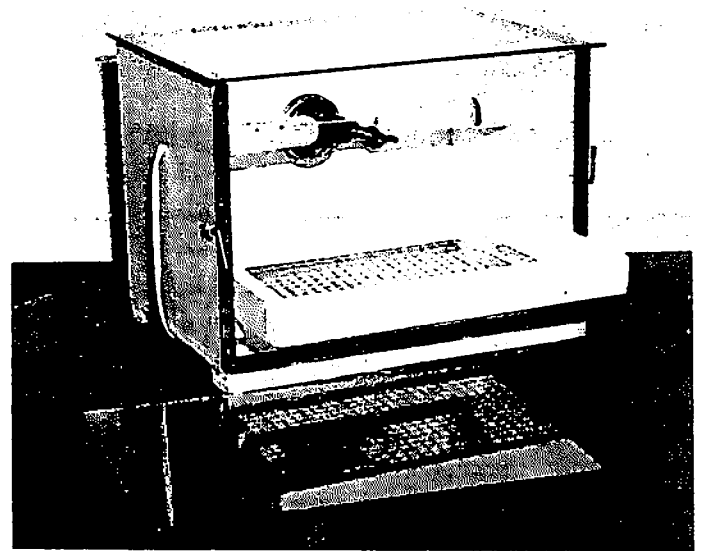




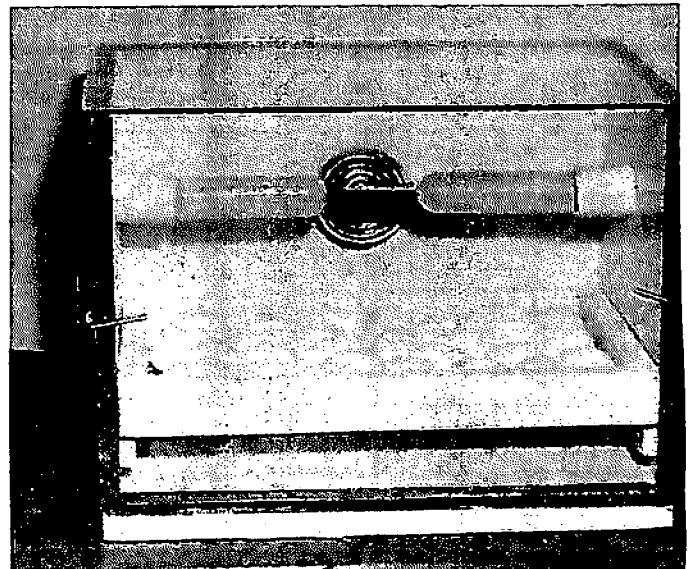
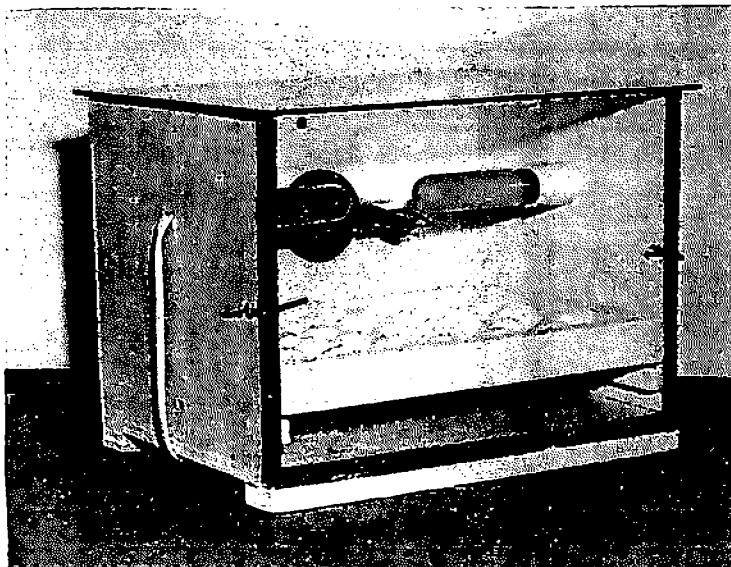
CONSTRUCTION OF A SMALL DISPLAY INCUBATOR

A small incubator suitable for science projects and displays can be constructed at a nominal cost from easy-to-obtain materials. In this unit the basic design for a small still-air incubator (approximate cost \$10.00) is illustrated. For approximately an additional \$5.00 this incubator can be equipped with a commercial incubator kit (includes wafer snap-action switch heating element). The capacity of this incubator is approximately two dozen chicken eggs, a sufficient number for most projects.

