

1943

EC1441 Revised 1943 Practical Poultry Equipment

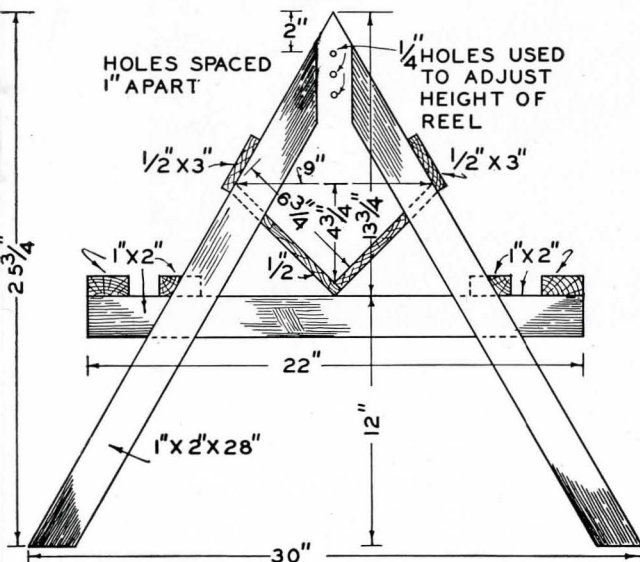
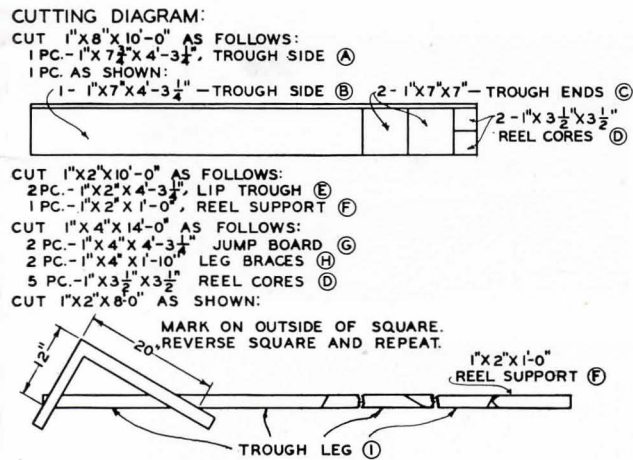
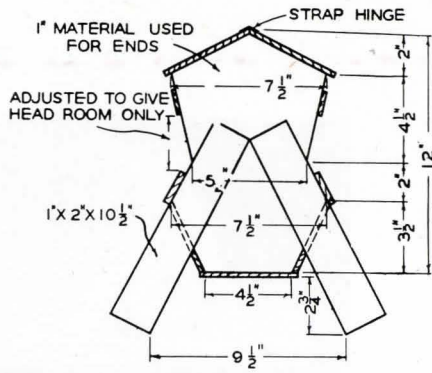
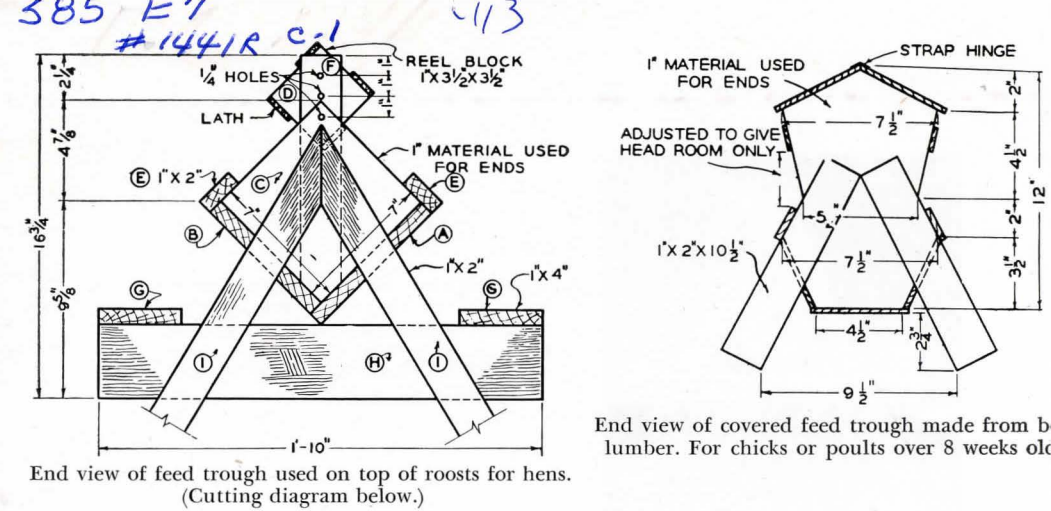
J. H. Claybaugh

