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VOL. XXVI

February, 1919

No. 5

Publicity Campaign Will Stimulate Building

"BUILD A BUILDING!" IS SLOGAN OF MOVE TO QUICKEN ACTIVITY IN BUILDING INDUSTRY

"BUILD A BUILDING!" That is the slogan of a most intensive publicity campaign to be made to stimulate activity in the building industry. The campaign was originated and will be carried thru by the AMERICAN BUILDER.

In this movement will be enlisted the AMERICAN BUILDER, its more than 30,000 readers, all actively engaged in the building industry, the newspapers, both dailies and weeklies, and men who are leaders in the governmental and business life of the country. Thru and by these agencies millions of people will be repeatedly urged to "Build a Building!" and do it now.

This is a bare outline of the AMERICAN BUILDER's campaign. It is in line with the effort of the government, which, thru William B. Wilson, secretary of labor, is urging the state and municipal governments, and the people generally, to start on public and private improvements. In urging the government's movement, Secretary Wilson said:

"Lack of dwelling accommodations and lack of public conveniences in the way of roads, bridges and public buildings are a serious detriment at this time, when we are anxious to pass thru the readjustment

with all speed. There is another and equally serious side, however, namely, that with the lack of building activities many of our returned soldiers who are skilled in the various building trades are in danger of finding themselves out of employment on their return to this country.

"I have no thought of advocating wasteful or unnecessary building, for that would be a poor solution of a most serious problem; but I do feel that if we can secure from public authorities and private individuals an early intention to start work in the construction of buildings, sewers, waterworks, bridges and similar undertakings, all of which are vitally necessary, we will not only be increasing the total substantial value of our country, but we will in a measure be stabilizing general economic conditions during the period of reconstruction."

Before going into the details of our "Build a Building" campaign, let us consider the conditions the building industry has faced from the time the United States entered the war until last November; also, what is the situation now.

First, a great amount of the skilled labor in the building industry was taken by the war industries and

the army. July 30, 1917, the National Council of Defense created the War Industries Board. From that time on this board had absolute control of the industrial activities of the country. It said what should and what should not be produced. And one of its first acts was to place drastic restrictions on the building industry. Until November 21, last, these restrictions, coupled with the labor shortage, stopped practically all building that was not essential to the prosecution of the war.

An idea of how far-reaching this cessation was, may be gained from the fact that in Chicago alone more than \$50,000,000, or nearly 50 per cent less was spent for building in 1917 than in 1916. The loss to the industry of the country during the war runs into the billions. Couple these facts with the ordinary building losses from fire, which, with contents, average around \$200,000,000 a year, and it will be seen how far behind the country's normal building program was when the War Industries Board removed all restrictions from building.

This country faces the greatest building boom in its history. All that is needed is a start. And the AMERICAN BUILDER proposes to help it get that start by carrying its slogan, "Build a Building!" either directly or indirectly, to a great majority of the people of the country.

Here is how it proposes to do it:

It always has been the policy of the AMERICAN BUILDER to preach optimism—the certainty that the clouds will pass and the sun will shine as brightly as ever. That policy will be continued, but increased, until every reader—contractors, architects, real estate builders, carpenters and builders, lumber dealers, masons' supply dealers and hardware dealers—is so filled with it that he will communicate it to all with whom he comes in contact.

The newspapers will be enlisted in this campaign as the agencies to get this prosperity propaganda to the people. A department, under the title of our slogan, "Build a Building!" will be conducted by William A. Radford, publisher of the AMERICAN BUILDER, and

will be furnished to the newspapers without charge. Besides articles designed to create a desire for homes, for farm buildings, business and other buildings, many public men have been asked to send a "Build a Building" message to the public.

These articles will furnish the people of the country with authoritative information on the questions that are vital to the building industry—the necessity of building and the desirability of building now.

These are the agencies that are at work to promote the interests of every individual in the building industry. However, greater results will be secured thru a close co-operation of everyone whose prosperity is affected by building activities.

The one best method of co-operation is by advertising—using every means that will spread the message to "Build a Building!"

Printer's ink is recognized as the best way of getting a message to the public. Keeping our slogan, "Build a Building," constantly before the readers of the public prints will have a cumulative effect. Repetition of this phrase will bring to life that idea of a dwelling, a garage, a barn, or some other new structure that has been dormant for the last year and a half.

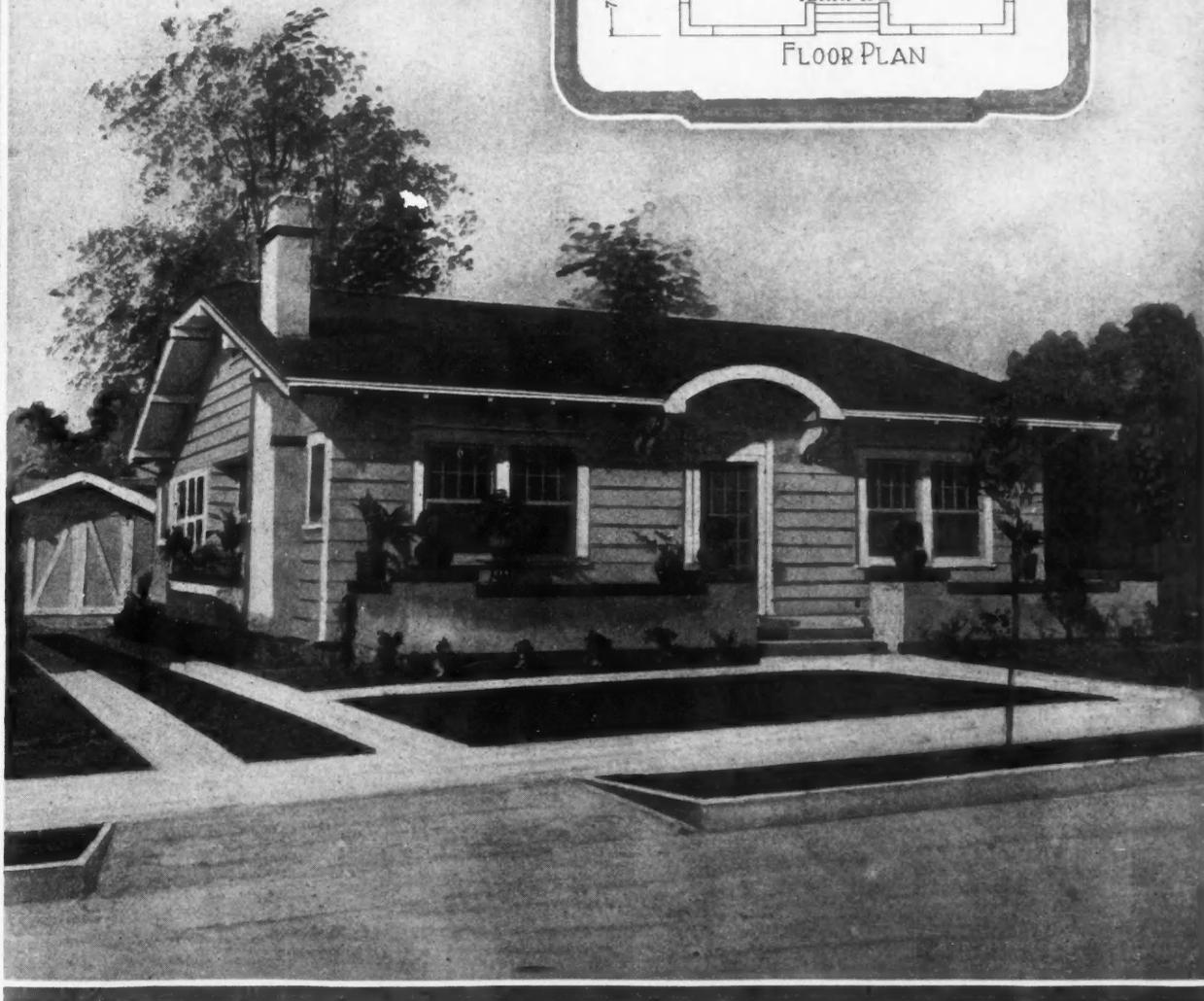
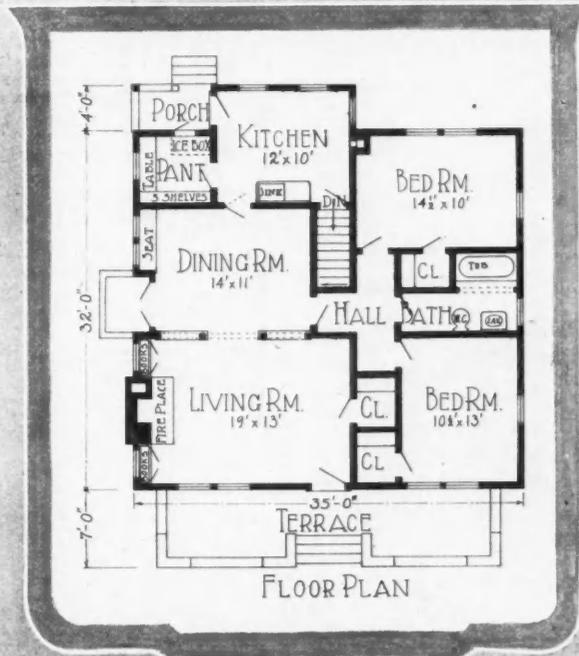
Couple this advertising with a visualization of how attractive these buildings will be in their finished state. Get the imagination of the prospect working by picturing to him the pleasure and satisfaction of having a home of his own for his family and children; the advantages to a farmer of having modern barns, live-stock buildings and granaries. Photographs, the illustrations in the AMERICAN BUILDER, or the inspection of a building in the immediate neighborhood are methods that can be used to bring the attractive picture home to the prospect.

Here are the United States Government, and, thru its influence, the state and municipal authorities, and the AMERICAN BUILDER, aided by its readers and the newspapers, working to spread the word to "Build a Building." The results are certain because the work is there, waiting for some builder to go and get it.

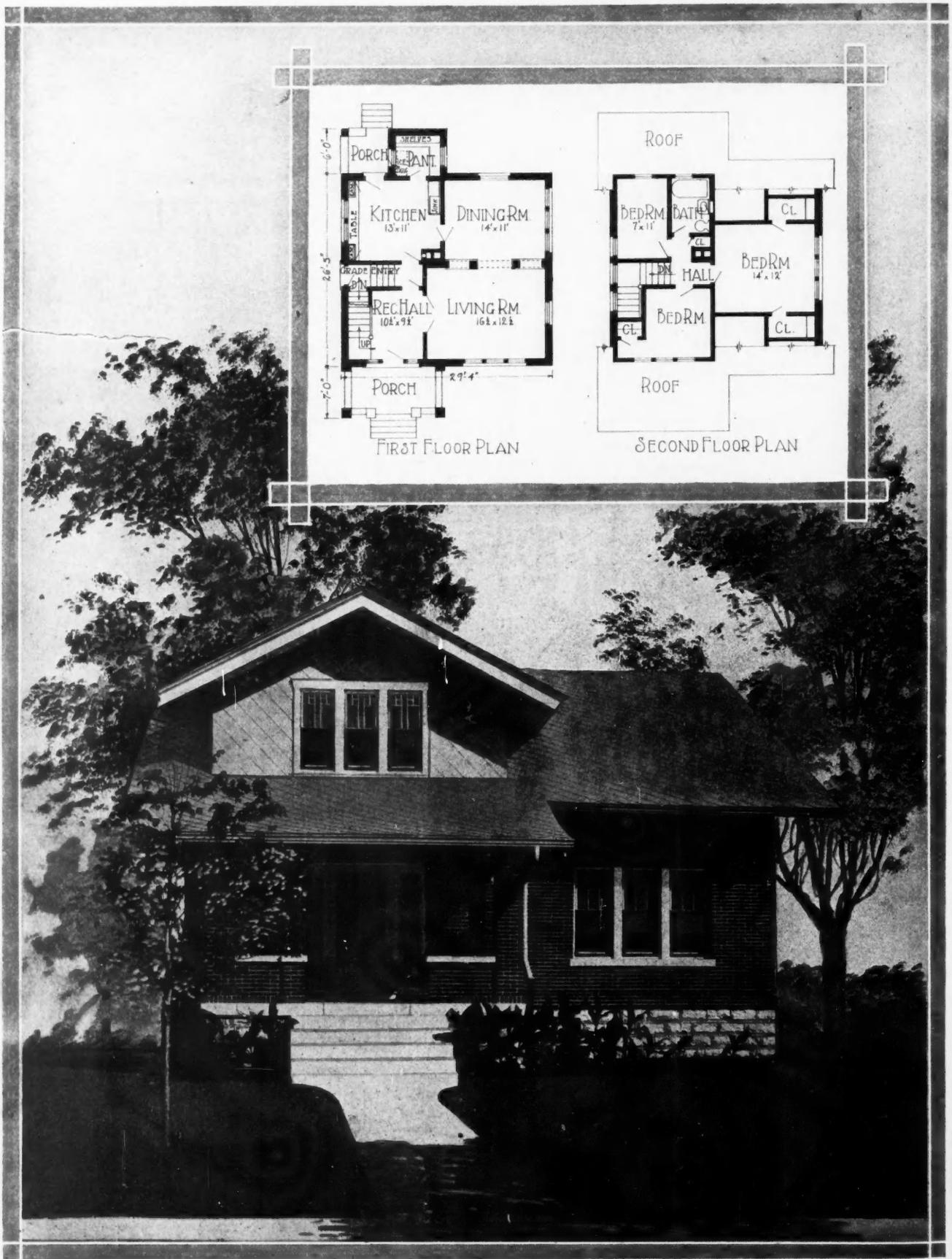
Let's go!



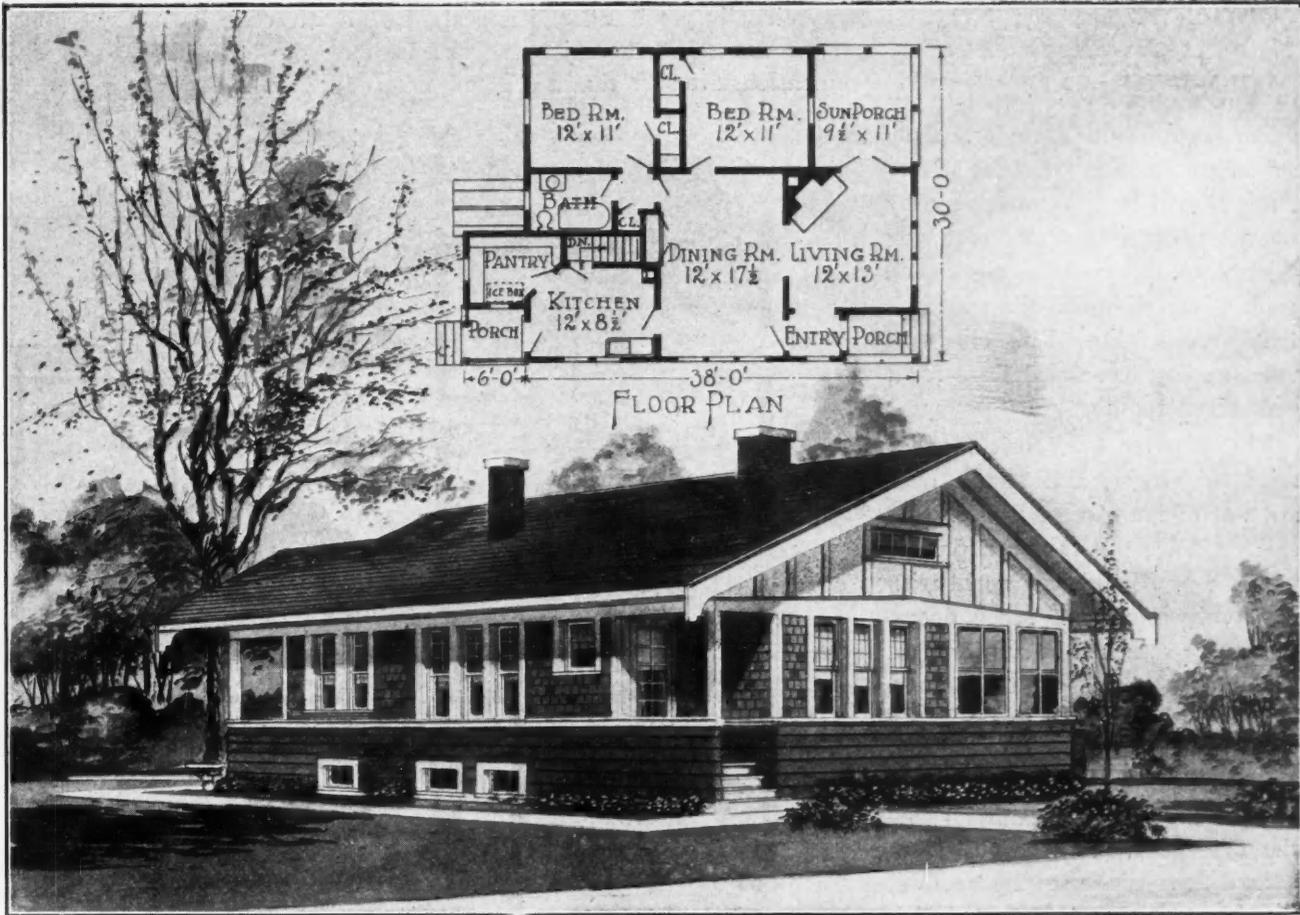
Substantial Farm Buildings Usually Mean Good Live Stock. These Polled Durham Cattle on the Farm of W. W. Rose, Near Rossville, Ind., Are Well Housed—and They Look It.



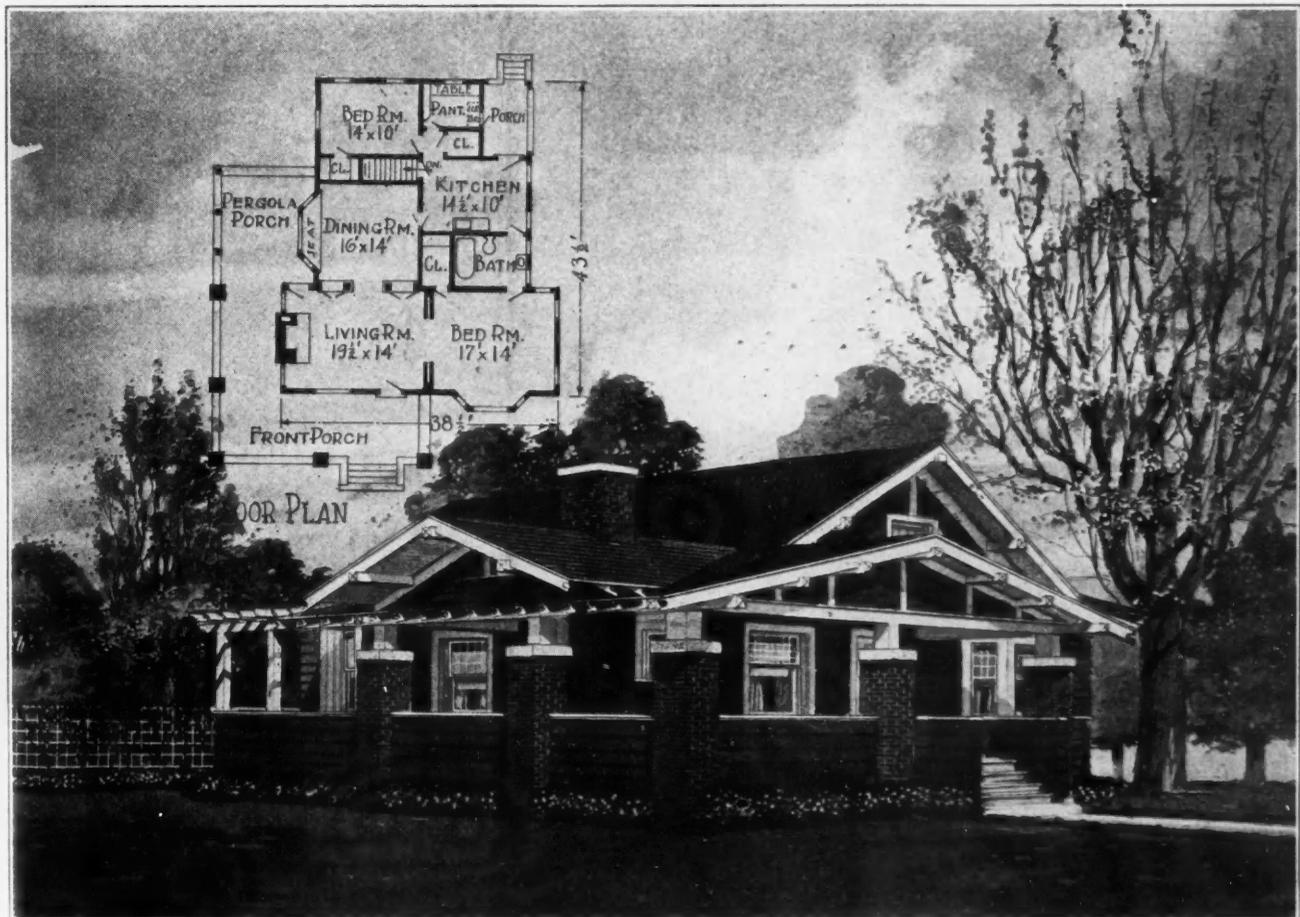
ANOTHER WHITE BUNGALOW of five rooms, consisting of living and dining room and kitchen on one side and two bedrooms and bath on the other. The size is 35 by 32 feet, with a terrace across nearly the whole front. A fireplace with space for wall book cases on either side of it is a feature of the living room, which is of good size. A small balcony porch makes the dining room attractive. The kitchen is large with a good-sized pantry and space for ice box that can be iced from the porch. Altogether this is an out-of-the-ordinary bungalow for either city or country.



SEVEN-ROOM BRICK HOUSE. This brick dwelling will have many admirers because reception hall and living and dining room are practically one. A small house for a good-sized family, being only 26 feet, 5 inches by 29 feet, 4 inches. Interesting features of this house are its side grade entrance, leading to kitchen, reception hall and basement, large pantry, with outside ventilation and icebox that is iced from the porch; colonnade effect between dining and living rooms; one large and two smaller bedrooms, and its extraordinary amount of closet space. Asbestos shingles supplement the brick on the exterior.



Five-Room Bungalow. Out-of-the-Ordinary Board and Shingle Home with Stucco Gable. Unpretentious, But Comfortable. Size 30 by 38 Feet.



Five-Room and Attic Bungalow with Pergola Porch. A Beauty in Design and Convenient in Arrangement. Size 38 1/2 by 43 1/2 Feet.

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Brick House for City Dwellers

ATTRACTIVE SEVEN-ROOM HOME FOR NARROW BUILDING LOT

An eight-room house especially suited to the idea of what a city home should be. Altho apparently not a large house nor one requiring a large lot, this contains eight good rooms, one of them being a large living room. Four bedrooms provide sleeping accommodations for a good-sized family.

The exterior is of brick, either solid or veneer, and stucco over any one of the base materials. The side entrance allows for a private porch, 8 by 23 feet, connected with the living room by French doors. It may be screened in summer and enclosed with glass in the winter. The living room is 13 feet 3 inches by 23 feet 4 inches with fireplace. Beside the dining room and kitchen, two of the four bedrooms are on the first floor. A feature of the second floor is the sewing room at the front. It will be noted that space for a number of closets is provided.

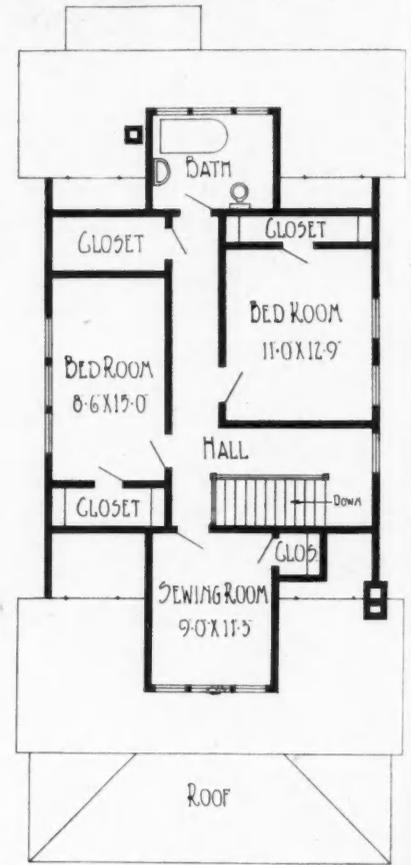
The arrangement of this house is

exceptionally good and will appeal to the women of the family. The dimensions are such that they allow

for an attractive lawn if the house is built on the usual 50-foot city lot.



First Floor Plan.



Second Floor Plan.



Eight-Room City Home of the Most Modern Type. Attractive in Appearance and Convenient in Arrangement of the Rooms. Brick and Stucco Construction. Size, 25 by 48 Feet.

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Stucco Bungalow for Corner Lot

Five Rooms and Every Convenience in This City Home

A stucco bungalow for a corner lot in a city or town is always attractive, but this design is especially so. While it has but five rooms, the arrangement of them is such that there are many conveniences not ordinarily put into a home of this size.

Stucco over any of the materials used as a base forms the exterior walls, including the porch. The latter is large, being 10 by 15 feet, providing a comfortable sitting place in the summer. The entrance hall is 5 by 12 feet, with a seat and a closet and the basement stairway tucked out of the way.

Living and dining rooms, two bedrooms and kitchen comprise the five rooms. The first is 19 feet 6 inches by 12 feet, a good size. Off it is a nook, with wall space for built-in book cases and seats on either side. It is 8 by 6 feet.

The dining room, 16 by 12 feet, opens off both the living room and entrance hall. Between it and the kitchen is a pantry, 6 feet by 9 feet 6 inches. A hall, 6 by 10, leads to the bedrooms, neither of which is connected with the dining room. In the hall is a linen closet. The bedroom toward the

front of the house is 12 by 12 feet and the one at the rear is 10 by 12 feet. At the end of the hall is the bathroom. The kitchen is 9 feet 6 inches by 12 feet, and opens on the back porch, 10 by 7 feet.

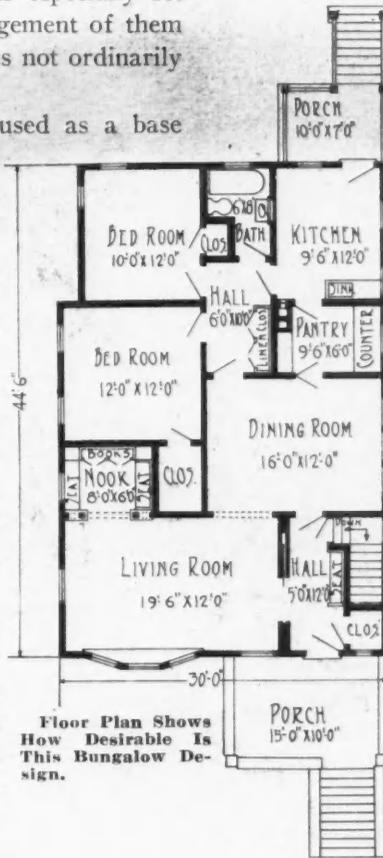
How much attractive and convenient cabinet work the contractor can put into this house will readily be realized.

The exterior view and the floor plan of this bungalow will have a strong appeal to the owner of a corner lot, altho it is well suited to one in the middle of the block. The dimensions allow for plenty of clearance on either side.

Stucco construction is popular with city people as well as rural folks, as it gives a solid appearance at a considerable less cost than masonry.

This is especially true in a bungalow and this design is one of the best the architects have produced of this type.

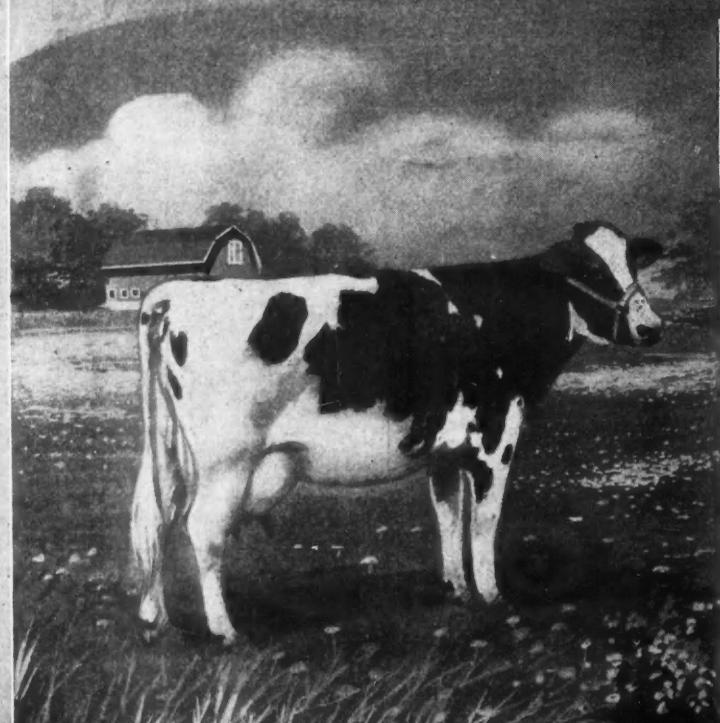
To the small family that wants a bungalow with large rooms and an attractive exterior, this plan will appeal at once, for it combines both of these good points.



Floor Plan Shows How Desirable Is This Bungalow Design.



Five-Room Bungalow for Corner or Narrow City Lot. An Exceptionally Attractive Stucco Home, with Convenient Interior Arrangement. Size, 25 by 48 Feet.



Blue Print Supplement Design

Imposing Dairy Barn With Horse Stable Wing

Size 36'x98' and 36'x30'

For Working Drawings See Blue
Print Sheets

Nos. 1, 2 and 3.

Rule for Productive Farming:
Good Cows and Good Barns

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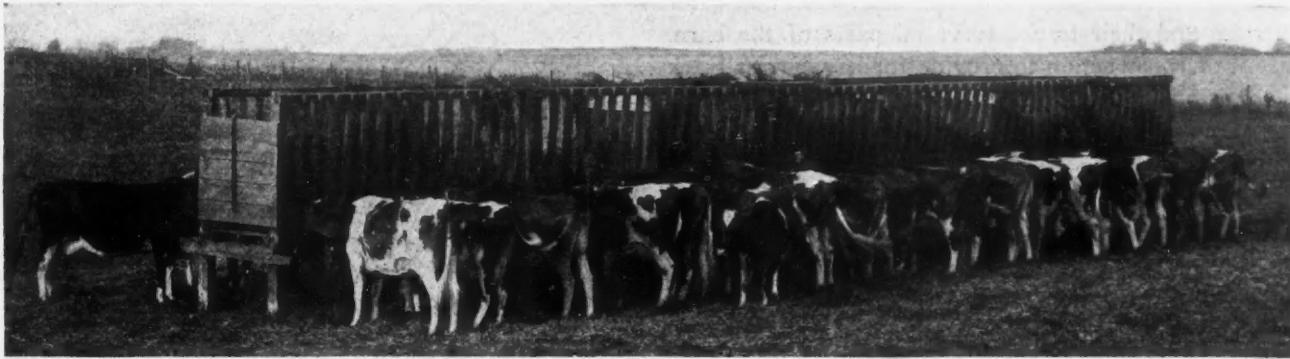
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Barn Design That Lands the Contracts

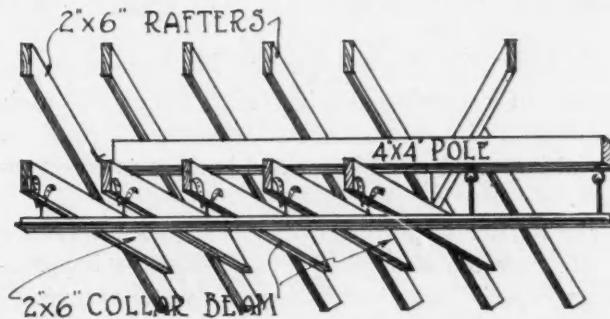
COMPLETE BLUE PRINT PLANS PRESENTED FOR IMPOSING DAIRY BARN WITH HORSE STABLE WING, AS ILLUSTRATED ON THE OPPOSITE PAGE

A COMBINATION dairy and horse barn, such as is shown in the illustration on the preceding page, is the ideal building, since it brings under one roof all the work of caring for the livestock. Constructed with trussed rafter gambrel self-supporting roof; arranged conveniently so that all the work can be performed with the least number of steps; equipped with all the labor saving devices, and built as sanitary as barns can be made, this building will have a strong appeal to the farmer. Show it to your likely prospects now and see them take an interest right away!

While the illustration shows what an addition this barn will make to the farm landscape, the features that will interest the practical farmer most are contained in the plans shown on the first three pages of the blue print supplement that follows. The first shows the front elevation of the building and the

method of construction; the second a side elevation and some details, and the third the stable floor plan.

The main section is the cow barn, which is 36 by



Hay Carrier Track and Hay Track Pole at Hay Doors.

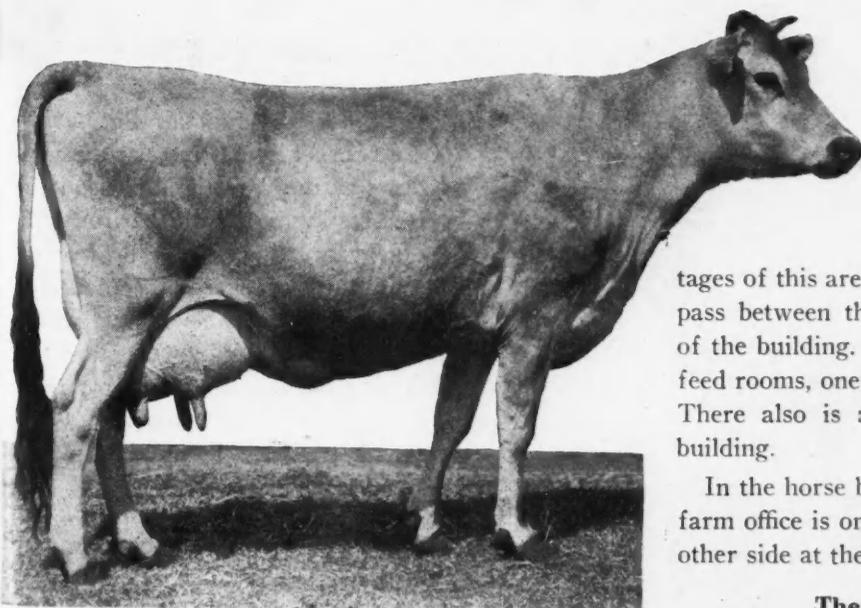
98 feet. Forming an ell from this building is the horse barn, 36 by 30 feet. Adjoining to the rear of the cow barn are two silos, 14 feet in diameter.

The cow barn is designed to accommodate 34 animals in single stalls, besides which four pens are provided. The cows are faced out, a feed alley 5 feet wide being between the wall and the line of stanchions. The litter alley extends thru the center of the building, 8 feet, 4 inches wide. The advantages of this are obvious, as a team can enter one door, pass between the stalls and go out at the other end of the building. At the rear of the cow barn are two feed rooms, one on either side, and adjoining the silos. There also is a toilet room in this portion of the building.

In the horse barn are 8 stalls and 2 box stalls. The farm office is on one side and the harness room on the other side at the front of the horse barn.

The Modern Barn Equipment

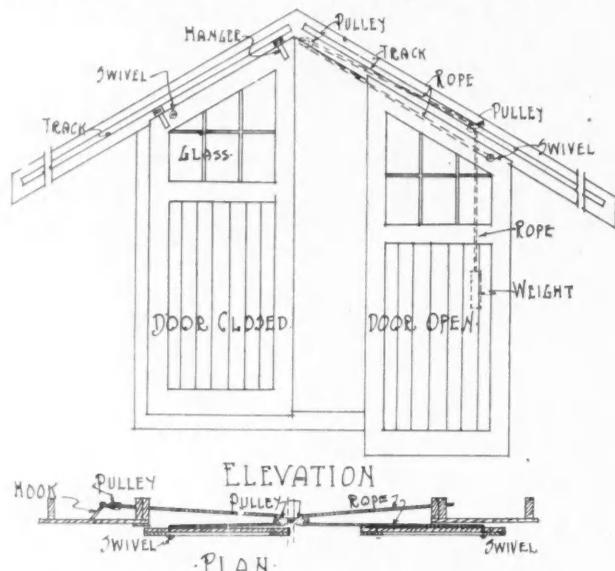
While only the general scheme of equipment for this building is shown, the plans contemplate the use of many specialties that make for efficiency. The doors are equipped with storm tight, easy rolling hangers;



"SOPHIE AGNES," THE NEW QUEEN OF THE JERSEYS. Her new record of 1,000.07 pounds of butterfat for 365 days, completed December 1, 1918, makes her the world's champion Jersey. She now has the double distinction of having produced more butterfat in one year than any other Jersey and of having set a new record sales price, \$10,000, for Jersey cows. She was bred by C. I. Hood and is owned by F. W. Ayer, of Ayredale Farm, Bangor, Maine.

Dairy and House Barn

drinking water is piped to each stall; feed and litter carriers and their tracks serve all parts of the barn. Detail of construction to provide for hay carrier track is shown in one of the accompanying illustrations. The



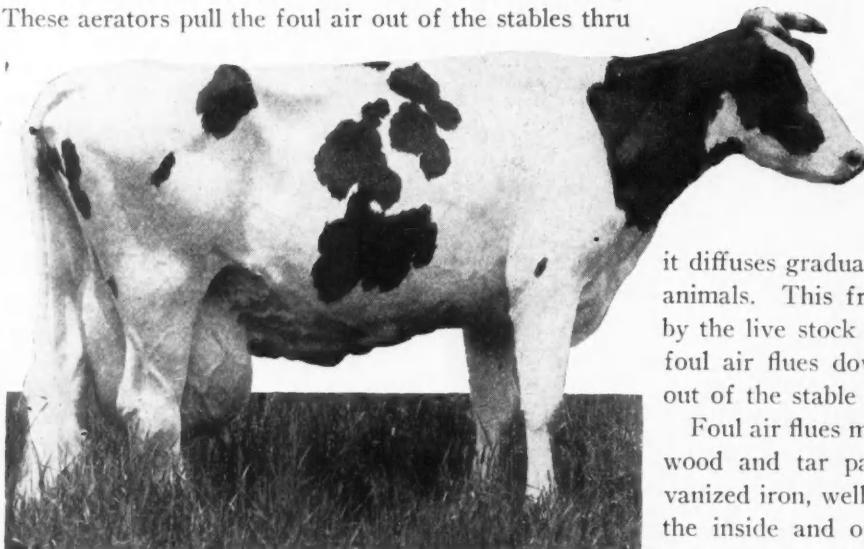
method of arranging the hay mow sliding doors is shown also. In the horse stable wing are stall guards, special hay racks, feed boxes and harness room equipment.

The builder in putting barn plans before a farmer cannot urge too strongly the value of these improvements, especially the installation of a water system.

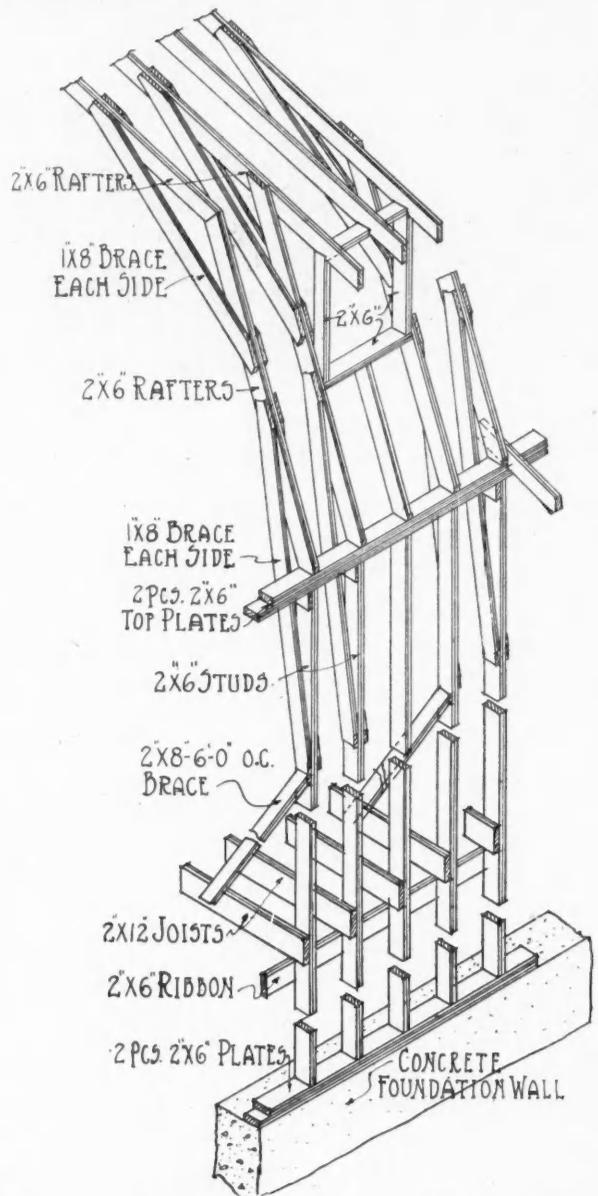
Arranging the Ventilation System

Since every modern dairy stable must be provided with an abundance of fresh air and with means for removing the foul air, this blueprint supplement design makes careful provision for ventilation.

In the first place, there are the air pumps or cupola ventilators on the roof, three large ones on the ridge of the main section and a fourth above the wing. These aerators pull the foul air out of the stables thru



"MAY ECHO SYLVIA," the World's Greatest Cow, Mother of the \$106,000 Bull Calf. It was her world's record-breaking milk production that won such a fabulous price for her son. Her records are: 152.1 pounds milk in one day; 1,005.8 pounds milk in seven days; 4,196.8 pounds milk in thirty days; and 12,898.8 pounds milk in 100 days. She was bred at Avondale Farm, Brockville, Ont.



well insulated foul air flues.

Fresh air comes in thru the windows as they are tilted back at the top, resting in galvanized iron window ventilating shields or frames. With these the fresh air is deflected up against the stable ceiling, where it diffuses gradually; no direct draft blows against the animals. This fresh air gradually settles, is breathed by the live stock and finally enters the mouths of the foul air flues down near the floor line and is pulled out of the stable up to the outside air.

Foul air flues must be very well insulated—of double wood and tar paper construction or of double galvanized iron, well insulated with fibre packing between the inside and outside metal walls. The idea is to prevent the cooling of the warm stable air as it passes up thru the cold hay mow. If this happens, there is sure to be lots of condensation, with frost choked flues in cold weather, and a mussy drip at all times.

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Water Supply on Modern Farms

IMPORTANCE EMPHASIZED OF PUMPS, PIPING, TANKS AND FIXTURES—WORK FOR RURAL BUILDERS AND SATISFACTION FOR THEIR CUSTOMERS

“**R**UNNING hot and cold water is commonly regarded as ‘the crying need of the farm home,’” wrote W. A. Etherton, professor of rural architecture of the Kansas State Agricultural College, in 1916, in his bulletin on inexpensive plumbing for farm kitchens. If Professor Etherton had been covering the subject of the need of a water supply on the whole farm he would have said that running water is the “crying need of the farm home, the barn and the pasture in these days when efficiency demands that every labor-saving device obtainable be installed on the farm.”

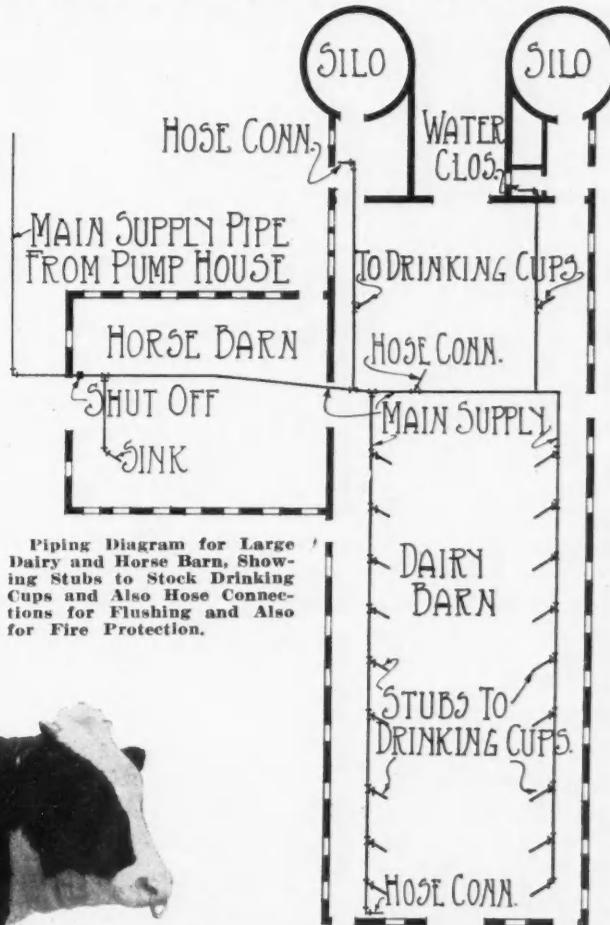
Someone has estimated that in the old days when the well or spring was some distance from the farm house the family carried a ton of water a day. When it is considered that water for the family needs and a great deal of it for the horses and cattle was carried a considerable distance, this statement does not seem an exaggeration. However, little water is now carried on the farm; the gas engine and the water system manufacturers have eliminated this hard work.

There are so many kinds of water plants at such a wide range in prices offered the enterprising farmer nowadays that he has no difficulty in finding one that suits his needs and his purse. And when he is planning such a building as the barn shown and described by text and blue prints in this issue, he will include in it piping to carry water directly to each stall.

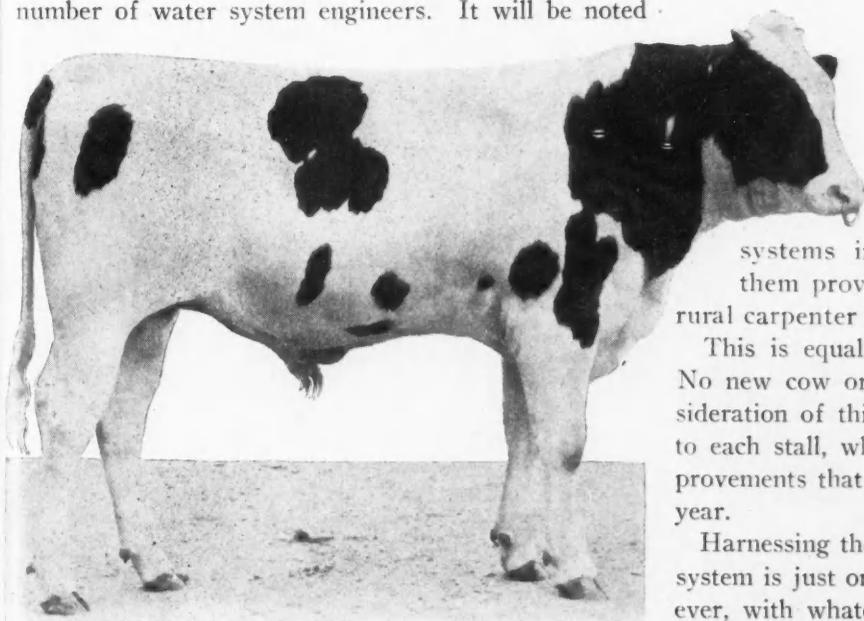
The accompanying illustration shows the plan of installing the water pipes in the big Blue Print Supplement barn. This plan has been approved by a number of water system engineers. It will be noted

that hose connections to provide fire protection and make easy the work of cleaning gutters have been located in convenient places.

Providing a water supply for the home is now recognized as an essential. Lightening the work of the women on the farm has become the pride and joy of every farm owner. Few new houses now are built that are not planned to contain a water system, even tho the pipes run only to the kitchen. A bathroom, too, is now usually provided. Installations of water



Piping Diagram for Large Dairy and Horse Barn, Showing Stubs to Stock Drinking Cups and Also Hose Connections for Flushing and Also for Fire Protection.



THE \$106,000 BULL CALF, "CARNATION KING SYLVIA." The above price was actually paid for this calf, aged six months, at public auction in Milwaukee. Photo shows him at nine months. Elbridge A. Stuart, of the Carnation Milk Products Co., was willing to pay this record price for purely business reasons, because of the breeding and milk production records back of this young bull. Such investments show confidence in the future of the dairy industry.

systems in houses that were built without them provide a great amount of work for the rural carpenter and the plumber.

This is equally true of the houses for the stock. No new cow or horse barn is planned without consideration of this question of carrying water directly to each stall, while pipe lines to the pasture are improvements that are being added to many farms each year.

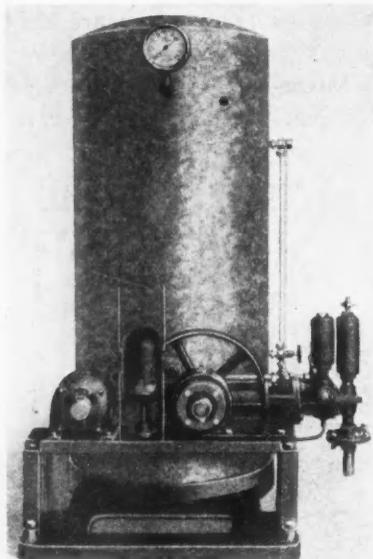
Harnessing the power plant on the farm to a water system is just one more use of the gas engine. However, with whatever equipment in the line of pumps the farm has, a tank of steel, of wooden staves, of concrete, brick or tile is necessary to provide a steady pressure. Water bowls that automatically shut off the flow of water when the animal ceases drinking and lifts its head provide against waste.

When submitting plans for a new barn or a new home, even tho it be a small one such as is shown with blue prints in this issue, there should be suggested a water system of a type that will provide for the needs of that building.



Water System for Medium-Size Farm

City conveniences in the home and other buildings are now recognized as necessities on the farm and many are the systems to provide both electric light and water that can be installed either at the time the buildings are constructed or in those already on the place.



Electrically Driven Pressure Pump and Tank Mounted Together on One Base.

Herewith is an illustration showing the pumping unit for a farm of medium size. It is designed to accommodate not more than five persons and fifteen head of stock. This outfit consists of a self-priming pump, capacity 150 gallons per hour, mounted on an elevated cast iron base, and belted to a 1/6-horse power motor; one air charging device attached to the pump; one pressure controller, set at from 20 to 40 pounds,

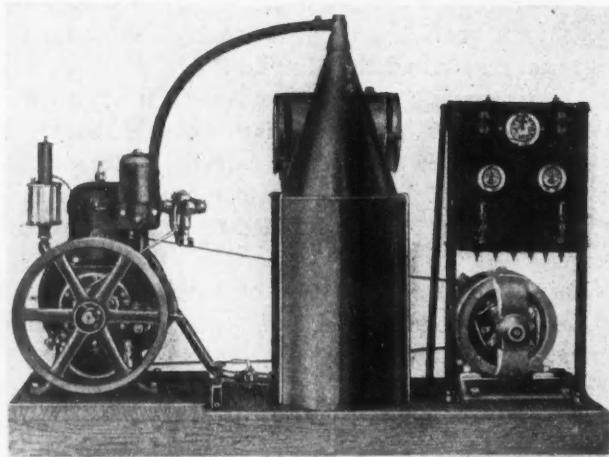
mounted on the pump base; one galvanized pressure tank, tested to a pressure of 125 pounds; one each of water gage, pressure gage, stop valve, relief valve, foot valve and all pipe between pump and tank, and one suction strainer.

This design presupposes, of course, that there is an electric plant on the farm. It is designed to be used in connection with a shallow well. The cost is comparatively moderate.



Electric Light and Power Plant

The gas engine and the electric power it produces supply so many farm needs nowadays that no up-to-date place can be really called efficient without such a plant. Builders who have the interest of their customers at heart provide, wherever



Combined Electric Light and Power Plant for the Farm; One That Can be Put to Many Uses.

possible, in their plans for electric light and water in the home and for running water in the cow and horse barns and the pig house.

The basis of all these improvements on the farm is the gas engine, which provides the power for the electric generator and the water pump. The engine, moreover, if installed in an outbuilding will do much of the farmer's indoor work, providing it is so located that shafting can be hung, or a direct drive to the corn sheller, feed cutter, or churn be obtained.

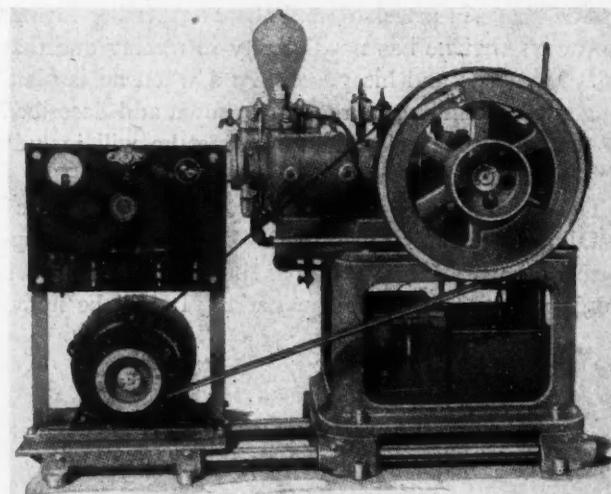
The accompanying illustration shows an electric light and power plant combined. The engine is of a light, medium speed all-purpose type, developing 4-horse power, at 800 revolutions per minute. It is 4-cycle, water cooled and has a single cylinder. The generator is of a high efficiency multipolar type with 4 brushes and adjustable brush yoke, with a 1,000-watt rating. It generates 30 to 45 volts, of 25 to 30 amperes. A feature is that the delicate switchboard instruments are placed in a strong steel box, complying with the underwriters' insurance regulations.

This is one of the latest models of farm lighting and power plants and is not expensive.



Combination Power, Light and Pumping Plant

Combining the light, power and pumping plants on the farm makes for economy in installing these necessary features of the extensive modern farm. Here is illustrated these three plants concentrated into a single unit.



Single Unit Power, Light and Pumping Plant. Gas Engine Geared to Pump and Belted to Electric Generator. Either or Both Can be Detached and Engine Used for Power Purposes.

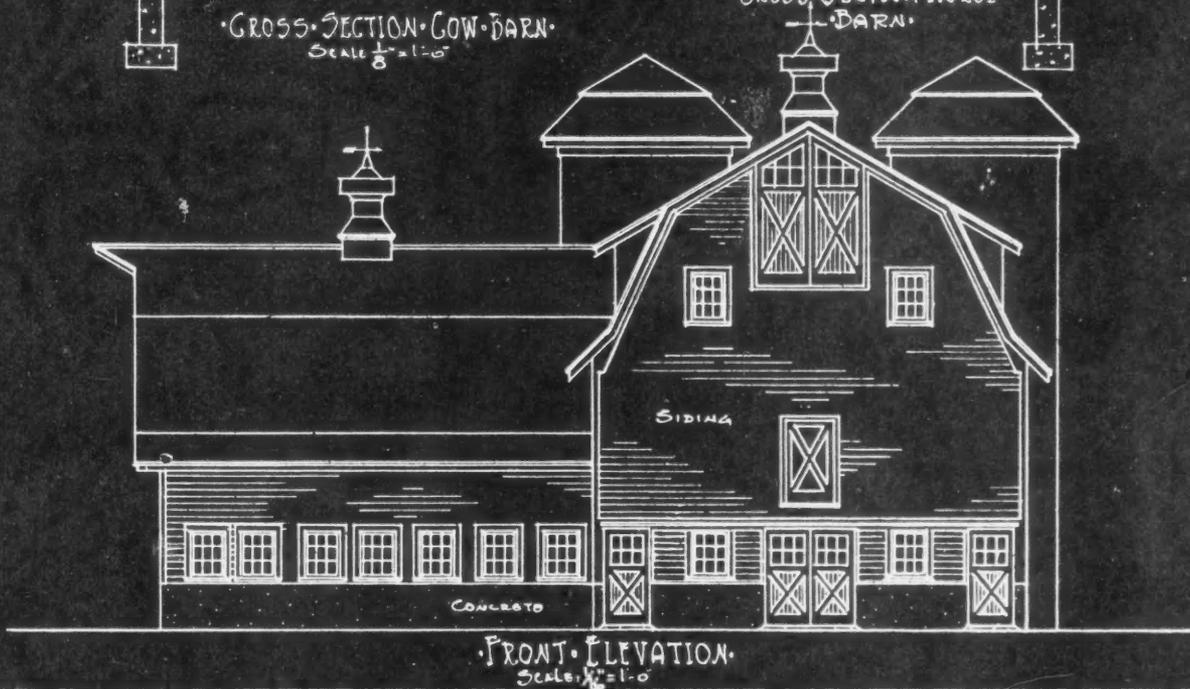
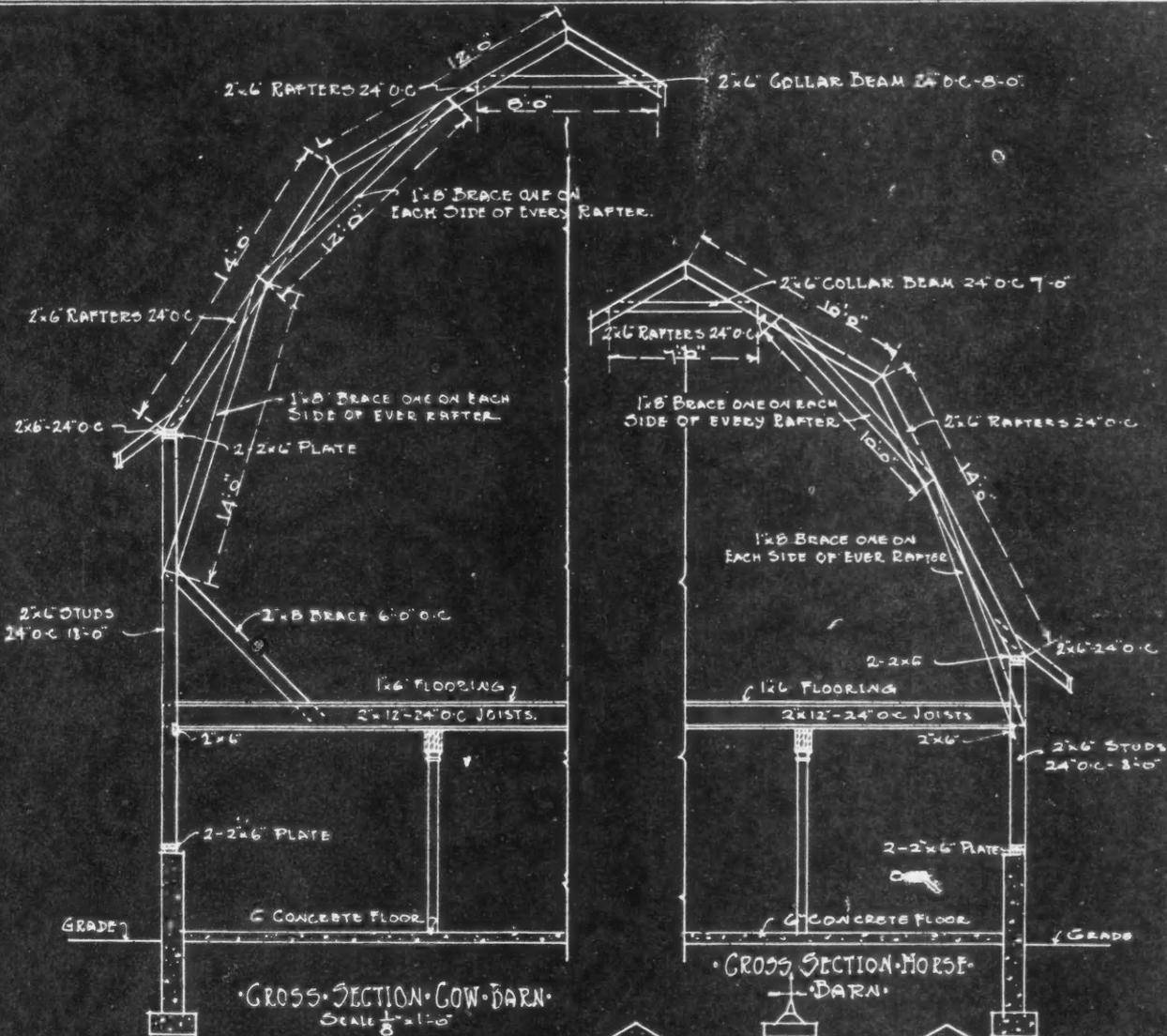
This combination makes for efficiency in that many times in the direct connected type of lighting plants the engine and generator are built in an inseparable unit. If it is desired to install in addition to the electricity a water supply system, either an electric pump must be used or another engine purchased. The plant shown is constructed so that the generator is driven by a belt from the fly wheel of the engine, and the pump is directly geared to the engine, so that it does not interfere with the lighting plant.

This pumping unit consists of a 1-horse power engine directly connected with gears to a double acting horizontal suction pump, having a capacity of between 350 and 600 gallons per hour. The electric plant has a capacity of 60 ampere hours, 1,820 watt hours, or 12 to 60 watt lights for 8 hours.

By combining these plants into the one unit there is a considerable saving.



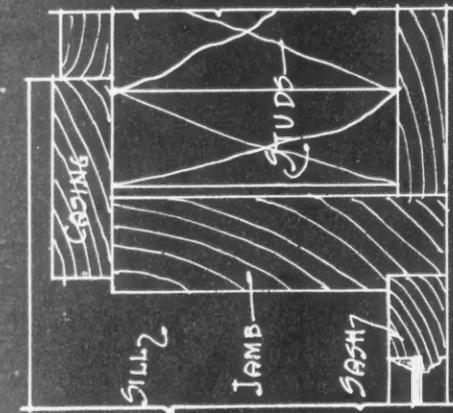
AMERICAN BUILDER BUILDING PLANS



DAIRY & HORSE BARN

SHEET No. 1

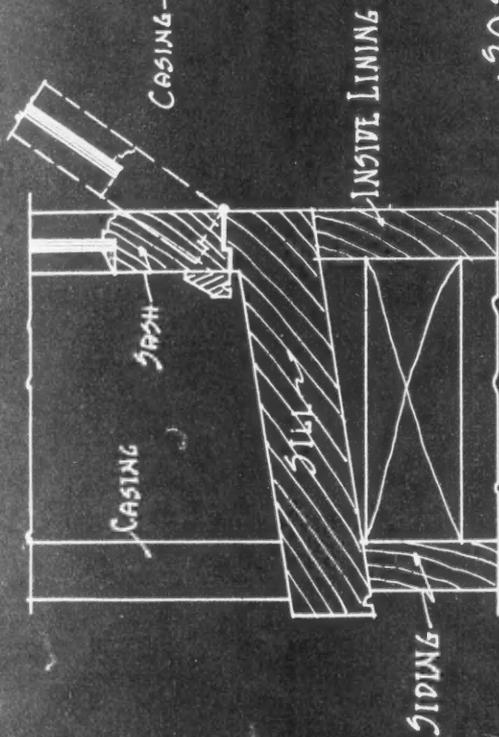
AMERICAN BUILDER BUILDING PLANS



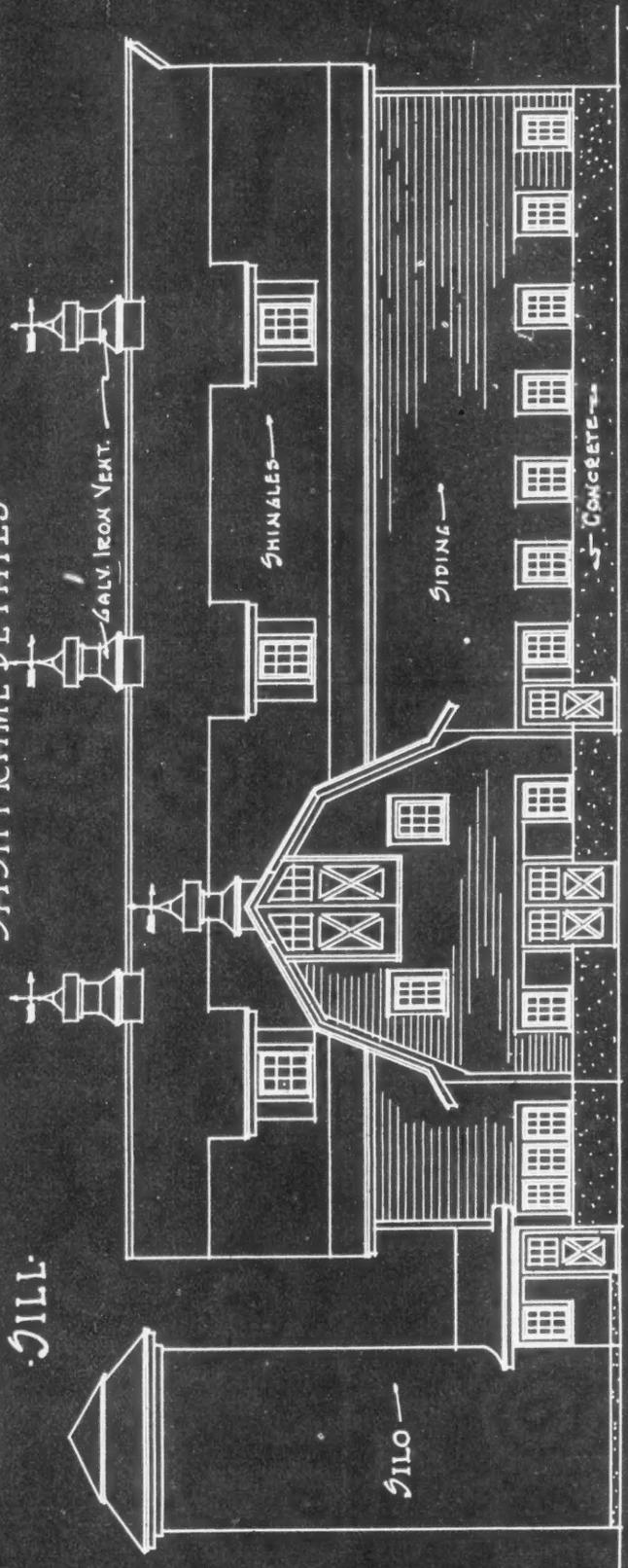
SIDE JAMB.



SASH-FRAME-DETAILS.

