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Extension Division

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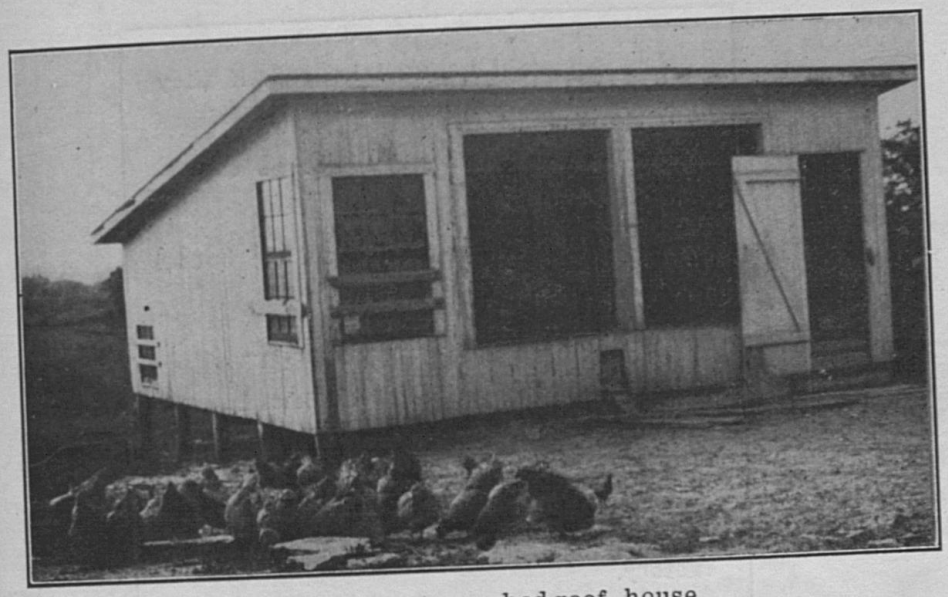
CIRCULAR NO. 107

HOUSING FARM POULTRY



A satisfactory shed-roof house.

By

J. B. KELLEY and J. HOLMES MARTIN.

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Fowls should be well housed, if they are to produce eggs well in winter.

A suitable house need not be expensive.

Essentials for a good poultry house are:

Plenty of fresh air and sunlight.

Dryness and freedom from drafts.

Durability and moderate cost.

Many farm poultry houses can be remodeled easily so as to make them satisfactory.

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In Kentucky, the climate of which is subject to sudden changes of temperature, fowls need suitable houses to enable them to produce eggs in winter. In order that a hen lay in other than the normal breeding season, she must first of all be comfortable. If the feeding and breeding conditions are correct, egg production will be proportional to the comfort of the fowl. A poultry house should provide for the following essential requirements: (1) Plenty of fresh air; (2) plenty of sunlight; (3) dryness; (4) freedom from drafts; (5) durability. The poultry houses described in this circular are designed to meet these requirements at reasonably low cost.

Fresh Air. Ventilation is essential in the poultry house. A poorly ventilated house is damp, close and unhealthful for fowls. Ample ventilation is necessary to remove the moisture which the fowls have exhaled, and also odors and gases. In order to provide proper ventilation the house should be tightly constructed on three sides with a part of the front open to admit fresh air. To allow for increased ventilation during the hot summer nights the back and top of the roosting quarters should be ceiled and a drop ventilator placed under the eaves. (See figure 1 on page 6.) The cloth curtains in the front allow fresh air to pass thru and yet prevent draft. For maximum ventilation in the summer the curtains are opened and the windows taken out.

Sunlight. Sunlight is far better than any disinfectant in destroying disease germs. It also aids in keeping the house dry. Flooding the house with plenty of sunlight aids appreci-

ably in the winter time in making conditions spring-like. To provide ample sunlight the two large windows shown in the shed roof type are necessary. One advantage of the half-monitor type (see figure on page 9) is the large row of windows which permit the sunlight to penetrate to the back of the house. In addition to the windows on the south or front of the house there should be at least one window for each 10 feet of length at the back of the house under the dropping boards. In addition to providing light in the back part of the house, these windows aid in keeping the house cool in summer. Stock size window sash should always be used. In general six lights 10x12 inches will prove most satisfactory. In the past, too much open front has been recommended. The present tendency is to reduce the open space that is covered with cloth curtain. If the cloth curtains are hinged on the inside of the house they should be built in two sections (see pages 10 and 11), so that the sill may be sloped towards the outside. If the curtain sill is level there will be trouble from driving rains. The cloth curtains may be on the outside and built in slots so that they may be lowered to admit the sunlight. If such curtains are used they should be two feet high and arranged to slide up and down.

Dryness. Good ventilation, drainage and plenty of sunlight are essential in keeping the house dry. Dryness is a most important essential of a poultry house, because the hen has no sweat glands. A large portion of the moisture of her body is removed thru her breathing. If the air which she is breathing is damp it will not absorb the moisture from her breath. Under damp conditions the flock is more susceptible to disease. In order that the house be perfectly dry a good floor is necessary. If a board floor is used the house should be set on posts at least 18 inches off the ground. A concrete floor will be perfectly dry if properly constructed.