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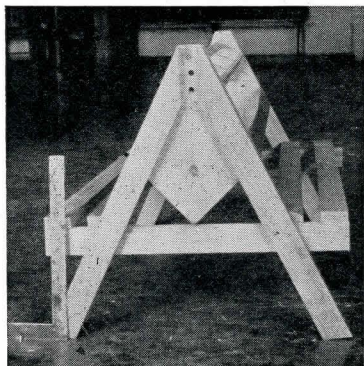
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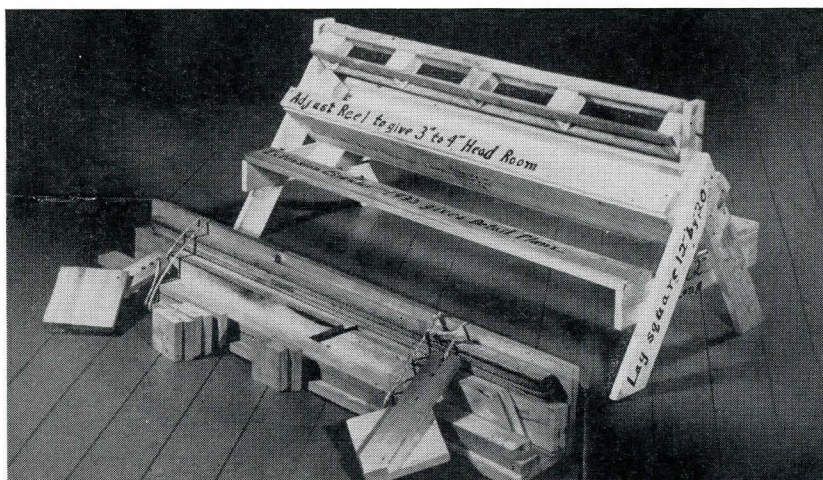
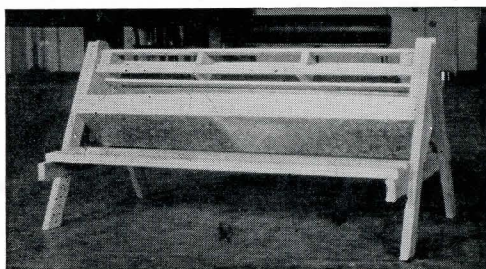
Practical Poultry Equipment

Extension Circular 1441, Revised
The University of Nebraska
College of Agriculture
Extension Service, Lincoln



In addition to the feeders shown here and on the cover, this circular includes suggestions about waterers, nests, a grain bin, alfalfa rack, oats sprouter, sun parlor, and range shelter.

A V-shaped feed trough such as is pictured here can be made in various sizes of either metal or crating lumber $\frac{3}{8}$ -inch thick. Its features include low cost, light weight, practically waste proof, and dirt proof.



Practical Poultry Equipment

J. H. Claybaugh

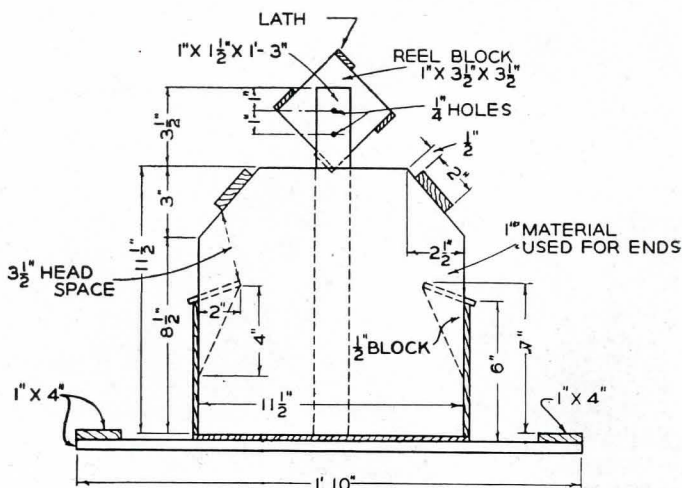
POULTRY raisers of Nebraska ask many questions about equipment which can be made at home and which will keep feed and water clean. This circular is intended to help answer such questions. Use of practical equipment will help maintain health in the poultry flock, save labor, and increase production of eggs and meat.