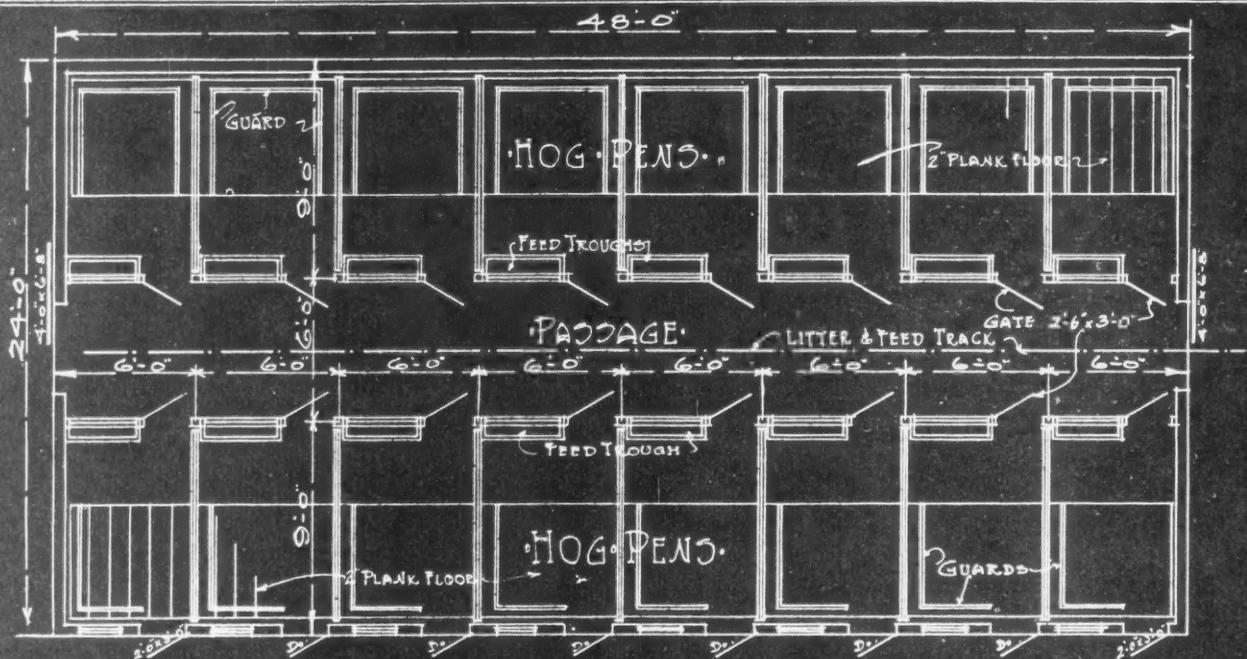


SILL.



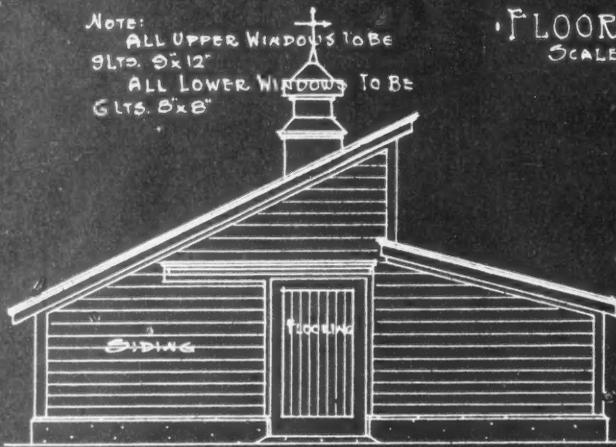
SIDE ELEVATION.
SCALE 1/16" = 1'-0"

AMERICAN BUILDER BUILDING PLANS

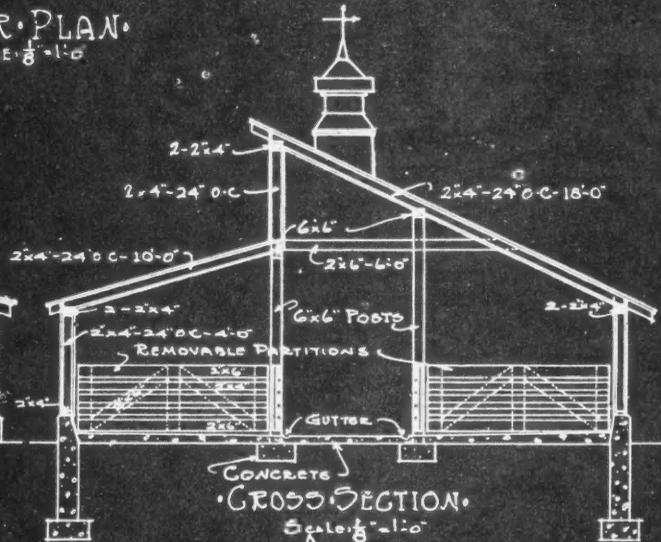


NOTE:
ALL UPPER WINDOWS TO BE
9 LTS. 9x12"
ALL LOWER WINDOWS TO BE
GLTS. 5x8"

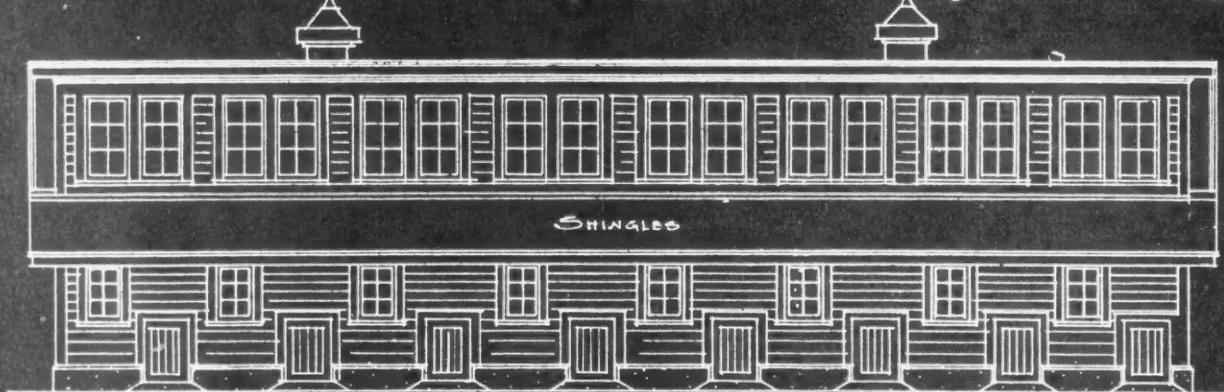
FLOOR PLAN
SCALE: $\frac{1}{8}$ " = 1'-0"



END ELEVATION
SCALE: $\frac{1}{8}$ " = 1'-0"



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



FRONT ELEVATION
SCALE: $\frac{1}{8}$ " = 1'-0"

COMMUNITY HOG HOUSE 16 HOG PENS.



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A Healthy Home for Hogs

BLUE PRINT PAGE OPPOSITE PRESENTS WORKING PLANS OF HALF-MONITOR TYPE COMMUNITY HOG HOUSE, SIZE 24 BY 48 FEET FOR SIXTEEN PENS, AS PICTURED ON PAGE 44

THE stockraiser who provides his sows with a clean, dry pen where they may litter in perfect safety the last of February or early in March is

the man who is making the most money with his hogs. Few of the pigs will be raised when littered at this time in the year unless the mother has a warm, clean place to live. By June, these young animals will have been weaned and out in the pasture, and the mother will be ready for a second family.

A hog house that provides this sort of a home for the sows and their young is shown in the illustration on the following page. This is a community house with a concreted yard adjoining. It is of the government approved half monitor or saw tooth roof construction, which permits the pens inside to get the full benefit of the late winter and early spring sun.

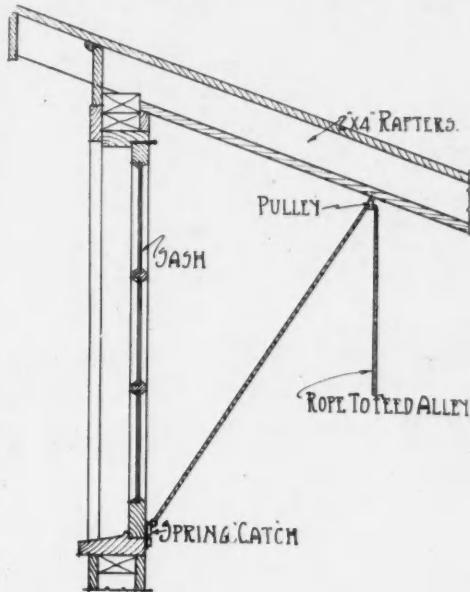
How these windows can be operated and their construction are shown in the accompanying illustration.

Front and end elevations, a cross section and the

floor plan of this house are shown on the blue print page opposite. This hog house, it will be seen, is designed to accommodate 16 sows. It is faced toward the south. The lower windows admit the sunlight and warmth to the pens on the south side of the building. The upper windows admit the light and sun to the pens along the north side of the building.

Wood construction with concrete foundations and concrete floor are specified. The litter and feed alley extends thru the center of the building.

This house has been shown to be the "best by test" and will meet with the approval of every hog raiser who sees the plans.



Method of Operating Sash in Saw-Tooth Roof for Ventilation.



Photograph Showing Well Lighted Interior of Our Half-Monitor Type Community Hog House as Built Near Xenia, Ohio.



Blue Print Supplement Design

Half-Monitor Type Community Hog House

Size 24'x48' for 16 Pens

For Working Drawings See Blue
Print Sheet No. 4.

(Opposite page 43)

Illustrating "Longfellow's Double",
Prize Berkshire Boar
Nine Times a Grand Champion

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“Evident” Hawkins—

A RURAL BUILDER WHO MADE A SUCCESS OF THE FARM LIGHTING BUSINESS

By Thomas F. Chantler

of The Society for Electrical Development, Inc.

UNDOUBTEDLY he has a given name. His folks no more would have thought of presenting him to the world without that distinction than they would of permitting him to wander abroad without his clothes. But mail addressed to “Evident” Hawkins reaches him promptly, and those who know him best insist that “Evident” becomes him better than whatever name was wished on him when he was baptized. He earned that sobriquet by persistently preaching and practicing the doctrine that in business, no matter how badly things were going, the man who would do the *evident* thing, the thing that was crying loudest to get itself done, would be so busy that business would just naturally improve because of the effort that was being put behind it.

His performance in turning to and selling electric lighting plants to the farmers in the vicinity where he carries on his building operations illustrates as well as anything I know his faculty for seizing upon the “evident” thing to do. And as my first acquaintance with Hawkins came thru sitting up until the wee small hours in the smoking compartment of a Pullman and listening in on the talk which passed back and forth between him and a young rural builder who appeared a bit down on his luck, there seems no better way to clear the workings of that faculty of his than to relate here as briefly as possible his tale of his own experience with farm lighting plants.

“Buck up, son,” I heard him say to the other man as I entered the smoking compartment, “the rural builder has his ups and downs just the same as the chap who gets rich or goes broke building sky-

scrapers, but for a long life and a reasonably prosperous and happy one give me the part of the man who boosts the agricultural game by supplying farmers with buildings and comforts that make life on the farm worth living.”

“I, I’m game, all right! But I don’t like these long waits between jobs; if I could be busy all the time I wouldn’t trade places with the best of them, but I hate this thing of spending all the profits of one job keeping the pot boiling ’till the next one comes along. You say that you’re a builder and that business is always good out your way; well, I know that my state is as busy and prosperous as any. So I’m darned if I can see how you manage to keep busy *all* the time, unless you are just building houses and barns for the fun of the thing and selling them at cost.”

“Have a cigar,” was “Evident’s” comeback, suiting the action to the word by proffering several of a brand that spoke volumes for his discriminating taste, “and I’ll tell you about it.”

“To begin with, allow me to point out something which I believe to be the very basis of success in all rural building operations and other activities that go naturally with it; what I have in mind is this: No matter how primitively a farmer may happen to conduct his own particular farming operations, it is up to the rural builder to be the pacemaker in setting new high standards of comforts and convenience in the buildings he erects and equips.”

“Yes, that may all be,” replied his listener, “but when I drive the last nail I’m done—the owner can



Only the man who has tended stock by the fitful glow from a lantern is capable of appreciating the comforts of an electrically lighted barn.

Contracting—with Electricity on the Side

equip his building to suit himself. As I see it, my work begins and ends when I have found a man who wants a building; when I have put up that building according to his instructions, and when I have collected my money."

I had suspected that Hawkins had been laying a trap, and his manner of hunching forward in his seat was reminiscent of a chess player whose adversary makes the move he has been hoping he would.

"I expected that you would say something like that, and you are right, too, if that is your idea of the building business; but it isn't mine. I take my business a whole lot more seriously than that, and while I do not insist that my plan is the only plan that produces satisfactory results, I do know that I have gotten ahead and that I am busy all the time. Now I've got half an hour yet before I turn in, and if it will help you to know how we do things out my way, you are welcome to anything I know."

"You bet it will," shot back his hearer. "Tell me first, please, what you mean by equipping the buildings you erect and making them more comfortable."

"Why, that is as *evident* as anything could be. Get this thought and you will see it in a second. Unless it is to be knocked down and sold for scrap, the only value in a building, whether it be house, barn, silo or garage, is derived thru the use that is gotten out of it. That's true, isn't it? All right. Then anything that you can do towards helping the farmer to enjoy more of comfort, satisfaction or efficiency from the use of his house and buildings is something that it is right and proper for you as a builder to take up and



Operating the cream separator by power generated by the lighting plant is only one of the many services of electricity that can be translated into actual terms of time, labor and money saved.

push. It's all a matter of how ambitious you are and of how willing you are to go to the limits of your opportunities. Do you follow me?"

"No one could object to that, but I don't quite see how you are going to put that policy into practice. Maybe I am a thickhead, but if you will illustrate that with an actual experience I think I will be surer of getting just what you mean."

"I intended to do that," replied Hawkins, "and I don't know that I could do better than to tell you how I came to get into the farm lighting business. Incidentally, too, that section where you operate is a good one for such business, and you could not do better than devote your spare time to pushing electric farm lighting plants. Have you ever thought anything about that department of your business?"

"Yes," vouchsafed his now thoroly interested listener, "I have thought some about that, but I don't know a thing about electricity, and I have been afraid to tackle it."

"There isn't anything about those plants that you actually need to know to sell them and to see that they are installed properly that cannot be picked up in a few evenings devoted to careful reading of the literature and instructions that the manufacturers supply. All I knew when I started was precious little. So if that's all that's bothering you, you have a clear track ahead. But let me tell you about my experience and you will see how easily you can get into the business."

From here on, "Evident" had everything his own way; we were only too well contented to listen. So this, then, is the story in as nearly his own words as I can remember them:

"I never did like the way that the cold weather blankets the building business, and while I have always made use of that lull to solicit and plan for building operations to be commenced as early in the year as possible, I felt that there must be other profitable enterprises that could be carried along at that same time and that I could undertake without exceeding my scope as a builder. Just about that time there was a bad fire out our way, which was occasioned by an overturned lamp, and in which two people lost their lives. It was as evident as the nose on your face that the surest way to prevent other such occurrences was by starting a crusade against the use of lamps; also, that the man who helped the farmers to better lighting facilities might be expected to enjoy a pretty handsome business.

"A friend in the electrical business gave me a line on several concerns making individual electric lighting plants, and I got on the train and went to see those manufacturers. I found out later I could have transacted my business just as satisfactorily by mail, and with the representatives that the manufacturers would have sent to see me and explain the workings of their plants. But I had other business in the locality of



When the farmer allows the "George" of electricity to do the heavy work—well, then farming takes its place among the progressive industries.

those manufacturers, so I made my trip profitable. Anyway, I got the agency for a lighting system that looked good to me and hustled back home to get busy.

"I had figured out in advance the lighting requirements of all the farmers and other rural dwellers in my section, and I knew just how much illumination each could make use of to good advantage. And from my knowledge of their farming operations I was able to make a pretty good guess as to the uses each would make of the mechanical power that would be his to enjoy with the installation of a lighting plant. Like that chap who worked from sunup to the time when the frogs quit croaking, and then had nothing to do until the next morning, all I had to do was to convince the farmers that they could not longer afford to be without the advantages of electricity, and to induce them to pay for the plants that I was itching to sell them! Now I haven't time to tell you about all of the methods and plans I made use of to electrify my neighborhood, but perhaps if I relate to you how I helped to bring the comforts of Broadway right to Virgil Swenson's farm it will enable you to imagine the rest, because he was my first and by all odds my toughest customer.

"Virgil isn't what you would call a big farmer, altho he has some mighty good land and he works it intelligently. He has an automobile and his buildings are ample and good—I ought to know, seeing how I built them. Just the same, Virgil is what you might term set in his way, and I figured that I had

my work cut out for me. There was one big advantage, tho, that I had working for me from the start, and I was not slow to recognize it: the lighting system of his automobile had given him a taste for the comforts and advantages of up-to-date illumination, to say nothing about the car's going a long way towards convincing him of the value of motors, and making him familiar with their operation. Besides, it had resulted in his gaining a speaking acquaintance with some few electrical terms, at least. Once the farmer has had the way to the barn illuminated by the headlights of an automobile a few times he quickly commences to find fault with the sickly glow from a lantern, and the women folks—well, leave it to them to recognize an advantage when they meet up with it.

"I suppose the automobile people don't realize it, but they surely have done good work in pioneering the way for the sale of electric lighting plants to farmers. Take my tip, if you will, and go first after those farmers who have automobiles, and sell them lighting plants before you tackle the ever-decreasing element who still depend upon old 'dobbin.'

"Before going to see Swenson I did a lot of figuring and planning. First, taking a tip from the manner in which successful battles are fought, I resolved myself into a strategy board or general staff of one and went into executive session to lay out a plan of campaign. It was evident at a glance that I had open to me more than one angle of approach to his pocket-book, and knowing Swenson as I did it seemed probable that I should have to make a combined assault in force from all of those directions at once in order to win Virgil over to my way of thinking.

"First, of course, there was that big persuasive force of arguments which travel naturally under the banner of illumination—electric light is the only light that precedes one, for instance, in going upstairs or down cellar; it eliminates the bother and expense of

(Continued to page 170.)



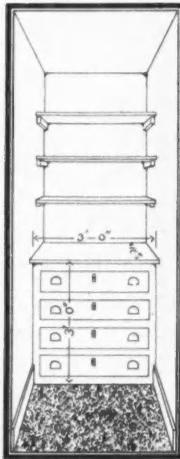
Grooming (by wire) with the electric cleaner is another labor-saving advantage that farmers are quick to appreciate. The horses like it, too.

A Closet for Every Need

THE IDEAS OF AN ORDERLY HOUSEWIFE ON SPECIAL CUPBOARDS AND CABINETS BUILT INTO THE HOME

By Anna H. Hill

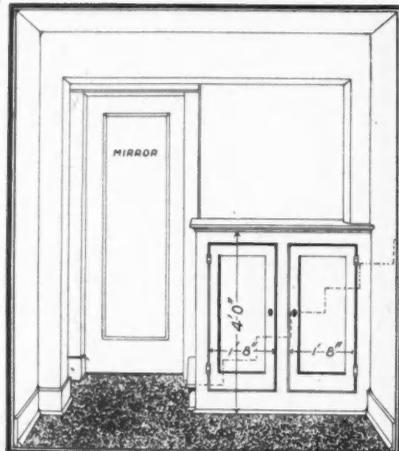
ONE of the most fascinating features in the houses of bygone days, is the innumerable little closets and cupboards built in at the sides of chimneys and in every available place. This feature might well be copied to a greater extent in our modern homes. For order in the household and for the peace of the family, plenty of storage room is absolutely necessary.



Case of Four Drawers with Shelves Above Built Into End of Closet.

To many architects, a small closet in each bedroom, a china closet in the dining-room and a kitchen closet fill the bill, but to the occupants of the house these are generally woefully inadequate. When a family moves into a new home, they are apt to find room for their immediate needs, but as the family grows or their interests and activities expand, new clothes and other belongings increase and soon each hook and shelf is filled to overflowing; and disorder and despair result. To the old adage, "A place for everything and everything in its place," I would add a roomy place for everything and everything will stay in its place. Boxes a little larger than absolutely necessary for their contents are easily kept in order and so with closets and drawers, the rule of not only big enough, but a little too big, is a good one.

There are certain articles in most homes that have no abiding place and are apt to be always in the way. Would not an umbrella close fill a long-felt need? The overly ornate jar with a varied collection of handles sticking from its top is not a very artistic article of furniture. In one home I know of a closet for umbrellas was made in the square post at the foot of the stairs. This might be borne in the mind of the



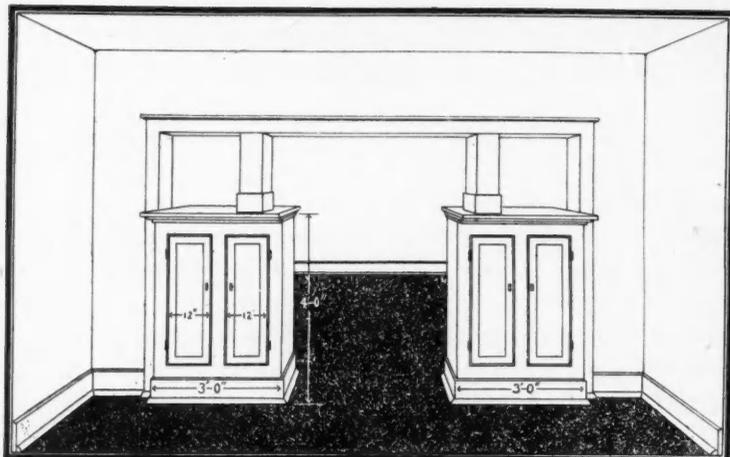
Closet in Newel Pedestal to Hold Umbrellas and Rubbers in Front Hall.

In my own home we have never found a place for the auto blankets when not in use, excepting hanging over the stair railing in the second floor hall—a great

trial to my housewifely heart. There is simply no other place for them and as we object to their being cold or perhaps damp from hanging in the garage, they continue to ornament the railing much of the time. Unless one has a heated garage this is something that might be provided for in the new home.

A preserve closet with a window, a broom closet, a cedar lined closet for winter clothing, a linen closet, all are most necessary in the modern home, but not always included in the plans.

In a house recently built by an acquaintance of mine, a wonderful foresight has provided for every possible need in closet room. In each bedroom closet a place is provided for shoes. A slanting shelf is placed just above the baseboard with a cleat near the top to hold the heels of the shoes and prevent their slipping to the floor.



Closet Inside of Colonnade with Doors to Hall Provided with Shelves for Auto Blankets, Etc.

In the sewing room there is a large closet with two deep drawers for notions and findings and under a shelf is a place where the sewing machine may be placed when not in actual use. Most housewives will appreciate such an arrangement, for surely a sewing machine is not an ornament to any room, and is a most annoying dust catcher.

In the butler's pantry there is a narrow closet with grooves at the top and bottom where the extra leaves for the dinner table are stowed away.

In the kitchen is a shallow closet to hold the ironing board, irons, etc. Not only does this arrangement keep the ironing sheets clean for a very long time, but it prevents this useful but awkward article slipping out from behind a door at unexpected and frequent intervals.

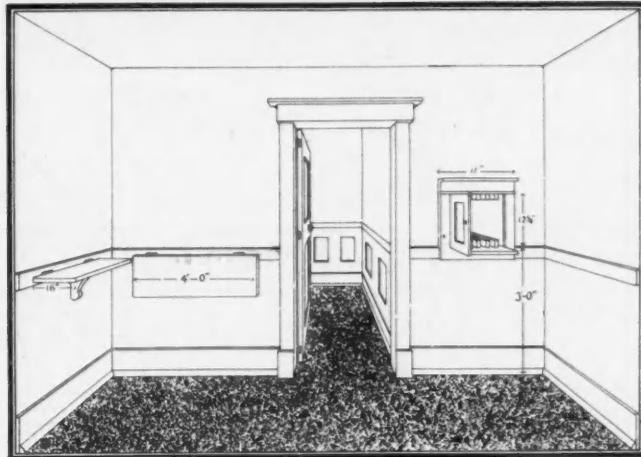
A closet for tools is provided with hooks of various kinds to hold each tool in its proper place.

In the attic there is a large hanging closet, lined with cedar and lighted with an electric bulb and winter clothes are hung where "neither moth nor rust can corrupt."

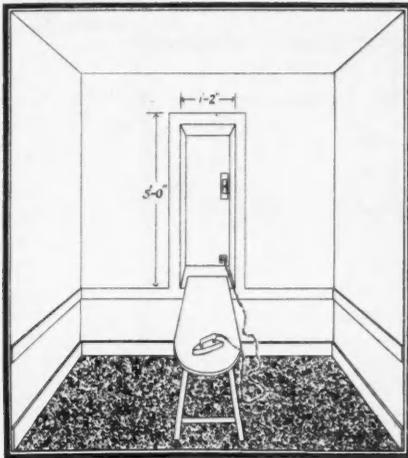
There is a large linen closet in which is a window. Large deep drawers are provided for extra blankets and comforters and shelves for linen. A broom closet upstairs as well as down saves many steps and much clutter and deep-drawn breaths.

Under a broad window in the nursery are cupboards running up either side to the top of the window frame which make roomy receptacles for the toys. This also provides a broad window seat which may be cushioned or used for flowering plants.

A recessed medicine closet built into the wall of the bath room is always a useful and ever present friend in time of trouble. Many of these cupboards may be built by the handy man and add greatly to the comfort of an orderly house.



Closest Built Into Butler's Pantry with Opening Into Kitchen for Table Leaves, and Cases Built Below and Above in Pantry.



Case Built in Kitchen Wall with Disappearing Ironing Board Hinged Inside, Also Provided with Outlet Plug for Electric Iron.

In my third floor hall, my husband has built a closet which we have dubbed the "Glory hole." It is built against a side wall and is 5 feet long, 7 feet wide and 2 feet deep. It is divided into three compartments and has shelves, each shelf having a

drop door hinged at the bottom and with a cylinder lock at the top. One compartment is used for preserves and jellies; one for magazines and one for bundles of clothing temporarily out of use. I cannot tell what a comfort and saving of trouble and temper this one cupboard has been to me.

Bookcases, either with edges flush with the wall or extending ten inches beyond the wall, making a shelf top, are much more artistic and roomy than a collec-

tion of portable bookcases ranged around the library walls.

Cupboards with glass doors built either side of the dining-room mantel or in opposite corners where this arrangement is possible are decorative in themselves. In them may be placed pieces of china or glass or perhaps a collection of old china heirlooms, safe from dust and careless hands.

In homes where frequent trips to the woods and fields, or the flower garden furnish flowers a plenty, a number of vases, jars and bowls of various sizes and shapes are absolutely necessary. A cupboard in the butler's pantry should be provided for these receptacles where they may be kept together and always at hand.

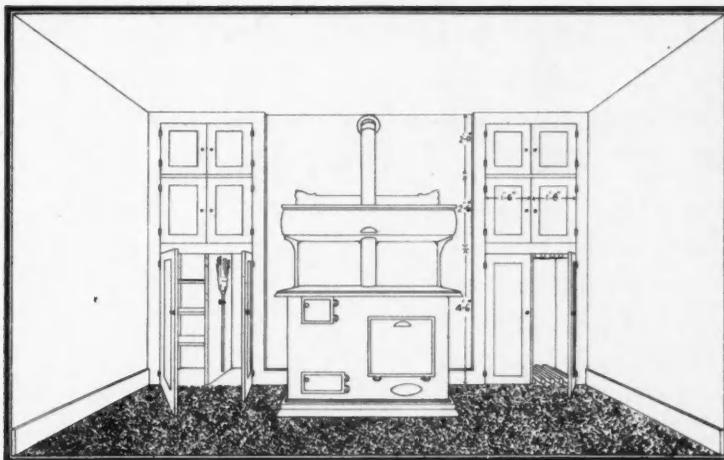


Prices Are Down—Figure Now

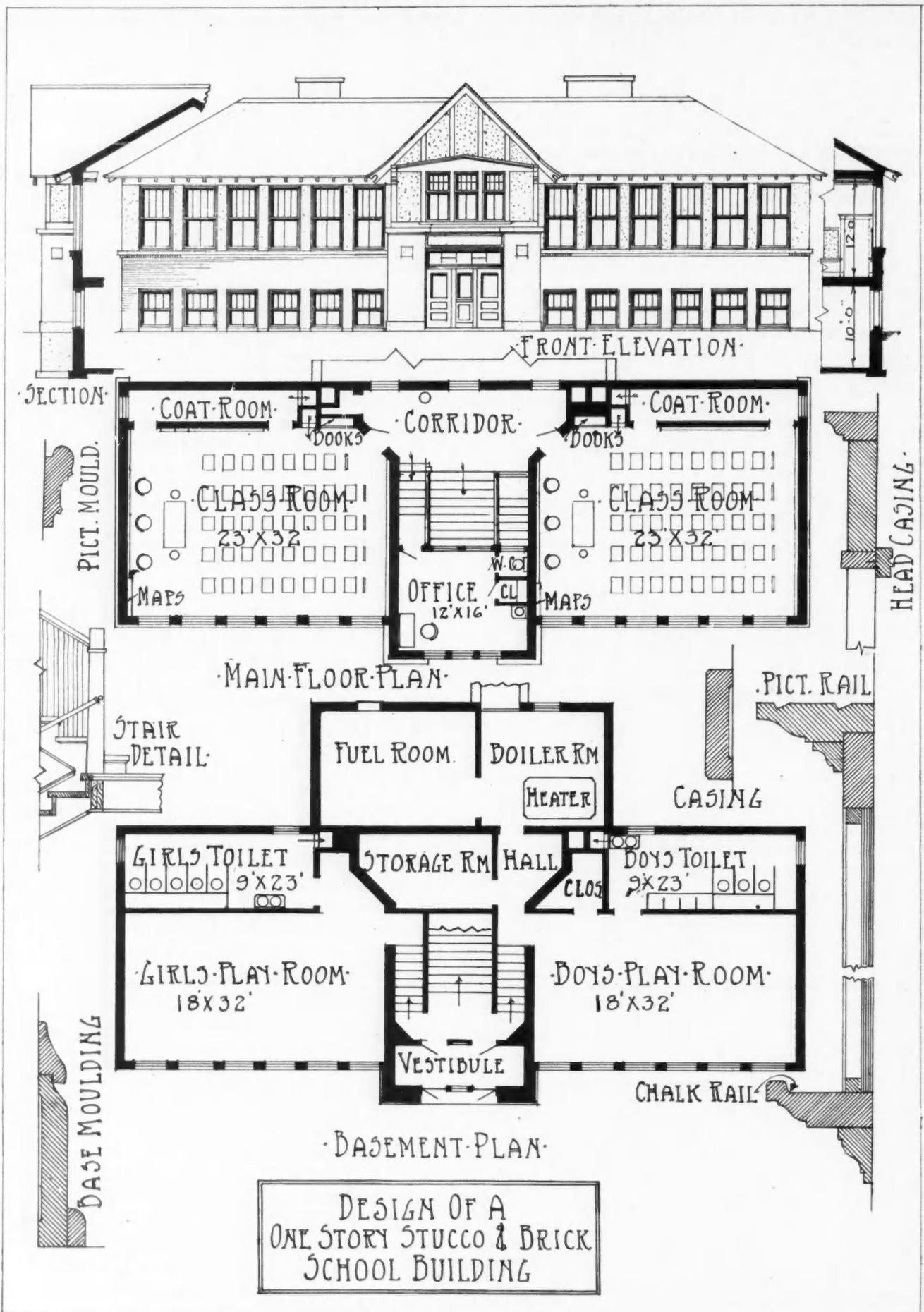
FOLLOWING the assertion of E. H. Gary, chairman of the board of directors of the U. S. Steel Corporation, that the prices of steel would immediately be reduced from \$3 to \$10 per ton, which was reported in the *AMERICAN BUILDER* for January, comes the announcement from a prominent radiator manufacturing company that it has reduced the prices of its radiators and boilers 25 per cent.

"Inasmuch as similar reductions are taking place in other lines of building material," says the company's announcement, "we take pleasure in announcing the foregoing information. This will do much to encourage clients to release building plans that have been held in abeyance on account of the war-time conditions."

The government announcement that every effort must be made to encourage the resumption of building operations at once will undoubtedly have the effect of lowering the prices of building materials considerably before the weather becomes mild enough to start work.

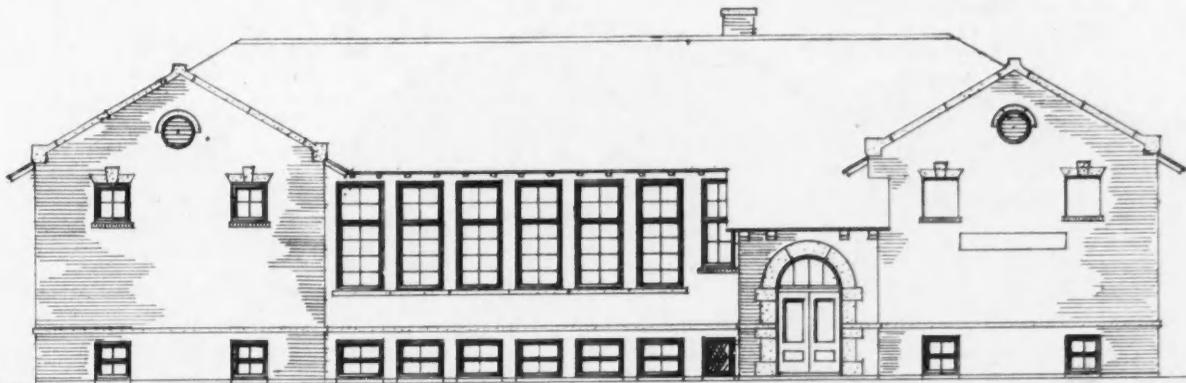


Closets for Brooms, Linen, Table-Leaves and Kitchen Utensils Built Into Niches Next to Chimney in Kitchen.

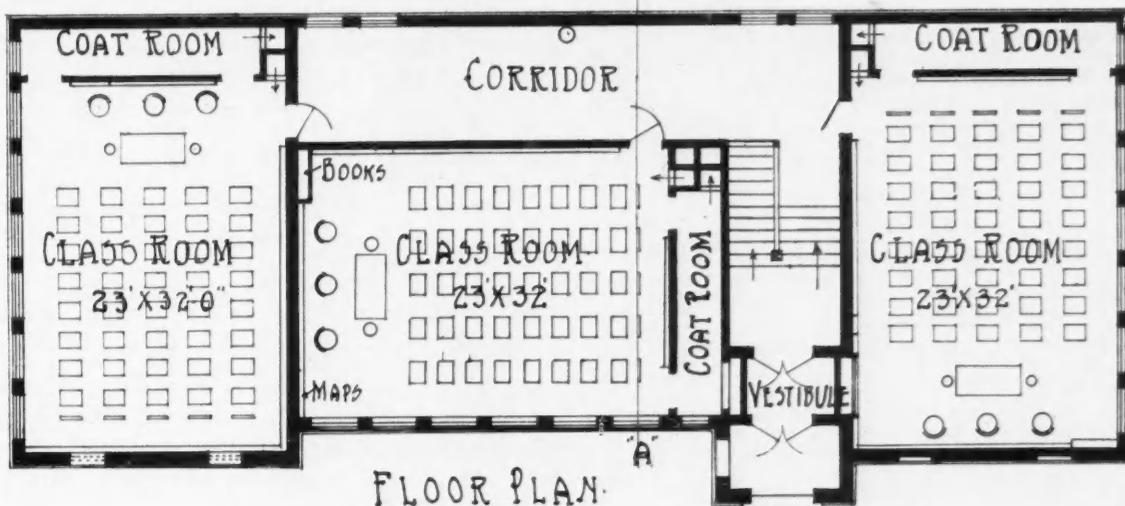


DESIGN OF A
ONE STORY STUCCO & BRICK
SCHOOL BUILDING

This Three-Room Brick School House is Notable for the Simple Efficiency with which it Solves the Modern School Building Problem as Fixed by the Rigorous State Laws of Indiana, Illinois, Wisconsin, Michigan and Ohio. The Architect is G. W. Ashby, of Chicago.



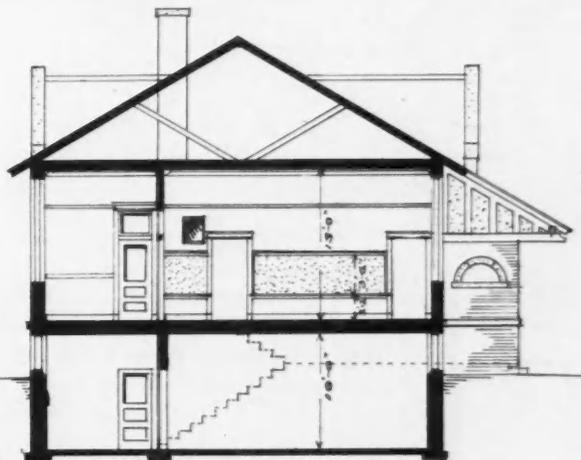
FRONT ELEVATION "D"



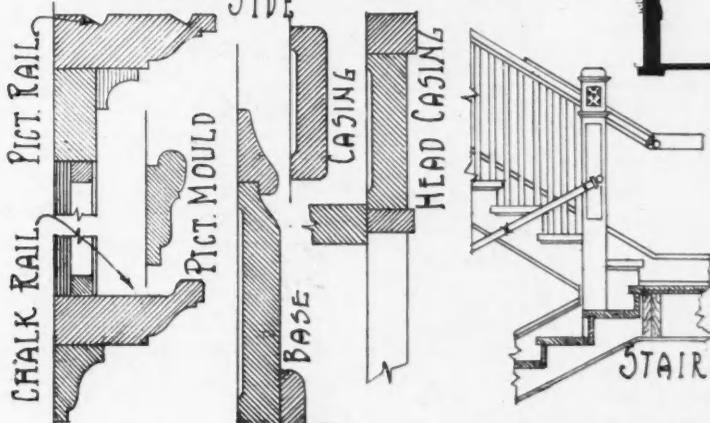
FLOOR PLAN "A"



SIDE



SECTION-A

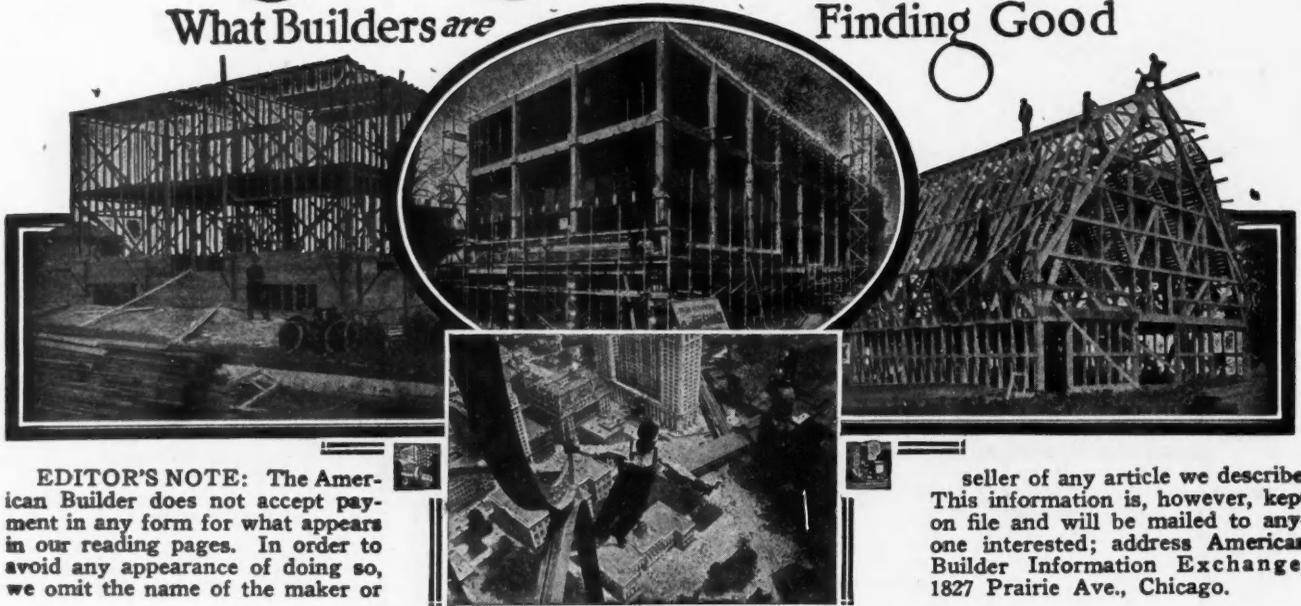


DESIGN OF A
THREE ROOM BRICK
SCHOOL BUILDING

Here is an Attractive Two-Room Modern School Building Which Works Out Very Satisfactorily Inside, Taking Into Account All of the State Building Code Regulations. G. W. Ashby, Architect, Chicago. New School Houses by the Hundreds Will be Built This Spring. Will Your District Have One?

OUT ON THE JOB

What Builders are Finding Good



EDITOR'S NOTE: The American Builder does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or

seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address American Builder Information Exchange, 1827 Prairie Ave., Chicago.

Uncle Sam's Ventilator

Uncle Sam's brain has been convoluting rapidly during the last few years. First, there was the problem of keeping



Warm Heart and Cool Head.

out of the war; then, having decided that keeping out was not politic, he got into it and set about to win it, or help end the conflict. That little job accomplished, he is now busy with reconstruction—restoring our industries to normal. All of these problems caused such great activity in his brain cells that the beaver hat he has sported for so many years needed ventilation. So he turned to the manufacturers of these useful things and picked one out. How well it fits into the beaver tile and how much satisfaction it gives its wearer is shown in the accompanying illustration.

Seriously, however, the many building problems that the war brought to the government was the real cause of picking a type of ventilator for the buildings at the army training camps, the welfare houses at the ship building yards, and the ammunition cities. Of course, many were the styles of ventilators submitted when the government set about making tests.

The successful competitor in these tests felt justifiably proud of his success. So he caused to be made the drawing of Uncle Sam with the ventilator at work.



Building Wagon Bodies for Farmers

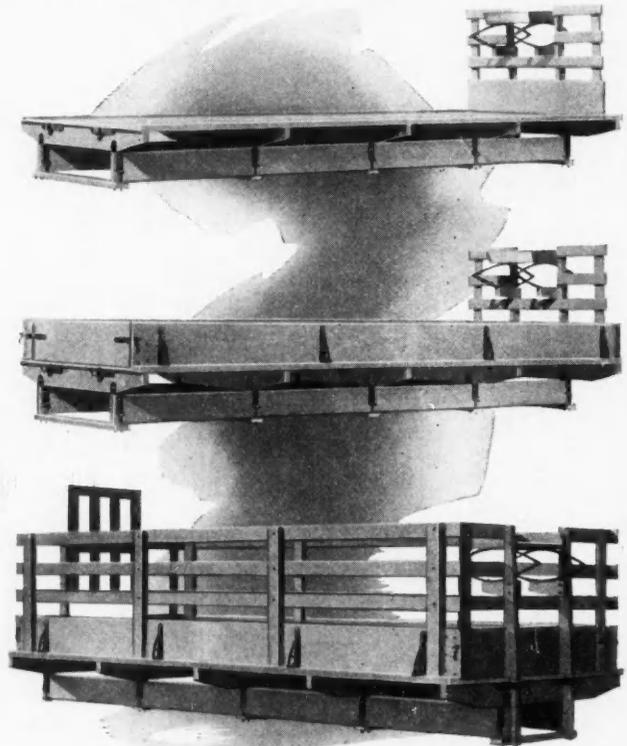
The contracting carpenter with his shop, whether it be large or small, who is up to date has no dull seasons now. He has so enlarged the scope of his operations that when winter comes he is provided with work that can be done in

the shop, while during the summer he is busy when the weather keeps him and his men from outdoor work.

How does he do this? Why, by letting his customers know that there are many things, which are usually bought in their finished state, that he can build as cheaply and do the work better.

One of the things that provides odd-time work for the carpenter is the building of bodies for farm wagons. The lumber he has available, the ironwork can be bought, ready to be used in putting the bodies together.

Here are pictured three types of bodies for farm wagons that are easily constructed. At the top is a hay bed, the



Making Wagon Bodies Is Profitable Odd-Time Work.

second is a corn or grain bed and the third is a stock rack.

The hardware for these beds can be secured from the maker, who also supplies the dimensions and quantities of the necessary lumber and tells how the bodies should be put together. The lumber is available right at home.

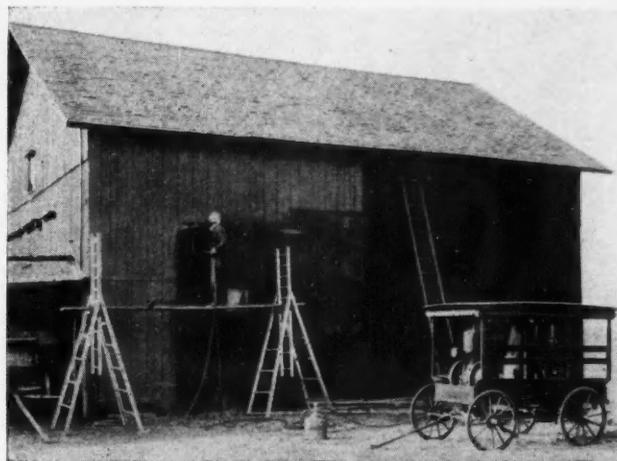
As every farmer knows, such bodies built by an experienced carpenter can be obtained more cheaply and, more often than not, with better workmanship than those secured from wagon manufacturers.

This is the sort of work that it pays every carpenter to go out and get. It supplies him and his men with something to do when otherwise they would be idle.



Barn, 60 Years Old, Gets First Coat of Paint

A barn that will withstand the action of the weather for sixty years without ever having been given a coating of any kind is a pretty good building and deserved better treatment. Nevertheless, the one shown in the accompanying illustration at the age of sixty got its maiden coat, its owner having decided that it had earned it. And the owner and



Barn Getting Its First Coat of Paint in Sixty Years—Air Spray Equipment Does It.

builder of the barn, at ninety-three years of age, watched the operation.

Painting such a barn, however, presented difficulties. The weather had opened up the boards to such an extent that some of the cracks were one-eighth inch wide. In the face of such a condition it would have been almost impossible to apply the paint with a hand brush. At any rate, the first coat would have worn out many brushes and the patience of the painter.

But modern methods stepped in and the job was done. The owner of the barn secured the services of a man with an equipment that applies the paint by the spray method. The illustration shows the painter applying the paint. He sprayed on two coats of paint, averaging a covering speed of 600 square feet an hour. This is perhaps six or seven times as fast as the job could have been hand-brushed, and the two sprayed coatings produced a more finished and better job than could have been done with three hand-brushed coatings under the circumstances.

By the illustration it will be seen that the painting contractor had mounted his equipment in a covered trailer, having side curtains to protect it from the weather. Attached to the back of his automobile, it was hauled to the barn along with the ladders, and soon the painting was started. The equipment included the air-compressing outfit, paint tank, sprayer, hose and ladder trestles.

Painting by the method of forcing the liquid thru a tube

and spraying it by compressed air is not new, but it was not until recently that oil paints could be applied in this way satisfactorily. Now, however, buildings of all kinds, houses, barns, school houses, factories and others are being painted, both inside and out, by this air-spray equipment.



Improved Water Bowl for Dairy Barns

The individual water bowl is now considered an essential part of the equipment of the modern dairy barn, and builders who plan and construct houses for the cattle put them in the specifications along with the other fixtures that make for sanitary construction. There are many types of water bowls. Here is pictured one that has won great favor with the dairymen, one reason being the smaller ones show how easily it sterilized.

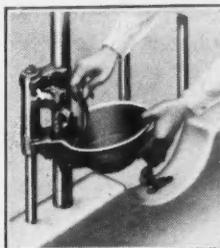


Fig. 1—To Release the Bowl It Is Only Necessary to Raise the Nose Piece to a Vertical Position.

can be removed and sterilized.

This bowl is of heavy gray iron, with brass valve rod, valve seat and spring. It can be attached to 1/4-inch or 1-inch pipe. The cow operates it by pushing down the release valve with her nose when she drinks. When

the bowl is in natural position it is as shown in the illustration. The projecting lug (a) on the spout extends out over the upstanding flange (b) so that when the nose-piece is down it is impossible to raise the bowl. When the nose-piece is raised the back portion, or flange (b), naturally moves back and down, allowing the bowl to be lifted out of the slot (d) and off the lugs (e).

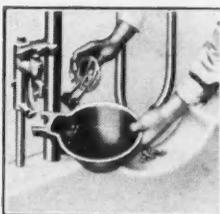


Fig. 2—To Remove the Bowl and Nose Piece Is But the Work of a Moment. It Is Done in a Single Operation.

The bowl then can be taken off and sterilized, the process being shown in the three smaller illustrations.

Another feature shown in the illustration is the brass valve in the seat (f) by which the water is released and shut off.



Fig. 3—The Extreme Simplicity of the Bowl Makes Every Part of it Easily Accessible, and Easy to Sterilize.

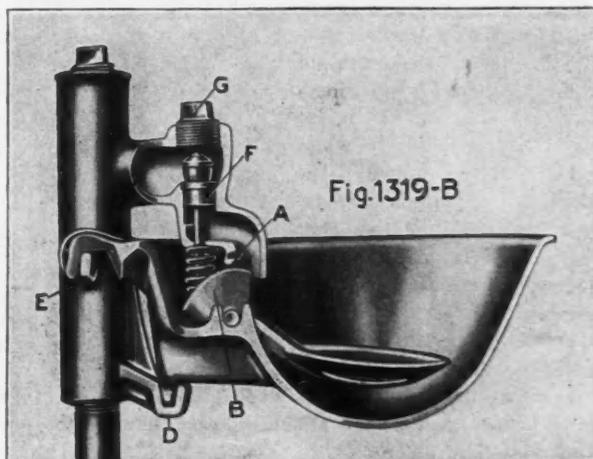


Fig. 1319-B

How Simple But Sanitary Barn Water Bowl Operates.

The valve stem also is of brass, which is rustproof and insures against sticking of the valve. The bowl is 8 inches in diameter and has a depth of 4½ inches. It weighs 11½ pounds.

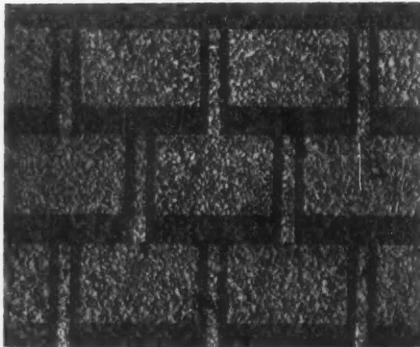
While this bowl has been on the market only a short time, it has gained many strong advocates among designers of dairy barns, and undoubtedly will be more popular as the builders become better acquainted with it.



Inlaid Asphalt Roofing in Color

For bungalows, homes, summer cottages, garages and buildings where ornamental effects are wanted at a moderate expense there is being used a new inlaid asphalt roofing in color.

The inlaid design is made in red and green, secured by applying natural colored stone to the hot asphalt surface, which, when hardened, makes a durable material. The result is an ornamental and artistic roof that is spark and weather-proof, economical and easy to put on.



Inlaid Roofing in Green and Red.

The accompanying illustration shows the roofing as it appears when in the rolls, which are 32 inches wide and contain about 108 square feet. Galvanized nails and cement are used in putting it on the roof.

Some extraordinary effects can be obtained with this roofing when asphalt shingles are used in place of weather boarding. This method of construction is exceptionally popular for summer homes and cottages, and will be effective for the farmhouse, garage and better farm buildings.



Doubly Insulated Pipeless Furnace

The success of the pipeless furnace in heating small buildings, homes, stores, churches, etc., has brought this type of heating plant into prominence during the last few years and the furnace manufacturers are constantly making improvements on them.

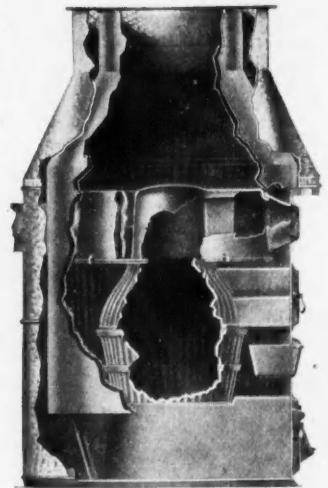
Herewith are two illustrations showing exterior and sectional views of a pipeless furnace that has recently been put on the market. A prominent feature of this furnace is the double insulation of the inner casing from the firepot. The outer casing is of the customary galvanized iron, but there is a double inner casing. It is lined with asbestos paper and corrugated tin to prevent the radiation of heat into the cold air space. There is a space of 4 inches between the outside and inner casings, and a similar space between the inner casing and the radiator.



Outside View of Pipeless Heater.

The furnace proper is of the all-cast type. It has an extended front, with the water pan between the feed and ash-pit doors. This construction enables it to be easily cased and centered without being crowded to the front. Both the outside and inside casings are provided with adjustable slip joints, so that the furnace can be installed in cellars of different heights without the necessity of cutting.

There will be a great deal of small home building this year and the furnace manufacturers expect a big call for the pipeless types.

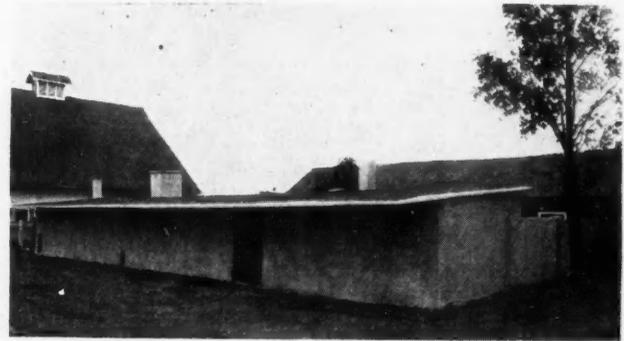


Sectional View of Insulated Heater.



Concrete and Expanded Metal Hog House

The campaign for greater food production has taught the farmer many things about his business. One of them is that the hog needs a home that can be kept clean and one in which he can be kept clean. His keepers have learned



The Ingram Fireproof Hog House Completed.

that the only reason he sought out a mud hole for a wallow was that a cleaner one was not provided, and that the former was the cause of much loss thru cholera.

This advance in hog raising has brought a great demand for modern hog houses, and the contractor who does much farm building is called on to erect many such houses. Here-



Hog House Under Construction, Showing No. 27 Gauge Trussed Metal Lath in Place for the 3-Inch Side Walls.

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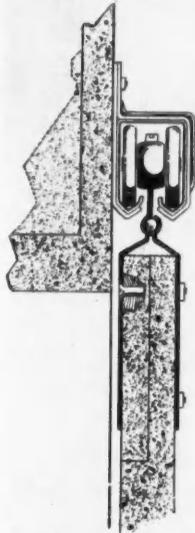
with is pictured a hog house of expanded metal and concrete that was built for F. F. Ingram of Grosse Isle, Mich. One illustration shows the hog house with the expanded metal walls in place before the concrete was applied. The other shows the completed building.

The use of the expanded metal for wall reinforcement and base for the concrete eliminated the necessity of all form work. The roof was constructed of the same combinations of materials. The side walls were 3 inches thick and required 1,515 square feet of expanded metal, while the roof required 1,350 square feet. This construction makes a sanitary, fireproof and permanent building.



A Double Roller Door Hanger

Every builder knows how much useless waste of effort the old-fashioned swing and slide doors on barns and garages caused and welcomed the advent of the modern equipment of this character. Great strides have been made during the last few years in the improving of door hangers. Not the least of these is the new double-V hanger shown in the accompanying illustration.



Showing How Hanger is Enclosed.

The double-V shaped tread gives maximum strength, with least friction with the hanger wheel, is self-cleaning and keeps the hanger in alignment. The track is made of 14-gauge steel and is furnished in 6, 8 and 10-foot lengths. The track is bird and storm proof, being closed at the ends. The weight of the track per foot is 2 1/5 pounds. The center and end brackets are identical, save that the latter has an additional end section, which fits into the bracket and is held firmly in place.

The double-V hanger is made with double tandem tracks and the axles turn in roller bearings, making it easy to open or close the door. The hanger has a trussed frame. The wheels are shaped so as to conform to V-tread of the track, thus preventing binding or sticking.

It is a track and hanger that will be appreciated by farmers and the owners of garages.



Some Artistic Stucco Dashes

Putting a rough finish on stuccoed houses by dashes of other materials produces some extraordinarily fine effects. They are easy to apply in connection with a special magnesite stucco that is gaining wide use. Clean, dry aggregates are cast onto the surface of the second coat of stucco before it is set. The dash is immediately held by the adhesiveness of the stucco and when dry it hardens into an integral part of the stucco.

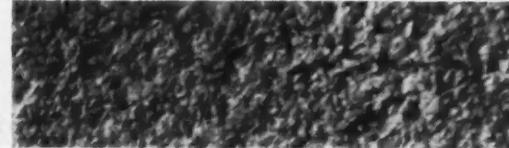
The accompanying illustrations show some of the finished surfaces. Gray and white marble, white quartz, mother-of-pearl shell and brown granite create pleasing

color effects. The colors of these materials give some distinctive effects. Gray, black, pink and brown, green and yellow and other striking combinations can be had. These dashes give a choice of fine or coarse surfaces, many tone variations and color combinations to harmonize with any architectural scheme.

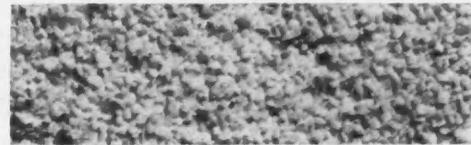
Stucco made from a combination of magnesite and chloride has been found to be particularly susceptible to the use of these dashes. Its adhesive properties and hardening qualities hold the surface material so strongly that when set it will never become loose or fall out.



Mother-of-Pearl Shell



Brown Granite



White Quartz
THREE TYPES OF STUCCO DASH.



Steel Roofing Weather Test

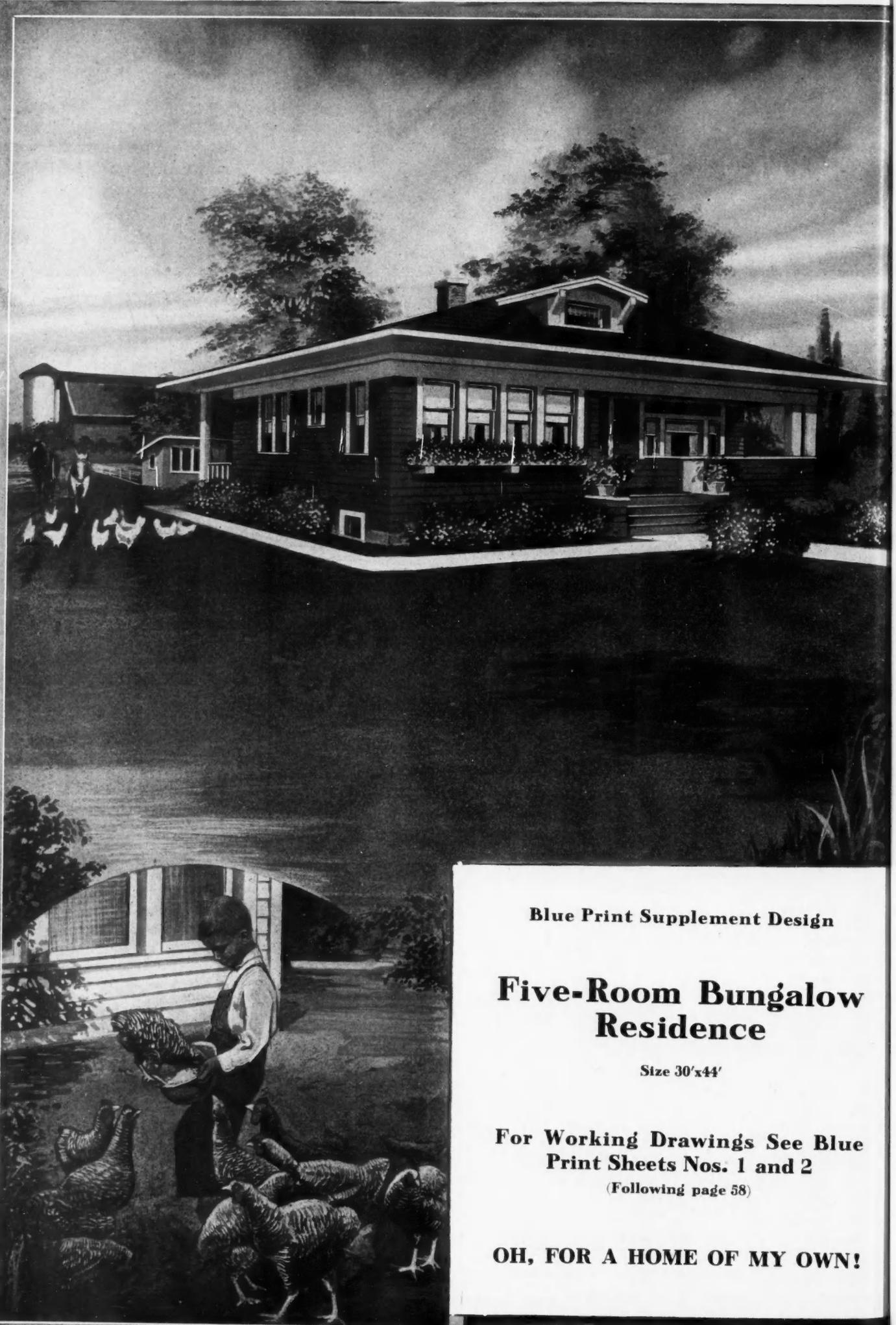
Since a manufacturer added copper to steel in the making of a sheet steel roofing several years ago, there have been many tests made to show the comparative resistance to weather of sheet steel with copper and that without. The accompanying illustrations show the results of a test made by a builder who desired to find for himself the relative merits of the materials. The loss proved to be from 8 to 13 per cent greater in the steel without copper.

The results of experience have demonstrated that copper increases the resistance of steel to atmospheric corrosion; that 25 per cent of copper is the best for commercial steel and that steel containing 25 per cent of copper outlasts "pure iron" containing only 5 per cent copper.

These facts were established by tests similar to the one illustrated, which was made with trays of uncoated black sheets taken from stock.



A—Copper Steel Loss, 34 Per Cent.
B and C—Two Varieties Without Copper. Loss, 42 3/10 Per Cent. Loss, 47 1/2 Per Cent.
WHAT THE TEST OF STEEL ROOFING WITH AND WITHOUT COPPER SHOWED.



Blue Print Supplement Design

Five-Room Bungalow Residence

Size 30'x44'

For Working Drawings See Blue
Print Sheets Nos. 1 and 2

(Following page 58)

OH, FOR A HOME OF MY OWN!

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Farmers Want Modern Bungalows

FIVE-ROOM BUNGALOW RESIDENCE PICTURED ON OPPOSITE PAGE WILL APPEAL EQUALLY TO SUBURBAN AND RURAL HOME BUILDERS—BLUE PRINT SUPPLEMENT FOLLOWING PAGE 58 GIVES WORKING PLANS

A SMALL house with a great many large rooms in it" has always been the ideal of the housekeeper. Obviously, such a house is impossible. However, modern construction comes near providing such a home. There isn't a great number of rooms, but those that are incorporated in the modern building plans are large and are so arranged and fitted that they have the utility of many more.

This type of a house is best illustrated by the bungalow. There are few rooms, but they are large and, being all on the same floor, give a feeling of spaciousness without the work required to take care of a large house. Equipped with modern furnishings, such as disappearing beds, a drop-leaf table, which serves the double purpose of a dining and living room table, and other practical and attractive furniture, four rooms on one floor serve the purposes of more than is apparent at first thought.

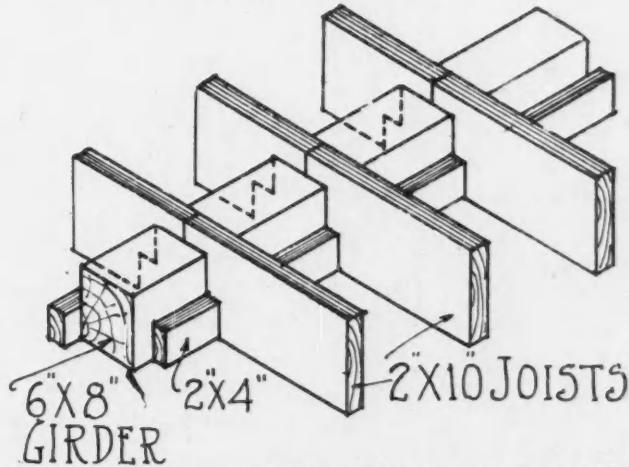
Nowhere is the bungalow in greater favor now than on the farm. If the owner's family be small, the bungalow makes an attractive, comfortable home—one that requires not near the amount of labor in its upkeep as the 2-story house. As a tenant home a bungalow is ideal and goes far toward solving the problem of keeping the married hired man.

Such a bungalow is pictured on the preceding page. What an attractive home this 5-room and basement house will make can readily be seen. On the farm—large or small—there is opportunity to have such a lawn and the flower beds and window boxes, the vegetable garden and the poultry that are shown.

However, what will interest the prospective home builder most are the working plans of this home shown

on the first two sheets of the blue print supplement that follows.

The house contains a living room, dining room, kitchen, two bed rooms and bath. All are of good size and are arranged with a view of economy in the work of taking care of them. The living room is 12 feet 9 inches by 17 feet. Opening off it is the front porch,



How to Frame Floor Joists Into Girder Where Additional Head Room Is Wanted in Basement.

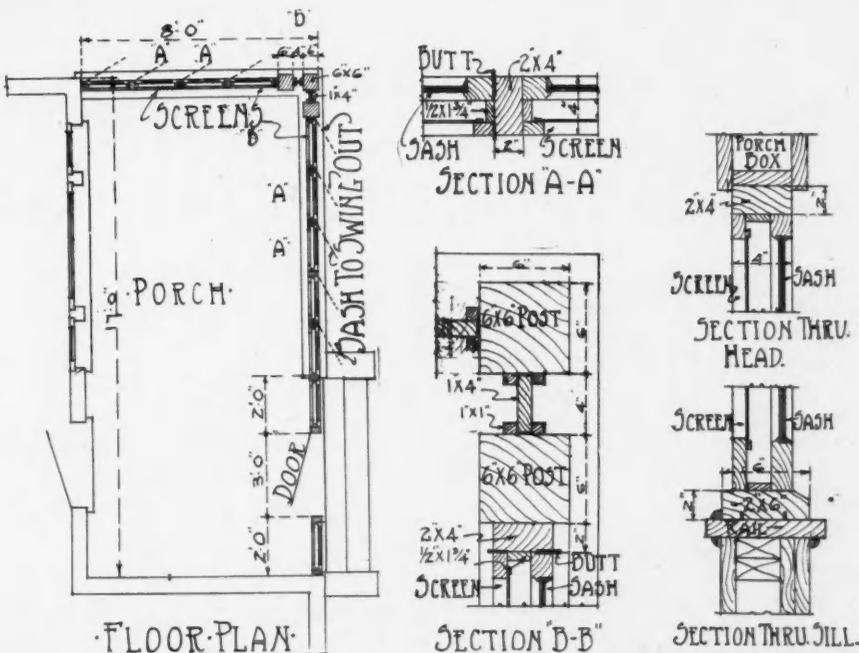
8 by 17 feet. This can easily be screened, as shown in the sketch. To the rear of the living room is the dining room, 12 feet 6 inches by 17 feet. Back of the dining room is the kitchen, 10 by 11 feet. One end is cut off for the pantry, while a door at the other leads to a back porch, 6 feet 6 inches by 12 feet.

A door from the living room leads into a hall. At each end is a bed room, while the bath is between them. The front bed room is 12 feet 9 inches by 13 feet; the back bed room is 12 feet 6 inches by 12 feet 9 inches. A good-sized closet adjoins each room.

