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## THE CONSTRUCTION OF THE DAIRY HOUSE

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Most dairymen realize that in order to produce milk or cream of the best quality it is desirable to have a dairy house so constructed and equipped that the products may be cared for in the most convenient and satisfactory manner.

It is impossible to draw a plan of a dairy house that will meet the requirements of every individual case. In order to design a plan properly, it is necessary to know the size of the herd, how the product is to be disposed of (whether as whole milk, cream, or butter), the location of the barn, well, etc. However, there are a few general principles that should be followed in the building of any dairy house.

*Location.*—Altho the dairy house should be near enough to the barn to be convenient, it should not be directly connected with the barn because it is then likely to be filled with stable odors which are absorbed by the milk or cream. It is well to leave an open air space of six to ten feet between the barn and the dairy house. Placing the dairy house on the side of the barn opposite the barnyard also lessens the chance of stable odors being absorbed by the milk. Proper drainage from the dairy house is important and must be considered when selecting the location.

*Construction.*—The building material may be drop siding, brick, or concrete, depending upon the investment the builder desires to make. The inside walls should be smooth. Plastered walls are preferable since board walls have a tendency to rot, especially close to the floor. Rotting can be obviated to a certain extent by plastering the walls up to a height of about three feet.

The building should be so partitioned that the milk room, wash room, and boiler room are separate. The rooms should be well lighted by windows, and ventilation should be supplied by an opening placed in the ceiling of each room. Each ventilator should be fitted with some sort of damper to regulate its action.

A solid and impervious floor is essential. A cement floor meets these requirements very well. A wooden floor is very unsatisfactory because it is not durable, does not dry quickly, collects filth, and when wet is slippery and hard to work on. The floors should have a good slope leading to drains fitted with proper traps.

*Water Supply.*—An abundance of clean, cold, running water is necessary. If the location is such that water from a municipal water system cannot be supplied, it may be obtained from an elevated tank or by means of a compressed air system.

*Equipment.*—The dairy house equipment depends largely upon the purpose for which the house is to be used. A boiler is the most convenient means of furnishing steam and hot water for washing and sterilizing cans and utensils. An upright boiler of two to four horse-power will serve the purpose.

The wash room should contain a sink having a drain board. The drain board may be fitted with steam and water connections so that the cans and pails can be rinsed and steamed after they are washed. It is desirable to have draining racks for cans and pails, and a closet in which to keep utensils. Every dairy house should have a Babcock milk testing outfit, which may be either hand or steam driven. Further equipment will depend upon which of the following purposes the dairy house is to serve, namely: (1) selling whole milk in bulk (see Fig. 1); (2) making butter or selling cream (see Fig. 2); and (3) bottling milk on the farm (see Fig. 3).

The plans in this circular are designed for dairies with as many as twenty-five cows in the herd. For larger herds it may be necessary to build a dairy house having larger dimensions than those submitted. If it is not intended to have the dairy house fitted with a

boiler room and a wash room, it may be made smaller than suggested in Figs. 1 and 2 by eliminating that part of the building devoted to such rooms.

#### DAIRY HOUSE FOR SELLING WHOLE MILK IN BULK

The milk room should contain a coil cooler for cooling the milk as quickly as possible after it is drawn. The milk may then be put into eight- or ten-gallon cans and set in the cooling tank, or the preliminary cooling may be omitted and the cans of warm milk placed in the cooling tank. The cooling tank may be fitted with water connections so that the milk can be kept cold by running water, or the tank may be insulated and fitted with a lid so that ice may be placed in the cooling water. The latter is not necessary if there is a good supply of cold water which will keep the milk at a temperature below 50° Fahrenheit.

A hand separator may be installed in case of the necessity of skimming surplus milk.