The Reel-Protected Feed Trough

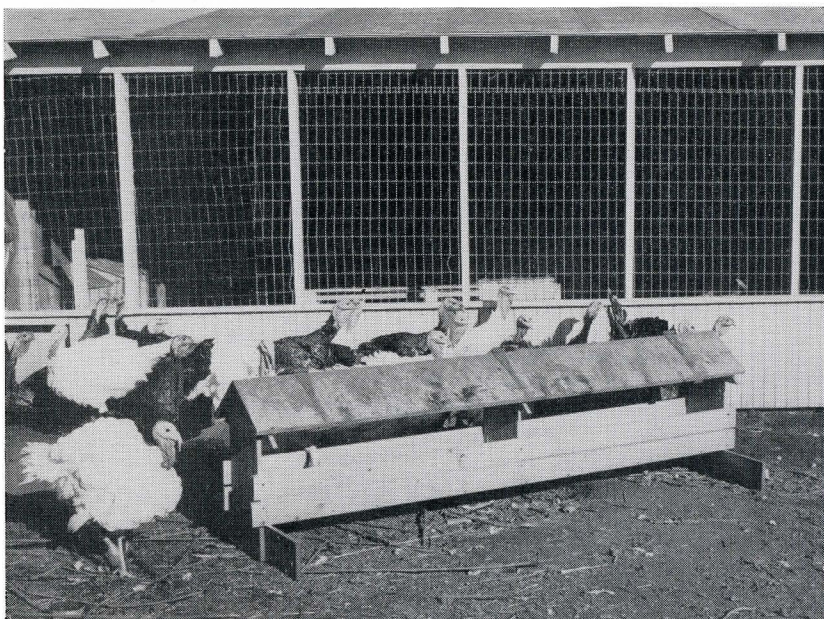
Reel-protected and V-shaped feed troughs similar to the ones illustrated are popular with Nebraska poultrymen. Different types, or several sizes of the same type, can be made for baby chicks, growing chicks, and laying hens. Detailed specifications are given on or below the illustrations. Mash, shredded green feed, or grain can be fed in these feeders. At least four feed troughs, each four feet long, are recommended per 100 hens.

Feed troughs for hens should be well lighted, waste proof, light in weight, low in cost, easily accessible, but elevated so that the feed can be kept clean.

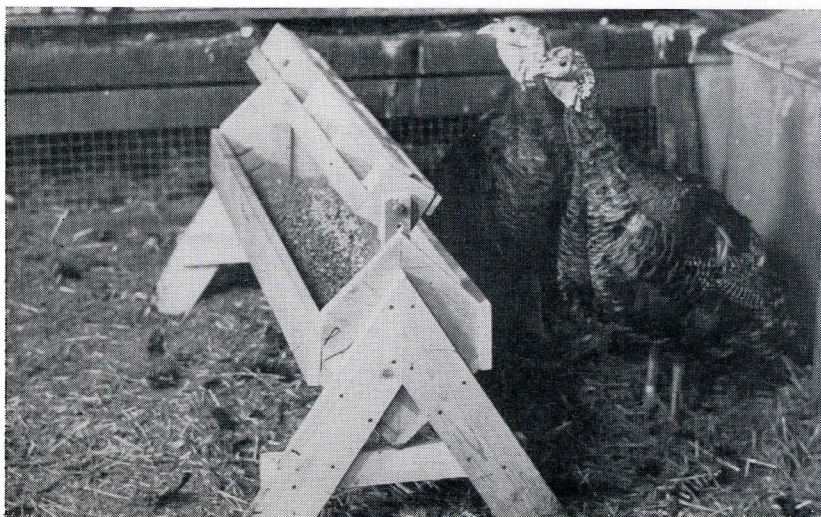
The edge of the trough should be higher than the vents of the birds when they stand on the jump board. For laying hens, head room between the edge of the trough and the reel should be about 3½ inches. This provides plenty of head room but still prevents the birds from getting into the trough.



End view of flat-bottom feed trough for hens. Can be used on top of roosts or legs can be added.



Feed must be adequately safeguarded against waste and contamination. Troughs should be covered and properly elevated.



Here are further illustrations of practical feeding equipment. Reel-protected troughs are popular with Nebraska poultrymen.

Watering Devices

Many poultry diseases are spread through an infected water supply. The department of animal pathology and hygiene has tested the self-cleaning bubbler as a means of keeping the water supply strictly sanitary. Extension Circular 1440 has the following to say about these bubblers: "A more efficient method of supplying safe water to poultry can be proposed in the form of a self-cleaning watering cup on the plan of the sanitary bubbler now in common use in public buildings and parks. It can be put in practice only where running water is constantly available, but even the ordinary windmill and tank equipment of many farms could be utilized to advantage in providing this more or less ideal method of watering poultry." The drinking cup is placed about eight inches above the ground, is kept clean, and can be regarded as strictly sanitary.

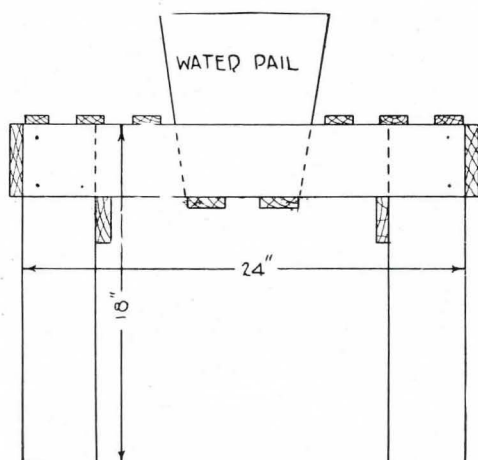


Plenty of clean, fresh water is a requirement. Here it is being provided by barrels equipped with pans and automatic controls.