The basement extends under the whole of the house proper and is divided into two sections, one 17 feet 3 inches by 28 feet, and the other 12 feet 9 inches by 25 feet. In the larger of the two rooms is the chimney, located so that it rises thru one corner of the kitchen. The framing around the chimney is of the approved type, space being provided between the wood and brick, as shown in the illustration.

The first-floor ceilings are 9 feet and the basement ceiling 7 feet. How space is saved by framing floor joists into the girders is shown in one of the accompanying illustrations.

This bungalow is economical in all ways, cost of construction and cost of upkeep, and if the modern



How to Screen and Glaze the Front Porch of the Five-Room Farm Bungalow.

home equipment is provided the owners can have all the conveniences of the city.

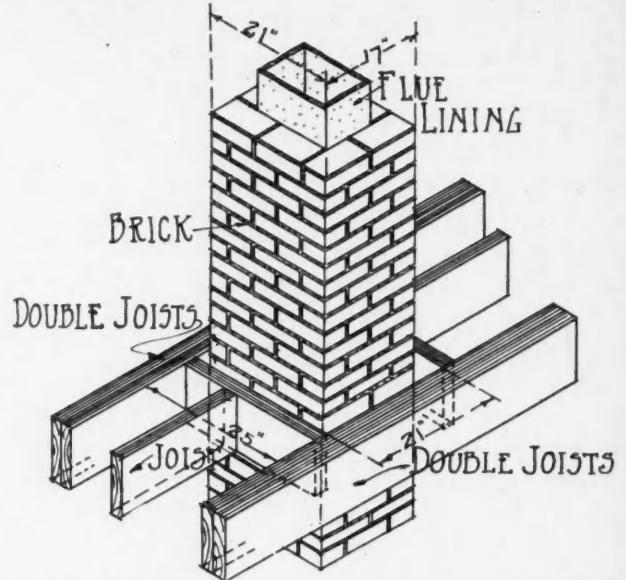
Can Have Conveniences of City

Heating is expensive at the present-day prices of fuel and, it is claimed, the pipeless furnace is a coal saver. This bungalow is of the type that is ideally suited to the pipeless furnace. By locating the furnace in the basement as near the center of the house as is convenient with a view to having the large register centrally placed this house can be comfortably heated.

The wiring and fixtures for electric light and the piping for water will not be great additional expense. The modern farm has a power plant of greater or lesser size and with the many types of electric and water equipments now offered, these conveniences can be installed in the home easily.

The plans for this bungalow are susceptible to any change that may suit the ideas of the person who wants to build. The contractor in showing them can easily get the views of the prospective builder and have the changes made. For instance, a fireplace appeals to almost everyone who is considering a bungalow. A slight change in these plans would provide for this feature.

During the coming season there will be an immense



Approved Framing Around Chimney—Wood and Brick Entirely Separated—Model Bungalow.

amount of home building, because government restrictions and the scarcity of labor have kept many from building. There will be those who want a small bungalow and these plans will be right in line with the ideas of those who desire an attractive, convenient, small home.

Corn Cribs Saves Dollars

BLUE PRINTS ON THE THIRD AND FOURTH SHEETS OF THE SUPPLEMENT SHOW CONSTRUCTION OF THE THREE TYPES OF CRIBS PICTURED ON PAGE 64

DURING the last three years the corn and small grains produced on the farm have so increased in value that the farmer more than ever realizes that proper housing facilities for his products are necessary. The corn crib or the combination corn crib and granary that he will now construct must be of the best type, weather-proof and rat-proof, and so designed as to require the minimum amount of labor in filling it and afterward in removing the grain.

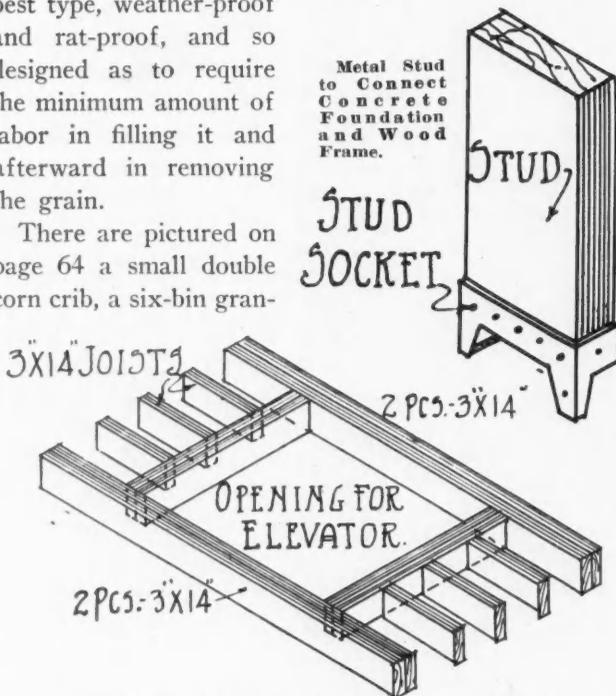
There are pictured on page 64 a small double corn crib, a six-bin gran-

ary and a two-story combination corn crib and granary.

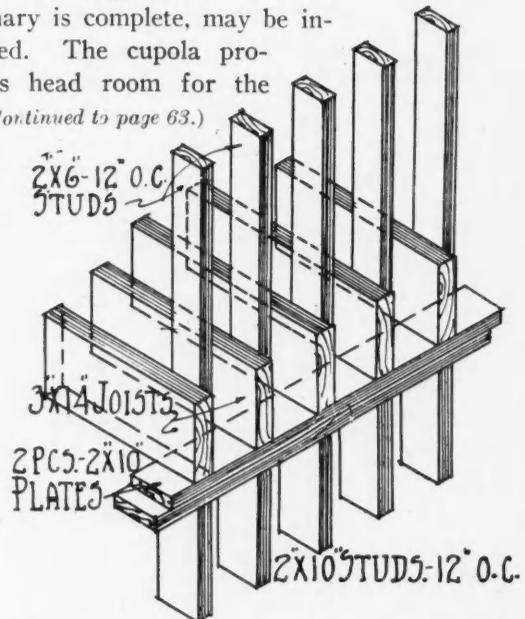
Referring to the blue print pages we see that the high crib is a gable roof and cupola building, size 26 by 40 feet, of wood construction with concrete foundation and floor. The cross section shows the strong framing necessary to support the loads that come onto such a building when filled with corn and small grains.

This crib is designed so that a cup elevator, without which no high corn crib and granary is complete, may be installed. The cupola provides head room for the

(Continued to page 63.)



Framing Around Elevator Opening in the High Crib.

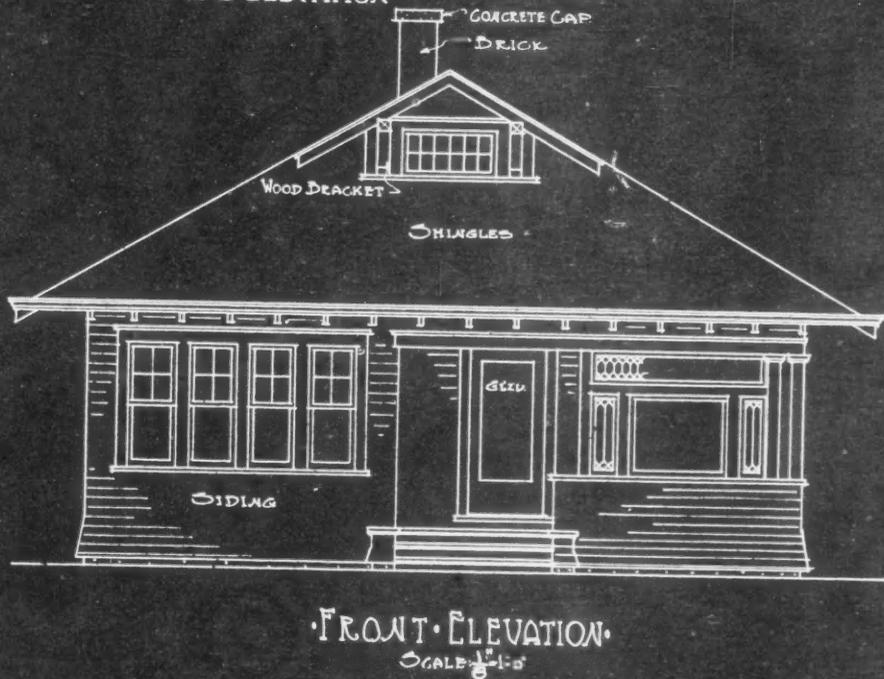
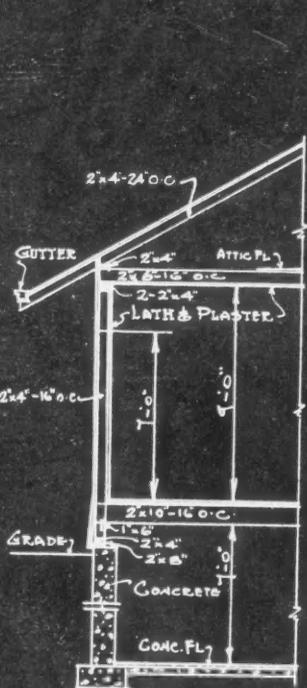
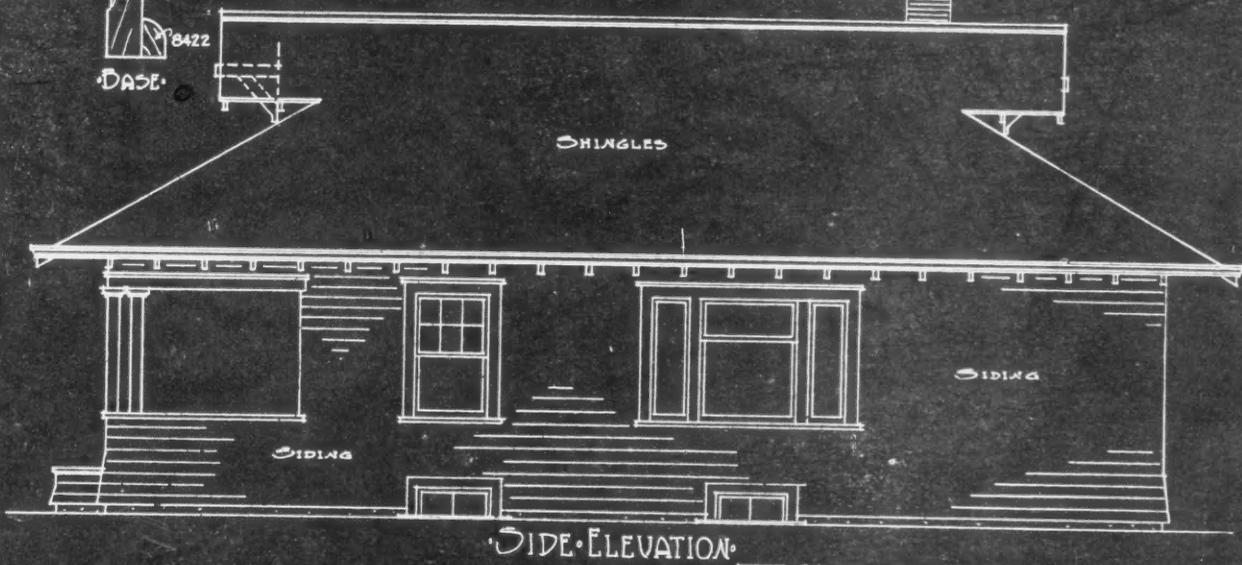
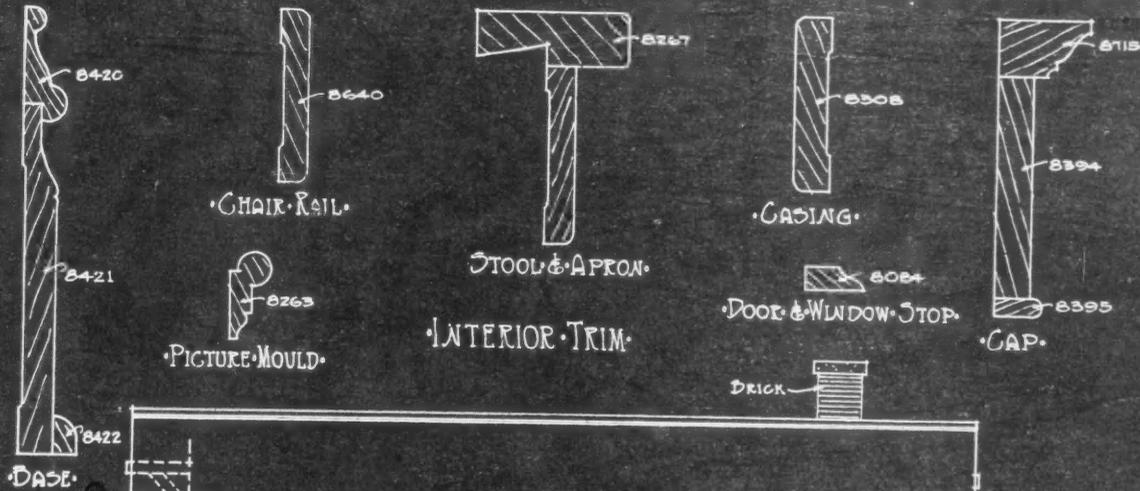


Framing at Top Partition Plates in the High Crib.





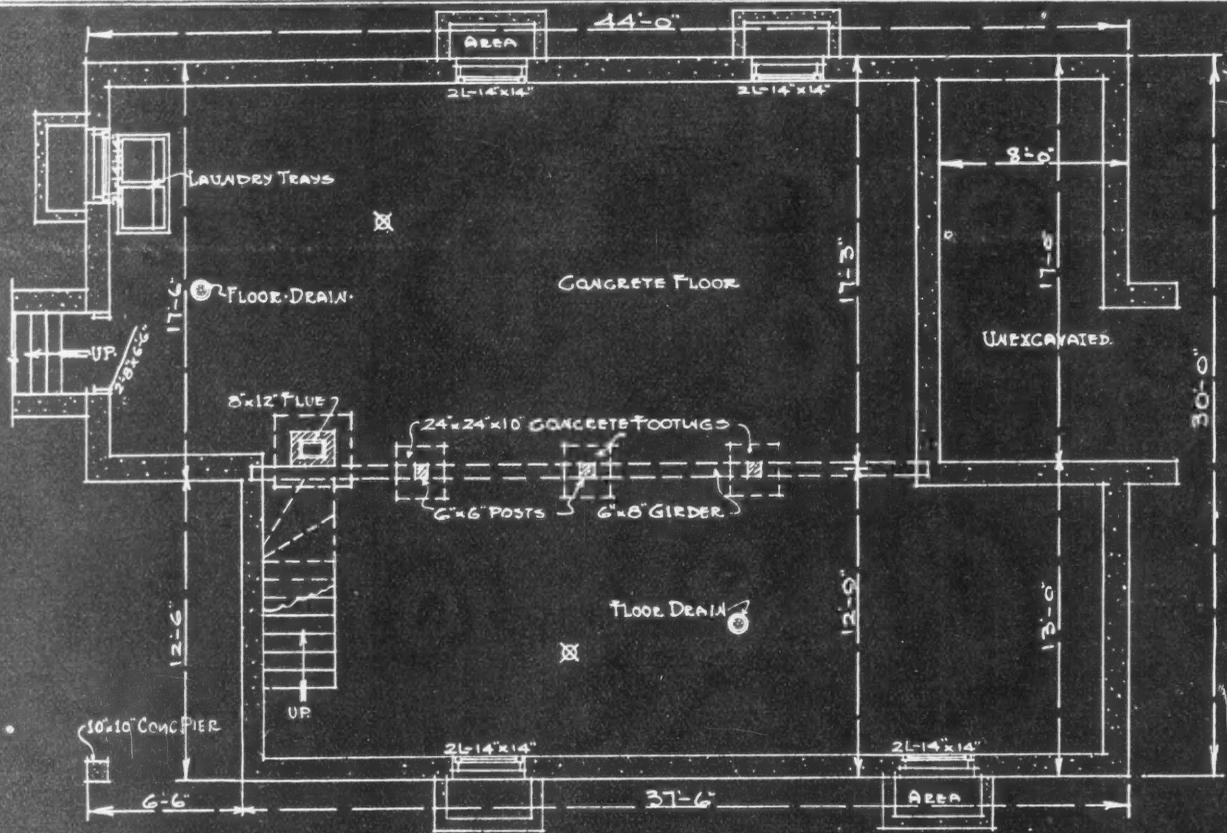
AMERICAN BUILDER BUILDING PLANS



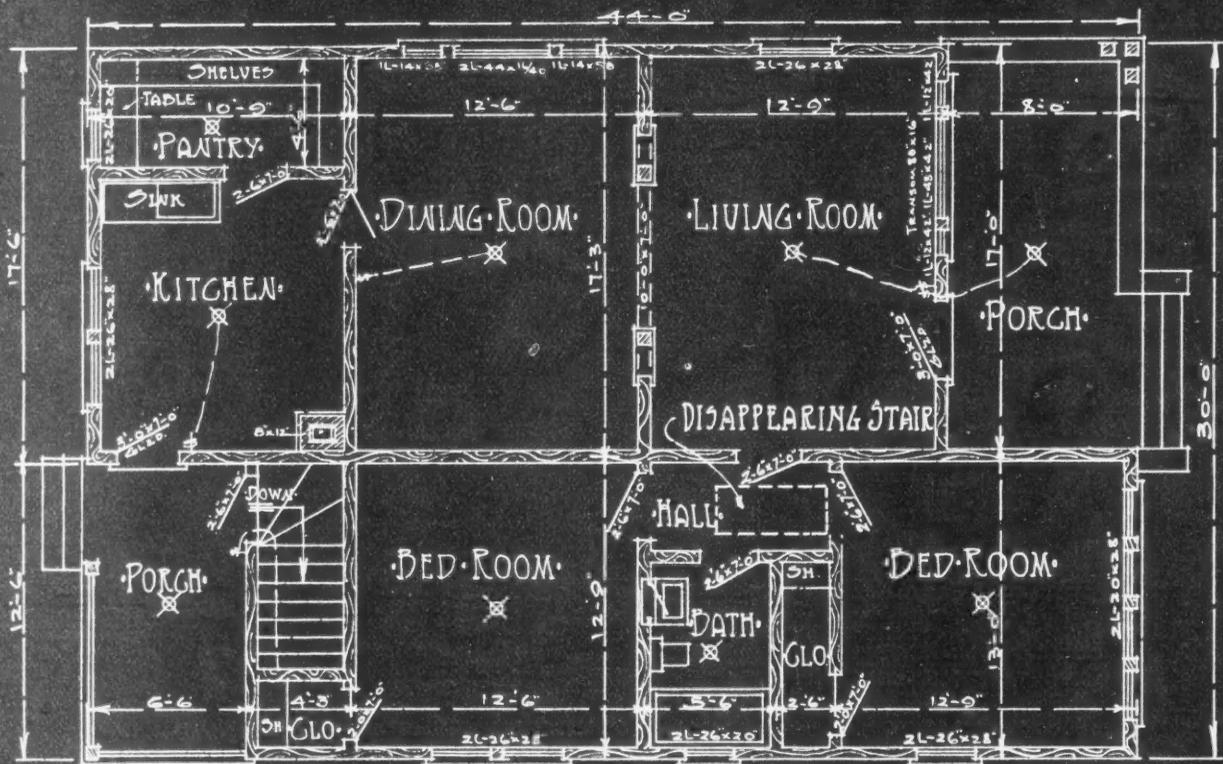
FIVE ROOM BUNGALOW

SHEET NO. 1

AMERICAN BUILDER BUILDING PLANS



BASEMENT PLAN



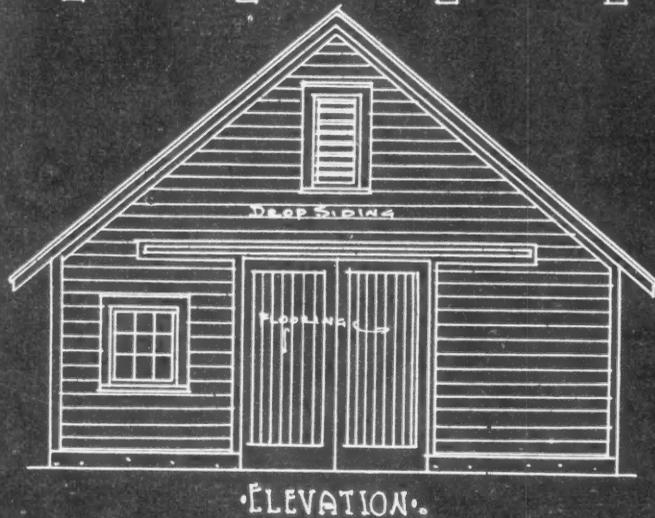
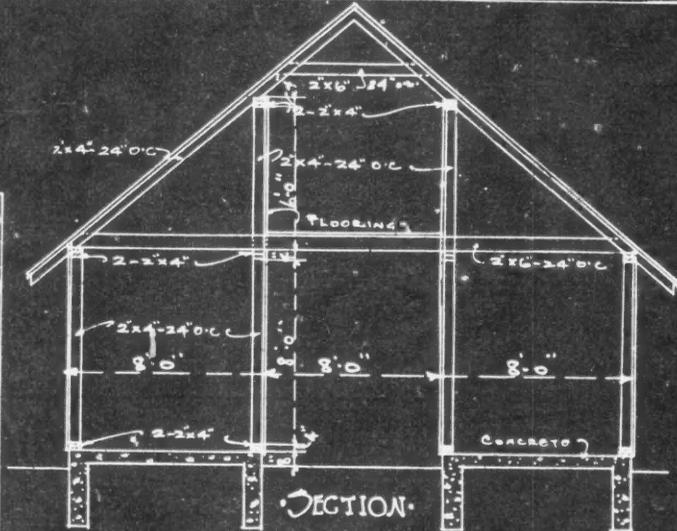
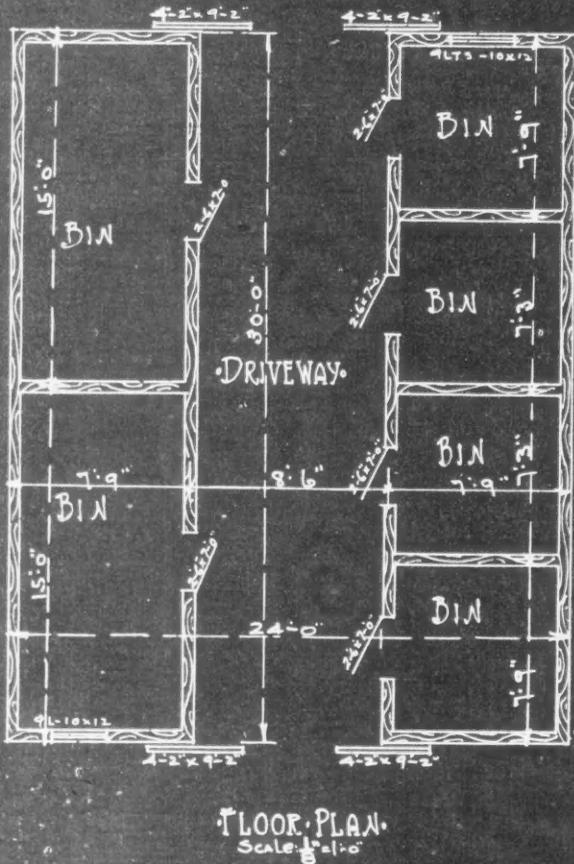
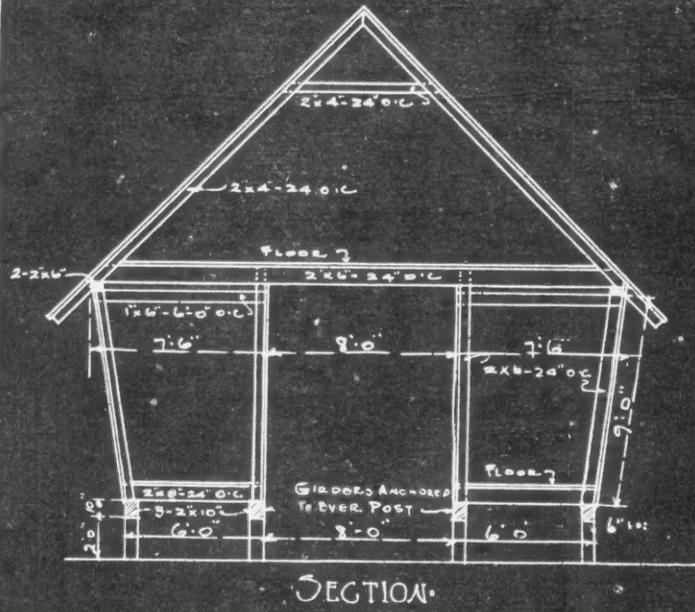
FLOOR PLAN

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

FIVE ROOM BUNGALOW

SHEET No. 2

AMERICAN BUILDER BUILDING PLANS



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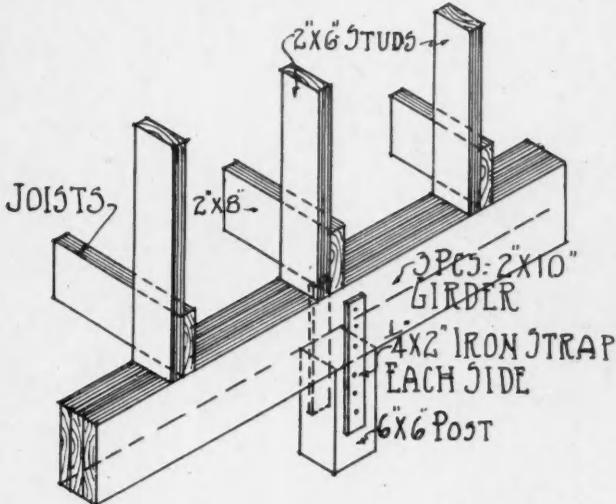
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elevator, which placed in the center of the building to one side of the driveway and equipped with a swivel spout carries the grain to all parts of the building without the necessity of scooping.

The Two Smaller Cribs

The two buildings shown on the second blue print

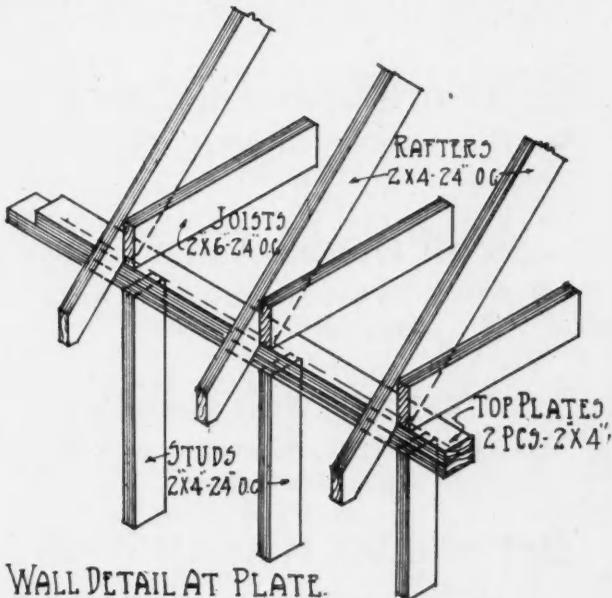


Method of Tying Girder or Sill to Posts in Small Corn Crib.

page are designed for the farm that does not require so much storage room. These, also, have a driveway thru the center. The one at the top has two cribs, each 6 by 26 feet. The building shown on the lower half of the page is a 6-bin granary, 4 bins on one side and two on the other.

These are types of modern cribs and granaries that will meet the requirements of almost any farm. The simplicity of the plans, the provision in the largest of the three buildings for modern machinery and the neat appearance of these buildings make the exceptionally good types for the builder to suggest to his clients.

The greater the ventilation of a corn crib the higher the corn will grade. Here are two cribs, one with a granary at the top, that provide perfect ventilation.



WALL DETAIL AT PLATE.

Proper Plate Construction for Six-Bin Granary.



Circular Corn Crib and Granary of Vitrified Clay Tile. The Tile for the Lower, or Crib, Section Have Pierced Holes for Ventilator.

They are of vitrified clay tile, laid with a slope downward and outward, making the crib water-proof, while three-fourths of the wall surface is open. These cribs are also fire-proof and rat-proof. The cone spreader is another good feature. The cost, it is asserted, is no more than for cribs of wooden construction.



Circular Corn Crib of Vitrified Clay Tile, the Tile Being Laid with a Slope Downward and Outward. Three-fourths of the Wall Surface Is Open, Providing Perfect Ventilation. The Cone Spreader Distributes the Day's Husking Evenly.



Blue Print Supplement Designs

High Corn Crib with Elevator

**See Third Blue Print Sheet Following
Page 58**

Small Double Corn Crib

**See Blue Print Sheet (upper half)
Opposite Page 63**

Granary with 6 Bins

**See Blue Print Sheet (lower half)
Opposite Page 63**

SAFE STORAGE FOR GRAIN CROPS

How to Build a Simple Boat

By W. D. Graves

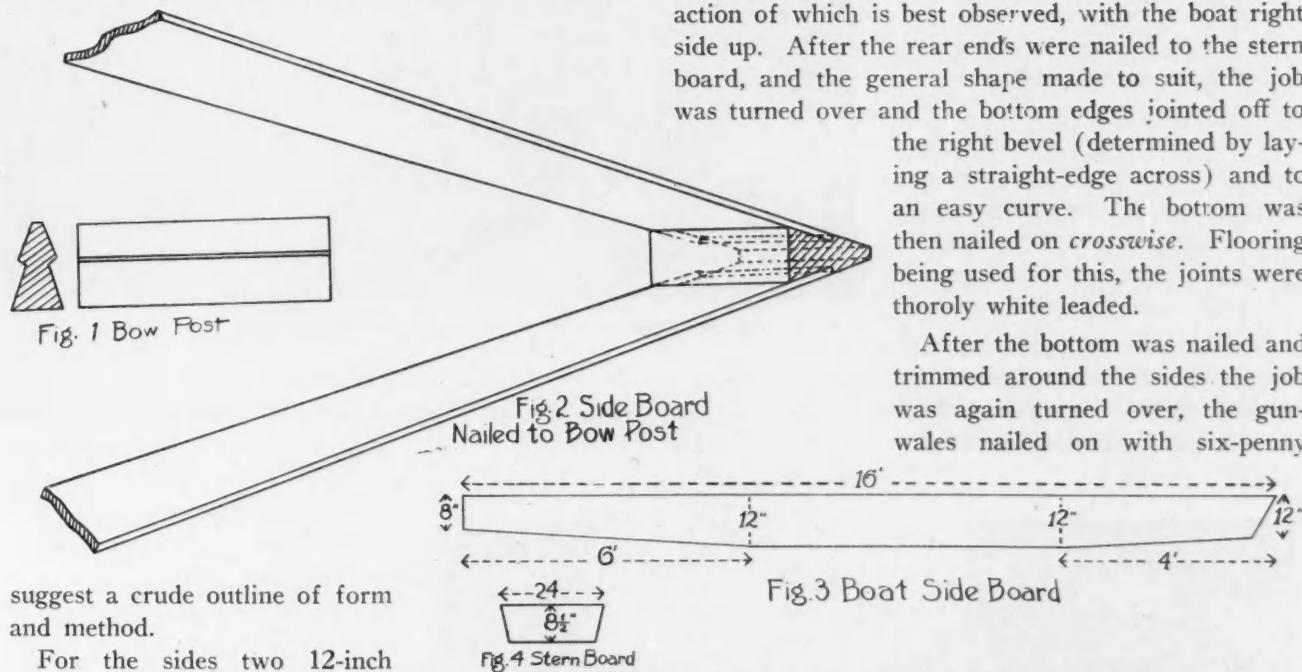
THIS is not written for boat builders, but is simply a plain carpenter's tale of how another plain carpenter built a plain boat. A boat at which maritime experts might smile, but which, being built for fun, accomplished more to that end than any box of monkeys that was ever nailed up. Incidentally, if this description is capable of affording the aforementioned maritime experts a tithe of the fun that the boat furnished the builder and his friends, they will do well to read it.

This boat had no particularly fine lines, and may not have borne much resemblance to a swan; but it has successfully borne up many a merry fishing party, thus accomplishing the end to which it was built, and is still good for many more. No attempt at accuracy of measurements will be herein undertaken, as half the zest of building such a thing for one's self lies in making it "out of one's own head." Also, the various minutae of form and construction need to be modified to suit different environments, so the writer attempts only to

boards were then shaped approximately as shown in Fig. 2 (which is drawn to a scale one-fourth as large as that of Fig. 1) and the front ends nailed to the stem as shown in Fig. 3. The joints were thoroly painted with thick white lead and a piece of lead-soaked wicking laid in. The free ends of the side boards were next drawn inward, temporary crosspieces being placed between them at such intervals as were required in order to give the required shape, and nailed to the stern board. This was of about the shape and size shown in Fig. 4. The widest point on top was made about one-third of the distance from the bow to the stern, being about 4 feet.

The amount of "sheer," or curvature of the bottom, which is required, depends on the nature of the waters where the boat is used, and on the preference of the user. This is determined mainly by the eye, and depends largely on the extent to which the sides are splayed. This amount is governed by means of the temporary crosspieces, which are best put in, and the action of which is best observed, with the boat right side up. After the rear ends were nailed to the stern board, and the general shape made to suit, the job was turned over and the bottom edges jointed off to the right level (determined by laying a straight-edge across) and to an easy curve. The bottom was then nailed on *crosswise*. Flooring being used for this, the joints were thoroly white leaded.

After the bottom was nailed and trimmed around the sides the job was again turned over, the gunwales nailed on with six-penny



Details That Will Help Carpenters in Building This Boat "Just for Fun."

suggest a crude outline of form and method.

For the sides two 12-inch boards, common thickness, were used; for the bottom, flooring or 6-inch unmatched boards; and for gunwales, two 2-inch clear strips. The stern and thwarts were made of "any old boards"; and these, with a chunk of hardwood for the stem, or bow post, constituted practically all the lumber used. There were no ribs or other framework. Common wire nails (ten-pennies for nailing on the bottom and six-pennies for the thwarts) a small can of white lead, and a couple of balls of candle wicking constituted the balance of the material.

The stem, or bow post, was gotten out first, about as shown in Fig. 1. This was made from a piece of oak, but any firm hardwood capable of firmly holding a lot of nails would doubtless do as well. The side

nails, clinched, and the thwarts and stern seat nailed in. A tight partition was put across under the front end of the stern seat and another near the front end; the space from the latter forward being decked over. These partitions were "tight" around the edges, as stated, but the initiated will understand that a hand hole, large enough to allow of the extraction of a small jug, preserve jar or similar vessel, was left near the top of each. After this was done the temporary braces were knocked out, the gunwales smoothed and rounded and the whole thoroly painted.

In the case observed, as stated, flooring was used for the bottom, and it was not caulked at all; unless

(Continued to page 170.)

Possibilities in Old Houses

HOW ARCHITECTS AND BUILDERS TRANSFORM OLD HOMES INTO MODERN DWELLINGS WITH LATH AND STUCCO—SOME TIMELY REMODELING IDEAS

NEW homes for old! That is the suggestion many architects and builders are making to the owners of houses that were built—substantially built—many years ago. They take a weather-beaten and otherwise decrepit house, one that has none of the modern comforts, and transform it into an up-to-date dwelling.

This method of building appeals to the owners of these old homes—appeals to them from both sentimental and economical viewpoints. They are “homes” in all that the word implies. Many of them have housed the same family for several generations. Here all the joys and sorrows in the lives of the members of this family have been felt. To part with the “old home” requires a decision that is difficult to make.

From an economic standpoint, the destruction of many of these houses is sheer waste of good material. They were built when the best of materials was far easier to obtain and cost less than those available today. Many are the houses whose joists and sills were hand hewn more than a half-century ago, but are solid and as free from rot as they were when they were put in place.

The outside, however, has been neglected. Lack of painting has given the siding a weather-beaten appearance; boards have split and pulled away. But the heart of the structure, the frame-

work, is there waiting for the adroit builder to use the materials that science has produced to transform it into a modern home, with modern conveniences—the type of home the modern family wants. This applies to both wooden and brick houses.

The Transformation of a Brick House

In 1841 there was erected on the Michigan road, near Pleasant View, Ind., a brick house. It was built of clay brick and in its day was one of the finest in



Old Residence of C. E. Larrison, Before Stucco Finish Was Applied.



Remodeled Residence of C. E. Larrison, Overcoated with Waterproofed White Cement. C. E. Bates, Architect.

that section of the Hoosier state. But building development during the last 77 years took away its fineness and left it merely a monument to the builders of that day. For many years it was the home of the owners of a 300-acre farm that, thru increase in value, has become an estate.

It was owned in 1918 by C. A. Larrison. Mr. Larrison is progressive. He did not want to part with the old home; neither did he want to waste the materials in the house. But he did want a modern home, with modern comforts.

So, he consulted C. E. Bates, an Indianapolis architect. Mr. Bates inspected the house. He found that the joists were hewn and split; that the rafters were cut out of poles. He also discovered that the plaster that was put on the inside walls when the house was built was intact.

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The answer was to use this brick house as it stood; add to it a bath room and the additional bed rooms the family needed; put on porches that would take away the ugly, square appearance and provide comfortable

page. The views show the house as it looked originally, during the course of construction and when completed.

This old house was well built. But it had been allowed to fall into decay. It also was not a particularly beautiful addition to the landscape along this country road. Its owner consulted a builder, who followed much the same plan as did Mr. Bates with the brick house. The builder found that the structure was sound and decided to "overcoat" it with stucco and make a few additions to change its ugliness into beauty. The "overcoating" was done with metal lath and stucco. Shown completed it is hard to realize that the house in the top picture is the one shown in the illustration directly underneath it.

The two photos below show a frame house, built only 15 or 20 years ago. Its owner tired of it and wanted it trans-

formed into a stucco house. Here also metal lath was used as a basis for the stucco.

There are many old wood and brick houses that present to architects and builders opportunities for transformation into modern homes, if the frame-work is still sound. A new exterior of lath and stucco will save them. If the materials are well handled and the opportunities for artistic designs are not overlooked, the reconstructed houses will be better than the original ones.

With new lumber at the price it is today it is criminal to let any serviceable old building go to waste. The new appearance and the modern appointments are easily added.



A Decaying Frame House Restored to Beauty and Long Life by the Combination of Good Design, Stucco and Metal Lath.

formed into a stucco house. Here also metal lath was used as a basis for the stucco.

How well Mr. Bates succeeded is shown in the accompanying illustrations. One view is of the old house before it was remodeled; the other is of the house as it looks today remodeled and beautified.

To the old home, in addition to the bath room and two bed rooms, a rear porch extending the full width of the house and a front porch with a sleeping room above were built. Two coats of gray portland cement stucco, of a 1 to 2½ mixture were applied to the brick. The finish was of waterproof white cement, with ½-inch limestone screenings and dust and 10 per cent hydrated lime. A patented stucco board was used as a base for the cement plaster on the additions to the house.

The contractors were Larrison & Wild, of Indianapolis, and the plastering contractor was J. A. Carr, also of Indianapolis. The cost of remodeling was \$10,000.

Overcoating An Old Wooden House

Three periods in the life of an old wooden house are illustrated in the group of photographs at the top of this



View of Old Frame Residence Before Overcoating.



The Same House Improved with Metal Lath and Stucco Exterior Put on Over the Old Boards.



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New Swivel Spout for Grain Elevator

Lightening the work on the farm is constantly engaging the attention of the men who design the machinery that is installed in the modern farm buildings. Regularly there appears some new device to accomplish this purpose or an improvement on those already in service.

The swivel spout on the head section of bucket grain elevators is not new. But many of them are limited in the area they cover. Here with is illustrated a new type of swivel spout. It is so joined to the head that it not only swings from side to side, delivering the grain in front and on either side of the carrier, but to the rear of it. This is designed to do away with the necessity of scooping the grain back, thus eliminating much hand labor.

The illustration shows the spout pointed to the back of the elevator. The dotted lines illustrate the range of the spout. It is constructed of 22-gauge steel, has well-ironed corners and is reinforced.

Little Scooping is Required With This Spout Attached to Elevator, as it Has a Wide Swing.

of it. This is designed to do away with the necessity of scooping the grain back, thus eliminating much hand labor.

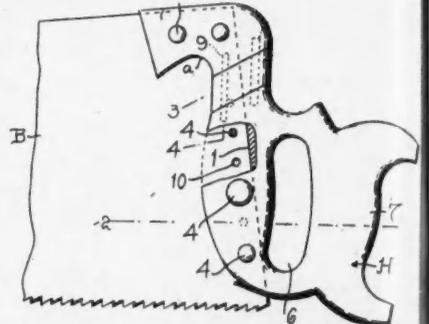
The illustration shows the spout pointed to the back of the elevator. The dotted lines illustrate the range of the spout. It is constructed of 22-gauge steel, has well-ironed corners and is reinforced.

Double-Handle, Double-Purpose Saw

Two years ago a saw manufacturer's attention was challenged by the fact that many of these tools came back to his factory for repairs, the blades of which had lost an inch or so thru filing. As was natural, an attempt was made to provide the owners with new saws. Nothing doing! The owners would not part with the old saws for twice the original cost. So, that manufacturer began to investigate the reason. Tests were made in an effort to discover why a saw with teeth an inch nearer the handle would cut better than a new saw. Experiments led to the designing of the saw shown in the accompanying illustration.

It will be noticed from the illustration that the handle is

placed much nearer to the teeth than is usual. It was discovered that a saw of this type, with hooked teeth, would not jump or stick. Also, it was found that with the handle in this position an extra grip for the left hand could be added. While the teeth are of the ripping type, they are bevel filed, which makes the saw efficient for both ripping and cross-cutting.

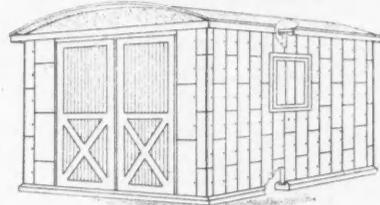


Detail of New Saw Handle. Position Makes It Speedy, Allows for Grip for Other Hand.

The great cutting quality of this type of saw was demonstrated time and again by the manufacturer. The tests were made on red gum boards, 1 by 6, which were cut with five and one-half strokes. This, with a 12-point saw, is claimed to be about the speed of the ordinary 7-point saw.

A Low-Priced Fire-Proof Garage

A fireproof garage that is low priced appeals to the average automobile owner when he consults a builder regarding the construction of such a building. Illustrated here is such a garage. It is 12 by 18 feet and is constructed of concrete lumber. The walls of this building, it is claimed, can be assembled in a day by two men.



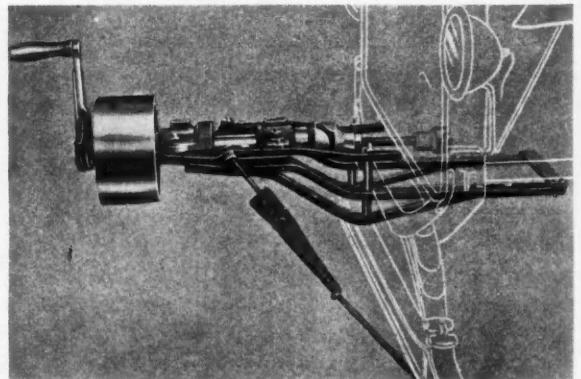
Garage of Concrete Lumber That Two Men Can Erect in a Day

The work consists of setting up the staves and bolting them together, the bolts passing thru the eyes of the reinforcements that are imbedded in the staves, thus linking them together. This makes a continuous reinforcement around the building every 16 inches of its height.

The concrete staves, corners and shoe footing are molded in forms and are constructed in full and half lengths. The full dimensions of the staves are 3 by 16 by 32 inches. All of the materials are poured in steel molds, which are set up in series and clamped. The reinforcements then are placed. The pins that are used to form the bolt holes lock the reinforcements together.

Transform a Ford Into Power Plant

If you could unmount the engine in your Ford automobile after you had reached the job and attach it to that concrete mixer, saw rig, or use it to operate the hoist, it would be a great convenience, wouldn't it?



Auto Belt Power Attachment That Turns a Ford Into a Power Plant on the Job.

That believe investn could that an As v tachment crank use. there p be right is read insert the clu starter From operat from The can be is off where And that it The by eve Tha the ba now c Here the a "yearl so as Remo abla of th bar a Th in oi to be forty A kegs hard on th mati It is hand

That same thought has occurred to a man who evidently believes that a Ford at rest is not earning interest on the investment. So he set about designing an attachment that could be easily put on, quickly taken off and do the things that are necessary to do on a building job.

As will be seen by the accompanying illustration, this attachment is joined directly to the crank shaft where the crank used to be before the self-starters came into general use. Self-starter, or no self-starter, the place to crank is there just the same. The framework is put on so that it will be rigid, but it does not take up much room. When the job is reached and power is wanted, all that is necessary is to insert the shaft that clutches the shaft of the engine, put the clutch in neutral and start the engine. If there is no self-starter on the car, a crank is provided to do the starting. From the wheel the belt is attached to whatever rig is to be operated and a gas engine is at work. With this attachment from 1 to 8 horsepower is developed.

The attachment is made of the best quality material and can be removed in less than a minute. When the attachment is off all that is left on the car is the stub shaft, inserted where the crank was originally.

And what is an interesting feature of this attachment is that it costs little more than a tire for a Ford machine.

The advantage of this equipment will at once be realized by every builder who owns a Ford.



An Adjustable Stanchion

That the stanchion is the best method of fastening cattle in the barn is recognized. A number of types of stanchions are now on the market, some being of wood and some of iron. Here is a pictured one of the former material that has the advantage of being adjustable. With it is supplied a "yearling bar," by which the neck space may be narrowed, so as to hold a smaller animal.



Removable Stanchion Bar Makes This Adjustable to Neck of Young or Mature Animal.

Because of the construction of the stanchion, this adjustment is easily made. The bottom of the loose bar is not bolted to the foot block, but rests in a socket on a pivoted shoulder. It is, therefore, easily removed by unlocking it and allowing it to drop back, and then lifting it out

of the socket. The "yearling bar" is used to replace the loose bar and, because of its width, will hold a younger animal.

This stanchion and frame are made of hard wood dipped in oil, and are supplied to the builder knocked down, ready to be put together. Two men, it is claimed, can put up forty of them in a day.



To Make Handling Kegs Easy

A device that will lighten the work of the man who handles kegs of nails, screws, bolts, etc., in the warehouses of the hardware and building supply dealers has recently been placed on the market. This keg conveyor is said to be almost automatic in its action, when in the hands of an experienced man. It is a small truck, much like the truck that has been used in handling barrels and boxes for many years, with the excep-

tion that it has a loop near the top that goes over the keg, while at the bottom are spurs to hold the load firmly in place.

As is shown in the accompanying illustration, the operator



Handy Truck to Transport Kegs About the Wareroom and Store. Speed and Ease Are Features.

approaches the keg with the loop up against the handle and by a swift movement throws it over the keg, brings the handle down and is ready to start. Different sizes of kegs may be handled with this conveyor. The truck is light, yet strong and durable and is built to withstand all the abuse a truck of this character is bound to receive.

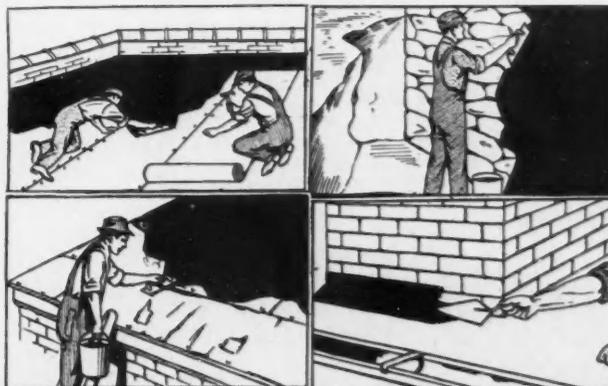
The use of the conveyor undoubtedly will become general, as it will lighten the work of handling kegs and save much time.



A Liquid, Efficient Roof Covering

The original slacker was the man who "couldn't repair the roof when it rained and when it was dry the roof didn't need it," so the work never was done. However, the first part of the excuse would not be valid now as there is a liquid that can be applied to a roof whether it be dry or wet that will stick, and what's more do the work of making it tight.

This liquid is a combination of non-volatile asphaltic oils, interwoven with long asbestos fibre. Asphalt has been regarded as nature's best water-proofing material and asbestos as an indestructible mineral. By combining



Asbestos and Asphalt Liquid Has Many Uses on Roofs and as Waterproofing.

the two materials there is produced a roof covering that is impervious to weather, is fire-proof and possesses exceptional adhesiveness and elasticity.

For recovering roofs of every description, tin, wood, composition, or concrete, this liquid, it has been demonstrated, is wonderfully efficient. Surfaces so covered are said to be practically indestructible, as they are immune from rust, decay and disintegration. It is easy to apply, being spread to a thickness of 1/32 of an inch. One gallon will cover approximately 75 square feet. It is also used successfully for water-proofing foundations and basements.

The accompanying illustration was made from a sketch showing the liquid being applied to roofs of various materials. It is put on with a common three-knot roof paint brush without mixing, thinning or heating and is guaranteed to keep the roof tight for ten years.



War Building Proves Worth of New Insulation Wall Board

The building activities of the government and of the industries engaged in war work brought into prominence during the last two years a new insulating and building board. It is a wood fibre by-product of paper pulp manufacture and has been successfully used for both inside and outside walls in the construction of army camp quarters and hospitals, private houses, garages, ice houses and many other types of buildings.

The material comes in the form of boards or sheets about one-half inch in thickness. It is light brown in color and has a surface texture like canvas. Tho it has such elasticity that it can be temporarily compressed between the thumb and fingers, it is strong enough to bear the weight of a man when it is supported between 16-inch centers, as was shown on the roof of a building at Camp Meigs.

Government tests also showed that it has a natural affinity for plaster, owing to its burlap-like surface; is both heat

and cold resistant and is not only nearly waterproof, but absorbs water very slowly when completely submerged. It is made from long selected wood fibres, waterproofed, felted into light but strong sheets containing 90 per cent by volume of minute, hermetically sealed air cells.

This technical description of the material was furnished by Dr. Charles E. Munroe, professor of chemistry at the George Washington University, and now consulting expert of the U. S. Bureau of Mines.

The accompanying illustration shows a workman plastering over this material, while the inset is a reproduction of a photograph of the material itself. The board is first nailed to the studding and joists, where it does the double duty by insulating the walls and ceiling and of providing a plaster board. Tests showed that the bond between plaster and the material developed an ultimate strength of over 200 pounds per square foot, or 57 times the weight of plaster. More than 800 homes in the Northwest, where, because of the extreme cold weather, wall insulation is most necessary, have proved this material a practical success. There also is the saving of plaster over its use on laths of 25 per cent.

As a base for magnesite stucco this board also has been successful. One notable building of this construction is the Dr. H. Longstreet Taylor Sanitarium at Pokegama Lake, Minn. As this is a sanitarium for tubercular patients damp-proof and coldproof construction was necessary.

For ice house insulation this material has been used in several ways. One method was its use in a wall of four sections, with air spaces between; another was by the use of the material as lining for both outside and inside walls, with a fill between of mill shavings, while in a third it was used as a lining of the inside wall.

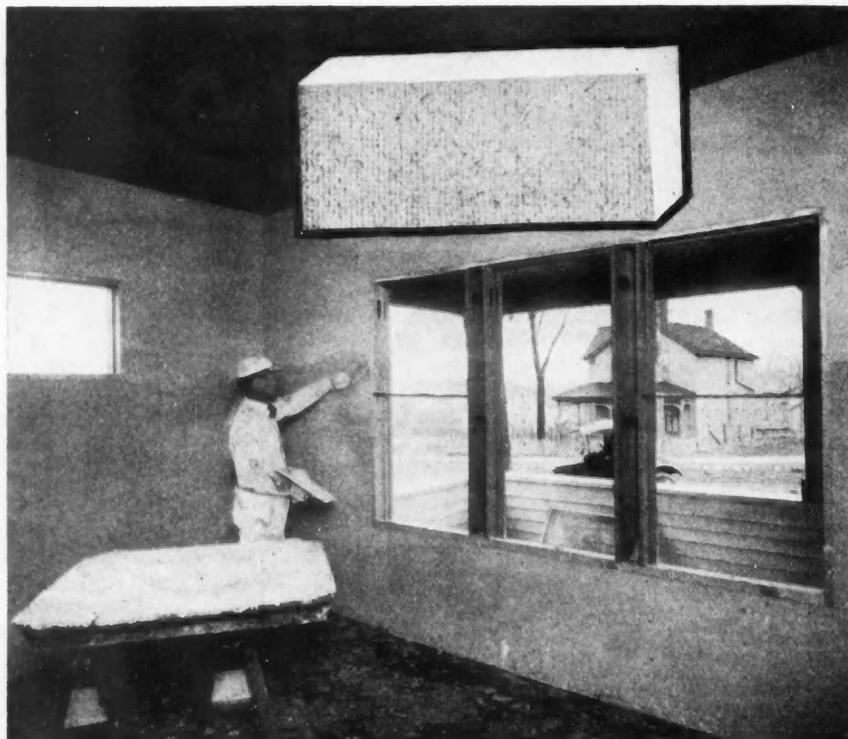
What has appealed to architects and interior decorators, however, is the fact that this board has a surface that can be painted with oils after it has been sized as is the canvas artists use.

While this insulating and wall board has not been exploited for general use in the building industry, its success during the last two years gives promise that it soon will be.



Self-Feeder for Hogs Pays

The Jefferson County (Indiana) farm bureau, thru the county agent, has just completed a profitable self-feeder demonstration for hogs. Ten pigs from one litter were fed skimmed milk and allowed to eat at will from a self-feeder containing bran, shipstuff, and hominy meal. The pigs were farrowed March 1 and sold on October 22. They made an average daily gain, from date of birth, of 0.93 pound. The total cost of feed was \$200. The weight of the hogs at selling time was 2,160 pounds, or an average of 216 pounds each. The farmer received \$18.50 a hundred, \$399.60 for the lot, making a net profit of \$199.60, or \$19.96 per head.



Plastering Over New Insulating Material. Inset Shows Section of It.

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

How to Dress a Scrapper

To the Editor: Columbus, Wis.
I see in the December issue that John De Vries would like to know how to sharpen scrapper blades so as to take old varnish.

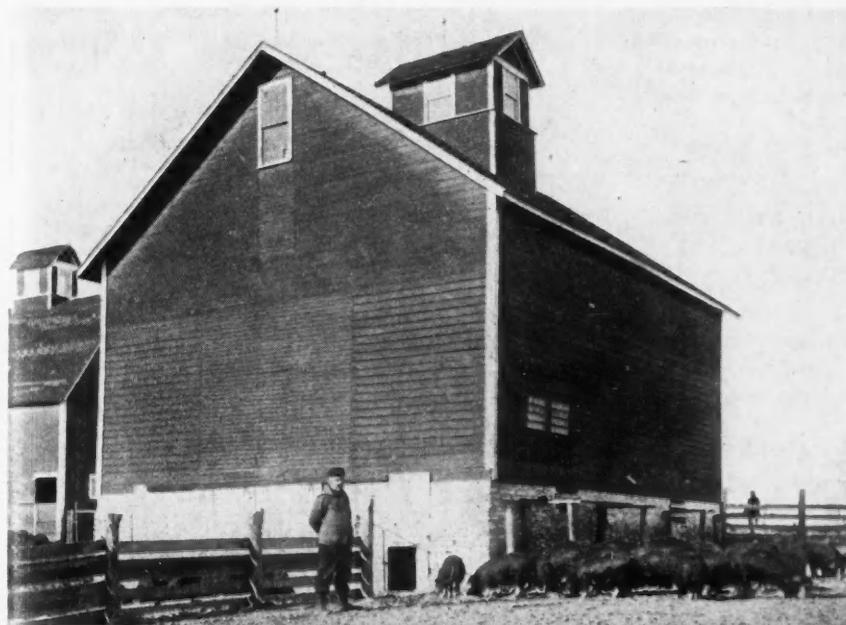
I sharpen the blade with a flat file in a saw clamp to a good edge, and finish it with a fine oil stone. Then I turn the edge with turning steel or a nail set, starting on an angle of 45 degrees a few strokes, and a little less every time, up to about 10 degrees; but on varnished floors the best results are obtained by soaking with warm water and a can of eagle lye. I soak a place about six feet wide and the length of the room and scrape on an angle, and then finish with the length of floor.

I hope this will be of some good to you.

A. J. STARK.

High Crib with Stable Underneath

To the Editor: Pontiac, Ill.
The crib with the high foundation and with the drove of hogs in the foreground is located on the farm of J. B. Scott, near Pontiac, Ill. This crib is 40 feet long, 32 feet wide and 18 feet high from the foundation to the eaves. It has a 12-foot driveway, and the cribs are 10 feet in width. Bins for holding small grain are built over the driveway. This crib has a capacity of 5,000 bushels of ear corn and over 3,000 bushels of small grain. It is equipped with inside cup elevator with driveway jack and horsepower.



J. B. Scott's High Crib and Stable, Near Pontiac, Ill.

This crib also has a basement which is divided so as to allow one-half to serve as a hog house, and the other half as a cow barn. An arrangement of this kind makes an unusually warm place for the stock in the winter. A picture of this kind is surely an example of real thrift.

MEADOWS MFG. CO.,
E. J. Agnew, Adv. Mgr.

Wants Drop Nest for Hens

To the Editor: Medford, Wis.
Can you send me a diagram for a drop nest for chickens? I am experimenting in poultry raising and think a drop nest for selecting the eggs from the best chickens would help much to raise good layers. I never saw one and would like to make a few for my own flock.

MR. O. GRIESSER, SR.

Edging the Scrapper

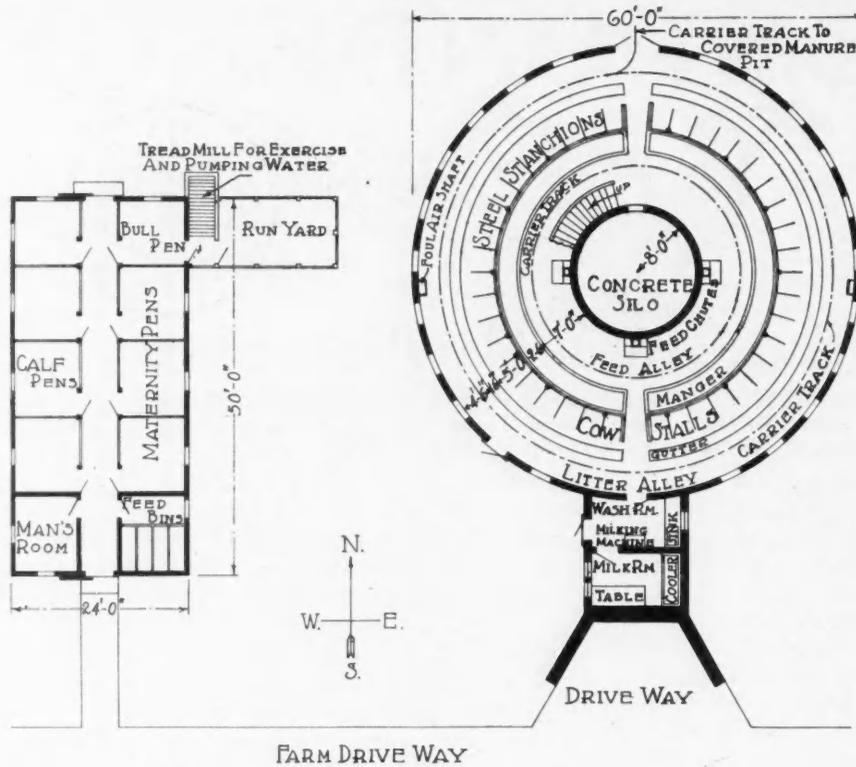
To the Editor: La Fargeville, N. Y.
To Mr. De Vries and others who wish to sharpen a scrapper: First remove any burr or turned over edge and then file square across. To turn the edge, put in a vise and use a burnishing iron or the shaft of a chisel or bit. You can see and feel the turned-over edge when you get it right. I am pleased that H. M. Render enjoys my writings and hope there are others who are being interested and helped as well, but I did not mean to imitate Walt Mason by starting out with 45 degrees in the December issue, then changing to 45 per cent and later to 45 inches, but intended to stick to the 45 degree line. If anyone has problems or questions, send them in and give us all a chance at them.

I was laid off at the ship yard and have worked four weeks on a large combination dairy, horse, and stock barn, to replace one which was burned. The main part is 40x110 feet, the stable 39x90, with a very handy floor plan. I hope to send a photo and will send a plan and description and some new ideas learned in the work.

The barn was destroyed by lightning last August, but there was a scarcity of labor and trouble in getting material, some sickness and the head man died, so the work has been delayed, but it is practically finished now.

There will not be much new work started here till spring, in fact, the 300 houses that were to be built at Watertown has been cut to 100, but we are all looking for a busy time next spring.

JOHN UPTON.



FLOOR PLANS OF RECTANGULAR AND ROUND DAIRY BARN

Favors Round Barn, Rectangular Barn Group

To the Editor: Lafayette, Ind.
 On pages 79 to 81 of your book, "How to Read Plans," you illustrate a round barn. I think that it is an ideal method for a dairy barn, and wonder if we will see more of it in future numbers of the AMERICAN BUILDER, showing one with a monolithic concrete silo and feed bins arranged around the silo, with a milking machine installed in the milk room and a rectangular building built near the circular barn to house the calf, maternity, and bull pens. This would be my idea of a dandy dairy unit, as in that way feeding, watering, cleaning and milking could be done with a minimum of labor and piping.

I also think that the silage is least likely to freeze when enclosed by the barn in this manner, thereby eliminating the one fault in a monolithic silo. And I think that more round barns built would mean less big rectangular barns flattened out by heavy winds. I am enclosing a rough sketch to illustrate what I mean.

WALTER C. OBERBECK.

Urges Study of Estimating and Cost Keeping

To the Editor: Chicago, Ill.
 The writer's attention has been called to an article appearing in the January issue of the AMERICAN BUILDER on "Records and System of Filing," by Walter Engard. This matter was called to my attention by one of your readers who is desirous of installing a new system.

From what I can make out of the system described, it is patterned after a double entry system of bookkeeping, except that the records are kept on cards, but it is much more incomplete than a plain bookkeeping system would be—and not any more easily kept.

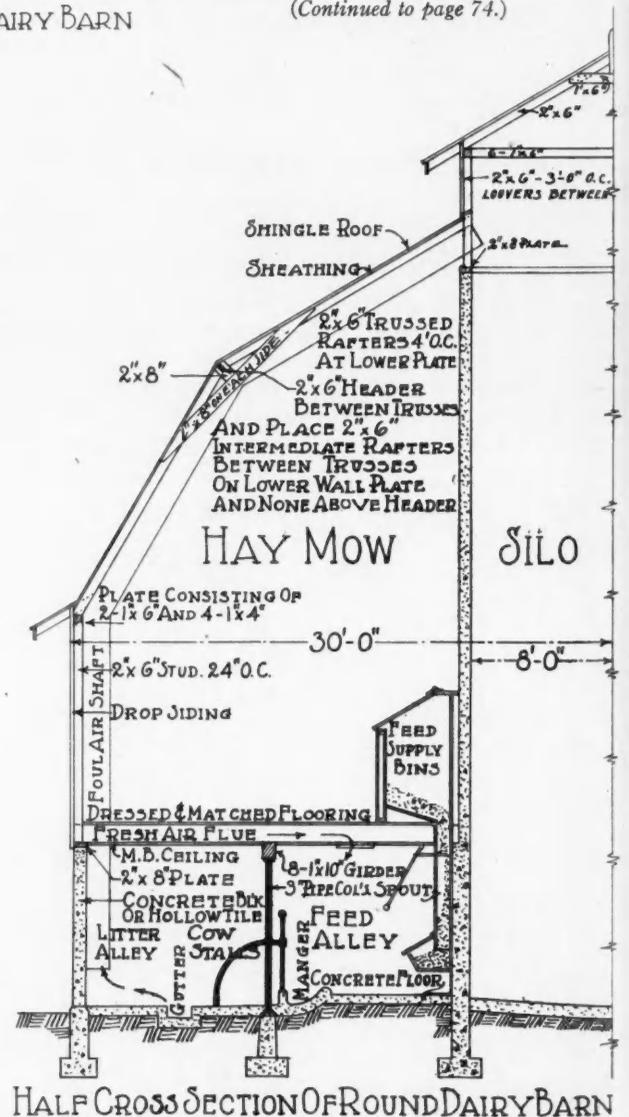
The cards are all right as long as all entries are made correctly, but in case of an error in writing any figures there

is no way of checking the accounts to see whether or not they balance. The contractor must remember where he made the mistake. It is impossible to take off a trial balance of the business to see whether or not it is on a profitable or losing basis, but seems to be more of an attempt at a combination bookkeeping and cost keeping system.

Bookkeeping and cost keeping are absolutely foreign to one another—and when one attempts to combine the two, the result is an incomplete record of either. Bookkeeping is a general record of the business and accounting or cost keeping is an analysis of the ledger accounts, showing just where the money was spent, revealing mistakes in estimating—and should prevent future mistakes of a similar nature.

After the war conditions in the building business are going to force all contractors—from the smallest to the largest—to put their business on a business basis, because government tax reports must be made out showing the profits made on the business, and half-way methods will not suffice.

(Continued to page 74.)



HALF CROSS SECTION OF ROUND DAIRY BARN



Stanley Garage Door Holder No. 1774

ON the garage you build this safety-first device should always be included. It prevents damage to car or occupant.

The steel arm works automatically and locks the door securely open no matter how hard the wind is blowing.

This Holder is only one item of the extensive line of Stanley Garage Hardware which includes

Hinges, Bolts, Latches and Pulls, all built especially for garage use.

Leading hardware dealers everywhere carry Stanley Garage Hardware.

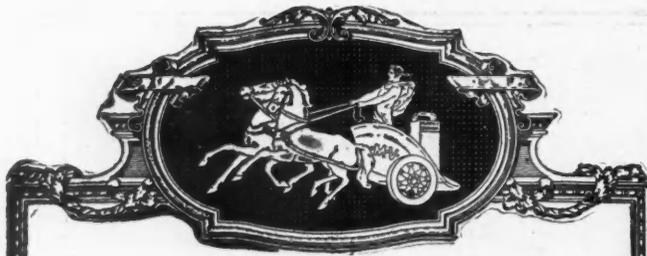
If you haven't a copy of our book on Stanley Garage Hardware, we should be very glad to send you one on request

THE STANLEY WORKS, New Britain, Conn., U. S. A.

NEW YORK
100 Lafayette Street

CHICAGO
73 East Lake Street

(TRAILER)



An Economical Large Job Varnish

These days of conservation demand a varnish which preserves—which makes things last and last—which saves labor and initial expense.

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"the varnish that lasts longest"

has just these qualities. That is why it is used by great manufacturing concerns, railways and shipbuilders—why it is ordered by purchasing agents who *know*.

