SOCKET

The installation of the Shelby Chief greatly simplified. Mortising for pivot and socket entirely eliminated. To install bore a 1 1/2-inch hole 1/4-inch deep in top jamb for rim of pivot and 1/4-inch in top of door for socket. Secure with wood screws, allowing the thickness of metal of socket for clearance between door and top jamb. Insist upon having genuine Shelby Chief Hinges.

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STAR Barn Equipment

Everything for the complete equipment of modern dairy barns. Also garage and barn door hangers, ventilators, litter carriers and hay tools.

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Finest in Material, Design and Workmanship

Hammer forged from Master Steel, the finest steel obtainable for the purpose. Octagon-shaped handle of second growth hickory, ideal hardness, and a claw that firmly grips nails of all sizes.

**GERMANTOWN
MASTER BUILDER**

—is the name that guarantees the quality. Be sure that it appears on the hammer you buy. Three sizes, 11 oz., 16 oz., and 20 oz.

GERMANTOWN TOOL WORKS, Philadelphia, Pa.
Branch: 62 East Lake Street, Chicago



Government Housing Project at Quincy

(Continued from page 40.)

representatives, each working independently. Then the wishes of the workmen were considered through a conference with a representative committee from their body, where such matters were discussed as what they feel they could afford to pay in rentals, what kinds of houses they would prefer if they could pick and choose, whether they wanted garden plots, and how big they would like them to be, etc. So soon as the locations have been determined upon it is the practice of the bureau to entrust the purchase negotiations to some well-recognized local real estate expert, and in this case Gerald G. E. Street of Boston was selected for this most delicate and important task. The selection of a designing and constructing staff was the next step, and on this the bureau named Ernest W. Branch of Quincy as engineer, James E. McLaughlin of Boston as architect, and Herbert J. Kellaway of Boston as town planner.

And now that the work of acquiring the sites has been completed, and the layout of the ground and the house plans have been finished, the contractors have their innings, and before long Quincy will be in possession of three new real estate developments that will be as attractive in their way as anything in any part of the Greater Boston section.

Quincy's Unique Problem

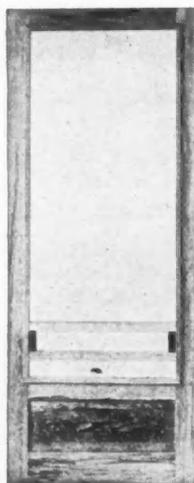
The problem which confronted the town planner at

Quincy differed a good deal from those projects which have thus far attracted so much public notice. This was not a case where a new townsite was to be developed out of the raw. Much has been written about such brand-new creations, both in England and in this country, where the planner was given a piece of open countryside and told to put it on the map as a municipality, with town hall, churches and all the most approved modern fixings. Quincy, however, had been a geographical entity for many generations. It was distinctly a going concern, with all kinds of plans of its own on hand for street widenings and extensions and other public betterments. It had been growing, too, of late in the neighborhood of the shipyard, and lands which but a few years ago, relatively speaking, were farmed, had begun to sprout up to houses. There was no big open tract at hand, therefore, that could be seized upon and converted into a new village. The best that could be done was to take over such open areas as had not been developed beyond a few lines of speculative street stakes, and a "For Sale" sign or two.

Four Separate Villages

Four plots were finally selected, all within a mile of the plant, and also within easy walking distance of Quincy Square, as well as close to the trolley line running thru that important junction point.

(Continued to page 126.)



TRADE MARK
"NO-SAG"

Stamped on
Each Door

Dealers: If our salesman has not called on you ask for catalog of our line of "No-Sag" Screen Doors. Stock up now for spring delivery. No better screen doors are made than those bearing the "No-Sag" trademark. Its metal brace secures great strength and rigidity.

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Contractors: Your clients will appreciate "No-Sag" Screen Doors. Get in touch with your dealer and let him show you their superior merit. If he does not carry "No-Sag" Screen Doors, write us for catalog and prices. We have several desirable styles.

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Standard Sizes in Stock
of All Designs

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Write for Booklets
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It's easy with our help AND SAVE OVER HALF

A few hours interesting work saves many dollars and gives you a machine exactly to suit your ideals. We furnish motors, tone arms, case material, blue prints and full instructions. Plays any record. You can make fine profit building phonographs for your friends.



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Write today for our free blue print offer
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Earn \$27⁵⁰ A Day Easily



Sold direct at Wholesale Price in open territory.

Carpenters and builders can earn this money by working all or spare time. Start now to own a business of your own. Akron Lighting Systems are wanted in homes, stores, churches and public buildings. Best and cheapest light known. Uses common gasoline. Absolutely safe. Permitted by Insurance Companies.

Sell Akron Lighting Systems They are simple, dependable and durable. Have latest patented improvements. Give an abundance of bright, clear, soft, steady light which is restful to the eyes. Complete line of portable lamps and lanterns. Lamps are clean—no smoke, no wicks to trim and odorless. They will burn in any position whether standing erect or upside down. Lantern is storm-proof, bug-proof and wind-proof. Gives a 400 c. p. light. Is absolutely safe; can be dropped or rolled without danger of exploding. Fully guaranteed. Exclusive territory to Agents. Outfit Free. Write NOW for catalog and agent's proposition all Free.



AKRON GAS LAMP CO., 310 Gas Building, Akron, Ohio



Griffin

Pressed Steel Door Stops

No. 640

Are drawn into shape from one piece of high quality Cold Rolled Steel making them extra strong—guaranteed **indestructible**.

The rubber bumper is made from the best rubber and is backed up by a metal disc, which in turn is knurled, "ENTRENCHED," in place—and will stand all the "Banging" one can possibly give it, and absolutely cannot work out of place.

Beautiful Yet Plain

Compare this beautiful, plain door stop with the ordinary kind. It is modern and when finished in any of the various Griffin Hardware Finishes, it harmonizes with the beautiful interior finish of the Modern Home or Building.

No sharp edges or corner to cut the hand on, catch the clothes, as the woodwork is dusted. This is the door stop your customer is looking for. Have your Hardware Dealer show them to you.

Send for complete circulars and information at once

The Griffin Mfg. Co.

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NEW YORK

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CHICAGO



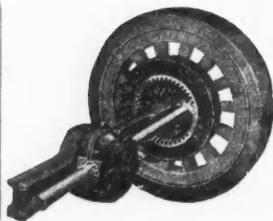
Built to Meet Your Every Requirement

MANY of the largest firms in the building field are owners of Republic Trucks. Whenever trucks are required for light hauling or heavy industrial construction work, Republics are delivering, day after day, the consistent, dependable service which means maximum efficiency and economy.

Republic builds a truck for every purpose—from $\frac{3}{4}$ -ton to 5-ton capacity. Hauling service to fit individual needs is the principle behind Republic construction. Republic engineers are truck specialists—they concern themselves with nothing else.

Owners of Republic Trucks are assured of continuously satisfactory service—1300 Republic Service Stations distributed all over the United States see to that.

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The Internal Gear Drive, used in all Republic Trucks, delivers 92% of the motor power to the wheels. We know of no other type of drive that delivers as much.

REPUBLIC MOTOR TRUCK CO., INC.
Alma, Michigan

REPUBLIC
Internal Gear Drive
MOTOR TRUCKS
7 Models— $\frac{3}{4}$ Ton to 5 Ton

Built by the Largest Manufacturers of Motor Trucks in the World

Government Housing Project at Quincy

(Continued from page 124.)

On three of the tracts the construction will be of a thoroly permanent nature, with single and semi-detached houses, and two-family apartments. On the River Street land about a third of the houses will be single, the remainder semi-detached, in all thirty-six new structures, and one remodeled existing house. At Arnold Street there will be one hundred and two new buildings, three-fourths of which will be one-family single houses and the others to be of the semi-detached type. On the twenty-acre piece, which, for convenience, has been called by the engineers the Baker Basin lot, because on its water side it fronts the old yacht basin of that name, one hundred and seventeen new houses will be built. Except for eight semi-detached houses these will be two-family apartments of four and five rooms each.

No Tenement House Monotony

Altho the Arnold Street property is very close to the shipyard, its roar and tumult are scarcely audible there, thanks to the happy interposition of a little rocky and oak-clad hillock that is a part of the tract. At present the environs of that little eminence are made something less than attractive by the presence of sundry hog pens, and other things evil to sight and smell, but it is destined in the near future to be transformed into a recreation ground, a very little brush cutting being all that is needed to reveal the charm of its miniature cliffs and its pretty swales, and to open the broad view of the harbor from its summit.

After looking at Mr. Kellaway's plottings of the subdivisions and house locations, and at Mr. McLaughlin's detailed house plans, it does not tax the imagination to conceive how attractive and home-like these neighborhoods will shortly be. Type for type, the houses are as alike as the proverbial peas in a pod, at least in so far as floor area, light, ventilation, quality of finish and all other essential appointments are concerned. Outwardly, tho, there will be great variety of appearance. There is to be no run off by the mile similarity, nothing that would suggest a row of corporation houses. Thanks to the architect's ingenuity in fitting the specifications to the square forms and to rectangular ones, and to the varied types of roofs and porches and other external features, such as clapboards here and shingles there, the stereotyped house called for by the bureau takes on individuality in every structure. Again monotony of line has been obviated thru the clever manner in which the town planner has located the sites along the several streets, and by judiciously arranging the square and oblong houses so as to give variety.

Simplicity of line and ornament has been the keynote of the house designs. In the main the houses will be frame structures, modeled appropriately after

(Continued on page 128.)



Lane's Automatic Lock Blocks

WITH these Blocks one man can do the work of two using the ordinary kind. No "slip back" holds "all you get." 46 sizes.

Catalog shows our entire line. Send for it. :: ::

LANE BROS. CO.

Cherry Street Poughkeepsie, N. Y.



MYERS Tandem Adjustable DOOR HANGER

No. 3

For Sliding Doors on Barns, Garages, Sheds, Warehouses, Factory and Similar Buildings.

Has heavy, malleable iron frame; large tandem rollers, steel roller bearings, double stayon device, patented adjustable and flexible features, and operates on Myers O. K. High Carbon Stiff Steel Track. This unusual construction produces "Easy to Push or Pull—Stayon the Track" sliding door service of the highest quality, and makes the Myers Tandem Hanger the one for sales and satisfaction both from the dealers' and customers' point of view.

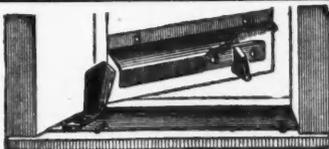
Catalog showing Myers Tandem and other styles of Myers Stayon and Tubular Hangers and Tracks with late prices to dealers, contractors and builders.