Other poultrymen who have water piped through their chicken houses have installed automatic floats on watering pans. This equipment is similar to automatic hog waterers and is used with lamp heaters during cold weather. When the area beneath such watering troughs is boxed in and a wire grid is used for the jump board, the hens cannot gain access to the wet litter beneath.

Watering Stands

Placing the water pails on stands like the one shown on this page keeps litter and dirt out of the water and avoids wet spots on the floor. No floor space is occupied by the watering pails when they are elevated on such stands. More water as well as mash is consumed if the water is placed near the dry mash troughs. Two pails, each holding from 10 to 12 quarts, will furnish the daily volume of water necessary for



A stand for the water bucket.

BILL OF MATERIAL:

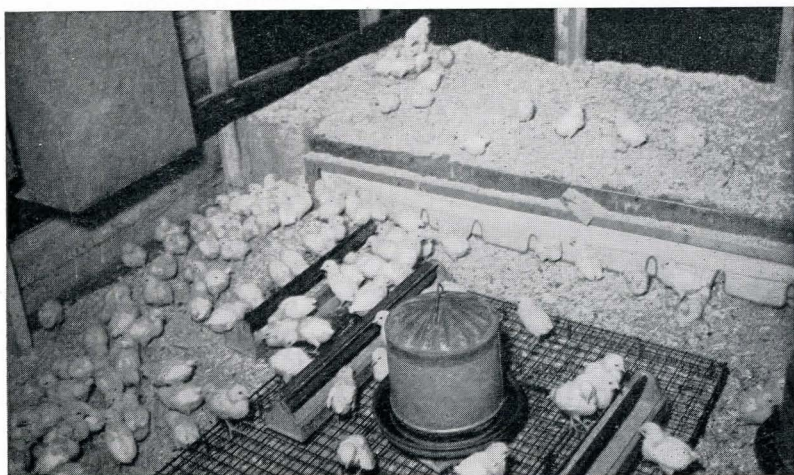
4 legs	1"x4"x18"
4 sides	1"x4"x24"
10 cleats	1"x2"x24"

100 hens in medium lay. Reports indicate that one common managerial fault is lack of volume and cleanliness of the water supply.

Such a stand is also useful as a bench on which the coop for broody hens may be set outdoors in the shade of a tree.

Watering Stands for Baby Chicks

Baby chicks soon begin to scratch litter into their water and milk supply unless the crocks are elevated a little above the floor. The necessary stands can be made quite easily from ends of an orange box.



Efficient brooding includes use of proper equipment. Here is screen-covered platform for waterers and feeders, and at the rear is a flat-topped electric brooder.

Screen-Covered Water Stands for Chicks

Many watering devices used for baby chicks permit water or milk to be spilled so that litter surrounding the crocks becomes damp. With many of the feeding devices, the mash is scooped out of the troughs or pans and scattered in the litter in which the chicks scratch. Much dirt is picked up with such feed. A satisfactory feed and water stand can be made by stapling $\frac{1}{2}$ -inch hardware cloth or welded wire screen of one-inch mesh onto the edges of a four-inch frame. The wire serves as the top of the frame on which the water crocks and feed troughs are placed. Any spilled water or wasted feed falls through the meshes of this screen. This feed or wet litter is out of reach of the chicks. One side of the screen platform is usually made to set against the wall.

Chicks can be taught also to roost on screen platforms if these are placed in the back part of the brooder room and near the stove. Much less floor litter is needed where such screens are used. Providing screens for the entire floor of the brooder house makes cleaning more difficult.

Nests

One nest is usually recommended for each six hens. This is considered sufficient to prevent the breakage of eggs in the nests. Where trap nests are used, one nest is needed for each four hens. Nests placed high above the floor encourage hens to use them for roosts, thus making it more difficult to produce clean eggs. Nests placed on the floor take up expensive floor space needed for scratching.