Why not preserve your work with this *longest-lasting* and economical varnish.

Murphy Varnish Company

Franklin Murphy, jr., President

Newark

Chicago

The Dougall Varnish Company, Ltd., Montreal, Canadian Associate

ANA

Correspondence Department

(Continued from page 72.)

It is just as easy and just as simple to do a thing right as any other way, but it seems that more damage has been done to the contractors throught the country by articles published in builders' magazines and trade journals, that have been absolutely misleading and putting the contractor on the wrong track when the result should have been directly opposite.

There is nothing that is more important to the average contractor than correct methods of estimating, keeping accounts and costs on the work performed, for these items are the very life blood of the entire business, for no matter how good a mechanic a man might be or how well he knows how the work should be performed—if he does not know how to estimate it correctly and know what it actually costs him—his business is in a poor way to succeed.

The magazines and trade journals could not do a greater service to the contractor than help educate them—IN THE RIGHT MANNER—on these very important subjects.

FRANK R. WALKER.



How to Remove Varnish

To the Editor:

Indianapolis, Ind.

I have been doing bench work in electrical machine shops, magneto and home lighting plants for more than three years.

I noticed in my December issue of the AMERICAN BUILDER that John De Vries asks how to sharpen a scraper to remove old varnish. I wish to say that I formerly worked in city and interurban car shops, and have had much experience in removing varnish. We would go to the machine shop department, get a broken retriever spring, and with a smooth file bevel the end, leaving the middle higher than the corners (do not whet); then turn edge the same as the Stanley scraper. A little liquid remover will aid, as it softens the varnish and the edge will last much longer. This beats any scraper I have ever tried.

I am planning to go back to my old trade at carpenter work again in the spring, as I am a stranger here in this city as a carpenter, and as the war has ruined my pocketbook I am trying to plan a way to break in that will be successful. Do you think I can do it?

The blue prints fastened in magazine are O. K.

JOSIAH DUNN.



A Good Feed Rack and Other Good Ideas

To the Editor:

Edina, Mo.

I am sending you pictures of a portable rack which I got up several years ago, which I believe would interest every farmer who has to feed twenty to twenty-five dollar hay and also help out some of the "chaps" who would like to "annex" some of his coin.

There are no dimensions marked as the photos were taken from a model. It will suffice to say that the rack is 6 feet wide and 14 to 16 feet long, and will hold more than a ton of hay.

The writer put his wits to working to keep from hitching up a team every day when the mercury was hovering around zero and the idea was to set the sections around a rick of hay out in the field to save hauling and to keep the manure where it belonged. All farmers in the corn belt pasture their stalks and by having racks around the ricks they could be filled with hay and supplement the stalk field when it began to get bare.

The portable feature also is desirable; when the mud gets deep in one place the rack can be easily moved to another.

I noted the rack in the December number and have to find fault with it in that there is no manger to catch the hay

(Continued to page 76.)

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

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.

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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.

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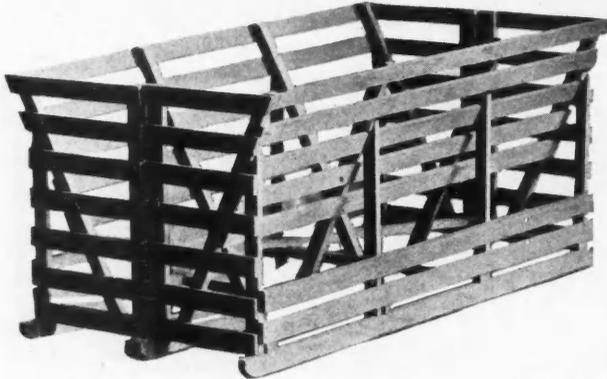
(Continued from page 74.)

that is pulled out thru the slats, and that it has the same fault that my first attempt at rack building had. It is too wide and the stock cannot reach the hay. As a result it will pack in the center and have to be pitched out against the sides before it can be reached.

My first attempt was a rack with straight sides 6 feet wide and a manger on each side about 20 inches wide. About the time I had finished an uncle came along and did not pass the time of day until he said, "Boy! boy! your rack is too wide, the hay will pack in the center and you will have



This Hay Rack Is Made in Two Sections—More Easily Moveable.



Hay Rack Ready for Use. No Hay Wasted with This Rack.

to be continually pitching out to the sides." Of course, being a youngster at the time, it dampened my enthusiasm,

but he had handled cattle by the hundreds and I found out that experience had taught him a lesson also. And then the hopper idea was tried out with success as the stock eat mostly from underneath and waste very little.

A farmer recently saw this model and he went home and put a manger outside a feed rack that was boarded vertically and he said it was a money-maker.

I am glad to see the page of handy items in the paper and would like to see some details of wood mangers, feed boxes and stalls for the many barn plans that have been shown the past year, also hay chutes and other appliances for getting hay out of the loft. With the present-day appliances it is easy enough to make the horses do the hard work, but with a big mow full of hay it must be a hard job to get it down, and if some of the good friends of the paper will give us their experience it will be helpful to both the farmer who is putting

(Continued to page 78.)

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So, the lesson of a fire—the scare circle—sells more Johns-Manville Asbestos Roofing than any other agency or factor.

To the roofer in the community it is a strong object lesson of how people, once awakened to a threatened danger, take steps to guard against it.

In almost every city and town there are essential factories and buildings where loss by fire would result in serious handicap to civic programs. Some of these plants are having additions built;

perhaps close by workmen's houses are being erected.

Probably a dozen or more roofers will be after each of these jobs. It is some roofer's opportunity to make himself stand out "head and shoulders" above the others by talking roofing that not only keeps water out but also resists fire and gives maximum long-time service.

This roofer can prove that a roofing made from coal tar or asphalt compound is far inferior to one made of mineral asbestos with just enough Trinidad Lake and other natural asphalts to act as a binder. He can demonstrate that while "rubber type" roofings may look like and smell like Johns-Manville Asbestos Roofing, they do not and will not give the same protection and service.

It is a real business-getting opportunity and wise building for the future, because the satisfaction given and reputation made by each Johns-Manville Asbestos Roof reacts to the credit and prestige of the roofer who sold it.

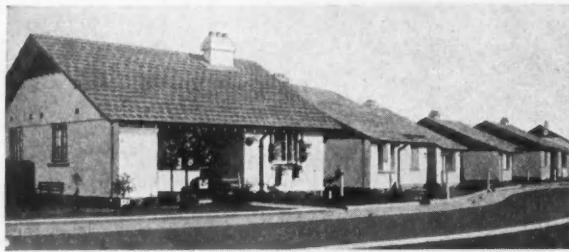
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If interested in any industrial housing operation, give us an outline of what is proposed so that we can send our detailed suggestions.

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(FORMERLY TRUSSED CONCRETE STEEL CO.)
YOUNGSTOWN, OHIO.
WAREHOUSES AND REPRESENTATIVES IN PRINCIPAL CITIES



Correspondence Department

(Continued from page 76.)

his good money into the building and bring home the bacon to his friend and builder.

I am calling this to the attention of the readers, as I note very few details of barn planning and most of the designs are got up for fixtures made in factories by the firms making a specialty of this line of work, and I am of the opinion that the average farmer does not want to pay the price and the next best thing to do is furnish him with the best there is in design built of lumber; and if those who consider themselves specialists along this line will contribute their experience not only along this line but in all others in which builders are interested there would be fewer eyesores in the country, much good material saved, lost motion reduced to a minimum, and last, but not least, a more interesting "Builder."

Greater efficiency is the "watchword" of the day and the trade press is much the best way to spread the good things that are continually coming to light, books in some instances are helpful, but there is so much repetition in most of them by the different authors that they fail grievously compared with the trade press and it is with this view of the subject that I believe all who can should contribute for the common good.

J. J. HONAN.



Would Bend the Flues Back at Right Angles

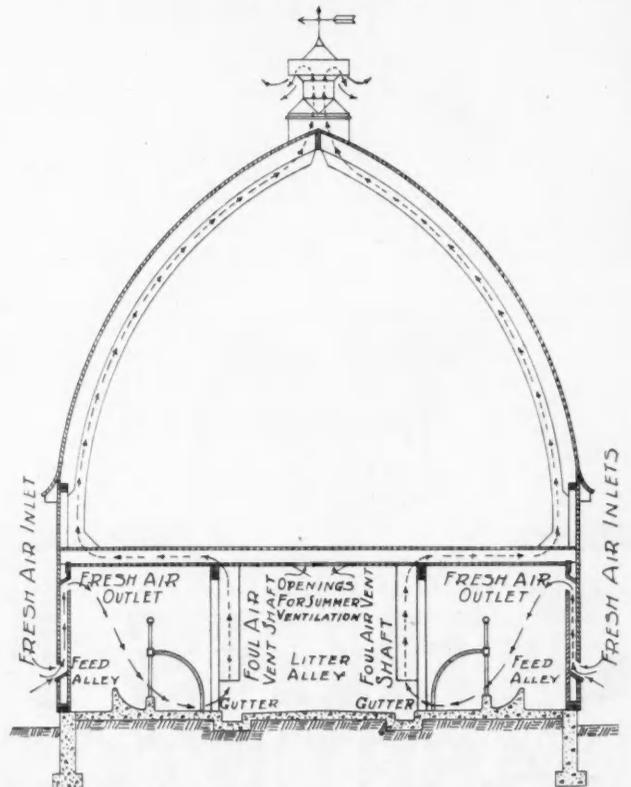
To the Editor:

Derby, Conn.

Gentlemen: I just bought your last December issue and appreciate very much the picture of the barn creator in dire distress before his finished (or unfinished) creation, looking for some inspiring spirit to put the wisdom of ages into him, so he might put the finishing touches of the mysteries of the ventilation brotherhood on it, to make it a credit to men and gods.

Well, without being conceited, I decided that I might be

(Continued to page 80.)



Method Suggested for Keeping the Foul Air Flues Out of the Center of the Hay Mow; Cows Facing Out.



For Complete Plans of This Barn, See Blue Print Supplement in This Issue

HEADQUARTERS FOR BARN HARDWARE

FOR this fine barn or any other farm building improvements our complete line of Hardware offers the most up-to-date conveniences and embodies all the small improvements that mean so much to Builders and their customers. You will find each item even to the smallest to be the best of its particular kind. We especially recommend to Builders our—

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OUR ENGINEERING SERVICE IS AT YOUR DISPOSAL WHENEVER DESIRED

(Continued from page 78.)

that Solomon he was looking for.

The accompanying sketch shows how with a slight change of your illustration he can make a ventilation system that will fill the owner's and his own heart with delight, for it is just as efficient as the system you show with animals facing inwards, and if you follow the flow of the air you will see that the way air has to travel is not any longer than in the standard arrangement.

As a further advantage a summer ventilating opening can easily be put in the center of the ceiling.

Glad to help a brother struggling mason out.

PAUL C. H. SMITH.

Note: This same solution of this ventilating problem has also been sent in by several other readers, also, to whom credit is acknowledged.—EDITOR.



Wants to Build Motordrome

To the Editor:

San Francisco, Calif.

Would ask if you can furnish information as to building an eight-lap motor-pace bicycle race track. Would like to know the highest and lowest angles of the track, and the distance in which the rise is made from the lowest to the highest angle at the four points. Also the width of track necessary.

L. S. PRINCE.



Building the December House

To the Editor:

La Fargeville, N. Y.

Suppose you were to build the house shown in the December issue blue print. Look at the basement plan; it is a little complicated, but not too much so, and by adding the figures given we find that it may all be inclosed in a rectangle 24x48

feet, and I think this is the best way to lay it out, and then cut off the ten feet at the front.

As the cellar walls come only up to grade you will not need to build the forms above that.

For building forms you can use the partition studs, short rafters and joists, also the roof boards and sub floors. There will also be some short stuff needed for the porch joists and the collar beams and the headers for the doors and windows. A stick cut about right for two headers will make a stud for the forms, so will one cut to put by the side of a window.

It is all right to cut good lumber for forms if you cut it so it will be right to use later, and the nearer right you cut it the less you will need to work on it after it is covered with mortar.

You will have some joists 12 feet long and some longer and some shorter and by using these you can get two lengths to reach from the back to the fireplace base, the long space at the back and that on the side. The short spaces may be filled by letting the stuff run by the corners or by standing stuff on end; or boards may be cut for them.

You may set all the studs for two-inch stuff and fill in where you use inch stuff.

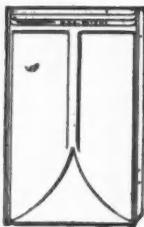
Notice that the ash pit of the fireplace comes down into the foundation, also the flue of the chimney, and there is a clean-out hole for the ash pit.

Some might think that it was not necessary to have the chimney base and the short walls for the porches go as low as the others and in some climates it would not be, but where the mercury goes way down the walls should do the same.

It might be well to make walls across the open places and inclose the spaces under the porches, using one for coal and one for a cistern. The coal can be kept under the sun porch and a cistern is not needed, except in the country.

(Continued to page 84.)

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have a reputation for quality and endurance that is backed up by thirty years' actual roof service. This fact warrants your consideration.

By handling Cortright Shingles you not only make your regular profit for laying the shingles, but you will also make a good margin on their sale.

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Correspondence Department

(Continued from page 80.)

Remember that there is a wide footing at the bottom of the walls and build the forms for this or make the footing first.

I notice that there are no outside cellar doors. If one is wanted it can be made under the rear porch, or a grade entrance may be made on to the landing of the cellar stairs.

Another change would be to build the wall as shown and then put on three courses of concrete blocks, bringing the sills up two feet or up to the joists. In this case the porch steps and floors could also be of concrete.

JOHN UPTON.



How to Build a Carpenter's Chest

To the Editor:

Edina, Mo.

Our BUILDER has seemingly never taken much interest in the "tool box," as I have never seen one described in its columns. I have tried out several kinds and found out that the trunk manufacturers knew how to build a good box that was lighter and stronger than the carpenters usually put up, and I'm sending a rough sketch and description of what I have found to be about what the average mechanic can use to best advantage.

Box inside measurements about 17 inches wide, 31 inches long and 12 to 18 inches deep, depending on the number of tools used.

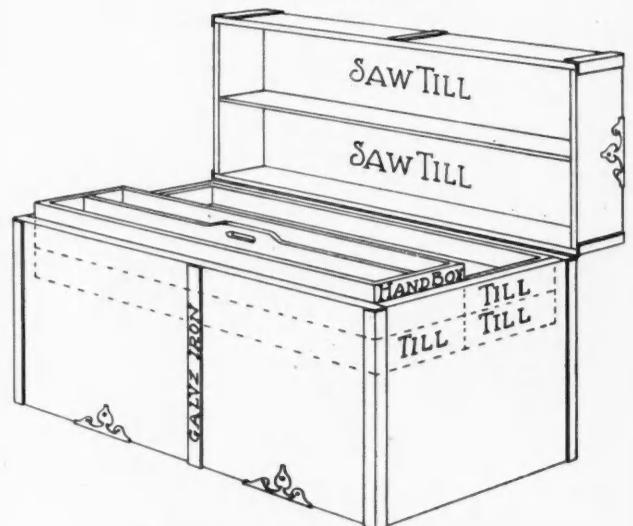
The inside to be fitted with three tills and a hand box, the latter to be made of 3/8-inch lumber with handle in center of 1/2 inch, which could be planed down at the ends and bottom to reduce weight, the tills of 1/4 inch with the ends and partitions of 5/16 or 3/8-inch material, hand box 4 1/2 inches deep and top till 3 inches and two bottoms 3 1/2 inches.

The material for the box, either 1/2 or 5/8 inch thick, bound on ends with galvanized iron angle 1 1/4 inches wide put on with tinned trunk nails clinched on the side, also a band around the center of box and reinforced between this band and ends or edges full bound as fancy may dictate.

The hinges should be bought from a trunk manufacturer, as they use a light hinge that is double and is neater and stronger than the kind sold by hardware stores. For a lock nothing offers more security than a Yale hasp lock, but it is objectionable in one way in that it cuts a large hole in the lid of box where it is weakest.

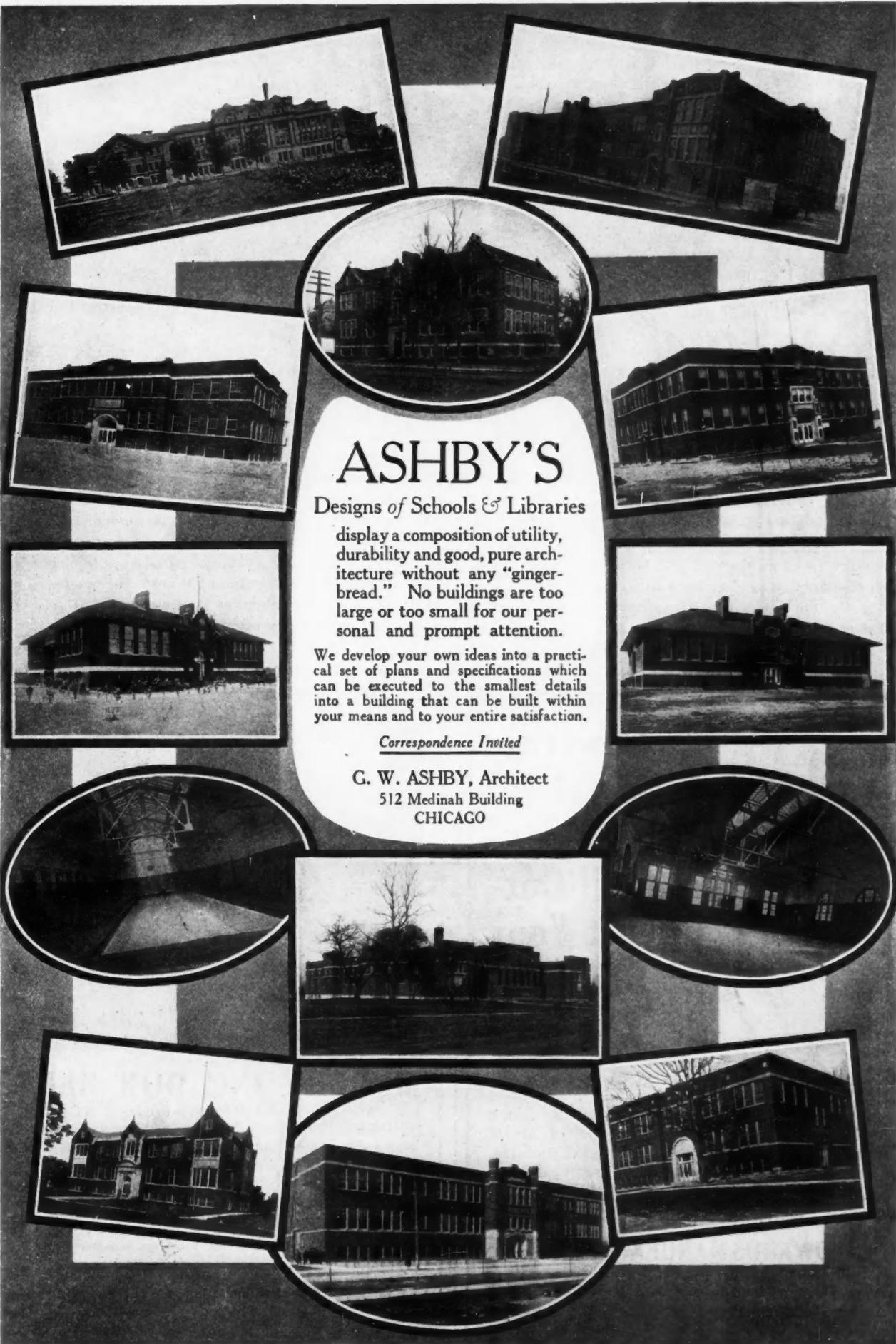
I have often tried to fix up some kind of a scheme whereby

(Continued to page 86.)



BUILDER'S TOOL BOX

Box With Many Handy Features.



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display a composition of utility, durability and good, pure architecture without any "gingerbread." No buildings are too large or too small for our personal and prompt attention.

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Correspondence Invited

G. W. ASHBY, Architect
512 Medinah Building
CHICAGO

(Continued from page 84.)

I could pick up the hand box and till underneath and place them back against the saw till when opening the lid and in that way I would have a chest of drawers, but never could contrive anything that would work that was not too heavy, and I would willingly give ten dollars for a plan whereby I would have full length sides in the end of the box and could pull out any one of the tills that I wanted to. Now, who wants the coin?

In conclusion, study the sample trunk when next you see one; not the valance around the bottom of the lid and the reinforced corners, the clamps in front opposite the hinges, and the hagny bolts also; however, they are not needed in your box, as the tills inside reinforce the outer box. For handles get the regulation trunk style. While they are not easy on the hands, yet when you move take your tools as excess baggage and do not lay around waiting for a freight train, as it does not pay.

I went to San Francisco after the fire and when I reached Kansas City the baggage man said seven dollars per hundred for excess baggage, which meant fourteen dollars out. I demurred and had a sleep over it before letting go the "coin," but it was money well spent, as I lit Friday night and went to work Monday morning.

There is another type of box that probably would be more convenient than this one for some workmen and that is to cut out the front of the box and hinge it and put sliding drawers in the bottom for the smaller tools and the heavy tools in the top which would require a second bottom or division in the box. If I was making one would make the drawer slides out of galvanized iron about 24 gauge and crimp

it in a T-shape. This need not be more than $\frac{3}{8}$ -inch for the trays to slide on and $\frac{1}{2}$ or $\frac{5}{8}$ inch to fasten to box; or a sheet wide enough to cover the whole end might be used with the slides formed up in it as it would reinforce the end of the box.

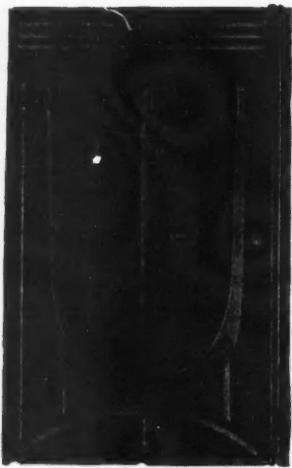
One bad feature of this style box is that it weakens it materially; but if I was trying it out would hinge the drop leaf at the bottom and would fasten the ends by making a full length hinge out of 20 or 22 gauge galvanized iron and formed up in shape to fit on both sides of the leaf and rivet thru and the other part of the hinge to be formed on the binding of the box.

This would necessitate some rather nice work with a hack saw and the fellow that tries it will have a better knowledge of hinging when he gets thru, as no two knuckles would have the same cross-section.

When traveling a No. 9 or 10 wire inserted in the hinges would make it about as strong as tho it was solid.

Now, Mr. Editor, this is rather a long-drawn-out box story, but some thirty-five years ago I began to read a carpenter's paper and there were about twenty different styles of chest that winter along with the dimensions and all said from 20 to 24 inches wide, with length and depth in proportion. I spent a long time double dovetailing a walnut box 22 inches wide and when I put it together saw it was too big and had to cut it to 18 inches inside measurement, so this is to keep some other chap from making a mistake as to dimensions. This article is only suggestive and if any one has a better plan all would like a description, as the time should be ripe for a good many new tool chests this year.

J. J. HONAN.



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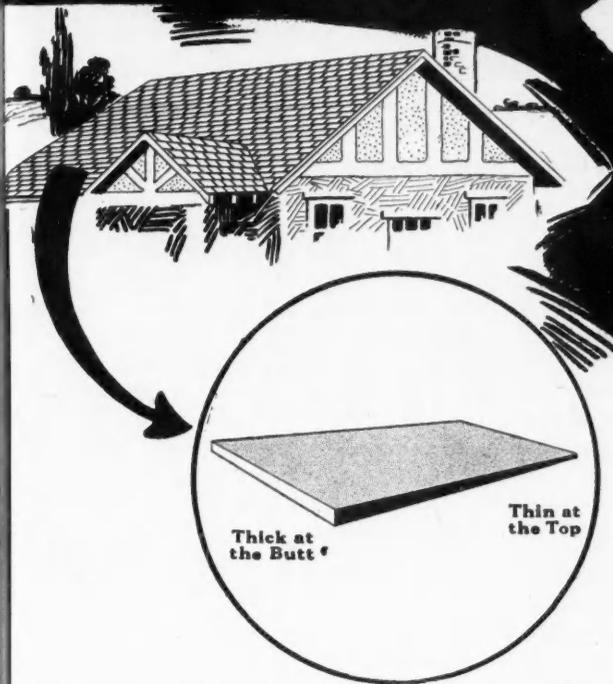
can save you money, whether you are figuring on the smallest bungalow or the largest apartment house or hotel. Murphy In-a-Dor Beds mean a substantial cut in the original cost, and also convenience and economy for those who are to enjoy them.

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Call on us personally, or write for complete catalogs.

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CONTRACTORS everywhere are reporting the greatest satisfaction on the part of their customers with the buildings that have been roofed with Winthrop Tapered Asphalt Shingles.

One contractor writes: "I have been thoroughly pleased with the shingles on all of the different jobs, and if they continue as they have for the past three years, I am satisfied they are unequalled by any other shingle of the same cost. The shingles lay perfectly tight to the roof and do not leak."

One home-owner writes: "Have had Winthrop Tapered Asphalt Shingles on my roof since June 12, 1913, and am more than pleased with them. I do not consider them an expense, but an investment. They are neat, durable, non-breakable—therefore do not need repairing. At this time I would consider no other."

Winthrop TAPERED Asphalt Shingles

They are thick at the butt and thin at the top like a wooden shingle. They are laid the same as wooden shingles—with ordinary shingle nails. Winthrop Tapered Asphalt Shingles make a water-tight fire-resisting roof. They are made of asphalt with finely chipped slate rolled under heavy pressure into the exposed surface, thus making a shingle of remarkable durability. These shingles are tough, yet pliable—easy to handle. Your men can do fast work.

Winthrop Tapered Asphalt Shingles win out with less argument than any other shingle you ever tried to sell. They look better than wooden shingles and have all the protection of asphalt. Wherever they are introduced they sell themselves.

RED, GREEN and SLATE-BLACK

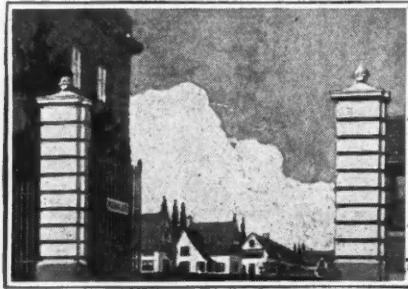
They are made in three colors, any one of which makes a very beautiful roof.

We can refer you to Winthrop Tapered Asphalt Roofs in almost every city in America. Before planning your next job, ask for a sample shingle.

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Also MEANS A TOWN

Scarcely four miles from Sheboygan, Wisconsin, U. S. A., stands the town of Kohler, home of the world-famed enameled plumbing ware that bears its name.

Here is an independent community imbued with the spirit of achievement, yet untrammled by aught that tends to hinder fullest self-expression.

Through this spirit Kohler products have set and attained their enviable mark.

Thus Kohler has come to mean many things. Kohler is an idea. It also means a bathtub, a town, a kitchen sink, an institution, a complete plumbing equipment for home or factory, a laundry tray, an ideal.

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The discriminating builder knows that it always pays to install Kohler products because they are so beautiful and durable and so dependable in every way.

Let us send you with our compliments an interesting booklet describing Kohler products.

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NEWS OF THE FIELD

Provide a New Home for Your Returning Soldier Boy

There is nothing more welcome to the returning soldier than the old home—unless it may be a new one.

The unusually good prices obtained for agricultural products during the war have placed many farmers in position to make great improvements about the old homestead. Naturally, nothing will gladden the heart and brighten the life of the homecoming soldier more than to see the improvements that have taken place in his absence.

There are many ways to improve the appearance of a place with the use of a little lumber and paint.

The greatest building era in the nation's history is now on,



Hess Holds Open Places for Soldiers

Along with many other patriotic builders and manufacturers of building material and equipment the Hess Warming & Ventilating Co., Chicago, is holding open in its organization the places of the young men who joined the military and naval service of the United States. "More than 5 per cent of our furnace men, 22 of them, have been in the service and now are coming home," said G. H. Hess, president of the company, lately. "We are increasing our advertising considerably so that these boys will find their jobs open to them when they return."



Lieut. Charles H. Swan, Flyer, Is Killed

Lieut. Charles H. Swan, who, before he entered the 28th U. S. Aero Squadron, was connected with the Swan Concrete Silo Company, Cassopolis, Mich., was accidentally killed in France in December. This message was communicated to Secretary Hayden, of the Swan company. No particulars as to how or where the fatality occurred have been received by the company.



A Victory Greeting

The service flag of the Richards-Wilcox Manufacturing Company, Aurora, Ill., contains many stars. Before the armistice was signed, three of these stars had turned to gold. Thus it was with thankfulness that the news of the end of hostilities was received by W. H. Fitch, president of the company, who issued a "Victory Greeting" to the hardware trade. It follows, in part:

"November 11th marked in America the greatest celebration that was ever known—in commemoration of the crowning victory of all history.

"She laid aside every other consideration for a day, and gave herself over unreservedly to whole-souled rejoicing, inspired to profound emotion by the realization that the whole world was acting under the same impulse.

"Peace was assured—prosperity at hand, relief from bloodshed, anxiety, separation and restriction.

"Soon families and friends might be united. Soon wheatless bread, sugarless coffee, meatless meals and heatless homes

(Continued to page 90.)



Those RITE-GRADES Are Honest Shingles



And by honest is meant a shingle that is up-to-grade all the time, a shingle that is inspected by association inspectors, guaranteeing a maintained standard.

"Rite-Grade Inspected" Shingles and rust-proof nails make the forty-year roof.

You can be certain that when you see the "Rite-Grade Inspected" mark on any bundle of shingles that, irrespective of the brand, manufacturer or grade, you have a shingle that is up-to-grade, well manufactured and good for a 40-year roof or siding if nailed with rust-proof nails.

Free Plan Books. Send for Distinctive Homes and Farm Building Books, containing valuable building ideas.

Shingle Branch, West Coast Lumbermen's Assn.

426 Henry Building, SEATTLE, WASHINGTON

(Continued from page 88.)

might be forgotten. Soon swords should be beaten into plow shares and business restored to a normal working basis.

"Soon the manufacturer might obtain materials necessary for the fabrication of his products, the merchandiser in due course secure those products, and in turn present them for the requirements of the consumer.

"In men, in materials, in money, in hardship due to necessary restrictions caused by shortage of fuel, materials, labor and service—the hardware business has contributed its full complement.

"Service has been sorely hampered by the necessities of war all along the line—Uncle Sam has particularly required the things needed by the hardware and building trades. Efficient service and prompt deliveries under pressure of war could not be maintained.

"The great war is over. Victory is ours. Our united efforts have achieved their end. The portals of an era of unprecedented prosperity lie before us. The government has thrown open for us the door of this haven by the removal of restrictions of all kinds. Let us enter with confidence and energy—let us prosecute the aims of peace as vigorously as we did the aims of war—that the victory of peace may be as sublime as the victory of war."



Prominent Architect Proposes New Type of War Memorials

The December issue of "Contractor's Atlas," the contractor house organ of the Atlas Portland Cement Company, contains an article entitled "War Memorials," by Ernest Alan Van Vleck, senior member of the well-known firm of New York architects, Starrett & Van Vleck. Its purpose is to bring out to the contractor the part he can

play in promoting a movement for the construction of fitting war memorials.

We are confident that a good many of the American Builder Family will want to secure a copy and read it carefully. The following introductory note by the Atlas editor gives a glimpse of its nature and purpose:

"Now that Uncle Sam's sailors and marines are turning their faces homeward, after the glorious participation in the great war, there is doubtless no city or town in all our land but is now hearing the question asked on every hand, 'What are we going to do to perpetuate to posterity the memory of our fellow-townsmen and women, not only of those who made the "the great sacrifice," but also of those who returned to us and deserve a memorial for their patriotic services?"

"At the conclusion of former American wars this public memorial has usually taken the form of a monument or slab, erected in a public place, and which was too frequently lacking in either artistic or useful qualities. As the prosecution of the war just ending has developed so many new human phases, especially along co-operative social lines, without regard to racial, religious or political distinctions, it has seemed good to many that memorials both to the departed and living heroines and heroes should not take the form of a monument or arch, but rather of structures capable of artistic treatment and yet of real useful value to the respective towns and cities, such as community houses, parks, fields, notable bridges and the like.

"Believing firmly in the idea and to encourage its development, the editor of 'Contractor's Atlas' asked Mr. Ernest A. Van Vleck, senior member of the well-known firm of New York architects, Starrett & Van Vleck, to write an

(Continued to page 92.)



Beautiful Oak Floors

are always the source of unlimited satisfaction and pride.

Every modern home today has **Oak Floors**. The owners know that **Oak Floors** will attract a better class of tenants and make a big difference in values when **renting** and **selling**.

Oak Floors are **rich** and **cheerful** in color and always create a friendly atmosphere. With a little care **Oak Floors** will last a lifetime.

3-8 in. Oak Flooring offers a very **beautiful** and **economical** floor at a very low cost for all classes of buildings. It is the ideal flooring for covering old pine floors in old houses as well as in new houses over cheap sub-floors.

Our Government used millions of feet of **Oak Flooring** at various housing projects.

Oak Flooring can be laid successfully by any carpenter or handy man. It makes a very profitable side line during the winter months.

Write for folders that tell all that is worth knowing about **Oak Flooring**.

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ASBESTONE floors are fire-proof, sanitary, easy to walk on, not noisy, handsome in appearance and moderate in cost. They add that much desired touch of distinction that can be found in no other type of floor.

It is Your Job to Install Them

Put down with a trowel like spreading plaster over old or new wood or cement floors.



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We want live Contractors and Building Material Dealers to look into this proposition. Now that building operation can go ahead under a full head of steam, the opportunity is enormous.

Let us send you samples and information. Write us today.

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Examples of the kind of buildings on which Asfaltslate Shingles are used.

Robert First, Contractor, Cincinnati, \$10,000 bungalow.

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Eugene Martin, Italy, Texas, \$5,000 brick bungalow.

Judge Schwan, Benton, Ills., \$12,000—2½ story residence.

Japanese Tea Garden, Seattle, Wash. A \$3,000 dream of artistic architecture.

H. S. Atho, Orlando, Fla., Sub-tropical home of great beauty.

R. C. Ware, Plainview, Texas, \$7,000 single story, stucco bungalow.

Panama Park School Bldg., Jacksonville, Fla., \$100,000 brick structure.

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They require no painting. They do not rot. They do not dry out and split nor curl. Wind cannot loosen them, heat or cold does not affect them; rust cannot reach the nail heads and, finally, they are spark-proof.

The base is a special wool felt produced in our own mills. This is thoroughly waterproofed with asphalt from our own refineries and the surface finished with crushed slate in natural red and green colors.

Asfaltslate Shingles save painting, repairs and replacements and reduce insurance premiums. To be sure of getting the maximum beauty, safety, economy and satisfaction, specify Carey Asfaltslate Shingles.

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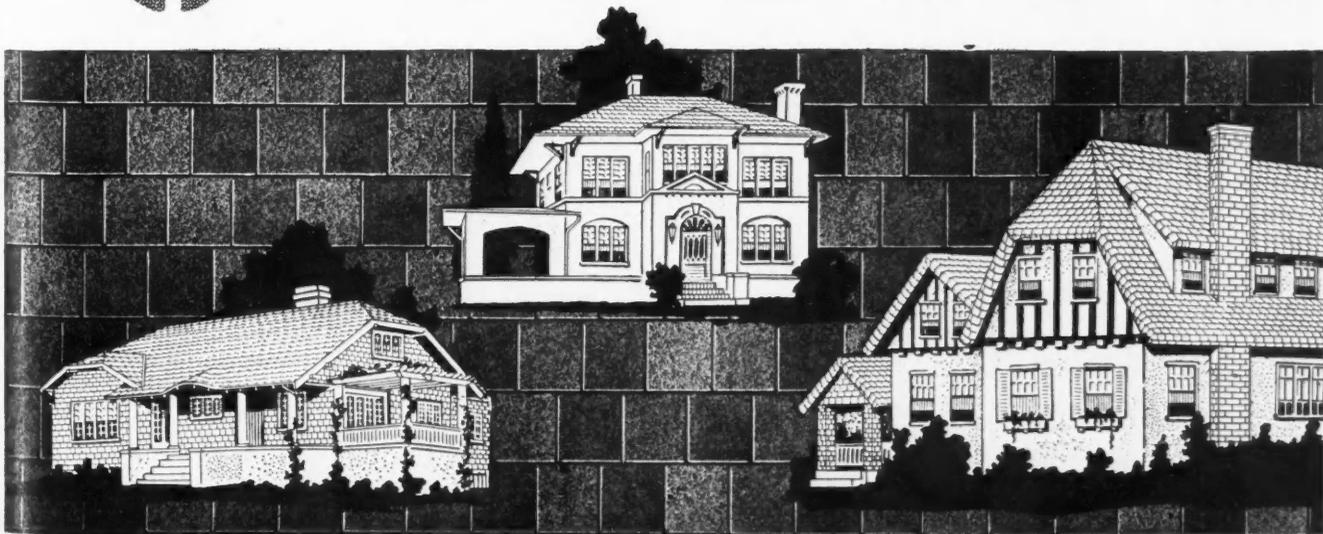
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SELL WEATHER STRIP

Take advantage of the advertising of Weather Strip and the request of the Fuel Administration—add this line to your business and sell your customers Weather Strip.

Weather Strip can be sold every month in the year—in all kinds and conditions of buildings: private homes, stores, schools, hospitals, theaters, churches—they all need Weather Strip.

ANGELL Weather Strip is made in all standard sizes of windows and doors—Brass Thresholds, Spring Bronze, Felt Door Bottoms, Automatic Door Bottoms, planes for installing, and all other supplies.

We sell to the retailer; we do no installing ourselves.

GEORGE ANGELL COMPANY
400 Penobscot Building
DETROIT MICHIGAN

News of the Field

(Continued from page 90.)

article giving his thoughts on the subject, and he gladly consented. Mr. Van Vleck is especially well equipped to write on such a subject. Not only is he an architect of international training and reputation, but his firm has contributed very largely to the planning of many of the large cantonments and camps. He has accordingly had much experience in designing the types of buildings which have largely furnished the inspiration for the utilitarian memorial.

"Few villages and towns or even cities have suitable artistic public community buildings, museums or recreation halls. And what could be a more fitting tribute to your fellow-citizens who went into the National Service than a 'Liberty House' where, as Mr. Van Vleck suggests, your community may also install trophies, flags, books and pictures relating to the great struggle?"

"Doubtless the reader of 'Contractor's Atlas' may say, after he has read Mr. Van Vleck's article, 'What can I do to advance this worthy object?' Just this—every community has already started or will soon begin a movement for the construction of a war memorial of some sort. Be a leader in the movement. As a contractor you know the architects, building material dealers and prominent men and women in your community. Get them to unite in such a national movement. Have your local papers publish Mr. Van Vleck's article. Every step will bring nearer the adoption of the idea that will do much to stamp you as a progressive and practical citizen."



Prof. W. H. Day Joins Shinn Co.

Prof. W. H. Day, for the last twelve years professor of the department of physics of the Ontario Agricultural College, Guelph, Ont., has tendered his resignation to take effect March 1. Professor Day will enter the commercial lightning protection field as secretary and manager of the W. C. Shinn Manufacturing Company of Canada and will take charge of the company's offices and factory at Guelph.

Professor Day was graduated from the University of Toronto in 1903 as an honor student in the department of physics and was awarded a gold medal. His investigations of lightning protection and a bulletin he issued on this subject in 1914 won him recognition as an expert throughout the Dominion and the United States.



A Coupla Laffs

Harry Lauder, the Scotch singing comedian, has the reputation, deserved or undeserved, of being stingy. Two of his friends were watching workmen making the excavation for a building, when a third came along.

"What's doing?" the latter asked.

"O, Harry Lauder lost a quarter and they're looking for it," was the reply.



A carpenter had a brand new wagon. It was brightly painted and had his name and business on the box. His horse, however, was far from new and suffered by comparison with the wagon.

"That's a swell rig you have," remarked a friend. "Only one thing wrong with it."

"What's that?" asked the carpenter.

"The horse," the friend replied.

No Longer, "Just Lumber"

THE Long-Bell Lumber Company, the largest distributor of Southern Pine in the United States, announces that hereafter the product from its twelve great saw mills will be marked with this design

LONG-BELL

This progressive age demands named goods. Heretofore lumber has not been considered adaptable to trademarking, but this company believes that the public is as much entitled to know the identity of the manufacturer of the lumber he uses as the food it eats or the clothing it wears.

It is no longer necessary to ask for "just lumber." Whether your requirements be large or small you may specify LONG-BELL brand with the same assurance and satisfaction that accompanies the purchase of any commodity that bears the maker's guarantee in the shape of a trademark.

Ask your dealer for Long-Bell brand lumber

The Long-Bell Lumber Company

R. A. Long Building

Kansas City, Mo.

Manufacturer of Southern Pine, hardwood, oak flooring, and creosoted lumber, ties, posts, poles, piling and wood blocks.



The Calendar Crop

THE beginning of each new year brings to the office of the AMERICAN BUILDER a number of calendars from manufacturers of the materials used by the building industry. The Editor always is glad to get them, because of their many unique features. Here is a list of those received this season with a short description of each one.

Radford Publications, Chicago—Twelve-sheet, four-color building poster calendar of model farm buildings and their relation to greater food production. On each page is the portrait of the grand champion of different breeds of live stock. This calendar is distributed thru the best lumber dealer in each community, who is supplied with eighteen sheets of blueprints showing in detail the construction of the buildings illustrated.

Truscon Steel Co., Detroit, Mich.—Twelve-sheet, two-color calendar; each sheet contains calendar of the preceding, present and succeeding month. The decorations are line drawings showing Truscon products.

Sandusky Cement Co., Cleveland Ohio—Single sheet with calendar pad. Set in a frame design, showing ornamental cement construction, is a picture in colors of a stucco residence in which Medusa white portland cement was used.

F. E. Myers & Bro., Ashland, Ohio—For the thirtieth year this calendar shows by illustrations this firm's products, making a handy wall reference for dealers in Myers' products. After forty years, Mr. Myers and his brother, P. A. Myers, have injected the "personal element," their portraits being at the top. A calendar pad completes this hanger.

Edison Lamp Works of General Electric Co., Harrison, N. J.—Poster calendar in colors. The painting, depicting "The Spirit of the Night," is by Maxfield Parrish, the well-

known illustrator and mural artist. The colors used are striking and in Mr. Parrish's best style.

Simonds Manufacturing Co., Fitchburg, Mass.—Four-sheet calendar in four colors, each sheet showing three months. The illustrations depict the manufacturing processes in producing Simonds saws; also the finished products.

Universal Portland Cement Co., Chicago.—A twelve-sheet big-figure calendar, each page showing the current month and a week or more of the month preceding and succeeding. Alternate color combinations, red and blue and green and blue, are used.

General Electric Co., Schenectady, N. Y.—Three-color calendar that emphasizes the government request for paper conservation. It is printed on two sides, each sheet containing three months, the one preceding, the present and that succeeding. There is a paper hanger for the sheets, which are not torn off, but turned in the sequence of the months. Half-tone illustrations show General Electric products.

John Boyle & Co., Inc., New York City—A twelve-page calendar in black and white, designed to encourage export trade in prepared deck cloth, cotton duck and other Boyle materials. In colors are presented twelve maps of the continents and the several large countries with which the United States trades.



Cornell Appoints New Sales Manager

Mr. F. M. Cook, who has been assistant to the vice-president, has been appointed sales manager of the Cornell Wood Products Company. He will be in charge of the sales department and sales force under the direction of W. G. Saville, vice-president in general charge of sales, and C. O. Frisbie, president of the company.

Carpenters Wanted as Special Representatives

Carpenters and others are earning big money. Right in your line. Fenton, of Indiana, made 400 sales in one week; Woodard sold 47 the first day. Sell

**The Henry Airtight
(Automatic) Weatherstrip**

for bottom of doors and hinged windows. A perfect protection against cold, snow, rain, dust. Approved by architects, carpenters and builders wherever known. Now is the time to start.

Send Now
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Making Plans

THE HENRY
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510 Elm Street,
Crawfordsville, Ind.



We Have Some Excellent Territory Still Open

and a good agency proposition for the largest
and most complete line of Order-Made

Window and Door SCREENS

on the market. We supply you with a complete agent's outfit, consisting of models, contract blanks, advertising matter, etc. We give exclusive agencies to ones who make good. No regular agencies established in towns less than 10,000 population. This is a splendid opportunity for carpenters, contractors, builders and material dealers. Write now—address

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1848-58 Hastings Street, Chicago, Illinois

Neat Corners Made Quickly KEES Metal Building Corners



will enable even inexperienced workmen to make perfect "mitred" corners quickly. Pierced ready for nailing, they save beveling expense, fit any corner and are practically invisible when painted. Made of heavy galvanized iron, they form a neat, indestructible and weatherproof corner.

Kees Metallic Batten Strips

will make your buildings rain rot and vermin-proof. They allow for contraction of siding, will never warp and make snug, permanent and weather-tight joints.

Write for Prices and Free Samples

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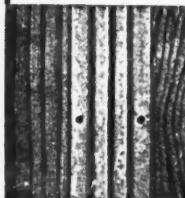
Protect Your

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

METALLIC BATTEN STRIPS

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

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End View Showing Batten Open.—Pat.



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ROLL SHINGLE ROOFING



Great Saving in Labor

FLEX-A-TILE Roll Shingle Roofing can be used on new or old buildings. On new work it is nailed direct to the roof boards. FLEX-A-TILE Roll Shingle Roofing is extra strong and for this reason can be applied right over old wood shingles with good results. This saves all the dirt and fuss of taking off the old wood shingles. When the roofing is applied in this manner we will furnish extra long nails without extra charge when asked to do so.

Big Business Is Coming

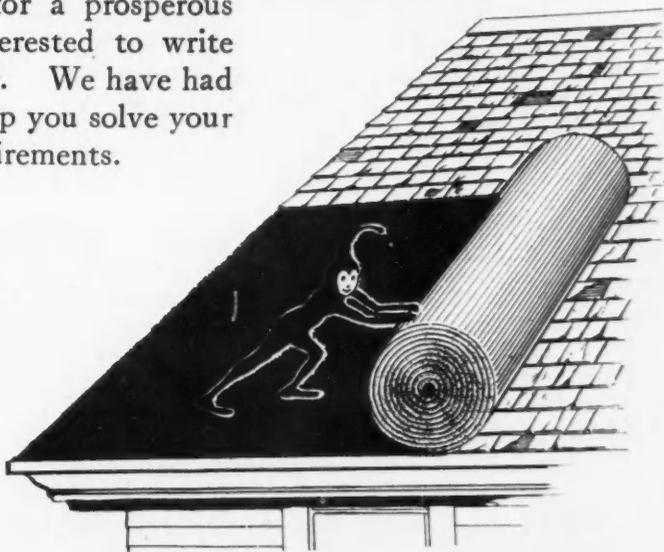
Never have the prospects been so good for a big building business. Dealers and Contractors find FLEX-A-TILE Products satisfactory in all those features that mean success for a prosperous business. We invite all those interested to write us for samples and descriptive matter. We have had a wide experience and will gladly help you solve your roofing problems and meet your requirements.

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APPLIED OVER OLD WOOD SHINGLES

The Lumber Situation in Its Relation to the Building Outlook

By J. E. Rhodes

Secretary-Manager, Southern Pine Association

THE part which industrial America is to play in the readjustment of the world's economic structure may well be measured by the demand which will be made upon our resources and our productive capacity to meet these demands.

Intelligent surveys of the material loss sustained thruout the world during the war period, both by actual destruction and by forced economics, leave no doubt as to the enormous demands that will have to be met for years to come. And the intervening period between the cessation of hostilities and the declaration of peace, with the attending hesitancy of distributors and consumers to stock up for the future immediately, gives to the producers the necessary opportunity to lay their plans and adjust their productive forces—capital, equipment, labor and material—to the prospective requirements.

The outlook for the lumber industry is particularly bright. With adequate and intelligent extension of credit by this country to the war-ridden people of Europe an enormous demand will be made for forest products sufficient to tax the capacities of the mills for a considerable period, without taking into consideration an unprecedented domestic demand. The normal annual imports of lumber by European countries, based upon figures for the year 1913, are 21,240,986,000 feet, of which the United States supplied 2,700,575,000 feet, or 12.7 per cent of the total. During the last four years exportation of lumber has been almost entirely cut off thru

lack of shipping facilities and suspension of building everywhere.

The consequent heavy arrears in lumber imports from these causes will have to be made good besides the inestimable amounts required to rebuild the devastated areas. The export trade itself will prove a very sustaining element in the future of the lumber industry.

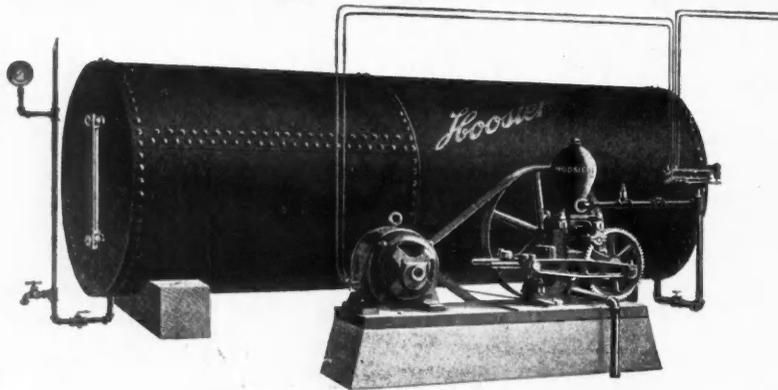
The demand for lumber for domestic needs will be no less pressing than those from foreign countries.

According to Brookmire, reports from 105 cities of the United States indicate from the beginning of the war in Europe in 1914 to the time our country engaged in it, April, 1917, the dammed-up demand for domestic construction amounted to \$1,824,000,000, and since April, 1917, to \$1,206,000,000, making a total of delayed construction in these 105 cities since August 1, 1914, of \$3,030,000,000. This situation in the entire country, upon which we have no figures, will serve greatly to swell results.

In addition to the demands to take care of work in immediate prospect, the lumber manufacturers will be called upon to make heavy shipments to fill depleted stocks of the dealers. Recent figures show that present stocks of the dealers are 75 per cent of normal. Also, the stocks now carried by the mills are much below normal. Figures for 147 representative southern pine mills show that stocks at the present

(Continued to page 102.)

Running water—under pressure



THE one modern convenience in which every farm home owner is interested, and more especially so if he is building a new home, or remodeling his old one—is a modern water supply system.

Hoosier Pneumatic Water Supply Systems

Hoosier Systems are designed for operation by any kind of power, for any depth of well, and in many sizes, ranging from a hand outfit to those of large capacity, and suitable for schools, institutions, sanitariums, etc.

Hoosier Pneumatic Tanks are coated inside with Anti-Rust Enamel, which prevents the formation of rust and scale, prevents water contamination, and lengthens the life and usefulness of the tank. The most satisfactory tank you can select.

IF INTERESTED IN MODERN WATER SUPPLY SYSTEMS, WRITE AT ONCE FOR BULLETIN E, SHOWING MANY HOOSIER SYSTEMS

FLINT & WALLING MFG. CO., Kendallville, Indiana



A small section of the community of homes for workmen built by McDougall-Duluth Shipbuilding Co.

"The Finest of Everything"

THAT was the guiding thought of the McDougall-Duluth Shipbuilding Company officers in planning and building the wonderful community of homes for their workmen at Riverside, near Duluth. They spared no expense to make their employees comfortable and happy—and therefore more efficient.

So—after scientific tests had proven it to be the most efficient rigid form of insulation made—7½ times more efficient than lath and plaster—to be as impervious to moisture as a duck's back—to be strong enough to bear the weight of a man when supported between 16 inch girders—they used

UNIVERSAL INSULITE

"The Board of a Thousand Uses"

They used it because they knew it would keep their houses warm, dry, comfortable and healthful in winter and keep out the oppressive heat in summer.

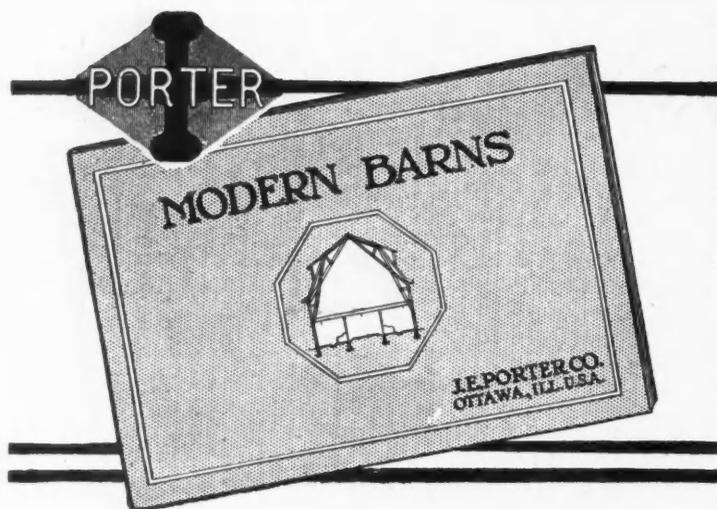
As a plaster base, as a sheathing, as a wall board, as a base for Magnesite Stucco—Universal Insulite has no equal.

Get **all** the facts on **all** of its uses—it means money, prestige, growing business for you.

International Insulation Company

Subsidiary of Minnesota and Ontario Paper Co.

GENERAL SALES OFFICE: 2362 University Avenue, ST. PAUL, MINN.



Porter Barn Planning Service

ONCE in his life-time, the average farmer builds a barn—and that job, involving thousands of dollars, is one he wants done right—not left to guesswork or inexperience.

Porter experience—half a century in the study of the farmer's needs—is at the disposal of carpenter, contractor, and farmer free for the asking.

Porter service does away with rule-of-thumb methods. It means economy to the contractor and satisfaction to the farmer.

The Efficient Barn

"Modern Barns," a Porter publication, gives in detail plans for practical, up-to-date barns, illustrated by blueprints which save the contractor all the labor of planning and graphically depict to the farmer the models from which he may select the one he needs.

And "Modern Barns" contains valuable information on the use of concrete and steel in barn-building, practical counsel on sanitation and data regarding building silos.

Porter Barn Equipment

Specify "Porter" in your details for stalls, stanchions, carriers—everything for the barn—and you are sure to satisfy the farmer.

For he knows that the Porter trade-mark spells reliability—that every article on which it is stamped carries the pledge of long and efficient service.

There is a "consumer preference" for Porter products. Write for information.

J. E. Porter Co.
476 Guilon Street
Ottawa, Illinois

(34)

Lumber Situation and the Building Outlook

(Continued from page 100.)

time are approximately 46 per cent of the stocks on hand January 1, 1915.

Reports of Southern Pine Association mills indicate that there are more orders on file in the South as a whole, on an average, than there are stocks in the yards.

The foregoing is a general outline of the probable demands. As to the capacity for meeting them there is little doubt, but this problem will require careful attention. The plant capacity is more than sufficient. The labor situation is not such as would be hoped for, but with the release of workers from war industries and with the demobilization of the army the gradual drifting of the necessary labor back to the mills can be looked for.

Given a large demand and the productive power to meet it, the lumbermen will be confronted with the transportation problem, not so much as applied to domestic trade, but as to the scarcity of ocean tonnage to carry the foreign business. However, intelligent co-ordination of these three problems should do much to enable the lumbermen to take full advantage of the opportunities to be afforded them by the approaching increased business activities.



"Folly to Hold Off for Lower Prices"

Duty of Business Is to Go Ahead, Says J. E. Otis; No Big Decline in Sight

A TENDENCY on the part of business men to hold back new enterprises, in expectation of lower commodity prices and wages, is a mistake, in the opinion of Joseph E. Otis, vice-president and acting head of the Central Trust Company of Illinois.

"I have no sympathy with the man who is sitting back, awaiting lower prices," said Mr. Otis recently. "The people who are waiting a drastic decline in prices aren't going to get it, they are going to get left. In other words, I do not believe we are going to see any immediate and drastic decline in commodity prices. There is a world-wide scarcity of many materials and production costs are going to continue abnormally high.

"We have had perhaps a certain amount of inflation. To the extent that present high prices are due to that cause, moreover, we can expect no immediate decline. The process of deflation will be gradual.

"If we were all to hold back, awaiting lower prices, we should produce conditions of a sort that would benefit no one. It is the duty of business to go ahead and seize the opportunities now awaiting. If a manufacturer were to defer building needed additions to his plant, in the hope of securing a lower construction cost at some indefinite time in the future, he probably would lose more profits on goods which he might have been producing and selling in the meantime than he will save on cheaper construction costs."



Wants to Lay Out Segmental Arch

To the Editor:

Wichita, Kans.

Could some brother please enlighten me on laying out a segmental arch with the steel square? E. E. EASTMAN.

Meadows

TRADE MARK REGISTERED

Carpenters! Builders!

Our FREE PLANS

are yours for the asking. They should always be in your hands and your farmer customers should know about them. They give complete instructions and working drawings showing how to get the greatest possible capacity at the lowest expense by installing Meadows Stationary Inside Cup Elevators.

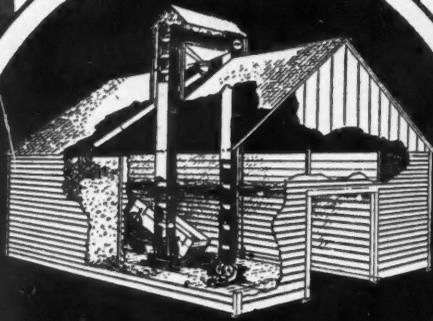
THE MEADOWS ELEVATOR

is convenient and economical and essential. It can be confined to one side of the driveway or it can set back in the crib leaving the driveway clear—no pit is necessary for dumping grain. The Wagon Jack is fastened overhead. For ear corn and all kinds of small grain. Complete outfit is easily installed.

Write Today for our plans and catalog—you will find them both useful and profitable.

**MEADOWS
MFG. CO.**
Pontiac Illinois





IT'S A "MEYER"

says the Farmer proudly when speaking of his elevator.

The name "MEYER" means so much more than the ordinary on a cup elevator. They are so much more satisfactory — shell less ear corn, waste less grain, and require less power to operate than any other elevator.

The "MEYER" set the standard years ago because of their perfect mechanical construction. Their simplicity and durability make it possible for them to render the greatest service at all times. That is why farmers want the "Meyer" in preference to any other. The elevator shown in the illustration has a pit at the base into which the grain is dumped. This is a great labor and time-saving arrangement. But if for any reason the pit isn't desired the elevator is equipped with a receiving conveyor and stationary lifting jack.

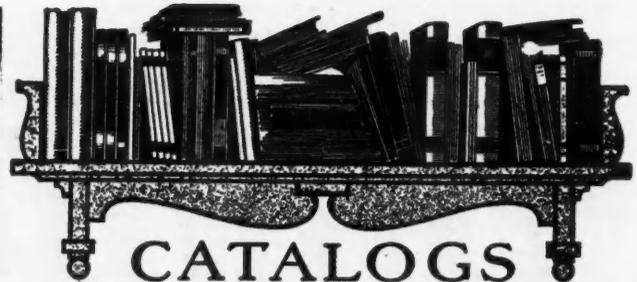
CARPENTERS AND BUILDERS

Write at once for our free crib plans and illustrated catalog which show eight styles.

Protect yourself on your territory and reap a handsome profit.

A. F. MEYER MFG. CO.

301 Wilson St., MORTON, ILL.



CATALOGS BULLETINS & BOOKS RECEIVED

The following literature, dealing with subjects of interest to builders, is now being distributed:

"Cashing in on Silos" and "Perfect Silage" are the titles of two booklets, issued by the E. C. Tecktonius Manufacturing Co., Racine, Wis. The former contains 36 pages and is a comprehensive resume of Tecktonius silo construction and sales co-operation, and is addressed to builders of this type of farm buildings and dealers in silo materials. The second is a 20-page booklet dealing with the need of silos and the benefits agriculture and stock raising derive from them. There also is a table showing capacities required for certain numbers of cattle and the dimensions to house the production of various acreages.

What White Enamel Will Do for Interiors is shown in a booklet, entitled "A Portfolio of White Enamel Interiors," issued by the Pitcairn Varnish Co., Milwaukee, Wis., and Newark, N. J. The portfolio is in black and white with a line decoration of green, the usual order being reversed, however, in that the paper is black and the text white. There are 27 illustrations.

"Standard Plumbing Fixtures for the Home" is a 64-page booklet containing descriptions and prices of fixtures for the modern house, issued by the Standard Sanitary Manufacturing Co., Pittsburgh, Pa. It is illustrated with half-tone reproductions of photographs of fixtures and of rooms with the fixtures installed.

Homes Made Comfortable by Weather Stripping are described in a 12-page booklet, entitled "Comfort," issued by the Monarch Metal Weather Strip Co., St. Louis. The introduction deals with the necessity of weather stripping and is followed with detailed descriptions of doors and windows equipped with this material.

"Colonial Architecture in Vermont" is the title of Vol. IV, No. 6, of the "White Pine Series of Architectural Monographs," published by Russel F. Whitehead, New York City. This number is as artistic as those that preceded it. There are 16 pages containing reproductions of photographs of famous old homes and buildings in Vermont. The photographs were taken by Kenneth Harris, while the descriptive text is by George S. Chappell, a well-known student of Colonial architecture. The monograph is sponsored by the White Pine Bureau, St. Paul, Minn. Volumes III and IV have been bound, uniform in size and binding with Volumes I and II. The price of the bound volumes is \$1.50 each.

"Looking Ahead," a book of information for the man who is thinking and planning for his future, contains a description of the courses in architecture and its branches of the International Correspondence Schools, Scranton, Pa. The booklet contains 124 pages and cover.

Fire-proof Construction in all its phases is treated in the sixth edition of the "Hand-Book of Fire Protection," by Everett U. Crosby, Henry A. Fiske and H. Walter Forster, published by the D. Van Nostrand Co., New York

(Continued to page 106.)

National Giant

Delivering Grain into 80-ft. Crib
With Aid of
Wood Spouts



National Giant
Installation

Write us about this kind of Crib

Requires No Pit

With or Without
Cupola



Farm Elevators



Most Sensible Head Section Ever Devised. Every Bit of Grain Drops Directly Into Center of Spout. Accommodates Itself to Any Driveway. Highest Point of Delivery Without Cupola. Read All About It in Our Catalog.

Swivel
Spout



For
Our
National
Giant
Inside
Bucket
Elevator

Attractive Proposition to Carpenter-Contractors

Here is a mighty good proposition. Look into it. You will make more money give your customers more satisfaction putting up a modern crib equipped with the National Giant Inside Bucket Elevator and it will cost your customer less money, too. Send postal now and let us explain why

The National Giant

is the Best and Most Sensible Inside Elevator Ever Made

On cribs 30 x 32 ft. or less with half pitch roof, it is not necessary to have a cupola. Saves the farmer money. When cupola is necessary we can help you save the farmer from \$15 to \$30 with the National Giant. And no special width driveway is required. You build whatever kind of crib your customer likes and put the National Giant in it. Not necessary to build the crib to suit the elevator. We also save cost of digging a pit and on the length of elevator required. Ask us why.

Other features are: The National Giant Inside Bucket Elevator is equipped with large No. 77 chain. Buckets hold a peck. Does not shell corn because feeder empties directly into mouth of bucket. Short distance delivery means lightest draft. Has no overhead gearing.

Simple and Easy To Install

Nothing technical in our elevator. Can be set up in a very little time by any practical carpenter. Everything explained in our catalog.

The Swivel Spout Section shown above is the perfected device used exclusively on the Head Section of the National Giant Bucket Elevator. It allows crib to be filled in back of the elevator as well as in front or on the sides.

Other picture above shows the National Giant delivering grain through wooden spouts to an 80 ft. crib. Note delivery of grain to any corner of crib. Best way to handle all grain with one elevator in one crib.

Besides the advantages to the farmer, there are these advantages to you: More money for your work. Easy to get approval. We advertise well in many farm papers. The farmers all know the National Giant. It is the World's Greatest Farm Elevator.

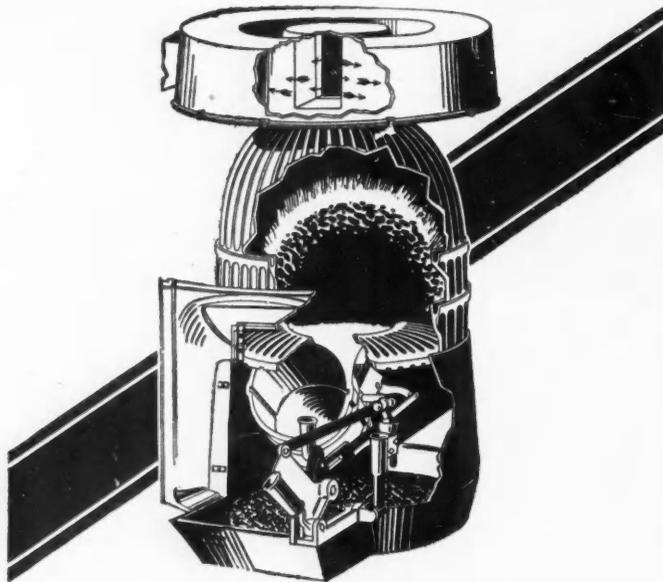


Send for
Crib
Plans
and a

New Catalog **FREE**

We have just issued a wonderful new Elevator Catalog containing pictures and a description of every type of elevator. Don't miss getting this catalog. Also, new book of crib plans—just out—which we send free with catalog. Contains latest tried and successful cribs, all good sound and simple construction. Write us at once. We will be pleased to cooperate with you. Satisfactory credit terms may be arranged. Get details at once. Address

PORTABLE ELEVATOR MFG. COMPANY
834 East Grove Street, Bloomington, Ills.



Sales and Profits Waiting for You

Millions are intensely interested in the problem of how to "Cut Coal Bills 'Way Down." And millions are reading this message of Williamson UNDERFEED furnaces and boilers in the country's leading magazines every month. Here is your opportunity to reap a rich harvest of sure profits—big profits—quick profits. And remember, every UNDERFEED owner is an enthusiastic booster. That means permanent, steadily-growing business for you.

WILLIAMSON
UNDERFEED FURNACES
& BOILERS
Cut Coal Bills Way Down

Here's co-operation that will bring you big returns in a hurry: National advertising on a large scale month after month and an intensive follow-up system which enables us to keep right after any prospects that you refer to us. Without cost to you we will supply you with attractive booklets and folders, electrotypes for newspaper advertising, picture slides and other selling aids. Also at your service is our well-organized *Engineering Department*. Simply send us your sketches and we will prepare heating plans and estimates so you will know what price to charge and how to install the job. Sign and mail the coupon for further details. Do it—today!

The Williamson Heater Company
71 W. Fifth Street, Cincinnati, Ohio

THE WILLIAMSON HEATER CO.

71 W. Fifth St., Cincinnati, Ohio

Please send me full details regarding your plans to help me sell and install Williamson UNDERFEED Furnaces and Boilers. This request is to involve no obligation on my part.

