

G. H. LEE.  
REGULATOR FOR CHICKEN INCUBATORS.  
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1,039,550.

Patented Sept. 24, 1912.

Fig. 1,

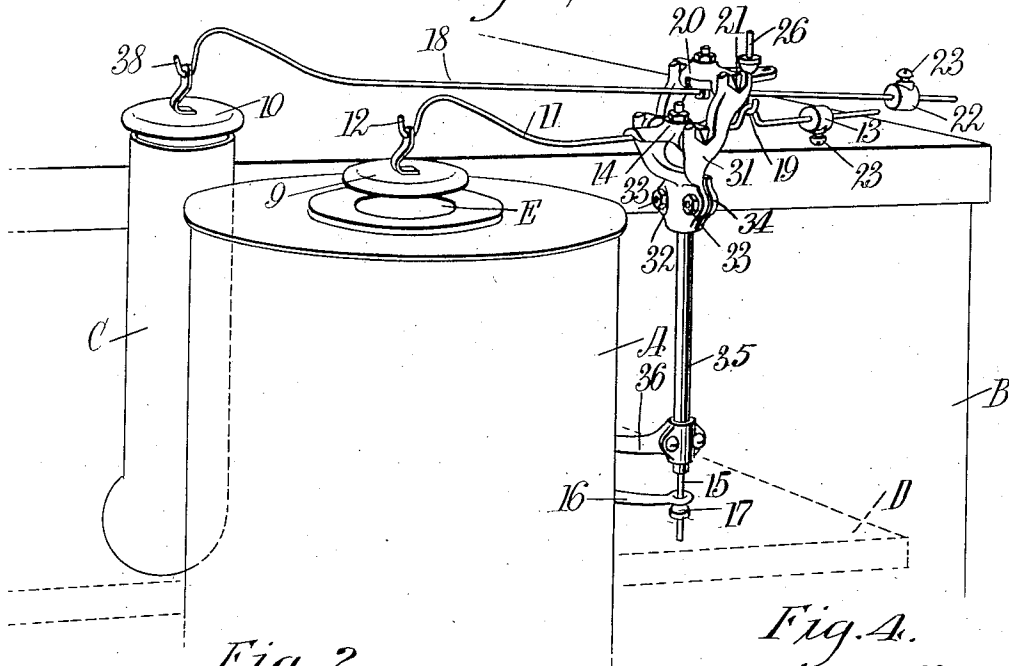


Fig. 2,

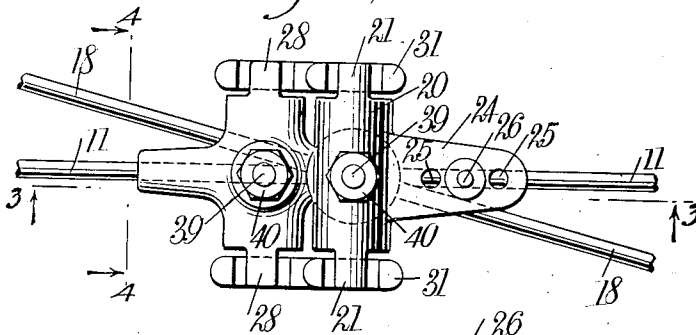
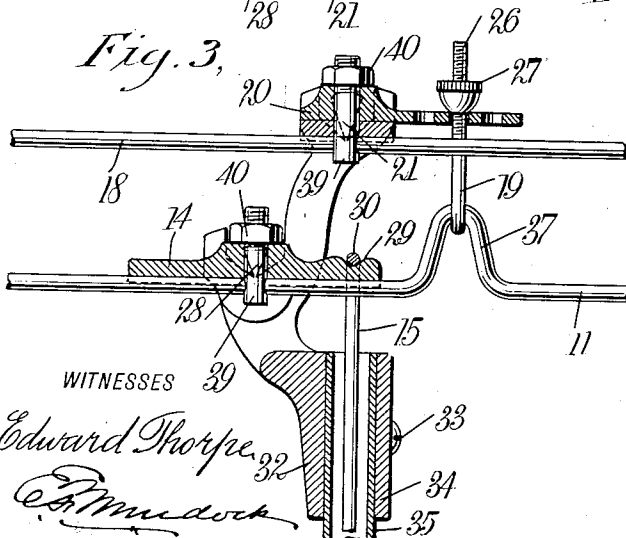


