G. H. LEE.

BROODER.

APPLICATION FILED APR. 14, 1908.

918,174.

Patented Apr. 13, 1909.

2 SHEETS—SHEET 1.

Fig. 1

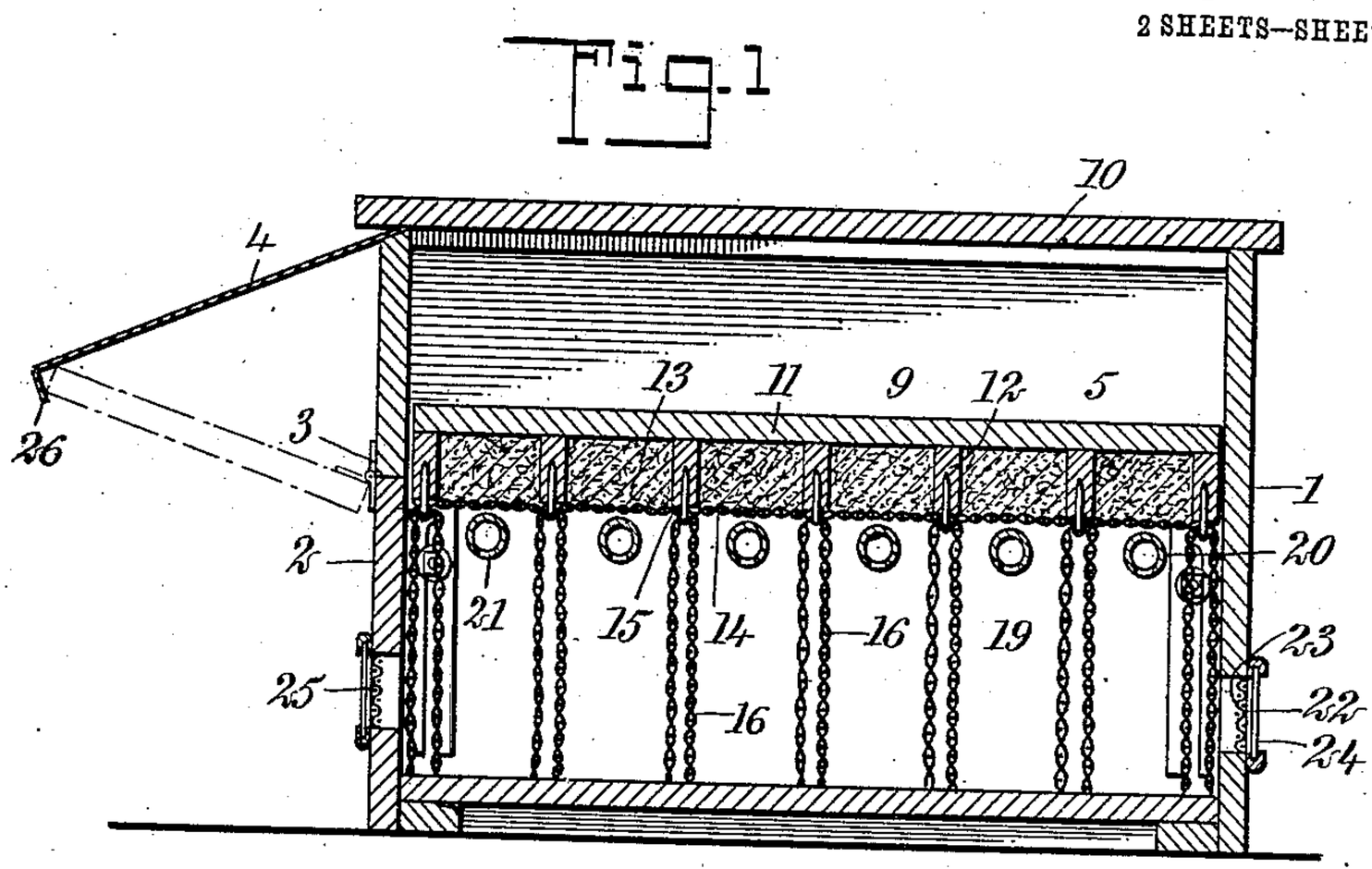


Fig. 2