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Put up one set in an individual box



Six sets to a case



For bottom of doors and swinging windows. Over a 1,000,000 in daily use.

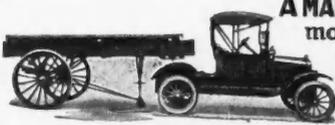
AXTELL ALL METAL WEATHER STRIPS and AIR-TIGHT LOCK JOINT MOULDING

Sell at sight and coin \$\$\$\$\$\$ Sample full size set of either by mail for \$1.25. Write for folders and quantity prices.

E. I. CHURCH & CO., West Hanover, Mass.



For sides and top of doors. Superior to double doors at 1/4 the cost.



A MARTIN SEMI-TRAILER WITH A FORD makes the most efficient, as well as the most economical **ONE-TON TRUCK** in the world. Tracks, tracts, backs. Full information on request.

MARTIN ROCKING FIFTH WHEEL CO., Springfield, Mass.



TOPPING GARAGE DOOR HANGERS

Read this advertisement very carefully. Here is a MONEY MAKER. Every Garage Builder buys almost on sight. TOPPING FOLDING GARAGE DOOR HANGERS are the SIMPLEST and STRONGEST on the market.

THEY WILL OUTLAST THE BUILDING

BIG MONEY IN INSTALLING

Contractors, get busy with TOPPING FOLDING GARAGE DOOR HANGER SETS. Every sale means more installations for you. They sell themselves. Are neat in appearance. Automatic locking device. Just what your clients have been looking for. Look into our proposition at your local dealers. It means money in your pocket.

Safety Door Hanger Company
Ashland, Ohio



Government Housing Project at Quincy

(Continued from page 126.)

those fascinating relics of the Old Colony which one sees in driving thru the villages of Norfolk and Plymouth counties. Nor will the similarity end with mere external appearances, for every effort will be made to make these new houses as sound and enduring as their venerable prototypes. Even if the houses are not manorial in their proportions, the amount of elbow room that they afford is quite astonishing. A living-room sixteen feet long by eleven feet wide might be crowded if a concert grand and a davenport lounge were to be a part of the furnishings, but it is surely a pretty commodious apartment when appropriately fitted. A dining-room nearly twelve feet square will give ample space for the family, plus the grandparents, at a Thanksgiving sit-down, and still leave room for a full-sized turkey and accessories. Bedrooms ranging from eight by ten to twelve by fourteen feet will be the rule. To any who have slept in a stately four-paster in a diminutive "chamber" in some old Cape house those proportions will seem quite spacious.

All the Comforts of Home

In the arrangement of rooms, in matters of drainage, ventilation and lighting, and in the fittings of

kitchens and bathrooms, the bureau's specifications are exacting, and the architect may not depart therefrom a hair's breadth. Every house must be so schemed as to give a maximum of light and air to its interior. No houses may be built with side walls nearer than sixteen feet to one another. Rear yards must be at least as deep as the house is high, and houses must not approach one another at the back at closer range than fifty feet. Every room must have at least one window, with an area of not less than twelve square feet opening to the outer air. No bathroom or toilet is acceptable that does not provide an outside window of specified size. Cellars must be well lighted and ventilated, drained and paved, and be deep enough to afford sufficient headroom. Living quarters in basements are, of course, absolutely taboo. Every house will have its hot-air furnace in the cellar, a gas stove, bath water heater and set tubs in the kitchen, a fully appointed bathroom and electric lighting fixtures thruout. There is one more feature that every housewife will be interested to know about, and concerning which the bureau's requirements are inexorable. How many otherwise admirably designed houses have been deficient in closets, especially in bedrooms? The bureau insists

(Continued to page 130.)

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DO YOUR OWN PLUMBING—HEATING



Our New Easy Way—Buy From Us at Low Cost
 Every builder and contractor needs **Our Free Handy Man Book**. Shows new home improvements and everything in guaranteed plumbing and heating supplies exclusively at wholesale prices. Any handy man can install with our free, easy installing plans and instructions.

Cut to Fit Heating Plants
 Our 40 years' experience enables us to furnish heating plants, Cut-to-Fit; bath room outfits, etc., with new original installing features, combining quality, economy, simplicity and ease of installation. Our \$500,000 organization is behind our guarantee. Write today, for free book.

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USE our complete house-moving equipment **FREE** for 30 days. Prove to yourself the profits house-moving with our equipment will bring you. You can double the money you are making now with

ALL-STEEL GIANT House-Moving TRUCKS

Made of best Bessemer steel—unlimited guarantee—45 tons capacity. The house-moving contracting business is growing. The man with the right equipment gets the work. Start now and get the cream. Small investment—big profits. Experience not necessary. We help you start. Write now for my plan—**Free Offer** and Catalog "B." E. W. La Plant, Pres.

La Plant-Choate Mfg. Co., 620 Eastlack Ct., Cedar Rapids, Ia.
 Let us send you "Successful House-Moving Contractor" Free. Every issue full of helpful, practical advice. Write us **now**.



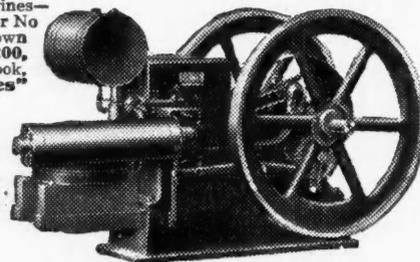
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 Produce Power at Lowest Cost



Built in the largest Exclusive Engine factory, selling direct. I build nothing else—back every engine I make with a good 5-Year Guarantee as to quality, durability, fuel requirements and workmanship. You take no chances. **I guarantee** safe delivery—make prompt shipment, all sizes:

32 YEARS SUCCESS

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 1775 Oakland Ave. Kansas City, Mo.
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\$50 to \$100 Extra a Week

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Rutherford G. Young, New Galilee, Pa., writes: "My roofing business went to the bad this year but the Lightning Conductor business is booming. It is the easiest and most honest money I can make. I have handled Shinn-Flat for 8 years and am convinced you have the best system of Lightning Protection on the globe. It is no trick to make \$50 to \$100 extra a week."

Shinn-Flat

LIGHTNING CONDUCTORS

(Formerly known as National Flat Cable)

Is the greatest scientific Lightning Conductor ever devised. It is endorsed by scientific authorities in preference to all round or other old-style cables or rods.

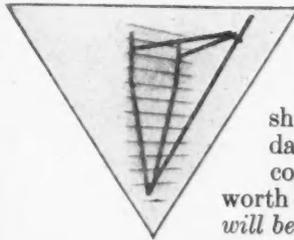
It sweeps the field of all competition. We help you get the business. Write for particulars.

W. C. Shinn Mfg. Co.

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Meet all your bracket needs with Reliable Folding Steel Scaffold Brackets. Used on either Stucco, Brick, or Frame. They save Time, Labor, and Trouble.



They save enough on the first job to pay for themselves. Every contractor should use them. A ten days' FREE TRIAL will convince you of their worth—if not your money will be refunded.

Write for Catalog

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Contractor's Handy Auto Trailer

SPEED—ECONOMY—STRENGTH



Capacity—2000 pounds. Body—8 feet long, 46 inches wide, 12 inches high. Body and under frame built of open hearth steel. Axels—1 1/2 inch square bed, special high carbon steel. Springs—Semi-elliptic, oil tempered and double heat treated. Bearings—Bower roller. Wheels—1 1/2 inch spoke, artillery type, second growth hickory. Tires—32x2, solid rubber. Weight—534 lbs.

Other models with gates at front; also extension tongue which permits carrying lumber, poles, ladders, etc. 30 feet long.

Write for Catalog C.

Rogers Brothers

COMPANY

Albion - - - Pa.

Oak Floors "America's Best Flooring"

Always attracts a better class of buyers or tenants and invariably increases the selling and renting values. This is a proven fact.

Oak Floors are made in 1 1/4 inch and 3/4 inch thicknesses and in four grades. 3/4 inch is used very extensively and economically over old pine floors in remodeling old houses.

Carpenters and builders during dull periods find 3/4 inch Oak Flooring a very profitable side line and business getter to lay over old pine floors in old houses. 3/4 inch Oak Flooring is very beautiful, durable and economical. The modern woman wants Oak Floors because they simplify house cleaning and housekeeping by being the ideal floor for the house.

WRITE FOR FOLDERS

OAK FLOORING MFRS. ASS'N.
Union Trust Bldg., Cincinnati, O.



THE TANK WITH A REPUTATION

Caldwell

Simple, Strong, Safe

There's the story of a Caldwell Tubular Tower. It is so simple that you can erect it yourself. It is so strong that it will endure cyclones and tornadoes. It conforms strictly with approved engineering principles. The cost is moderate.

If you want these qualities in a tower, equip yourself with a Caldwell Tubular.

Send for Catalogue

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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. .\$.175 Pints. .\$.100 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 10
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

Government Housing Project at Quincy

(Continued from page 128.)

that every such room shall have its closet—not a built-in wardrobe—but a sure enough closet with a practicable door, and not only are minimum proportions specified, but there is a stipulation that there shall be a coat-hanger rod in each.

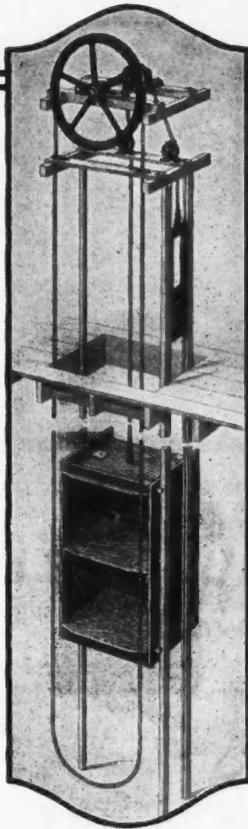
Whatever streets are built thru the government's land, and there will be some two miles in all, they will be of first-class bituminous macadam, with granolithic sidewalks, grassed parkings and shade trees. In this work the city bears 50 per cent of the cost under the terms of the betterment act, and sewers will also be laid according to the Massachusetts law, at the joint expense of the municipality and the owner, who, in this case, is the government. City water is to be supplied in the usual manner and on the customary basis, the local gas and electric light companies installing their services under the direction of the government engineer.

For a considerable time the Fore River works have enjoyed the distinction of having the lowest labor turnover of any of the Bethlehem Company's plants. When the new model houses are ready for occupancy it will be strange if their minimum does not dwindle to the vanishing point. Here are houses of the most up-to-the-minute type, planned according to the desires of the men themselves, and to be rented at a price that they again have named as fair and reasonable, a figure amounting to approximately 20 per cent of the wages. It is not understood the the government intends to charge a rental less than the houses are worth. Speculative profits are eliminated from the calculation, however, and the rents are based on a fair interest return on the capital, plus such items as insurance, an allotment for repairs, and reasonable reserves for non-occupancy (not likely to be a large item here at present), administrative overhead, and depreciation. Unless the bureau's management department bungles in the handling of the tenants there can be no chance for anything except contentment. The houses will be in all respects superior to anything now in that section, and the influence on future private developments must necessarily be marked.

