June 14, 1955 O. H. THOMAS ET AL 2,710,592

CHICKEN BROODERS

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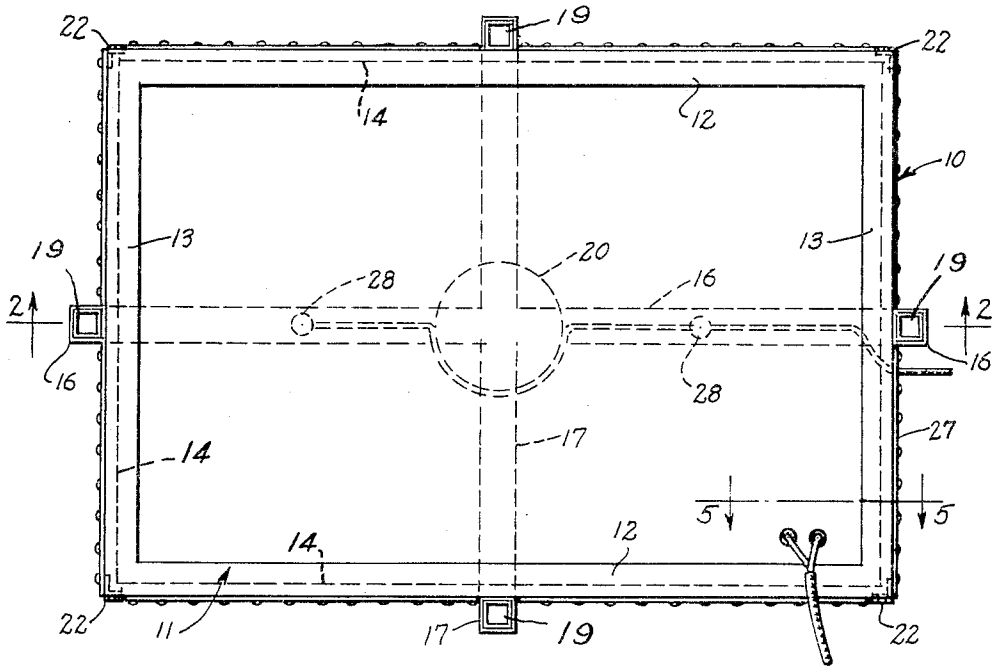


Fig. 1

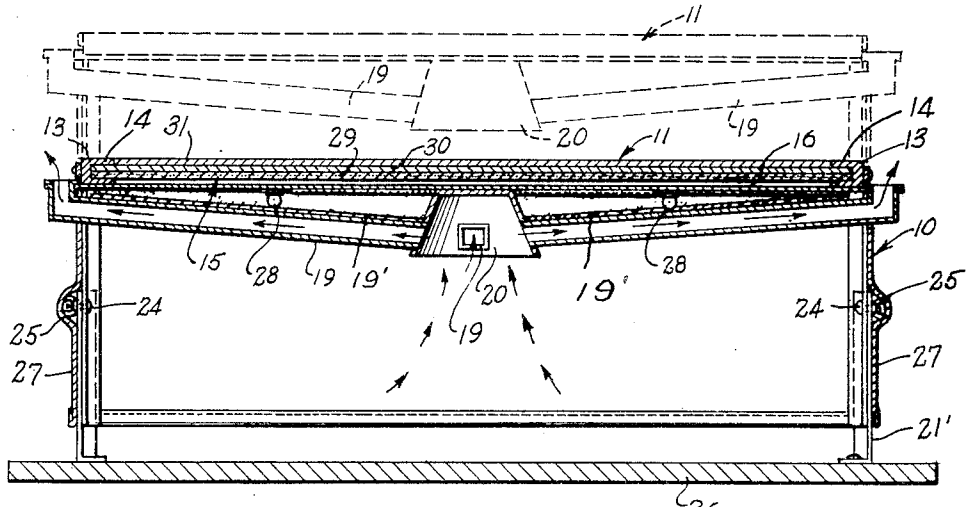
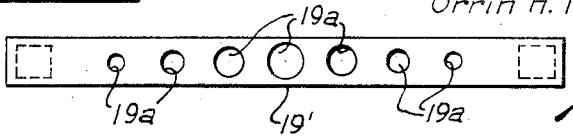