Name

Address

Business

Catalogs, Bulletins and Booklets Received

(Continued from page 104.)

City. The book contains 800 pages, including 140 pages of illustrations, is printed on bible paper, with a flexible cover, and is of pocket size. Special features of this edition are chapters on the relation of accident prevention to fire prevention; causes of fire; spread of fire and extinguishing of fire. The price is \$4 per copy.

"Wood Lattice Trusses" is a 6-page monograph on this type of roof truss by Chas. E. Paul, C. E., published by the National Lumber Manufacturers' Association. Methods of construction of three styles of trusses are given, together with detail drawings and half-tone illustrations showing the interiors of buildings constructed with wood trusses.

"Concrete Stone Manufacture," by Harvey Whipple, editor of *Concrete*, is aptly described by its author as the "blue book of the block business." First published in 1915, the text has been brought up to date, many new developments in the concrete stone business being incorporated. The book is bound in cloth and contains 320 pages, with 185 illustrations. It is a practical hand-book on concrete stone construction and is published by the Concrete-Cement Age Publishing Co., Detroit, Mich. The price is \$1.50, postpaid.

Door Hangers and Tracks for barns, warehouses, factories and garages are pictured and described in a booklet of 32 pages and cover, issued by F. E. Myers & Bro., Ashland, O. This is an illustrated catalog of the several types of door hangers and tracks manufactured by this firm.

"Industrial Houses of Concrete and Stucco" is a survey of the principal types and groups of permanently constructed industrial houses, issued by the Atlas Portland Cement Co., New York and Chicago. It is a 42-page booklet containing an argument for the erection of homes for workers by their employers, with estimates of costs and floor plans of single and group construction.

"Architects' Specifications for Carey Roofing" is a 16-page booklet containing six sets of specifications providing for this material, published by the Philip Carey Co., Cincinnati, O. Illustrations show the methods of applying flexible cement roofing over wood sheathing and concrete.

"Non-staining Mortar for Pointing, Setting and Backing" is an interesting treatise on the use of portland cement mortar, published by the Atlas Portland Cement Co., New York and Chicago. The 28 pages of the booklet include a set of specifications suggested for the various uses of mortar.

"Timber Highway Bridges" is a collection of data on this subject by Chas. E. Paul, C. E., and is published by the National Lumber Manufacturers' Association as engineering bulletin No. 3, of "Structural Timber." It is an 80-page and cover booklet containing detailed descriptions of highway bridges and plans and specifications for them. Much of the information, the author says, was obtained thru the co-operation of state highway engineers and others engaged in this work.

"Permanent Homes Make Permanent Workers" is a 16-page booklet advocating this class of building. It is issued by the Truscon Steel Co., Youngstown, O. Part of the text and illustrations describes industrial housing in England and the United States, and the reasons for it. Stucco construction on metal lath is another feature of the booklet.

(Continued to page 108.)



Bovee Compound Radiator Pipeless Furnace

A REAL FURNACE

Twenty-five years on the market. Double the heating surface. Double the heat from fuel consumed. A complete and practically perfect Heating Plant for the best of homes. Every customer is a satisfied booster.

This Furnace furnished with regular piping when so desired. Manufactured in five sizes suitable for any building from a *cottage* to a *church*.

Special manufacturer's prices to contractors and builders. Write us for full description.

BOVEE FURNACE WORKS

50 West 8th Street, Waterloo, Iowa

(Continued from page 108.)

A Home for Single Workers that has attracted attention thruout the country is the American Club, erected by the Kohler Co., Kohler, Wis. A description of the dedication of this building and its many features is contained in a recent 40-page issue of the "Kohler of Kohler News."

For the **Farmer and Rural Builder** the Stewart Manufacturing Co., Waterloo, Ia., has listed among other things, in its general catalog No. 9, tilting-table wood saws and parts, line shafting, drop hangers, cement block machines, diaphragm pumps, block and brick tampers, material screens and elevators, concrete mixers, gears of all types, dump cars and uni-Ford truck attachments.

Why Lightning Strikes a Building is one of the many features of an 86-page booklet issued by the W. C. Shinn Manufacturing Co., Chicago. The booklet gives historical data regarding Franklin's method of lightning protection and describes the company's product along this line.

"**The Fire-Proofing Handbook**" is the title of a 112-page treatise on the problem of fire-proof construction issued by the General Fireproofing Co., Youngstown, O. The book contains 112 pages and numerous illustrations, and gives such information on the subject as a table for determining purlins, data for estimating floor construction, etc.

What the War Did to promote the production in the United States of many materials theretofore imported is described in the third edition of "Du Pont Products," issued by the E. I. Du Pont de Nemours Co., Wilmington, Del. The book contains 236 pages.

"**Water Systems for Farm Homes**" is the title of Farmers Bulletin, No. 941, issued by the U. S. Department of Agriculture. The bulletin is by George E. Warren, M. E. Mr. Warren devotes much of the bulletin to a discussion of a safe location for the source of the water supply;

methods of constructing wells and cisterns, while there also are plans for pressure systems. Considerable attention is paid to the proper chemical contents of the water.

Load-Bearing Tile and their uses in fire-proof building and details of construction are described in seven sets of drawings issued by the Denison Fire-Proofing Co., Mason City. There are 2½ drawings contained in a cloth portfolio.

"**Herringbone Homes**" is the title of a 30-page booklet issued by the General Fire Proofing Co., Youngstown, O. It describes the use of stucco and Herringbone lath, while the illustrations show a number of houses where these materials were used.

"**Concrete Work Made Easy**" is a 12-page hand-book issued by the Sandusky Cement Co., Cleveland, O. It contains tables of figures on cement and mortar work that are useful to builders.

Portland Cement Stucco and the recommended practice for its use on lath and masonry surfaces are the subjects of a 16-page booklet issued by the Portland Cement Association. The booklet is illustrated by half-tone reproductions of photographs and detail drawings.

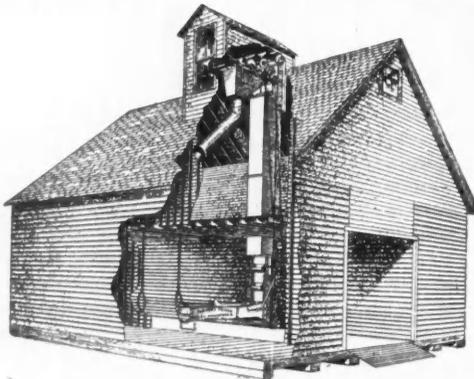
British Methods of Training Workers for its war industries are described in "Training and Dilution Bulletin No. 3," issued by the U. S. Department of Labor. Altho the necessity now is past, the bulletin gives an interesting recital of the part the British workers played in winning the war. Several illustrations show British women at work.

Power Saw Rigs, both portable and stationary, are described in a 48-page catalog of contractors' equipment issued by the C. H. & E. Manufacturing Co., Milwaukee. Also are shown power pumps, builders' hoists, double cage elevators and gasoline engines. Accompanying the catalog is a folder showing the company's equipment employed in constructing army cantonments.

Farmer's Friend Cup Elevator

Here is a new, improved, Pitless Elevator, the biggest advance ever made in farm elevator designing.

It can be installed in four hours with ordinary carpenters' tools. No troublesome pit to be dug, cemented, drained and cleaned. Simply set elevator on driveway floor.



Contractors—Write for **Free Crib Plans** and special offer to you.

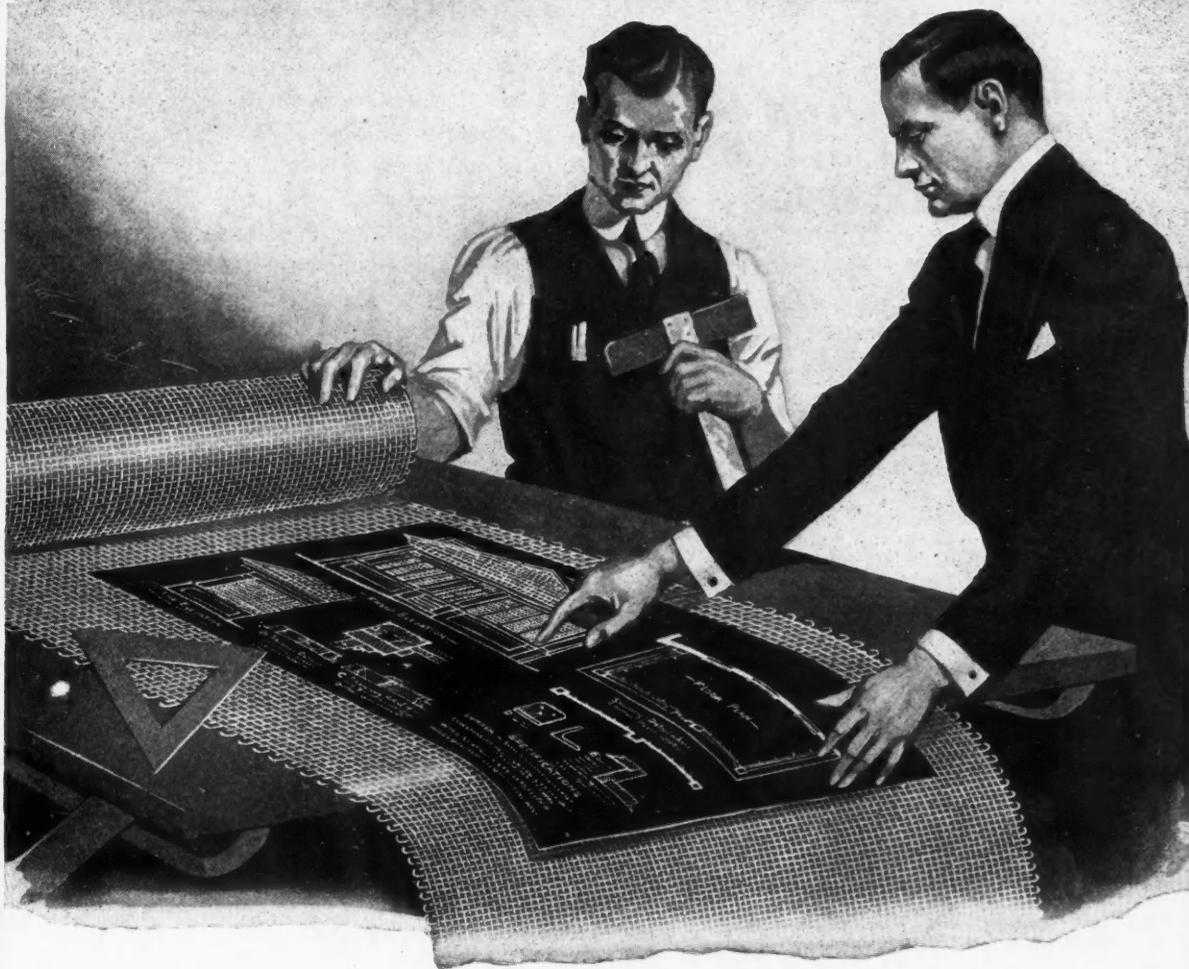
The Farmer's Friend

because it unloads 80 bushels of oats per minute and ear corn in proportion. Up-going buckets enclosed. No grain can spill in driveway. Can be installed in any crib having a driveway. Write today for our offer to builders.

MANUFACTURED BY

G. & D. Manufacturing Co.
STREATOR, ILL.





USE THIS PLAN AND GET THE JOB

WE WILL GLADLY send, upon request, a blue print showing elevation, floor plan and detailed specifications for properly screening a porch.

THERE ARE MANY homes that have porches that are not screened and many in need of a better plan and new screens.

NOW IS THE TIME to act. Call upon them. Screened porches are money makers for you and by submitting to your prospects this plan showing how easily and inexpensively he can screen his porch, and add a room that will combine comfort, healthfulness, beauty and convenience—you can easily get the job.

TO INSURE SATISFACTION and protect the investment in frames, and workmanship, specify PEARL Wire Cloth. Due to its metallic coating, a secret process owned and controlled by us, PEARL is longest lasting and therefore costs less in the long run—besides being the most handsome and sanitary.



BE SURE to get the genuine—which has two Copper Wires in the Selvage and our round tag on every roll.

Call on our local dealer or write direct for samples and literature if you're interested in screen material.

Address Department A

The Gilbert & Bennett Mfg. Co.

New York

Georgetown, Conn.

Chicago

Kansas City, Mo.

*PEARL is Made in Two Weights—Regular and Extra Heavy
The best Hardware Dealer in your city sells "PEARL"*

Reasons Why "NICE" LIQUID FILLER should be added to every Builders' Equipment

Nice Liquid Filler saves you time and material on every finishing job and adds to its quality.

Because:

It has an unequalled covering capacity, 700 to 800 square feet to the gallon, which means a material saving on every job.

It will hold out varnish even better than shellac. First class jobs can be done over close grained wood with one coat of Nice Filler and one coat of varnish.

Nice Filler goes on flat and even and requires little if any sand papering. It dries hard in 8 to 12 hours, allowing one-coat-a-day work to be done with safety.

The best of Flat Stains can be made of this filler by simply shading with colors in oil to suit. A good Varnish Stain can be made by adding a little good mixing varnish.

As a first coat for floors, Nice Filler is very valuable in bringing them up to an even surface. It makes an ideal first coat for linoleum.

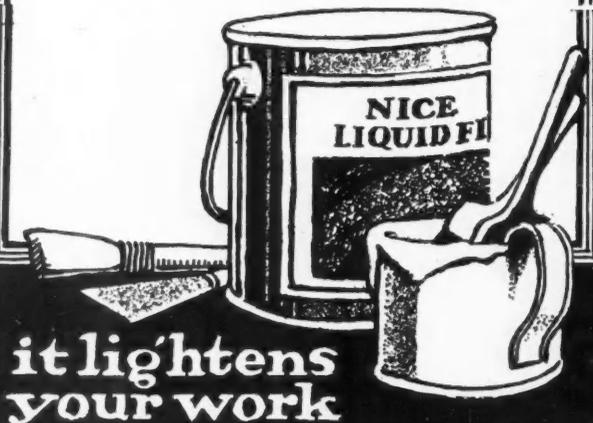
Nice Filler helps the user out of many difficult places and always adds to the quality of his work.

Let us send you a sample of this Filler. We want every Builder to become acquainted with the "Nice" line of Varnishes, Stains and similar products and will gladly send catalogs and samples on request.

Eugene E. Nice

Manufacturer of Paints, Stains, Enamels,
Varnishes, since 1875

Philadelphia, Pa.



The Building Outlook for 1919

By Noble Foster Hoggson

President Hoggson Brothers, Builders, New York

DESPITE the unusual and varied factors affecting construction work at this time, indications point to the greatest building revival during 1919 which this country has ever experienced. This is true largely because certain classes of structures must be erected almost at once to provide for actual demand.

First of all, in the larger cities, apartment houses and dwellings will lead the way, but closely following will be office buildings, lofts and industrial structures. Then there will be a tremendous amount of bank building. All over the country our financial institutions have been carrying on their work in their old homes, in crowded, inadequate quarters, waiting for a favorable time to erect new buildings or modernize their quarters by remodeling. Banks have never been more prosperous, and the bankers seem to feel that not only will they be meeting an economic need by building now, but that their action in this regard will set a precedent in their communities and encourage other owners to build. It is the specified wish of the Government that, in order to provide employment, construction work be put under way at the earliest possible moment.

In the industrial as well as in the domestic and commercial fields, building should see a large and healthy increase in volume. New factories must be built; plant extensions are an economic necessity, war plants, instead of being scrapped or abandoned, will in many instances be altered for peace work.

Housing for employes, which received such an impetus during the past two years, will be carried out on a vaster scale than we had ever thought possible. Employers have recognized the actual money-value return of providing good housing accommodations for their employes. It is fatuous to believe that the employes have not profited by the lessons of the war. They have learned that contented workmen are the best possible asset, that high labor turn over is wrong and expensive, and that proper housing is one of the greatest, if not the greatest, factors in reducing labor turn-over and keeping employes happy on the job.

The immense amount of reconstruction work to be done in France and Belgium is going to affect building conditions in this country more than is generally realized. This is true particularly in regard to prices for materials. The excessive demand for certain materials for use abroad, is most likely to keep prices in this country up to the present high level. Steel, so far, has been the only material which has shown any tendency to decline in price, but, with the great number and kinds of buildings needed, the matter of cost will probably not enter into calculations as much as under ordinary conditions. It should be remembered that since 1914 this country, except for a short period in 1916, has been underbuilt.



A Kellastone Home is a Big Advertising Card for You

Build just one Kellastone house in your town and you then and there lay the foundation for a profitable growing business. Each job completed stands as a permanent tribute to your good name.

Every prospective home builder who sees a home of KELLASTONE is sold—and sold well, and the more he knows about stucco construction, that much more will he be impressed with the plainly superior advantages of

KELLASTONE

IMPERISHABLE STUCCO

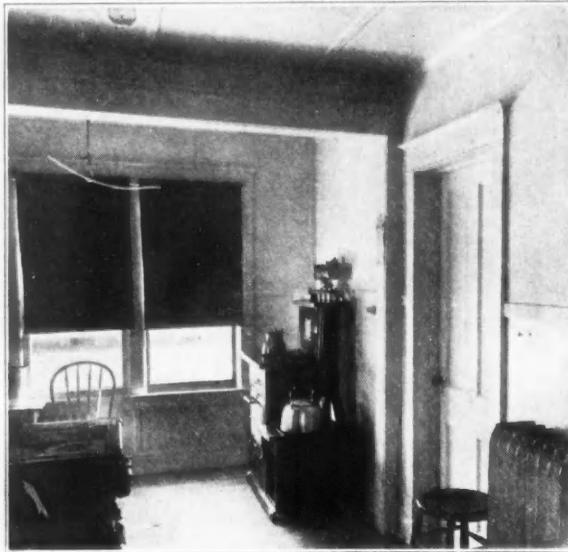
KELLASTONE is the original magnesite stucco—as lasting as the pyramids—does not expand, contract, chip or crack like ordinary stucco. It's a scientifically balanced composition that does not contain a particle of gypsum, lime or portland cement.

KELLASTONE qualifies for cottage or mansion, affording exclusive talking points which instantly appeal to every particular builder. Meet us half way and we will unfold the details of a proposition that will enable you to cash in on the approaching wave of prosperity in the building world.

National Kellastone Co.

1315 Mallers Bldg.

Chicago, Illinois



Kitchen finished in Cornell-Wood-Board

Develop new business and greater profits with

Cornell-Wood-Board

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

Carpenters, contractors and builders can create a volume of new business in the repair and alteration field by specifying Cornell-Wood-Board for interior finishing. Cold, inclement weather will mean added profits and you will save time and labor on every job.

Cornell-Wood-Board will not warp, chip, crack, or buckle. Resists cold, heat and moisture. Comes in standard sized panels and is easy to put up. Nails right to the framework or over the the old walls. Needs less paint or calamine than other interior finishes.

FREE Cornell-Wood-Board Samples and on receipt of room measurements, panel suggestions and cost estimates.

CORNELL WOOD PRODUCTS CO.

C. O. FRISBIE, President

Dept. 102 173-175 W. Jackson Boulevard, Chicago, U.S.A.

Cornell-Wood-Board is universally used among the building trades for the walls and ceilings of

Homes	Offices	Farm Buildings	Basements
Churches	Factories	Restaurants	Railroad
Schools	Clubs	Enclosed Porches	Depots
Garages	Theatres	Attics	Etc.



Cornell-Wood-Board made this attic attractive

A "Good One" on the Cantonment Builders

By E. S. Hanson

"NOW that the war is over" has come to be a favorite introduction for the telling of many a good story. But the ending of hostilities has made possible the relating of an endless number of interesting incidents which could not be given publicity while the nation was at war.

One such which will be of interest to builders relates to the construction of one of the big army cantonments. It was told confidentially to the writer, while the war was still on, by the supervising engineer for the construction company having the contract to erect the cantonment buildings.

This engineer was the first man of his company on the job. He went to the army headquarters on the site, stated that he represented the contractors, and asked where he was to begin work.

He was told that before doing anything he must prove to the satisfaction of the authorities that he actually represented the contractors.

"All right," he replied, "I can easily do that. And after I satisfy you as to my identity, then where do I begin?"

But he could find no one who was willing to say just where the work was to start. Everything had been done so rapidly, the authority was so divided, and changes were being made in the plans almost daily, so that no one was willing to take the responsibility for saying the word to allow the work to proceed.

The superintendent spent several valuable days going from one man to another, tho apparently without getting anywhere. But he was a veteran of many construction jobs and not easily discouraged. In all his quest for information, the one point which seemed to be definitely determined was that a certain building of the group was to be erected in a certain location. Fortunately for his purpose, this site was concealed from public view by a thick grove of trees.

So on his own initiative he got his forces together, went quietly to work clearing and excavating for this building, and by the time he was discovered he had the foundation staked out in a preliminary way.

At this juncture a high officer of the Engineer Corps arrived from Washington on a visit of inspection. Seeing this work started, he complimented the superintendent on his energy on getting such an early start and making such satisfactory progress.

And everyone who saw that the work was started, supposed that someone else had given the superintendent the word to go ahead!



Water-Proofing Concrete is the theme of a 32-page booklet, entitled "Medusia Water-Proofing," issued by the Sandusky Cement Co., Cleveland, O. This booklet describes Medusa water-proofing material, and tells how to mix and apply it.

BLACK ROCK WALLBOARD

BLACK CENTRE

A Distinctive Wallboard for Exceptional Results

One good job deserves another. And the good results you can get from Black Rock Wallboard will bring you wall and ceiling business that will prove mighty profitable for you.

For the building of new rooms in waste spaces, for the covering over of old plaster walls, and for the countless odd repair jobs, Black Rock Wallboard has all the quality and distinctiveness to make the final results worth while.

1 Black Rock Wallboard has the exclusive moisture-repellant black centre, double-ply in thickness, a distinctive feature your customers will learn to know.

2 It is doubly sealed and sized on the back to meet the varying humid conditions to be found within the walls themselves.

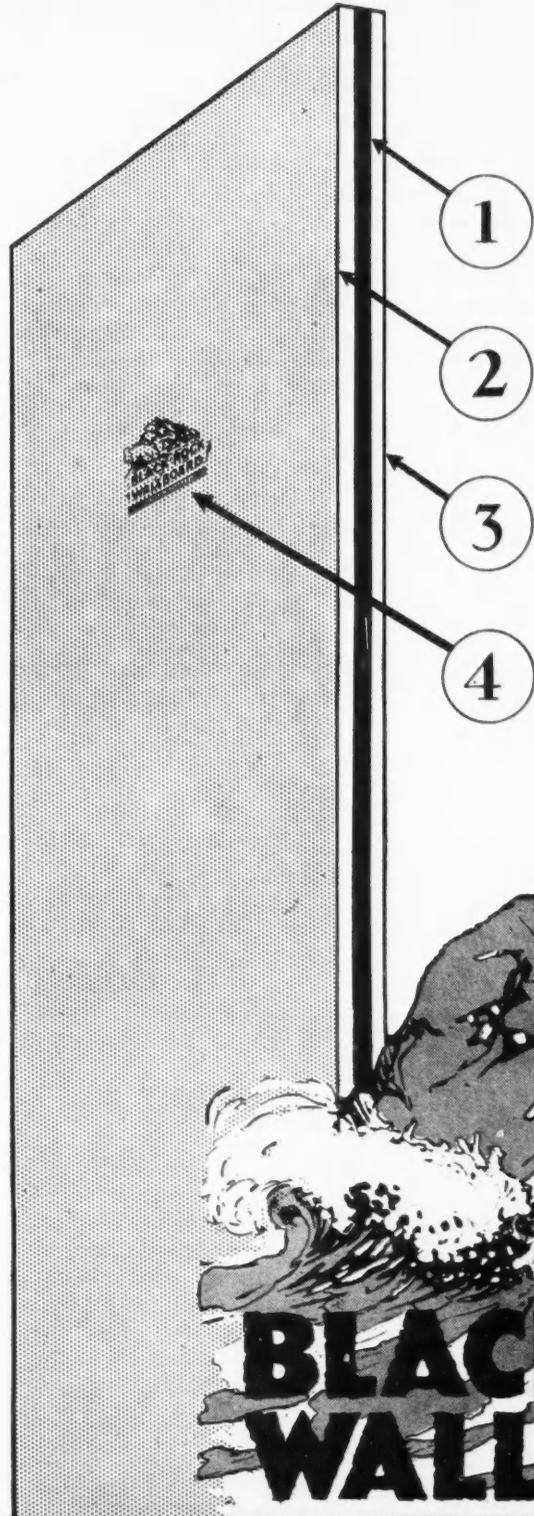
3 Surface-sealed and sized on the front so that priming coat by painters is unnecessary. Treated to withstand the tests of any climate.

4 Here is the distinctive Black Rock trademark printed on the back of every panel. To be sure of good results let this trademark be your guide.

Look up the Black Rock Wallboard dealer in your territory, or write us direct. We'll give you full particulars of our free plan service and send you a sample of Black Rock cut from stock.

THE BLACK ROCK WALLBOARD COMPANY
64 Ontario Street Buffalo, N. Y.

Dealers—Write for details of our exclusive sales plan.



BLACK ROCK WALLBOARD

BLACK CENTRE

A Definite Plan for the Physical Reconstruction of the Devastated Areas of France

(OR POSSIBLY BELGIUM, SERBIA, POLAND OR RUSSIA)

By **John V. Schaefer, M. E.**

President Cement-Gun Construction Company

THE disposal of the surplus stocks of material and equipment now owned by the Government, without disturbing our own industrial reconstruction, is giving American business men grave concern.

Herewith is a plan that has been submitted to a number of business men, to engineers, to secretaries of Chamber of Commerce, and to men who have seen conditions in France. They say it is practical and in part, at least solves our own industrial problem, and at the same time shows our good faith toward our Allies.

In order to get effective action, public sentiment should be aroused in favor of it as quickly as possible.

JOHN V. SCHAEFER,

President, Cement-Gun Construction Co.

Chicago, Dec. 31, 1918.

IT is suggested that the U. S. Government offer to the French Government:

First—That all the building material and other equipment owned by the U. S. Government, both here and in France, and purchased for war purposes, be collected. This will include material not yet used as well as all good material salvaged from the demolition of plants built for war purposes. All such material as can be used in reconstruction to be given to France and delivery expedited to the utmost of our ability.

Second—That this be considered as a part of the cost of the war to be included as a part of the bill against Germany.

Third—That there be sent to France such part of the existing Construction Division of the U. S. Army as will enable

it in co-operation with French constructors and European workmen to rehabilitate quickly the devastated portion, bringing to that task the organization, experience and mechanical equipment that has carried thru the American construction program.

This proposition divides itself into two parts, "A"—Materials, and "B"—Personnel.

"A"—MATERIALS

First—Demand

In the remarkable address delivered by Mr. Tardieu in New York City, Nov. 8, 1918, we are advised—

One-sixth the area of France has been devastated utterly. This was the richest part of France. It paid 25 per cent of the sum total of their taxes.

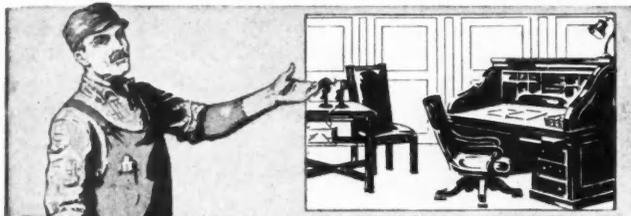
In this area there have been destroyed 350,000 homes; 90 per cent of France's spinning and weaving industry; 83 per cent of her pig iron production; 70 per cent of steel production; 70 per cent of sugar production, etc.

Of all that, plants, machinery, mines, etc., nothing is left, everything has been carried away or destroyed.

This must be rebuilt.

"We have lost two and one-half million men." * * * "A fifteenth part of our people is missing at the very time we need all our material and moral forces to build up our life again. But besides this restoration we must understand that rapidity of execution is a primary condition of the reconstruction of France and that the U. S. by its immense possi-

(Continued to page 118.)



You're the man

who can make offices and factories more comfortable, warm for this winter.

For you are the man who can put in

PLASTERGON
TREATED
WOOD FIBRE
WALL-BOARD

The hard, stiff, water-proof Plastergon Wall-Board, by shutting out the cold far more than sieve-like plaster, also does the patriotic work of saving coal.

Different from any other wall-board. Don't forget that! Chemically saturated.

Why don't you do now what the Government did before using Plastergon Wall-Board in ninety per cent of the new Washington buildings. Find out the difference.

Write for Free sample of Plastergon Wall-Board and Builders' Book

Plastergon Wall-Board Company

201-207 Philadelphia Avenue

Buffalo, N. Y.



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.

Send for Our Free Magazine

LOOK and LEARN

All over the land building activities are being resumed. Don't make the costly mistake of going ahead with your plans until you have attended the permanent

BUILDING MATERIAL EXHIBIT

Entire Second Floor

**Insurance Exchange Building
175 W. Jackson Boulevard
CHICAGO**

Displays of everything new in the building line — more than 150 of them. A treat to see. If you can't come in person, write.

“Look Before You Build”

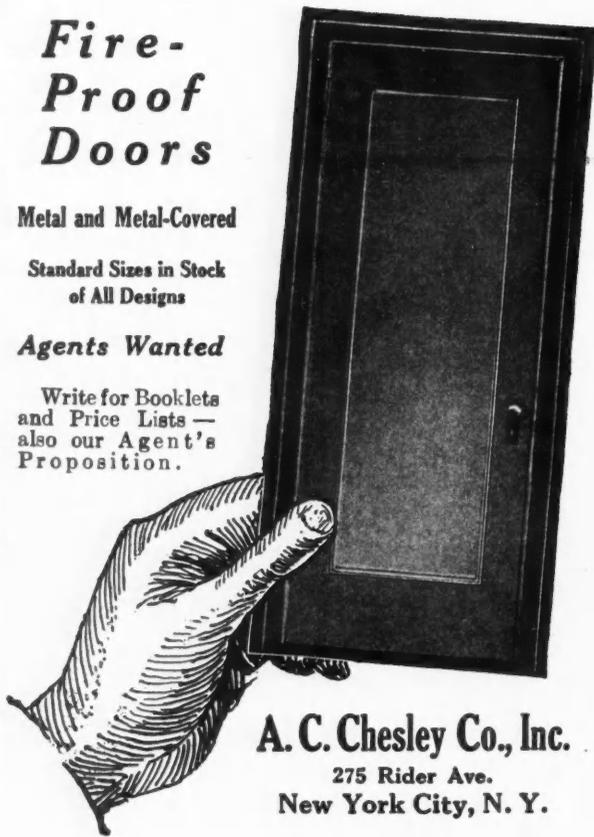
Fire-Proof Doors

Metal and Metal-Covered

Standard Sizes in Stock
of All Designs

Agents Wanted

Write for Booklets
and Price Lists —
also our Agent's
Proposition.



A. C. Chesley Co., Inc.
275 Rider Ave.
New York City, N. Y.

Permanence— At Smaller Cost

For your peace-time re-adjustment in building you must save time; but—do not sacrifice permanence. You can build permanently in less time and at smaller cost with



Trade Mark Registered, U. S. Patent Office, No. 94748

It is made with a center core of kiln-dried wood slats. It is strong, durable and resists heat, cold and moisture. Its surface is always perfectly smooth and rigid. May be painted or papered—won't buckle, break, crack, chip or mar.

Be sure you get the genuine Compo-Board. It has the natural wood core and the name printed every four feet.

Write for Sample and Interesting Booklet

The Compo-Board Co.

5777 Lyndale Avenue North,
MINNEAPOLIS, - MINN.

Plan for Reconstruction of Devastated Area

(Continued from page 116.)

bilities of production must be our first aid."

In brief, we may say there is nothing in the way of building material, equipment, domestic utensils and industrial machinery that is not needed in very large quantities, and at once.

Second—Supply

The Construction Division of the U. S. Army has here in America \$30,000,000 worth of building material that has never been used. Included in this is enough lumber to build 60,000 5-room houses. There is about \$7,000,000 worth of plumbing, heating, piping and other sanitary and water supply fixtures. When to this is added all the material of like nature from the other departments here and in France, some used and some unused, and to this is added what can be salvaged from demolition of plants, the figures are staggering. The Construction Division alone has purchased bakeries enough to bake 2,000,000 1-lb. loaves of bread daily. It has purchased 100 miles of steam radiators, 1,200 miles of plumbing material. Out of one group of temporary office buildings alone there will soon be available 125,000 chairs, 25,000 good office desks, 25,000 typewriters, and electric fans and other office equipment in proportion.

Inventories are being prepared showing materials on hand. It will take some time to complete these. Meanwhile it is safe to say that the equipment which was used to house, clothe, feed, doctor and nurse, entertain and safeguard morally and spiritually 4,000,000 men as no body of men ever were cared for before will go a long way toward quickly reconstructing communities aggregating 350,000 homes, at least until such time when a new generation may without suffering and want provide for itself more in accordance with its own taste.

"B"—PERSONNEL

The Construction Division of the U. S. Army is one of the most effective construction organizations that has ever existed. It is believed this statement will go unchallenged so it will not be necessary to prove it. But note. This organization is composed almost entirely of men from civil life. They are the men who have tunneled our mountains, bridged our streams, built our skyscrapers, constructed and maintained our shops and industrial enterprises and public utilities and railroads. In two years they will have performed three times the work required by the Panama Canal that took ten years to complete. They have done this under the most trying conditions of labor, material and transportation and at a reasonable cost.

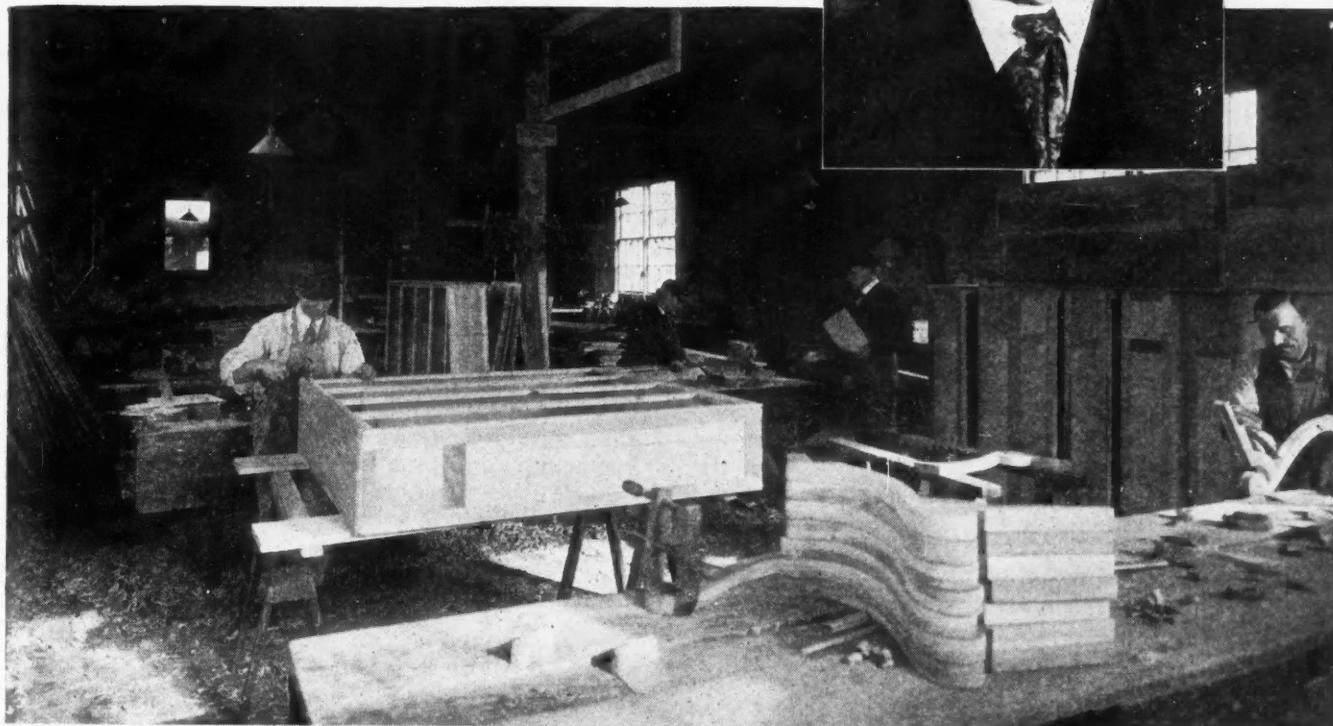
This organization is still intact. It still possesses \$3,000,000 worth of mechanical construction equipment with the operation of which it has experienced. Its labor is nearly finished. Within a few months all of this will be disbanded. To allow it to disintegrate while this great construction demand exists would be an economic crime. If this organization with its equipment could take hold of the rebuilding of France as it took hold of the building of our cantonments and terminals, etc., it should be of the greatest possible assistance to French constructors and would be appreciated.

The majority of these men would be willing to go to France if they could continue their present organization and be permitted to work by the methods that have proved so successful. Co-operation of French engineers will be necessary. At the invitation of the French Engineering Societies and of the French Government, a representative body of American engineers is now in Paris conferring with them regarding maintenance and construction of all kinds of reconstruction work for the devastated areas. When that delegation returns to this country and advises as to the exact condition of affairs, we should be ready to take instant action along these lines.

(Continued to page 120.)

"We Always Have Beaver Board in Stock"

Wm. Dunbar, Builder, Cleveland



"Beaver Board is now used so steadily in our business that we have to keep it in stock."—*Wm. Dunbar.*

Here is another demonstration of the increasing usefulness of Beaver Board. It is another concrete example of the way this good lumber product has grown from a specialty to a staple building material.

Wm. Dunbar, a prominent contractor and builder of Cleveland, Ohio, is a steady user of Beaver Board. In big jobs and little ones it is serving his good purposes along with other kinds of building material.

Steady use means satisfactory use. That's just what you'll find when you know the many good things you can do with Beaver Board. You'll soon depend upon it for large ceilings, for partitions, for back grounds and you'll never

have a repair job of any kind that doesn't call for some of this knotless, crackless, manufactured lumber.

Unlike other wallboards, Beaver Board is treated with the patent *Sealtite* process that prevents warping. When you use it you will find many worthwhile advantages.

Wherever you get your other building materials you can probably get Beaver Board. If not, please write us. We gladly send you interesting and helpful literature.

THE BEAVER BOARD COMPANIES

57 Beaver Road Buffalo, N. Y.

Branches at Boston, New York, Baltimore, Cleveland, Detroit, Chicago, Minneapolis, Kansas City, San Francisco, Ottawa, Can., and London, Eng.

Manufacturers also of Beaver Greenboard and Beaver Blackboard.

Distributors in principal cities, dealers everywhere.



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

BEAVER BOARD

FOR BETTER WALLS & CEILINGS

A Plan for Reconstruction of Devastated Areas

(Continued from page 118.)

Every impulse of human sympathy prompts us to do it, but humanitarian reasons are so strong and so obvious that I pass them over for a few more material but possibly less apparent reasons.

The production of this material has taken the maximum effort on the part of our manufacturers for nearly two years. We have it. We must dispose of it within a time measured by its ability to resist decay and corrosion. It is agreed that our domestic market will not absorb it within such period without seriously curtailing normal production. To do this at a time when work must be found for about 7,000,000 soldiers and munition workers, who must be reabsorbed by normal industry, cannot be considered. The re-sale of this material is giving the manufacturers of the U. S. grave concern. There is no other safe solution than to dispose of it abroad and if so it should be placed where most urgently needed.

We are building a great merchant marine. What for? To carry our foreign trade. How are we going to get foreign trade commensurate with our shipping? In normal times a foreign market has to be won by slow and painful and expensive work. Prejudices must be overcome, competition must be met. Here at one stroke we have a foreign trade established. We can establish in one year what in normal times we would not do in fifty years, there is no competition, the only prejudice that exists is in our favor. We could afford to make a free gift to France and Belgium and Serbia and Poland and Russia of all our spare radiators and cook stoves and electric light fixtures, and chairs, etc., and so at one stroke overcome the danger of domestic labor panic and establish a foreign market, which once established will continue to

keep our labor employed and our merchant marine busy.

In this connection we must also remember that all of this material we have will fall far short of meeting present requirements. The deficiency must still be supplied and this additional demand, together with the normal domestic demand should keep our industries working in such manner as to greatly assist the re-absorption of our soldiers and munition workers.

Are we then not taking away from French workmen their means of profitable labor? Not at all. We don't propose to raise their crops or dig their coal or spin their yarn. We propose to help prepare their soil so they can plant and harvest their own crops instead of eating bread sent from here. We propose to help them open their coal mines so they can dig their own coal instead of freezing or getting coal from here. We don't propose to spin their yarn, but we propose to help them make themselves self-sustaining and if we do our part every able bodied French man and woman will have plenty to do planting and digging and spinning.

Again, it may be said that they are not used to our bathtubs and electric lights and running water; that they won't appreciate these things and won't use them. But they have got to use them or perish. Their soil is full of dead men and gas and shells. Pure water must be supplied. Individual discomfort, in the pressure of necessity will be replaced by public utility conveniences, and this will come the more easily because over there all live in villages. There are no detached farm houses like here.

Reasons why the plan should be adopted can be multiplied. I will mention only one more.

The French Government will be very heavily in debt to us. This debt will be secured by French good will, French recuperative power and indemnity from Germany. The good

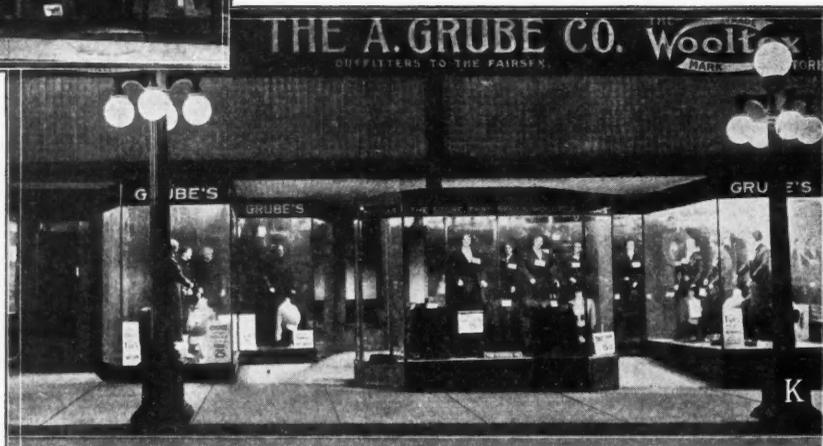
(Continued to page 122.)



This Kawneer Store Front Brought 25% Increase in Sales

Whether for New Work or Remodeling

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.

Selling years the f saved We h make all o Such tion a to on than simi
 Hig
 "Des bar, f chan Rust a pos tract and creos Glas and tract tion ized to u (whi actu front med
 We to yo posit offic our sales price of th fron cred store bigg



"I Make Money Remodeling Store Fronts—So Can You"

Buy Direct From Maker

Selling store front construction to contractors for twenty-nine years has firmly convinced us that you prefer to buy direct from the factory—you profit by the direct service, and the money saved on even a small order is no small item.

We have no branch offices, no road salesmen—you deal with the maker whose reputation for fair dealing is known by contractors all over the country.

Such an experience has enabled us to develop "Desco" construction so that you can easily sell it to your customers. It is easy to order, easy to install and the price is lower than you have been accustomed to pay for similar material.

High Quality—Moderate Price

"Desco" is simple—it is strong. The corner bar, for example, is reinforced with a heavy steel channel rust-proofed by the well known Parker Rust Proof Process. All bars and sash allow for a positive grip on the glass and permit of glass expansion, contraction and vibration. "Desco" sash provides for ventilation and drainage with large sized holes. The glass rests against creosote-dipped blocks in the sash which serve as a cushion. Glass breakages (both during and after setting) are very rare, and then only because of extreme carelessness. Many contractors and retailers say "Desco" is the best looking construction on the market. It is a complete construction, but standardized in such a way that you can easily and quickly decide what to use. Instead of making a large number of bars, sash, etc. (which are unnecessary and confusing), we make only what is actually needed to build good, permanent, strong and attractive fronts. As a user of store front construction you will immediately appreciate this simplicity.

You Sell at a Profit

We sell "Desco" construction to you at a discount that permits you to sell it to your customer at a profit and still save him money. To do this the quality positively is not sacrificed. We save you the profit and heavy expense of branch offices and road salesmen. This advertisement is our salesman which tells our story to you, and you in turn sell "Desco" to your customers. By this sales plan you make a good profit and are able to sell "Desco" at attractive prices. Remember, the Detroit Show Case Co. is favorably known in all parts of the country and enjoys the reputation of building only high quality store front construction and show cases. Every "Desco" front you install will be a credit to you, to your customer and to us. This is the practical way to sell store front construction—so let us work together. Here is your opening to a bigger and more profitable business.

Big Opportunity for You

Every indication points to the biggest store front remodeling season that you have ever had. Retailers everywhere, in large cities and small towns, are now ready to tear out their old fronts and put in modern ones. Are you ready to get your share of this profitable business? You are the ideal man to land those store front contracts in your city. The retailers and building owners know you, they have confidence in you and your work. What you say goes.

We urge you to fill in this coupon and mail it to us now—today. We will provide you with information about modern store fronts that will enable you to go out and line up some profitable contracts. We will give you drawings of various types of fronts—large and small—full size details and prices (with your discounts) of "Desco" construction.

Don't Wait!

Spring always has been one of the best seasons to remodel store fronts, so don't wait until you have a job before getting our help. We've spent years gathering the information you need to do this work at a profit.

See Sweet's Catalog

Turn to Sweet's Catalog—pages 477-478-479-480 and study "Desco" construction. It's practical—every part—and is just what you need to use in your store front work. Architects in all parts of the country are specifying "Desco." Before you line up any jobs, be sure to send in this coupon.



A COMBINATION OF STRENGTH AND SIMPLICITY. SOLD AT A MODERATE PRICE.

DETROIT SHOW CASE CO.,
491 Fort Street W.
DETROIT, MICHIGAN

Gentlemen:

Without obligation please send me copy of "Book of Store Front Suggestions," full size details of "Desco" construction with list prices and special discount.

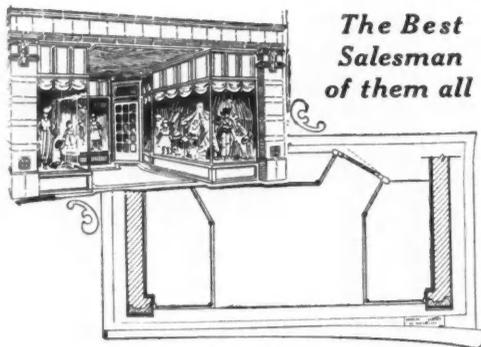
Name _____

Street Address _____

City _____

State _____

This is Your OPPORTUNITY COUPON



Planning the New Store Front

YOUR action **now** will, to a large degree, determine the volume of business you will have in the Spring and Summer.

DEFERRED action means **deferred returns** if not the loss of a very valuable patronage. To be prepared to offer a Store Front service backed up by the assistance of our entire organization will lead to an early and profitable return on your efforts.

A GLANCE at the many old fronts reveals the crying need of many merchants and the value of your service to these merchants will be measured as much by the high standard of the Store Front Construction you use as by the skill with which it is installed. Start early and start right by getting full information on **Brasco Copper Store Front Construction**.

Brasco

Manufacturing Co.

5029 S. Wabash Avenue
CHICAGO

A Plan for Reconstruction of Devastated Areas

(Continued to page 120.)

will we will have in abundance, but it isn't legal tender. The indemnity will be paid as Germany can raise it, but that should first go to rebuilding a thousand and one losses that our reconstruction program cannot touch. So in the final analysis our security for our loan will be French recuperative power. The quicker we get them rebuilt and on a self-sustaining basis the safer our loan. The loaf of bread we send them on their promise to pay, only makes the debt larger, but the acre of land we restore for his plow, enhances our security and hastens repayment.

Whatever is done should be done quickly. The Construction Division is still intact and its mechanical equipment immediately available. Within 30 days it will begin to disband and dispose of its equipment, if it does not have set before it further tasks commensurate with its ability.

The re-sale of quartermaster stores, not including the material in charge of the Construction Division herein above mentioned, or any of the material owned by the U. S. Government in France is being handled in an admirable way by the Surplus Supply Division of the U. S. Army recently organized in Washington. Their efforts should be co-ordinated with those of the Construction Division. By putting them together, the American Government is in a position to say to the French Government: "Here is the material for reconstruction, and here are the men to take care of the work, leaving your own forces free to re-establish your normal industries which for four years have been interrupted by war activities."

Finally, such an offer made promptly at this time will be the strongest possible evidence that we are sincere in our expression of the desire that some form of international agreement—call it League of Nations, or by some other term—shall be reached that will bind us together in peace as we have been bound together in war.

JOHN V. SCHAEFER, President,
Cement-Gun Construction Company.



A Victory for Home Builders

The victory of the "Bone dry America," which the ratification of the constitutional prohibition amendment has brought about, could be made to mean a thousand miles of homes, according to a Chicago expert with figures. In other words, a row of frame cottages erected on fifty foot lots would stretch out that distance.

The calculator who turns the prohibition victory into a splendid collection of happy firesides figures about this way:

"The United States (or rather its people), has spent each year for liquor \$2,400,000,000, which now it will have for the purchase of other things. This sum would buy 800,000 dwellings at an average cost of \$3,000 each—a row over a thousand miles long if built on fifty foot lots."

Tho it is not stated, this proposition of a thousand miles of happy lumber-built homes would be repeated every year, so that at the end of ten years there would be ten thousand miles of such homes. More figuring shows that this means there would be eight million such homes, which ought to take care of a large part of the earth.

USE
**MIDLAND
TERRA COTTA**

FOR BETTER BUILDINGS

Business-winning store fronts, self-renting apartment buildings and attractive structures of every description are assured thru the use of MIDLAND TERRA COTTA.

Don't follow the crowd. Have the best store front in town. You will be surprised with the results of this sort of permanent advertising.

QUALITY AND SERVICE

Our motto

MIDLAND TERRA COTTA COMPANY
Lumber Exchange Building Chicago



Unique Office Building Largely of Zinc

WITH the completion of a unique seven-story building at No. 160 Front Street, the sky line along the East River in lower New York City has become changed. Of additional importance is the fact that necessity demanded the completion of this building during the war period when only essential construction work was permitted.

Among the principal features brought out in the construction of this edifice was the quite general use of zinc materials. The design follows standard of modern architecture, but in the use of zinc for so many purposes, innovations are offered that are of interest to building contractors, manufacturers of builders' hardware, architects and realty concerns.

It is certain that in few other buildings does this metal play so prominent a part. From basement to roof zinc material is embodied both on the exterior and for inside use. Zinc plated door checks, frames, window sash and locks are among the more apparent ways in which zinc is employed. By no means, however, do these represent the only utility of this metal which has so rapidly come into prominence in so many new ways thru conditions, in part, brought about by the war.

The building is being built by the Smith Valley Realty Company, for the exclusive use of The New Jersey Zinc Company. This concern, which has stood sponsor for many new uses of zinc in various forms, realized that for building purposes rolled zinc possessed many desirable features. Accordingly, plans were made, when the building was projected, to embody them in the structure. This was at a time well in advance of the ruling of the War Industries Board which called upon manufacturers, as a patriotic duty, to substitute the metal for others in the non-ferrous field for a great variety of uses.

Flashings, gutters and all other outside work are made of rolled zinc, this material having been substituted for copper,

heretofore commonly used in construction work. In this not only does zinc perform the functions well, but it is also a material that entails less cost.

"The substitution of zinc for copper offers a new field whereby building costs can be decreased," said W. W. Ferguson, who is supervising construction. "The future should bring vastly increased use of this metal for the above purposes. It is easily worked, is non-corrosive and its durability has been thoroly demonstrated in Europe, where it has been employed for more than a century."

As one enters the building, the entrance and vestibule doors are found to be constructed of sheet zinc rolled on wood. The knobs and locks are made of zinc plate, a detail that is embodied thruout. Zinc composition is the material embodied in the hinges.

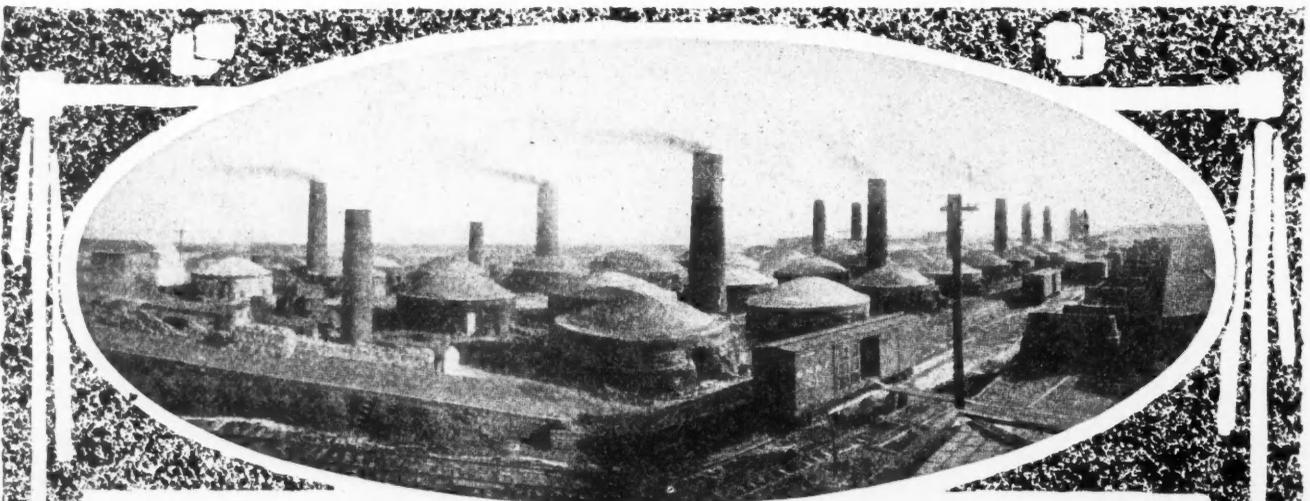
Side walls of the elevators immediately inside are of zinc construction. Likewise, the elevator doors and bell plans are zinc coated, giving a rich satin finish. All of the window hardware is manufactured from zinc plate. This includes sash, locks and handles.

A complete ventilating system is installed thruout the building. The grilles for the registers were first stamped and then zinc plated. These are found in suitable places, their location being designed to produce the greatest possible efficiency.

Floors are of marble, while steel railings are found on almost every floor. Partitions are made of steel and have a natural hardwood finish.

In the interior fixtures zinc materials are consistently employed. This metal is used in the hardware, including trimmings and fittings, of the mail chute. Some of the panel

(Continued to page 126.)



WESTERN HOLLOW TILE HAS NO EQUAL FOR FARM BUILDINGS

For Modern Farm Buildings there is no material that embodies as many good features and so few bad ones—none that so completely does away with repairs and general upkeep.

With the Introduction of Western Hollow Tile into the Building Industry the life and profitableness of Farm Buildings was no longer a question. It makes them fireproof, vermin-proof, and absolutely permanent, demanding no repairs or attention thru the years of service.

It makes all buildings cooler in summer and warmer in winter, greatly adding to the comforts and convenience of live stock, as well as the Farmer himself.

FACE BRICK AND HOLLOW TILE

Our line covers every building need—from chimney and foundation brick to the most beautiful Face Brick, in many colors and textures.

You can get our products thru your nearest dealer. Building Material Dealers carry the "Western Line." We want good dealers for territory still open. Tell your dealer to write for samples and prices.

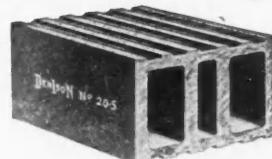
WESTERN BRICK COMPANY

DANVILLE, ILLINOIS

Denison Hollow Building Tile

The Ideal Construction for All Types of Buildings

Economical—The first cost of building with Denison Tile to either owner or contractor, is no greater than when substantially built of any other material. Requires no paint or repairs.



Denison No. 20 Tile

Comfortable—Warm in winter and cool in summer. Sanitary, vermin and rat proof. Provides drier buildings.

Permanent—Will last for centuries. Is decay proof and fire resistant. Used and endorsed by hundreds of contractors and builders.

Appearance—Uniform, pleasing and permanent color, which is developed naturally by the burning of the clay.

HOME OF WOODCREST RAG APPLE CHAMPION \$5000.00 BULL
 J. B. SCHEMERHORN, OWNER. GILBERT E. HANSON, MANAGER
 BREEDERS OF REGISTERED HOLSTEIN CATTLE

MASON CITY, IOWA

"Our buildings are all constructed of Denison Hollow Clay Tile. In spite of last winter's severe cold, and the barn being only half full of cattle, water in the drinking cups did not freeze. The cattle thrive better and put on more flesh, the cows gave more milk than when in wooden barns. The buildings are warmer, drier and more sanitary than are wooden buildings. There is not a rat on the place. I would not use any other building material." Signed,

Gilbert E. Hanson

Manager.



Contractors and Builders—This type of construction will enable you to establish a reputation for yourself and your work, and result in future as well as immediate profit for you. Will insure greater satisfaction and service to your customers. Write for our **FREE** details and prices.

MASON CITY BRICK & TILE CO.
 900 EIGHTH STREET, MASON CITY, IOWA



Complete Group of Farm Buildings Near Mason City, Iowa
 Built of Denison Hollow Clay Tile. Owned by Mr. J. B. Schemerhorn, Chicago, Ill.

Unique Office Building Largely of Zinc

(Continued from page 124.)

doors enclosing cut-out boxes, enunciator boxes and all low tension work in the electrical equipment are made of zinc plate.

The lighting fixtures are also zinc plate, while frames for the illuminating lamps are spun from rolled zinc sheets. Ornaments that are to be found thruout the building have been cast from zinc.

Paint, enamels and tints that compose the interior decorations include zinc oxide and lithopone (zinc sulphide—barium sulphate) as ingredients. These are ordinarily used by paint manufacturers in the higher grade paints and enamels, however, and their use is, therefore, not considered so unusual in this structure.

Many of the furnishings to be used are designed to be in keeping with the structural features of the edifice. These include desk fittings and office supplies, all of the materials for which are products of the tenant corporation. This applies even to the window shades, which contain lithopone in their construction.

The company moved into the new quarters, which are at the corner of Maiden Lane, about January 20.



Boxes Big as a House

Enough lumber to build a small cottage is required to construct a packing box for the big navy seaplanes of the United States, according to information from Washington. These boxes are necessary for overseas shipment of the planes. The box for the hull usually is $8\frac{1}{2} \times 10 \times 46$ feet, and 3,620 feet of lumber is necessary to build it.

Except for the windows and doors, which would have to be

added, that much lumber would build a small but neat and comfortable cottage for, say, two. The navy department in a recent statement emphasized the importance of the "wooden packing box," and went into detail as to the manner of its construction.



Lumber Is Not High

THE time to build is right now!

An equal amount of farm produce will buy twice as much lumber today as it would two or three years ago, and more than it would have bought during the past five, ten or even fifteen years.

There is a mistaken impression that lumber is high.

The facts below prove it is not. The farmer will never find a better time to build than the present. What brought him \$1.00 in 1914 now brings him \$2.00 or \$2.50. In other words, the same products now buy from two to two and one-half times as much as they did then.

In 1914 one bushel of wheat would buy three pieces of lumber 2x4—16. This winter one bushel of wheat will buy SEVEN PIECES of 2x4—16.

Or, if you plan to build a gambrel roof barn 32x56 feet with 14-foot shed along one side:

In 1914 it took 40 hogs to pay for this barn, while at the present time it requires only 24!

There never was a better time to buy lumber than the present.



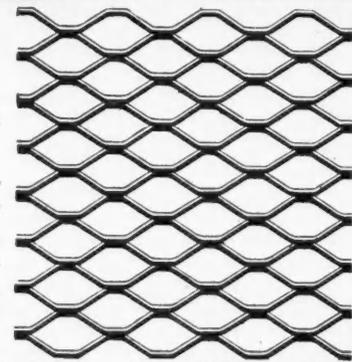
Kno-Burn
TRADE MARK

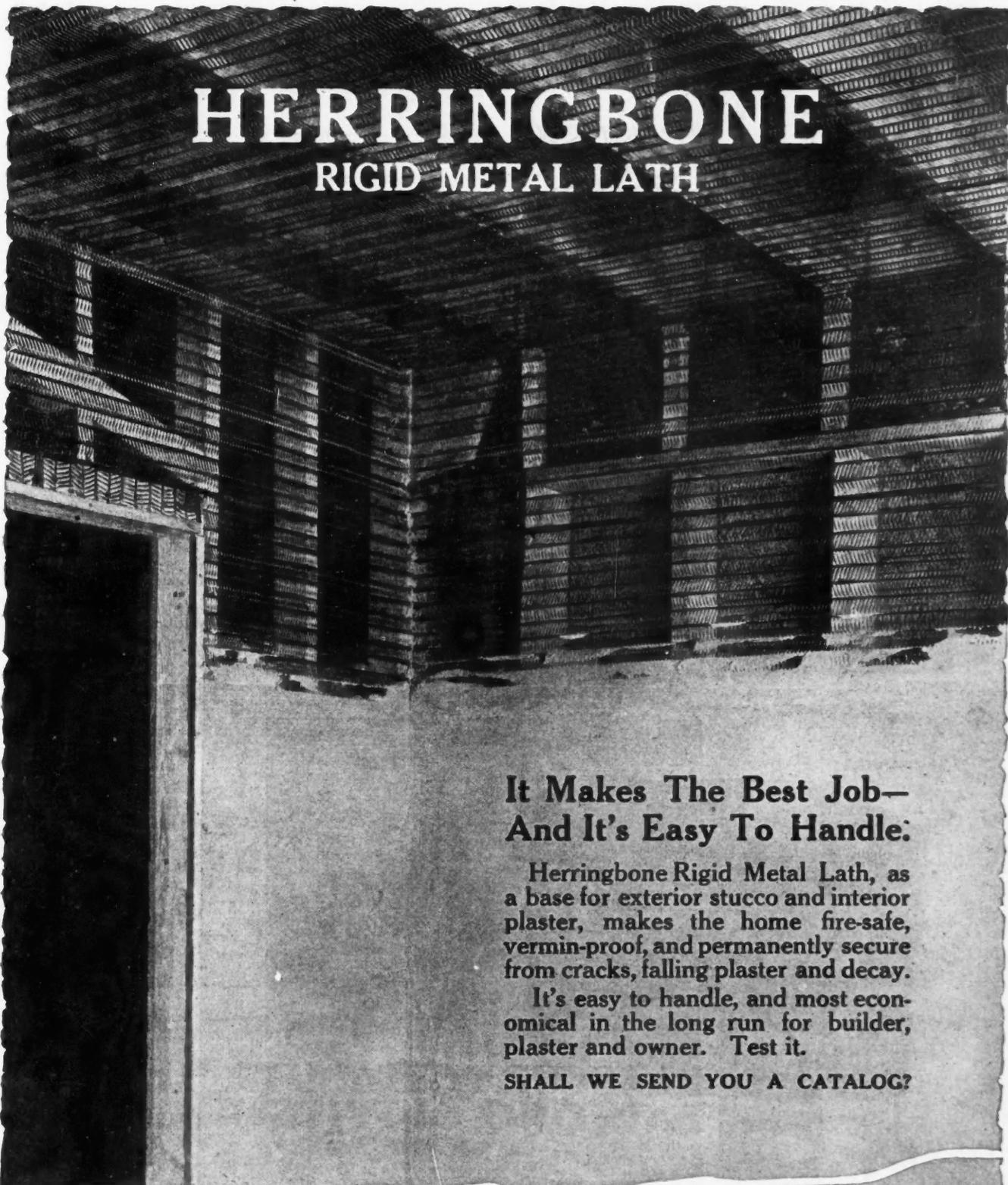
EXPANDED METAL LATH

A Blue Print of this house is to be found on another page of this magazine.

WHEN YOU COMPARE the real value of KNO BURN construction in both town and farm buildings with other less durable building materials, you at once recognize its wonderful quality, its permanence, its strength, its fire resistance and economy. The life of stucco depends entirely upon the quality of base used in construction. In Kno Burn you have the one base that guarantees the long life of stucco buildings.

NORTH WESTERN EXPANDED METAL CO., 203 Old Colony Bldg., Chicago, Ill.





HERRINGBONE RIGID METAL LATH

It Makes The Best Job— And It's Easy To Handle:

Herringbone Rigid Metal Lath, as a base for exterior stucco and interior plaster, makes the home fire-safe, vermin-proof, and permanently secure from cracks, falling plaster and decay.

It's easy to handle, and most economical in the long run for builder, plaster and owner. Test it.

SHALL WE SEND YOU A CATALOG?

The General Fireproofing Co.

Metal Lath—Concrete Reinforcements—Waterproofings—Technical Paints

MEMBER OF ASSOCIATED METAL LATH MANUFACTURERS

YOUNGSTOWN, OHIO

The Editors' Drawer

*New things
worth while*

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

Steel Wheel for Heavily Loaded Trucks

There is no place where the motor truck must be able to stand up under heavier loads than in the building field. Crushed stone, cement, steel and lumber are about the heaviest materials a motor truck is called on to transport. What happens when a wheel gives way is much more serious than the mere destruction of the wheel. The drop of the heavy load will almost always have a destructive effect on the structure of the truck, while the loss of a spoke, which develops a "flat," or an untrue wheel, does much damage to the axles and bearings.

This fact has been realized by the makers of truck wheels, and as a result numerous styles and types of metal wheels were evolved. One of the latest of these is shown in the accompanying illustration. It is a one-piece wheel of electric furnace steel, and because of its construction overcomes any possibility of loose spokes, which results in a lightness of weight that is astonishing. As will be noticed from the illustration, it has an odd number of spokes and sweeping curves, which have the effect of breaking road shocks before they reach the axle.

This Wheel of Hollow Steel is Designed to Stand Up Under the Heavy Loads Auto Trucks Carry.

Recent government tests have shown that this wheel has remarkable strength and resiliency and they were specified in the plans for trucks for war work.



Slate Roofs Are Permanent

"Roof material may come and roof material may go, but it seems that slate roofing goes on forever," to paraphrase the Song of the Brook, for since the first slate quarries were opened in the United States there has been a steady demand for this class of material for the roofs of buildings of all types.

Herewith is shown a new home in Bethlehem, Pa. It

(Continued to page 130.)



PAASCHE PORTABLE PAINTING OUTFITS

SAVE TIME, LABOR AND MONEY

Contractors will find no modern labor-saving invention that really makes them as much money as the Paasche Painting Equipment. With this equipment one man does the work of from four to eight men. This immediately reduces the cost of both exterior and interior painting.

QUICKER--BETTER--CHEAPER From thirty to forty square feet of paint is easily applied per minute, and being applied by compressed air a cleaner, smoother and more uniform finish is obtained. The same smooth finish is given the roughest corners and edges, hollows, laps, and irregular joints.

The Paasche Painting Outfit is equipped to do all general painting, calcimining, varnishing of floors and all around decorating and finishing. From largest battleship or building to the smallest job of decorating, the Paasche Outfit will do it better and at a great saving.