For those who would rather buy than build an incubator, a list of companies manufacturing incubator supplies and prefabricated incubators is listed on the last page of this unit.



Three views of small incubator with glass front.



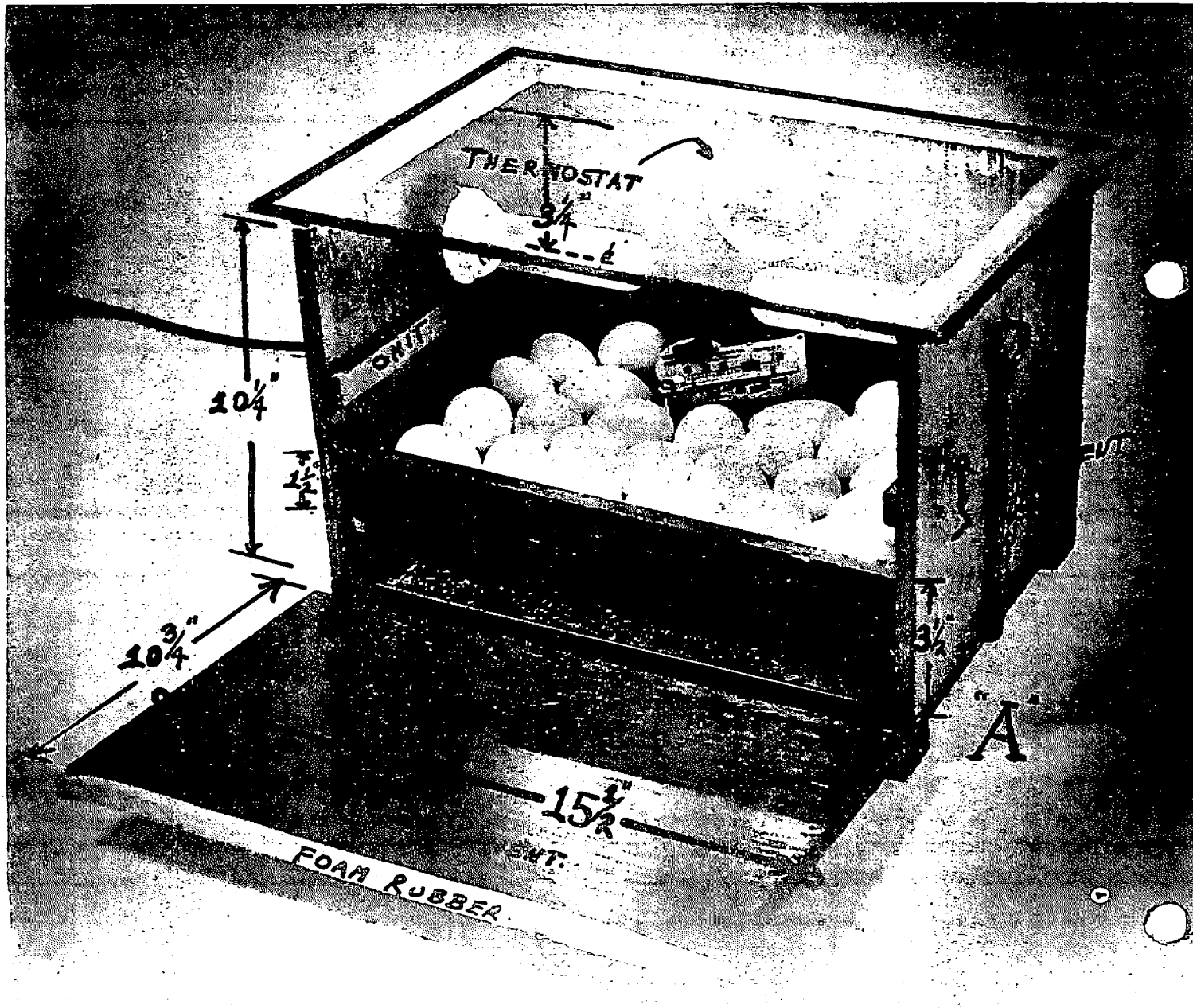
Building the Incubator

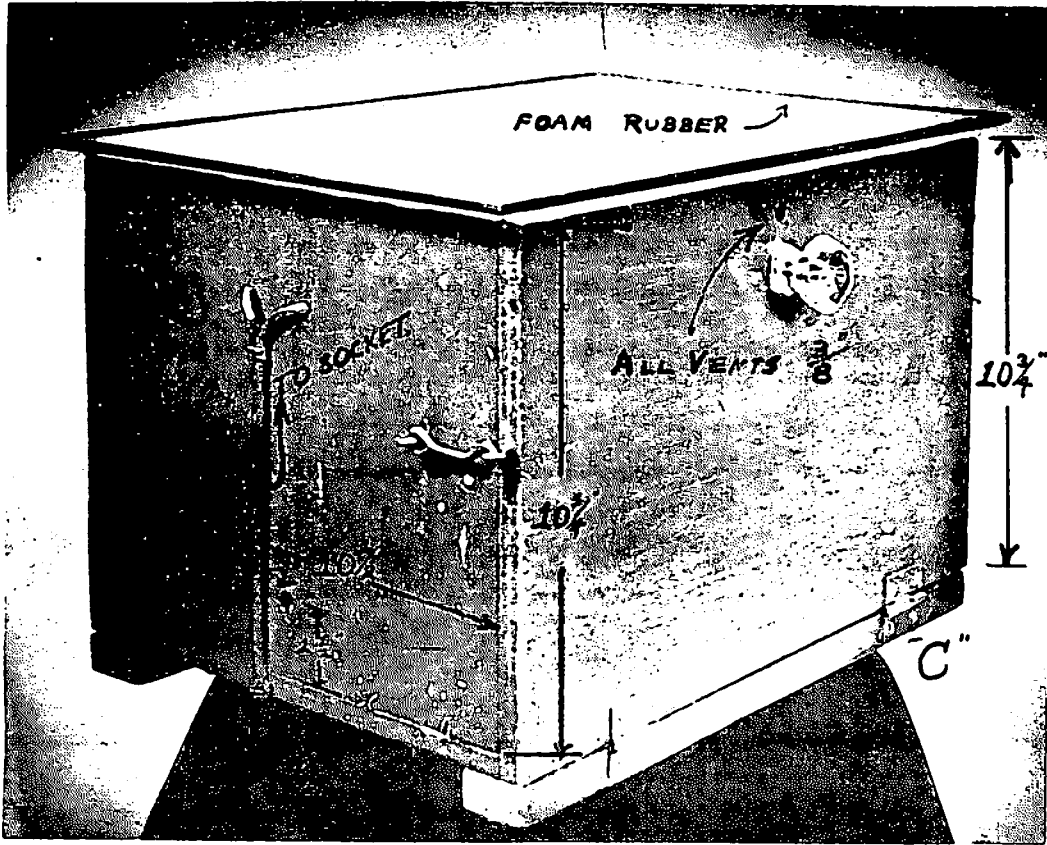
The illustrations show photo drawings of a simple still-air incubator. Credit for the basic design of this incubator goes to George D. Quigely, Poultry Department, University of Maryland. Constructing this incubator essentially