After the War, What?

Like all the housing projects fostered by the bureau, that at Quincy will be 100 per cent government owned. The shipbuilding company has not a cent invested in it, nor will it have anything to say in regard to its management. As long as the war lasts the government will retain full title to the property, and will play the role of landlord. What will happen after the war remains to be determined. In some cases the communal ownership plan, so popular in England, may very likely be tried, when at length the government is ready to let go, but that seems to be applicable only to absolutely new towns.

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When your contract calls you to bend every energy to meet completion date—

Come to Sedgwick for service on the dumbwaiter installation.

At our factory all catalogue sizes are carried in stock for shipment on the same day that order is received.

You receive full directions for installing with every outfit as well as personal service and expert advice from an organization which for a generation has specialized on hand power elevators and dumbwaiters.

Our catalogue obtained now will prepare you to meet the "penalty" clause in the future without thought of failure to make good.

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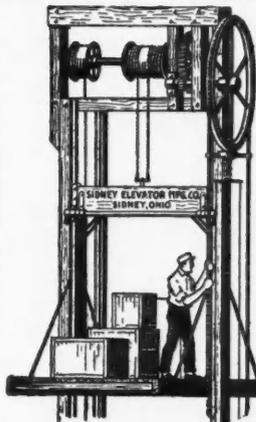
New York City

Hand Power
Elevators and
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Exclusively

TIPS FROM THE TRADE

"The sixty-two Sedgwick Dumbwaiters for the Spink Apartments are all in position and every one perfect. They came through true to measurements, every part intact, ropes nicely spliced and were erected by ordinary workmen without difficulty, from your directions."

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SIDNEY ELEVATORS

Will reduce your handling expense, and speed up your work.

Our machines are easily installed from our complete plans and instructions which are sent with each elevator.

The Reasonable Cost Will Interest You

Write us today, stating requirements, giving style of machine wanted, size of platform and number of feet travel, and we will quote a money saving price on equipment to serve you well.

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SIDNEY, OHIO

Scarcity of Building Materials

makes it imperative that economy be employed in designing and building. You can make use of the attic without building a stairway into the house if you specify

The
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Movable
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Stairway Folded up in Ceiling

This stairway is always ready for use. Folds up into ceiling—out of the way—when not needed. Occupies no floor space in lower room when not in use. A child can operate it.

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DUMBWAITER COMPLETE \$22.00 READY TO INSTALL

Includes all necessary material, not knocked down—machine, machine timbers, bolts, boxes, car, counterweight, ropes, guide ways, etc., all ready to set in hatchway and erection instructions. Length up to 30 feet. All material guaranteed. Money back if not satisfactory. Write for further particulars.

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DUMB WAITERS ELEVATORS
CELLAR HOISTS
JUMPER DISAPPEARING DUMB WAITERS
CHAIN HOISTS, CRANES AND TROLLEYS
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Sanitary Automatic Dumbwaiter saves carrying food to and from cellar. Perfectly ventilated; screened openings; finished inside with durable white enamel. Keeps food perfectly. Top lies flush with kitchen floor. You can walk over it. Operates with push button or lever. Also furnished as a Refrigerated dumbwaiter. Assembled complete ready to install. But three hours required to place our waiters in actual operation: old or new homes. Quotations include every needed supply. \$19.11 apiece. Illustrated catalogue.
York Automatic Dumbwaiter Works 639-645 West Market Street, York, Pa.

You Can Take This Planer Anywhere--It's Portable

You'll find thousands of them out on building or going about in shop saving many hours of hard work—costly labor.

Try a Wallace Bench Planer

Speed up your work. Cut your Costs.

Write for Our Trial Offer

J. D. Wallace & Co.
1407 Jackson Blvd.
Chicago, Ill.

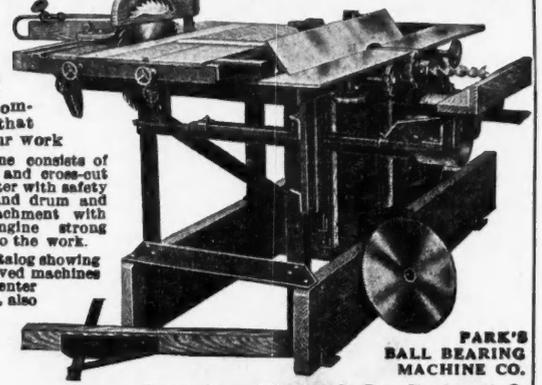


Park's Portable Saw Rigs

Are the result of thirty years of experience in making practical combinations that will do your work

This machine consists of Circular rip and cross-cut saw, 6" jointer with safety head, 12" sand drum and boring attachment with gasoline engine strong enough to do the work.

Write for catalog showing many improved machines for the carpenter and builder, also 12 page catalog of moulding knives.



PARK'S BALL BEARING MACHINE CO.

Fergus St. and C. H. & D. R., Cincinnati, O.

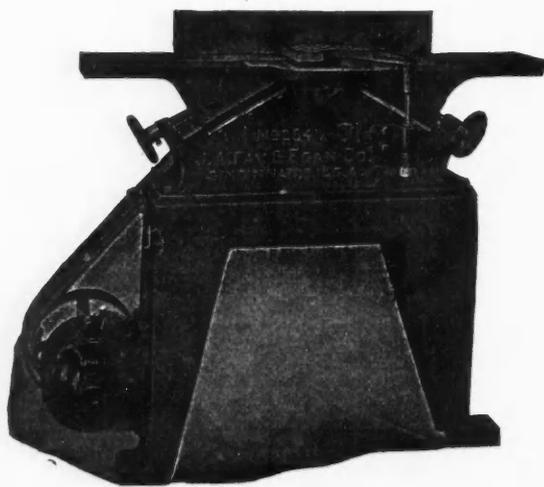
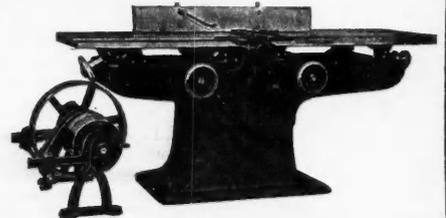
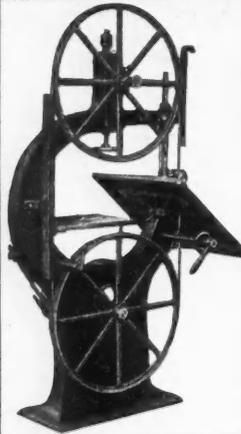
Get Our Attractive Catalog Covering

The Silver Line of Band Saws, Jointers Saw Tables, Swing Saws, Etc.

The simplicity of design—the light and easy running qualities and the safety in operation of Silver's splendid line of Woodworking Machines appeal to anyone looking for fast, strong, well-made machines for modern woodworking shops.

They are reasonably priced for such high quality machines. For full particulars write

The Silver Mfg. Co., Box 345, Salem, Ohio



—a really practical Carpenter's Hand Planer

—bench or pedestal—with or without motor

DON'T buy a toy, get a real machine! 6 1/2-inch safety head, thin air hardened steel knives, adjustable bevel fence, removable steel lips, rabbeting arm, pedestal that gives your feet clearance; easy to keep clean under the machine; a practical time-saver and money-maker. Write for Bulletin H-7.

J. A. Fay & Egan Company
545-565 W. Front St., Cincinnati, O.

**SPEED
POWER
PROFIT
SAVING
PATRIOTISM**



Increase the productive power of your shop. Which is simply another way of saying—"boost your profits." How? By installing a Crescent Universal Woodworker in your shop.

Your industrial housing jobs require the use of a Crescent Woodworker.

The Crescent Universal Woodworker will enable you to do your band sawing, cross cutting, ripping, resawing, panel raising, grooving, disc grinding, sanding, jointing, sawing, boring, tenoning, dadoing, knife grinding and mortising. A saver of many dollars on labor bills.

Write for Catalog

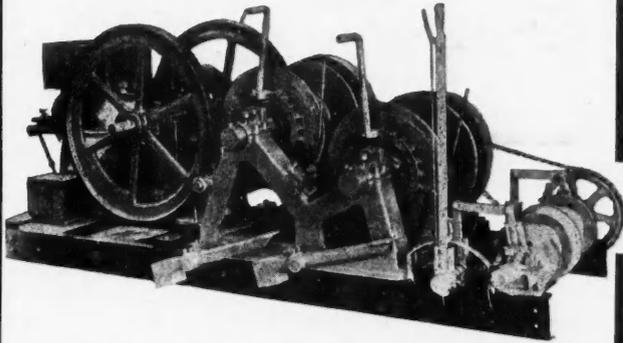


The Crescent Mach. Co.
224 Main Street Leetonia, Ohio

OK

**DOUBLE DRUM HOIST
AND BOOM SWINGER**

Something really new and worth while. Combines in one mounting, two Hoisting Drums, a boom Swinger for Derricks with a gas engine or Electric Motor to operate.

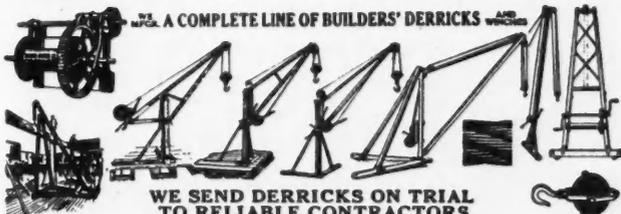


Designed for THE CONTRACTOR

This Hoist is made in all sizes and the savings it will effect will soon take care of its original cost.

WRITE US TODAY FOR CATALOG

O. K. CLUTCH & MACHINERY CO.
Florence Street, Columbia, Pa.



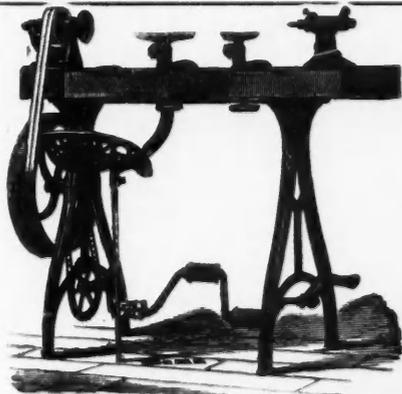
A COMPLETE LINE OF BUILDERS' DERRICKS

WE SEND DERRICKS ON TRIAL TO RELIABLE CONTRACTORS

Our Motto is SATISFACTION or DERRICK RETURNED

Write for circular No. 2 with illustrations, descriptions and best prices on our complete line. The Sasgen Builders' Derricks are built of best Crucible Steel and Malleable Iron Fittings, which makes them light, strong, safe and durable. The derricks will please you and probably more than pay for themselves on the first job. Get one on trial.