#### DAIRY HOUSE FOR SELLING CREAM OR MAKING BUTTER

Selling cream necessitates the use of a centrifugal separator and a cooling tank or refrigerator. Making butter requires the additional equipment of a churn, and a table upon which to print and wrap the butter. The cooling tank may be smaller than that shown in Fig. 2, the size depending on the amount of material to be kept cool. The cream should be cooled directly after skimming and kept cool until it is delivered or ripened for churning, as the case may be.

A gasoline engine may be installed in the wash room to furnish power for separating and churning. If such an engine is used, the exhaust should be piped thru the roof of the building in order to avoid the possibility of the gasoline flavor being absorbed by the cream.

#### DAIRY HOUSE FOR BOTTLING MILK

For bottling milk on the farm the dairy house should be larger and contain more equipment than is required for the two above mentioned purposes. A double compartment sink is convenient for washing and rinsing bottles. There should be a sterilizer for sterilizing all bottles before they are filled. This may be used also to sterilize the milk pails, cooler, and the bottler. The sterilizer may be constructed of hollow tile plastered with cement plaster, or of heavy galvanized sheet iron reinforced with angle iron. A drain should be placed in the floor of the sterilizer and a ventilator with a tight-fitting damper in the

ceiling. Shelves may be arranged so that they will hold the bottles in an inverted position, or, if cases of the proper kind are used, the bottles can be put into the cases and the cases inverted. It is necessary to allow the bottles to cool before filling with the cold milk in order to prevent breakage, as well as to avoid warming the milk. A bottling table or small bottler may be used in bottling the milk. A well-constructed refrigerator is necessary for storing the bottled milk until it is delivered.

In constructing a refrigerator, proper insulation is extremely important in order to maintain a low temperature and to use ice economically. Either cork board or water-proof lith makes a very efficient insulation. These materials can be obtained in sheets twelve inches wide, thirty-six inches long, and two inches thick. These sheets can be applied in the same way as lumber, and hence are very convenient to use. A refrigerator for storing milk, if built on the ground, should have the floor insulated with two inches of this material and the walls and ceiling with four inches. When putting on this insulation, it is best to use two layers and break the joints in each direction. A slush coat of cement plaster should be put in between the two layers and the outside covered with cement plaster. The doors should be tight-fitting and well-insulated. The ice bunker should be placed in the upper part of the refrigerator, and the air shafts should be so constructed as to obtain a good circulation of air. Fig. 4 shows the proper method of insulating a refrigerator and also the construction necessary to give the proper circulation of air.

The milk room should have some sort of cooler for cooling the milk rapidly to a temperature below 50° Fahrenheit. As the milk is put into the cooler supply can, it may be strained thru cotton outing flannel or thru absorbent cotton held between cheesecloth.

A separator should be installed also for skimming surplus milk or to supply cream for the cream trade.