consists of building a box and supplying it with provisions for controlled heat, an adequate moisture supply and a small amount of ventilation. Care should

be taken when constructing this incubator, thus assuring a tight box which will aid in proper temperature and moisture regulation.

After completing your incubator, check it using instructions in Unit 3, "Incubation of Chicken Eggs," to see if it will function properly. Particularly check the temperature and the humidity.

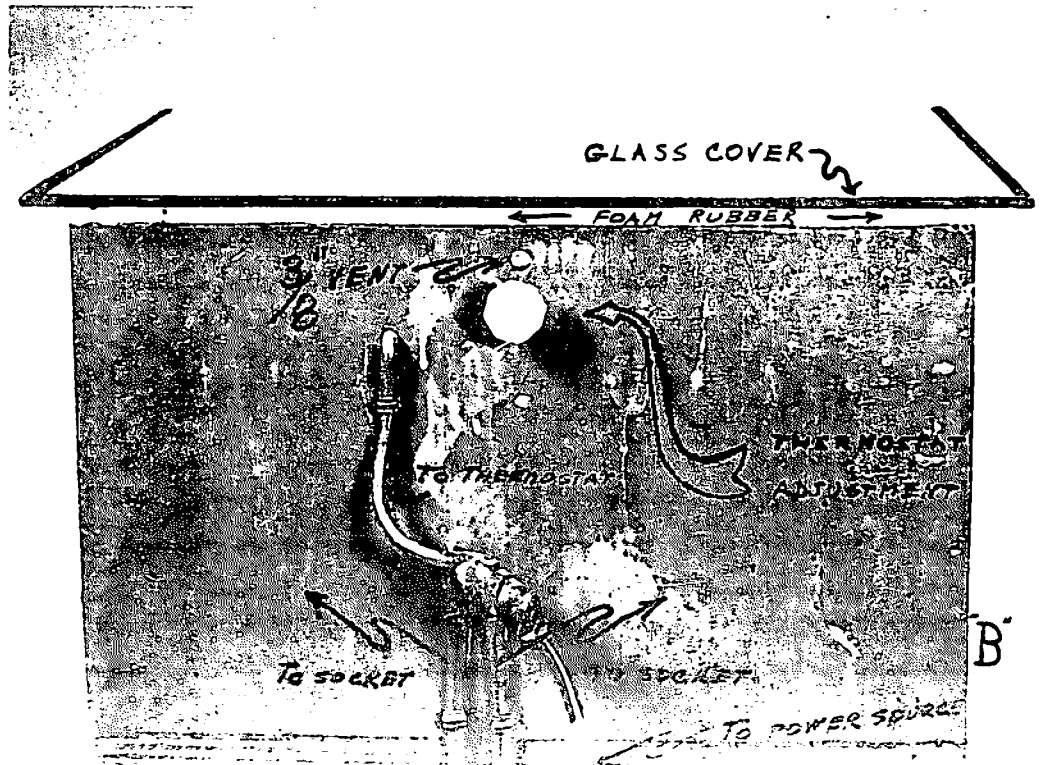
Front and right end of incubator.