SASGEN DERRICK CO., 3101-3125 W. GRAND AVE. CHICAGO, ILL.
NEW YORK OFFICE—GRAND CENTRAL TERMINAL



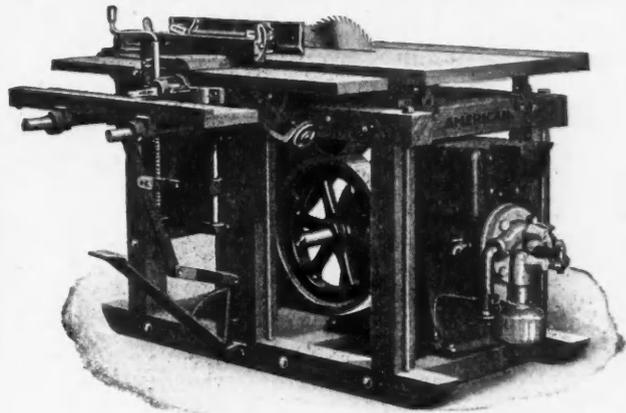
**COMPLETE
OUTFIT**
Hand and Foot-Power
MACHINERY

Our No. 3 Wood Turning Lathe can be speeded from 1,000 to 2,000 revolutions a minute with perfect ease. Stopped or reversed at will of operator.

Write for Particulars

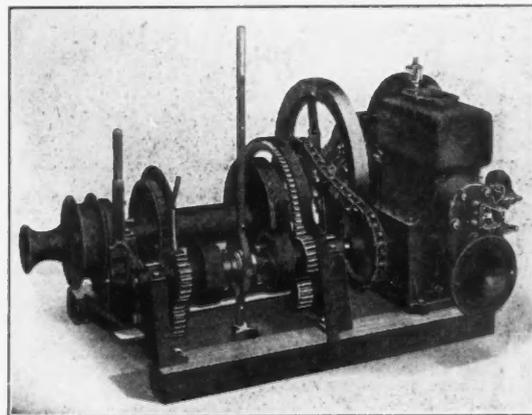
W. F. & Jno. Barnes Co. 74 RUDY ST., Rockford, Ill.

These Two
"AMERICANS"
Bring Many Man-Power
to Your Assistance



"American" Variety Woodworker with Gasoline Engine Built in. Also supplied with Self-Contained Electric Motor, or arranged for Belt Drive.

They are sturdy, dependable, thoroughly trained to their jobs. They are not subject to the draft. You can drive them to the limit—you can work them overtime. They make but small demands on your pocket-book, but they will turn out a tremendous amount of work. They are ready to work for you—now. Write for Bulletin 67 on the "American" Woodworker and Bulletin 10 on the "American" Hoist.



"American" No. 4 Hoist with Self-Contained Gasoline Engine. It can be made also with Electric Motor Built in, or arranged for Belt Drive.

American Saw Mill Machinery Co.
1360 Hudson Terminal New York City

Now - All Together!



NOTHING could stand against the mad dash of the French and American cavalry on the Marne—the German lines gave way, broke, fled; the day was won.

That fighting spirit of the men of Foch and Pershing, that united purpose—for Victory—*must be the spirit, the purpose, of each of us behind the lines.*

Paris, Aug. 8.—The Americans covered themselves with glory in the hand-to-hand fighting in the streets of Fismes yesterday when they captured that German base. The fighting is said to have been the bitterest of the whole war, the Prussian Guards asking no quarter and being bayoneted or clubbed to death as they stood by their machine guns.

We must lend as well as they fight. And we must pull together with all the strength we have—*now!*

We must so order our lives that we can save—to the limit—and lend—to the limit—for Victory. We must put America's whole strength behind our fighting men.

Let us lend the way they fight* Now—All Together! *Let us buy bonds to our utmost

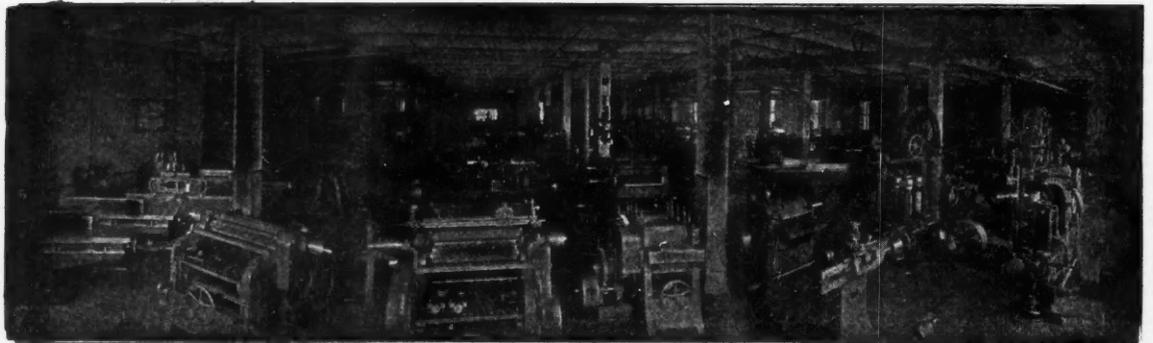
F. C. AUSTIN COMPANY, Inc.

The Products of the Municipal Engineering & Contracting Co. are now being marketed by us

Main Office: Railway Exchange Building, Chicago

New York Office: 30 Church Street

Write for catalogue showing full line of Wood Working Machinery for Carpenters and Builders. Also Bargains in second hand Machinery.



CHICAGO MACHINERY EXCHANGE - - 1215-1223 WASHINGTON BOULEVARD CHICAGO, ILLINOIS



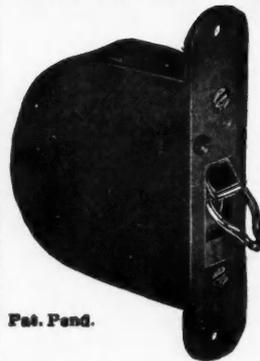
SPEED, ACCURACY and LOW COST

These are the three good reasons for the success of these machines which are rapidly gaining favor in the general woodworking shops. SUPERIOR Mortisers and Boring Machines are made for both electric and belt drive. Our prices will convince you that you cannot afford to be without the

SUPERIOR

Warren W. Morse
1308 W. Lake St., Minneapolis, Minn.

Caldwell Sash Balances Uniform Mortises



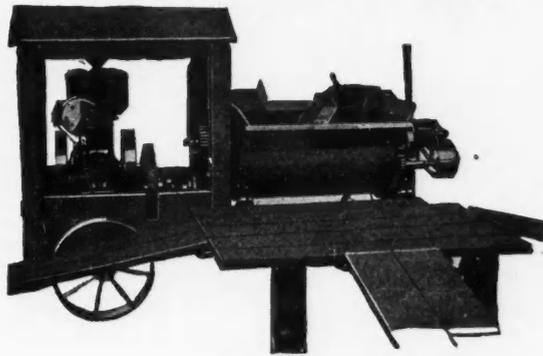
For use in all classes of new work. Box frames unnecessary. Mortises cut at mill reduces cost of installing. Counterbalance sashes perfectly unaffected by atmospheric conditions. Cheapest method for modernizing old window, as alterations in sashes and frames are not necessary. Sashes should be weighed before ordering.

Write for Circular
CALDWELL MFG. CO.
2 Jones St. Rochester, N. Y.

Pat. Pend.

BLYSTONE MIXER

Made in 3-5-7-9 Cubic Feet Capacities



**CONCRETE
MORTAR
PLASTER**

In times like these when men are so scarce and costly—and needed for other work—do your concrete, mortar and plaster mixing by machine. The BLYSTONE is known as the three-purpose mixer because it mixes concrete, mortar and plaster equally well.

Mixers shipped promptly

BLYSTONE MANUFACTURING CO.

1018 Carpenter Street CAMBRIDGE SPRINGS, PA.



Lansing No. 7 "One-Bag" Mixer with Power Loader and Water Tank

This advertisement proves to you

—that in the midst of War, the Lansing-Company is not one of these that has dropped out of sight—with the plant buzzing and singing with Uncle Sam's work, it is able also to take care of the war-time needs of Lansing customers—those contractors who are using Lansing machines on their work *now*

—and to those concrete men who contemplate doing business next season and the year after, we are prepared to offer suggestions that will help them overhaul their equipment, standardize it, make each machine and each operation fit where it belongs.

Write *now* for the Lansing Catalog of Contractors' Equipment—plan ahead—the contractor who investigates now will save time and money.

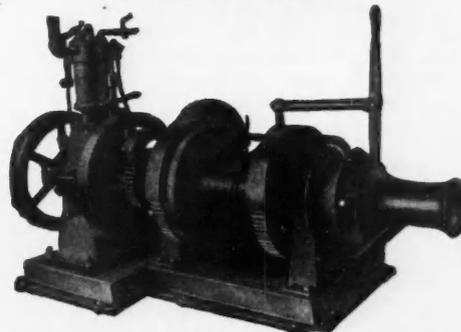
Lansing Line

- Concrete Mixers
- Pavers
- Mortar Mixers
- Hoists
- Elevators
- Carts
- Barrows

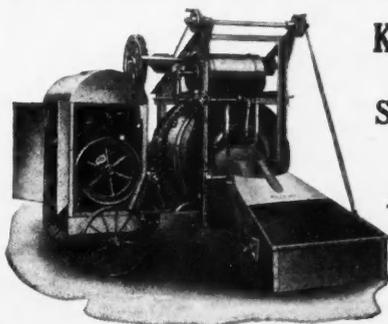
Ask for General Mixer Catalog No 202



22 Cedar Street LANSING, MICH.
Warehouses in Principal Cities



Lansing Single Drum, Single Speed Reversible Hoisting Outfits



Knickerbocker
Built for
**SATISFACTORY
SERVICE**
And Gives It

MIXERS
Built in
Sizes,
5, 7, and 10
cu. ft.

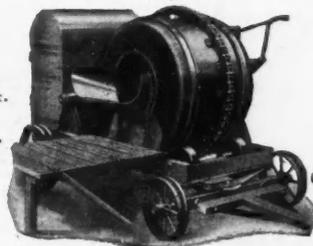
Portable
Saw Rigs
and
Mortar
Mixers

Quick
deliveries
from stock
in all
principal
cities

Perfection to meet the need before any thought of cost, profit, or selling price, produce the quality that counts with the user, and brings us reorders.

