Poultry Equipment

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For all phases of the poultry industry, the trade offers adequate and useful pieces of equipment. However there are poultrymen who prefer making their own. For them this bulletin has been prepared.

The bulletin is divided into four parts. Part I is concerned with pieces of equipment used in the brooding phase of the work. Part II deals with articles used in connection with growing young stock on range. Part III contains descriptions of laying stock devices. It also has to do with things which may be made to simplify and aid in the marketing of eggs and poultry meat. Part IV is devoted to equipment and articles used in the raising of turkeys. The bulletin in no way deals with subject matter problems. For these the reader is referred to specific bulletins dealing with them.

PART I—BROODING EQUIPMENT

HOMEMADE BROODERS

ELECTRIC BROODER—Poultrymen with a steady reliable source of electricity and an insulated brooder room which does not drop below 70° can use an electric brooder.

Figure 1 (left) Top and (right) upside down view showing wire and lamps of Home-made Electric Brooder.
List of materials—The top and sides of the brooder are made of plywood, hard composition board or ordinary lumber. A 4'x4' brooder (capacity 150 to 200 chicks) requires:
1 piece 1/4" plywood 4' x 4' (top)
4 pieces 1/4" plywood 1' x 4' (sides)
4 posts, 2" x 2", 16 in. long
4 cleats, 1" x 1", to support top
2 porcelain receptacles
15 to 20 feet appliance cord with plug
1 250-watt R 40 bulb drying lamp
1 150-watt projector or reflector Mazda spot or flood lamp (115 to 120 volt)

How to build—Nail sides to posts, put cleats on side pieces. Notch corners of top piece, and nail it on top of cleats. Put porcelain receptacles on sides (midway between posts and three inches from the top of the brooder). Bore hole for cord in one side near the receptacle and fasten electric cord to connections. Put 2 to 4 inches of ground corn cobs, shavings or litter on top of the brooder to save heat.

Regulating the heat—Screw in the lamps and turn the brooder on for an hour or so before putting the chicks under. In cold weather, tack a curtain to the sides, so it will reach almost to the floor litter. As chicks get older, the curtain may be removed. To reduce heat, a 25-watt Mazda lamp may replace one of the bulbs. Never leave the socket empty. Regulate heat according to the way the chicks behave. If they spread out comfortably under the hover the heat is all right. If they bunch together, there is not enough heat. Too much heat drives the chicks from under the hover. As with all brooders a chick guard should be used until the chicks become "hover wise."

"Dutch Oven" Brooder Stove—The so-called "Dutch Oven" brooder stove, or the method of applying under floor heat for brooding has been successfully used in every section of Montana. It gives a dependable and constant source of heat at a low cost.

Fire box—The fire box may be made from an old oil barrel, heating stove, or it may be a brick or concrete fire box. The main thing is to have the fire box fitted with a tight door so that the fuel burns slowly. The fire box should be placed at least 18" below the surface of the ground in a pit one foot larger than the fire box on all sides. The entire space, around and above the fire box, is then filled with rocks or bricks and sand. The fire should be started at least 4 or 5 days before the chicks or poults arrive in order to have the sand and rocks thoroughly heated. Once hot, the temperature at the edge of the hover remains constant. The temperature will not drop even after the firing of the stove has been discontinued for 36 hours.
Be sure the fire box is placed back from the sill of the house to avoid any fire risk.

Place an additional door at A or B (see fig. 2) to give additional protection. The door prevents draughts and too rapid burning of fuel. A grate is needed when burning coal, but not for wood.

**The Pipe**—The pipe should extend 4 or 5 feet under the floor from the fire box, in order to have all the intense heat taken from the smoke and so remove all danger of fire.

**Floor**—The floor should be made of concrete, though wooden floors have been used by cutting out the floor a few feet above the fire box and filling the space with sand and gravel.

**The Hover**—The hover may be made of any material, preferably metal. The main thing is to have the hover about 10" from the floor and allow 7 square inches per chick and twice that amount of space per poult. Do not expect the chicks to
sleep under the hover. Rather they will sleep in the space beyond
the hover where heat is reflected onto their backs.

**Yard Sticks** for constructing brooder stoves and
hovers: Provide 7 sq. inches per chick—1 to 6 weeks.
Double space—6 to 12 weeks. Supply heat so that
chicks backs are warmed.