Front and left end. All 4 vents are $\frac{3}{8}$ " diameter.

Rear view showing thermostat adjusting screw.



Construction Details And Materials



Waterproof plywood ($\frac{1}{2}$ "

(Due to the high temperature and humidity in the incubator, a high grade moisture-resistant plywood is recommended.)

- 1 bottom $10\frac{1}{2}$ " x $15\frac{1}{2}$ "
- 1 front $10\frac{3}{4}$ " x $15\frac{1}{2}$ "*
- 1 back $10\frac{1}{2}$ " x $15\frac{1}{2}$ "
- 2 ends $10\frac{1}{2}$ " x $10\frac{1}{2}$ "

Board ($\frac{3}{4}$ " x $1\frac{1}{2}$ "

(Eight running feet for sides of egg tray. The bottom of the egg tray should be of $\frac{1}{4}$ " hardware cloth.)

- 2 sides for tray $1\frac{1}{2}$ " x $14\frac{1}{2}$ "
- 2 ends $1\frac{1}{2}$ " x $8\frac{3}{4}$ "
- 2 runners $\frac{1}{2}$ " x $10\frac{1}{2}$ "
- 2 cleats $\frac{1}{2}$ " x $10\frac{1}{2}$ "
- 2 base cleats $1\frac{1}{2}$ " x $15\frac{1}{2}$ "

Electrical heat control

(All contacts are to be covered for safety. The base receptacles are wired in parallel, not series, so each light will burn independently. The wafer thermostat is located above the egg tray in the back of the incubator.)

- 1 temperature regulator (includes wafer and thermostat with electric snap-action switch)
- 2 porcelain bulbs
- Receptacles with concealed terminals
- 2 40-watt long, narrow bulbs
- 10 feet of 2-wire replacement cord with plug

Glass

(Double pane glass is recommended to reduce heat loss and prevent fogging for better observation.)

- 1 double pane 12" x 16"
- 1 double pane $10\frac{3}{4}$ " x $15\frac{1}{2}$ "*

Thermometer (Stand-up type)

- 2 incubator type

Miscellaneous

- 2 butt hinges $1\frac{1}{2}$ " x 2"
- 2 door hooks
- 1 cookie sheet 10" x 14"
- 1 wooden knob
- 54 inches of $\frac{1}{2}$ " x $\frac{1}{2}$ " foam rubber
- Nails, brads, glue, etc.

*Depending on whether wood or glass front is desired.

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File Code: 4-H and Youth 2

5-74--1M; 8-76--1M; 8-79--2M

Companies Manufacturing Incubator Supplies

Brower Manufacturing Company
Quincy, Illinois

Incubator thermometers, wafers and electric snap-action switches, small incubators.

Lyon Rural Electric Company, Box 30
2075 Moore Street, San Diego 12,
California

Wafers and electric snap-action switches, midget incubator kit, incubator thermometers, small incubators.

National Agricultural Supply Company
Fort Atkinson, Wisconsin
Small incubators.

Sears and Roebuck and Company
Farm Equipment Catalogue
Incubator thermometers, wafers and electric snap-action switch, small incubators.

Montgomery Wards
Farm Equipment Catalogue
Same as Sears.