Building for the need of the user—and doing this for twelve years—has perfected such features as Fast Loading—Quick Discharging—Slop Guards on both sides—Low overhead construction—Bigger Mixing drum—Surplus power—and dozens of other features explained in our catalog.

THE
KNICKER
BOCKER CO.
525 Liberty St.
Jackson,
Mich.



Favers, Grouters, Hoists, Pumps, **→ BOSS ←** **Building Mixers, Backfillers, Elevators**

Contractors' Equipment
BUILT OF STEEL WITH HYATT ROLLER BEARINGS

ASK ABOUT OUR HIGH DRUM TWO RAG FAVER

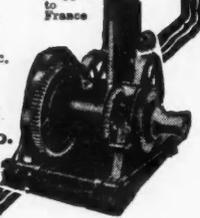
Astonishingly Low Prices
—Cash or Terms—
PROMPT DELIVERIES

OVER 100 SOLD IN ONE ORDER Shipped to France

All sizes from 5 ft. to 22 ft. cap. Gas, Steam or Electric. Complete stock carried in or near your city.

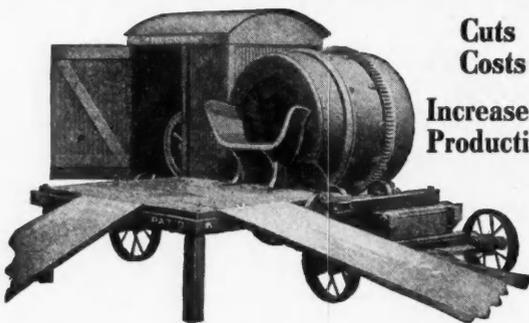
THE AMERICAN Cement Machine Co. Inc.
 Keokuk, Iowa

\$250 BUYS LOW CHARGER

"The Standard"
Low Charging Concrete Mixer

Cuts Costs
Increases Production



You can work "The Standard" Mixers on jobs of any size. On big jobs of buildings, foundations, columns and floors, the flexible "The Standard" Mixers may be distributed over the job close to the forms—or assembled in a battery at a central tower plant.

The low charging feature means quick, convenient charging. The elimination of high charging devices means the elimination of expensive delays due to breakdowns.

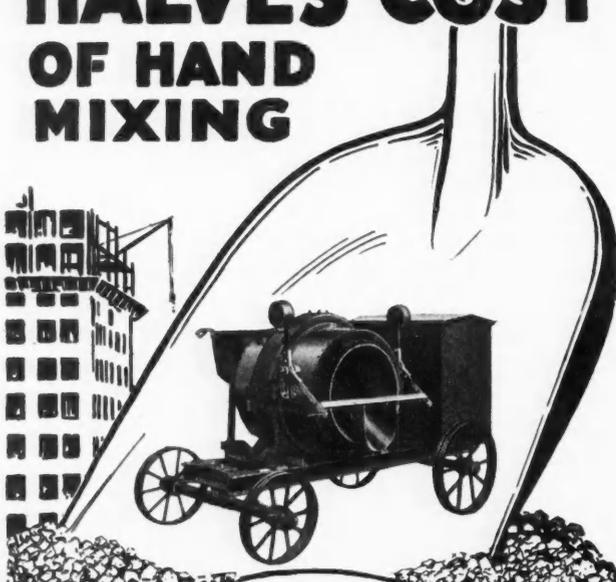
The light weight and easy portability of "The Standard" Mixers aid your foreman to RUSH a job.

A copy of our latest catalogue gladly sent on application. Ask for catalogue No. 44

The Standard Scale & Supply Co.
 1631 Liberty Ave., Pittsburgh, Pa.

New York 145 Chambers St. Philadelphia 523 Arch St. Chicago 163-171 N. May St. Cleveland 1547 Columbus Rd. Baltimore 409 N. Gay St.

HALVES COST
OF HAND
MIXING



Always on the job when wanted. Takes no layoffs.

Does more work—does better work than a crew with shovels.

Puts man power at work when it is most profitable—hustling concrete from the Smith Mixerette—hurrying the job through at greatest saving of time and cost. A little Mixer—4 cubic feet mixed concrete capacity—with a world-wide reputation for reliability. Now better than ever—with many new improvements.

Send for Catalog

The T. L. Smith Co.
 3186-J Hadley St.
 MILWAUKEE, WIS.

SMITH MIXERETTE

KOEHRING

DANDIE MIXER
 THE BIG VALUE LIGHT MIXER



The Right Equipment for Every Job

For construction work with pivoted loading skip, and automatic water-measuring tank—for silos with light duty hoist—for low charging work with low charging platform—for culverts, sidewalks, foundations, etc.—whatever your work, you get the right equipment with the Koehring Dandie—5 and 10 cubic feet capacities—is the big value in the light mixer field. Write for Catalog K-5.

Paving Mixers: 6, 11, 16, 22. Equipped with distributing boom and bucket or spout.

Koehring Machine Co., Milwaukee, Wis.
 Sales Offices and Service Warehouses in all parts of the U. S.

Sterling

No. 6-A



WHEELBARROWS

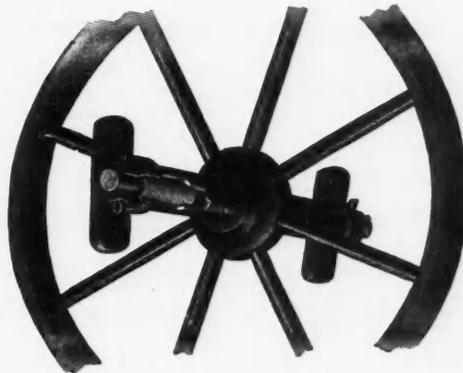
The Wheels Are Self-Oiling

We here feature just one of many exclusive improvements found only on the "STERLING" Barrow.

The wheel bearings are treated with an oil preparation which keeps the shaft well oiled at all times. Additional oiling is never necessary. The bearings become smoother and tougher with wear, and lessen the effort of wheeling fully 50%.

The Axle

is not the ordinary half-inch common bolt but instead it is made from perfectly smooth and round shafting stock of five-eighths diameter



The Brackets

are heavy pattern, and made of malleable iron. They extend over the ends of the hub, forming dust proof protection to shaft and bearings.

Catalog No. 19 shows a complete line of wheelbarrows and carts. Please write for this catalog

Sterling Wheelbarrow Company.

· Milwaukee · Wisconsin ·

Branches · Chicago · New York · Cleveland · Detroit

STOCKS CARRIED IN ALL LARGE CITIES.

Meet a
Friend
of Ours

They used the
EUREKA
for a year and it's better
than ever

That's why we have
so many re-orders



ST. CLOUD, MINN., September 20, 1918

Gentlemen—

We are very pleased to advise you that the No. 10 EUREKA Concrete Mixer that we purchased from you in Oct., 1917, has proved itself in every way a first class outfit.

We have not had the slightest trouble with the machine, had no repairs and same is in as good, if not better working condition than when we first used it.

We get a perfectly satisfactory mix from the machine. The New Way engine runs fine, and all together the machine shows evidence of good design and manufacture.

We shall certainly bear you in mind when we are in the market for another outfit.

Yours truly,
PAN MOTOR COMPANY

By Geo. Booth, Works Managing Engineer.

Write for Catalogue No. D-18

EUREKA MACHINE COMPANY

103 Handy Street - LANSING, MICHIGAN

Your experience, energy and equipment are needed NOW in an essential industry

FACE the facts. Admit that conditions in the building field are bad, and will be worse before the war ends. Get that straight because it's *right*. Little building means comparatively little work for the building contractor except in localities where industrial housing is needed. But possibly you are not engaged in such work. Then what are you going to do?

Are you going to quit? Are you willing to lose a business that has taken years to build up?

Or will you lay low until the war ends? Will you simply hold on to your equipment and building, and suffer the loss of depreciation, interest on investment, and the services of your men? Either case the outlook is bad.

But there's a third course!

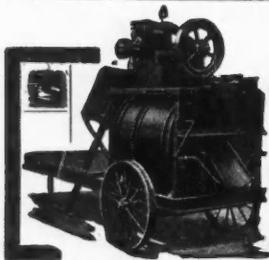
If you are willing to utilize your experience, energy, equipment, capital and labor in the manufacture of an essential product—one that you can make—you can do so.

The manufacture of this product is considered by The Priorities Board as "an industry of National importance". Its use is needed in crop development. The demand for it greatly exceeds the supply. Even after the war it will be in big demand for years to come.

By utilizing much of your present facilities you will require very little additional equipment. No trouble will be experienced in procuring materials. Possible profits range from \$20.00 to \$50.00 per day.

Write to the name and address below for more complete information.

W. E. Dunn Mfg., Co., 415 24th St., Holland, Mich.



**Archer
Mixers**

The "years ahead" mixer, saves time—labor—money. Write for bulletin and prices.

ARCHER IRON WORKS
2436 W. 34th Place CHICAGO

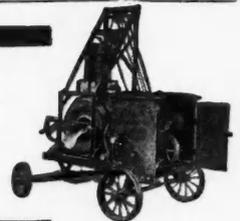
The *Atlas* Concrete Mixer

Made in 8 sizes and many styles. Prices \$55.00 and up. Send for Circular "CONCRETE FACTS"
ATLAS ENGINEERING COMPANY
3009 Lisbon Avenue Milwaukee, Wis.

**Northwestern
Drum-Mixers**

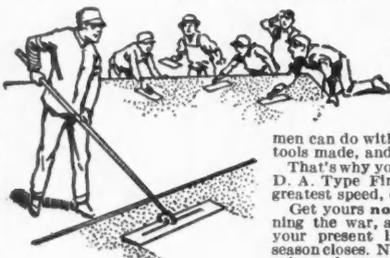
Lowest priced drum mixer on the market. Simple, rugged, powerful. Fast mixing—fast discharge. Frost and fool-proof engine burns either kerosene or gasoline. Special end discharge mixer for operating in close quarters—turns in its own length. Get particulars in Bulletin 4.

Northwestern Steel & Iron Wks., (Capital \$200,000) Eau Claire, Wis.



**Conserving Labor Helps
Win the War**

Conserve labor by using the most practical labor-saving tools.



Why permit five men to put in their time on a one man job?

Give one man a set of Abram long-handed double-action finishing tools and he will finish more concrete than five men can do with any other style of cement tools made, and do it better at that.

That's why your Uncle Sam uses Abram D. A. Type Finishing Tools. They want greatest speed, efficiency and service.

Get yours now and save labor for winning the war, and incidentally complete your present late contracts before the season closes. No war advance—yet, same price as last year. WRITE TODAY.

ABRAM CEMENT TOOL CO., Marquette Bldg., Detroit, Mich.

Capacity -- Economy

The Frank low price mixer will produce a full batch a minute. The mixing is always in plain sight and the machine is simple, nothing to get out of order.