**Feeders**—should be made to provide day old chicks with 1”
feeder space; with reel or tilt board to prevent roosting on hoppers;
with a lip to prevent “billing-out” of feed; and with the trough
of hopper deep enough to prevent wastage. The number of hop­
pers should be doubled at 6 weeks.

![Figure 4.](image)

**Waterers** — should be made
large enough to serve more than
a few days. From 1-6 weeks,
one hundred chicks should have
1½ gallons of fountain space.
Twice the amount is needed from
6-12 weeks.

A large gallon commercial
fount may be made safe for small
chicks by placing a coil of wire
around the utensils. See Fig. 5.

![Figure 5.](image)
Using an ordinary pan, a protector may be made from electric weld lawn fencing. Note the openings permit birds to put their heads through to drink.

An efficient fountain may be made from a two-pound coffee can and a pie plate. A nail hole is made an inch from the rim of the can. When filled with water and inverted over the pan, the fount works on the vacuum principal.

Platforms—should be made for all feeders and waterers. This prevents wet spots and contaminated areas. The platforms may be covered with wire or slats. A shallow tin box with hardware cloth soldered in the cover serves as platform and collects spilled water.

Sun Porches—If the brooder house can not be moved to clean ground, a sun porch should be provided. A sun porch is a wire or slat platform with wire or slat sides. For chicks, a two-foot side is high enough. It should be higher for turkeys. The sun porch should have the same floor space as the floor of the brooder house. When a slat floor is
made, use lath, space 1 inch apart. For wire floor, use 1-inch mesh hardware cloth.

![Diagram of Sun Porch Plan]

Figure 9. Plan of Sun Porch.

PART II—RANGE EQUIPMENT

The first essential of range equipment is that it shall be portable. Though equipment for this phase need not be expensive, it must be built sturdy so that it can be moved with ease. Also it
must be built to withstand weather. Progressive poultrymen usually paint all pieces of range equipment.

Range Shelter—An adequate shelter is merely a roof with wire sides and a wire or slat floor. The comb of the roof is 5' off the ground and the eaves 2½'. Pullets will need 8" to 10" roost space and turkeys 9" to 12". A 7' x 8' shelter will accommodate 100 pullets or 50 turkeys.

Figure 10. Plans for Range Shelter (courtesy Washington State College.)
Bill of Materials

<table>
<thead>
<tr>
<th>Use</th>
<th>No. Pieces</th>
<th>Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sills</td>
<td>2</td>
<td>1 x 6</td>
<td>7’ 10”</td>
</tr>
<tr>
<td>Sills</td>
<td>2</td>
<td>1 x 6</td>
<td>7’ 0”</td>
</tr>
<tr>
<td>Floor braces</td>
<td>1</td>
<td>1 x 6</td>
<td>7’ 10”</td>
</tr>
<tr>
<td>Floor braces</td>
<td>2</td>
<td>1 x 6</td>
<td>6’ 10”</td>
</tr>
<tr>
<td>Studs</td>
<td>6</td>
<td>2 x 3</td>
<td>2’ 6”</td>
</tr>
<tr>
<td>Studs</td>
<td>4</td>
<td>2 x 3</td>
<td>4’ 3”</td>
</tr>
<tr>
<td>Girts</td>
<td>2</td>
<td>1 x 3</td>
<td>7’ 10”</td>
</tr>
<tr>
<td>Girts</td>
<td>1</td>
<td>1 x 3</td>
<td>7’ 0”</td>
</tr>
<tr>
<td>Girts</td>
<td>2</td>
<td>1 x 3</td>
<td>2’ 6”</td>
</tr>
<tr>
<td>Rafters</td>
<td>18</td>
<td>1 x 3</td>
<td>5’ 9”</td>
</tr>
<tr>
<td>Ridgeboard</td>
<td>1</td>
<td>1 x 4</td>
<td>11’ 5”</td>
</tr>
<tr>
<td>Eavesboards</td>
<td>2</td>
<td>1 x 3</td>
<td>11’ 5”</td>
</tr>
<tr>
<td>Brace over door</td>
<td>1</td>
<td>1 x 3</td>
<td>2’ 0”</td>
</tr>
<tr>
<td>Roosts</td>
<td>6</td>
<td>2 x 2</td>
<td>7’ 10”</td>
</tr>
<tr>
<td>Roost supports</td>
<td>4</td>
<td>1 x 3</td>
<td>2’ 10½”</td>
</tr>
<tr>
<td>Door</td>
<td>2</td>
<td>1 x 3</td>
<td>3’ 6”</td>
</tr>
<tr>
<td>Door</td>
<td>4</td>
<td>1 x 3</td>
<td>2’ 0”</td>
</tr>
<tr>
<td>Laths</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing</td>
<td></td>
<td></td>
<td>1½ rolls 36” 2-ply roofing paper.</td>
</tr>
</tbody>
</table>