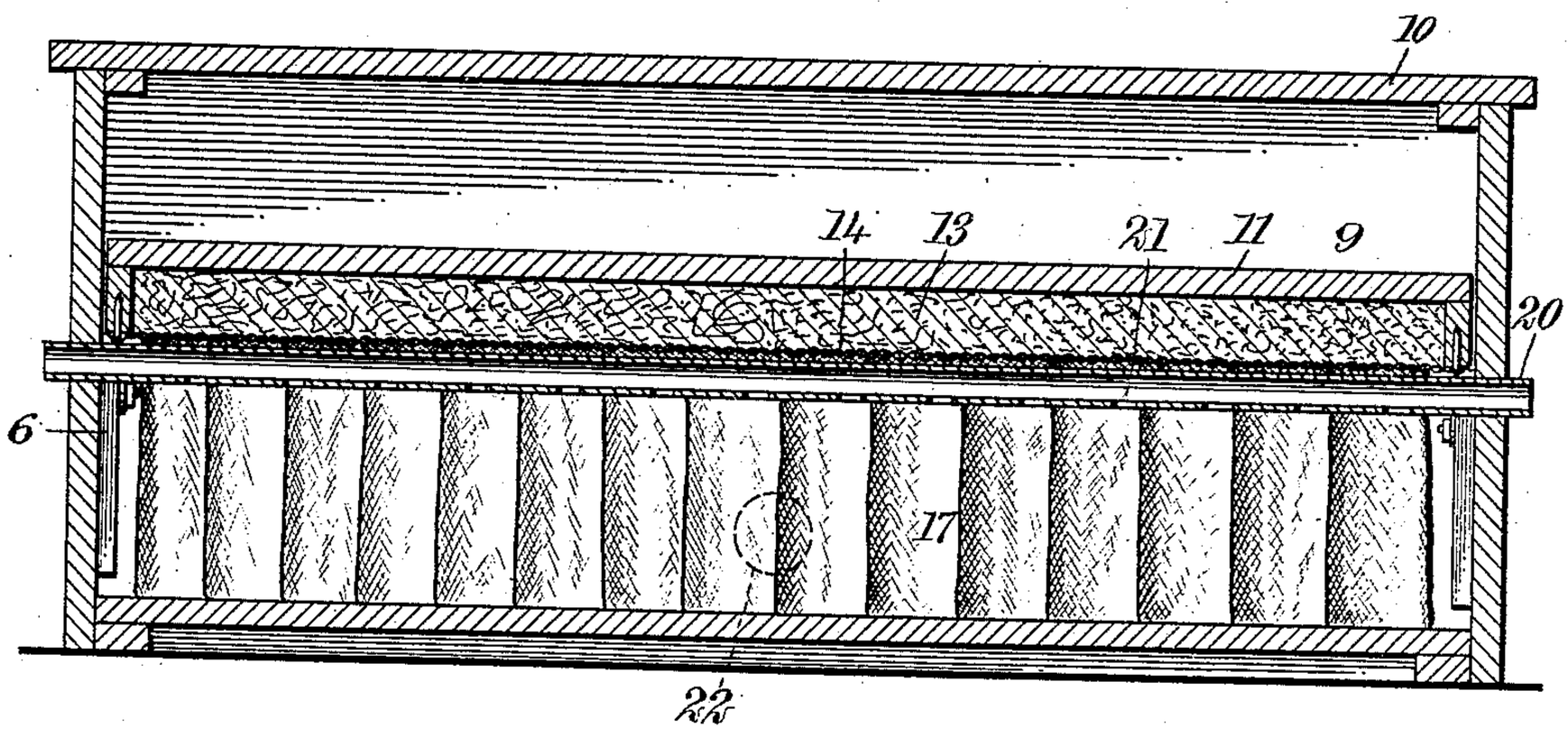
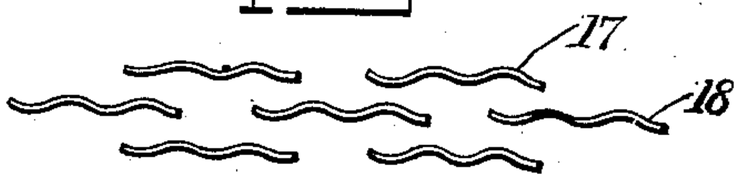


Fig. 7



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2 SHEETS—SHEET 2.