Sold in 3, 5 and 7 foot sizes. Every mixer guaranteed.

INVESTIGATE TODAY

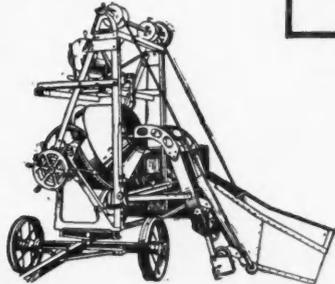
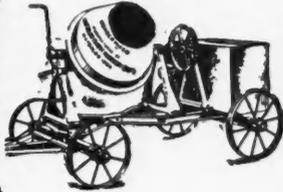
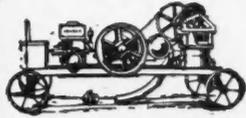
Frank Mfg. Co.

241 Century Bldg.
DES MOINES, IOWA



Inside View, Showing Door for Unloading

"SPEEDER UP" WONDER WITH EQUIPMENT

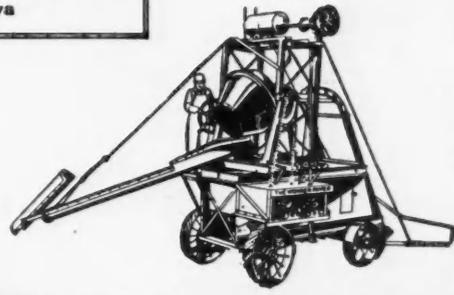
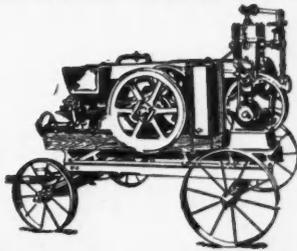
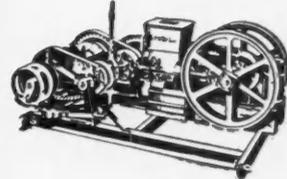
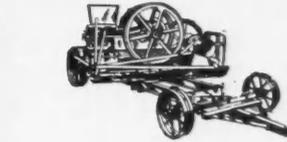


WONDER Equipment is making record construction time for nationally known contractors on many great Government projects.

WONDER MIXERS, HOISTS TRENCH PUMPS, PAVERS BACKFILLERS, COMPRESSORS

Are self-contained units that solve labor problems with smallest investment consistent with grief-proof service. They have profit-making features that you should inquire about before deciding where to buy. *Send for catalog.*

WATERLOO CEMENT MACH'Y CORPORATION
103 Vinton Street, Waterloo, Iowa

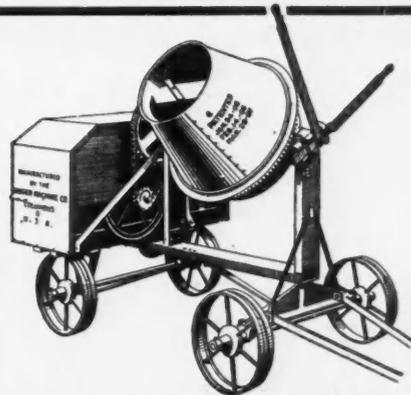


Jaeger Mixers Save Their OWN Cost

The time you save in mixing—the better quality of work you turn out with a JAEGER—soon equals the amount you originally paid for the machine. After that the savings go into your own pocket in bigger profits.

Our catalog fully describes the JAEGER MIXER—how it makes "A MIX A MINUTE"—how it saves money. *Send for a copy.*

THE JAEGER MACHINE COMPANY
521 Dublin Avenue Columbus, Ohio



No. 34-E Jaeger Mixer on trucks with 2 h. p. engine. Capacity, 3 to 4 cu. feet per batch.

"Little-Devil Mixer"

ALWAYS ON THE JOB

A Bigger, Better Mixer for the Same Money
Capacity, 7 cubic feet of loose material. Low Charging—End Discharge—May be used for paving, Grouting Brick Pavements, Foundations, Sidewalks and will mix and place concrete quicker and at less labor cost than any mixer on the market. Write today for catalogue, prices and terms.

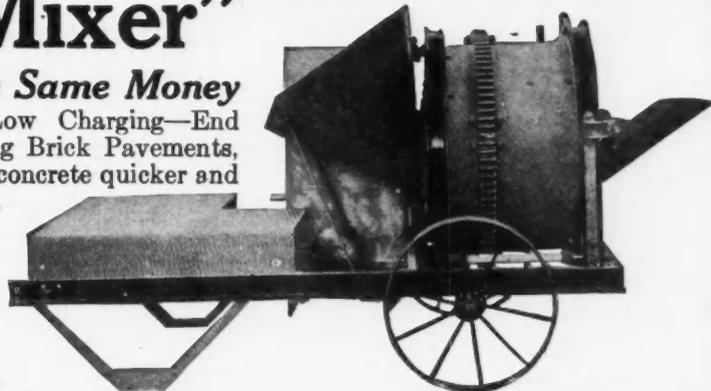
CAN MAKE IMMEDIATE SHIPMENT

Equipment Corporation of America

Formerly Chicago Builders Specialties Co.

1461 Lumber Exchange

Chicago, Ill.



Kill the Hun
Kill His Hope



Bayonet and Bond -both kill!

ONE KILLS the Hun, the other kills his hope. And to kill his hope of victory is as essential right now as to kill his fighting hordes. For while hope lasts, the Wolf of Prussia will force his subject soldiers to the fighting line.

We have floated other loans, built a great fleet of ships, sunk pirate submarines, sent our men across and shown the Kaiser's generals what American dash and grit and initiative can do. The Hun has felt the sting of our bullets and the thrust

of our bayonets. He is beginning to understand America Aroused—to dread the weight of our arms and energy.

This is a crucial moment. Nothing can so smother the Hun morale, so blast his hopes, as a further message from a hundred million Freemen, a message that says in tones that cannot be misunderstood, "Our lives, our dollars, our ALL—these are in the fight for that Liberty which was made sacred by the sacrifices of our forefathers."

Buy U. S. Government Bonds Fourth Liberty Loan

Contributed through Division of Advertising



United States Govt. Commission on Public Information

The Publisher of

This space contributed for the Winning of the War by
The Publisher of AMERICAN BUILDER, Chicago

KEEPING THEM THERE!

This letter tells the story—

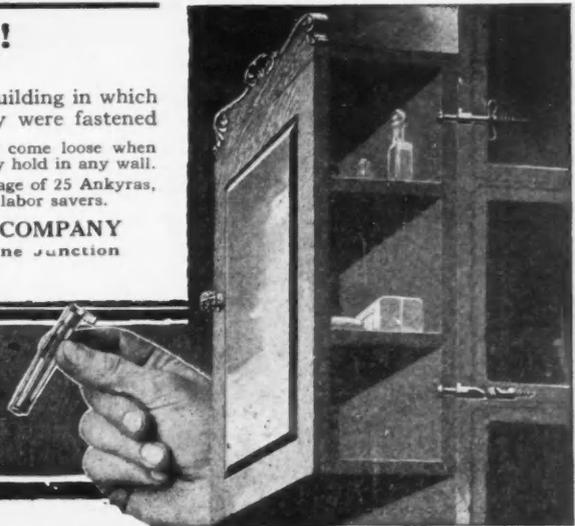
"I want the bolts in order to convince the management of the building in which we have our offices that the toilet room fixtures would stay put if they were fastened with Ankyra Ankor Bolts."

Fixtures, grounds or trimmings never come loose when fastened with "Ankyra Ankor Bolts." They hold in any wall. Send One Dollar now for trial package of 25 Ankyras, collapsing tool and instructions.—Time and labor savers.

ANKYRA MANUFACTURING COMPANY
151 Berkeley Street Wayne Junction
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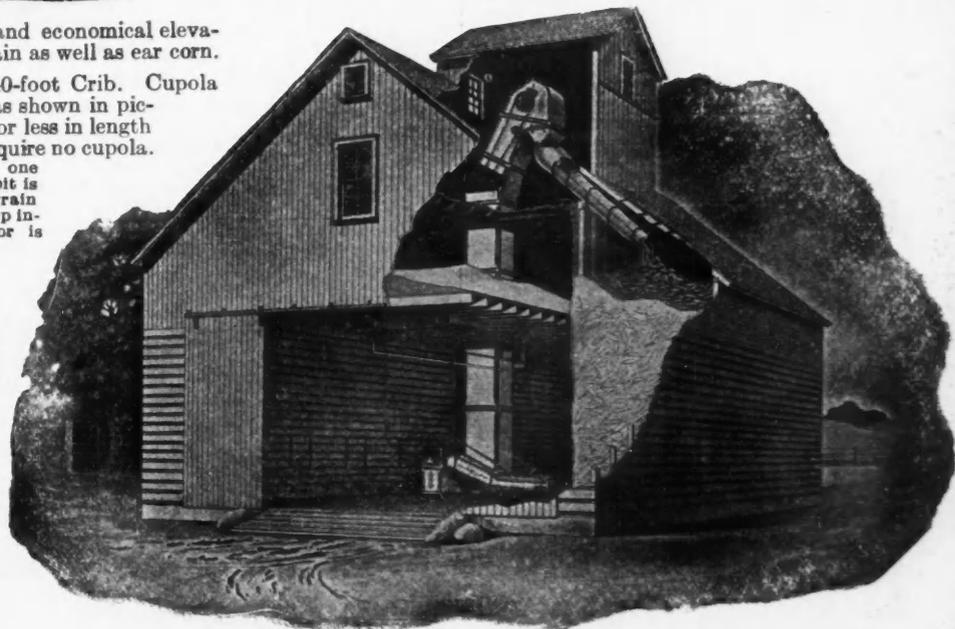
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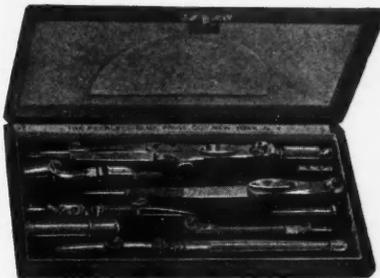


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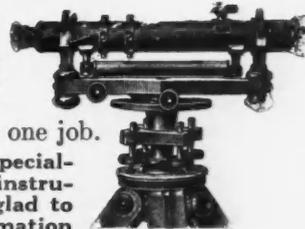
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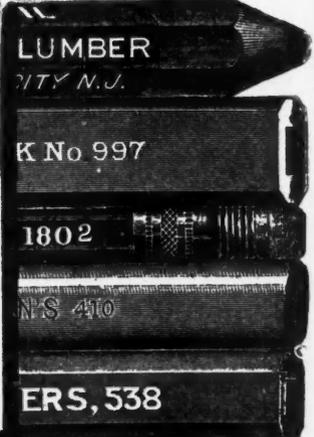
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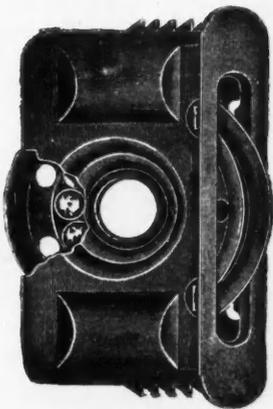