Hardware

Wire for sides 36’ of 1” mesh; 2’ wide poultry netting
Wire for floor 16’ of 1½” mesh 4’ wide poultry netting, No. 18 gauge
Wire for roof, 23’ of 2” mesh 6’ wide poultry netting
Nails—2 lbs. 8d
Nails—1 lb. 6d
Staples 1 lb.
Hinges 1 pr. 2”

Range Shade—If birds have shade, they grow faster, feather better and do not sunburn. However birds should not hang around a shelter belt or patches of underbrush where birds have run year after year. Sooner or later sickness occurs unless the ground is cleaned up. If no natural shade is available an artificial shade may be made or corn or sunflowers planted in rows to provide shade.

Range Equipment — Range feeders and waterers should be (1) movable; (2) covered to provide shade and protection from weath-
er; (3) large enough to hold a day's supply of feed or water and (4) placed on platforms to avoid wet or dirty spots around equipment. Note, the platforms used in both figures 12 and 13. In figure 12 the shade is made from 4 metal fence posts covered with netting then burlaps sacks. In figure 13 the watering device is on skids so that it may be moved with the shelter. The waterer is shaded.

In building the feeder shown in fig. 14, it should also be placed on skids. The cover serves as a roof to protect feed from wind and weather. Also a lip is placed on the trough of the feeder to keep birds from billing out the feed. If this device is used for turkeys, a wire should be stretched from end to end to serve as a "bill wiper."

Figure 12. Range Waterer.

Figure 13. Range Waterer.

Figure 14. Range Feeder.
Figure 15 — is the portable water barrel and float for watering pullets and turkeys on range at the Montana State College poultry farm.

For the multiple unit waterer, which works on the vacuum principle, see figure 53. A single unit could be used for pullets on range.

Figure 16 — gives a suggestion for a simple temporary fattening pen for surplus cockerels or cull old hens. A piece of fencing encloses birds. Boards weighted down form temporary roof. An iron pipe serves as roost. Feeders and waterers are placed outside of pen.

Figure 17 — is the portable barrel arrangement for feed storage on range. The range feeders are filled from the portable storage device. Being placed on skids it can be drawn about the range as the shelter is moved.
PART III—LAYING STOCK EQUIPMENT

Equipment for the adult stock is varied. A bulletin of this size can not possibly include all types of devices used. It only attempts to give the reader suggestions and general requirements.

Feeders—The requirements for a good mash hopper are: that it shall provide 3 to 4 linear inches per bird (for 100 birds, 3 four-foot feeders will suffice); that it stands 15” to 18” off the floor, so that birds may use the floor space beneath it; that it be provided with a tilt board or reel to keep birds from roosting on it; a lip to prevent wastage and space for one day’s feed.

The V shaped hopper is rapidly gaining favor because of
simplicity of construction and management. Since the square bottom hopper is preferred by some, it is also included.

![Diagram of Non-Wasting Mash Hopper with Reel](image)

**MASH-HOPPER**

**Figure 19.** Non-Wasting Mash Hopper with Reel.

**Waterers**—Enough waterers are important. A 5 gallon capacity should be provided per 100 birds. The fountain should be provided with protection so that birds can not roost on it; further means should be supplied to prevent freezing in winter. Fountains should also be placed so that the space under them can be utilized. Foun-
Figure 20. Drinking Fountain with lamp under it to prevent freezing and "Protector" over it to avoid contamination.

Figure 21. Insulated Water Pail and Container (Ohio Exp. Sta.).

There are a number of ways "protectors" (those devices which are placed over a fountain to prevent contamination) can be made. Fig. 6 and 20 give suggestions for their structure.