Fig. 4

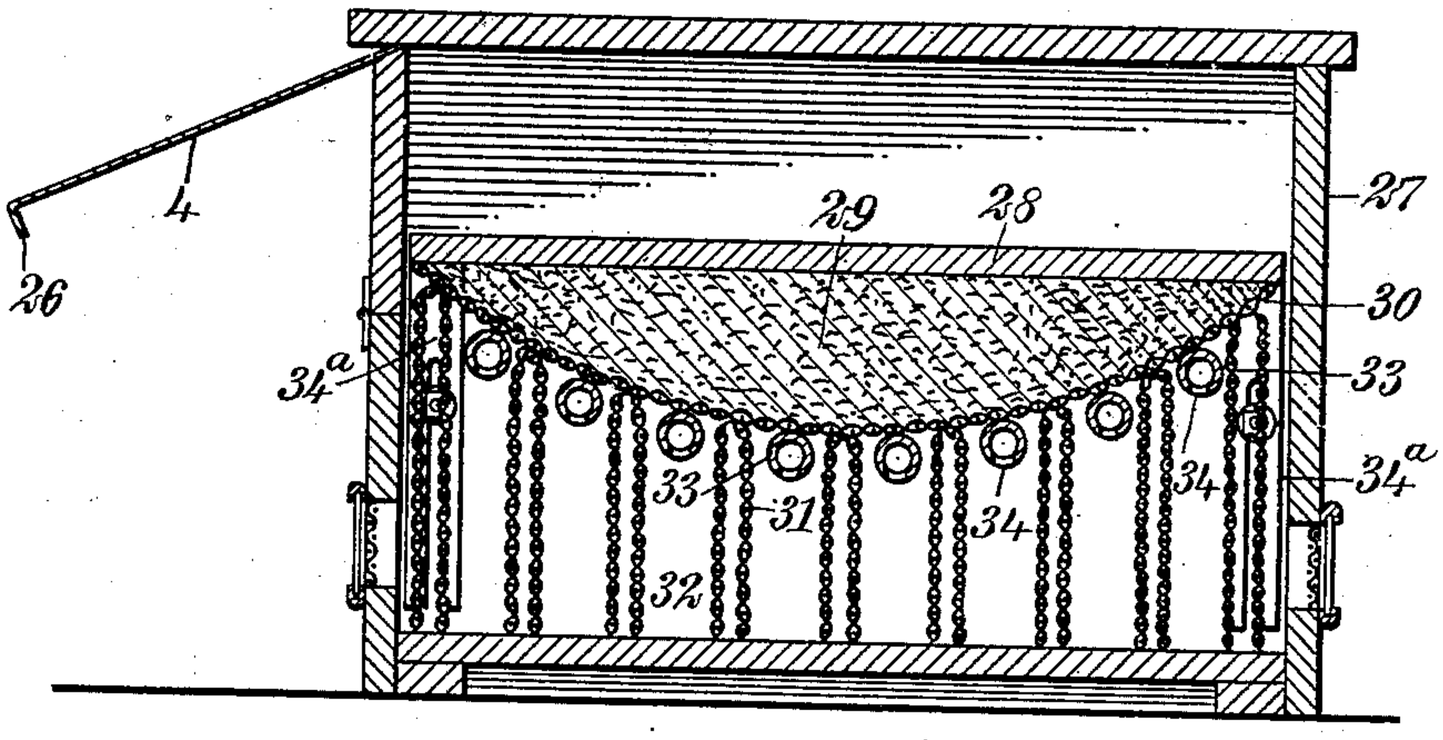


Fig. 5

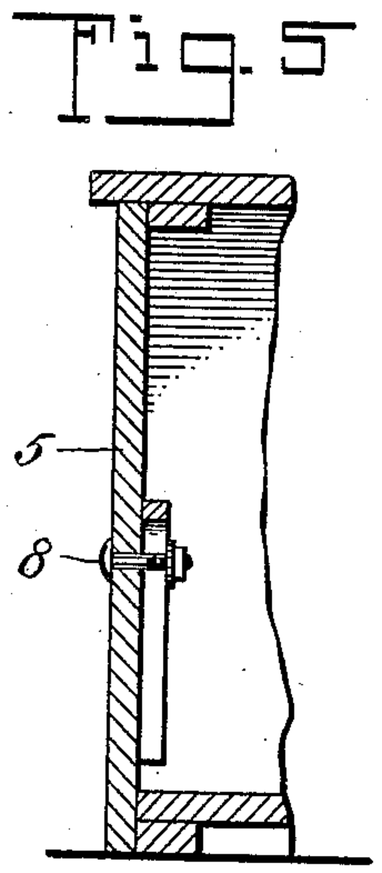