Fig. 2

Fig. 7



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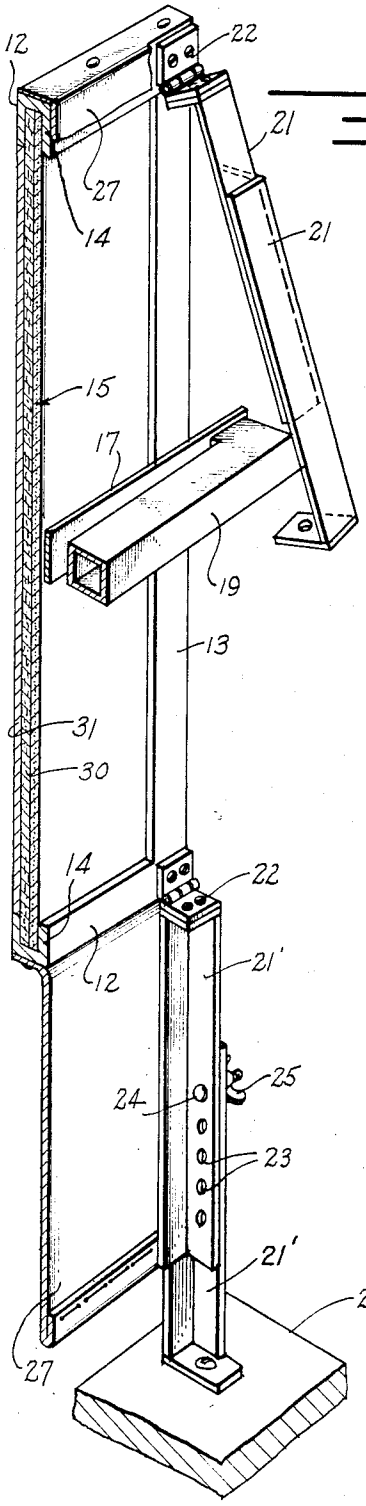


Fig. 4

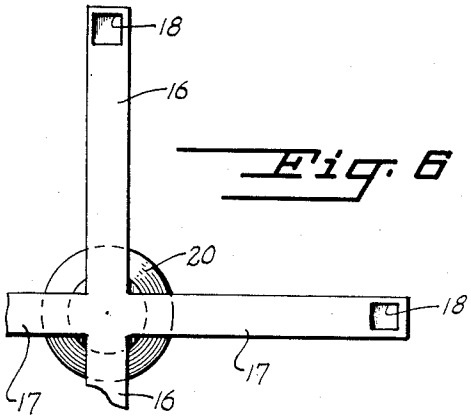


Fig. 6

Fig. 7

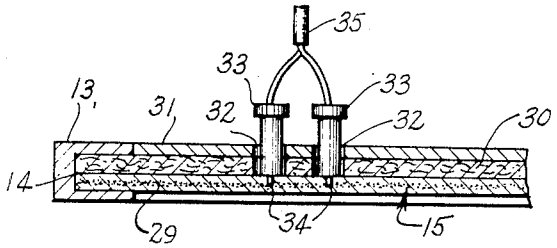


Fig. 5

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CHICKEN BROODERS

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3 Claims. (Cl. 119—33)

This invention relates to a chicken brooder and more particularly to a heating means incorporated therein and it consists in the constructions, arrangements and combinations herein described and claimed.

It is the cardinal object of the invention to provide a brooder wherein an even temperature may be maintained throughout the entire area of the brooder thus eliminating crowding of chicks in order to acquire the necessary heat.

More specifically, it is an object of the invention to provide a brooder wherein a heating element is embodied in an upper or roof portion of the brooder housing, the housing having a circumscribing depending curtain for maintaining the heat within the housing, the brooder further including a medially positioned canopy and associated ducts for withdrawing foul air and creating ventilation in the brooder.

It is a further important object of the invention to provide a brooder which is vertically adjustable so as to accommodate growing chicks.

It is a still further object of the invention to provide a brooder which is hingedly connected to the floor or wall of a poultry house, permitting movement of the brooder unit in a vertical position, thus facilitating cleaning of the floor.

Additional objects, advantages and features of invention will be apparent from the following description, considered in conjunction with the accompanying drawings, wherein,

Figure 1 is a top plan view of the brooder,

Figure 2 is a longitudinal sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a fragmentary sectional view of the brooder illustrating the raised position of the brooder,

Figure 4 is an enlarged fragmentary perspective view illustrating the relation of the parts of the brooder when in raised position and also illustrating the adjusting means for the supporting legs of the brooder.

Figure 5 is an enlarged fragmentary sectional view through the heating element, taken on the line 5—5 of Figure 1, and

Figure 6 is a fragmentary top plan view of the support for the ventilating ducts and canopy.

Figure 7 is a plan view of a modified form of the ventilating duct.

Referring to Figures 1 and 2 of the drawings there is illustrated a brooder 10 of substantially rectangular form which, however, is not arbitrary, since the brooder may be constructed in various dimensions.

The brooder 10 comprises an upper or roof portion 11 comprising side frame members 12 and end frame members 13, suitably connected together at abutting ends. The side and end frames 12 and 13 are formed with a channel 14, within which there is seated a heating element 15 which is of panel formation, of such dimensions as to snugly fit within the channels 14.