Heating devices to keep drinking water from freezing can also be made at home. In general, they either work on the principle of a thermos bottle or they have some sort of a heater. If constructing the latter, precautions must be made to avoid fire risks.

When employing the thermos bottle principle, see fig. 21, absolute air tight construction is necessary, in order to maintain the drinking water temperature. Also in constructing this fountain, care must be taken in soldering the metal collar in place. Rough edges may catch and tear a bird's wattles, sometimes causing serious bleeding.

If a heater is preferred to prevent freezing, the use of electricity is the safest. However since many poultrymen do not have electricity, a small lamp such as a brooder lamp or lantern may be used. In this case the box containing the heater should have an asbestos or metal lining for fire protection. Such a heater is illustrated in figure 20.

For years the Illinois University Experiment Station has successfully used a bucket arrangement provided with an electric
heating element. An inverted can is soldered to the bottom of the bucket and the portion of the bucket bottom covered by the can is cut out. A wooden base is then made which has a 2\" strip of tin tacked around the edge to hold the bucket in place. A 60-watt heating element is plugged into the receptacle which is fastened to the wooden base. The extension cord should be a heavy rubber covered type. See figure 22.

The stand for any type of fountain as stated above should allow the fountain to be at least 18\" off the floor. It is usually provided with a slat base. Sometimes an apron is placed under the stand to catch spilled water, thus avoiding wet spots on the floor. See fig. 23. Or the stand may be placed in the partition, servicing two units. See figure 24.
Where freezing is not a problem, some poultrymen construct a fountain which works on the vacuum principle. A 10-gallon milk can makes a very satisfactory waterer of this type. See fig. 25. A can which is no longer suitable for milk or cream but does not leak may be inverted over a pan which allows plenty of drinking space. A nail hole is punched in the throat of the can at the level at which the water is to stand in the pan.

This waterer can also be used on range.

When milk is provided for the drink, it should never be placed

![Diagram of water stand](image)

**Bill of Materials For Water Stand**

<table>
<thead>
<tr>
<th>Parts of water stand</th>
<th>No. of pieces</th>
<th>Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side</td>
<td>2</td>
<td>1 x 4</td>
<td>24”</td>
</tr>
<tr>
<td>Side</td>
<td>2</td>
<td>1 x 4</td>
<td>22 1/2”</td>
</tr>
<tr>
<td>Middle brace</td>
<td>2</td>
<td>1 x 4</td>
<td>22 1/2”</td>
</tr>
<tr>
<td>Bucket support</td>
<td>2</td>
<td>1 x 2</td>
<td>24”</td>
</tr>
<tr>
<td>Middle support</td>
<td>2</td>
<td>1 x 4</td>
<td>10 1/2”</td>
</tr>
<tr>
<td>Legs</td>
<td>4</td>
<td>2 x 4</td>
<td>18”</td>
</tr>
<tr>
<td>Top</td>
<td>6</td>
<td>laths</td>
<td>24”</td>
</tr>
<tr>
<td>Top</td>
<td>8</td>
<td>laths</td>
<td>6 1/4”</td>
</tr>
</tbody>
</table>

Lumber needed: one 1 x 4, 16 ft. long; one 2 x 4 6 ft. long; 5 plaster laths.

Nails: a few No. 6 and No. 8 box nails and a few shingle nails.
Pen Partition

(2 Quart.
Galvanized Pan

10"

10"

1"x4"

2.1/2"

2.0"

Floor

Figure 24.

in metal containers. It should either be put in crockery, glass or in unchipped enamel ware.

Nests — There are a number of nest types to choose from: the open wall nest; the "dark nest"; the "tunnel nest"; the "clean nest"; as well as the trap nest. While there are other nests, most of them embrace the same general principles.

Whichever nest is chosen, it should meet the following specifications. It should be easy to clean. One nest should be provided for 5 hens, (with the exception of the trap-nest which requires one for every 3 or 4 hens.) The nest should be roomy, yet not so large that several hens can fight in it. Allow 12" x 12" for Leghorns and 14" x 14" for heavier breeds. Provisions should be made to close the nests at night, so that hens will not roost in them. Some poultrymen prefer placing nests under the dropping board. But for sanitation and ease of management the wall nest is much more satisfactory.