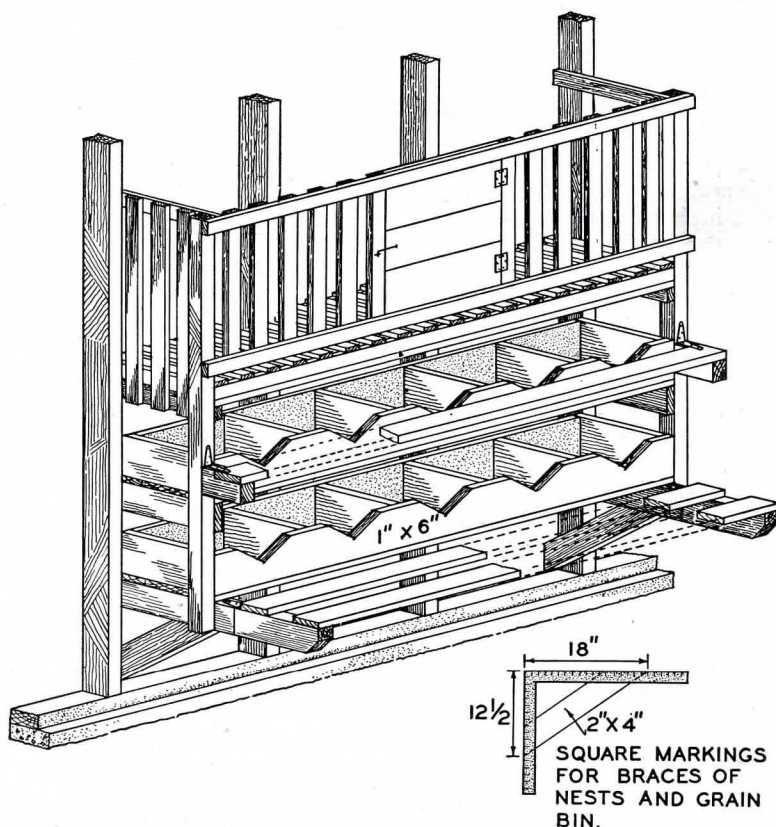
Movable nests that slide into fixed frames, with jump boards hinged so that nests can be closed, are giving complete satisfaction. Building the nests six inches deep and 12 to 14 inches square is recommended. When the floor boards for the nests are left unnailed, they can be easily removed for an annual creosote bath.

A popular material for padding nests is coarse and rather stemmy alfalfa or sweet clover. Such material fits easiest if applied when freshly cut. When dried, the coarse stems on the outside of the nests tend to hold the straw that is placed in the center.

Orange-Box Nests

The orange-box nest is popular because new ones can be added easily and old ones can be discarded in case of an invasion of mites. However, these nests are only $11\frac{1}{2}$ inches square and thus hardly large enough for hens of the heavier breeds.

When an orange box is laid on its side, nests can be made easily by nailing one of the boards from the cover to the edge to retain the nest packing. Pieces of cardboard are fitted to the floor of the nests and turned up on the edges far enough to retain the litter. Such nests must be covered to prevent chickens from getting on top. Otherwise the nests will become dirty from droppings falling through from above. Such nests are stacked one above another. The upper box is placed about four inches back of the lower box to make a jump board for the hens to use as they enter the nests.

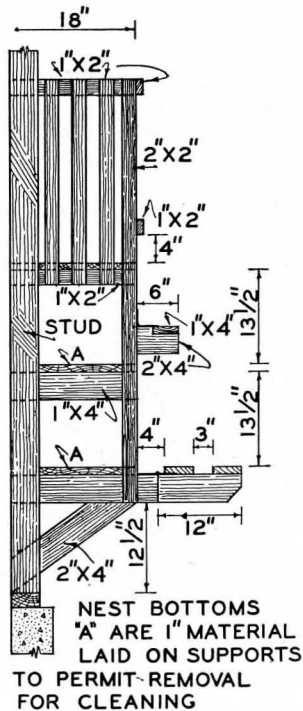


These shelf-like nests are easily removed and cleaned. The hinged jump boards allow nests to be closed at night. Broody coops should be handy to the nests.

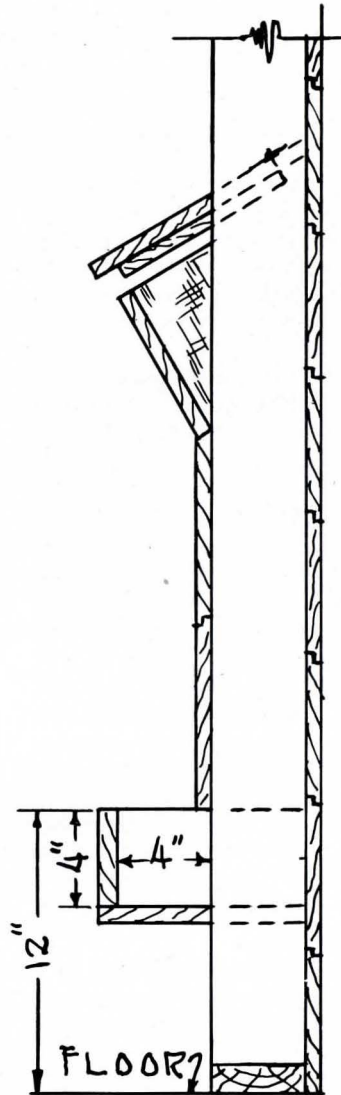
Covers for Nests

Hens will perch on any elevated level surface and cause an accumulation of filth. The following is a simple way of making movable sloping covers which can be placed on top of flat surfaces to prevent the perching of hens.