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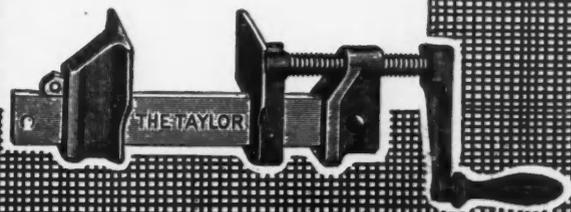
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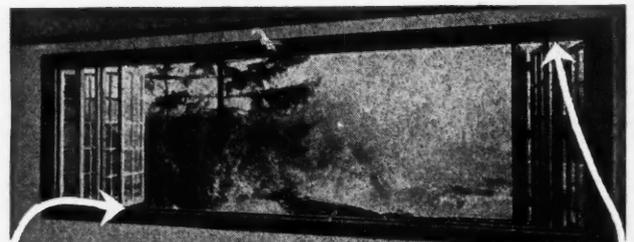


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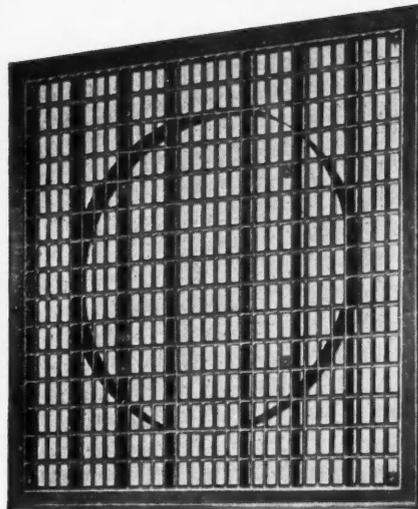
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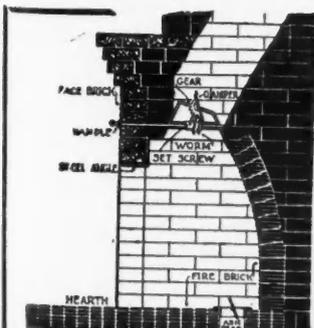
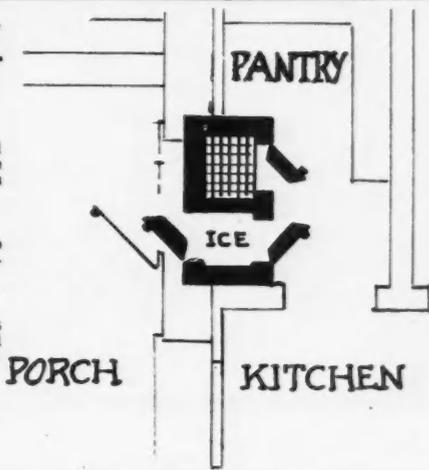
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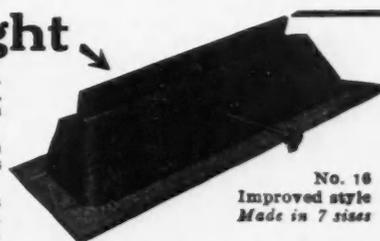
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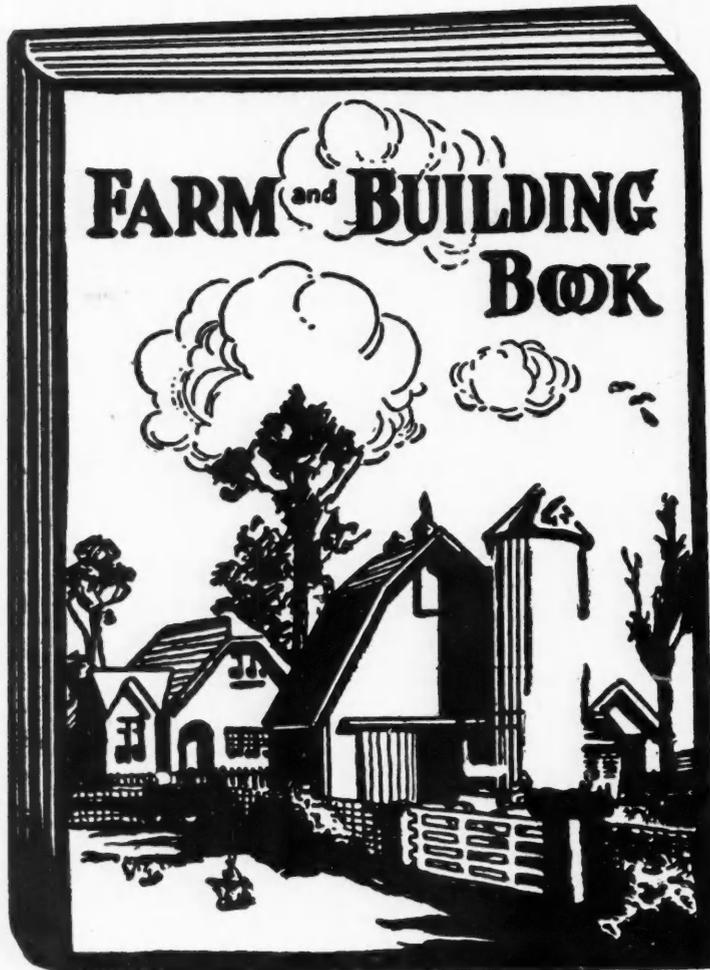
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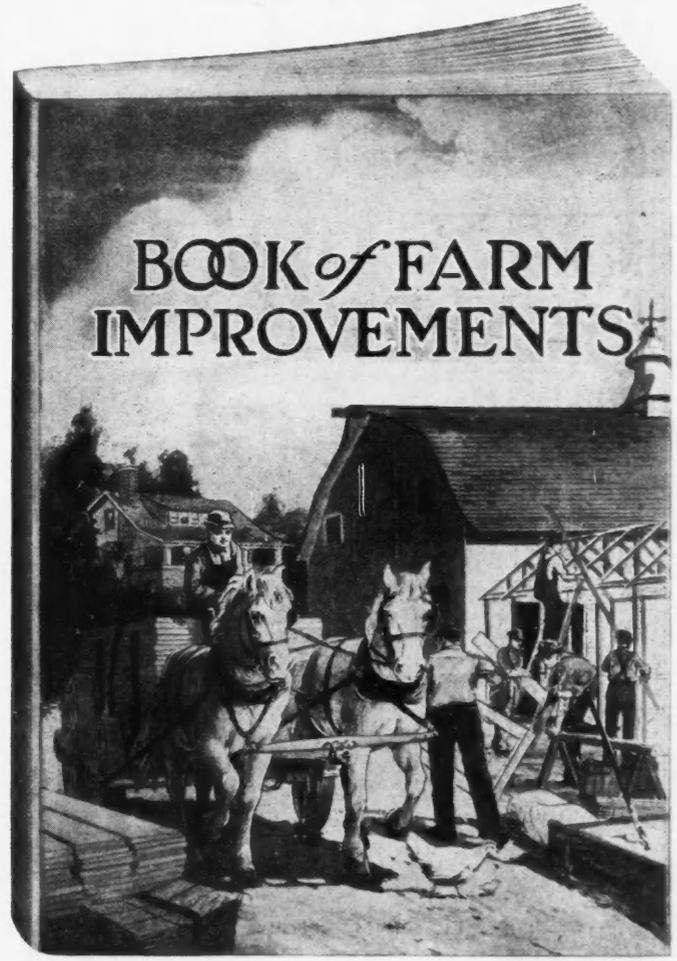
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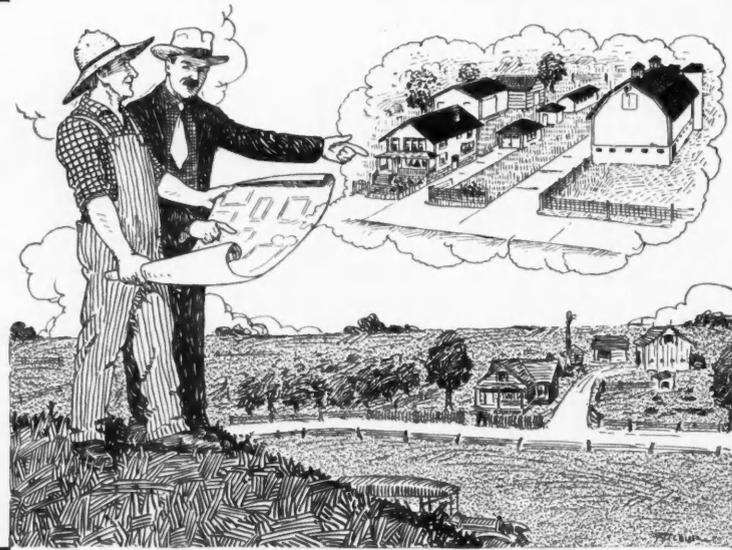
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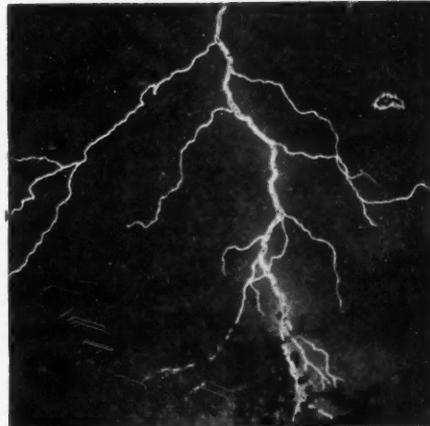
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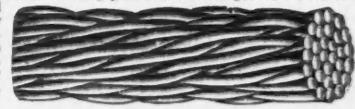