Freedom from Drafts. A hen roosting in the house near a crack may develop roup, hence, to avoid such trouble, the house should be so constructed as to allow maximum ventilation without drafts. It is advisable to have the house 16 to 20 feet from front to back, as this lessens the chances of drafts.

Durability. A poultry house worth building at all is worth building in a permanent way. The durability of the poultry house depends upon the proper selection and utilization of the material of which it is constructed.

Concrete properly made is durable, dry and clean, and in event of disease can be easily and completely disinfected. The foundation and floors for a permanent house should be made of concrete.

Wood floors are not as permanent as concrete. Different kinds of wood vary in durability, when placed in situations where conditions are favorable for decay. Heart cypress, cedars, white oak or close-grained woods naturally resist decay but are often very expensive and hard to get. The sap woods of all species are readily broken down by wood-destroying organisms when exposed to the weather or when placed in contact with the ground or concrete. These woods, however, can be used with economy if properly creosoted. The sills, joists, floors and inside walls of a poultry house should be creosoted. It makes them more sanitary, durable and also helps to control the mites and lice which commonly infest poultry houses.

Low Cost. A small investment without sacrificing any of the desirable points is important in a poultry house. The house should have a strong frame with a tightly constructed single wall.

The size of the house is dependent upon the size of the flock. The smaller the flock the larger should be the number of square feet per bird. A 20x20 foot house will comfortably accommodate 100 birds. The plans shown in this circular are of this size, and are designed to furnish four square feet per bird, which is the recommended practis. For the farm flock a house of this size is usually the most satisfactory unit. Such a unit can be added to as the flock increases. The front of the house should be high enough to allow the sunlight to flood the house and also of a convenient height for the attendant to work. The 9-foot front shown in the plan of the shed-roof house has been found quite satisfactory.

The square building always costs less than one with the same floor space of other dimensions. The deeper the house is, the warmer will be the roosting quarters. By depth is meant the distance from the front to back. For this reason a 16-foot to 20-foot depth is preferable. A poultry house which is 20 feet long or longer should never be less than 16 feet deep. A shallow house may be improved by adding in front a scratching shed with the roof sloped forward. This will give the remodeled house the appearance of the half monitor house shown in figure 1.

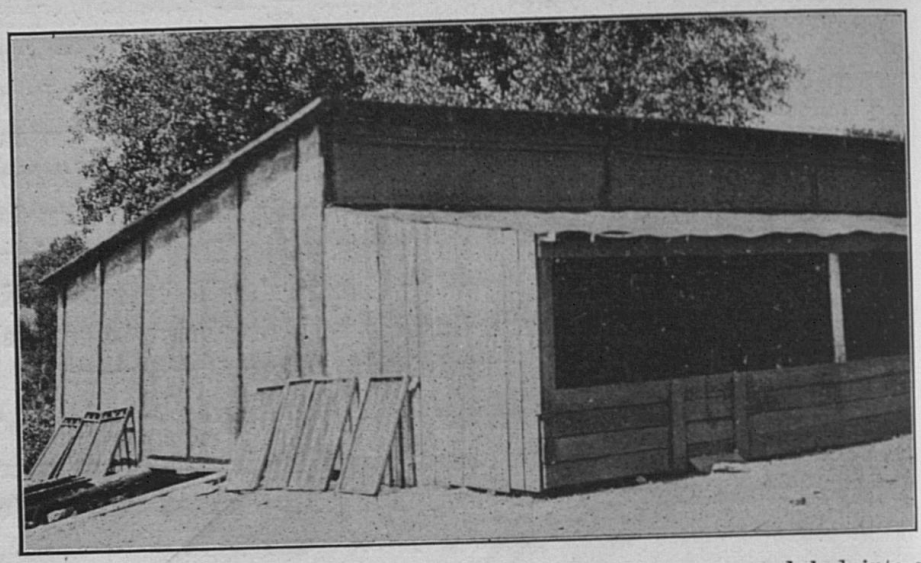


Fig. 1. A shallow shed-roof house which has been remodeled into a half-monitor house. Note entrance to incubator cellar.

INTERIOR ARRANGEMENT.

The nests, roosts and all equipment should be so arranged as to permit all the floor space to be used for scratching. This necessitates a dropping board under the roosts which keeps the straw litter much cleaner. The board should be 2 1/2 to 3 feet above the floor and should extend out at least 10 inches from the first roost. The roosts should all be on the same level to prevent the birds fighting for the top roost. Ten to twelve inches of roost space should be provided for each bird of the heavier breeds, whereas eight inches is sufficient for Leghorns.