The United States Government uses Paasche Portable Painting Equipment in all railroad and shipbuilding yards and wherever paint is needed.

CONTRACTORS Can you afford to do less than investigate a proposition that offers you such an opportunity? Write today for complete information. It will make you money.

Paasche Air Brush Co. 1230 W. Washington Blvd., Chicago, Ill., U. S. A.



The Best Backing for Stucco

The demand for minimum cost with maximum fire-resistance, permanence and all-round satisfaction is leading to a rapidly growing use of stucco for exteriors.

The progressive builder **must know stucco.** How to use it, how to make a good job of it. He must know the advantages and disadvantages of various methods and materials.

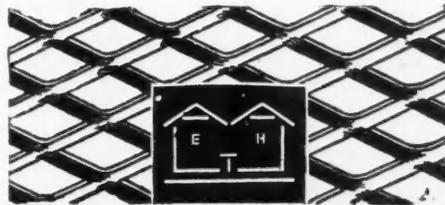
For Backing you will find nothing better than

Berger's Expanded Metal Lath

Steel is the best reinforcement for concrete. For the same reason and many others Expanded Metal Lath is the best backing for stucco.

Berger's Expanded Metal Lath is a reinforcement in every direction. It is *embedded in stucco*—not merely latched to it.

All of the worst causes of cracks are eliminated and as a result where the work has been well done, cracks do not occur. Under abuse, such as a blow with a sledge or a blast of flame, less cracking results than with any other form of backing. Even then, cracked and broken pieces are held in place by the close mesh—they still offer a barrier to fire.



METAL LATH
Because Metal Lasts

Metal Lath cannot burn, it cannot swell, warp, split or shrink. It is strong and stiff but not too rigid.

Contraction and expansion are also cared for. This eliminates another cause of cracking. Thousands upon thousands of structures have exterior walls of stucco on

Expanded Metal Lath. The condition of these structures after years of use is the best possible argument for the use of Metal Lath.

To help you to use Stucco and Expanded Metal Lath, we have prepared a Metal Lath Handbook. This book, by illustration and descriptive data, tells you the best ways of doing the work. It's yours on request.

The Berger Mfg. Co.

Canton, Ohio

Branches: Boston New York Philadelphia Chicago St. Louis Minneapolis San Francisco

Export Dept.: Berger Bldg., New York City, U. S. A.

Members Associated Metal Lath Manufacturers

BERGER

**EXPANDED METAL LATH-FLOOR CORES-REINFORCING PLATES-METAL LUMBER
STEEL FILING CASES-LOCKERS-FACTORY STORAGE BINS AND SHELVING
STEEL CEILINGS-ROOFING-SIDING AND OTHER PRESSED STEEL PRODUCTS**



Stop Those Leaks!

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

**JOHNSON'S
RADIATOR CEMENT**

Quick—Efficient—Harmless

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

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

Quarts. .\$.1.75 Pints. .\$.1.00 Half-Pints. .\$. .65

Write for our folder on "Keeping Your Car Young"—it's free.



If your dealer cannot supply you, use attached coupon.

S. C. JOHNSON & SON, Dept. ACB 2
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

The Editors Drawer

(Continued from page 128.)

was designed for Edward S. Knisely by William M. Michler, architect, of Easton, Pa., and erected by F. F. Speck, contractor, of Bethlehem. What an attractive exterior effect was obtained with lumber and dashed stucco can be seen from the illustration.

One outstanding feature, however, is the roof, which is



Residence of Edw. S. Knisely, Bethlehem, Pa. Architect, Wm. M. Michler; Contractor, F. F. Speck. Roofed with Graduated Special Rough Slate, 24 to 14 inches Long and 1/2 to 1/4 inches Thick, Random Widths.

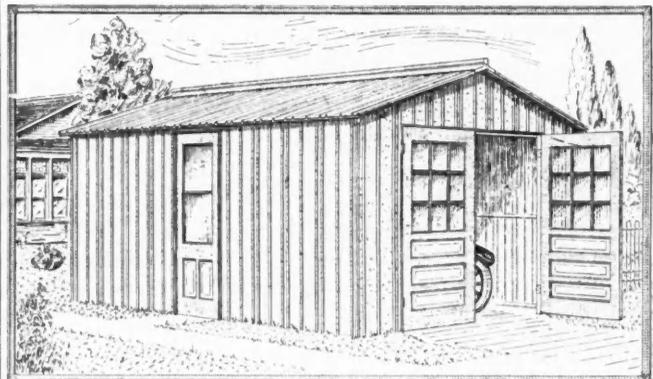
of gray-black slate, taken from a Bethlehem quarry. The type of slate used was graduated special rough in random widths, the lengths varying from 14 to 24 inches and the thickness from 1/4 to 1/2 inch. The color is gray-black.

The quarries from which this slate was taken were opened in 1850 and have been in successful operation ever since.



Steel Portable Garages

Until the War Industries Board stopped the production of passenger automobiles the farmers were the largest buyers of machines among the many classes of professional and business men of the country. The restrictions on the production of the so-called pleasure car were short lived, being imposed only a few months before the war ended, and have been



Portable Steel Garage Comes Knocked Down, Ready for the Builder.

removed. Now the manufacturers are again turning to this field, but are pushing trucks and tractors as well as passenger cars.

All of these machines need homes and many owners will want those of steel. The accompanying illustration shows a garage of all-steel construction, with roof, ends, sides and

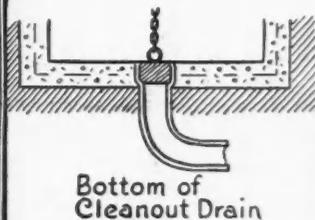
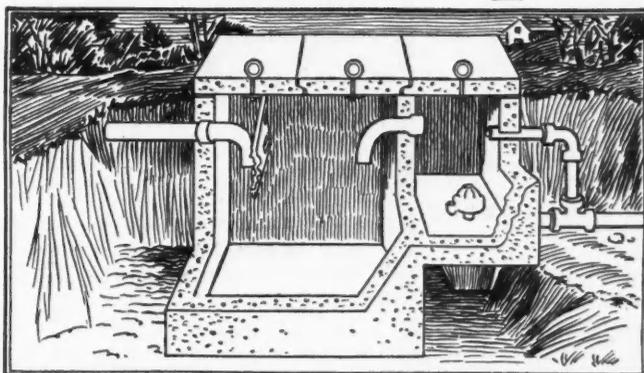
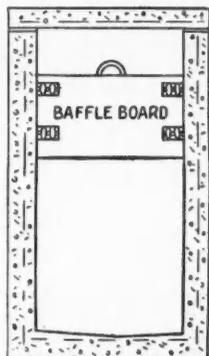
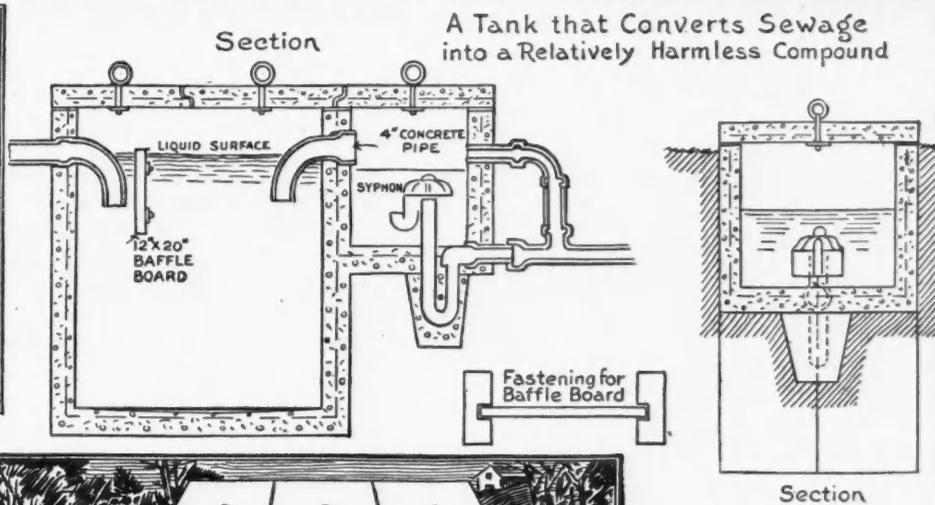
(Continued to page 132.)

Get these Practical ALPHA service sheets on Concrete Construction

ESTIMATE OF CONCRETE MATERIALS

CEMENT	4.5 Bbs.
SAND	1 1/2 Cu.Yds.
STONE	2 3/4 Cu.Yds.
4 1/4 in. Rods for Reinforcing 300ft.	

Concrete Mixture composed of
 1 Part ALPHA CEMENT
 2 Parts of Sand and
 4 Parts of Broken Stone



REINFORCED CONCRETE SEPTIC TANK
 ALPHA PORTLAND CEMENT CO.

The above gives an idea of the timely and practical information afforded by the ALPHA Service Sheets and Bulletins. Such helpful details are available on the following concrete improvements:

- | | | | | |
|-----------------|----------------|-----------------|-----------------------|-----------------------|
| Walkway | Storage Cellar | Tennis Court | Dipping Vat | Fence Posts |
| Driveway | Spring House | Concrete Roof | Tanks, Troughs and | Gate Posts |
| Roads | Small Dam | Barns and Silos | Pools | Walls, Sills, Lintels |
| Small Bridges | Milk House | Corn Crib | Piers for Small Boats | Workingmen's Homes |
| Culvert | Ice House | Smoke House | Garden Furniture | Garages |
| Foundation | Manure Pit | Hog House | Greenhouse | Porch, Cellar and |
| Gutter and Curb | Septic Tank | Poultry House | Storage House | Stable Floors |

Any of these Sheets and Bulletins that interest you will be sent free on request if you live East of the Mississippi. Available also on request are the practical handbook, ALPHA CEMENT, How to Use It, 96 pages, illustrated, and recent issues of ALPHA AIDS, devoted to storage buildings, municipal hog houses, overcoating of old dwellings, oil storage tanks, coal pockets, cold-weather concreting, post building, etc.

PLEASE MENTION AMERICAN BUILDER

ALPHA PORTLAND CEMENT CO., General Offices: Easton, Pa.

Branch Offices: NEW YORK BOSTON PHILADELPHIA PITTSBURGH BALTIMORE SAVANNAH

Concrete for Permanence

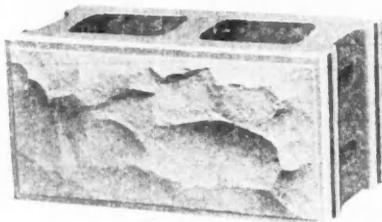
Ideal

Concrete Machinery

The Ideal Machine

For the manufacture of concrete block offers an opportunity of engaging in a business that is both pleasant and profitable.

Ideal Concrete Block



Is a building material which combines the modern principles of fire, wind and weather-proof construction with the artistic.

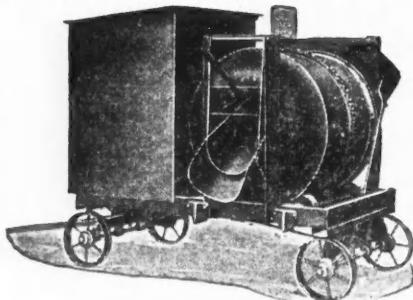
The Result



Of furnishing such a product to the farmer for residence, barn or silo is a satisfied customer and a finished job which will bring other customers thru its appearance of solidity, permanence and beauty.

Ideal Cincinnati Mixers

Sizes
5
to
22
cu. ft.



Because of their compact, sturdy construction, light weight and easy portability are just the mixers for putting down a feeding floor, foundations, walks and for every kind of concrete work.

Ideal Concrete Machinery Company
1308 Monmouth Street Cincinnati, Ohio

The Editor's Drawer

(Continued from page 130.)

doors cut to the exact size of specifications. This garage comes in knocked-down shape and is said to be easy to put up.

The steel frame has strength and durability, being thoroly anchored and provided with a complete and modern system of bracing, which takes care of wind pressure and produces rigid construction. All the necessary bolts, washers, fillers, anchor bolts, etc., are provided.

The only thing about this garage that is not of steel are the windows. Consequently it is fireproof, a feature that will appeal to the owners of gasoline vehicles.



Saving Electric Current

There is a neat little device that will appeal to the thrifty housewife. It is a device that will allow her to save electric

current, and still have a light in the room. This is a socket with a chain attached, a pull of which will dim the light. This not only saves current, but oftentimes provides just the illumination necessary, as, for instance, in the children's sleeping room, or in the bath room, or the sick room. It has only been within the last few years that these fixtures have been inexpensive enough to become in general use, altho Edison discovered the principle a long time ago.



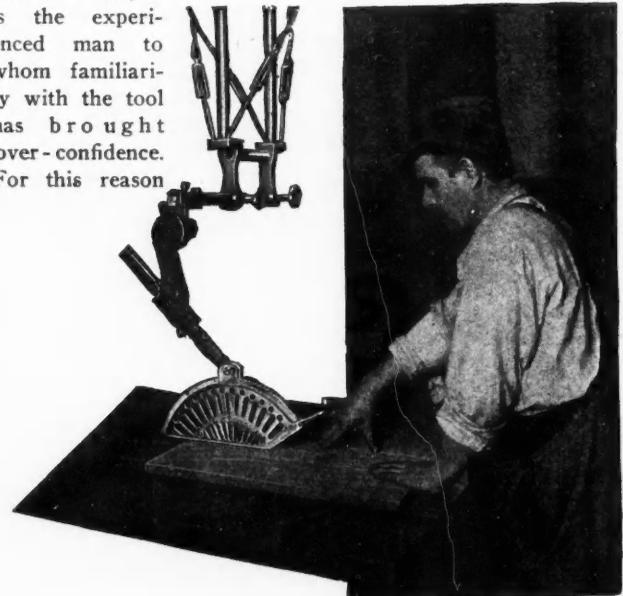
Electric Fixture
Shuts Off Most of
the Light and Saves
Current.



Safety Device for Power Saws

The same human element—mental lapses—that causes railroad wrecks also causes injury to the workmen operating power saws. It is not the new man who gets his fingers in the buzz saw; it

is the experienced man to whom familiarity with the tool has brought over-confidence. For this reason



Danger From Carelessness at Power Saw Eliminated by This Device.

there have been invented many safety devices to prevent injury to workmen operating machinery. None, however, is more necessary than one that will protect the operator of a power saw from the oftentimes permanent injury a moment's mental lapse will cause.

(Continued to page 134.)



Medusa Waterproofing used for residence, chicken house, watering troughs, fence posts, etc.

Farm Construction That Will Be Permanently Damp-Proof and Weather-Resisting

CONCRETE is becoming more and more the standard form of farm construction. Farmers know that concrete work properly done will be *permanent*.

But most concrete farm structures must be *watertight*—if they are to give permanent satisfaction. Cisterns, tanks, silos, feeding floors, etc., must be built so that they will not absorb moisture.

Medusa Waterproofing absolutely insures damp-proof construction. Its merits are well known to every progressive contractor and builder. It costs little to use but its results can never be measured in dollars and cents.

Insure your concrete work by using Medusa, the Original Waterproofing. It will enhance your reputation as a builder. It will bring you nothing but satisfied customers.



Send for this
Booklet

Send a post card today for a practical booklet "How to Make Concrete Waterproof." You'll refer to it often.

The Sandusky Cement Company
Dept. G. Cleveland, Ohio

MEDUSA WATERPROOFING

BUILDER'S SPECIAL

500-Foot and 1000-Foot Lightning Rod Outfits Shipped Direct

THERE'S an extra profit waiting for you on many jobs, which you can easily get by installing proper lightning protection. The property owner has confidence in you—make this extra money yourself. With only a small investment in our Builder's Special Outfit, you will realize this big profit in selling and erecting

Thompson's
THE WORLD'S BEST

Guaranteed Lightning Protection

The Builder's Special Outfit is designed to meet your needs. A 1000-Foot Outfit will equip from 6 to 8 average buildings, a 500-Foot Outfit from 3 to 4 buildings.

An Extra Profit You Can Get

Many Thompson agents are making \$3,000.00 extra per year. Every un-roofed rural building is a prospect for a sale ranging from forty to several hundred dollars. Your profit on a complete 1000-Foot Outfit is \$165.00; on a 500-Foot Outfit, \$82.50.

FREE If you are a Builder, Carpenter, Contractor, or Lumber Dealer, with your initial order we will give you free a set of the necessary Special Lightning Rod Tools. *This offer is limited.*

Write today for Illustrated Dealer's Catalog, Instruction Book (shown at left), and full details of our Introductory offer and Exclusive Agency Proposition.

THE GEORGE E. THOMPSON LIGHTNING ROD COMPANY
Originators and Distributors
Dept. B, Owatonna Minnesota, U. S. A.



R. H. Co. ESTABLISHED 1849
STAR SECTION
GALVANIZED AND COPPER COVERED
LIGHTNING RODS
100 PER CENT EFFICIENT

Greater Profits

For contractors who wish to utilize their time and build up a wide reputation. By installing Star Section Lightning Rods you are doing the utmost for your customer and pocketing a big profit each month.

Seventy years of successful manufacturing of lightning rods guarantees to the contractor that he is handling the product that will give his customer the most complete satisfaction. There is no greater asset than satisfied customers. We have some "territory" in which we want more reliable representatives. You can serve your own best interests by writing us at once regarding this unoccupied territory.

You cannot afford to delay—it is territory that yields great profits to wide awake contractors.

WRITE FOR OUR PROPOSITION

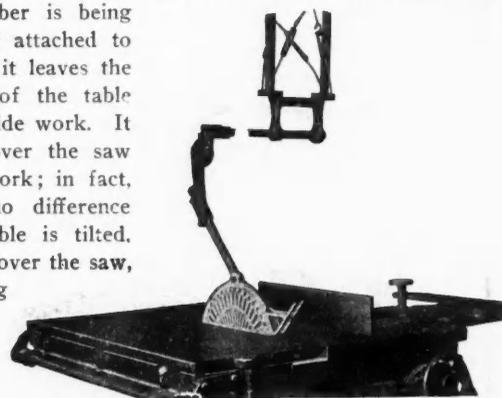
The Reyburn-Hunter-Foy Co.
815-819-821 Broadway Cincinnati, Ohio
Successors to
REYBURN-HUNTER & CO. E. A. FOY COMPANY
Philadelphia-Chicago Cincinnati



The Editor's Drawer

(Continued from page 132.)

Herewith are shown two illustrations of a late model of saw guard. The one shows the guard in place for straight or bevel sawing; the other with the guard turned back for up-end work. This is a simple, but efficient saw guard. It is self-adjustable, due to steel rollers placed in the sleeve carrying the hood, allowing it to raise and lower automatically as the lumber is being run. Being attached to the ceiling, it leaves the entire top of the table clear for wide work. It is always over the saw for bevel work; in fact, it makes no difference how the table is tilted, the hood is over the saw, always doing its duty.



Showing How Saw is Completely Guarded When Not in Use.

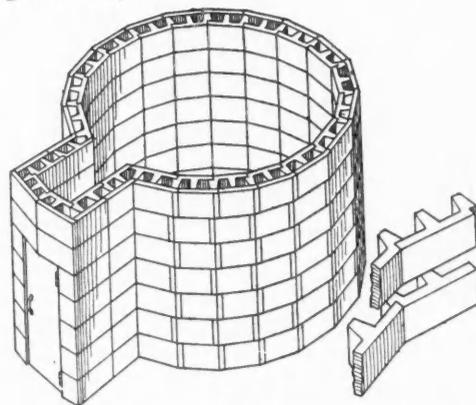
Some manufacturers are more or less prejudiced against guards, for the reason they feel that they are in the way and decrease the efficiency of the operator. This one, however, is not in the way and helps efficiency, as the operator is safe and can devote all of his time to the work, not having to think of his fingers.



Concrete Blocks for Silos

To those who prefer a silo of concrete block construction, the type of block pictured in the accompanying illustration will have a strong appeal. While the block has a straight surface, it is of such shape as to permit of circular walls, with a good air space.

The blocks have a single surface and are made in units 12 by 24 inches, each one making about 2 square feet of wall. As will be seen by the detail sketch of the blocks, the spurs are so arranged as to form what might be called a hinge, so that the joints will be tight, altho a curved wall is formed.

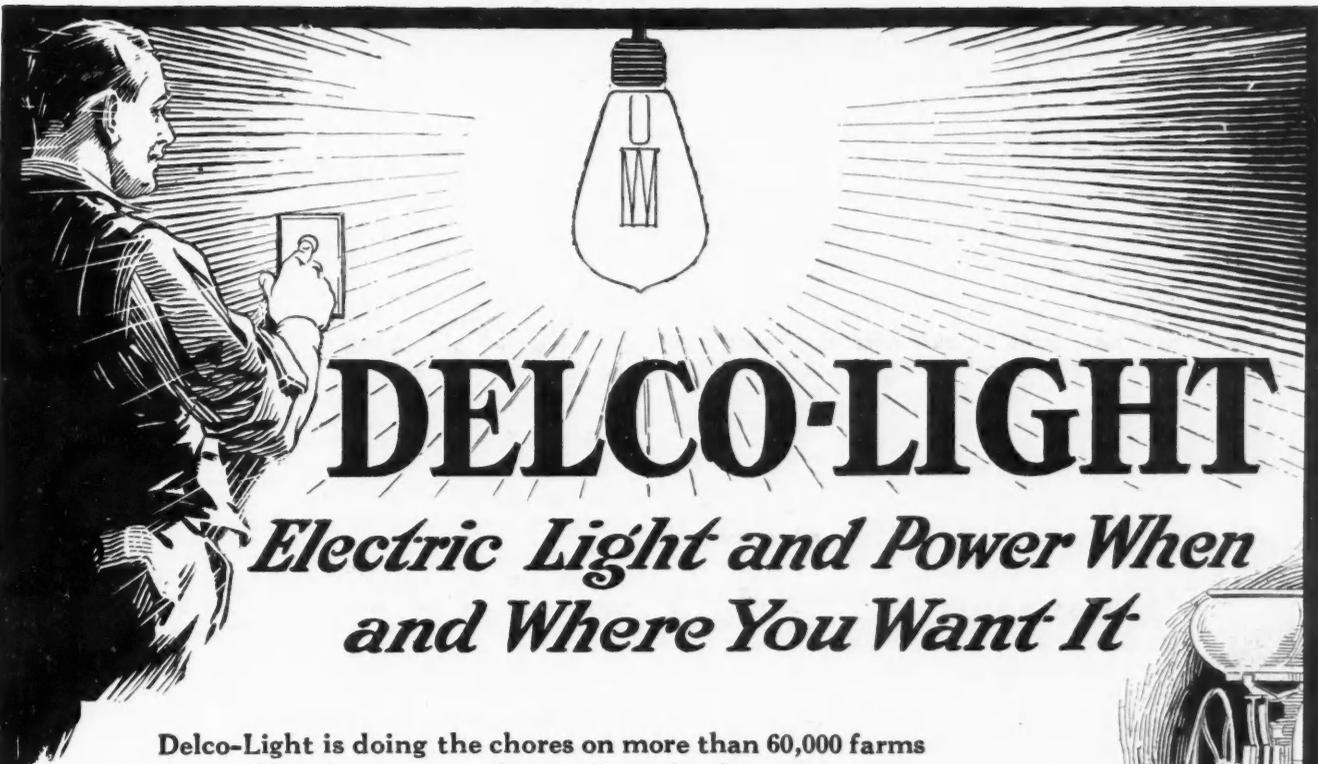


New Type of Concrete Block That is Hinged on Spurs so as to Permit Curved Silo Walls.

These blocks are useful in the construction of many farm buildings. Besides the silo, they can be used for the concrete grain bin and the water tank. In both silo and grain bin construction, the air space is an advantage as it will keep out the frost.

Machines for the construction of this type of block are easily operated by one man, who, it is claimed, can make fifty blocks or 100 square feet in a day. The blocks can

(Continued to page 136.)



DELCO-LIGHT

*Electric Light and Power When
and Where You Want It*

Delco-Light is doing the chores on more than 60,000 farms today. That is a reason why builders should prepare their plans and specifications for farm buildings to include electric wiring.

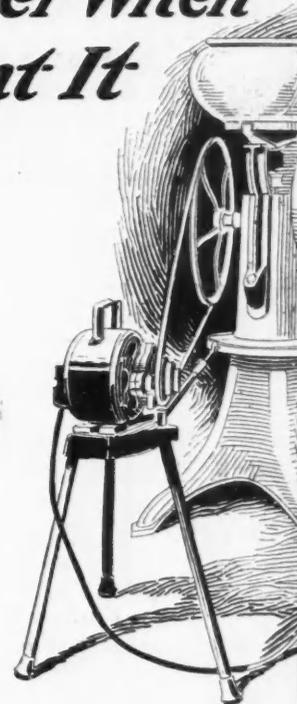
Delco-Light is an essential on every modern farm.

It is a time and labor saver to the farmer and his wife—brings them comfort—brings the conveniences of the city and invites them to stay at home.

Delco-Light plants are going into farms, country estates, stores, public buildings and small towns every day. The plant not only improves living conditions through the benefits it provides, but quickly pays for itself in time and labor saved.

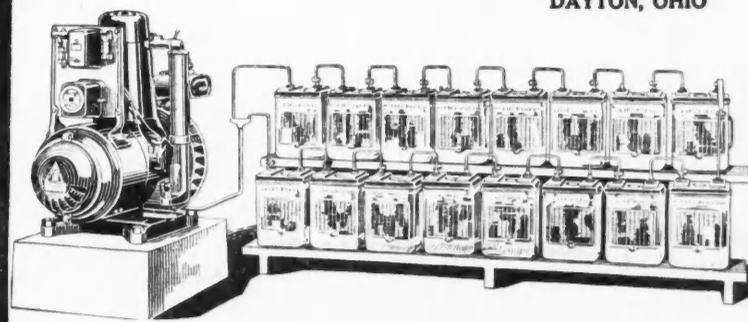
It is the complete electric light and power plant—furnishing light and running water, power to operate churn, feed mill and other practical farm appliances. Lessens fire hazards and is the cheapest power on earth.

Builders are invited to write for booklet giving valuable information and further complete details.



Put the Delco-Light Power Stand to work for you. It is an efficient, portable electric motor that you can easily carry from one job to another.

THE DOMESTIC ENGINEERING COMPANY
DAYTON, OHIO



*A Complete Electric Light and Power
Plant for Farms and Country Homes
Self-Cranking—Air Cooled—Ball Bearings
No Belts—Only One Place to Oil—Thick
Plates, Long Lived Battery*
RUNS ON KEROSENE

(Continued from page 134.)

be made wet, so wet that they will quake in the mold, and at the same time can be immediately removed.



Here's a Tip for the Furnace Man

While it may be a little late in the winter to direct the attention of the furnace man to the proper method of burning coal, this is the time when the owners of furnaces will be having trouble with them. Much of this trouble comes from inexperience in firing with bituminous coal. But now this is practically the only kind of coal that can be obtained in a great many sections of the country. Consequently, it is well for the furnace man to aid his customers in handling their fires correctly. This will prevent many "kicks," while the



This Home of an Omaha Packer Is Heated by a Warm-Air Furnace.

interest in his welfare will create in the customer that feeling of goodwill every business man wants to get and keep. George H. Hess, president of the Hess Warming and Ventilating Co., Chicago, has had much experience with the cheaper grades of bituminous coal, which until two years ago was not considered suitable for use in the home. From

his experience, Mr. Hess has formulated the following suggestions for the satisfactory use of soft coal:

"The indirect or chain regulated smoke damper should always be open, never closed. The direct draft damper, which is close up to the furnace, may be opened when you are putting in fresh coal, but should be closed at all other times. The chain regulating damper in front and the slide in the ash-door should be closed, excepting at short periods of time when it happens that smoke has been entirely burned off from the fuel in the fire-box. The wheel in the fire-door should always be open, so that fresh air may be sprayed over the top of the fire, where it will mingle with the smoke and gas and burn most of it. If the fire burns too fast the door itself may be opened a little, and the inflowing cold air will then check the fire and make it carry longer.

"In the small size furnaces soft coal of the large egg size or mine run coal may be used, but small coal is not desirable. In the larger furnaces lump coal or mine run is best.

"In burning soft coal do not start your fire with the kindling wood UNDER the coal, but quite the reverse. Put in your soft coal first and the kindling wood ON TOP OF IT, and the fire will start off without smoke. When the fire is burning well and the smoke is mostly gone, push all of the live coals to the back end of the fire-box and instead of spreading fresh coal over the entire fire, bank it close up to the front. The smoke and fresh air will then mingle and burn as they pass over the fire at the back end of the fire-box.

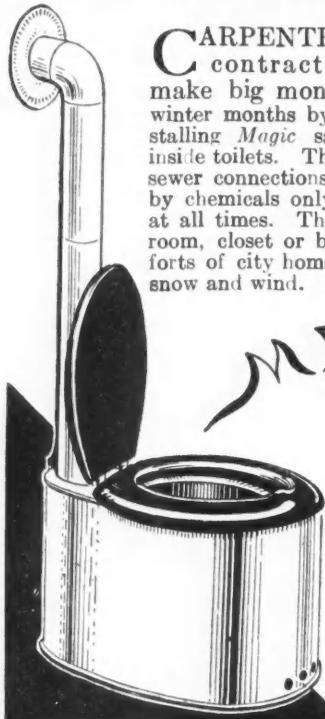
"To carry fire over night, or for a long time, when much heat is not required, put in your large lumps, as large as the door will admit. They will burn more slowly than the smaller fragments.

(Continued to page 138.)

Set It Up In 30 Minutes

NEEDS NO
WATER,
NO
SEWER

CARPENTERS and contractors can make big money during the winter months by selling and installing *Magic* sanitary chemical inside toilets. They need no water or sewer connections. They are operated by chemicals only, keeping the toilet sterilized at all times. The Magic can be placed in a bedroom, closet or bathroom. Enjoy all the comforts of city homes. Keep out of the cold, rain, snow and wind. Avoid exposure to the weather



MAGIC
TRADE MARK

Write to the address below for their liberal money-making proposition to carpenters and builders. You run no risk. We guarantee absolute satisfaction and refund your money after thirty days' trial if you are not pleased and contented.

Chemical Closet Supply Co.
Jackson, Michigan

Comfort Indoor Closet Odorless Sanitary Germ-Proof No Sewer — No Waterworks — No Plumbing Needed

This modern home necessity is fast taking the place of the unsightly, unhealthy, inconvenient outhouse in the back yard. Thousands now in use and all giving complete satisfaction. Can be put wherever convenient in the house. No odor whatever. Gives city convenience in the country or town.

Abolish Outdoor Closet

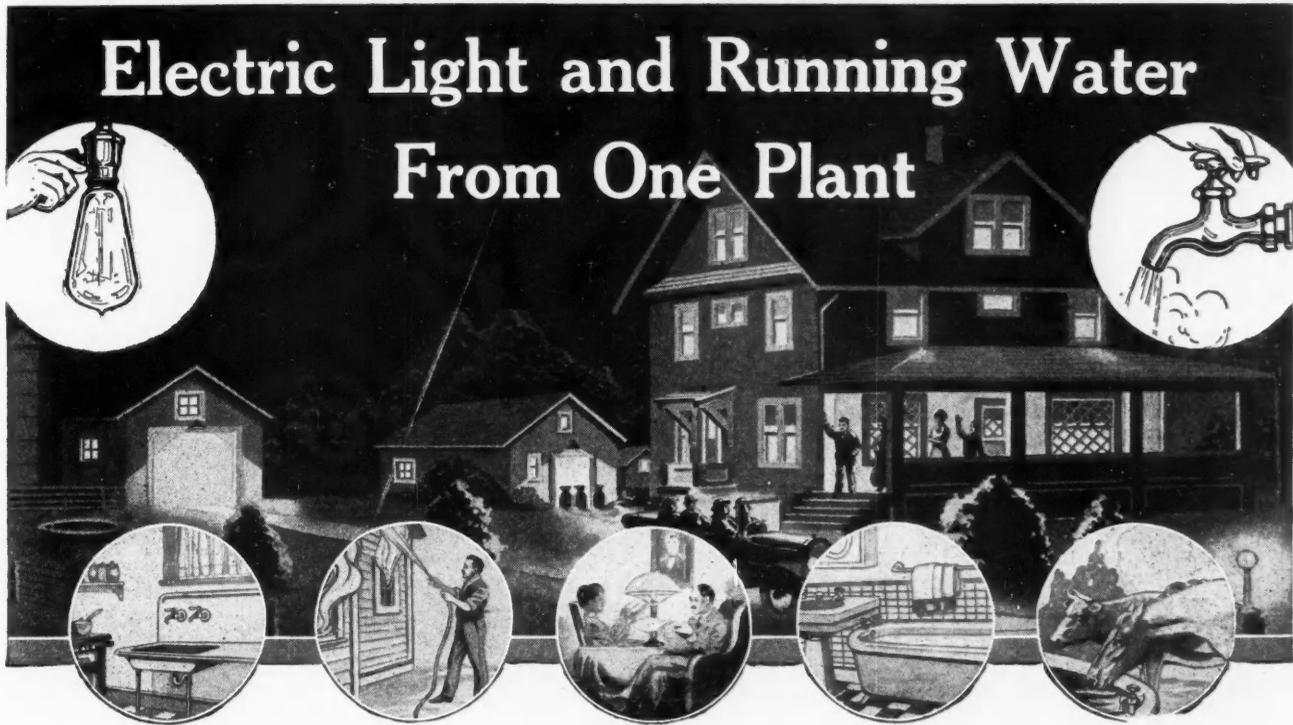
Anybody can afford one. Saves those cold night trips out-of-doors. Impossible to get same amount of comfort for the money another way. Sold on 30 days' trial and under sworn guarantee to refund all money if not entirely satisfactory. Send for description and prices **today**. Be fair to your family.

Agents Make Big Money Easily

Comfort Indoor Closets sell themselves as fast as people understand about them. Contractors and carpenters are making big money by merely suggesting this closet. Write for details of this exclusive agency offer. Send postal **now** before somebody else gets your territory.

Comfort Chemical Closet Co.
302 Factory Bldg. TOLEDO, OHIO





What Men Buy First

MEN buy first what they *must* buy. When you consider the convenience, comfort and health of your clients, you consider the first things for which they are willing to pay.

The compact, complete, Kewanee plant—providing both Electric Light and Running Water—meets two prize household needs on which health and comfort depend, with simplicity, economy and maximum working efficiency. Kewanee systems are built *right*—and can be operated by anyone.

There is a Kewanee System to meet the needs

of every building. For years Kewanee Electric Light, Running Water and Sewage Disposal Systems have been making life comfortable for thousands of users. And in safeguarding your clients' interests with any one—or all—of these Systems, you guarantee yourself constantly increasing business. You gain the enviable reputation of a Builder who provides the Best.



KEWANEE



Electric Light, Water Supply and Sewage Disposal Systems

Cooperation of our drafting and engineering departments gladly extended without charge to builders and contractors. Write for bulletins on Water Supply Systems, Sewage Disposal Systems, Electric Lighting Plants.

KEWANEE PRIVATE UTILITIES COMPANY

(Formerly Kewanee Water Supply Co.)

424 South Franklin Street - - - -

KEWANEE, ILLINOIS

The PURITY JUNIOR

**Odorless
Waterless
Germ-Proof**

Operated by chemicals that decompose all sewage, killing all bacteria and rendering the contents of the container absolutely sterile. The Purity Junior is perfectly constructed and very simple in operation. It can be installed in any room, closet, or basement. Fittings are white enameled, giving them a very handsome appearance.



Contractors!

Outdoor Toilets are a source of great distress in winter and are germ breeding, undesirable places in summer. By installing The Purity Junior you not only reap a big profit for yourself, but you add to the general good health and well being of the community. Don't permit your customers to be inconvenienced by the lack of a good indoor sanitary toilet. Purity Toilets Create Business. Write us today.

**THE NIGHT COMMANDER
LIGHTING COMPANY
JACKSON, MICHIGAN**

YOUR NEW BUILDING Should Be Equipped With A WARNER ELEVATOR

We Build All Kinds of Elevators.

Hand Elevators—Power Elevators—Electric Elevators for Passengers and Freight Service—Automatic Push Button Elevators for Private Residence and Hospitals—Hand Power Elevators and Dumb Waiters—All Sizes and Capacities—Automobile Elevators—Ash Hoists—Cellar Hoists.

Write for Catalog and Prices

**The Warner Elevator Mfg. Co.
CINCINNATI**

RO-SAN Indoor Closet



The original chemical closet. More comfortable, healthful, convenient. Takes the place of all outdoor toilets, where germs breed. Be ready for the long, cold winter. Have a warm, sanitary, comfortable, odorless toilet right in the house anywhere you want it. Don't go out in the cold. A boon to invalids.

GUARANTEED ODORLESS

The germs are killed by a chemical in water in the container. Empty once a month as easy as ashes. Closet guaranteed. Thirty days' trial. Ask for catalog and price.

ROWE SANITARY MFG. CO.
902 Rowe Bldg., Detroit, Mich.
Ask about Ro-San Washstand—Hot and Cold Running Water Without Plumbing.

This ad running all over the country. Cash in on it.

AGENTS WANTED

We have a good proposition for one **CARPENTER** in each town.

Use your spare time this winter making good profits.

Write today for terms and territory.

The Editor's Drawer

(Continued from page 136.)

"Your smoke pipe should be kept clean and this may be done by burning it out occasionally. To do this open the clean-out door at the bottom of the smoke pipe and light a newspaper or a bunch of excelsior, leaving the clean-out door open to admit air for combustion. It is best to do this when rain or snow has wet your roof, for sparks will fly and the moisture prevents danger."

The accompanying illustration is a reproduction of a photograph of the home of an Omaha packer. This large house is heated by a warm air furnace. Scientific firing methods have been used in this house this winter and excellent results have been obtained.

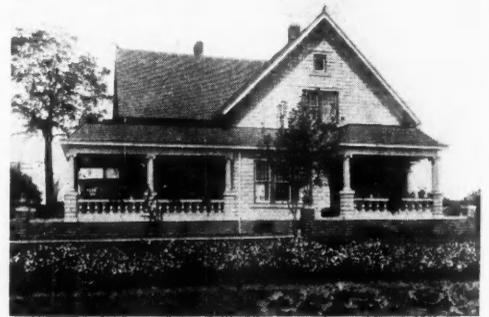
Why would it not be good business for the furnace man, when the opportunity presents itself, to discuss firing methods with the owners of furnaces he has installed? The time would be an investment on which large dividends in good-will will be paid in the future.



A Farm House to Be Proud of

Farm houses of concrete block still are far from being so common that this type of construction is not interesting to everyone in the building industry, whether he specializes in this kind of work or not.

Herewith is pictured a farm house of concrete block that is out of the ordinary and a credit to the builder.



This Modern Concrete Block Farm House is a Credit to Builder and Owner. All the Blocks Used Were Made in the Same Machine.

As will be seen, the building proper, even to the chimneys, is of concrete block, rough-faced for the foundations and smooth for the upper work. A metal roof makes the house practically fireproof.

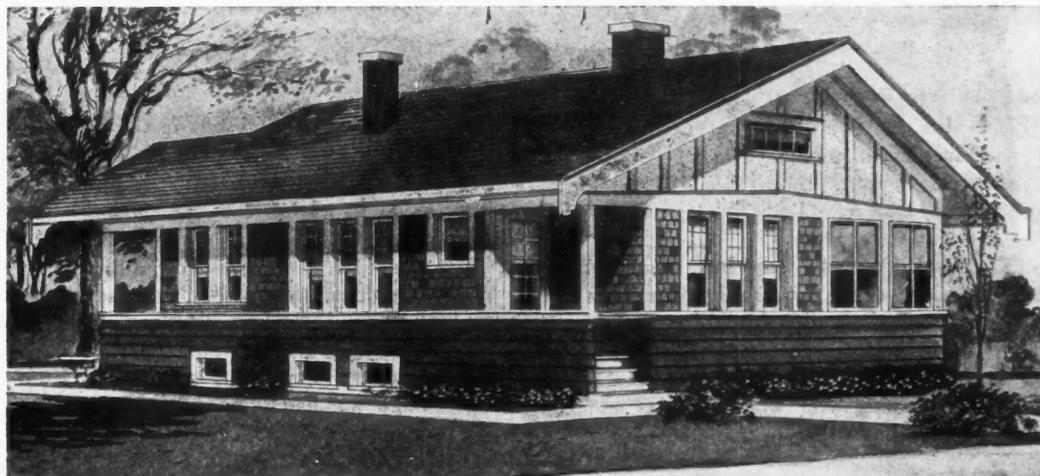
The blocks for this house all were made in the same machine, which employs the "face down" principle. The different faces of the block were made possible by interchangeable patterns



Silo and Dairy Barn of Concrete Blocks that Form Ideal Group for the Up-to-date Farm.

at the bottom of the molds, which enable the block proper to produce many types of architectural and ornamental designs. This method also permits the use of rich material for the facing and coarser for the body of the block. The advantages of this are obvious.

(Continued to page 140.)



DESIGNED IN HARMONY with the architect and builder's conception of the completed structure—that is the characteristic of the Lighting Fixtures of Mitchell Vance Co., Inc. It is just as important that these fixtures be in keeping with the interior of the home as the trees, shrubs and flowers are with its exterior.

Whether it be a magnificent country residence, a modern suburban house, bungalow or formal city establishment, Mitchell Vance Co., Inc. Lighting Fixtures of distinctive individuality are offered at an exceptionally low range of prices.

In addition to a full knowledge of period styles and the employment of skilled artistry and workmanship, Mitchell Vance Co., Inc., are Lighting Engineers. Sixty years' experience and study has given a knowledge of lighting requirements and effects that is at the disposal of yourself or clients.

Our Electric Lighting Fixtures

are made in all standard, also many other rare and unusual finishes are employed to conform with any decorative color scheme that may be chosen. May we have your specifications to figure on?

Write for Plates of Our New Designs "Series B."

MITCHELL VANCE CO., INC.

Sole Producers of VANCO BRONZE, the New Metal

503-511 WEST 24th STREET

NEW YORK CITY



(Continued from page 138.)

The machine is built on the unit plan, which enables the block maker to add to his equipment as the demand warrants.

The second illustration shows a silo constructed of concrete blocks from this machine.

Both buildings are excellent and demonstrate the advantages of concrete block construction.



Zinc-Coated Shingles on This Large Barn

Here is a reproduction of a photograph of the second largest barn in New York State. It is owned by Rev. Louis Lapman, whose farm is near West Coxsackie, N. Y. Frank Tremmel, who has been a tinner in that place for forty-one years, roofed the barn with re-dipped galvanized roofing tin shingles. The roof area is 13,000 square feet. The shingles used were 14 by 20 inches. Mr. Tremmel says that during his experience he has put much of this type of roofing over wood shingles and considers that it is an excellent material to use

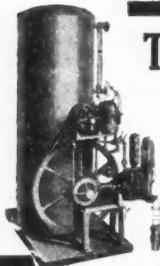


Second Largest Barn in New York State. Owned by Rev. Louis Lapman, Near West Coxsackie, N. Y., Roofed With Tin Shingles.

The method of coating roofing tin with zinc was originated in 1885, by Charles B. Cooper, and the finished product since has been known as "galvanized iron." Three years before that Mr. Cooper had originated the idea of making shingles of roofing tin and immediately adapted his latest idea to them. Each shingle was hand-dipped in molten zinc.

(Continued to page 142.)

Marvel System No. 2085; self-operating; operating cost less than one cent per day.



TAKE THE ORDER —for the Water Supply System

Don't overlook a good profit. Point out the advantages and low cost of operating a

DEMING Hydro-Pneumatic System

Your plumber installs it and your client is better pleased with his new home. Send for Deming catalog of hand and power pumps and details of co-operative plan.

THE DEMING CO., 99 Depot St., Salem, Ohio
"Hand and Power Pumps for all uses"

Running Water and Electric Light

You Can Have Either or Both in your village or country home, no matter how far you may be from a central pumping plant. The Milwaukee Air Power Water System delivers fresh water from well, lake or spring direct to any part of house or yard. Saves all carrying—all inconvenience. Just turn a faucet and you get fresh, running water just as in a city home. No water storage tank to freeze or foul the water.

The Milwaukee Electric Light System is another wonderful convenience. It is sold with the water system or separate as desired. They can both be run with one engine—giving water, light and power.

Write for illustrated, descriptive matter.
MILWAUKEE AIR POWER PUMP CO.
872 Third Street Milwaukee, Wis.



"GET-A-WITTE"

BIG CUT IN ENGINE PRICES

KEROSENE ENGINE DIRECT FROM FACTORY—FACTORY PRICES.

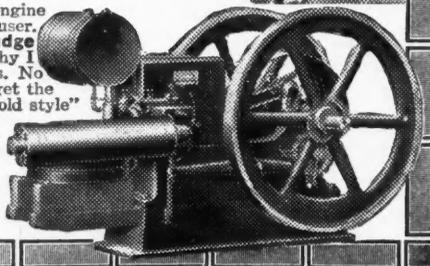
Own your farm or shop power at lowest cost. Get as much power for half the price, using kerosene. Choose your own terms—Cash, Payments, or No Money Down as arranged for. Save \$15 to \$200 buying direct—all fully explained in my new book—sent FREE on request.—Ed. H. Witte, Pres.

WITTE Engines Stationary—Portable—Saw-Rig



are all made in the largest exclusive engine factory in the world dealing direct with user. My Free Factory Book, "How To Judge Engines", tells the whole story—tells why I can make a better engine and sell it for less. No need to pay higher prices than I ask to get the kind of an engine you want, or accept an "old style" or "back-number" to save money. Write for my new illustrated factory book and see just what a big offer I am able to make.

Witte Engine Works
1772 Oakland Ave. Kansas City, Mo.
1772 Empire Bldg. Pittsburgh, Pa.





We Teach You FREE

How to Prevent Lightning From Destroying Property

Learn how to protect every building in your community from damage by Lightning, and add thousands of dollars a year to your income.

Any man who understands the principles of building construction can soon master the details of scientifically applying Shinn-Flat protection to any building, and can soon build up a very profitable business.

We teach you everything that is necessary to know—how to compute the amount of Shinn-Flat necessary—how to determine where the ground rods should be located and how deep to place them—how to decide how many tops are necessary and where to place them—how to connect up other metal conductors to prevent side-flashes—how to protect churches, barns, silos, smoke-stacks, etc.—how to install telephone lightning arresters—and how to install interior protection.

Shinn-Flat

Prevents Lightning Losses

Shinn-Flat prevents the accumulation of electricity in the building, by permitting it to gradually pass from the heavily charged ground into the atmosphere above the building—relieving the strain on the building caused by the attraction of the electricity in the cloud above, and removing the conditions that cause the Lightning Stroke.

36 Per Cent Greater Protection

Shinn-Flat Lightning Conductors are distinctive and more efficient. They are woven flat, and have 36 per cent more conducting surface than the same amount of material woven in a round cable.

W. C. Shinn has been an important factor for more than twenty years in the development of Lightning Protection, and the result of his effort has been the perfection of both the Exposed and Concealed Systems, endorsed by eminent authorities everywhere and approved by the National Board of Fire Underwriters.

Shinn's Cash Bond

On every building protected by the Shinn-System by one of our licensed representatives, we issue a Cash Bond to the owner guaranteeing that Lightning will not strike. This makes it easy to get the business. Shinn-Flat is not only different and affords greater protection, but this company is the only lightning rod manufacturer in the world that covers the work of its representatives with a Cash Bond issued by an independent Bonding Company.

We Help You Get the Business

We not only instruct you how to protect property, but we show you how to get business. We also refer to you inquiries from our National Advertising in the Country Gentleman, Literary Digest, Hoard's Dairyman and a large number of farm periodicals. We can help you build up a profitable business.

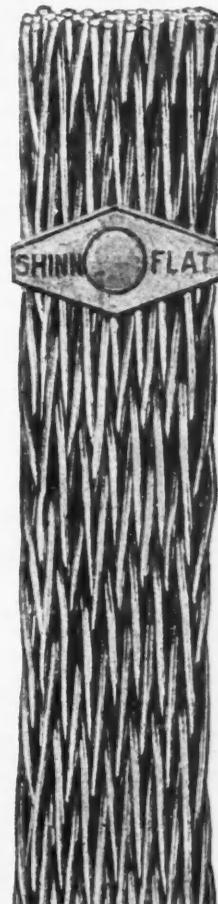
Send the coupon for full information and Booklet on Lightning Cause and Control.

W. C. SHINN MANUFACTURING CO.

Lightning Prevention Experts

1659 Monadnock Bldg., Chicago, Ill.

Lightning Can't Strike IF Shinn Gets There First



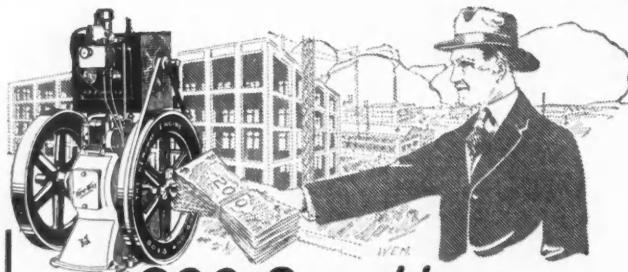
The Picture Above shows the actual size and appearance of a Shinn-Flat Conductor. It is entirely different from any other rod or Conductor ever manufactured.

**W. C. Shinn Mfg. Co.,
1659 Monadnock Bldg., Chicago**

I am interested in your proposition to instruct me without charge how to properly protect buildings from lightning, and in becoming one of your regular licensed representatives. Please send me full information.

Name.....

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



**\$200 Saved by a
"New-Way" KEROSENE ENGINE
IS MONEY EARNED BY GOOD JUDGEMENT**

CONTRACTORS figuring on saving operating cost will wisely demand the "New-Way" Kerosene Engine as the proper power unit for his new outfit.

Using kerosene in a 6 H. P. "New-Way" Engine for 300 working days, saves over \$200.00 yearly on each engine used—other sizes in proportion. **You cannot afford to use any other fuel than kerosene for your power.**

The "New-Way" Patented Vaporizer changes kerosene oil into a perfect gas before it reaches the cylinder.

The engine is throttle governed, which is absolutely necessary for successful operation on kerosene. It uses no water and is years in advance of all other engines.

Increase the efficiency of your new outfit by equipping it with the "New-Way" Kerosene Engine.

**THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.**



**A Boy Can Clean
300 Brick an Hour
With This Machine**

**Does Work
of Three Men**

RECLAIM YOUR USED BRICK

THIS Brick Reclaiming Outfit will clean 300 or more brick per hour and clean them right regardless of what kind of mortar was used or how dirty they are. Much better results than obtained by old fashioned methods of cleaning by hand. Increases market value while effecting big saving in labor. Does not require skilled operator; anyone can use it successfully. We make and sell outfit complete with engine, ready to run. Our standard $\frac{1}{2}$ H. P. Little Pet Engine is used. A simple, compact, portable rig, that will pay for itself many times over in a season. Write us for details and prices.

ELGIN GAS MOTOR CO., 60 River St., Elgin, Ill.

The Editor's Drawer

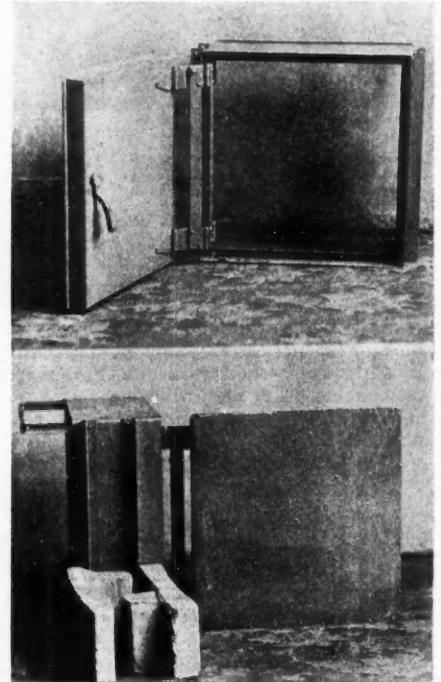
(Continued from page 140.)

Many roofs covered with zinc-coated shingles have been in service thirty years; others have outlasted the building, have been removed and put on new buildings, without appreciable loss.



Steel Door and Frame for Block Silos

Applying the principle of the thermos bottle to silo construction sounds reasonable in that it should keep the silage safe from freezing. That is the idea used in erecting the silo and barn for the U.S. Government on an Indian asylum farm by J. H. Millie. They are constructed of reinforced continuous air space concrete block, the size used on the barn being 8 by 10 by 24 inches, and in the silo 8 by 11 by 24 inches. In the silo 4-gauge galvanized wire was used for band reinforcing, being laid in the mortar joints, one band wire being used in every course from top to bottom. A silo door, which embodies the frame, ladder, hinge, door and lock in a single unit ready to install was used. "I consider it to be the best silo door on the market," says Mr. Millie.



This Silo Door Embodies Frame, Ladder, Hinge, Door and Lock in a Single Unit.

This door is so constructed that when in place it is a part of the concrete construction. A double groove in the sides fits into the concrete blocks. The details of the door's construction are shown in the illustration.

Silo builders have found that this door solves many difficulties, as those who have used it are as enthusiastic over its merits as was Mr. Millie.



Farm Concrete Fence Posts

It recently was asserted that about one-third of the portland cement produced in this country is used on the farm. Certainly, each year sees more and more construction work of cement. One of the popular improvements on the farm is concrete fence posts. The concrete post has the advantage of being well-nigh indestructible, keeps in alignment and will resist unusual strains without breaking.

The accompanying illustration shows the concrete fence posts on the farm of Haverford College, Haverford, Pa. A cement manufacturer has issued an interesting description of concrete posts on the farm, with detailed instructions on how to make them, which every contractor will find interesting.

In it are given details of concrete fence post construction. Some of the points described are making the molds and the

(Continued to page 144.)

Plan for Motors Motorize your Plans



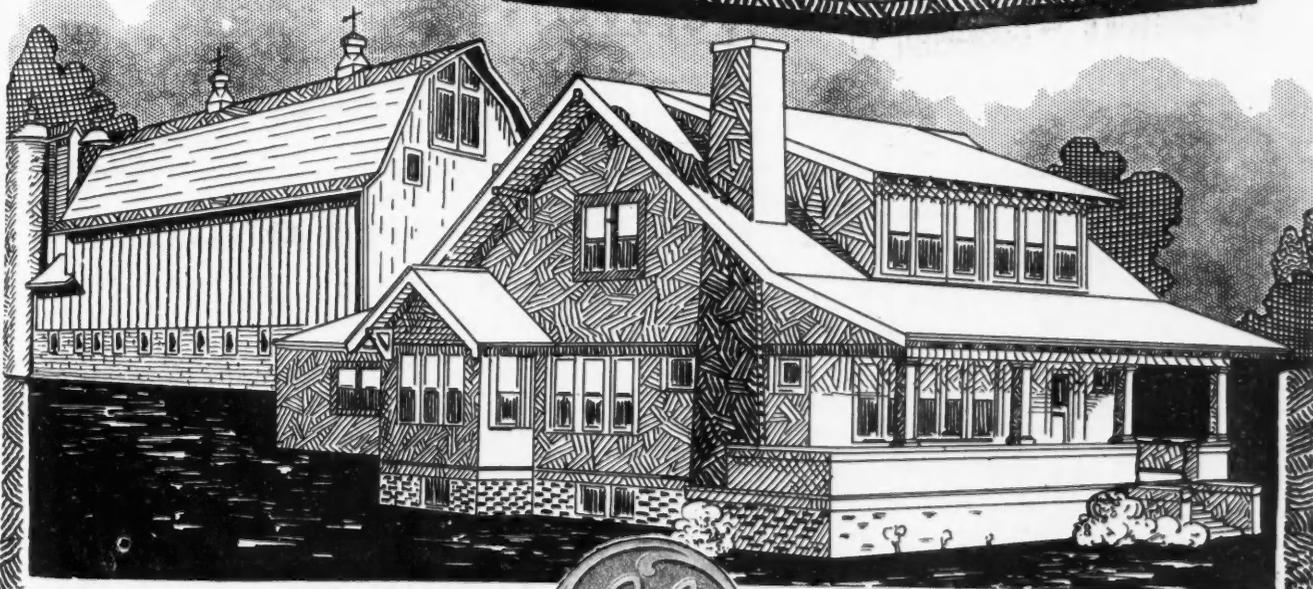
Look over the plans again. See if arrangements have been made for electric motors in the farm house, barn, dairy and machine shop. It is far simpler and cheaper to arrange for electric power before building than afterwards.

The electric motor is essentially a time and labor-saving device. It is, therefore, an economical necessity, particularly for the large or medium size farm.

Electrified farms will stand as examples of your progressiveness in the building field. Through the assistance of your local lighting company and the cooperation we will be glad to extend, you can occupy a leading position in this lucrative field.

The following publications on the application of electric power to farm buildings will be sent you on request:

A4115 — 4978 — B3393



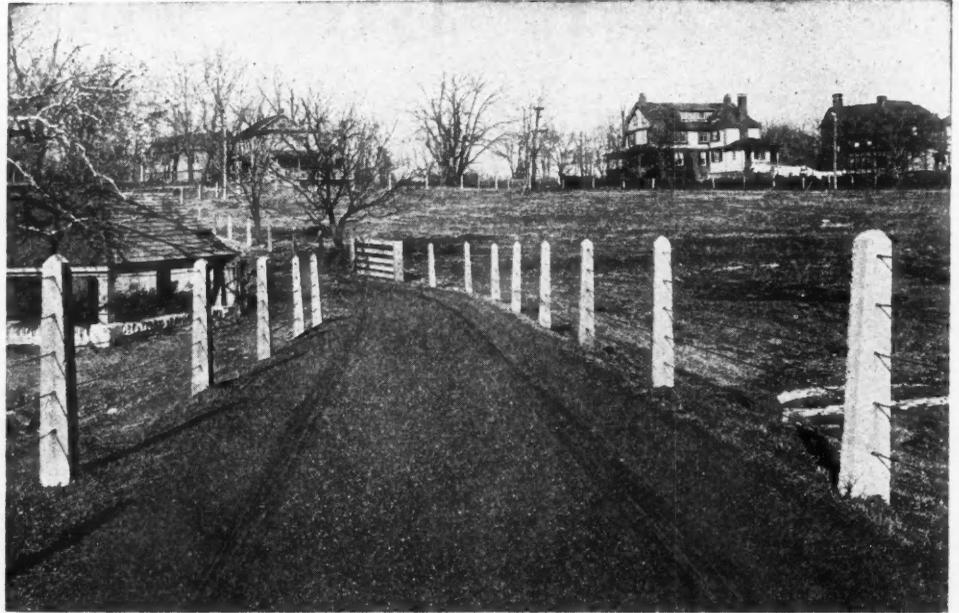
General Electric
 General Office **Company** Schenectady, N.Y.

45-31

(Continued from page 142.)

types that should be used for various kinds of soil; the advisability of reinforcing the concrete and the sizes of steel to be used, and the process of molding the posts. Also the proper proportions of cement, sand and pebbles or crushed stone.

All of these details of construction will be of great help to the contractor and builder who does concrete work. Farmers and the owners of country homes are demanding this sort of permanent construction more and more and the concrete builder is a busy man these days.



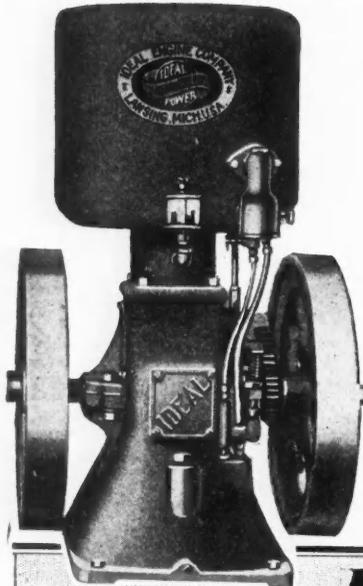
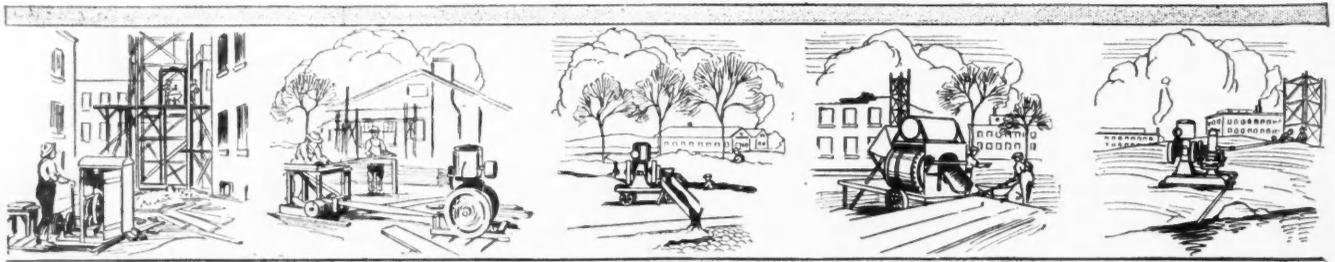
Permanent and Attractive Concrete Fence Posts on Farm of Haverford College, Haverford, Pa.

✦ Inter-locking Metal Shingles on the Farm

Inter-locking metal shingles that are proof against storm, fire and lightning have an especial appeal to the farmer in selecting the materials that will go into his new barn, home or other building. Not only do they insure the buildings against the destructive elements of nature, but many contractors assert that they are savers of time in putting on the roof.

The illustration accompanying this article is the new farm house, constructed for Jacob Ohms, at Rising City, Neb., and was taken shortly after the builder had turned the structure over to Mr. Ohms. Mr. Ohms specified the type of roof shown, as he has other buildings roofed with the same material and put it into his specifications. He says that the con-

(Continued to page 146.)



Profitable Power for Contractors

IDEAL ENGINES are designed and constructed to give the kind of service that insures the contractor dividends on his investment. They are of a strong rugged build, and are noted for their ability to plug along month after month at the hardest kind of work.

Best of all, Ideal Engines have been giving this kind of service for many years. Their dependable qualities are well known. In fact, Mr. R. E. Olds, the man back of the Ideal Engine Company, was one of the pioneers in the gasoline engine industry, and a man responsible for many notable successes in the engine and auto world. Over twenty-two years ago he designed one of the first commercially successful gasoline engines.

So when you select the *Ideal* you are buying unadulterated power and service. You are buying

a power plant that embodies all those qualities which you have a right to expect.

Summed up briefly, the *Ideal* is the logical power for contractors for the following reasons. Light enough for portability, yet sturdy enough for the hardest kind of work. Dust proof—dirt proof—frost proof—simple to operate, and easy to care for. Built for long life and constant service.

When you get the *Ideal* catalog, note carefully the details of material, workmanship and design. Especially the dirt-proof crank case, frost-proof cylinders, simple carburetor, liberal bearings, ground cylinders, ground pistons; also the extra large sized valves, which are thoroughly cooled, top and bottom. Valve trouble with *Ideal* engines is practically an unknown quantity.

For catalog, prices and full details, address,

IDEAL ENGINE COMPANY
R. E. OLDS, Chairman
630 Kalamazoo Street, Lansing, Mich.

IDEAL  **POWER**

What Novo Hoists Are Doing

Here is a Type O. H. Novo Hoist lifting two 250 lb. blocks of concrete at Camp Holabird, Md., where the government is building a huge, permanent motor storage depot.

This is one of 13 Novo Outfits which Edward L. Scheidhelm, contractor, has at work on this job. It is one of the six types and fifty sizes of Novo Hoisting Outfits, ranging from 4 to 15 H. P., which are supplying portable, Reliable Power for big and important construction enterprises all over the country. These various types and sizes of Novo Hoists are especially designed for different purposes—lifting ore, coal and building materials, pile-driving, hauling scrapers, back filling, log loading, lumber piling, etc. For full information regarding Novo Hoisting Outfits, write us for Bulletin No. 11.

Compactness and simplicity of operation are leading features of all Novo Outfits. Added to these qualities, Novo Reliability makes Novo the recognized standard power for all work within the range of its capacity.

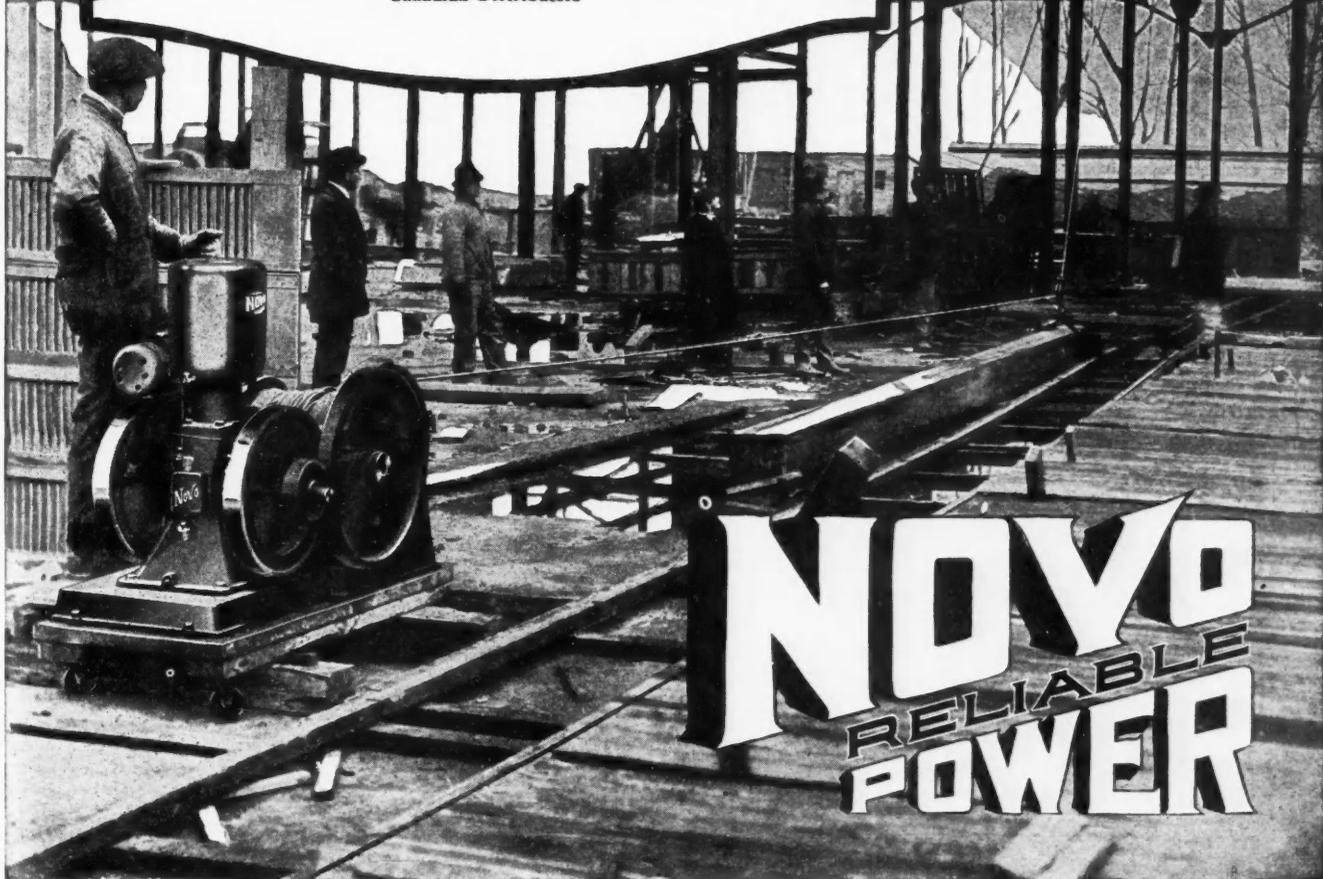
Any Novo Engine or Outfit can be furnished to operate on gasoline, kerosene, distillate, natural or artificial gas. Outfits for Hoisting, Pumping, Air Compressing, Sawing. Catalog showing complete line sent on request.