A metallic strap 16 is suitably secured to the underside portions of the end frame members 13 and includes a

similar strap 17 connected between the side frame members 12, these straps being extended at right angles to each other and disposed beneath the medial axis of the heating element 15. The straps 16 and 17 are of a length so as to extend beyond the outer boundaries of the brooder and each end is provided with an opening 18 (see Figure 6) for reception of a respective ventilating duct 19, the inner ends of these ducts being suitably connected to a canopy 20 positioned medially of the brooder and fixed to the straps 16 and 17. The upper portion of the ducts 19 may be insulated as at 19' so that heat from the heating unit 15 will not be directed upon the ducts.

The upper or roof portion 11 of the brooder is supported by vertically adjustable legs 21 and 21', a leg being hingedly connected at respective corners thereof as indicated at 22. In the present instance, the legs 21 and 21' are constructed from a pair of angle irons of suitable lengths arranged in nested relation, each angle iron being formed with a series of vertically spaced apertures 23, a pair of which when aligned receives a bolt 24 secured by means of a wing nut 25. The legs 21' will be considered as the rear legs and these will be secured to the floor 26 of the poultry house, for stability.

A curtain 27 is secured to the outer faces of the frame members 12 and 13, circumscribing the brooder and terminating a suitable distance above the floor 26 to permit the passage of chicks beneath the brooder, and in order to encourage such entrance of the chicks, attraction lights 28 are suitably supported by the strap 16, although additional lights may be likewise mounted on the strap 17, if desired, these lights being illuminated constantly.

The heating element 15 is the product commercially known as "Uskon" and consists of a binder in which a multiplicity of metallic particles are embedded interiorly thereof, indicated at 29, these particles being electrically connected with each other. As best seen in Figures 4 and 5, the heating element 15 is disposed within the channel 14 of the frame members 12 and 13 and upon this element a sheet of asbestos 30 is laid, the edges of which are encased by the channels 14, and finally an insulating panel 31 is secured in the channels 14, this panel being flush with the upper face of the channels 14 as clearly shown in Figure 5. By having this surface flush with the frame members, it may be readily cleaned of foreign matter.

Sockets 32 are formed through the asbestos 30 and insulating panel 31 for reception of plugs 33 each of which has a contact 34 in circuit with the particles 29, electrical current being supplied by means of a conductor 35 associated with a suitable source of current. As is customary, in order to maintain a desired degree of heat, the conductor 35 will include a suitable adjustable thermostat.

In use, when electrical current is supplied to the particles 29, the unit 15 will become uniformly heated throughout its area, resulting in a uniform and even temperature within the brooder, air entering beneath the curtain 27 passing upwardly into the canopy 20 and outwardly through the ducts 19 discharging exteriorly of the brooder.

As the chicks grow in height, the curtain can be raised from the floor by adjustment of the legs 21 and 21', as indicated in dotted lines in Figure 1.

In commercial plants a battery of brooders are required which are usually arranged in rows, and when it becomes necessary to clean and disinfect the floors, it has been required to move the brooders which is a laborious task, as well as time consuming. However, in this construction, the upper or roof portion 11 may be swung to a vertical position, as shown in Figures 3 and 4, by virtue of the hinges 22, the leg 21 swinging downwardly so

as to not project any material distance from the brooder. Thus the floor surface is fully exposed for cleaning purposes.

In Figure 7, a modified form of ventilating duct **19** is shown, in which a plurality of openings **19***a* are formed, of progressively decreasing diameter from the canopy toward the ends thereof.

While we have shown and described a preferred form of the brooder, this is by way of illustration only, and we consider as our own all such modifications in construction as fairly fall within the scope of the appended claims.

We claim:

1. A chicken brooder comprising an open frame, an electrically heated panel mounted in the open frame and closing the same, vertically adjustable legs for the frame, said legs being hingedly connected thereto permitting movement of the frame from a horizontal to a vertical position with respect to a supporting surface, a canopy mounted medially beneath said electrically heated panel, said canopy having ducts extended exterior of said frame, and a curtain circumscribing the outer boundary of said frame.

2. A chicken brooder comprising an open frame, an electrically heated panel mounted in the open frame and closing the same, vertically adjustable legs for the frame, said legs being hingedly connected thereto permitting movement of the frame from a horizontal to a vertical position with respect to a supporting surface, crossed strap members beneath said heated panel and secured to said frame, said strap members extending beyond said frame member, each strap having an opening formed in the outer ends thereof, a canopy mounted on said straps medially of said heated panel, said canopy having ducts extended into and secured in the openings of said straps, and a curtain circumscribing the outer boundary of said frame.

3. The structure of claim 2, in which said ducts are formed with openings of decreasing diameter from the canopy toward the ends thereof.

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