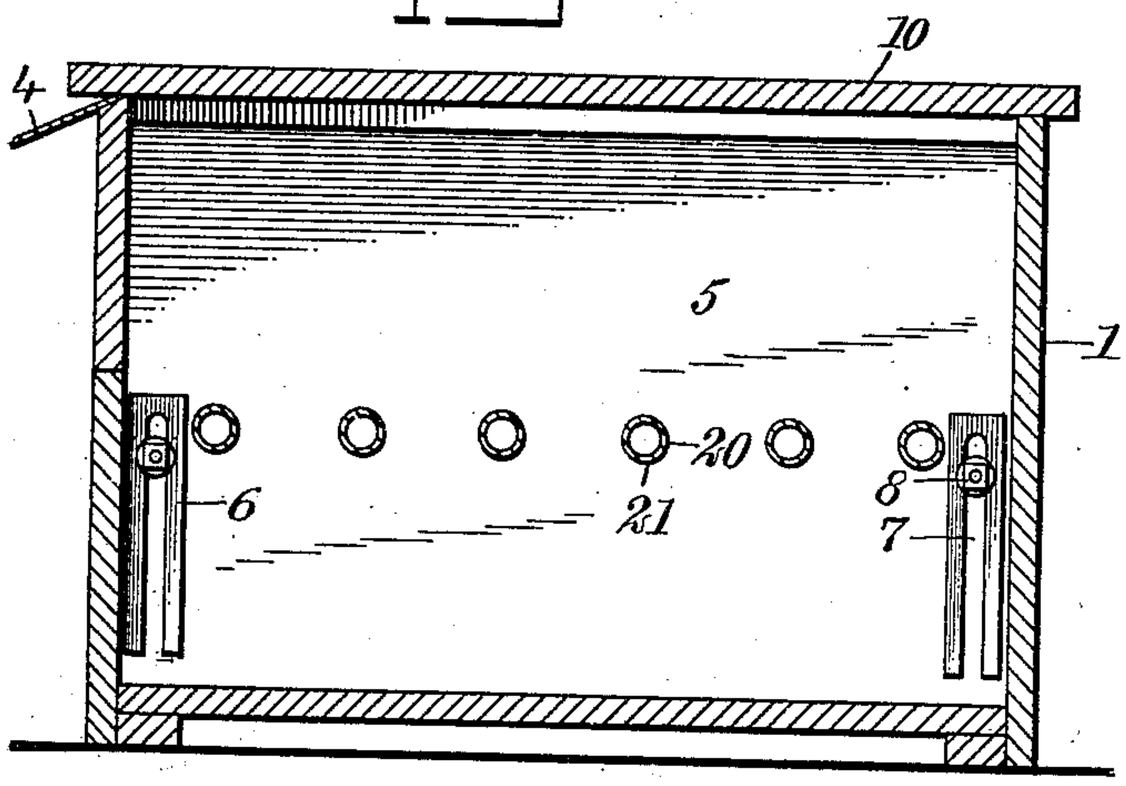
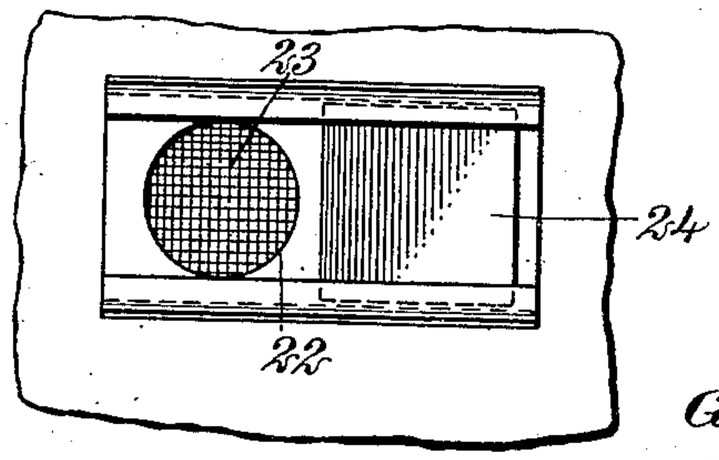