NOVO ENGINE CO.

Clarence E. Bement, Vice-Pres. & Gen. Mgr.

885 Porter St., Lansing, Michigan
New York: 1617-1619 Woolworth Building
Chicago: 800 Old Colony Building

London Concrete Machinery Co., London, Ontario
Canadian Distributors



NOVO
RELIABLE
POWER



This Big Business Waiting for Building Contractors

With the war over there is already a big boom in the Williamson Pipeless Furnace business. Home owners the country over want relief from costly coal bills and old-fashioned stove-and-grate methods of heating. They are eagerly reading the Williamson Pipeless fuel-saving message in the country's leading farm publications month by month. Now is the time for you to begin making quick, big, easy profits selling and installing

WILLIAMSON Pipeless
Furnace
Saves In Many Ways

We'll back you to the limit. Smashing, sales-winning national advertising is appearing month after month. By an intensive follow-up system we'll help you with letters, booklets, catalogs, folders, etc. And we will supply you with plenty of selling aids and place our well-organized *Engineering Department* fully at your service in making plans and estimates. Remember that the Williamson Pipeless Furnace is easy to install and is sold at a very reasonable price and that we have hundreds of unsolicited letters from satisfied users. Do not let this money-making opportunity slip by. Mail the coupon today for further details.

The Williamson Heater Company
75 W. Fifth Street, Cincinnati, Ohio

THE WILLIAMSON HEATER CO.
75 W. Fifth St., Cincinnati, Ohio

Send full details regarding your plan to help me make money selling and installing the Williamson Pipeless Furnace. This request is to involve no obligation on my part.

Name

Address

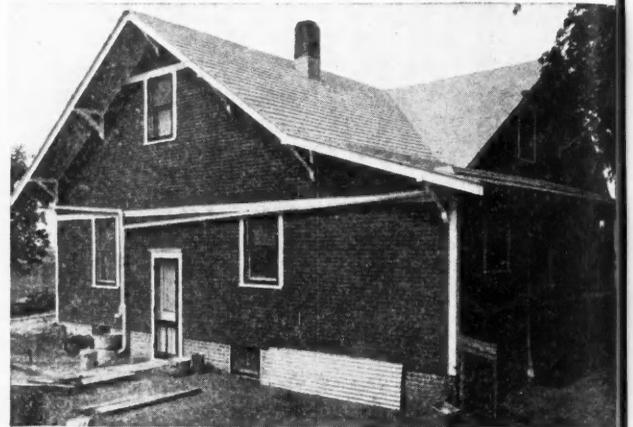
Business

The Editor's Drawer

(Continued from page 144.)

tractor told him that many other buildings in that section also are roofed with inter-locking metal shingles.

The shingles come in one, two and three-panel effects and



Residence of Jacob Ohms, Rising City, Neb., Roofed With Galvanized Shingles.

are over-lapping and inter-locking, making them storm-proof. They are made with a double groove, which makes a two-fold protection against leaks. Ridges, gable finials, hip starters, valleys and porch flashings are of the same material.



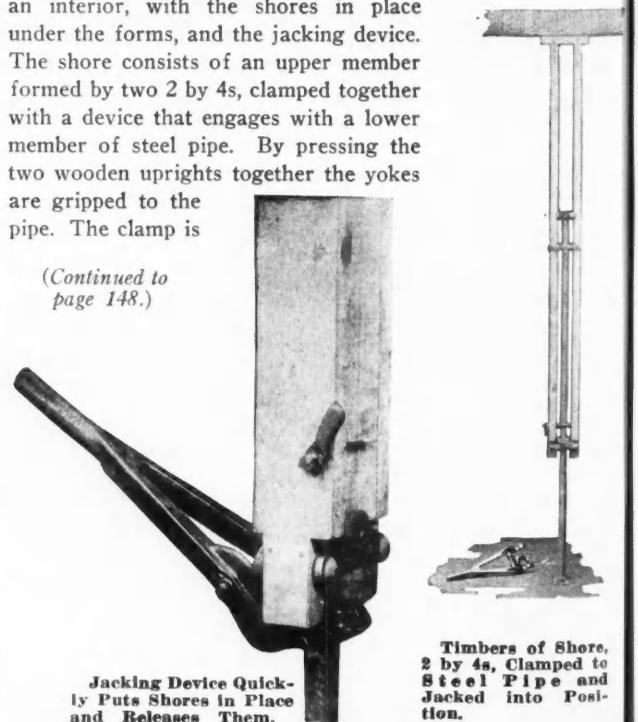
Adjustable Shores for Concrete Work

Shoring for the forms in concrete building construction is one of the big items of expense in labor and materials to the contractor. The cost of 4 by 4s and the necessity of having on hand different lengths of these timbers make a considerable overhead investment.

A few years ago an expert on concrete building construction realized this drawback and set about to design shores that were lighter, as durable and at the same time elastic. This was accomplished by a simple clamping device, the use of two 2 by 4s and a jack. Many of these shores were put in use and have given excellent satisfaction.

The accompanying illustrations show an interior, with the shores in place under the forms, and the jacking device. The shore consists of an upper member formed by two 2 by 4s, clamped together with a device that engages with a lower member of steel pipe. By pressing the two wooden uprights together the yokes are gripped to the pipe. The clamp is

(Continued to page 148.)



Timbers of Shore, 2 by 4s, Clamped to Steel Pipe and Jacked into Position.

Jacking Device Quickly Puts Shores in Place and Releases Them.

Water Supply Outfits That Really Supply

An adequate water supply system is now an essential in farm and small-town homes. And the power-driven pump is the **heart** of the water supply system. We have developed a complete line of power-driven pumps for deep or shallow wells. Each is **positively guaranteed to perform satisfactorily the work for which we recommended it.** Whatever your pump requirements are, they can be fully met with one of

GOULDS PUMPS FOR EVERY SERVICE

Goulds Pumps have been the standard of pump construction ever since the first iron pumps were made. Today the line embraces over 400 styles and sizes. If there is any question as to which style will give the best results under a given condition, our Engineering Service Department will advise you without charge.

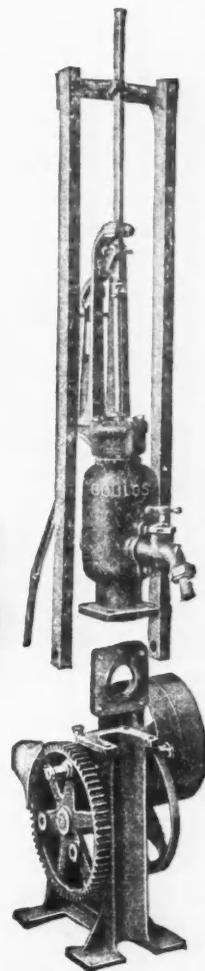
Goulds Hi-Speed Outfits are **noiseless**—can be operated anywhere without causing the slightest annoyance. You may choose among 13 combinations. Some are equipped with 32-volt motors adapted to home lighting plants; others have motors suited to regular commercial currents; and one has a $\frac{1}{2}$ h.p. gasoline engine for homes where no electric current is available.

Write for descriptive literature and prices to builders

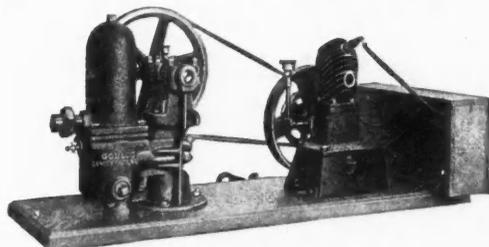
The Goulds Manufacturing Co.

Main Office and Works:
Seneca Falls, New York

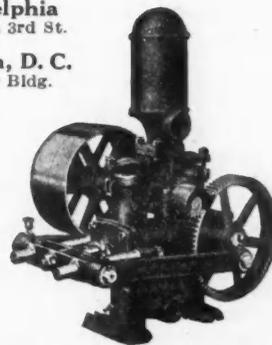
New York 16 Murray Street	Boston 58 Pearl Street	Chicago 12-14 S. Clinton St.	Philadelphia 111 North 3rd St.
Pittsburgh 636 Henry W. Oliver Bldg.	Atlanta 3rd Nat'l Bank Bldg.	Houston 1001 Carter Bldg.	Washington, D. C. 338 Munsey Bldg.



Goulds Fig. 1680
(Exploded View)
Combined Working Head and Jack with Open Base. For filling tanks up to 190 feet above the source of supply. Operated by hand, windmill or power, direct or belt connected.



Goulds Hi-Speed Outfit "N"
Goulds Fig. 1695 HI-Speed Pump mounted on a wood base and connected with $\frac{1}{2}$ h.p. Gasoline Engine. We fit the pump with an air cock so that it may be used with either open or pressure tank water system. Capacity 3 gallons per minute.



Goulds Fig. 1531 "Pyramid" Double-acting Piston Pump
For many years this has been the leading small power pump. It will fill tanks up to 175 feet above the source of supply.

(Continued from page 146.)

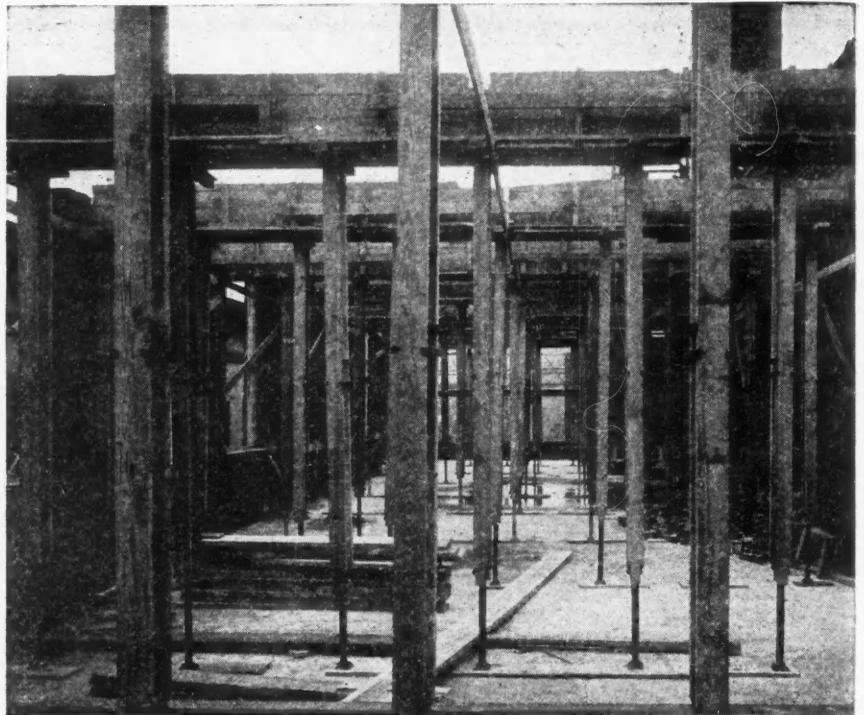
designed so that the greater the pressure the more firmly it holds.

For the final adjustment a portable jacking device is attached to the pipe just under the two wooden uprights. By turning the handle screw the upper member is raised to the final height with the jacking lever. After this is done, and while the pressure still is on the jack, a set screw lock is tightened and the shore is set. To remove the shore it is only necessary to release the set screw and tap the yokes with a hammer.

Tests have shown that this shore will sustain a load of 2,385 pounds with a deflection of about 1/20 inch. As the average load a shore carries is from 150 to 1,800 pounds, this test indicates that these shores are perfectly safe.

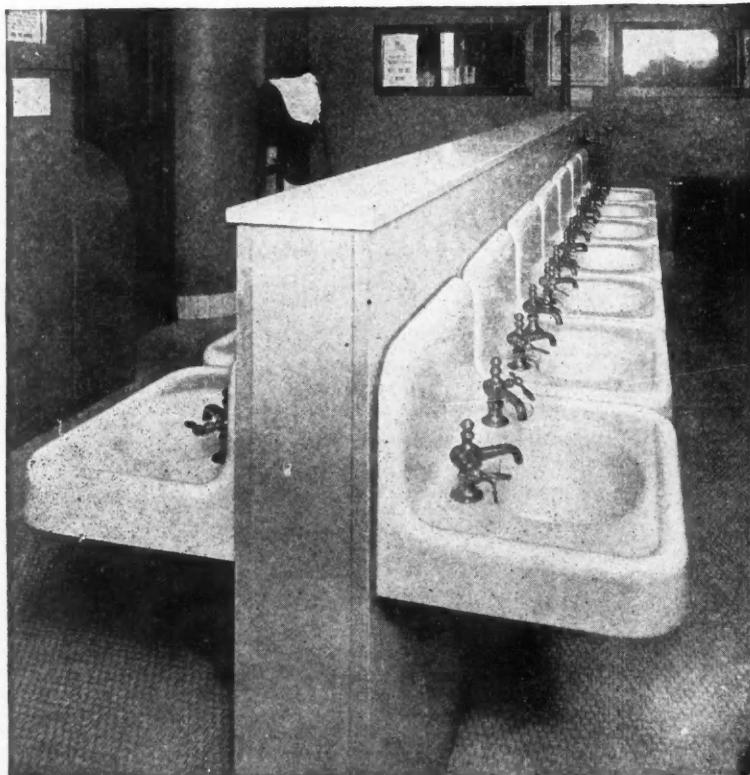
A feature of the shores is their light weight and the ease with which they may be removed and put up in another part of the building. They have an elasticity of 8 feet thru the use of the jack, thus being available for different height floors. They weigh only 50 pounds each and are quickly adjusted.

It is claimed that by this method of shoring 80 per cent of the cost is saved, which is a healthy saving. The ease with which these shores can be set up and removed, their



Adjustable Shores in Place Under Girder Forms, Ready to Pour the Concrete.

adjustability to different heights and the saving in labor and materials all recommend them to the builder of concrete work. Incidentally their cost is little when all of these things are taken into consideration.



Wolff Lavatory in Reid, Murdock & Co. Building, Chicago
George C. Nimmons, Architect C. J. Stein Plumbing Contractor

Specify Wolff Plumbing

For installations of any size or character. It is the best today as it has been for over 60 years.

**L. Wolff
Manufacturing Co.**

General Office and Showroom
111 N. Dearborn Street

Chicago

CORN CRIB AND GRANARY BLUE PRINT WORKING PLANS FREE

These plans have unusual value to every contractor devoting attention to the farm trade.

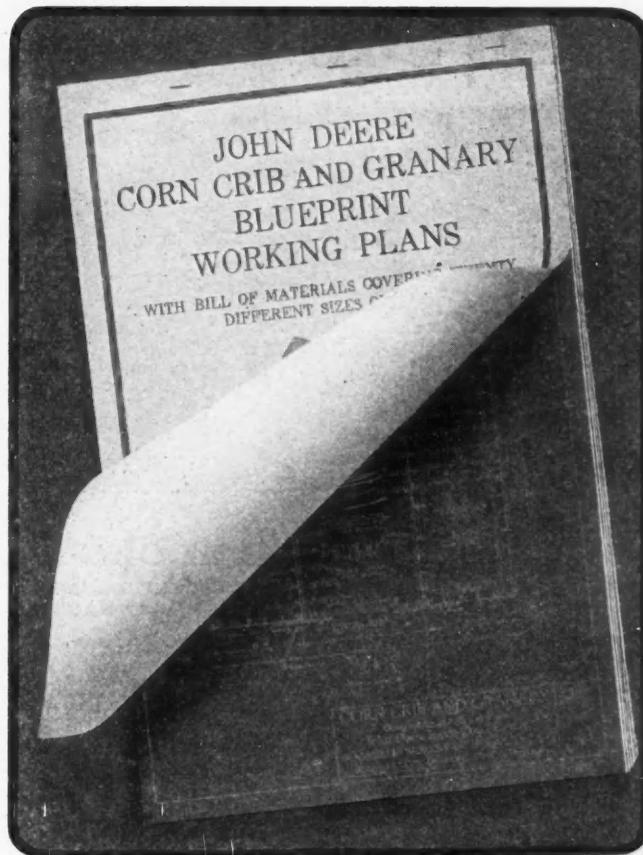
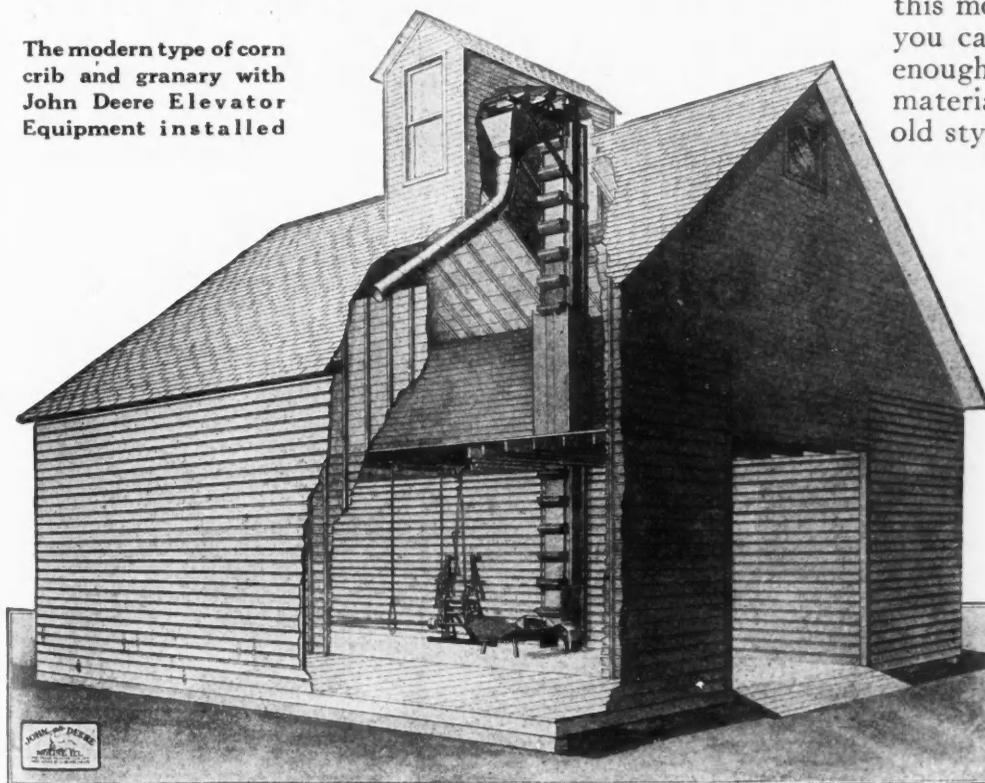
The economical, practical construction of the modern combination corn crib and granary is covered in every detail. The plans are elastic enough to meet fully the requirements on every farm.

Blue prints show the side elevation, end elevation, transverse and floor plan together with necessary detail drawings.

With the blue prints you get complete Bills of Material covering 20 different sizes of cribs—ranging from a 28-ft. crib to a 48-ft. crib with 14, 16, 18 and 20 ft. studs. Ear corn and small grain capacity of the different sized cribs is also given. These plans enable you to assist the farmer in the selection of the size of building he needs.

The John Deere Inside Cup Elevator, a practical labor-saving outfit, can be easily and quickly installed in such buildings. Various methods of installation and special equipment to meet every requirement are illustrated and described in this set of plans.

The modern type of corn crib and granary with John Deere Elevator Equipment installed



Get These Free Plans Now

Don't fail to write for this set of crib plans. There is a big opportunity to build many combination corn cribs and granaries on farms in your territory this year. In the construction of this modern combination crib you can save your customer enough money in labor and material over the cost of the old style crib to pay for a John Deere Inside Cup Elevator. Ask for Corn Crib Plans CC-1.

John Deere

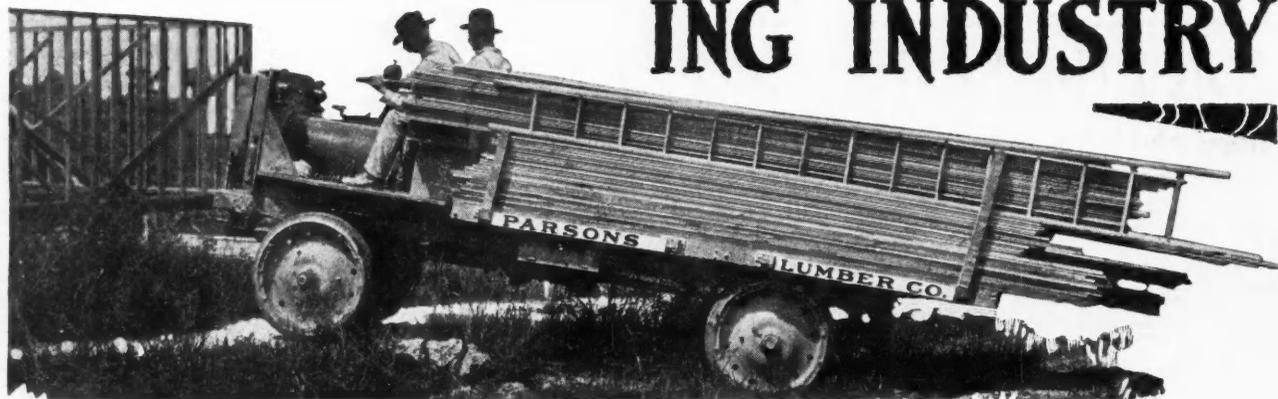
MOLINE, ILLINOIS

COUNTY AGENTS

You are frequently called upon for advice about corn crib and granary construction. These plans will be of interest and value to you in your work.

The big saving in labor and material effected in building the modern combination corn crib and granary over the old style cribs is a point of particular concern to you. This is covered in the plans. Write for your free copy today.

MOTOR TRUCKS IN THE BUILDING INDUSTRY



Motor Trucks in War and Peace

PROVED THEIR EFFICIENCY IN DESTRUCTION, BUT WILL PLAY A BIGGER PART IN THE CONSTRUCTION THAT IS AT HAND

OF the many stories of American participation in the war that have come back home, there is none that gives a greater thrill than that of the U. S. Marines at Chateau-Thierry. Every American feels that it is great to be one as he pictures the situation on that day in July, which, it is now recognized, was the turning point of the war.

The high German command had gathered its resources for one great blow before the American force in France became stronger. The French were near the exhaustion point. They had held the Germans when their task seemed impossible. Again and again Paris appeared to be in the grasp of the invaders.

Then came this day, July 15, to be exact.

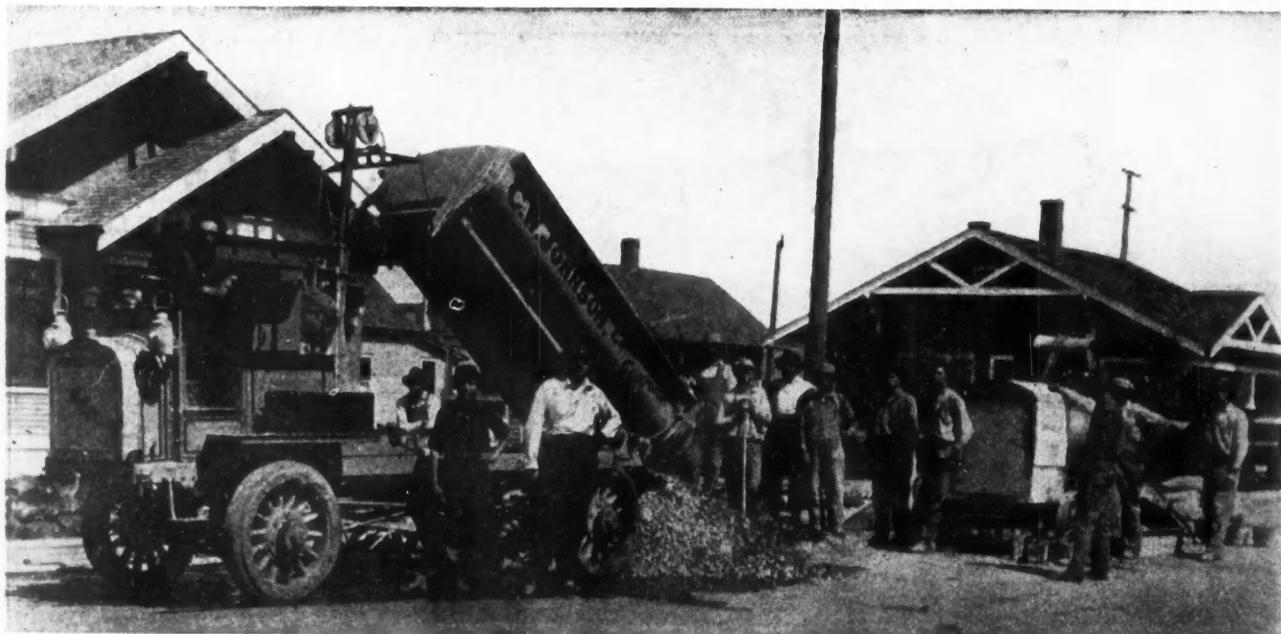
The Germans had started their offensive, one of the greatest of the war. It was directed at the weakest point in the French line, which was at Chateau-

Thierry. The pressure was too great for the French. They retired, fighting as they went. The retirement became in the nature of a rout. The soldiers were throwing away their guns and equipment in order to facilitate their progress away from the battle-front. The roads leading to Paris were filled with retreating soldiers and wounded.

And Then the Motor Trucks Came

And then—

Bowling along these roads, winding their way in and out of the traffic headed rearward, came a stream of motor trucks. Each truck was loaded with stalwart, khaki-clad young men. They were singing the inspiring, swinging song that is traditional with the U. S. Marine Corps when going into action. The beaten Frenchmen stopped; French officers attempted to halt the Americans. One high French officer in-



C. W. Johnson, Sidewalk Contractor, Lewistown, Mont., Hauled 12 Tons of Crushed Rock With This 3-Ton "F. W. D." Truck and Two Wagons as Trailers.

Another
FEDERAL

3½ ton Federal in service for E. T. Gresham, Norfolk, Va. Giving highly satisfactory service every day.



The More Difficult the Work the More Obvious is Federal Superiority!

IT is when a truck is put to the supreme test that quality must show if it is there. Heavy hauling, such as you are doing, requires the highest character of truck. That Federals have this unusual quality is shown by the fact that thousands of Federals are today doing such work satisfactorily.

There are three very significant reasons for this superiority. Greater stamina — rugged strength — and remarkable economy. These advantages, when provided in the measure embodied in the Federal, must mean satisfactory haulage service.

*"Return loads will cut
your haulage costs"*

Write us and we will send you the magazine, "Traffic News," a publication for the truck owner and buyer.

Federal Motor Truck Company
79 Federal St. Detroit, Mich.

FEDERAL

One to Five Ton Capacities

formed a Marine officer that a retirement had been ordered.

"Retreat, hell! The Marines never retreat," this officer is quoted as saying.

At any rate, they went on and with them went many of the French soldiers, their morale restored.

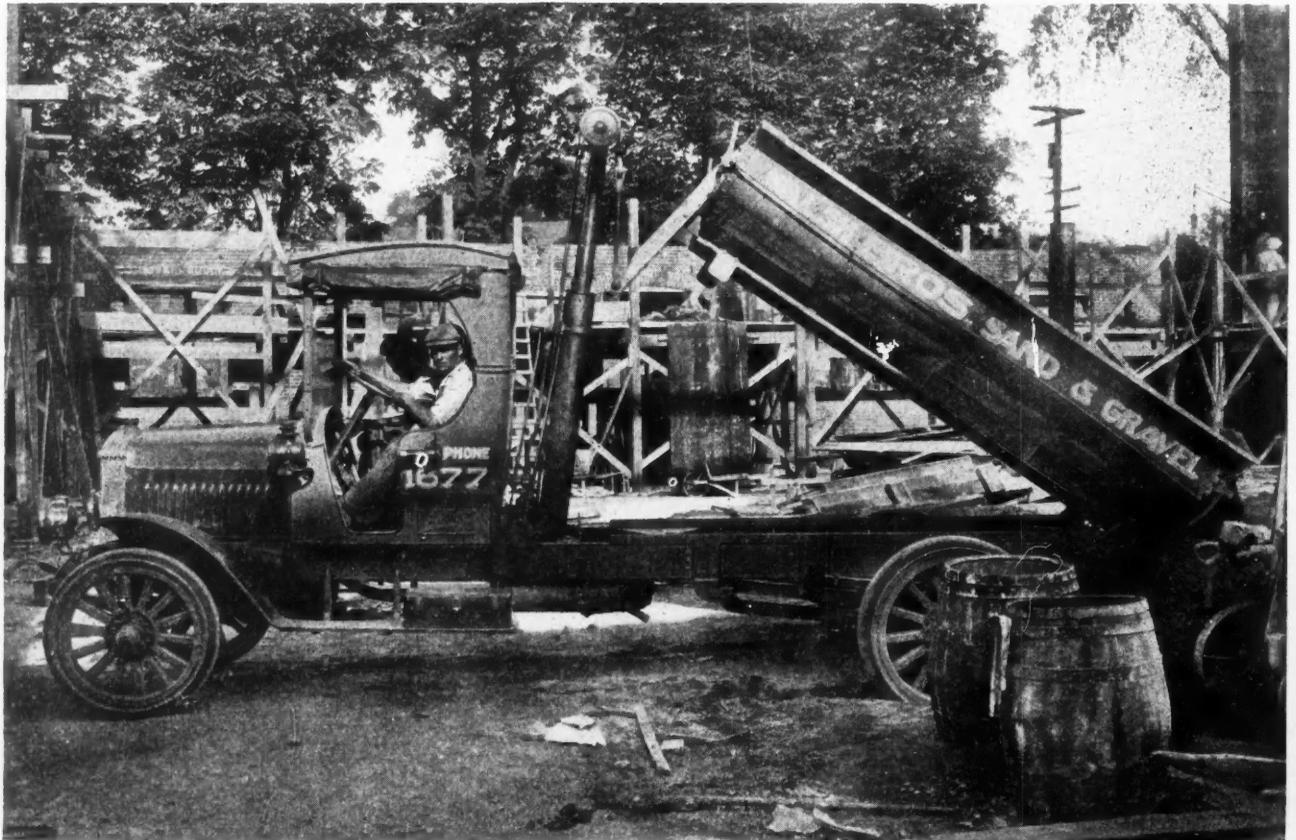
What happened within the next three days is best told by quoting a statement of Count Von Hertling, the German Imperial Chancellor, made a few days before his death.

"We expected grave events in Paris for the end of July," said Count Von Hertling. "This was on the 15th. On the 18th, even the most optimistic among us understood that all was lost. The history of the world was played out in three days."

tion that has now begun.

Consider the transformation of the devastated parts of France and Belgium into their former commercial and agricultural productiveness by the building methods of, say, even 20 years ago. To analyze the situation by comparison, consider the man-power the trucks, and their big brothers, the tractors, will save in this building activity; consider the time that will be saved in making the European nations again self-supporting.

The motor truck is nowhere more efficient than as an adjunct of the building industry. The loads of material they will carry; their well-nigh imperviousness to weather and road conditions; their economy in labor thru ability to load and unload them quickly; their



Walsh Bros., Auburn, N. Y., Use This 3½-Ton "Acme" Truck to Deliver Sand and Gravel to the Building Job.

Of the 8,000 Marines who came swinging and swaying along the road in those lumbering motor trucks, fewer than 2,000 survived. But they turned the tide of the war—they and the motor trucks that brought them many miles to the battle-front and delivered them where they were needed.

The part the motor truck played in winning the war is aptly illustrated in this story of one, but highly important battle. Incidentally it may be stated right here that the value of the motor truck as a means of transporting materials could not have been brought so quickly and forcibly to the attention of the world in any other way.

But the part the motor truck played in the war was not so great as the part it will play in the reconstruc-

economy in operation, when results are considered—all of these abilities will make them indispensable in the great era of building that the industry in this country now faces.

Manufacturers Now Able to Supply Demand

And the American truck manufacturers now are in a position to supply this demand for commercial trucks. Their contribution to the winning of the war has been made; they delivered the goods that delivered the Marines; now they will deliver the trucks that the building industry will need.

During 1918 and the last part of 1917, the American truck manufacturers devoted their plants almost exclusively to producing the trucks the government

SOME KANSAS CITY USERS OF REPUBLIC TRUCKS

Kansas City Furnace Co.
 A. B. C. Storage Co.
 Woolf Bros. Laundry
 National Refining Co.
 Feinberg-Wayne Paper Co.
 Anheuser-Busch Brewing Assn.
 Park Board of Kansas City
 Bulger-Woolf Cement Co.
 Wear-U-Well Shoe Co.
 Manhattan Oil Co.
 Baker & Lockwood Mfg. Co.
 Prior Brass Mfg. Co.
 Bell Telephone Co.
 Union Pacific Tea Co.
 Midland Milling Co.
 Forrester-Nace Box Co.
 Davidson Furniture Co.
 Iten Biscuit Co.
 Patterson-Sargent Paint Co.
 Kansas City Gas Co.
 Booth Fisheries Co.
 Oxygen Gas Co.
 Dierks Lumber Co.
 Standard Oil Co.
 C. R. Cook Paint Co.
 Richards & Conover Hdw. Co.
 Edelman-Fleming Cons. Co.
 Great Western Oil Refining Co.
 Thos. Cusack Co.—Signs
 Firestone Tire & Rubber Co.
 Security Stove & Mfg. Co.
 H. D. Lee Mercantile Co.
 Missouri Dairy Co.
 Franklin Ice Cream Co.
 Interstate Sash & Door Co.
 Faultless Engine Co.
 Sinclair Refining Co.
 Excelsior Powder Mfg. Co.
 Kansas City Railways Co.
 Faith Iron Co.
 Southwest News Company
 Forest Park Butter Co.
 Kansas City Water Dept.
 Rushton Baking Co.
 Independence Ice Co.
 Schweiger Contracting Co.
 Lincoln Fireproof Storage Co.
 Sedlitz Varnish Co.

What KANSAS CITY — with its steep grades — thinks of Republic Trucks

Republic Trucks have proved their quality in Kansas City, where steep grades in every part of the city add difficulties to motor truck transportation. Twenty-five per cent of *all* the motor trucks in Kansas City are Republics and the number is increasing constantly.

H. D. Lee Mercantile Co., who have operated six Republic Trucks for the last two years, say: "Our Republics give complete satisfaction and the cost of upkeep is extremely low."

Fifteen of the Rushton Baking Company's twenty motor trucks are Republics. They say: "Republic Trucks stand up so well that if we needed another truck tomorrow we would buy another Republic."

National Refining Company operate seven two-ton Republics and say: "We keep accurate hauling costs and have found Republic Trucks both efficient and very economical."

Franklin Ice Cream Co. say: "After trying out other makes, we have standardized on Republics and now use twelve—all 1 1/2 tons.

We find them *best* for our heavy hauling, seven days a week over roads that are often choked with mud."

Other Kansas City owners tell the same story of dependable performance that causes them to stick to Republics for the strenuous hauling conditions Kansas City presents.

Republic Trucks have proved their quality everywhere. In every kind of business, in 27 foreign countries—for *any* work that *any* motor truck can do.

More than 1400 Republic Service Stations are conveniently located in every part of the United States.

REPUBLIC MOTOR TRUCK CO., INC.
 Alma, Michigan

The "Yellow Chassis" Trucks—that serve so well

Republic Special, with body	\$1295	Model 12—2 Ton, chassis	\$2275
Model 10—1 Ton, with Express body	1535	Model T—3 1/2 Ton, chassis	3450
Model 11—1 1/2 Ton, chassis	1885	Model V—5 Ton, chassis	4750

All prices F. O. B. Alma, Michigan.

The Torbenesen 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

Internal Gear Drive

MOTOR TRUCKS

Built by the Largest Manufacturers of Motor Trucks in the World

KISSEL TRUCKS

Uninterrupted Transportation!

KISSEL Trucks are not "War Baby" Trucks. They were built and making transportation history six years before Aug. 14, 1914.

These ten years of practical truck engineering and construction experience give them a veteran ability to solve today's unique haulage problems in the Building business.

Particularly this winter will Kissel Trucks prove invaluable to you—when uninterrupted transportation must be maintained at all hazards.

Kissel mechanical features—headlined by the Kissel-built power-plant and topped with the ALL-YEAR Cab for full protection to drivers—insure maintaining schedules regardless of weather or road conditions.

Your nearest Kissel dealer is a transportation expert. See him without delay. Send for Truck Catalogue.

Kissel Motor Car Co.

Hartford, Wis., U. S. A.



Motor Trucks in the Building Industry

(Continued from page 152.)

needed in this country and for the use of the army in France. Consequently, statistics show, there were 16,000 less trucks delivered for commercial purposes in the United States during 1918 than in 1917, altho, during that time, 137,000 trucks were absorbed by the commercial interests of the United States, while 46,275 trucks and 5,228 trailers were delivered to the army overseas and 43,000 trucks were supplied the government for use here.

While these figures are so large that it is difficult to comprehend them, they are interesting because of the support they give to the claim that modern operations, on either a small or extensive scale, whether they be waging war, or building a barn, are more or less dependent on modern methods of transport.

What the Truck Does For Builders

And in this connection let us consider the advantages the builder gains from the use of motor trucks over horse-drawn wagons. This may seem trite,



The Parsons Lumber Co., Rockford, Ill., Use a "Nash" Truck That Drives and Steers on All Four Wheels. It Takes Them Anywhere, no Matter How Rough the Ground.

however, because these advantages are well recognized by the building industry.

The builder with motor truck equipment can outdistance his rival with horses and wagons because:

He can get his excavation done quicker and with less men.

He can transport his building materials at less cost.

He can get his equipment to the building site more rapidly.

He can give his client far better and quicker service.

A few miles more or less mean practically nothing to a motor truck. They eat distance. For instance:

Compare the ability of a 5-ton motor truck in delivering masonry materials to a barn job 5 miles out in the country with that of a team and wagon. How many round trips can a truck make? How much more material can be carried at each trip? How much less time does the driver of a truck waste than the driver of a team?

(Continued to page 156.)

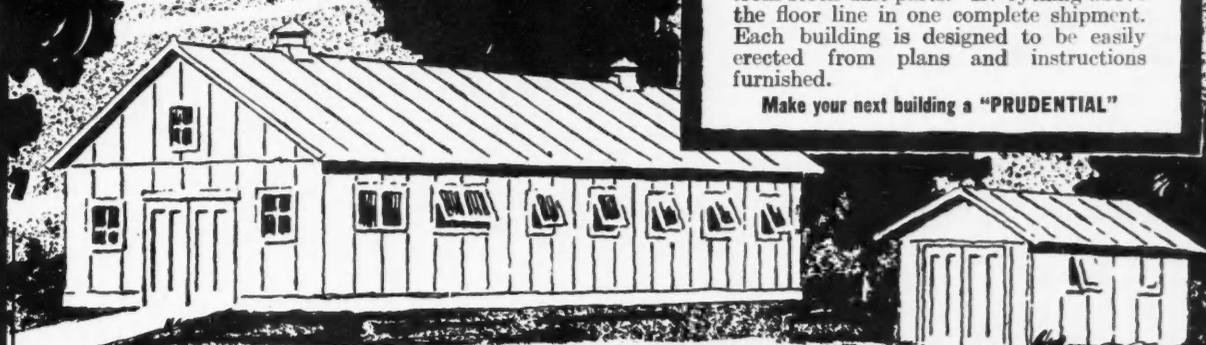
FARM BUILDINGS
GALVANIZED STEEL
CORN CRIBS
RAT-PROOF

"PRUDENTIAL" STEEL BUILDINGS
PORTABLE -- SANITARY -- FIREPROOF

CONSTRUCTION—

A unit system with interchangeable parts. Buildings for all purposes may be built from stock unit parts. Everything above the floor line in one complete shipment. Each building is designed to be easily erected from plans and instructions furnished.

Make your next building a "PRUDENTIAL"



AUTO OR TRACTOR GARAGES

Your experience proves that you can build a certain number of buildings with a certain number of men in a given time. If with "PRUDENTIAL" construction you can increase the number 3½ times, PRUDENTIALS belong in your new year's plans.

As Originators of portable steel buildings we have developed them to the highest point of efficiency for strength, durability and economy. They are made of Galvanized Steel with sanitary and fireproof advantages. Crated and shipped complete.

Secure our selling plan for your vicinity. State width, length, and wall height, number of windows and doors, for quotation. Ask for Catalog No. 200.

The C. D. PRUDEN COMPANY Bavard and Warner Sts. **Baltimore, Md.** New York Office, 56 Pine St.

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. Axle—1½ inch square rod, special high carbon steel. Springs—Semi-elliptic, oil tempered and double heat treated. Bearings—Bower roller. Wheels—1½ 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.

Moore's Reinforced Concrete Lumber



Was designed to meet the demand for low priced fire-proof garages. Simply set the staves up and bolt them together.

**NO MASON
NO MORTAR**

Make concrete lumber and supply the demand. Write for particulars.

Merrill Moore :: Box 33 :: Creston, Iowa

KRAGSTONE
AMERICAN MAGNESIA PRODUCTS CO. CHICAGO
STUCCO

Use Kragstone Stucco on all buildings. No checking or cracking. Economical, attractive and permanent. Can be applied over any surface or lath. Fine for remodeling.

Send for book that tells all about this incomparable material. FREE to builders. Write today for prices and specifications.

The Stucco Beautiful
For All Buildings

CONSTRUCTION MATERIALS CO.
133 West Washington Street CHICAGO, ILLINOIS



**SECURITY
SILO**

**Sell
YOUR
OWN
Silo --
Make
All the
Profit**

We supply the fixtures, you supply the rest.

A Money-Maker for Builders and Lumber Dealers

We furnish the fixtures only. You purchase your staves direct — save handling, freight — build up business under your own name — make all the profit — give the farmer a better silo for less money.

Selling silos built with SECURITY Silo Fixtures is permanent, profitable business, a staple necessity that sells readily year after year. Some SECURITY dealers have sold 20 to 50 silos yearly for last five years.

We help you with lowest silo fixture prices in the field and new selling plans that get the farmer's interest.

Security Silo Fixtures

supply the selling features that farmers want. Make silo easier to erect — simpler to handle. Superior sagless hinge door and collapse-proof anchorage. Safety ladder. Make a silo that produces best silage.

Dealers testify that they can beat all competition and prices and make good profits.

A million silos are still needed on American farms. Hundreds — thousands of dollars in profits can be made yearly with our plan and SECURITY fixtures.

**COMPLETE DETAILS FREE
WRITE TODAY**

Chicago Warehouse & Silo Fixture Co.
329 So. LaSalle St. Chicago, Illinois



Security Sagless Hinge Door
A Great Selling Feature

(Continued from page 154.)

These points were illustrated the day this was written on a street near the home of the AMERICAN BUILDER in Chicago. The pavement was slippery. A team, drawing a wagon loaded with trunks, was passing. The horses were barely able to stand and the wagon progressed about as fast as a child could toddle. A 5-ton truck, with dump body, loaded with crushed stone, passed the horse-drawn wagon as tho it was standing still. This thought came: "Where will that truck be when this wagon has traversed two blocks?" It is a safe guess that it was a couple of miles away, at the building job, its engine hoisting the front end of the dump body, and the crushed stone was on the place.

The Motor Truck Versus Horses

The economic side of employing trucks on building operations is, of course, one that will get careful consideration before the builder makes his investment. A number of large contractors, or rather contractors who operate in a large way, have carefully kept cost records to discover for themselves what they have saved by using trucks. The daily outlay, when interest on the investment, depreciation and cost of operation are considered, is greater. But, when the cost of hauling per ton, per mile is taken into account the motor truck is much less costly than a team and wagon.

A 1-ton truck will carry the same load or more than a horse-drawn wagon. Its cost in these days of the high price of horseflesh is not much greater. A 2-ton truck will carry the same load as 2 teams and horses, but requires only a single driver. This comparison can be carried on to the 5-ton truck, which, compared with teams, saves the wages of four men. But a 1, or 2, or 5-ton truck will accomplish so much more than 1, 2, or 5 teams that the cost of hauling per ton, per mile will be a great deal less.

The Trailer and the Tractor

It will be remembered that in speaking of the transport equipment of the U. S. Army in France, it was shown that there were "5,228 trailers delivered to the army overseas."

The trailer has come into general use during the last two or three years as an auxiliary to the motor truck. For a time trailers were not satisfactory because of the fact that couplings had not been devised that would make the traction of the trailer conform to that of the truck. The result was that in turning street corners, for instance, the trailer often met with a mishap. Great improvement now has been made in the couplings that fasten the trailer to the automobile. Attached to the truck a trailer greatly increases the hauling capacity.

Another machine that the war brought into general use is the caterpillar-tread tractor. When England

(Continued to page 158.)

LOUDEN



Expert Service to CARPENTERS and BUILDERS



WM. LOUDEN, Barn Specialist
Over 50 years' experience

THE Louden Architectural department is in reality a **Service Department** of The Louden Machinery Company, comprised of experts devoted exclusively to planning barns. Much of the valuable service it renders is absolutely free. There is no charge for preliminary sketches and suggestions or for advisory service. Complete working plans and material lists are furnished at actual cost of production.

Let these men help you plan your barns. Show your prospective client suggestive sketches and blue prints specially designed to meet his individual needs. They will give you a decided advantage over less aggressive competition and help you land valuable contracts.

Get This Valuable Book of Barn Plans

Louden Barn Plan Book is not a catalog. Its 112 pages are devoted entirely to barn building. Shows 74 barns and other farm buildings with floor plans and estimated cost of each. Also many detailed illustrations and cross section views of floor and roof construction; chapters on drainage, ventilation, concrete work, lighting, etc.

Fill out and mail us the coupon, giving one or more names of prospective builders in your locality and we will send you this great book postpaid—no charge. We will also help line up the prospects for you.



The Louden Machinery Company

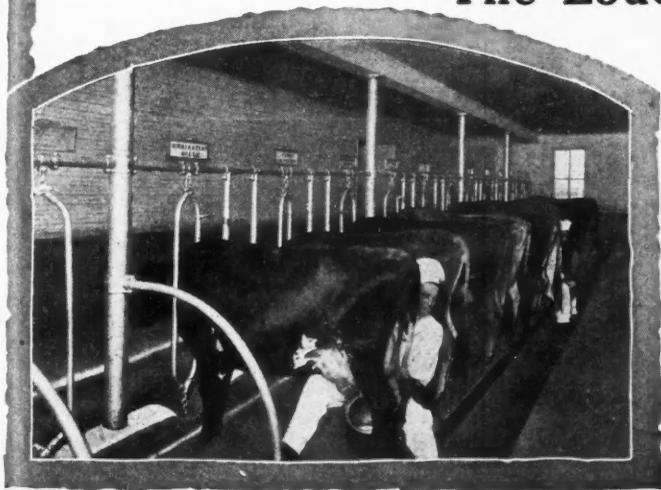
Established 1867
5527 Court St., Fairfield, Ia.
Branches: ST. PAUL, MINN.
ALBANY, N. Y. CHICAGO, ILL.

Write also for Louden Equipment Catalog

Shows the full line of Louden Labor Saving Barn Equipment, which is indispensable to the profitable barn: Stalls and Stanchions, Litter and Feed Carriers, Animal Pens of all kinds, Detachable Water Bowls, Hay Unloading Tools, Power Hoists, Barn and Garage Door Hangers, Cupolas, Ventilators—"Everything for the Barn." Sent postpaid—no charge or obligation.

Louden Machinery Company
5527 Court Street, Fairfield, Ia.
Please send me, postpaid, without charge or obligation.
 Louden Barn Plans
 Louden General Catalog
Prospective barn builders in this vicinity are:

My name _____
P.O. _____
State _____





Profit-Making Barns For Both Owner and Builder

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

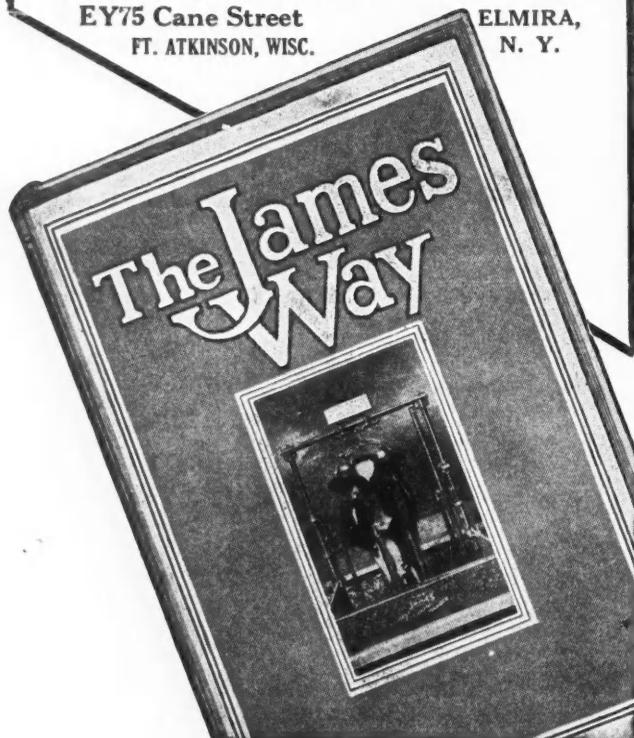
Why not get your share of the contracts for these barns?

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

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

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

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



Motor Trucks in the Building Industry

(Continued from page 156.)

first took an American-made tractor, put an armored body on it and turned it loose on the Germans, it caused consternation among the Germans. But British genius, coupled with American inventiveness, brought out a war machine that was well-nigh invincible. The tractor would go anywhere, and, before the war ended, there were huge "tanks," as they were called, and little tanks, or "whippets." Instances of the large tanks uprooting trees and pushing over houses and climbing in and out of shell holes and ravines make interesting features of the history of these machines.

Here again was demonstrated the possibilities of this type of tractor in constructive as well as destructive operations. As motive power to haul over rough ground, draw wagons out of excavations and do many other things that a motor truck cannot do, the caterpillar-tread tractor has shown its efficiency.

What They Mean to the Building Industry

Operating a motor truck, or two or three, or as many as a builder's business demands, is good business. There is the satisfaction that comes because the building is progressing rapidly; the freedom from petty delays caused by inability to keep up the flow of material to the ground; the ability to get the men and equipment on the job quickly, or to obtain in a hurry something that is necessary.

And there also is the satisfaction of knowing that any kind of fair competition for a job can be met; that your equipment is adequate. Knowing this yourself, and having your prospective customer know it mean that your bid will get the same consideration that will be given that of a rival similarly equipped and more than that of one who is not so progressive, and will get many a job that otherwise would go to someone else.

And right here, may we not enlist your support in the good roads movement? Good roads mean a saving of time and money to every man who uses transport in the conduct of his business. They and motor trucks and cars have effaced the distance that formerly lay between the city and town and the farming communities. The farmers have come to realize this; so has every other man who has the interests of the community in which he lives at heart.

The next few years will be one of the greatest eras of prosperity for the building industry this country has ever known. Building of all kinds, now that the restrictions have been removed, will be urged and urgently needed everywhere.

Be in on these good times. Have the equipment that is necessary to increase your business. In this way, and in this way only, will you be doing yourself and the building industry generally justice.



Let **Drew** Help You Get More and Better Barn Contracts

NINETEEN NINETEEN is going to be a big year for farm building—new barns by the hundreds will be built. You want to get your share of this good profitable business; and you'll want to be prepared to build and equip barns **completely**. Good farmers today look to the contractor to supply everything in the way of stalls, stanchions, bull and calf pens, feed and litter carriers, etc.

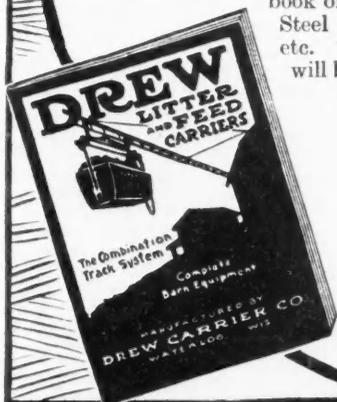
We can **help you** get the good contracts—and we'll be glad to do so, without obligating you in any way. The Drew barn-planning department works hand-in-hand with contractors and aids them in working out modern ideas in barn construction and equipment. This service is free to you. Take advantage of it—profit by it.

The "Drew" Blue Prints Are Made to Order, Not Stock Plans

Our free plan department offers you the valuable experience gained through planning **hundreds** of modern barns. By working with the men in charge of this department you can give your customers **better service**, and save yourself much more work and worry—perhaps avoid costly errors. Let us tell you all about the Drew plan—how it is helping other contractors—how it will help you.

Send the Coupon at Once for Full Details of Our Offer

There is no reason why you should not avail yourself of the valuable help of our barn planning department. Send for full particulars now and we will also send you free without obligation, our big new book on modern barn fixtures, including Drew all-steel Feed and Litter Carriers, Steel Stalls and Stanchions, Bull and Calf Pens, Watering Systems, Cupolas, etc. The Drew book shows ideal barn interiors, stall arrangements, etc. It will be of untold value to every barn builder.

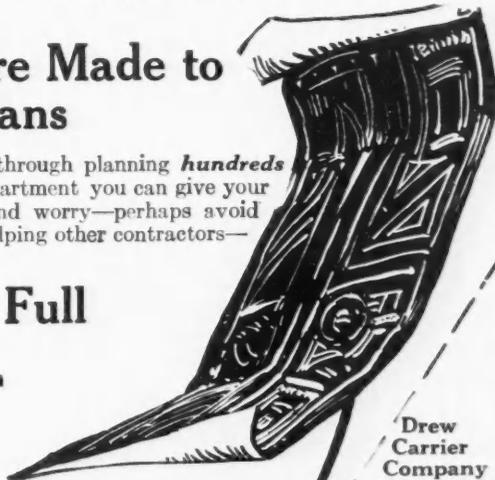


FILL OUT AND MAIL THE COUPON NOW, OR WRITE US A POSTCARD.

The Drew Carrier Co.

DEPT. 40

Waterloo, Wisconsin



Drew Carrier Company
Dept. 40,
Waterloo, Wis.

Please send me without charge or obligation, the Drew book on complete barn equipment, and full details of the Drew Made-to-Order barn-plan offer.

Name

Address

Town

State

Truck Enlarges Its Usefulness to Builders

How far will the motor truck go in helping building operations?

First, the automobile with an express body solved many of the problems of quick delivery of men and materials—it brought the job close to the material supply, the workmen closer to their work.

Then came the motor truck, ranging in capacity from 1 to 7 tons. This opened up new possibilities.

The tractor and its trailer or trailers added to the ability of the motor truck to transport quantities of materials.

Now the motor truck builders have gone farther. They have mounted on trucks the heavy machinery that is absolutely necessary in large building operations and makes smaller construction work easier.

An example of this last is shown in the accompanying illustrations. Here is a motor truck that might be termed a traveling crane or power shovel.

Only one of the possibilities of this machine is here pictured, that of excavating with a clam-shell digger. The one view shows the clam shell rising with its load

of dirt; the other with it poised over a truck placed to receive the several yards of excavated material it contains.

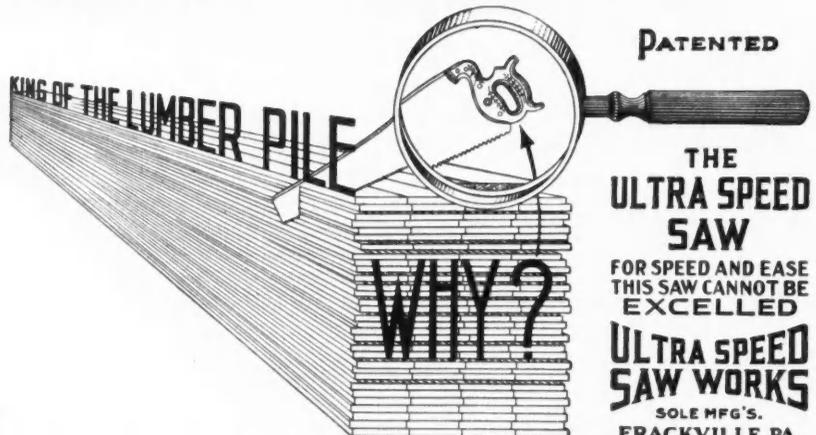
How many uses such a machine could be put to on a building job from the time the excavation is started



The "Winther" Truck and Mounted Hoist Delivering the Clam-Shell's Load to Another Truck.

until the building is finished readily can be pictured. After the excavation is made, it would be available for lifting the foundation stones onto the wall. As the superstructure is erected, here again the machine

"Money Matters"—Doesn't It?



You don't value an article for what it costs, but for what it will produce.

The Inventor of the famous **ULTRA SPEED SAW** has been offered as much as \$27,000 for this Patent. The party who made this bid is a Hand Saw Manufacturer of the old style, and after a severe test stated that he could see a world wide market for the **ULTRA SPEED** without a competitor. We guarantee a 12-point **ULTRA SPEED** to cut faster than any 7-point of the old type.

Study the sketch and you cannot help grasping the Inventor's idea of placing the handle on the lower portion of the blade, with a removable insert. It assures 100 per cent hook to the teeth, and a smooth, clean, fast and easy cut from toe to heel. With a 26" blade a 24½" stroke can easily be made.

Are you going to be one of the Boosters, for the saw without a fault, and making a million friends? If so, and your dealer does not have them in stock, a postal card will bring full information. Ask about our guarantee and our 30-day trial offer.

NOTICE: We cannot promise delivery inside of two weeks from date order is received, when shipment is made from factory, due to increasing demand.

ULTRA SPEED SAW WORKS,

317-355 Broad Ave.

Factory and Main Office:
FRACKVILLE, PENNA.



**No. 15 Track
for No. 58 Hanger**

14-gauge seamless steel.
Bird-proof, self-cleaning,
4, 6, 8 and 10 ft. lengths.
Brackets for attaching to
side-wall or ceiling.

No. 25 Track for No. 78 Hanger

Illustration shows actual size. 12-gauge seamless
steel. 4, 6, 8 and 10 ft. lengths.
Ceiling or side brackets.

WAGNER CLOZTITE HANGER

For Folding-Sliding Doors

Simple—strong—easy to attach and adjust. Roller-bearing wheels—ball-bearing swivel. Works smoothly, quietly, doesn't get out of order. Doors fold compactly when open, close tight as any ordinary door. May be used inside or outside.

Suitable for openings of any width and for any number of doors, from two to six.

Two or three doors are hinged together and operate as one door, being hinged to jamb at one side and the second door supported by one Clozite Hanger operating in Wagner self-cleaning, bird-proof track. In three or five door openings one door may be used as a separate entrance door. Sketches furnished for special requirements on request—no charge.

No. 58

For Garages and Small Factories

Will support two or three doors having a combined weight of not more than 600 lbs. Use No. 15 track.

No. 78

For Factories and Warehouses

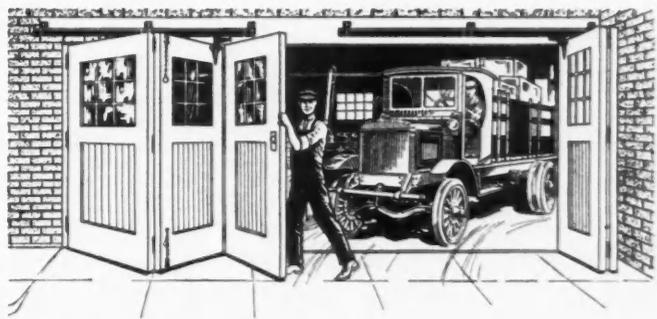
Will support two or three doors having a combined weight of not more than 1000 lbs. Use No. 25 track.

Write for Descriptive Circular giving full details. Complete catalog of Wagner door hangers and Overhead Trolley Carrier Systems upon request.

WAGNER MFG. CO., Dept. N. Cedar Falls, Iowa



Illustration at left shows No. 58 Clozite Hanger on private garage doors opening inward. Center door used as separate entrance. Illustration below shows No. 78 Clozite Hanger on big heavy factory doors, opening outward. Center door used as separate entrance.





Save \$43.00 This Easy Way

Here is your opportunity to own a genuine Oliver, Model 9, for \$57. The identical model formerly priced at \$100. Not a single change has been made in the machine in order to make this astounding reduction in price.

Only our sales plan has changed. We learned new economies during the war. We found it unnecessary to have great numbers of traveling salesmen and numerous, expensive branch houses throughout the country. We were able to discontinue many other superfluous, costly sales methods. You benefit by these savings.

Free Trial

We ship the Oliver for free trial. You can keep it for five days. Use it as if it were your own. All without paying one cent in advance.

If you agree that it is the finest typewriter regardless of price, and want to own it, merely pay us \$3 per month until the \$57 is paid.

If you want to return it, ship it back, express collect. We even refund the out-going transportation charges.

During the trial you are the sole judge. No eager salesman need influence you.

\$3 Per Month

Our easy plan makes it possible for all to own a typewriter. And to use it while paying. There is no need to rent.

You obtain the same wonderful model used by such big concerns as U. S. Steel Corporation, Pennsylvania Railroad, Encyclopedia Britannica, Otis Elevator Company, Nat'l City Bank of N. Y., and others of equal rank. Over 700,000 Oliver's have been sold!

No Typewriter is finer. It is noted for its workmanship, speed and durability. It is easy to learn. It has a standard keyboard. And all the latest improvements. If any typewriter is worth \$100 it is this splendid Oliver.

Mail the coupon now for our remarkable booklet entitled "The High Cost of Typewriters—The Reason and the Remedy," sent free, together with details of our plan. Then you may order a FREE Trial Oliver.

Canadian Price, \$72

The Oliver Typewriter Co.
2402 Oliver Typewriter Bldg., Chicago, Ill.

(48 03)

THE OLIVER TYPEWRITER COMPANY, 2402 Oliver Typewriter Building, Chicago, Ill.

Ship me a new Oliver Nine for 5 days' free inspection. If I keep it, I will pay \$57 at the rate of \$3 per month. The title to remain in you until fully paid for.

My shipping point is _____

This does not place me under any obligation to buy. If I choose to return the Oliver, I will ship it back at your expense at the end of five days.

Do not send a machine until I order it. Mail me your book—"The High Cost of Typewriters—The Reason and the Remedy," your de luxe catalog and further information.

Name _____

Street Address _____

City _____ State _____

Occupation or Business _____

Motor Trucks in the Building Industry

(Continued from page 160.)

could hoist the materials. By dropping the boom to the level of the ground the cable on the drum of the hoisting machine would provide power for the elevator. Its limitations are few.

But the thing that makes this type of equipment far superior to the stationary ones is its mobility. The power for the boom is provided by the same engine that drives the truck. Transferring the engine's energy from one to the other is simple, just as the engine that propels the modern fire engine to the fire provides the power for the pumps that throw the water. The driver of the automobile fire engine acts



Sand Ballast Gives Stability to Mounted Hoist on "Winther" Truck.

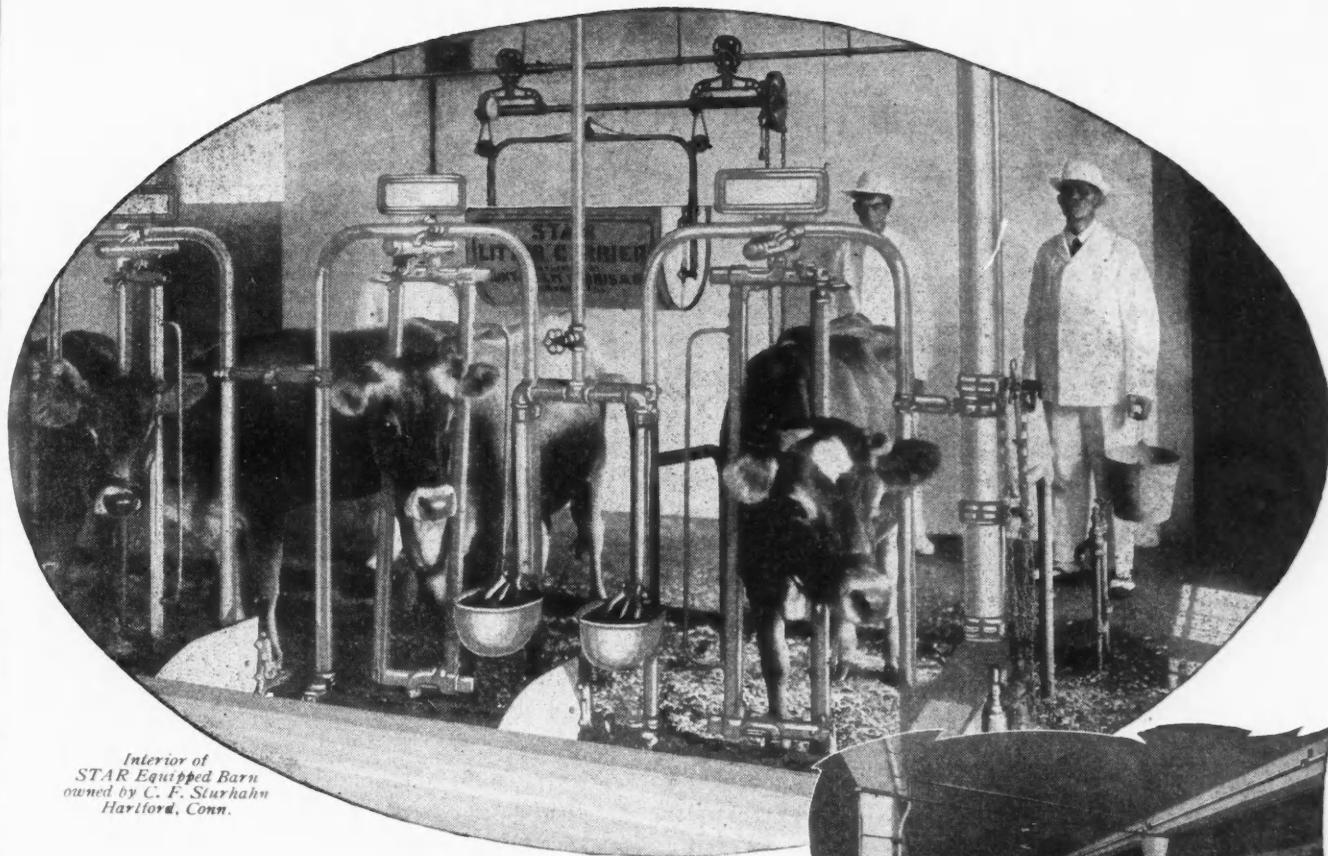
as engineer when the pumps are in use; the driver of this truck acts as engineer when the hoist is in operation.

