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BOYS' AND GIRLS' INDUSTRIAL CLUBS.

MANUAL ARTS.

Project Circular.
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OREGON AGRICULTURAL COLLEGE

EXTENSION SERVICE.

RALPH D. HETZEL, Director.

MANUAL ARTS: CONSTRUCTION.

by

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The following list of projects has been prepared to assist pupils in the Industrial Club work. Although some previous experience in the use of tools is desirable, it is believed that these projects may be made by the average boy who has available for use a few of the simpler woodworking tools. If the tools are not available and knowledge of what to buy is desired, College Bulletin No. 110, which may be had for the asking, should be secured. It is a four page folder dealing with tools, the proper tools to buy, the kinds of woods in common use, stains, fillers, and polishes.

No attempt is made in these pages to describe the tool operations necessary in constructing these pieces, that being impossible in this limited space. Any boy desiring simple and accurate information on the proper use of wood working tools should purchase some good book upon the subject. Among others might be mentioned "Essentials of Woodworking" by Ira S. Griffith. It may be obtained from the Manual Arts Press, Peoria, Illinois, price \$1.25. Other books will be recommended upon application.

In the description accompanying each drawing, it has seemed best to specify the sizes and kinds of materials used. Where these materials are not available, other suitable stock may be substituted.

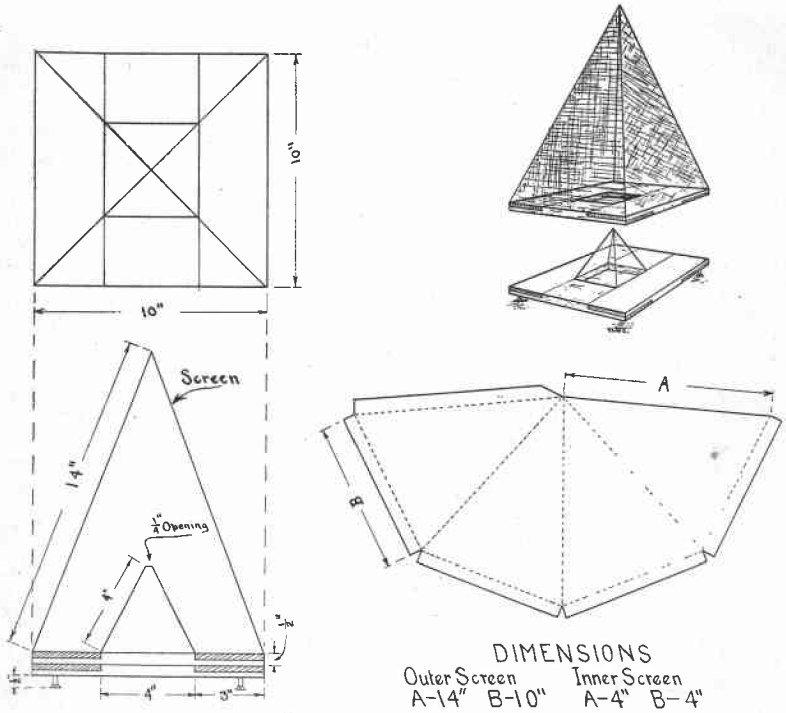
Individual help and suggestions may be secured by applying to the Department of Industrial Arts, Oregon Agricultural College.

At this time when so much attention is being given to the elimination of the house fly, the fly trap will prove to be a useful article.

The trap illustrated is of the same type as those recommended by the department of Entomology of the Oregon Agricultural College, and described in College Bulletin No. 126. As shown in the sketch, it consists of two light wooden frames (see upper left sketch), each carrying a wire screen pyramid. Each frame is made of four pieces joined with half-lap joints at the corners. Cut the screen according to the pattern (see lower right sketch) folding along the dotted lines. The lap

on the last segment should be sewed to the edge of the first with a strand of wire.

The lower frame is raised about one-half inch above table or other support, small screws being used as legs. A small



An Effective Home Made Fly Trap.

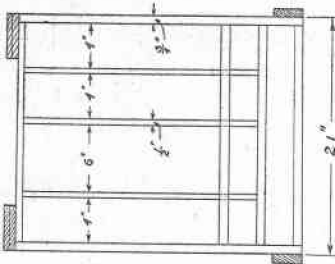
piece of bait should be placed beneath the lower screen to attract the flies. In leaving the bait, the fly rises into the lower screen and passes through the small opening at the top into the trap. The trap will be more effective if attractive substances other the bait are made inaccessible to the flies.

These drawings show the construction of a feed hopper as used by the department of Poultry Husbandry of the Oregon Agricultural College. It consists of a box divided into four compartments and covered with a lid. The bottom of the box stands at such an angle that the grain runs to the lower end, automatically replenishing the feeding boxes.

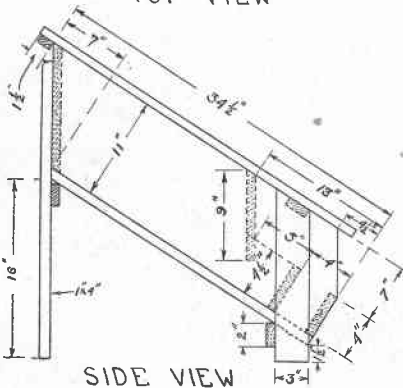
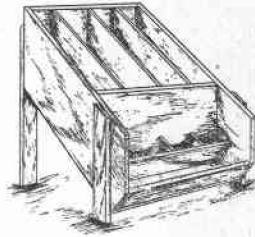
The cover may be made of tongue and groove material, well painted, or it may be made of eight inch boards with battens placed over the cracks. The cover may be secured by the use of a hook and screw eye placed at the upper end. The perspective (upper right), top, and end views, show the hopper with the cover removed. The side view shows the cover in place. The cover should be large enough to project one and one-half inches on all sides.