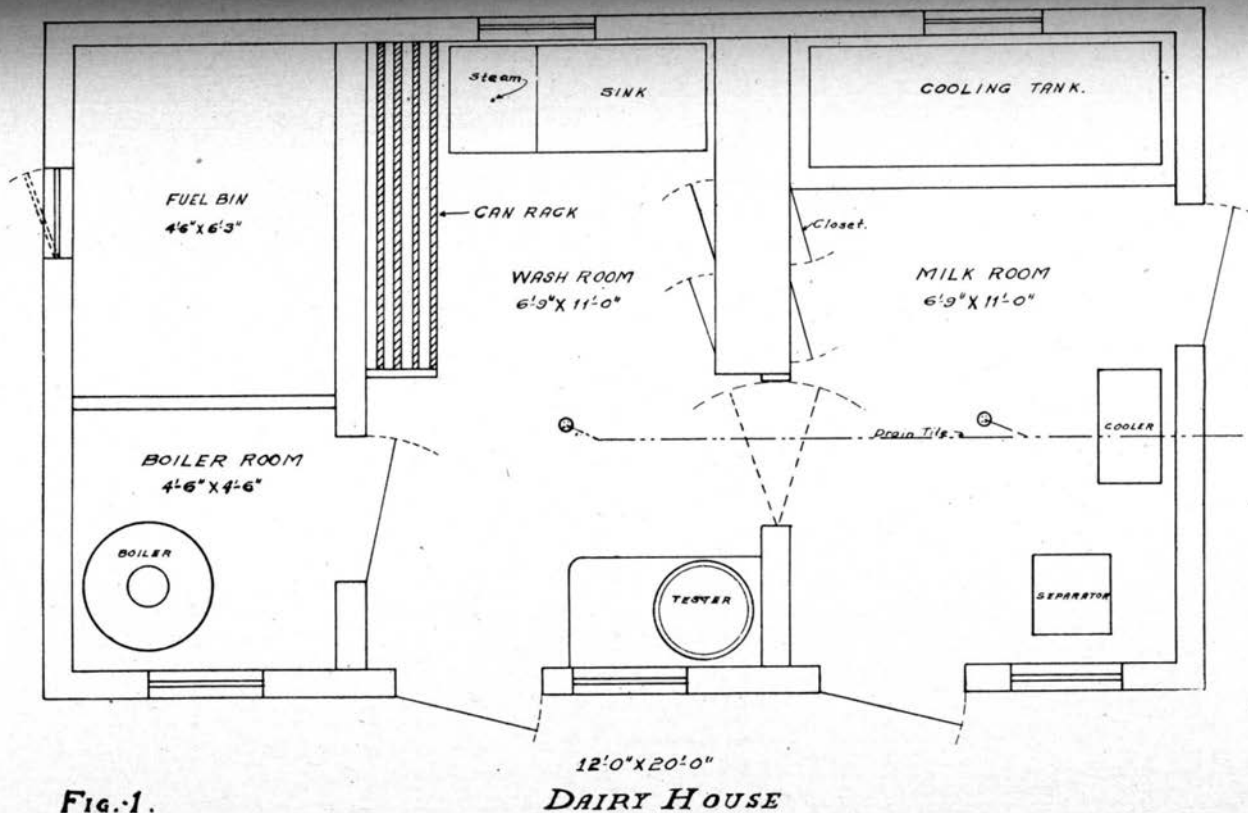


FIG. 1.