With the "tunnel nest" there are no dividing partitions between nests. The hen makes her nest wherever she wishes.
Those using this type claim less egg breakage and cleaner eggs. The Massachusetts Extension Service has worked out a plan for this type nest which they call "clean nest," but since that name has been widely used in connection with another nest in this state, a better term might be "one-nest." There is one entrance to each 4' section. This is 8" x 8" and 6" from the floor to the nest. See fig. 29. The top is divided into 2 sections, one 16"; the other 14" which is hinged and folds back for egg collection. The super-structure is not nailed to the nest floor, but is fastened with hooks and eyes. This permits easy cleaning. Two sections are adequate
for 75 birds.

What is known as "clean nest" in Montana, is the nest with a sloping hardware cloth floor. The egg upon being laid rolls forward, cannot be broken or soiled, and egg cools quickly, thereby maintaining the quality. This type of nest cannot be installed for a flock of hens already used to a nest with nesting material. Pullets can be started on the "clean nests" easily.

Since practically no one in Montana is using trap nests, details
of the nest are omitted. A separate leaflet with the plan can be obtained from the Montana Extension Service.

**Catching Equipment**—While every farm should have a catch-flock of hens already used to a nest with nesting material. Pullets can be started on the “clean nests” easily.

Since practically no one in Montana is using trap nests, details of the catching hook or net, it would make handling of a large number of birds much easier if a catching panel were also made. The panel is a series of hinged frames covered with wire. In one section a small hinged door or burlap flap is inserted. The panel can be set up in any room. When not in use it can be folded-up and stored.

The catching hook is shown in fig. 33. Some prefer the catching net. It is made something like a butterfly net. The net part may be made of chicken wire fastened to a metal hoop which in turn is fastened to the handle.

**Figure 31. Catching Panel.**

**Figure 32. Details of Catching Panel.**
Heating Equipment—Plenty of poultrymen get satisfactory winter egg production without heat, if the house is properly ventilated. Yet there are always some who rely on artificial heat. There are three general types of heating systems for the laying house: (1) under-floor heat as in figure 34; (2) a heater with an outer jacket; (3) and a heater at the fresh air intake.

With type No. 1 both top and bottom of each barrel is removed and barrels are welded or cemented together. With No. 2 an oil barrel may serve as a jacket.

The barrel is set on feet 6' high, with screen extending from the barrel to the floor, to cut down fire hazard. A door is cut in the front to service the stove. With No. 3 the intake comes directly into the stove. Wire netting should be placed over the intake to keep out predatory animals.
With any system of heating, the room temperature should never go above 40°. Furthermore, the temperature must be constant. A fluctuating temperature throws birds into a molt.

**Electric Equipment**—This is a bulletin in itself. Therefore, the poultryman should procure the mimeographed circular, "Electric Lights in the Poultry House" from his County Agent.

**Disposal Equipment**—Some poultrymen prefer an incinerator. Too frequently waste material in the incinerator is allowed to accumulate. For this reason the disposal pit is more practical. A cross section of the pit developed by the New York State College is shown in Fig. 36. This pit prevents the spread of disease, as neither flies nor rodents can get to it. Being tightly covered it gives off no odor. It is a time saver, since it takes less time to drop a bird into the pit than it would to burn or bury.

Dig a hole 6' to 10' deep and 4' to 6' in diameter. Make the top of the hole a foot wider on all sides and extend this greater diameter 1' below the surface of the ground. This makes a ledge to support the cover. Use casing or other devices to prevent caving. In gravelly soil, it may be necessary to box in the upper part of the pit. Cover the pit with two layers of 2-inch plank, the top layer at right angles to the under layer. Over the center of the pit cut a hole, over which an 8-inch tile is placed, large end down. A fly tight cover fits over the top. The top is then covered with 12" to 18" of dirt. Provide proper drainage so that the bottom of the pit will not fill with water.

Dead birds can be dropped into the pit without the addition of lime or other material.

While the soil is excellent filter, caution should be taken so that drinking water supplies are not contaminated.

**Broody Coop**—Every farm should be provided with a broody coop so that setters may be isolated as soon as they start to cluck. If situated out of doors make sure the coop is provided with shade.
Egg Handling Equipment—The equipment made to make the handling of eggs easier and aid in preserving their quality is very important.

EGG BASKET is a must on any poultry plant. There are many made commercially but that shown in fig. 38 is home made.

EGG CLEANER—Since eggs must not be washed, the device shown in fig. 39 will aid in cleaning simple dirt spots before eggs are cooled.