A crate such as an orange box can be taken apart so as not to break the lumber. One end piece which usually is 11 1/2 inches square can be sawed in two diagonally. The right angles of these two triangular pieces can then be set on top of the nests, with the thinner boards from the sides of the box nailed onto the longer slope of the triangular boards.



The end view of nest and broody coop arrangement.



Grit and Shell Hoppers

A hen will eat about three pounds of oyster shell and $\frac{3}{4}$ pound of grit a year. Relatively small hoppers can be used.

Where the hen house is not boarded up on the inside of the studding, shell hoppers can be made between two studdings.

The bottom board should first be nailed to the boards that are to be the sides and front of the feed trough. The side boards are then nailed to the studding. Cover is held in place by cleats.

Broody Coops

Broodiness is a cause of considerable loss in egg production when the hens are not broken up promptly. A broody coop in each room of the chicken house makes it easy to jail the broody hens before they are permitted to sit and become difficult to break up. Broody hens come back into lay more quickly if well fed and comfortable during the days they are confined. A slat-bottom coop causes the hen to roost rather than sit, keeps her cleaner, and is more sanitary than a solid floor. A feed trough and a water can should be hooked to the outer side of the broody coop to provide the hen with a complete ration. For this reason lath in place of wire netting is more popular for side walls of the broody coop.

For feeding broody hens, two tin cans are fastened to the slatted side of the coop. Smaller tin cans that fit into the fastened cans may then be used for feed and water.

Grain Bins

Much time is saved by having the feed supply stored conveniently in or near the chicken house. Bins can be built on the sides or in the corners of the chicken house and constructed so that they can be cleaned easily and do not occupy floor space. Plans for building grain bins are included in the blue print of the Nebraska-plan poultry house.

Green Feed Rack

Green cured alfalfa hay is very popular in Nebraska as a feed for hens during the winter months. The practice of placing such hay on the floor cannot be recommended for sanitary reasons. The most feed value can be obtained from alfalfa hay if it can be run through a feed chopper and cut into short lengths. Such fine cut hay can be placed in the feed troughs on top of the dry mash. When such feed choppers are not available, the hay can be placed in racks.

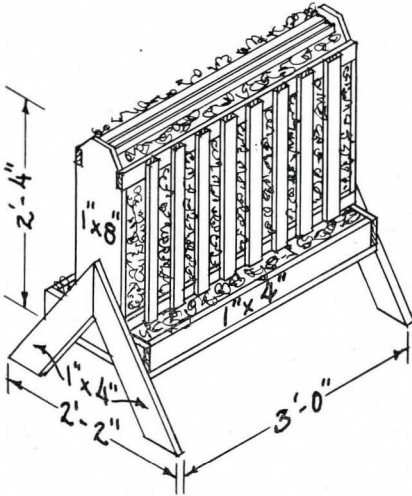
Germinated Oats

Germinated oats as a regular feed for laying hens and growing chicks are gaining rapidly in popularity. At the College of Agriculture, oats are soaked in large garbage cans and drained by tying a gunny sack over the top of the can and turning the can on its side. The soaked oats are then spread over the concrete floor in the basement of the feed house where they can be stirred and sprinkled with water as often as desired. During the winter the oats are piled several inches deep but during the hottest part of the summer they must be spread thinner and given more water.

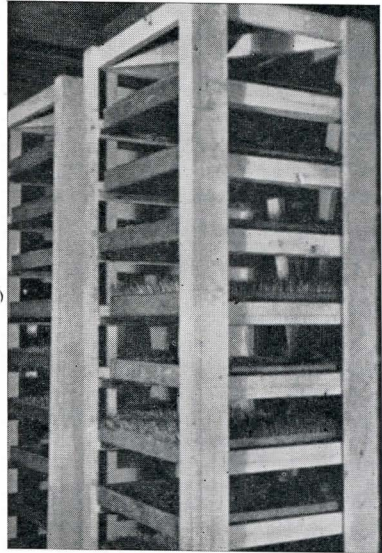
Four or five wooden candy pails with several holes bored in the bottoms for draining are the only equipment needed for germinating enough oats for a flock of 400 hens. During the summer these pails can be kept on a rack in the shade of a tree or on the north side of a building which is located near the water supply. During the winter

the buckets need to be placed near a furnace where a temperature of 45 to 60 degrees is maintained.