DAIRY HOUSE

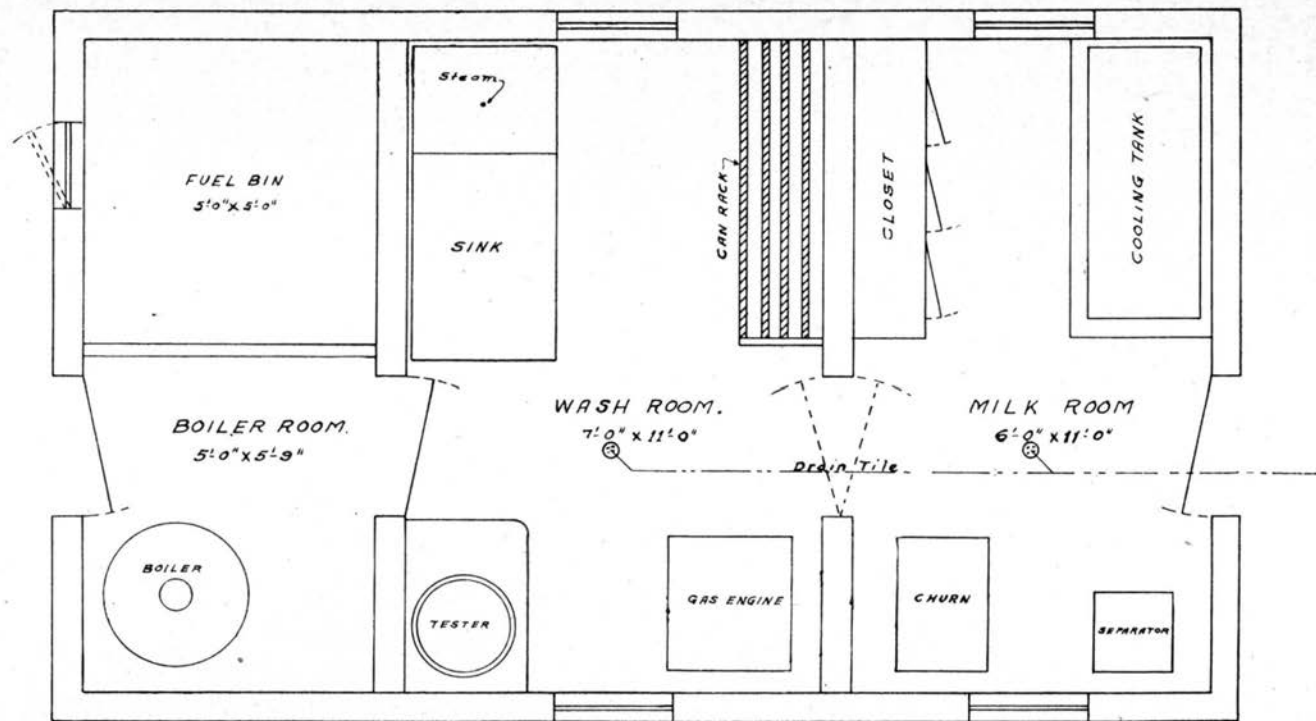


FIG. 2.