Fig. 6





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BROODER.

No. 918,174. Specification of Letters Patent. Patented April 13, 1909.

Application filed April 14, 1908. Serial No. 426,925.

To all whom it may concern:

Be it known that I, GEORGE H. LEE, a citizen of the United States, and a resident of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Brooder, of which the following is a full, clear, and exact description.

This invention relates to brooders such as used in rearing chicks.

The object of the invention is to produce a brooder which will not require other heat than that developed by the bodies of the chicks within the brooder.

More specifically, the object of the invention is to produce a brooder for this general purpose, having a special construction which will tend to conserve the heat from the bodies of the chicks, and which will provide for the ventilation without danger of crowding.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical cross section through a brooder constructed according to my invention; Fig. 2 is a longitudinal section; Fig. 3 is a view similar to Fig. 1, but showing another form the invention may take; Fig. 4 is a cross section showing the brooder box with the hover removed, and especially illustrating the means for adjusting the height of the hover within the brooder box; Fig. 5 is a vertical section further illustrating the adjusting means for supporting the hover; Fig. 6 is an elevation illustrating the ventilator which is used with the brooder; and Fig. 7 is a fragmentary plan illustrating the arrangement of the blanket strips in detail.

Referring more particularly to the parts and especially to Figs. 1 and 2, 1 represents the brooder body which has the form of a box, as shown. The forward wall of this box is formed with a door 2 mounted on hinges 3, and this door is adapted to open outwardly into a position indicated by the dotted lines in Fig. 1. In this position the door is adapted to be held by means of a rain shield 4, the said rain shield consisting simply of an inclined plate of resilient material such as sheet steel. This plate extends throughout the entire length of the brooder, and is attached to the upper edge of the forward wall thereof, as shown. The end walls 5 of the brooder are provided with supporting brackets 6, the construction of which is very clearly shown in Figs. 4 and 5. These adjusting brackets consist of bifurcated plates, each bracket having a centrally disposed slot 7 which receives a clamping bolt 8 for securing the bracket in any vertically adjusted position, as will be readily understood. On the upper ends of the brackets 6 the hover 9 rests. This hover is not secured to the side walls of the brooder in any way, but simply rests upon the brackets. In order to enable it to be put in position or removed, the cover 10 of the brooder is made removable.

The hover 9 consists of a horizontal back or board 11 on the under face of which a plurality of longitudinally disposed battens or pad strips 12 are placed, and between these battens a padding 13, of cotton or similar non-conducting material, is placed. This padding 13 is held in position by a sheet 14 of textile material or fabric, which is attached to the lower edges of the strips 12 by suitable fastening devices 15.

Extending longitudinally of the brooder I provide a plurality of blanket strips 16 which hang in folds, as shown. These strips are attached at their upper edges to the battens 12. The arrangement of these blanket strips is shown in Fig. 7; they are arranged in pairs 17 between which single blankets or blanket strips 18 are disposed, and the strips are arranged in staggered relation so as to form a substantially closed dividing wall separating the brooder into longitudinally disposed divisions or compartments 19. Through these compartments 19 longitudinally disposed ventilating tubes 20 are arranged, the ends of which pass through the end walls of the brooder body, as shown in Fig. 2. The under sides of these ventilating tubes are provided with perforations 21 so that the foul air will be carried off from the compartments. By raising or lowering the brackets 6 the hover may be supported at any point desired.