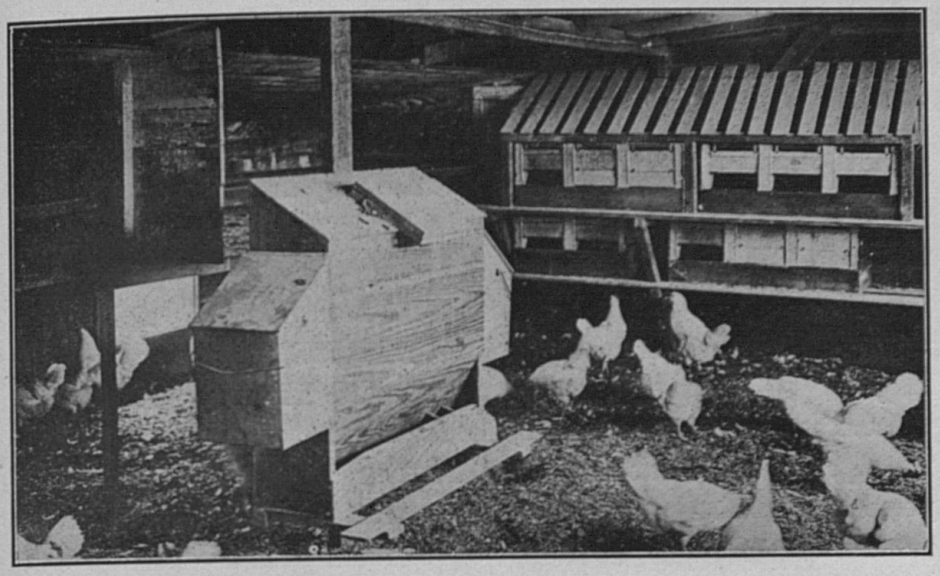


Fig. 2. Interior of a 20x20 shed-roof house.

The nests shown in the cut will prove satisfactory. Inexpensive nests can be made of orange or lemon crates by laying them on one side and putting a four-inch strip along the front to hold the straw in the nest. (See figure 3.) If this type of nest is used a framework should be built along the wall on which to set the nest boxes.

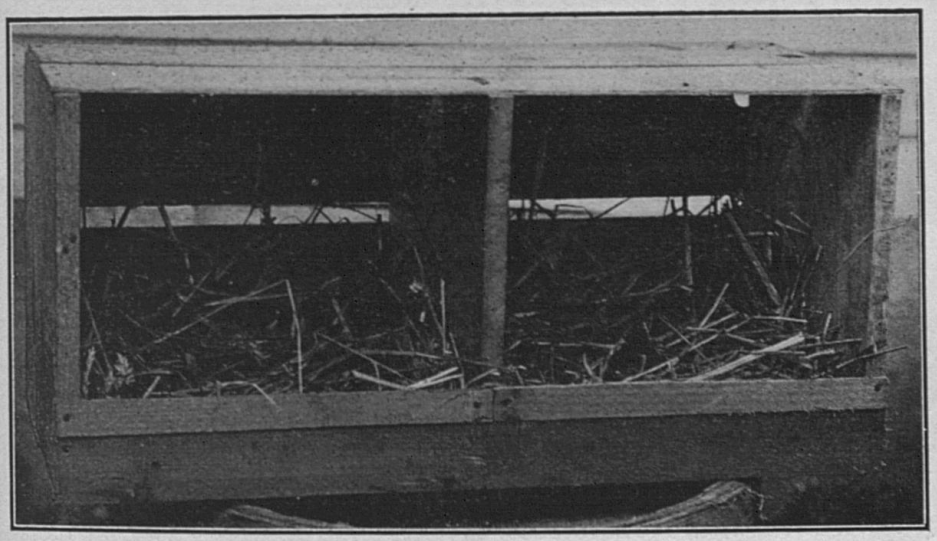


Fig. 3. A cheap, satisfactory nest made from an orange crate.

A large self-feeder or hopper is essential when dry mash is fed. The one shown in figure 4 has been found satisfactory and will hold a good supply of mash. The self-feeder should be fastened on the wall or to the 4″x4″ post that supports the roof. A 4-inch strip should be run along in front of the self-feeder to provide a place for the birds to stand while eating the mash.

Removable ventilators (see figure 3 on page 17) which permit fresh air to enter but exclude rain and snow may be used in place of cloth curtains if preferred. The objection to the ventilators is that they exclude the light. They have the advantage over the curtains, in that they are stronger and more permanent and do not have to be raised and lowered as do curtains.

FOUNDATION.

A poultry house should be placed on a good foundation so constructed as to be rat-proof and free from moisture. A solid concrete wall or posts can be used for either type of house. Wooden posts 6 to 8 inches in diameter and 3 to 4 feet long are most commonly used, but unless they are made of durable wood like cedar or locust and are creosoted they will rot. (See title page.) Permanent posts or piers are made of concrete. The concrete piers should be 12 inches square and should extend into the ground 12 to 18 inches and above ground about 18 inches. Where posts are used a board floor is necessary.

The solid concrete foundation should be 8 inches wide at the bottom and 6 to 8 inches at top. It should extend into the ground below the frost line and should extend 8 inches above the ground. One-half inch bolts 12 inches long should be imbedded in the concrete six feet apart with which the sills should be bolted to the foundation. The concrete should be mixed in the proportion 1:2 1/2:5. A 1:2 1/2:5 mixture means 1 sack of Portland cement to 2 1/2 cubic feet of clean, well-graded sand and 5 cubic feet of well-graded pebbles or broken stone.

Solid concrete foundations and floors are coming more and more into use by poultrymen. They are sanitary, easily cleaned and also do not afford a place for rats and mice to hide. If properly constructed, concrete makes a very satisfactory floor for a poultry house. Crushed stone or cinders five or six inches deep and well tamped should be placed under the concrete to prevent moisture from rising thru the floor.