EGG COOLERS — Eggs must be cooled to 50°F as quickly as possible. At the same time the humidity must remain high to prevent evaporation. Without an
Egg cellars, a humidor, as shown in figures 40 and 41, can be built. With this type of cooler, the burlap should be attached so that it may easily be removed, since the burlap will have to be washed and disinfected frequently.

Those having electricity may add a fan at the vent of the cooler.

Also a very efficient cooler may be made by making a box with one end open. A fan is placed in this end. Wet blotters are hung for the air to pass over or wet sand is placed in the bottom of the box, so that the moving air may become moisturized. Holes the size of the bottom of the egg bucket are cut in the top of the box. The bottoms from buckets are cut out and replaced by hardware cloth. The moist air is forced up through the eggs, cooling them faster than in still air. The faster eggs are cooled the better they retain their quality.

**EGG ROOMS**—If any number of eggs are handled, a regular egg room should be constructed. Experiments show the best egg rooms are those which are built entirely under ground. The egg room should be large enough to contain the egg cooler; place for storage of cartons, cases, flats and fillers; and candleing equipment which includes a candleing bench, candler and egg scales. If possible the egg room should be supplied with running water and electricity.

**AN EGG CANDLER** is a device which supplies a concentrated source of light. Before it an egg is rotated so that the operator may ascertain the interior quality of the egg. There are many good canders on the market, however, a satisfactory one may be made from a 2-pound coffee can. See figure 44. Where no electricity is available a gas lamp or lantern may be used as the source of light. Fig. 45 shows how a candler may be made from two coffee cans. The
extra can at the front is needed to keep eggs from the source of heat while being candled.

CANDLING BENCH—If the operator is handling only his own eggs and they are practically all one grade, the bench need not be as long as the one shown in figure 46. But by building the bench according to these dimensions, the job of candling can be greatly simplified.

In building a bench special note should be made of the height of the candler. The source of light should be about elbow height.
**Killing Equipment**—While the majority of the Montana birds, both chickens and turkeys, are now plant dressed, there is enough interest in home dressing to warrant a section to the equipment which may be made at home for the operation. To dry pick or slack scald, the operator needs shackles or a rope to hang-up the bird for killing, a killing knife, a blood cup, an accurate thermometer, and a vat or barrel for scalding.

**Figure 47. Sticking Knife.**

**Killing Knife**—A knife may be made at home, but it is money well spent to buy one, since the blade must be very stout and take an edge. For turkeys the blade should be ¼” wide and 3” long. For chickens the blade is 2” to 2½” long.

**Blood Cup**—The main requirements for a good blood cup are: that it shall have a sharp hook to be inserted in the bird’s lower jaw and carry sufficient weight to hold the bird’s head down while the blood is draining from the body. Any can with rocks added for weight and a sturdy wire attached will serve.

**Picking Line**—At the request of state poultrymen the following plans for a picking line was worked out to facilitate home picking.

**Figure 48. Blood Cup.**

**Figure 49. Detail Cross-Section of Track.**
One man stands at the head of the line and kills each bird hangs on the blood cup, removes the tail and main wing feathers, then rolls the bird to the first picker. The picker continues to pick on this bird until the next bird comes along from the killer. The birds are removed from the line and carried back to the rear of the room for final pinning and cooling. As the bird is removed from the track, the unoccupied pulley wheel is taken up to the head of the track. It is wise to make a few extra wheels.

Note the groove in the track. This is provided so that the
pulley wheel may drop into the groove and not roll while the bird struggles when killed.

The same line could be put to us following slack scalding.

Concerning equipment for the slack scald, any vat or tub will suffice providing the water volume is sufficient to reasonably hold the temperature.

PART IV—TURKEY EQUIPMENT

In general chicken brooding and rearing equipment can be adapted to turkey raising. The main thing to remember is: that turkeys require twice as much space as chicks in the brooder and about three times the amount on the range.

Since commercial turkey raising is on the increase in Montana, a portable device for feeding large numbers of turkeys is included. The piece of equipment shown in fig. 52 is planned for 1,000 birds on the range.

Figure 52. Range Feeders and Waterers for 1,000 Turkeys.

For more detailed information concerning turkey management, the bulletin “Turkeys in Montana” should be consulted.