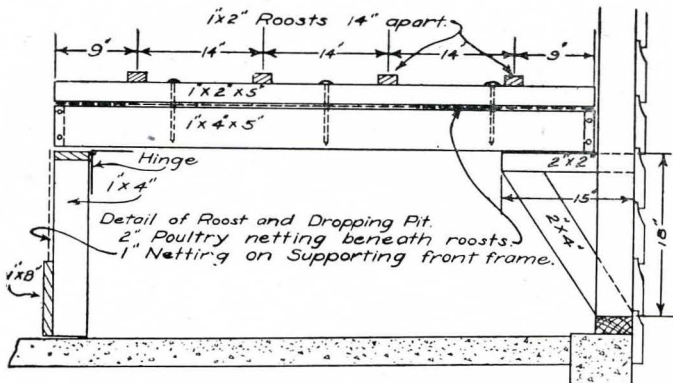
To avoid oats molding while germinating, some poultrymen add a teaspoon of formaldehyde to the water that is used to soak three gallons of oats. Cleaning of all buckets used is also necessary.



Detail construction of an alfalfa hay rack which will keep the hay clean and avoid waste.



Sprouted oats provide green feed that can be grown at any season of the year. Racks and trays, such as these, make oat-sprouting easy. Chop long sprouts for young chicks or poults.



Working drawing of a sanitary roosting rack.

Roosting Rack

A roosting rack, built as indicated in the illustration, will keep the hens out of their droppings. Manure should be cleaned out of the pit about once a month or even more often in the summer time.

Artificial Lights for Layers

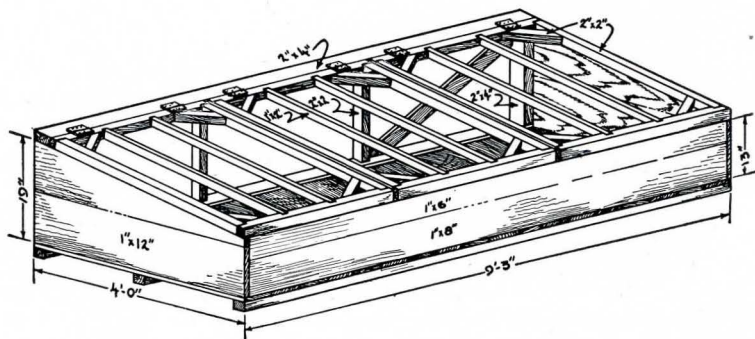
A number of Nebraska poultrymen have installed electric lights in their chicken houses to lengthen the working day during the winter months.

The colleges of agriculture of New York and Ohio have studied this problem, and printed bulletins on the subject. Briefly, their recommendations are as follows:

1. Use a reflector which is 16 inches in diameter with a four-inch rise from edge to center.
2. Hang the lights and reflectors six feet above the floor, or so that the entire roost will be well lighted.
3. Use one light with reflector for each 240 square feet of floor area. Use 40-watt lamps for bright lights, and 15-watt lamps for dim, all-night lights.
4. Place lights midway between front of roost and front of house.

A Sun Parlor and Porch

Direct rays of the sun are beneficial to the health of a poultry flock. Lack of direct sunshine for the breeding flock reduces vitality of the birds, making them susceptible to nutritional roup and rickets. The use of direct sunshine has increased egg production with improved shell quality. With chicks that have become affected with rickets due to malnutrition, direct sunlight soon effects a cure. Since so many poultry keepers find it practical to keep their hens confined to the chicken houses during the winter, arrangements are desired whereby



Sun parlor for use in front of brooder house. The netting on top of the lid is not shown here. The middle piece in front side slides between the two outer pieces and is held in place by the vertical cleats. This affords an opening when chicks are to be let out on range.

the hens are able to absorb these beneficial rays. Some will get this desired sunlight by open-front poultry houses or by doors and curtains on the south side of the house. Others will be interested in a sun parlor or sun porches placed on the sunny side of the poultry house. This same sun parlor could be moved easily to the front of a brooder-house when it is desired to get young chicks into the open sunshine.

A sun parlor four feet wide and ten feet long with sides and front built of wood, and top protected with muslin-covered frames, has been made for experimental use at the College poultry plant. This sun parlor has a floor space four by ten. It is two feet high on the open side which fits against the front of the brooder house. It is 14 inches high on the low or south side. This sun parlor should be built so it can be moved to the places where it is most needed.

Shipping Crates

In shipping or hauling breeding stock, colds and roup often develop because of the exposure of the birds while in transit. Most breeders prefer a crate about 12 to 15 inches wide, $1\frac{1}{2}$ to two feet long, and about two to $2\frac{1}{2}$ feet high for such shipments. To keep express charges at a minimum, light lumber should be used. Since cardboard cartons have come into common use, these empty boxes can be obtained from stores and converted into light, roomy, well-ventilated shipping crates. Short nails with large heads, such as are used for roofing paper, can be used to nail through the



upper part of the box into a frame $1'' \times 2''$ lumber which just fits around the outside of the box. Lath can then be used to cover the top of the coop after the bird is enclosed. For additional ventilation several holes which are too small to let a fowl's head through can be cut on each side of the box.