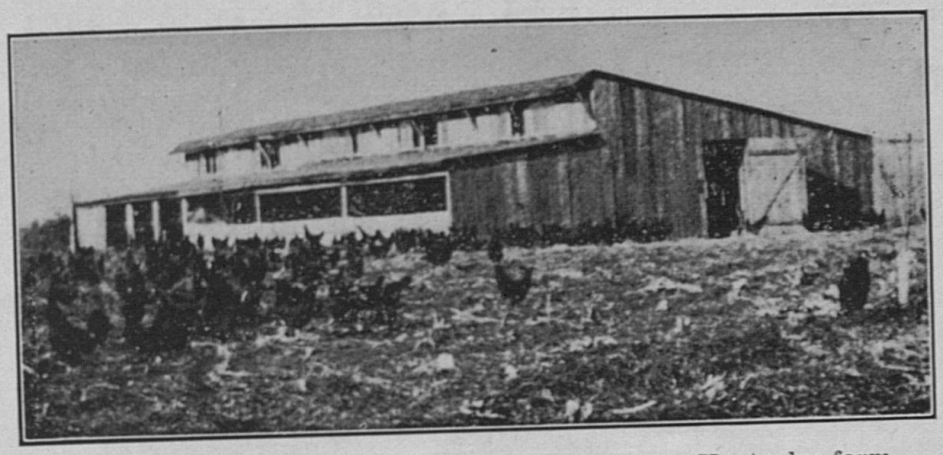
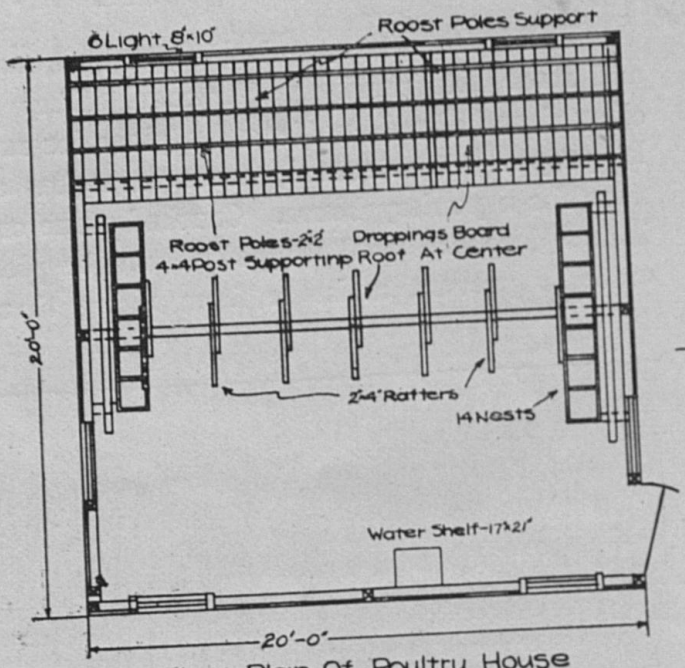
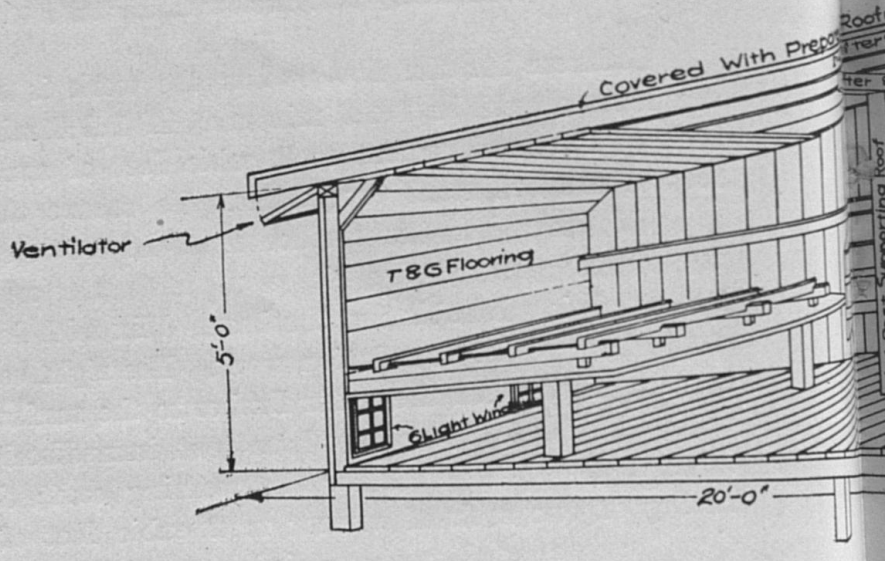


Fig. 5. A satisfactory half-monitor house on a Kentucky farm.