12'-0" x 20'-0"  
 DAIRY HOUSE FOR MAKING BUTTER

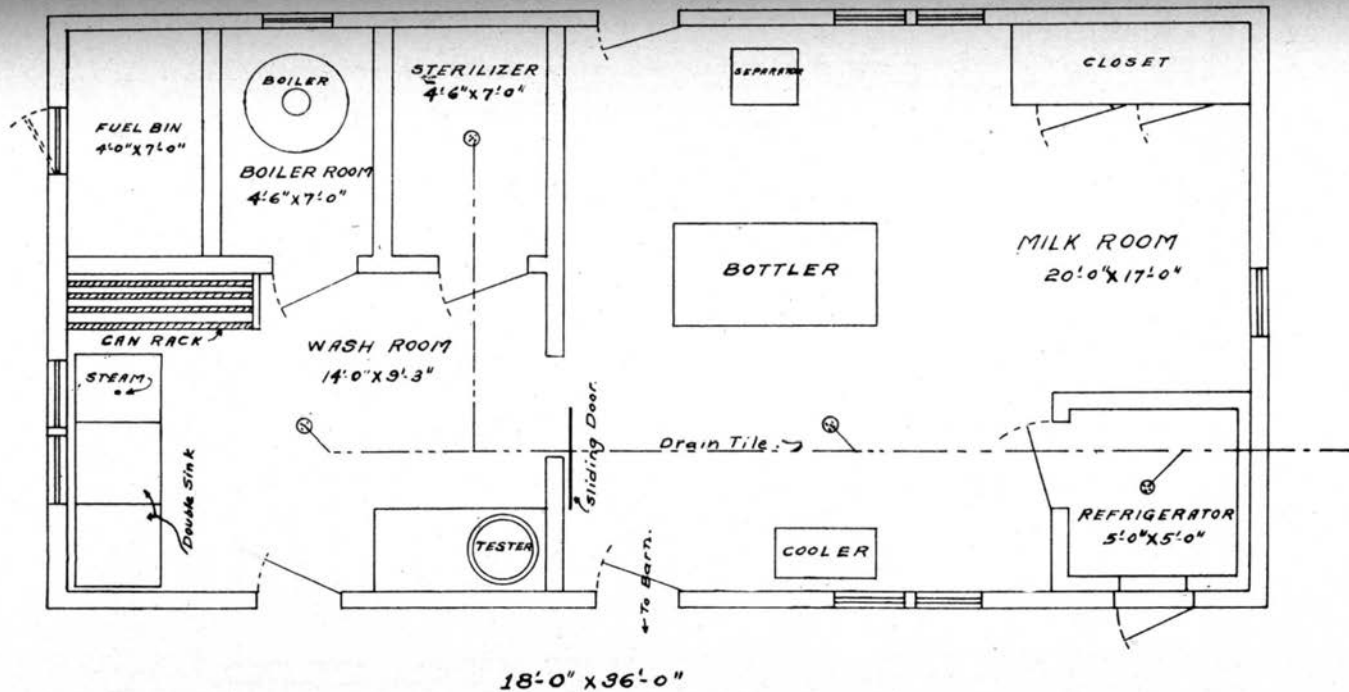


FIG. 3. DAIRY HOUSE FOR BOTTLING MILK

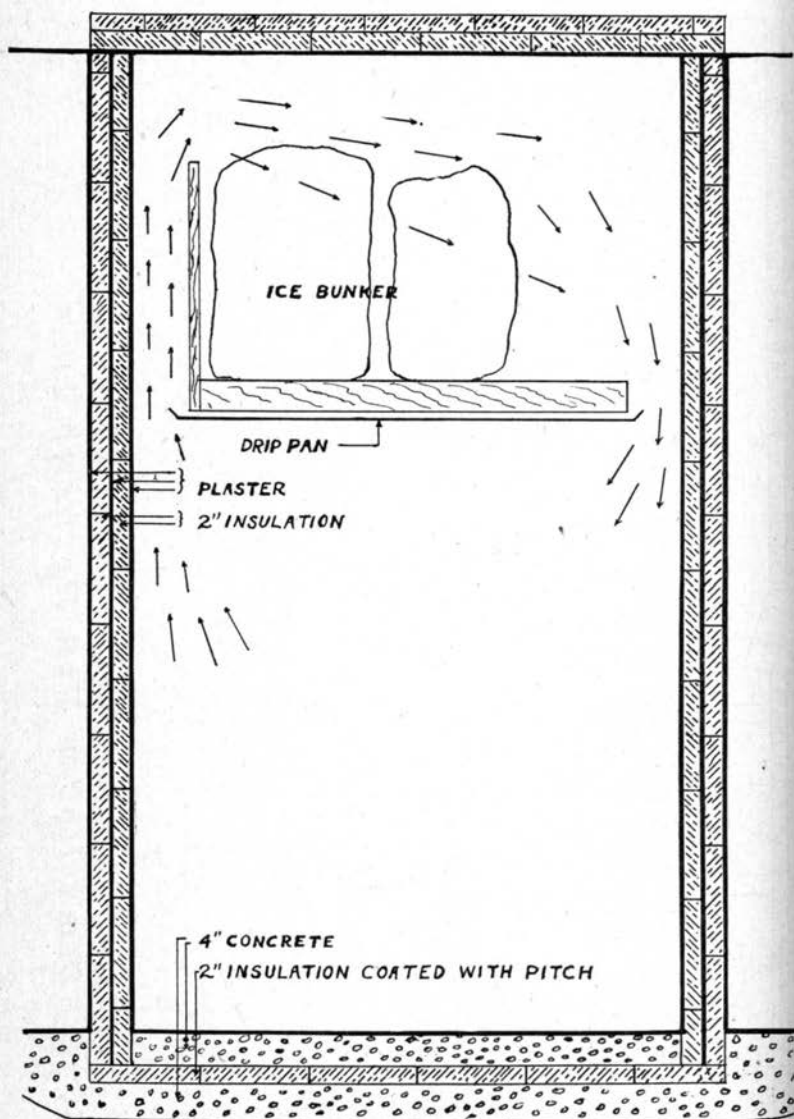


FIG. 4. ELEVATION OF REFRIGERATOR