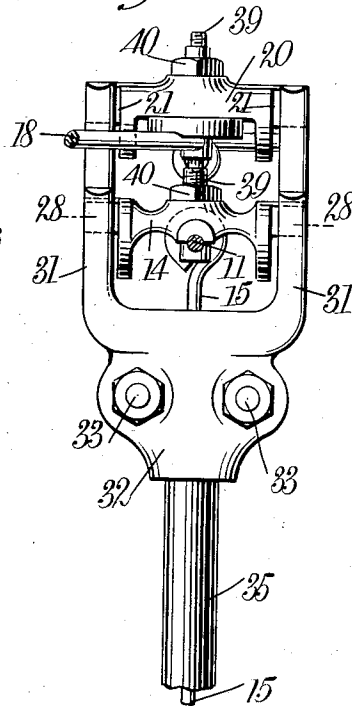
Fig. 3,



WITNESSES

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Fig. 4.



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# UNITED STATES PATENT OFFICE.

GEORGE HOWARD LEE, OF OMAHA, NEBRASKA.

REGULATOR FOR CHICKEN-INCUBATORS.

1,039,550.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed August 15, 1911. Serial No. 644,134.

*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 Regulator for Chicken-Incubators, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide means whereby the percentage of moisture is varied proportionate to the variation of heat within the incubating chamber; to provide means for changing the relative radius of alteration of dry heat and moisture in the said incubating chamber; and to provide a mechanism for accomplishing the above objects the construction and arrangement whereof is simplified.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a damper constructed and arranged in accordance with the present invention, shown in conjunction with a portion of an incubator and heating plant therefor; Fig. 2 is a detail view on an enlarged scale, looking from above at the rockers and portions of the lifting bars connected therewith; Fig. 3 is a vertical longitudinal section taken on the line 3—3 in Fig. 2; and Fig. 4 is a vertical cross section taken on the line 4—4 in Fig. 2.

As shown in the accompanying drawings, the heater A is separated from the incubating chamber B, and between the same is introduced a flue C which enters the chamber above the egg tray D. The upper end of the heater A is provided with an orifice E through which, when open, the heat escapes to the outer air instead of being delivered within the incubating chamber. The orifice is normally closed by the hood 9. A similar hood 10 is employed to close the upper or delivery end of the flue C. By lifting either or both of the said hoods the temperature within the incubating chamber and the volume of moistened air therein may be varied.

The heater A having the orifice E and hood 9, as shown in the accompanying drawings, is not new at the present time. The teeter bar 11 which is connected to the hood 9 by means of the hoop 12, and which is

balanced by means of the weight 13 on the rocker 14, is likewise old. The bar 11 and rocker 14 support the damper rod 15 which is engaged by the damper arm 16 and the nut 17 mounted thereon. When the heater is actuated to move the damper arm 16 the rod 15 is drawn upon to lift the end of the teeter bar 11 and the hood 9 connected therewith. In the present invention the teeter bar 11 is flexibly connected with the teeter bar 18, a hook 19 being employed for this purpose. A second rocker 20 is provided, upon which is supported the bar 18 and the hood 10, the same being balanced on the knife edge extensions 21 of the said rocker by a counterbalancing weight 22. The weight 22 is similar to the weight 13, each weight being held in adjustment by means of set screws 23.