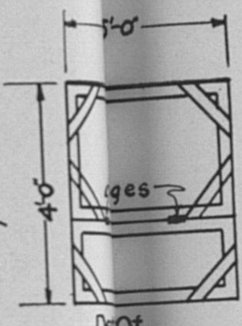
Concrete for the floor, when the work is one-course construction, should be 1:2:3 mixture. A 1:2:3 mixture means 1 sack of Portland cement to 2 cubic feet of sand and 3 cubic feet of crushed stone or pebbles. To secure the greatest degree of sanitation, the surface must be troweled smooth. If two-course construction is used a leaner mixture such as 1:2 1/2:5 is advisable for the base. Mix with less water than would be used for foundation work. The right consistency will be recognized when the water flushes to the surface under moderate tamping. Cover this base coat immediately with a 1:2 mixture one inch thick for the wearing coat; this coat, consisting of one sack of cement to 2 cubic feet of well-graded, clean, coarse sand not containing particles larger than 1/4 inch, should be mixed to a consistency that can be easily leveled with a straight edge. Finish smooth with a trowel. The floor should be laid so as to drain to one side, or to one corner.



Floor Plan Of Poultry House
Scale-¼"=1'



Perspective View
Scale-½"=1'



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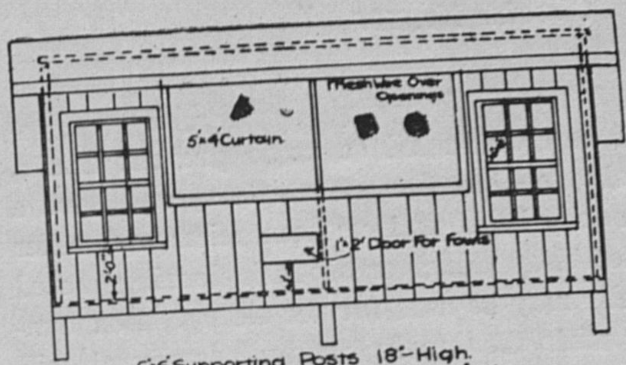
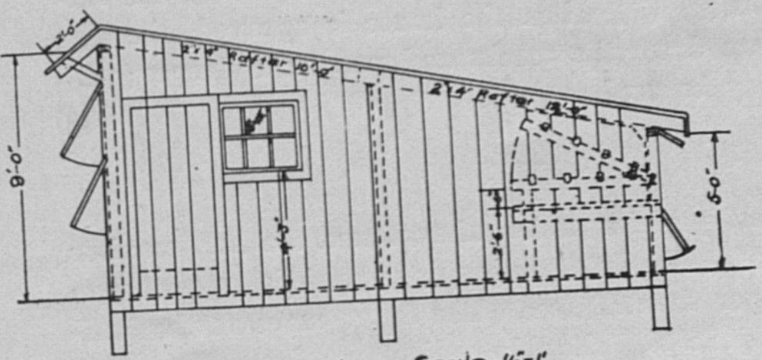
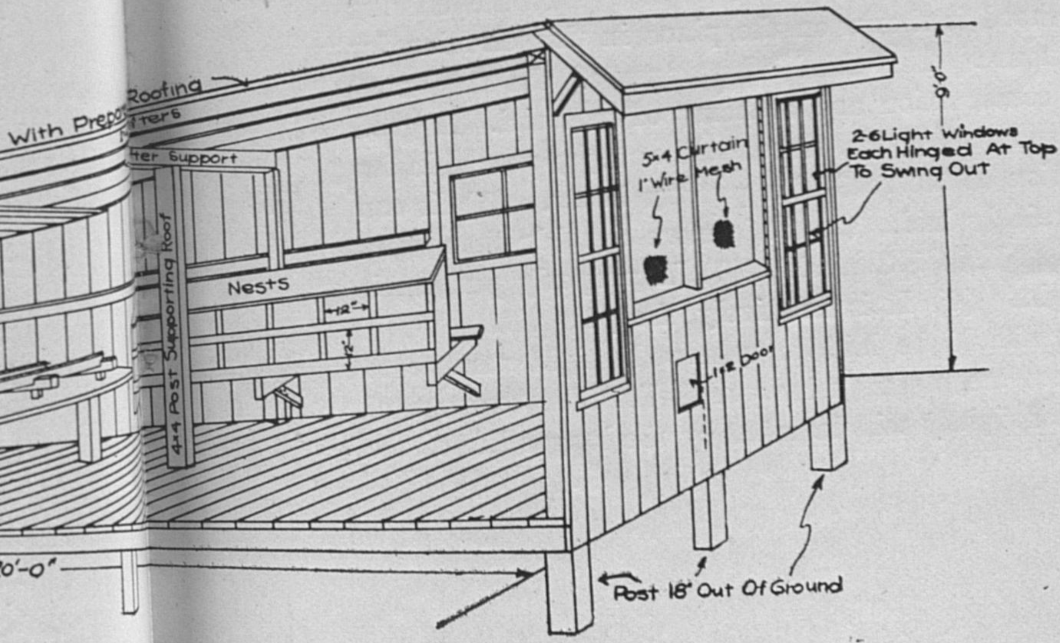


6×6 Supporting Posts 18" High.
Front Elevation. Scale 1/8=1'



End Elevation. Scale 1/4=1'



ve View
1/2"=1'

WALLS.

The walls should be constructed so as to prevent drafts, retain heat, prevent the condensation of moisture, and have a smooth surface which may be kept free from mites and other vermin. No. 1 matched drop siding or six-inch flooring placed horizontally or vertically may be used for the siding. Box lumber placed vertically with the cracks properly stripped will be satisfactory. There are two advantages in placing the siding perpendicularly: (1) when the house is sprayed, the disinfectant will run down the cracks and penetrate deeper; (2) less studding may be used.