Erected on the steel chassis of the truck is a turntable in which the boom, with its drum and gear are set. The load on the boom is offset by the ballast of sand-filled bags that will be observed in the illustrations. The truck is run into position, the engine thrown into gear with the drums and the machine is ready to operate. Moving it to a more advantageous place means simply transferring the power from the drum to the driving gear of the truck.

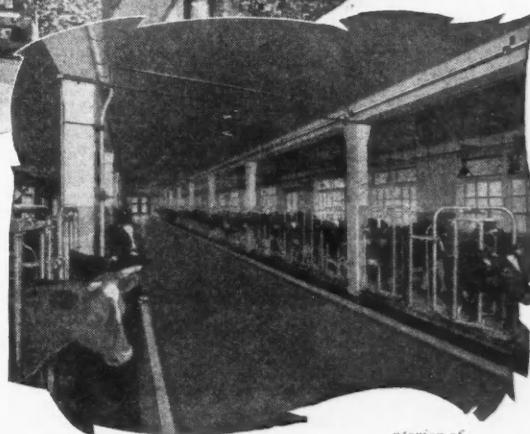
Putting the machinery necessary for excavation and hoisting, and the equipment required, into place has always been an expensive proposition for the building contractor. It means setting and moving the cumbersome steam shovel into place, laying tracks or a plank roadway so that it could be moved as the work progressed; and when the excavation was done, getting it out before the building proper could be begun.

This truck, of course, has its limitations in lifting power, but for a job that is not very extensive and where the materials are not extra heavy, it will do the work quickly, efficiently and at a much less expense than by the old method.

These are all advantages that will appeal to the contractor and, while the equipment pictured is new, it will find a ready market in the building industry.



Interior of
STAR Equipped Barn
owned by C. F. Sturhahn
Hartford, Conn.



Interior of
STAR Equipped Barn owned by
H. J. Krebs, Wilmington, Del.

Make Better Satisfied Customers With Exclusive STAR Features

TAKE advantage of Exclusive STAR Features by making them help you in your business. They will save you time and expense in installing the equipment and make a better looking job of installation to your credit.

STAR Stalls are built into separate units. Each stall connects with the other.

This means convenience and economy in installation and letting the system grow with the herd. The STAR Curb Clamp simplifies installation by doing away with curb anchors and templates. The STAR Alignment Device keeps every cow in line at the gutter by simply moving the stanchion backward or forward.

The STAR Stanchion can be adjusted to fit the neck of a young heifer or the heaviest bull by

adjusting two counter-sunk screws. These and other important exclusive features mean easier and better jobs of installation and better satisfied customers.

Also recommend and install STAR Litter Carriers. You can not only point out important features for convenience and durability, but supply the carrier equipment needed for any type of barn.

WRITE FOR OUR CATALOG and let us tell you about the STAR Line and architectural service in making barn plans for you and your customers.

HUNT, HELM, FERRIS & CO. HARVARD, ILLINOIS
COMPLETE BARN OUTFITTERS
EASTERN BRANCH—INDUSTRIAL BUILDING, ALBANY, N. Y.

The STAR Line

- Barn Equipment
- Litter Carriers
- Water Bowls
- Feed Trucks
- Harvester Hay Tools
- Door Hangers
- Garage Equipment
- Coaster Wagons
- Tank Heaters and other Farm Specialties

STAR

Farm Equipment

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Help the "Build a Building!" Campaign

EVERY READER CAN DO HIS PART IN THE AMERICAN BUILDER'S PUBLICITY PROJECT, THUS HELPING HIMSELF TO BUSINESS

DURING the last two years many persons in your community have been denied, thru government restrictions made necessary by the war, the new homes they had planned; farmers have been forced to postpone buildings they had intended to erect; business men and manufacturers have been required to abandon, temporarily, their building projects; even the building of new school houses has been stopped.

Now, the war is over, the building restrictions have been removed and all are free to go on with their plans. And, what is most important, practically everyone—the farmer, the potential home-owner, the business man and the manufacturer—is in a better financial condition to do so.

Could there be found a situation that would create greater optimism, more enthusiasm or stronger confidence when going after a prospect? The AMERICAN BUILDER knows that there could not; it knows that there is the immediate prospect of the biggest business the building industry ever has done. And knowing this it purposes to conduct a campaign that will awaken this sleeping business.

"Build a Building!" That's the slogan. "Build a Building!" It is going to be preached to the heads of

hundreds of thousands of American families; to the farmers; to the business men; to the manufacturers; to everyone.

Under the heading, "Build a Building," William A. Radford, publisher of the AMERICAN BUILDER, will conduct in the daily and weekly newspapers of the country a department on building. Some of these articles will be by the country's most prominent men and will be designed to create enthusiasm for building. Others will stimulate the desire to build.

This feature will be furnished to the newspapers of the country without cost to them. One will appear each day for several weeks and will tell millions of readers to "Build a Building!"

This campaign is big in itself. But you can help to make it bigger.

Talk building to everyone you meet.

Hunt up every person who has shown an interest in building during the last two years and tell him now is the time to build.

When you are approached on the subject of building, show your enthusiasm—it is contagious.

Picture the joys of owning his own home to the man who speaks of building a dwelling.

(Continued to page 166.)

Here's a Plan That Will Help You Double Your Profits This Year. Read it - Then Act Quick

THE carpenter or contractor who secures the exclusive sales rights for the Barnett System of Lightning Protection this spring will make big money.

Hundreds of new buildings going up—hundreds of old ones being remodeled—and every one can be equipped with Barnett pure copper cable rods, if the right man is on the job.

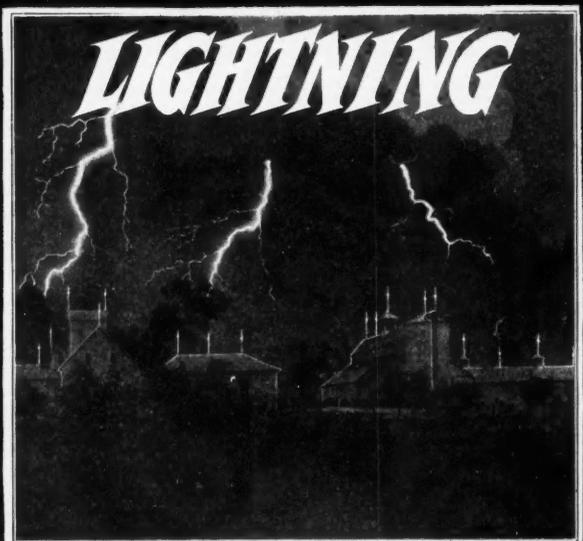
You're the logical man to rod these buildings. You know the owners and they have confidence in your ability and good judgment.

You'll make from \$20.00 to \$50.00 on every building you rod, and we'll help you get the business.

Our plan includes everything you need in the way of printed matter, newspaper ads, movie slides, and samples—we'll refer all inquiries to you and help you turn them into sales.

Let us tell you more about it

JOS. L. A. BARNETT & CO.
CEDAR RAPIDS, IOWA



There's a Lot of Satisfaction in Making a Home Safe—and a Lot of Profit, Too.





"Couldn't Keep House Without This Level"

F. MULKEY
CONTRACTOR
BUILDER

JAMIESON, OREGON

Editor American Builder,
Chicago.

December 9, 1918

Dear Sir --

Last Spring I purchased a builder's convertible level made by the David White Company and so far I have never had occasion to regret my investment

The enclosed photo will show the instrument in actual operation where my men are verifying level of a garage foundation

With the aid of this level we can put in foundations in a third of the time required formerly, and the minute we have finished we know it is both square and level Does not require an expert to get accurate results

There are a thousand and one uses to which it can be put, and there are no jobs so small that it will not pay to use it, and no jobs so large that it cannot accurately handle them There are no words of praise, too big for the White Convertible Level, and tho I am a small carpenter in a small town I just couldn't keep house without this level

Truly yours,

F. Mulkey.

What the White Convertible Level has done for Mr. Mulkey it will do for all other contractors and builders. **Write without delay.**

THE DAVID WHITE CO.

419 E. Water Street - - MILWAUKEE, WIS.



IF, YOU BUILDERS KNEW!—

the selling merits of CANTON COAL CHUTES and CANTON SIDEWALK DOORS—if you knew of the profits to be derived from the installation of these excellent and indispensable products—you would specify no others in your contracts.

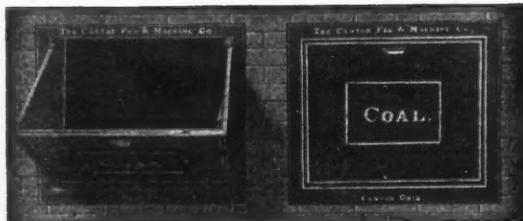
CANTON PRODUCTS

are constructed of steel. They are fire and burglar proof, and add greatly to the convenience and appearance of any building.

Write today for Catalog B-7

CANTON FOUNDRY AND MACHINE Co.

CANTON, OHIO



YOUR CUSTOMERS DEMAND PRODUCTS

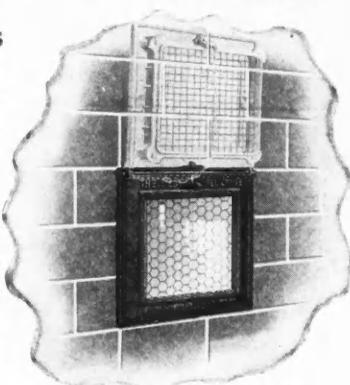
that embody neatness, durability and convenience. They have a right to expect the best that years of experience and indefatigable effort has created.

Such a Creation is the "Best" Coal Chute

It is constructed of iron, rain proof, flush, and automatically locks whether open or closed. It can be had with either wire glass or solid cast iron door.

Let us interest you with our complete catalog and moderate prices.

STERLING FOUNDRY CO.
8 Ave. A. Sterling, Ill.



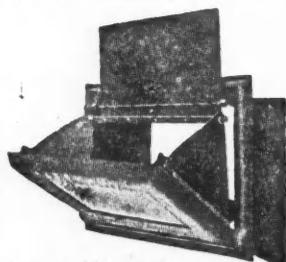
Skeleton outline, showing position of open door

THE AUTOMATIC COAL CHUTE

Will Answer Every Requirement

- Opens Automatically
- Closes Automatically
- Locks Automatically
- Fool Proof

Order one from your dealer or direct from



Agents Wanted

THE WESTERN IRON & FOUNDRY CO.
Wichita, Kansas

Help the "Build a Building" Campaign

(Continued from page 164.)

When the question of price comes up, tell the prospect what is a fact—that the cost of building has increased far less proportionately than have incomes.

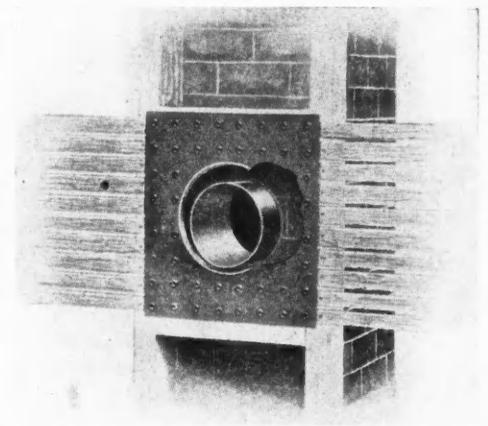
All of these things are effective and infective. Your prospect will discuss what you have told him with his wife and his friends. The news will spread. This aroused enthusiasm coupled with the series of building articles in the local newspaper will start such a building boom as has never before been known.

Adopt "Build a Building" as your slogan, and keep right on preaching it.



Fire-Proof Chimney Plate

Fires caused by overheated stove pipe have not been so numerous this winter as last because there has not been as severe weather in most sections of the country. However, there has been a sufficient number to demonstrate the desirability of the steel chimney plate shown in the accompanying illustration.



This plate forms a metal casing around the flue and, combined

Safety Chimney Plate. Laths Extend to Plate Only.

with an air space between the chimney wall and the plate, is a safeguard against the wall catching fire from the heated pipe and chimney. The plate is self-adjustable and allows for the walls to settle from one to two inches, altho it still maintains its original position in the chimney. This feature prevents the cracking and breaking away of the plaster around the flue. The connection between the pipe and the chimney is smaller than the opening in the plate, which is closed with a japanned collar.

As will be seen by the illustration, the lath or plaster board is placed only to the edge of the plate, it being provided with plaster clinches.

This chimney plate has only recently been put on the market.



Brackets Provide Safe Scaffold

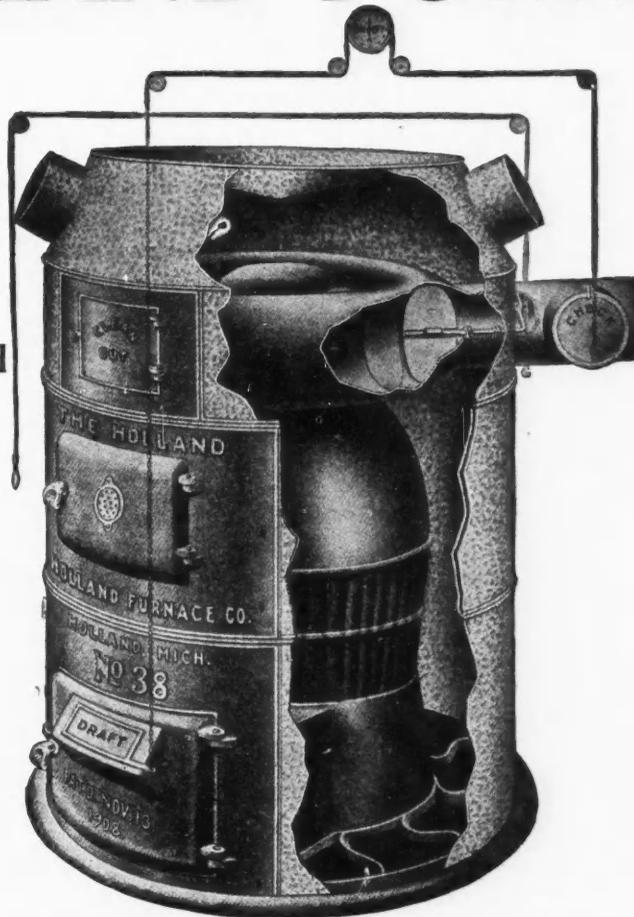
Present-day builders use little of the old-fashioned wooden scaffolding, but prefer instead the metal brackets that provide safety for the workmen and can be speedily put up. Recently, there was a chance for comparison between the two methods. Building contractors had jobs on opposite sides of a street. They commenced scaffolding at the same time. One used the old-fashioned method; the other the modern metal brackets. The latter had his up and a good start on the real work before the other had his wood staging completed.

There has been considerable progress in the manufacture of these brackets since they first appeared in the market. Now

(Continued to page 168.)

HOLLAND FURNACES

Lead in Sales
in the 135
Cities Where
Now Introduced



Lead in Service
for City,
Suburban,
Village and
Farm Homes

MAKE WARM FRIENDS

A Carpenter and Contractor is a good judge of a furnace. He acquires this because he has learned through observation and experience that if a man is absolutely pleased with his furnace—if his house is warm and comfortable at an economical heating cost—he naturally is better satisfied with everything else that was done in the building or remodeling of his house.

In other words, the Carpenter truly knows the furnace is the "heart of the home." Good furnace advice, therefore, spreads his good reputation.

Furthermore, Carpenters know the heating problem must be met scientifically. A furnace that is simply "guessed" into a house, runs ninety-nine chances out of a hundred against successful service.

Carpenters who have become acquainted with the Holland organization know the care and efficiency of all plans made for the individual conditions of each installation and the high standard maintained through the completion of every detail of the job.

Add to these essentials the advanced principles of its design and the dependability of its construction, together with the Holland Guarantee and the Holland Five-Year Service Bond, positively insuring heating satisfaction to every owner, and you will readily under-

stand why the leading conscientious carpenters and contractors in the six states where Holland Furnaces are now installed unqualifiedly recommend them.

The Holland Furnace Company has never expanded its sales faster than it could follow with efficient service. Branches are now located in 135 cities, each in charge of trained heating efficiency men, and the Holland Furnace leads all others in sales in each and every one of those localities. Holland reputation is not built upon promises; but upon actual service. The first branches established increase sales each year and remain the largest producers of business—built upon proved service.

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

High test cast iron construction, with the fact that all castings are evenly heated, prevents warping or burning out, and have given the Holland a certified reputation as repair-proof. We have hundreds of statements from owners who have burned the Holland seven, eight and ten years without one dollar for repairs. Our statement that the Holland fire pot outlasts any other is based upon and proved beyond challenge by this evidence.

Carpenters' Opportunity

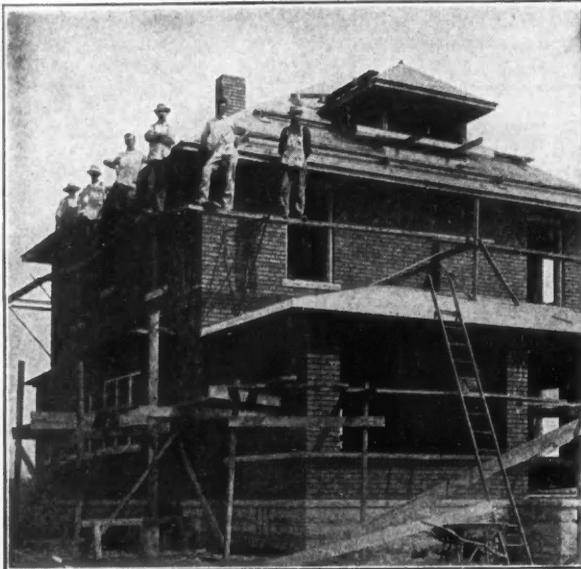
Write for our special proposition to you. We will send along our complete catalog, and will be glad to give you free heating plans and full information. Let us get better acquainted to our mutual advantage. Write us today

HOLLAND FURNACE COMPANY
Holland, Mich. "World's Largest Installers of Furnaces" Cedar Rapids, Iowa
TWO FACTORIES

Brockets Provide Safe Scaffold

(Continued from page 166.)

they are made of the best materials and are designed to stand a heavy strain. As is shown in the accompanying illustration they may be used on brick as well as wooden buildings. The



This Contractor and His Gang Boost for Scaffold Brackets.

only difference is that in brick construction holes that will accommodate a bolt must be left. This is fastened thru a piece of wood, running it from the inside. The bracket is hung on the bolt and the nut securely screwed on.

These brackets provide a safe scaffold for the carpenters, bricklayers and other men to stand on while they are at work.

In the states where there are industrial insurance laws they provide an added safeguard to the contractor, who is held responsible for the safety of his workmen.



C. B. Flinn, Chicago Lumber Ass'n Head, Dies

Charles B. Flinn, president of the Chicago Lumber Association died suddenly while sitting at his desk in the Monadnock Building, Chicago, January 24. Mr. Flinn had been talking with Capt. A. A. Henry, vice-president of the Metropolitan Lumber Company, and had expressed the wish that he would "die in the harness." A few minutes later the desire was gratified. Mr. Flinn had been active in the business life of Chicago for many years and was known to the lumber industry over a large part of the country. He leaves his wife and two sons, Frank and Charles B. Flinn, Jr. He was seventy-two years old.

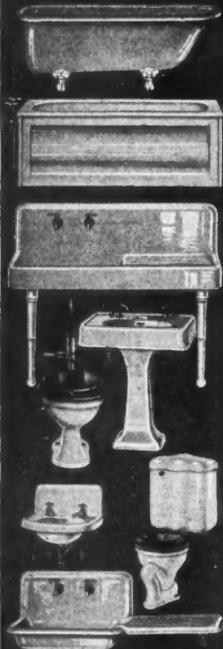


Build Now and Save Money

THRUOUT the United States there are a lot of far-seeing people who are putting their surplus funds in that safest and most satisfactory of all investments—a home. They are convinced that the price of lots will never be lower. They are satisfied in their own minds that the prices of building materials are higher now than in 1892, but they look for no decline in values of lumber and other things which are needed to put a house together.

There are some people, however, who are postponing the building of a home at this time, giving as the reason that they wish to wait for a decrease in price.

CONTRACTORS—BUILDERS—CARPENTERS DO YOUR OWN PLUMBING-HEATING



Free Handy Man Book

wholesale catalog, it has many pages of practical plans, diagrams, etc. Gives many suggestions on what system to select and how to install it. Shows how to save unnecessary material, hard labor and time by doing your plumbing and heating this new original

Cut to Fit Method This new way enables any contractor with a few tools to install a complete plumbing, water supply, hot water, air or steam plant at low cost.

We furnish a special contractor's and builder's wholesale discount sheet applying to this big book.

Water Supply Systems Our new electric, gasoline or hand operated water supply systems are up to the minute. Write us just what you have in mind.

Our Handy Man book describes over 10,000 different plumbing and heating fixtures and supplies, including plumbing outfits, water supply systems, warm air, hot water and steam heating plants and everything else pertaining to plumbing and heating supplies exclusively. Write today and save.

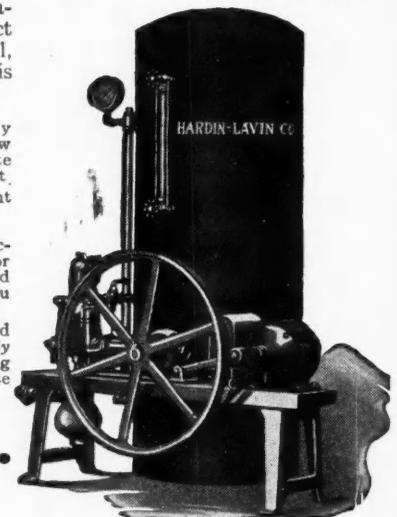
Hardin-Lavin Co.

\$500,000 Plants Behind Our Guarantee

40 Years at

4522-34C Cottage Grove Ave., Chicago

Every contractor and builder needs this big valuable, instructive Handy Man Book. Besides being our



Hardin-Lavin Water Supply System

The Hess Welded Steel Furnace

Burns hard or soft coal, screenings, slack, coke, wood or lignite, burns it clean, delivers all the heat, none wasted.

FOURTEEN ESSENTIAL POINTS

Refer to letters A, B, C, etc., in the cut

1. Every seam riveted, then welded under melting heat (D)—absolutely and everlastingly tight. These seams never open, never leak.

2. Large combustion chamber (E)—smooth inside, no flues, no obstructions, no deposit of soot. This is a separating chamber in which the heated contents are at the top, the coolest at the bottom (see No. 3).

3. Smoke outlet (G) at the bottom. Here we draw away the coolest of the contents of the combustion chamber, leaving the hottest for your use and benefit.

4. Fire-box (B) and ash pit fully enclosed by outer welded steel radiator, no burnt air odor, no red-hot surfaces, no leakage as with cast-iron fire-bowls.

5. Fire-box (B) close to the front, convenient in operation, no chutes necessary as with other styles having fire-pots in the center.

6. Heavy fire-brick slabs (H). These accumulate heat necessary for combustion of gases. The ideal form for inferior and smoky fuels, and perfect for the best. Metal fire-bowls are not equal to brick for good combustion, and cannot be replaced without taking down the heater.

7. Large grate area and deep fire (I) best for any fuel, permitting large bodies of air to enter for perfect combustion.

8. Perforated fire-door lining (C), sprays air supply all over the fire mingling with gas and smoke, promoting perfect combustion. Soot and black smoke are reduced, producing heat not smudge.

9. Evaporating pan (A) evaporates sufficient water and affords ample humidity essential to health, saves fuel.

10. Clean-out-door (F) where all deposits of soot and ashes are easily removed, no other cleaning required.

11. Fire-door (C) low down, 32 inches from floor, easy to reach, no high lifting of fuel.

12. Double outer casing surrounds furnace with cool air space between. Little heat in cellar.

13. Rocking grate bars, each one separate (I). Clean any part of the fire, disturbing no other portion. Simple and efficient.

14. Sold by the maker with full guarantees, direct to the user, at factory prices. Cash, Liberty Bonds or easy monthly payments.

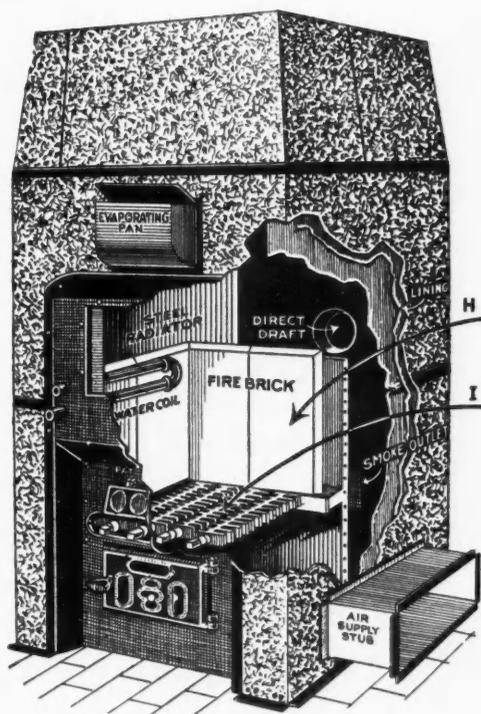
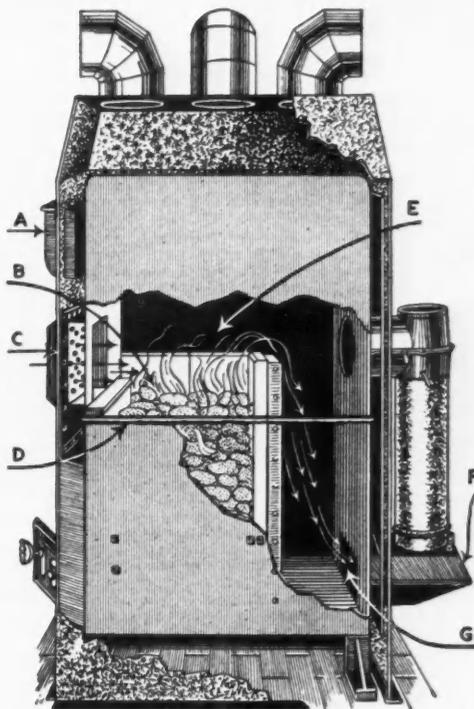
We issue a 48-page hand-book on furnace heating, describing both pipe and pipeless furnaces, which is instructive and useful. It is yours for the asking.

Send us a sketch of your house, and let us tell you the best way to heat it, and what it will cost. No charge, no obligation.

Special! Buyers before May 1st will be refunded the amount of any reduction in our prices taking effect before October 1st. Thus we guarantee now the year's lowest prices.

Special Rates to Contractors for Resale

Hess Warming & Ventilating Co.
1220 Tacoma Building Chicago, Ill.



The War is Over What are YOU Going to do?



**WRITE FOR
BIG
FREE
BOOK**

Have you mapped out a definite plan of action? Have you fitted yourself into a place for big achievement in the period of reconstruction? Have you established yourself so as to be a factor in accomplishing the work ahead? Have you prepared yourself to take advantage of this new era of prosperity? An unusual opportunity is offered you in

Automobile Tire Surgery

This is a business as big as your ambition for success.

Automobile Tire Surgery during the war was a factor in solving the Tire problem, in helping to keep automobiles going, aiding to meet the shortage of rubber and the high cost of tires.

There will be a greater demand for Automobile Tire Surgery than ever—with the starting again of the manufacture of automobiles, and with more automobiles put into use—**Automobile Tire Surgeons Earn \$2,500.00 to \$3,500.00 Per Year.**

Automobile Tire Surgeons repair, rebuild, reconstruct old worn out, discarded automobile tires, and keep going tires in condition. **It is scientific, thorough, practical.**

I Have a Big, Interesting Book

to send you. It tells all about Tires and how they are re-paired by the Haywood Method of Automobile Tire Surgery. Gives inside figures and profits—gives actual proof of success. It tells what other men are doing as Tire Surgeons, tells how we fit you for the work, how one machine will start you.

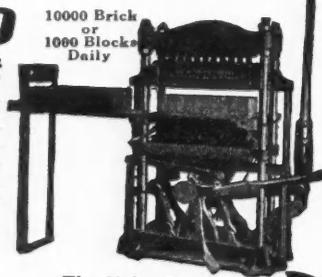
Get this book. Write me to-day.

M. Haywood, President,
HAYWOOD TIRE & EQUIPMENT CO.
660 Capitol Ave. Indianapolis, Ind.

Make Your Own Brick

and
\$20 to \$50
Extra Daily Profit

Be independent of the clay brickmaker and dealer. Put yourself in a position to make more money on your contracts, to take bigger jobs—more profitable jobs without worry of delays or lost time eating into your profits. With a Helm Press you can make **10,000 Brick or 1,000 Blocks a day—\$20 to \$50 daily profit. Operates under 80,000 pound pressure.** No tamping—no burning—every brick or block perfectly true. A big demand in your own community for this superior kind of building material. Equip yourself to supply it.



The Helm Press

Helm "Dry Wall" Building System

Appeals to builders, contractors and architects. It overcomes the opposition to concrete because it offers absolutely Dry Wall construction. It saves money for builders, as no furring and lathing are required, and it makes rigid walls and fireproof walls. This is the system which is bound to set you business and give you the advantage over all other products.

Send for Our Valuable Book FREE

Let this FREE book tell you all about this great opportunity which is open to you today. It will tell you all the details of this system, about the Helm Press and the Dry Wall building system. It will show you how easy it is to start a profitable business. It tells how each product is made, how it is cured and sold. Write today. Use a post card or coupon.

HELM BRICK MACHINE CO.
572 Mitchell St.
CADILLAC, MICH.

Helm Brick Machine Co.
572 Mitchell Street
Cadillac, Mich.

Gentlemen—Please send FREE your book on Concrete and Helm Presses.

Name.....

Address.....

How to Build a Simple Boat

(Continued from page 65.)

a strand of lead-soaked wicking laid along the bottom edge of the sides could be called caulking. While this bottom has done very satisfactory service, it would seem that the lips would be liable to split off the flooring, and that unmatched stuff, caulked, would make a more durable bottom. Also, while the writer would not venture to hint at any lack of perfection in that particular boat, it is his private opinion that some of the cheap black roofing paints, or pitch, would be much better than white lead, in that they would be less liable to dry hard and crack.



"Evident" Hawkins; or Contracting— With Electricity on the Side

(Continued from page 47.)

filling and trimming lamps; it makes sewing, reading or other evening occupations more enjoyable and productive. There is not time now to mention all the arguments that fall naturally under that heading of lighting—better lighting—but anyone who has groped his way around behind an oil lamp or a candle, or who has had to jump out of a warm bed on a bitter cold night and search for a match to light the lamp, has at hand a fund of experience that will enable him to talk for hours regarding the illuminating advantages of electricity.

"Then I put down all the reasons and arguments that occur under the heading of 'Mechanical Power.' It is under that heading, of course, that some of the strongest licks are gotten in. Because any farmer who makes use of machinery is bound to be interested in the idea of operating that machinery by mechanical power, instead of by hand power, particularly when the power is so readily available and at such a slight expense as is true of electricity. Go to the farmer who operates a cream separator, butter churn, pump, grindstone, wood saw, corn sheller, ensilage cutter, feed grinder or baler, for instance, and show him how easily and cheaply he can arrange to stand idly by and let the 'George' of electricity do the work, and you can feel reasonably sure that you have planted a thought in his mind that will make him think longingly of the convenience of electricity every time he has to turn to and accomplish those tasks by hand. But, of course, the best way of presenting those arguments is to do as I did when presenting my arguments to Virgil. I made a study of his farm and set down in black and white all the machinery that he made use of, and then I calculated what it was costing him to operate it by hand. Then it was a simple task to estimate the saving in time, labor and money that electrical power would make possible.

"Then I listed all the other arguments I could think of that were calculated to appeal to his pride, his sense of comfort, his desire to make his home as at-

(Continued to page 172.)

BUILDERS NOTICE!

Home Owners Demand *Heating Comfort and Economy*

OWNERS and contractors now give more time and thought than ever before to house-heating systems. Science has entirely changed old ideas and methods.

Today the builder who is indifferent to heat engineering finds it difficult to satisfy his customers. And owners are now better posted on the necessity and economy of scientific house plans and home heating.

Healthy Homes Must Have Moist Air

Not only warm air but warm moist air is demanded by well informed home owners. Few builders or contractors will attempt to argue otherwise with a well posted house owner.

Physicians persistently preach the necessity of pure moist air in the home. So—today—old ideas of home-heating, and homes with old style heating plants, are difficult to dispose of.

Builders find it advantageous to recommend scientifically designed and constructed systems. Knowing that this will insure satisfaction to

their patrons. And hence increased business and profits.

Nationally Known Round Oak Moistair System

Every demand for balmy, healthful, ever changing air is met by the Round Oak Moistair Heating System.

Scientific Hygrometer tests in many homes have proved the proper percentage of moisture in the air anywhere and everywhere is maintained by the patented Round Oak Automatic Humidifier.

Heating Problems Solved

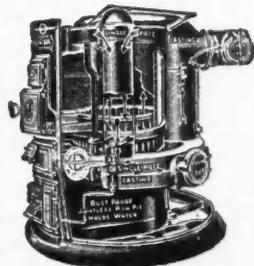
The Round Oak Moistair Heating System and the Round Oak Pipeless Furnace will solve all owners and builders problems in houses where either new or replacement plants are to be installed.

Complete information promptly furnished by the manufacturers; every possible co-operation is extended to both owners and builders.

Round Oak MOISTAIR Heating System



Round Oak PIPELESS FURNACE The Best Pipeless Heating System on the Market



Five Star Points of Round Oak Moistair System Supremacy

Health—Patented, automatic humidifier, keeps the family more healthy, prevents furniture from drying out.

Comfort — Circulates balmy, warm, moist air, permanently free from dust, gas and smoke.

Economy—Long, indirect fire travel forces most powerful radiation of heat; deeper fire pot, improved efficient hot blast, and oversize combustion chamber combined; guarantee most perfect combustion with maximum heat from minimum fuel.

Convenience — Single regulator conveniently located, controls entire system. Large seamless ash pit fitted with sprinkler, prevents dust. Easy to operate. Burns all fuels.

Durability—All iron is daily tested chemically and physically. The tens of thousands in use, many for more than thirty years, prove conclusively Round Oak Super-Service.

The Heating System That Automatically Humidifies and Ventilates

Unequaled Construction

Round Oak methods have been famous for 48 years. Over 75,000 users testify to the quality of Round Oak Moistair Heating System materials and construction.

Once correctly installed this modern and scientific heating system gives more than a generation of uninterrupted satisfactory service.

Both the Round Oak Moistair system and the Round Oak Pipeless Furnace are as "good as new" long after others would have been scrapped.

A Word to Dealers

We believe no manufacturer excels the "Round Oak Folks" in co-operation with dealers. Or is more painstaking in territory protection.

Round Oak dealers are supreme in a sales field of sufficient size to allow them a large and profitable business.

In addition to the powerful National advertising of Round Oak products dealers are supplied with a most liberal volume of sales helps—catalogs, prospect names and books, canvasser books and stars, sales campaigns completely mapped out, window trims, window cards, store cards, posters, hangers, stuffers, etc.

Prospects also receive a personalized series of letters direct from the Round Oak factory, giving necessary information and referring them to the dealer in every case.

Write Today for Detailed Information

House owners or builders who contemplate heating systems for new houses, or those who anticipate replacing unsatisfactory plants with better ones, should write us for complete information. We have prepared instructive illustrated books on both the Moistair System and the Pipeless Furnace which we shall be glad to send on request.

Dealers are urged to write for our "Sales and Profit Plan" and for information concerning exclusive Round Oak representation in their territory. The Round Oak agency may be made the most valuable connection any stove or furnace dealer can possibly acquire. Let us tell you the many profit points in it.

THE BECKWITH COMPANY

"The Round Oak Folks"

ESTABLISHED 1871

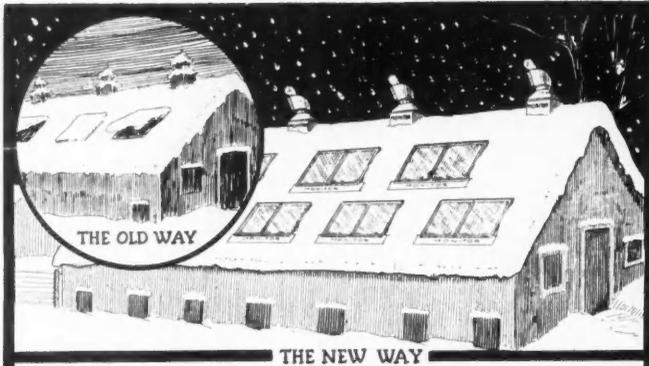
230 Front Street, Dowagiac, Michigan

Also manufacturers of the Genuine Round Oak Stoves, Boiler Iron Ranges and Ironbuilt Cast Range.



Ten Star Points of Round Oak Pipeless Furnace Supremacy

1. Built absolutely fire-proof.
2. Improved gas and dust-tight bolted construction.
3. Burns all fuels successfully. Economically.
4. Strongest. Lasts the longest. Heavier, too.
5. Humidifies and circulates pure air.
6. Holds the fire 24 hours.
7. Cool basement. Delivers all the heat to the home.
8. Responds more promptly than a stove.
9. Easily operated and quickly installed.
10. Made by "Makers of Good Goods Only."



Give Your Customer The Best When You Build His Hog House

Give him one that is sanitary, completely ventilated and completely sunlit—a hog house in which his hogs will grow fat faster. Give him the "Keep the Pigs in the Parlor" kind. Use

MONITOR TWIN WINDOWS

They are built to let in the winter sun as well as the summer sun. They are three times as big and will let in four times as much light as the old style windows.

MONITOR SUCTION CUPOLA

are good clean cupolas, absolutely storm proof and will ventilate in all weathers. They are designed especially for hog houses.

FREE BLUE PRINTS of the Monitor Model Hog House will help you get more business. They are genuine blue prints of a hog house designed by experts, economical to build, and thoroughly sanitary. Write for them today.

LICHTY METAL PRODUCTS CO., Waterloo, Iowa

Contracting—With Electricity on the Side

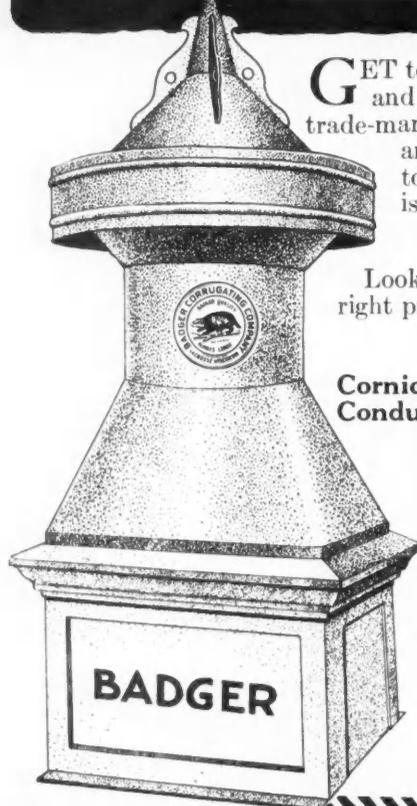
(Continued from page 170.)

tractive as possible to the wife and children, and, finally, all of those arguments that appealed to his good business sense. For instance, electrical power helped him to solve the labor problem, as well as making his farm a more attractive place to work for those who were on his payroll. Then I salted away a few specially prepared jolts calculated to make him see that the surest means he could adopt to make farming attractive to the son and insure his sticking around would be to bring the farm up to date and make it accord with the ideas of progressive farming that the son had acquired at agricultural school.

"After I had worked out those and a few other little schemes I resigned from the position I had appointed myself to as chief of staff and set about to do a little quartermastering work, so to speak. Seeing that I was going into the business to get out of it all there was in it, and as opportunities for plenty of business were evident, I figured that I could afford to spend a dollar or two getting ready to go after the business right. So I bought a trailer for my car and had it fitted with a 30-volt demonstrating plant—engine, dynamo, storage batteries and switchboard—and a supply of insulated cord and lamps. And from the manufacturers of the plant that I had elected to push I secured photographs of actual installations on farms in different sections, together with copies of letters from the owners showing what they thought

(Continued to page 174.)

Badger Sheet Metal Building Specialties



GET to know—and use—Badger products. They serve you well. Satisfaction and quality are stamped into every piece. Value goes in before the Badger trade-mark goes on. Being large producers of all kinds of sheet metal products and jobbers of tin plate, black and galvanized sheets, we are in position to quote interesting prices. Our policy is "shipment same day order is received."

Ask Your Dealer for Badger Goods

Look for the Badger trade-mark. It guarantees you quality, satisfaction, right price. Complete catalog sent upon request.

Here are some of the Badger Specialties

- Cornices Skylights Eaves Trough Finials Ventilators
- Conductor Pipe Sheet Metal Roofing and Siding
- Galvanized Tanks Galvanized Culverts
- Galvanized Screw Joint Metal Ceilings
- Well Casing Hip Shingles
- Metal Shingles Ridge Rolls

We Specialize on Farm Building Ventilation

Cupolas, skylights and complete Ventilating systems for barns, hog houses and other farm buildings. We furnish blue prints and complete plans for each individual job.

WRITE TODAY FOR CATALOG

Dealers: Write for discounts and special proposition.

Badger Corrugating Co.

Dept. D. La Crosse, Wis.





Louvred Ventilators

WILLIS

Farm Building Products



Style No. 74S

Are the best for the contractor and his customer. Their sturdy and simple construction make them the contractors' favorite.

Any mechanic of ordinary ability can erect our skylights and ventilators. They are desired by the customer on account of their lasting qualities and efficiency in the performance of their

work. They assure satisfaction.

Willis Louvred Ventilators and Cupolas are constructed to meet any demand on any type of building. They remove the foul air. They are wind proof, bird proof and storm proof. No down drafts.

Willis Hog House Skylights are designed to meet the demand for inexpensive lighting and ventilating in hog houses, dairy barns, cattle barns and poultry houses. Their construction is perfect. They will outlive the building.

Willis Batten Strips are the best on the market. They allow for the expansion and contraction of the boards and will not draw away or split. They lay flat to the boards and do not offer any resistance to sliding doors. Easily cut which eliminates all waste. They are also valuable in lining grain bins and wagon boxes.

Our 180-page catalogue, descriptive of our complete line, is a contractors' reference book of unequalled value. It will aid you in figuring your work as well as in making your purchases. A copy will be mailed you free at your request. Write for it today.



Willis Manufacturing Co

ARCHITECTURAL SHEET METAL GOODS
UNDERWRITERS LABELED METAL WINDOWS

102 No. Academy St., GALESBURG, ILL.



Cupola

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



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.

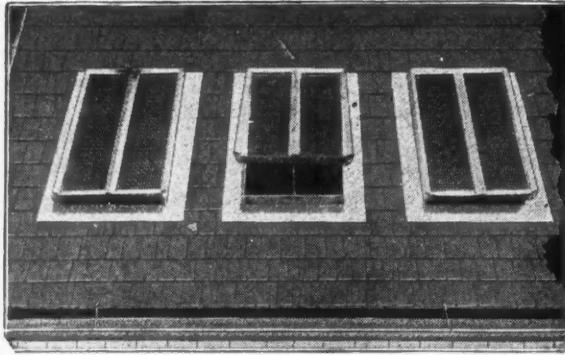
O K Cupolas solve the barn ventilation. They sell themselves. Are made of heavy galvanized steel; bird, storm, rot and rust proof. Neat in appearance. Are easy to erect—shipped ready to install. Farmers want them. You cash in big by supplying this necessity.

Write for full particulars and our special discount to builders and contractors where we are not represented.

Philip Bernard Co.

2402 Floyd Ave. Sioux City, Ia.





"Tip Top" More Sun Windows

Sun and Air

Make live stock vigorous, healthy and salable. Direct sunshine and plenty of good fresh air is sure death to all germs.

Builders and dealers should untiringly keep

**TIP TOP Sun Window
and TIP TOP Ventilator**

facts constantly before their Farmer Customers.

The necessity of good ventilation and germ killing sunshine is being constantly proven—as the greatest returns from food cannot be made unless animals are kept in a healthy condition by means of proper ventilation and sunlight.

"TIP TOPS"

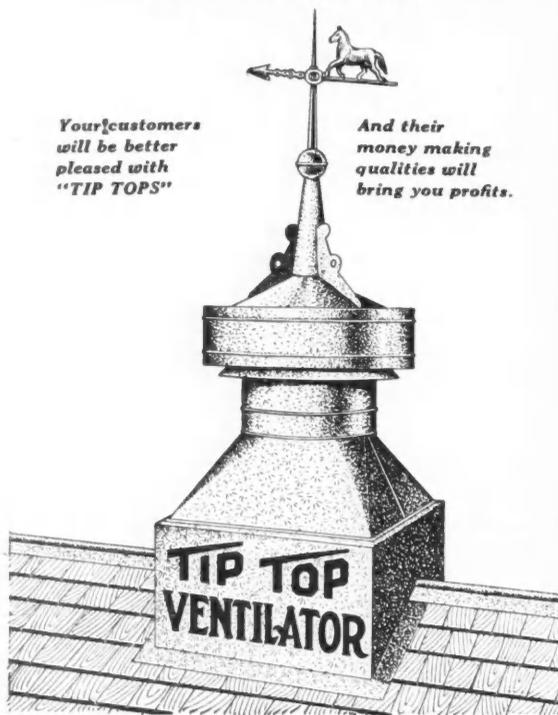
are quickly and easily installed, cost less, are more durable, more effective and greatly improve the appearance of any building.

Let us send you convincing evidence.

ANDERSON MFG. CO.
DES MOINES, IOWA

Your customers
will be better
pleased with
"TIP TOPS"

And their
money making
qualities will
bring you profits.



Contracting with Electricity on the Side

(Continued from page 172.)

of the advantages of electric lighting and power.

"Then I appointed myself everything from private to brigadier-general in the army of actual selling operations and set out to capture Virgil's order. I knew his habits pretty well, and that the folks usually took the car and went to town Saturday afternoon, and I calculated that if I got there about the time they left that I'd find Virgil with the week's work about done and time hanging a bit heavy on his hands; and it happened just as I had planned that it would. He saw me from the front window as I drove into the front yard and came to the door to let me in. I noticed him squinting at my trailer, but I said nothing about its contents or about my mission; I just passed the time of day and followed him into the house. After we had gotten squared away in our chairs and lighted up our cigars, I said, 'Well, Virgil, I suppose that you will be planning to go to Europe one of these days and see for yourself how war and fighting ruins good farm lands.' Now I don't put any stock in the idea of planning and making set speeches to those I want to sell something to; I find that I get better results by just being well posted on the thing I want to sell, and then taking my cue to what to say from the things which come up as I go along. And that's the way it was with the remark I made to Virgil—it came into my mind and I used it. But I could not have worked it better if I had sat up all night figuring out what to say, because it prompted him to say something that fitted my needs exactly.

"Do you know, Evident, I've been thinking some of what must o' happened to them farms, and about the awful losses, too, but I don't know but what good will come to the farmers, after all. They've been doing their farming in a mighty backward way over there; and this war certainly must have jarred them out of the rut of ages and made them see that they'll never be able to feed all the mouths that have got to be fed, unless they perk up and use better methods. Besides, our American boys must have told 'em a lot about the way we do things over here, and if the farmers over there get to doing things more like we do here—well, that'll be something good that came thru the war, anyway.'

"'Virgil,' I said, 'I want to ask you something, and I want you to answer me in all seriousness. If you were making a trip to Europe to look things over, would you go in a sailing ship that might get there in a month, if luck was with it, or would you go on one of the big liners that runs on schedule and gets you over in about a week?'

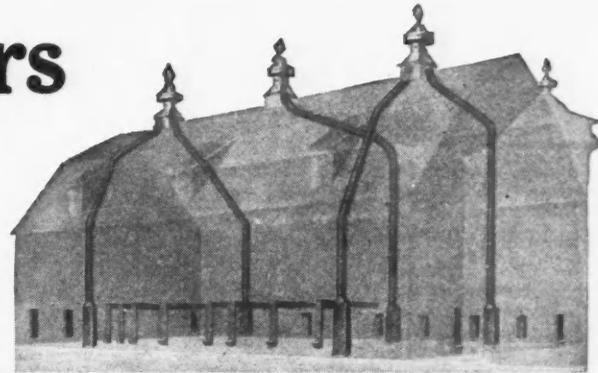
"'Has this cold weather addled your brains, Evident, or don't you think I place any value on time and comforts—which? I don't believe in spending money

(Continued to page 176.)

KING Aerators

Give Your Customers the First Part of the Complete

KING System



This illustration shows an X-Ray view of a complete King System installed in a modern barn. Every King System is planned by the King Ventilating Engineers to fit the actual conditions of the building, and we supply all the material including fresh-air intakes, foul-air flues and the King Aerators on the roof.



The King Aerator can be used with or without the complete King System. Because of its unusual beauty, many farmers are using King Aerators simply to beautify their buildings.

WHEN you put King Aerators on your customer's barn, you do more than add the finishing touch of beauty to the building. You give your customer the first article he will need in having his barn properly ventilated.

Every farmer now wants his barn ventilated. Sooner or later your customer will want to install a King System. Recommend King Aerators at the time you build it and give him the right start.

He can add the foul-air flues and fresh-air intakes any time and connect them with the King Aerators on the roof. Or, you can install the complete system in the new barn and make the job worth more to you.

The King System is the only system of ventilation that is always designed for the building by ventilating engineers and backed with a guarantee.

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take out the excessive moisture and foul air and bring in the fresh air. This prevents rust of equipment and rot of fodder and material. They bring sanitary conditions to a creamery, preventing rust, rot and rheumatism.

"Milcor" Ventilators are scientifically constructed, very strong and an ornament to any building.

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Important: Mark your Inquiry for Dept. 16.

MERCHANT & EVANS Co

NEW YORK PHILADELPHIA WHEELING
BALTIMORE ATLANTA CHICAGO
CLEVELAND ST. LOUIS
KANSAS CITY



Contracting with Electricity on the Side

(Continued from page 174.)

foolishly, no more do I believe in taking up with things just because they are new, but you can bet your bottom dollar that if I ever go to Europe I'm not going to depend on anything as uncertain as the wind to get me there. What's your idea in asking that question, anyway?"

"Well, Virgil," I says, "it all depends on the way you look at it whether that's a foolish question or not. What's that business over there that you got up and set a match to a few minutes ago?"

"Why, it's a lamp, you darned old ———. Say, Evident, what have you got in that contraption out there? You're not asking all those fool questions just to hear yourself talk. What is it? One of those 'lectric lighting businesses? My son's been writing me about them, and the womenfolks are dinging 'lectric light into my ears all the time, 'specially of late, since we've had the car and they are able to get around more and see things. What do you think of the idea—is it safe, does the motor generate enough power to turn my machinery, could I learn how to run one of those plants?"

"Don't go so fast, Virgil," I said, "let's do a little figuring and see just how badly you do need electric light, and just how much use you could make of an electric hired man." So I borrowed a bit of paper and made a rough plan of his house, and then we

figured the amount of illumination that would be required in each room, in the halls, on the porch and so on. And then I made another diagram showing the house in relation to the other buildings and places out of doors that had to be illuminated. It was easy for me to do that because the manufacturers had supplied me with a table showing just what candle-power or wattage it was customary to allot for each room and building, as well as for outside illumination, and how to reduce that total to terms of power required. Then we made a list of the machinery he had that could be operated electrically and added that to the total of power that the plant would be required to furnish. And right there I did something that I want to mention particularly, because it's the biggest kind of a help when you come to talking dollars and cents. After we had listed all the machinery that could be operated electrically I got Virgil to estimate how much it was costing him to operate those machines by handpower. That gave me a basis that I could use later on to show how much more economically he could do that work electrically, but I did not go into that at that time; there were one or two other things I wanted to provide for first.

"I had an idea that if it was right and proper for a rural builder to sell electric lighting plants it naturally followed, then, that he should go further

(Continued to page 178.)

The "No Complaint" Stairway

IN the first place, slate is the longest wearing material for stairways. It is used in such buildings as the N. Y. Hippodrome, tramped upon by thousands afternoon and evening.

Then it is highly sanitary, being non-absorbent and

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IF a heavy stone were thrown with considerable force onto a slate roof, a slate might be broken and require replacement.

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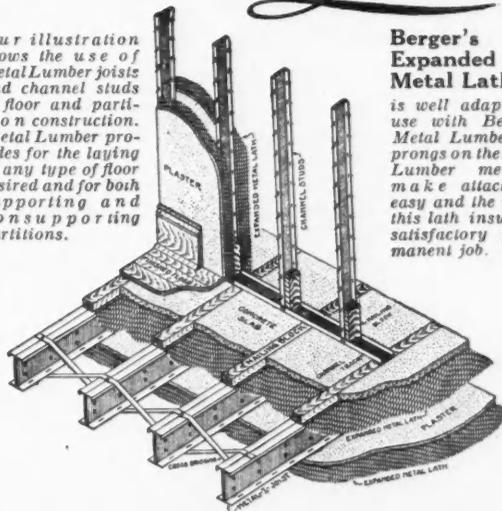
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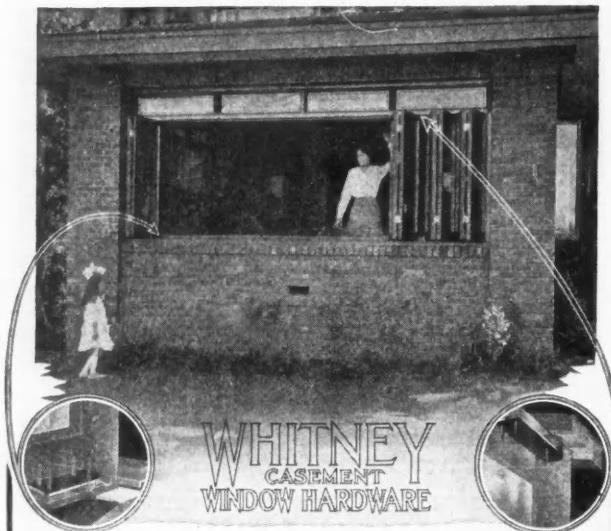
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See Sweet's Index for further data. Write for Bulletin L-3

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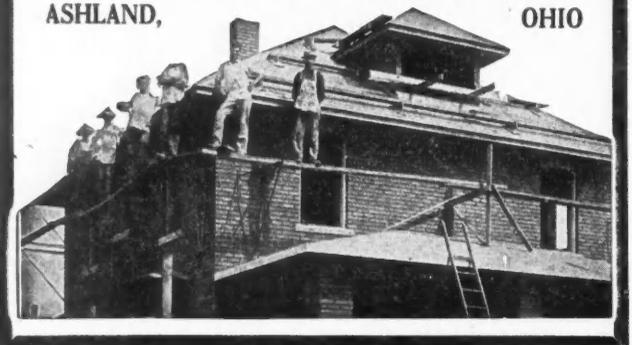
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Contracting—With Electricity on the Side

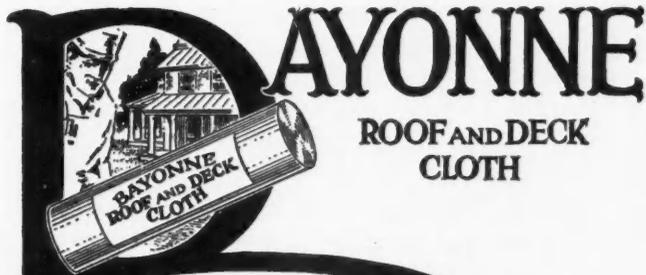
(Continued from page 176.)

and do the evident thing by paving the way for the sale of electrical appliances. So I figured that it was up to me to convince Virgil right then and there that the day would come when he would be making uses of electrically generated power that he was not even dreaming of at that moment, and that it would be shortsighted not to anticipate that day and figure accordingly on installing a plant big enough to take care of those demands for power as they arose. You see, his having that extra amount of power on tap would just sort of invite the purchase of other appliances and machinery from time to time in order to make use of that power. So I went to work on him then from that angle, and we estimated how much surplus power should be provided to take care of future wants.

"I could see there was something bothering Virgil; so I slowed up a bit to give him a chance to get it out of his system, and then he told me. 'See here, Evident, I don't mind talking about this new-fangled 'lectric hired man of yours, as you call him, but that's not saying I'm going to take him on, not by a jugful it isn't. Besides, I'd a durned sight rather go out and look him over than sit here and hear you spouting about the amount of wood he'd saw before breakfast; I never hired a man yet on another fellow's tell, and I don't calculate to start now. Come on out and show him to me.'

"Now I don't pretend to be a salesman, but I'd never been accused of giving things away in order to get rid of them. Just the same, I think I know farmers; and while the books about selling all favor getting down to cases as quickly as possible and showing your goods right off, I prefer to stick to my own plan of whetting a man's curiosity before allowing him to see the thing I have to sell him. That's what I had been playing for in my dealings with Virgil, and he rose to the bait like a hungry trout. But I wasn't ready yet to oblige him, and I didn't. 'Look here, Virgil,' I said, 'if you hire that electric farm hand of mine it will be because you figure that you can make good and profitable use of his services, and not just merely because he's out there ready and willing to go to work for you. That's true, isn't it?' I knew I had him there, and that he would have to say yes—and he did. 'All right, then,' I said, 'setting aside for a minute the advantages of electric light for illuminating your house, grounds and buildings, and regarding those benefits as something that will be thrown in, so to speak, are you convinced from the figures we have made that that electric man of mine would be well worth his keep if he didn't do anything more than what you know he can do towards helping you with your work?' 'I bought a tractor and an automobile and all that machinery of mine for that same reason.

(Continued to page 180.)



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.

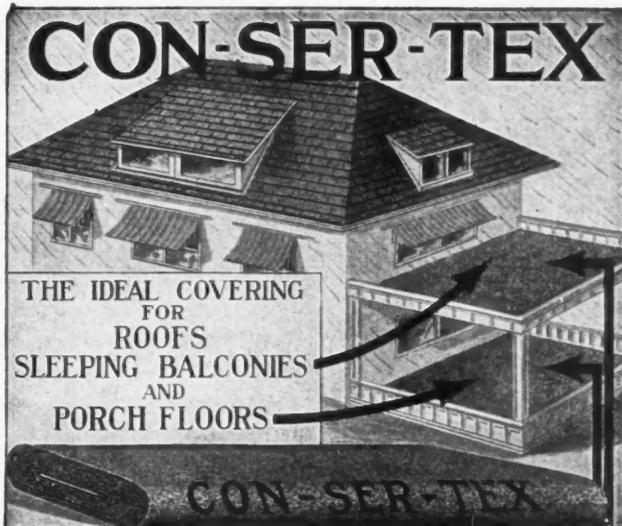
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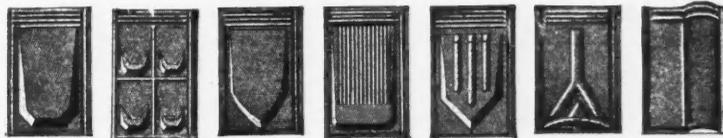
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Look for this on every board—Accept no Cypress without this mark



For the outer covering of a building no other wood gives such long and satisfactory service as

WHITE PINE

Contracting with Electricity on the Side

(Continued from page 178.)

didn't I?' he shot back at me. 'All right, Virgil,' I said, 'come out and look him over.'

"I could see, from the way he groped around with his eyes when I had opened up the trailer and exposed my outfit that he was puzzled to understand it. So I started in by comparing its each part and function with those of his windmill and water tank; that made it all clear to him. First I got him to think of electric current as water running thru pipes, the pipes, of course, corresponding to the wires carrying the current. Then I got him to look upon the pipes that carry the water to his storage tank as being similar in purpose to the conveying of electrical energy to the storage battery by wires. And when I had made that clear I then showed him how the pressure of water at the faucet that was occasioned by the elevation of the water tank might be likened to the voltage of electricity. And I made that still clearer by comparing the pressure of water coming from the faucet and operating a water wheel of a certain size with the driving power of electrical energy supplied by a storage battery or direct from the generator operating a piece of machinery. Then I likened the dynamo or generator to the windmill wheel and the pump that forced the water up into the tank, and ended by comparing the wind that turned the windmill wheel to the gas engine that operated the dynamo. It was a

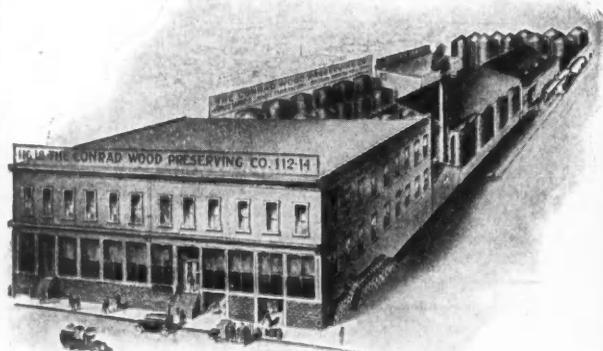
crude illustration, of course, but his familiarity with the mechanism of his automobile enabled him to get my meaning in jig time. In fact, he picked the whole thing up so quickly I was forced to conclude that the tractor and automobile had prompted the farmer to make advancement in his knowledge of things and to broaden his views away beyond the point where some of us still had him placed in our opinions.

"The women folks returned while we were still outside, and I repeated enough of my story to give them a good idea what it was all about, and then I maneuvered to get them all into the house where we could sit down and talk about the advantages of electric light over candle and lamp light. I knew I had them with me almost as soon as I commenced, but they left it to Virgil to do the deciding. I say they left it to him, but you know women—they have a knack of casting the deciding vote in many a conference without seeming hardly to be present. Anyhow, old Virgil and I went to it on the matter of prices and terms and had it hot and heavy for a spell, but he was hooked all the time and was due to be landed. He knew it and so did I, but the old son of a gun made me stay to supper and then go thru the whole thing again with him before he would let me take his order. But I got it.

"That was several years ago, and the instructions about installing electric lighting plants were not as

(Continued to page 182.)

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.

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Rider Agents Wanted

Contracting with Electricity on the Side

(Continued from page 180.)

complete as they have them now, or maybe it was that I had a lot to learn or thought that I had, which amounted to the same thing. Because when I came to put in that plant I was as nervous as I was that time when I took the contract to erect my first building. But there wasn't any occasion for my feeling nervous; I took my time and studied things out carefully as I went along, and when I got thru I don't know who was the better pleased, me or Virgil."

"You said when you started," I broke in, "that you were going to tell us about your hardest case," "Yes," chimed in the other chap, "and I didn't think, either, that you were going to land him as easy as that. Why, the way you tell it one would almost think that old Virgil had about decided that he needed electric light and power and was just waiting for someone to come around and convince him that he was losing money by not putting in a plant at once!"

"That was just about the size of it," confessed Evident, "and I was hoping that you chaps would see it that way."

"Then you mean," I ventured, "that electric lighting and power plants for the farm are easy to sell and that the rural builder should get into the game while the getting is good?"

"Boys, listen," said Evident, "as nearly as I could remember, I related all the important happenings connected with my most difficult sale—difficult, of course, because it was my first one, and because I was green. Since then I have done my share towards making electric light and power a byword on more farms than you could visit in a week's traveling; so I think I know something about the business and its opportunities. Now here's the answer to the whole thing in a word or two: When you find a farmer who has gone in for tractors, automobiles and improved farm machinery, you have met up with a man who has the habit of making use of anything that he can be shown will help him in his business. He's a progressive being, who has learned to laugh as heartily as anyone at the impersonations that the actors in the movies give of the old-fashioned rube with the straw sticking in his hair. His middle name is 'Progress,' these days. And all you have got to do is to show him. The sons and daughters that have gone to college and have come back with new and up-to-date ideas, the magazines that go into this home every month with their pages filled with progressive thoughts, and the chance that the automobile gives him to get around and see how the other fellow does it—well, if you have something that is an improvement over the old way, and you want him to buy it, he is ready and willing to be shown. Why, that is as evident as a thing well could be."

Then we both saw the *evident* thing to do.

Short Talks With Our Subscribers

SKINNING a job means skinning yourself out of a job—in the future.

CHEAPNESS does not mean economy. A first-class building costs more than a second-class building. But the latter is less economical. The builder who remembers this when discussing materials with a client is adding to the bank account of his reputation.

EQUIPMENT means, to the builder, the machinery and tools to do the work efficiently and economically. Every day less spent on the job means just that much more daily pay for the boss.

THE man who said "there is nothing new under the sun" wasn't acquainted with the building industry. What was new in methods and equipment yesterday is old today. Watch your step!

"WASTE not, want not." No more does the owner of a new home find enough good hard lumber in the basement and attic to keep him in kindling wood for several years. The builder now knows that this material comes in handy and carts it back to his shop.

EVERY vacant lot is the site for a building in the future. How many owners of vacant lots do you know?

SOMEONE has said that "an optimist is the man who sees the doughnut; a pessimist is the man who sees only the hole in the doughnut." However, as the hole for the basement of a building grows, so does the optimism of the builder.

TO promote more building activity in a community is building bigger business for the builder. Be a builder, not only of buildings, but of building activity.

ABELLIGERANT Irishman, getting his first view of two men operating a crosscut saw, remarked: "If I had hold of one end of that saw I'll bet I could make the other fellow let go."

APPEARANCES often are deceitful. A roughly dressed man was, apparently, standing idly watching the men at work on a building. He was smoking.

"Young man," said a well-meaning person at his elbow, "if you had saved the money you spend for tobacco, you could be building that building."

"I am," replied the smoker, for he was the contractor.

THE successful builder, when he sits down for a few moments, mentally considers his business problems; the unsuccessful builder just naturally goes to sleep.

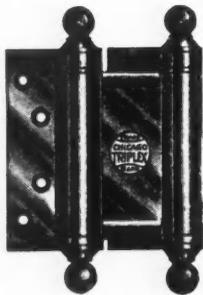
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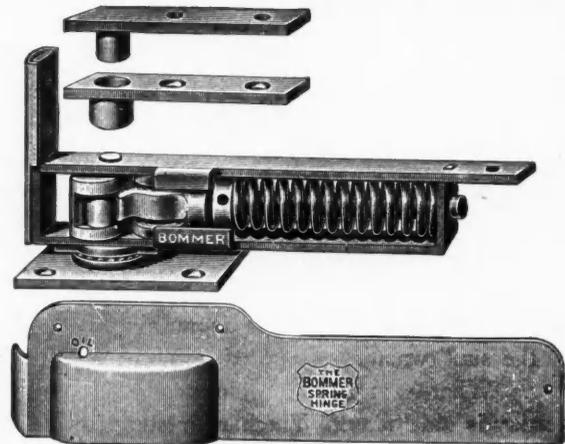


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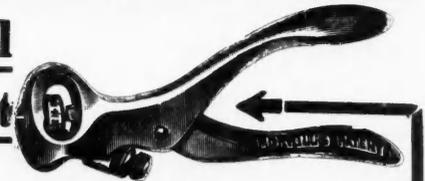
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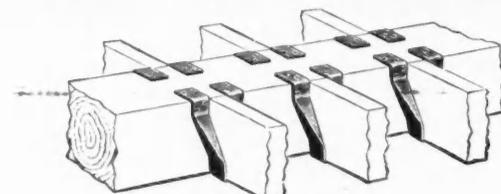


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