As seen best in Fig. 2 of the drawings the rocker 20 is provided with a tail piece 24, which tail piece 24 is provided with a series of perforations 25 through which the shank extension 26 of the hook 19 is protruded. As seen best in Fig. 3 of the drawings the shank extension 26 is provided with a screw thread to be engaged by the follower nut 27. The rocker 14 is provided with the knife edge extensions 28, and with a recess 29 over which a loop 30 of the damper rod 15 extends. The knife edge extensions 21 and 28 of the rockers 20 and 14 respectively are seated in a U-shaped casting 31, the arms whereof are shaped to form suitable recesses for freely supporting the said extensions 21 and 28. The casting 31 is provided with bolting flanges 32 through which are extended bolts 33 to hold the clamping plate 34 upon the hollow standard 35. The standard 35 is held by a bracket 36 permanently secured to the body of the incubating chamber B or other convenient standing structure.

As seen best in Fig. 3 of the drawings, the teeter bar 11 is provided with an upturned loop 37 within which the hook 19 is seated. The teeter bar 18 is provided at the forward end with a hook 38 for engaging the hood 10 to lift the same. Both bars 11 and 18 are extended through perforations formed in the lower end of short bolts 39, which bolts are slidably mounted in the rockers 14 and 20, and are provided with the screw ends for engagement of the nuts 40. The perforation in the bolts 39 is engaged to permit the bars 11 and 18 to move freely when

not clamped against the under side of the rockers 14 and 20. By means of this construction it will be seen that the bars 11 and 18 may be freely adjusted in relation each to the other and each to the rocker upon which it is mounted.

In operation the bars 11 and 18 are each adjusted to the location of the hoods 9 and 10. The balance of the said bars when carrying the said hoods is established by moving the weights 13 and 22. The adjustment between the bars 11 and 18 is primarily established by moving the hook 19 and shank extension 26 thereof to extend the said shank extension through the one or other of the perforations 25. It will be seen that as the bar 18 takes its movement from the bar 11, and at the point thereon fixed by the loop 37, the extent of the movement of the free end of the bar 18 will be varied as the hook 19 be shifted to extend through the perforation 25 nearest the pivotal bearing of the extensions 21 or the perforation removed therefrom. A slight variation of the point of pull in a lever of this character augments the extent of the movement of the free end of the said lever. The advantages of this construction are obvious, as by this means a slight, and to all intents, an unappreciable movement of the bar 11 is translated to a considerable and quite appreciable movement of the bar 18 and the resultant lifting of the hood 10 and opening of the flue C.

In certain climates and at certain altitudes it becomes necessary, for the proper incubation of chickens, that the moisture laden air should be removed in equal or increased proportion to the increase of the heat. In other climates it is wise to reverse the above stated ratio and to slow down the damper or hood for emitting the moisture from the incubating chamber. Experience is the only guide for this arrangement, but by shifting the hook 19 within

the compass of the perforations 25 all of the usual or known conditions may, by the present construction, be made. The adjustment of the bars 11 and 18 and the weights 13 and 22 having been established the operation of the apparatus is in all respects similar to that of the well known heat regulator.

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

1. In a regulator of the character set forth, a plurality of rocking members; a plurality of levers one adjustably mounted on each of said members; a bolt for fixedly securing the said levers on said members; a counterbalancing weight adjustably mounted on said levers; a bracket having seats for said members progressively arranged and superposed; a member operatively connecting said levers and adjustable to vary the swing thereof; and heat-controlled operating mechanism to rock said members.

2. In a regulator of the character set forth, a plurality of rocking members; a plurality of levers one adjustably mounted on each of said members; a bolt for fixedly securing the said levers on said members; a counterbalancing weight adjustably mounted on said levers; a bracket having seats for said members progressively arranged and superposed; a member operatively connecting said levers and adjustable to vary the swing thereof; means for varying and fixing the angular disposition of said levers; and heat-controlled operating mechanism to rock said members.

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

GEORGE HOWARD LEE.

Witnesses:

HARRY ROWLEY,  
V. M. COOPER.