C. E. ADAIR.

BROODER.

APPLICATION FILED JAN. 22, 1906.

959,097. Patented May 24, 1910.

FIG. 1.

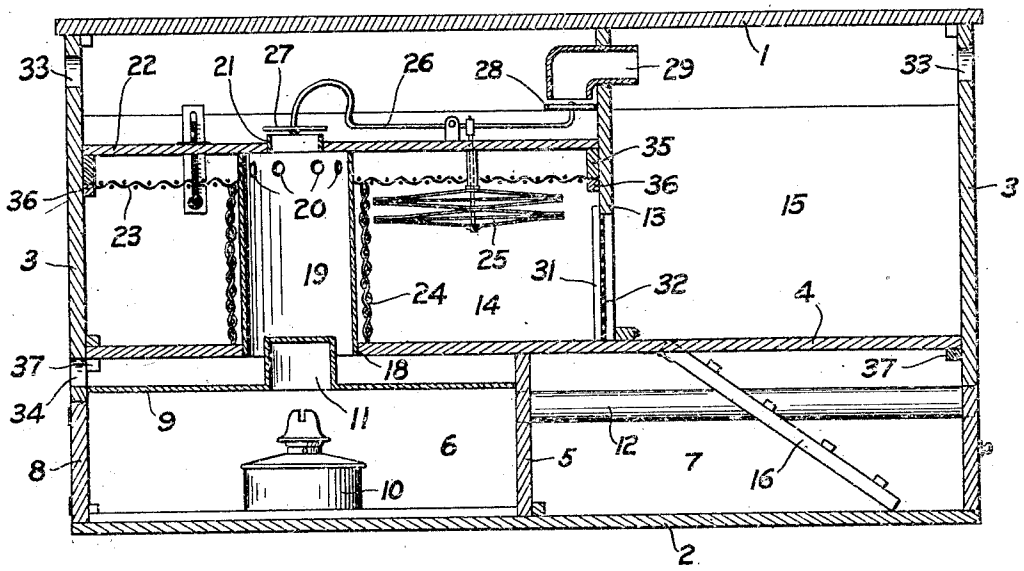
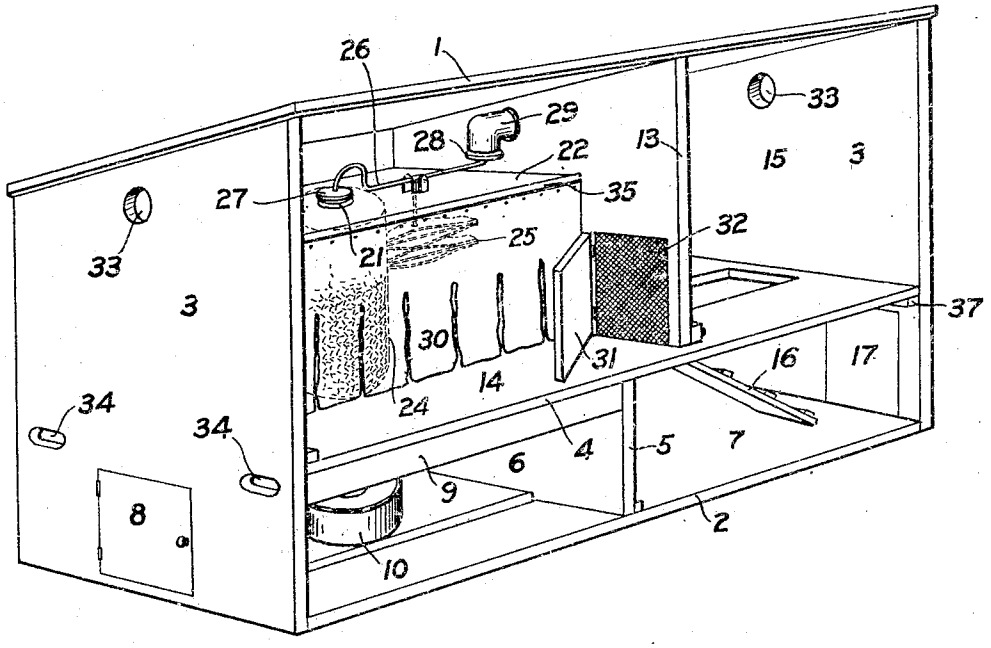


FIG. 2.



WITNESSES:

Clarence W. Carroll.

L. L. Gurnee.,

INVENTOR

Charles E. Adair

by Osgood & Davis

his attys

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES E. ADAIR, OF BUFFALO, NEW YORK, ASSIGNOR TO CYPHERS INCUBATOR COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

BROODER.

959,097. Specification of Letters Patent. Patented May 24, 1910.

Application filed January 22, 1906. Serial No. 297,118.

To all whom it may concern:

Be it known that I, CHARLES E. ADAIR, a citizen of the United States, and resident of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Brooders, of which the following is a specification.

This invention relates to brooders, and consists in the apparatus hereinafter described and claimed.

The object of the invention is to provide a brooder in which the temperature is accurately regulated by novel and effective means.

In the drawings:—Figure 1 is a vertical longitudinal section through the middle of a brooder embodying this invention; and Fig. 2 is a perspective view of the same brooder with the front removed.