Marketing Crate

Poultrymen who do not have many chickens to market at one time will need a small light crate in which to haul their cull hens and broilers to market. A coop which will fit these needs can be made from a lettuce crate and an orange box.

The thin boards from the orange box are removed and nailed to the bottom of a lettuce crate to form the solid bottom. To hold this bottom more securely, cleats should be nailed through the bottom like the tops of apple boxes are fastened.

The extra bottom boards of the orange crate are used to make the sides and top. Cracks must be narrow enough not to allow any chickens to crowd through. Two inches is suggested as the maximum width of these cracks.

One of the side boards from the orange box can be used for that part of the top which will slide out when chickens are being put into or taken from the crate, or a hinged door can be made in one end of the crate.

Catching Hooks

A catching hook is very handy in selecting the best hens for a breeding pen, or catching the hen that appears to have some physical de-

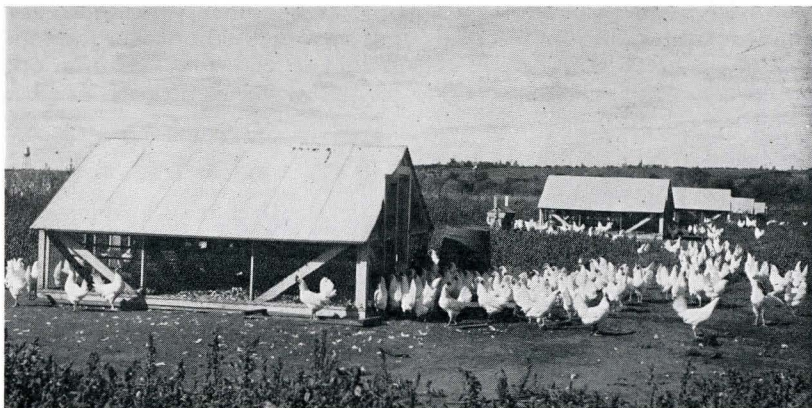


The wire catching hook.

fect, or is off feed. A piece of No. 9 wire and a pair of pliers are all that is needed for making such a hook. As a rule, hooks from four to five feet long are easiest to handle.

Clean Yards for Chicks

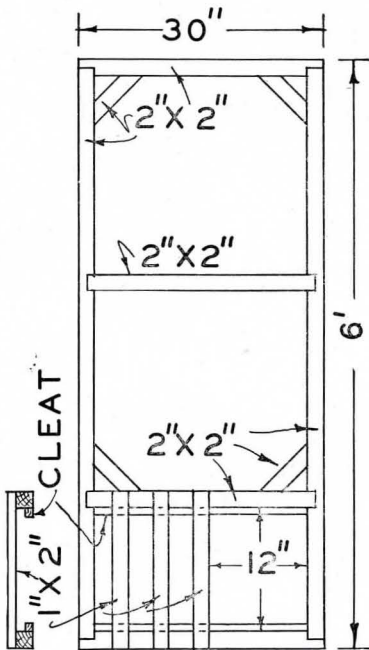
This bulletin has thus explained how to build poultry house and yard equipment which aids in keeping the feed and water clean. Such equipment will not prevent filth-borne diseases and parasites from attacking fowls if they range on ground which has become infested by long-continued use. To keep young chicks on safe ground requires that one of two methods be adopted. Either the brooder houses or range shelters must be moved each year to new and clean ground, or a system of alternating yards and confinement of hens must be established.



The ten-by-twelve foot Nebraska-type brooder house is built on four-by-four inch skids with the idea that it be moved to a different part of the range each year. On commercial poultry plants, chicks are often brooded in large units in one room of the house used for hens.

Range Shelter Sheds

When the same brooder house is used for two broods of chicks or for starting a brood of turkeys after chicks have been brooded, range summer shelter sheds become a necessity. For chickens, summer roosting sheds are built with either gable or shed roofs. Sheds are popular because they permit pullets to be moved to clean range where the evil effects of filth-borne diseases and parasites can be avoided. Some have wire floors.



Screen door allows direct sunlight to enter the poultry house in winter and prevents livestock from wrecking poultry house furniture in summer.

Screen Doors

Screen doors for the chicken houses are of value in keeping chickens confined during inclement weather. The use of screen doors is usually the easiest way to flood the poultry house floor with direct sunlight during the winter months. When hung on the outside of the building and held in place by a spring, they prevent pigs and calves from entering the chicken house. The sliding board placed at the bottom allows hens to have free exit and entrance while keeping livestock out. It is necessary to have doors as well as windows screened if sparrows are to be kept out of the chicken house. Screen doors are usually covered with either hardware cloth or one-inch poultry netting.