ROOF.

The two most popular styles of roof are the half-monitor and the shed roof. The half-monitor is very satisfactory when the house is deeper than 16 feet. The front eaves of the half-monitor (see figure 5) should project at least one foot beyond the front wall. If the shed roof is used a front projection or hood is very desirable to keep out the driving rains. Such a hood is shown on the plans in this circular for the shed-type house. The chief advantages of the shed roof are its ease of construction and economy of material. A good grade of prepared roofing has several advantages over shingles in the construction of the roof of a poultry house. (1) It can be easily and quickly laid. (2) It is more durable than shingles on slopes less than 1/3 pitch. (3) If properly put on, it is absolutely tight. (4) It is relatively cheap.

The roofing should be laid on a smooth, tight surface to prevent damage from strong winds or hail. The expense of sheathing the roof tightly will be offset by the longer life of the roofing.

BILL OF MATERIAL FOR FOUNDATION FOR 20′x20′ POULTRY HOUSE.

For Wood Posts:

9 locust or cedar posts 6″ in diameter, 3′ long.

For Concrete Piers:

9 piers, 12″x12″x3′.

5 sacks of cement
½ cubic yard sand
1 cubic yard of crushed stone

BILL OF MATERIAL FOR CONCRETE FOUNDATION AND FLOOR FOR 20′x20′ POULTRY HOUSE.

Foundation (1:2½:5 mixture)

15 sacks of cement
1½ cubic yards sand
2¾ cubic yards crushed stone

Floor:

Base 4″ of 1:2½:5 mixture
Top coat, 1″ of 1 to 1 mixture
44 sacks of cement
3½ cubic yards of sand
4½ cubic yards of crushed stone

LUMBER AND HARDWARE BILL FOR SHED-ROOF POULTRY HOUSE.

See pages 10 and 11 for plans.

Lumber.

Floor:

Joists, 11 pcs. 2″x4″x20′ No. 2 yellow pine.
Shiplap, 420 board ft. 8″ No. 2 yellow pine

Walls:

Studding, 6 pcs. 2″x4″x18′ No. 2 yellow pine
3 pcs. 2″x4″x16′ No. 2 yellow pine
10 pcs. 2″x4″x10′ No. 2 yellow pine
Plates, 2 pcs. 2″x4″x20′ No. 2 yellow pine
Boxing, 10 foot lengths, 560 board feet, No. 2 yellow pine
Battens, 1,280 lineal feet

Roof:

Rafter supports, 2 pcs. 2″x4″x20′ No. 2 yellow pine
Rafters, 22 pcs. 2″x4″x12′ No. 2 yellow pine
Shiplap, 600 bd. ft. 8″ No. 2 yellow pine
3-ply prepared roofing, 6 squares

Roosts:

6 pcs. 2″x4″x20′ No. 2 yellow pine
3 pcs. 2″x4″x16′ No. 2 yellow pine
Dropboard, 120 board feet 8″ Shiplap No. 2 yellow pine
Flooring, 200 board feet 6″ D. & M. Flooring No. 2 yellow pine

Nests:

6 pcs. 1″x4″x16′ Dressed No. 2 yellow pine
5 pcs. 1″x12″x16′ Dressed No. 2 yellow pine
4 pcs. 1″x4″x16′ Dressed No. 2 yellow pine
1 pc. 2″x4″x12′ Dressed No. 2 yellow pine

Windows:

2 single sash 6-light 8″x10″
6 single sash 6-light 10″x12″
1-inch wire screen 4′x10′
Canvas for screens, 4′x10′
2 pcs. 1″x4″x10′ Dressed No. 2 yellow pine
1 pc. 1″x4″x16′ Dressed No. 2 yellow pine

Hardware

5 pounds 5d nails
40 pounds 8d nails
20 pounds 10d nails
20 pounds 20d nails
12 pair steel butts 3″ hinges
1 pair 4″ strap hinges
6 hooks and eyes

LUMBER AND HARDWARE BILL FOR HALF MONITOR POULTRY HOUSE.

Lumber.

Sills:

4 pcs. 2″x4″x20′ No. 2 yellow pine

Walls:

Studding, 2 pcs. 2″x4″x16′ No. 2 yellow pine
12 pcs. 2″x4″x14′ No. 2 yellow pine
2 pcs. 2″x4″x12′ No. 2 yellow pine
20 pcs. 2″x4″x10′ No. 2 yellow pine
Plates and purlines, 6 pcs. 2″x4″x20′ No. 2 yellow pine
Sheathing, 460 board feet 8″ drop siding No. 2 yellow pine

Roof:

11 pcs. 2″x4″x7′ No. 2 yellow pine
11 pcs. 2″x4″x10′ No. 2 yellow pine
11 pcs. 2″x4″x8′ No. 2 yellow pine
Sheathing: 650 board feet 8″ shiplap No. 2 yellow pine
5½ squares 3-ply prepared roofing

Trim:

2 pcs. 1″x4″x20′ No. 2 dressed yellow pine
2 pcs. 1″x4″x18′ No. 2 dressed yellow pine
1 pc. 1″x4″x14′ No. 2 dressed yellow pine
7 pcs. 1″x4″x10′ No. 2 dressed yellow pine

Windows:

9 1-sash, 4-light 10″x16″
2 1-sash, 6-light 8″x10″

Roosts:

6 pcs. 2″x4″x20′ No. 2 yellow pine
2 pcs. 2″x4″x16′ No. 2 yellow pine
2 pcs. 2″x4″x12′ No. 2 yellow pine

Dropboard:

120 board feet 8″ shiplap No. 2 yellow pine
200 board feet 6″ D. & M. Flooring, No. 2 yellow pine

Nests:

6 pcs. 1″x4″x14′ Dressed No. 2 yellow pine
7 pcs. 1″x12″x16′ Dressed No. 2 yellow pine
4 pcs. 1″x8″x16′ Dressed No. 2 yellow pine
2 pcs. 2″x4″x12′ Dressed No. 2 yellow pine
Wire netting, 1″ mesh poultry netting, 3′x40′
Curtains, muslin 3′x20′
3 pcs. 1″x3″x18′ Dressed No. 2 yellow pine

Ventilators:

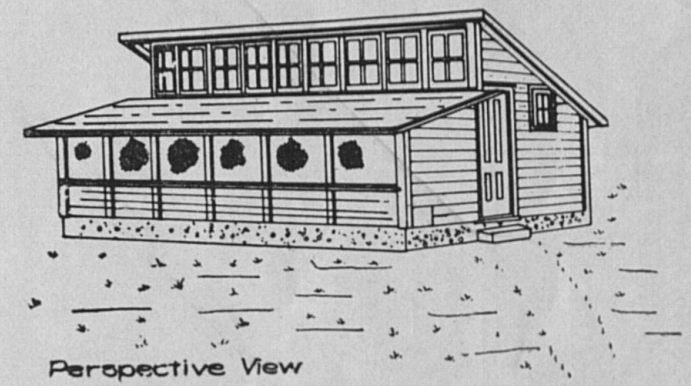
13 pcs. 1″x4″x12′ Dressed No. 2 yellow pine

Hardware.

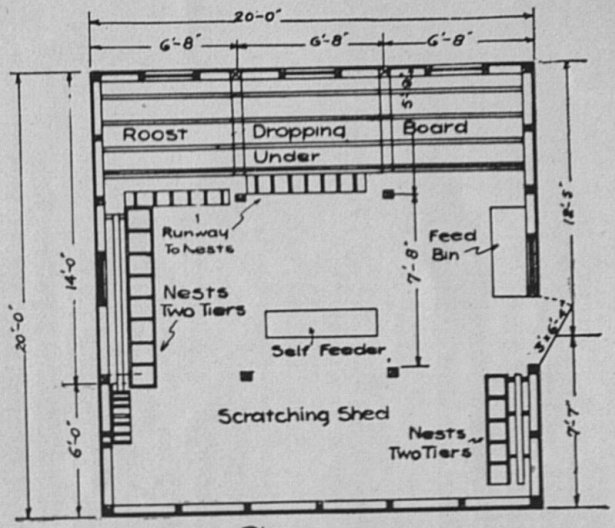
1 pair 4″ wrought steel butts
26 pair 3″ wrought steel butts
24 bolts, washers and nuts, ½″x12″
1 rim lock with knobs

Nails:

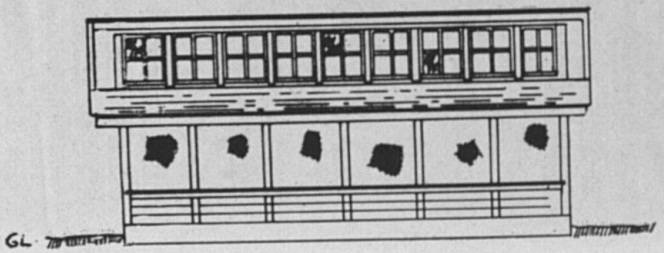
5 lbs. 5d finish
4 lbs. 5d common
30 lbs. 8d common
20 lbs. 10d common
20 lbs. 20d common
12 hooks and eyes
9 window bolts and chains or rope for opening windows



Perspective View



Plan
Scale-¼"-1'-0"