On the rear wall a ventilator 22 is provided near the floor of the brooder and this ventilator is provided with a screen 23 which is adapted to be closed or partially closed as desired, by a sliding door 24. A similar ventilator 25 is placed in the door 2 at the front of the incubator.

In order to enable the rain shield 4 to operate as a holder to hold the door 2 in the open position indicated in Fig. 1, the lower edge of the rain shield is provided with a downwardly projecting flange 26.

Instead of constructing the hover as described, I may construct it as indicated in Fig. 3, in which view 27 represents the body of the brooder. The hover is formed of a back or board 28 on the under side of which padding 29 is placed, and this padding is retained by an apron 30 which is formed of fabric, the edges of which are attached to the edges of the back 28. The body of this apron sags down like a bag so as to form a padding space between the apron and the back, which receives the padding, as shown. At suitable points on the under side of the apron 30, longitudinally disposed blanket strips 31 are sewed, dividing the space in the brooder into a plurality of longitudinally disposed compartments 32 for the chicks. In the upper parts of these compartments longitudinally disposed ventilating tubes 33 are arranged, and these extend to the end walls of the body as shown. Like the ventilator tubes 20, the under sides of these tubes are provided with perforations 34, as indicated. These tubes 33 are not arranged at the same level, but the middle rows of the tubes are depressed so that the tube in every compartment lies near the under surface of the apron 30; that is, it is disposed in the upper part of the compartment so as to carry off the foul air.

The hover is supported on adjustable brackets 34^a similar to the brackets 6 described in connection with the form of the invention shown in Figs. 1 and 2. In other respects, this form of the brooder is identical with the form previously described. In both forms of the brooder it will be observed that an air space is formed above the hover, and below the cover. This air space tends to prevent the loss of heat which passes upwardly from the bodies of the chicks. In this way the heat is retained in the brooder, and it is unnecessary to supply special heating means. The tubes provide ample ventilation for the inner compartments between the blanket strips and the outer ventilators, and insure that the sides of the body will be properly ventilated.

The construction described is advantageous, furthermore, for the reason that it tends to keep all parts of the brooder at substantially the same temperature, and this tends to prevent the chicks from crowding each other in a dangerous manner.

When the brooder is in use the heat from the bodies of the chicks ascends around the edges of the hover into the air chamber in the upper part of the body. In this way the entire upper portion of the body becomes filled with heated air. This keeps the hover warm. In this connection attention is called to the fact that the air chamber above the hover does not communicate with the outer air.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A brooder of the class described comprising a body, a hover disposed within said body extending out to the side walls thereof forming a chick compartment therebelow and a closed air space within said body above said hover, and means for adjusting said hover vertically within said body.

2. A brooder having a body, adjustable brackets mounted within said body, and a hover supported on said brackets and having longitudinally disposed blanket strips attached to the under side thereof dividing the space below said hover into compartments.

3. A brooder comprising a body having a plurality of ventilator tubes extending in parallel arrangement therewith, a hover disposed above said ventilator tubes and adjustable vertically, and blanket strips carried by the under side of said hover and depending between said ventilator tubes.

4. A brooder having a body with a plurality of substantially parallel perforated ventilator tubes extending completely therethrough, a hover disposed above said tubes and forming an air space in the upper part of said brooder, and brackets adjustably attached to the walls of said body and supporting said hover.

5. A brooder having a body with a plurality of substantially parallel ventilator tubes passing therethrough, a hover adjustably mounted above said tubes and dividing the upper portion of said brooder into an air space, longitudinally disposed blanket strips arranged between said tubes and depending therebelow, and ventilators in the side walls of said body.

6. A brooder having a body with a door in the side wall thereof opening upwardly, and a rain shield consisting of a plate projecting from said body and having means for engaging the free edge of said door to retain the same in an open position.

7. A brooder having a body with a door in the side wall thereof hinged at its upper edge, and a rain shield consisting of an inclined plate attached at the upper edge of said side wall and projecting outwardly from said body, said rain shield having means for engaging said door to maintain the same in an open position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE HOWARD LEE.

Witnesses:
R. D. JOHNSTON,
H. ROWLEY.