In the drawings 1 is the top, 2 is the bottom, 3, 3, are the walls of the brooder, and 4 is a flooring between the top and the bottom constituting the floor of the hover chamber. Between said floor 4 and the bottom 3 is a transverse, vertical partition 5, which separates the lamp chamber 6 from a portion of the runway or exercising chamber 7. The lamp chamber 6 has a door 8 at one end through which the lamp may be inserted. The top of the lamp chamber 6 is formed of metal 9 set at a suitable distance below the floor 4 and having over the lamp 10 an upwardly projecting central portion 11. From the upper part of the lamp chamber 6, the smoke pipe 12 passes out through the runway or exercising chamber 7, in order to assist in warming the latter chamber.

Above the floor 4 is a partition 13 separating the brooder chamber 14 from the upper runway or exercising chamber 15. An inclined runway 16, which may fit the floor 4 like a trap door, enables the chicks to pass from the upper runway 15 to the lower runway 7, and thence out through a door 17.

Above the ceiling 9 of the lamp chamber 6 is the hover chamber 14 having a perforation 18 therein registering with the projection 11 from said ceiling and upward from said perforation extends the hot-air pipe 19 having the perforations 20 around its upper end.

Parallel to the ceiling 22, and a suitable distance below it, is the burlap or fabric false ceiling 23 extending entirely across the top of the hover chamber and below the perforations 20 in the hot-air pipe 19, so that heat that passes upward through said pipe and is discharged through the perforations discharges downward through the fabric 23, the fabric thus checking the circulation and compelling a slow, gradual passage of heated air through the hover chamber.

Surrounding the hot-air pipe 19, in order to protect the chicks from contact therewith, is a guard cylinder 24, which may be made of coarse wire netting.

Within the hover is a thermostatic device 25 adapted to actuate a damper lever 26, to open and close an outlet 21 from the hot-air chamber between the ceilings 22 and 23 by means of a cap or damper 27 at one end, and at the other end by means of a damper 28 to open and close an air outlet pipe 29 leading from the space above the ceiling 22 into the upper runway or exercising chamber 15. A thermostat is arranged to open the dampers when the temperature in the hover rises to a predetermined degree, thereby permitting hot air to escape directly from the hot air chamber and the flue 19, instead of passing downward through the foraminiferous ceiling. The damper 28 and the outlet pipe 29 act both to prevent overheating of the hover chamber when the damper 27 is opened to discharge hot air from the hover, and to introduce heated air into the exercising chamber 15 so as to heat the latter economically by means of the surplus hot air discharged from the hover chamber. A hover curtain 30 extends from the ceiling 22 down to or near the floor 4 in the hover chamber, in order to form a hover within the general chamber and to allow chicks to pass out from under the hover to a slightly cooler area. A solid door 31 closes a doorway which leads through the partition 13 between the general hover chamber outside of the curtain 30 to communicate with the runway or exercising chamber 15. A secondary door 32 formed of perforated material, such as wire netting or perforated sheet metal, is used to close the same aperture or passage way as the door 31 and to prevent passage of the chicks, while permitting the flow of a current of air.

In the upper part of the brooder near to the roof are air openings 33 of a suitable number. Perforations 34 lead through the

wall of the brooder to the space between the metal ceiling 9 of the lamp chamber and the floor 4 above it. Through these openings or perforations the fresh air for ventilating the hover chamber is admitted.

In order that the brooder may be cleaned and to facilitate access to all parts thereof, the roof 1 is made removable. The ceiling 22 of the hover proper carrying the damper arm 26, its dampers 27 and 28, and the thermostatic device 25, is made of box form having the downwardly projecting edge pieces 35, Fig. 2, and the bottom of the box is formed of the burlap 23. Cleats 36 on the inner walls of the hover chamber 14 support the said ceiling box, and by this construction the whole ceiling box may be removed with the curtain 30 for cleaning the interior of the hover chamber. So, too, the bottom 4 may be removed for cleaning the same and for access when desired to the lower parts. Since the said bottom 4 rests upon cleats 37 on the inner surface of the wall 3, the partition 13 may be removable with the bottom 4.

What I claim is:—

1. A brooder chamber; a hover chamber therein; a false ceiling of fabric below the ceiling of the hover chamber; a vertical, hot air flue discharging through the ceiling of the hover chamber, and having permanently open ports leading into the space between the ceiling of said hover chamber and said false ceiling; a heater adapted to receive fresh air, heat it and discharge it into said flue; a damper adapted to close the port in said flue to atmosphere; a hover curtain extending from the false ceiling to or near the floor of the brooder; an exercising chamber; an air conduit between the brooder chamber and the exercising chamber; a thermostatic device within the hover chamber and below said false ceiling, having connections with said damper, whereby heated air below a predetermined temperature is introduced from said flue into the space between the two ceilings, and is compelled to pass downward through the false ceiling and outward under the hover curtain, and when the temperature underneath the hover curtain rises above said temperature the hot air is discharged from the flue to atmosphere; and a damper for said air conduit operated by said thermostat and simultaneously with said first mentioned damper.

2. A brooder having, in combination, a hover chamber, an exercising chamber, a hover in the hover chamber, means for heating the hover, an air outlet from the hover, a damper controlling said outlet, a passage from the hover chamber to the exercising chamber, a damper controlling said passage, and thermostatic mechanism connected with both said dampers and operating to open and close them simultaneously in accordance with variations of temperature in the hover.

CHARLES E. ADAIR.

Witnesses:

MAUDE BIRDSEY,

CLARENCE W. CARROLL.