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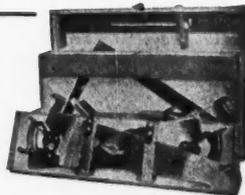
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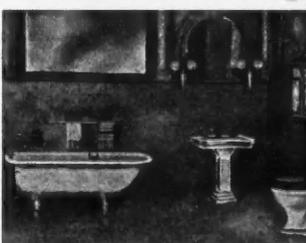
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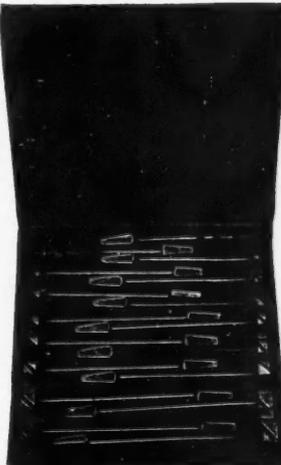
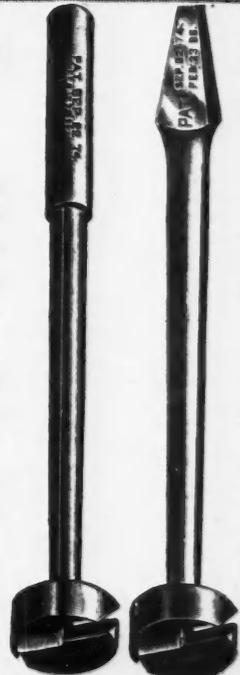
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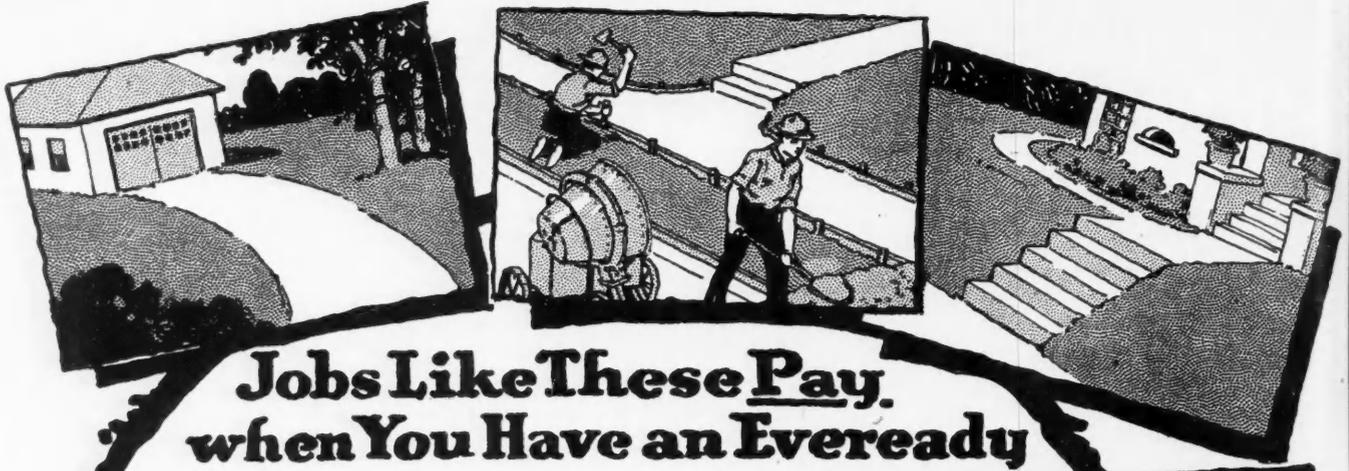
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NOTICE TO ADVERTISERS

Forms for the November number of the American Builder will close promptly on Oct. 15. New copy, changes and orders for omissions of advertisements must reach our business office, 1827 Prairie Ave., Chicago, not later than the above date. If new copy is not received by the 15th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts.



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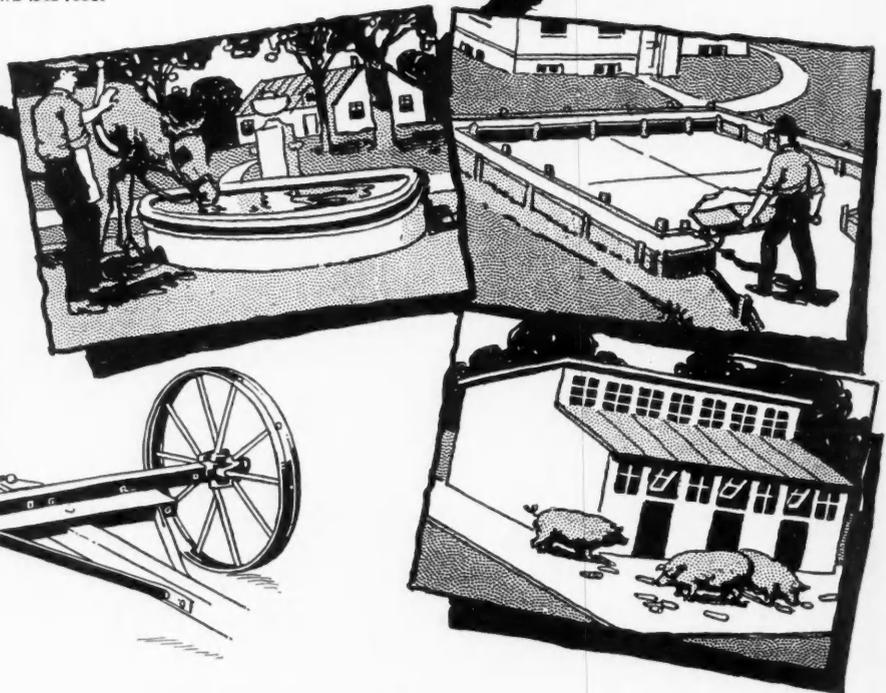
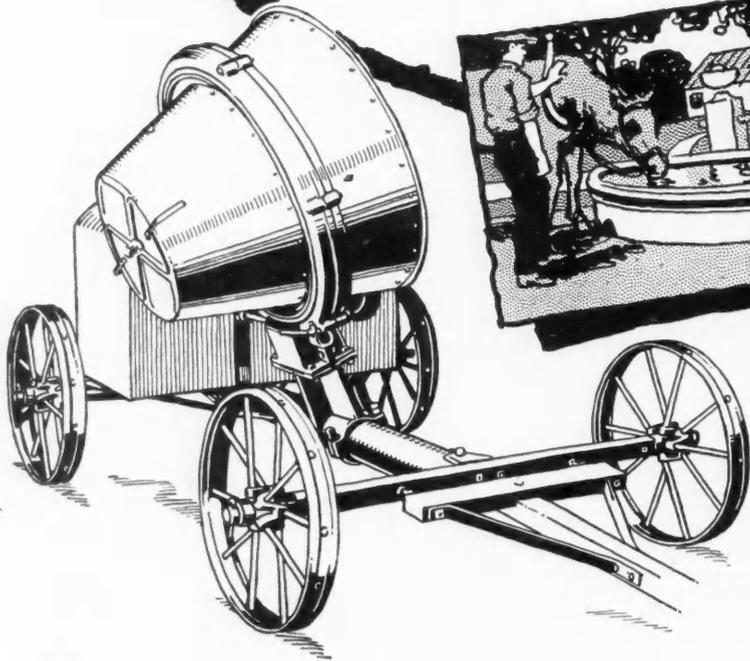
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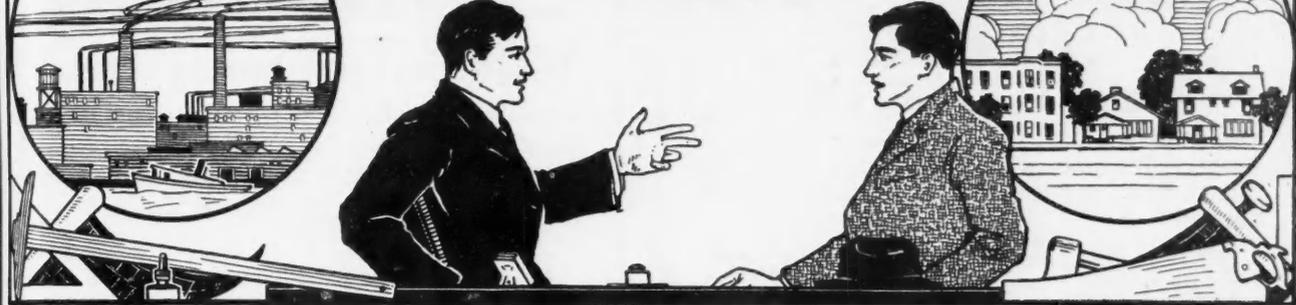
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SHORT TALKS *with* OUR SUBSCRIBERS



Reasons for Regulating the Building Industry

CONCERNING the action of the government toward the building industry, Material Facts, a booklet published by the Cleveland Builders Supply Co., says:

"The United States fuel administration's recent report showed that 30,000,000 tons of coal a year are consumed in the production of building material. The railroad administration found that 25 per cent of the total tonnage moved by the railroads is building materials.

"The United States employment service found that there exists an acute shortage in labor needed for the war program. It can readily be seen that the building industry, thru the many rulings of the War Industry Board, was compelled to eliminate all of the building that did not contribute directly to winning the war. Not only from the above facts, but when we take into consideration that the construction division of the war department since April, 1917, has undertaken 323 operations, and now has in prospect 153 more, the total cost of which is estimated to be

\$1,083,766,198, it is realized how greatly Uncle Sam needed man power.

"To the end of August last 93 operations, including the camps and cantonments, had been completed; the cost of the finished operations was \$277,745,847. There are now under construction 266 jobs which will represent a cost approximating \$636,858,351; the projects now under way include a large number of ammunition depots, quartermaster warehouses and storage depots in inland cities; hospitals, ordnance plants, new training camps and the enlarging of other camps. The major portion of this work is expected to be completed by January 1.

"This gives some conception of the government's demand for building material and labor, and justifies to a greater extent apparent rigid rulings.

"Much of the above information has been known by the various committees representing our industry, but it has only recently been released as public information. It may also be interesting to know that the best figures obtainable show that four billion dollars is invested in the building industry, and that the pre-war building permits in the United States were 1,800,000 for 1916."

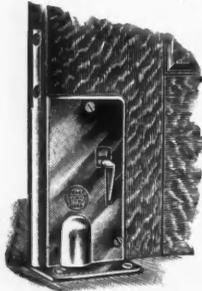
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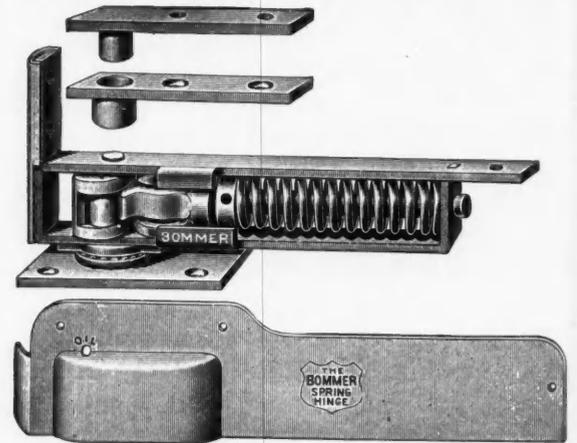
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