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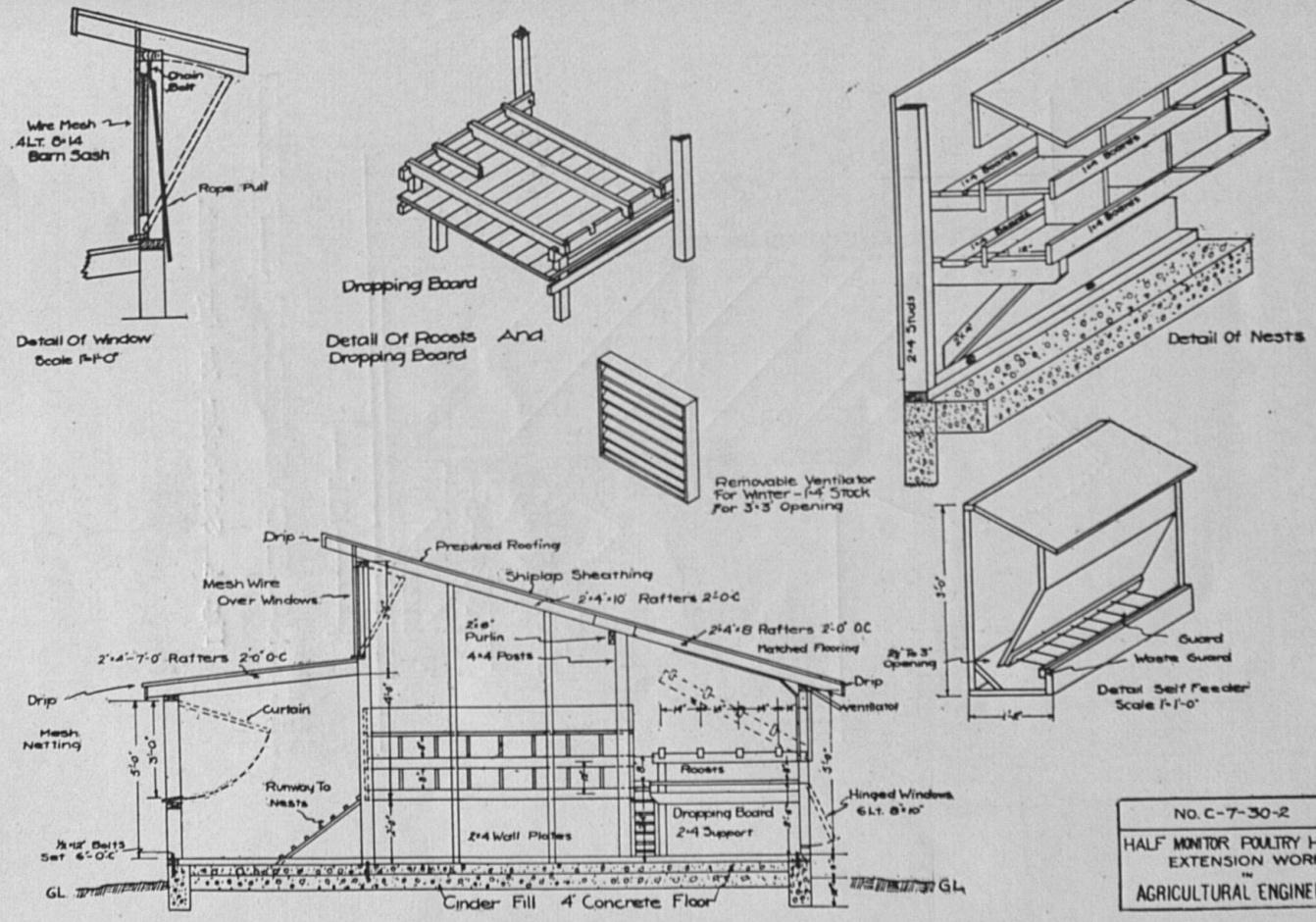
Front Elevation
Scale ¼"-1'-0"

End Elevation



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HALF MONITOR POULTRY HOUSE EXTENSION WORK IN AGRICULTURAL ENGINEERING

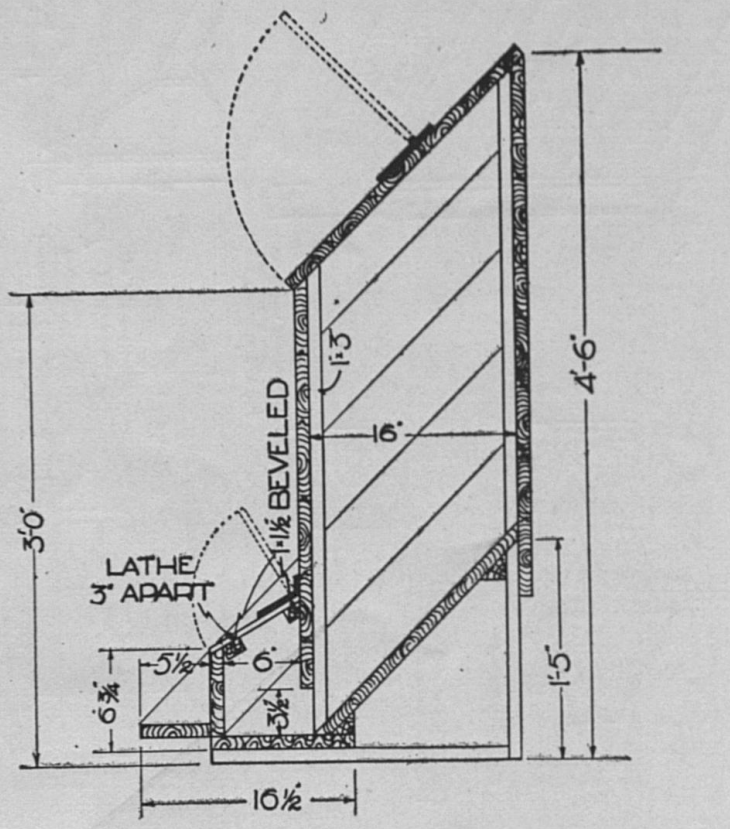

Fig. 4. Self-feeder for dry mash.