To lay out the side boards, first place two square lines, $3\frac{1}{2}$ inches apart, across the board that is to be used. From the end of one of these lines measure back along the edge seven inches. With a pencil line, connect this point with the end of the squared line on the

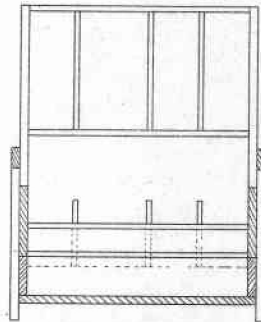
opposite edge of the board. This gives the cut for the upper end of the side board. The cut for the lower end is found in a similar manner, using the numbers shown in the drawing.



TOP VIEW



SIDE VIEW



END VIEW

Feed Hopper for Poultry.

The hopper should be built of three-fourths inch material surfaced on two sides. The partitions separating the compartments may be of one-half inch stuff. All joints should fit accurately, to exclude rain and to avoid leakage of grain.

BILL OF LUMBER FOR FEED HOPPER.

Pieces	Thickness	Width	Length	Part
2	1	11	34 1/2	sides
1	1	14	19 1/2	upper end
1	1	9	19 1/2	cross partition
1	1	4 1/2	19 1/2	cross partition
1	1	4	19 1/2	lower end
2	1	3	17	front legs
2	1	4	28	back legs
2	1	2	22 1/2	leg cleats
3	1	8	37 1/2	lid
1	1	1 1/2	24	cover cleat
1	1	2	21	cover cleat
3	1/2	11	28 1/2	partitions

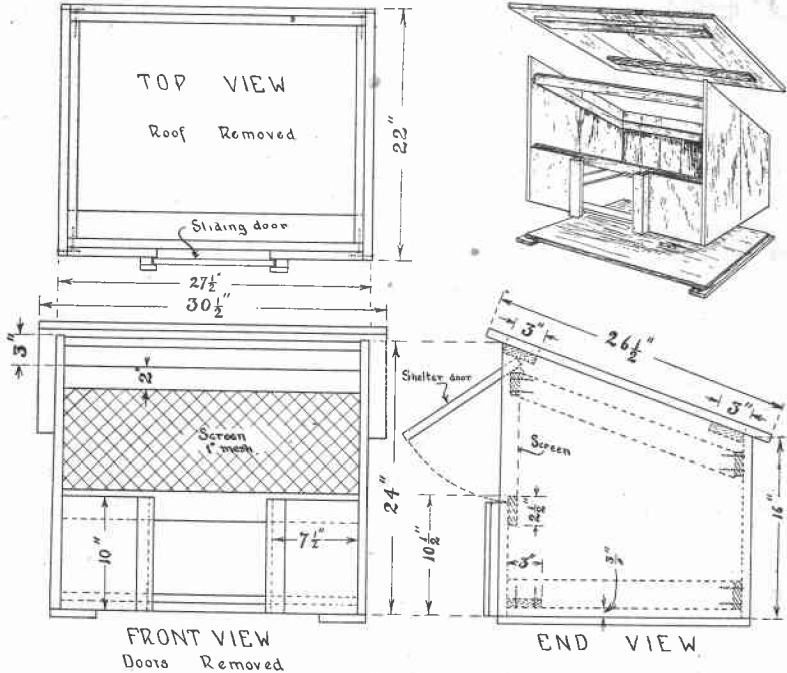
Twenty-four feet of one by twelve, surfaced on two sides, and eight feet of one-half by twelve, surfaced on two sides, will be required for the construction of this feed hopper.

The Brood Coop illustrated here is one recommended by Professor James Dryden of the Oregon Agricultural College. College Bulletin No. 82 descriptive of this coop will be sent upon request.

Thirty-five feet of one by twelve inch stock, surfaced on two sides, will be required for the construction of the coop. The

top may be made of one by eight or one by ten inch material, with battens over the cracks, or it may be made of tongue and groove flooring.

The shelter door is made of a piece of 1 by 12-inch material. It should be cleated on the outside with thin pieces to prevent its being split. This door is so arranged that it may be left in the position shown in the end view; it may be low-



Brood Coop for Hen and Chickens.

ered to close completely the screened opening; or it may be raised and pushed back beneath the cover. Upon the upper edge of this door are two iron hooks, so placed that when the door is lowered over the front opening they will drop over the upper front cross piece, holding the door in place. The lower front opening is closed with a sliding door. The bottom is detachable and is made to fit within the sides, the sides resting upon the projecting bottom cleats.

In putting the walls of the coop together, it will probably be advisable to cleat the ends first, taking care to make these cleats of the proper length. Next, connect the ends of the coop by nailing the front and back cross pieces in place, as indicated in the drawings. The back boards and screen may then be placed. As a protection against the weather, the coop should be painted.