C. E. ADAIR.

HEATER FOR BROODERS AND INCUBATORS.

APPLICATION FILED AUG. 28, 1908.

961,667. Patented June 14, 1910.

FIG. 1.

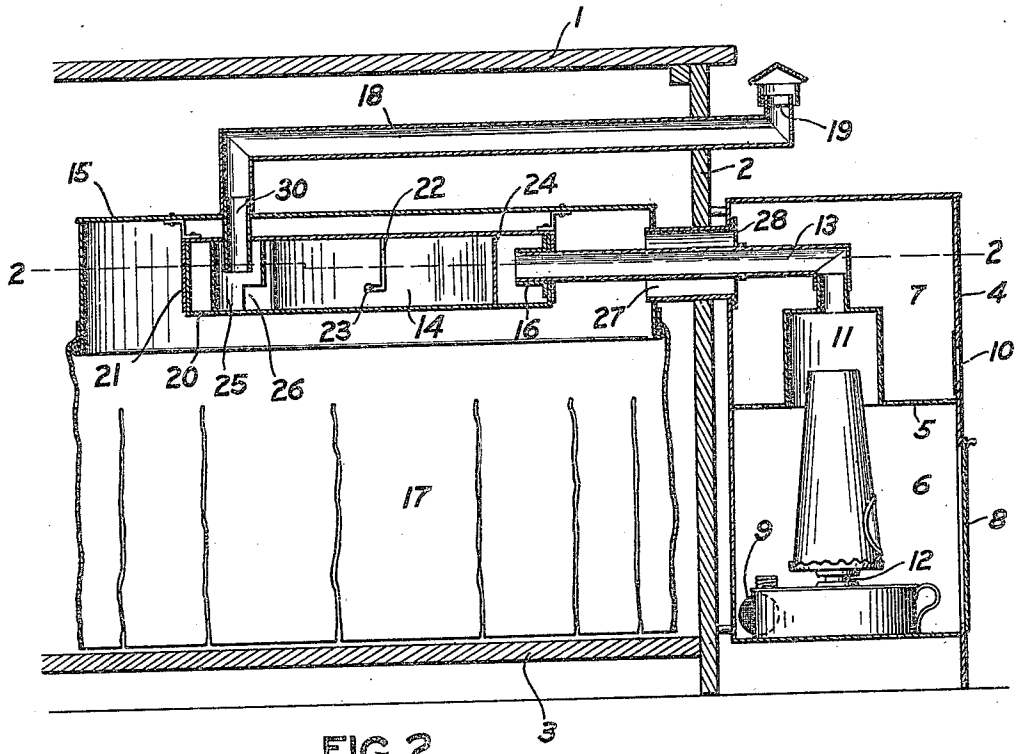
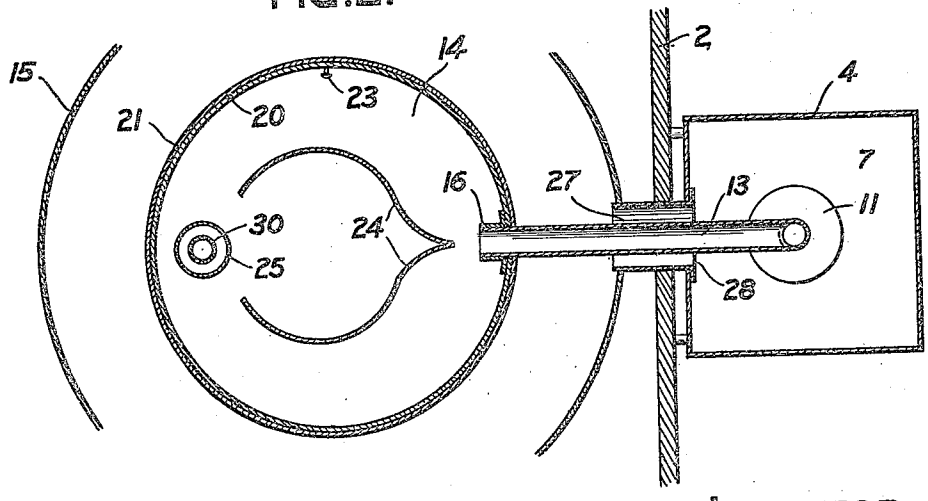


FIG. 2.



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UNITED STATES PATENT OFFICE.

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

HEATER FOR BROODERS AND INCUBATORS.

961,667. Specification of Letters Patent. **Patented June 14, 1910.**

Application filed August 28, 1908. Serial No. 450,757.

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 Heaters for Brooders and Incubators, of which the following is a specification.

This invention relates to heaters for brooders and incubators, and the object of the invention is to produce a heater of simple construction and efficient form.

To this end the invention consists in the heater hereinafter described as it is defined in the succeeding claims.

In the drawings:—Figure 1 is a vertical longitudinal section through a device embodying this invention; and Fig. 2 is a cross section on the line 2—2 of Fig. 1.

The brooder illustrated in the drawings has an outside casing, of which a part of the top 1, a side wall 2, and a part of the bottom 3 are shown. Outside the side wall 2 is fixed the heater box 4, divided by a diaphragm or partition 5 into two compartments, of which the lower compartment or chamber 6 holds the lamp, and may be called the lamp chamber, and the upper compartment 7 contains the air that is heated for delivery to the brooder.

A door 8 is provided for the lamp chamber 6, through which the lamp may be inserted, and into this chamber there is an air inlet 9 provided with a suitable fire screen, such as perforated metal or fine wire gauze. The upper or hot air chamber 7 is also provided with an air inlet 10, protected by a similar screen.

The diaphragm or partition 5 has a center dome-like portion 11, into which the upper end of the chimney of the lamp 12 projects. From the upper part of the dome 11 there extends a horizontal flue 13, which passes through the outer wall 2 of the brooder, and into a radiator drum 14, that is hung within the top or drum 15 of the hover.

In order to prevent the emergence of sparks, if any there should be, from the radiator drum 14 at the point where the flue 13 passes into it, an inwardly projecting sleeve 16 is attached to the drum around the orifice through which the flue 13 enters it, so that there is a long surface of the flue 13 in close contact with the sleeve 16. The hover drum 15 is closed on top and open at the bottom, and around its lower edge is fastened a hover curtain 17.

The products of combustion led into the drum 14 by the flue 13 are led out therefrom by a short flue 30 comprising a portion of a chimney 18, which rises from the interior of the radiating drum 14 through the top thereof, and through the top of the hover drum 15. The tube then turns at an angle, passes out through the wall 2 of the brooder, and then turns up again and is provided, near its outlet end, with a fire screen partition 19 of perforated metal or wire gauze. The open end of the tube is surmounted by a wind-breaking cap.

The radiating drum 14 is separable, and consists of two half drums 20 and 21, fitting in each other, and fastened together by an ordinary bayonet catch device, consisting of an L-shaped slot 22 in one of the drums, and a pin 23 on the other drum fitting in said slot, and holding the two drums in their telescoped position. The outer drum has a hole for the flue 13, and the sleeve 16 is fastened to the interior of the inner drum.

Within the radiating drum are baffle plates 24, which divide the current of gas entering by the flue 13, and lead the divided currents to the rear of the drum. There the currents are obliged to return toward the middle of the drum by a circular baffle 25 surrounding the lower end of the flue 30 and having an orifice 26 on the side toward the center of the drum.

The products of combustion from the lamp enter the dome 11, pass through the flue 13 into the drum 14, there are divided by the baffle plates, flow around the outer sides of the drum to the rear end thereof, return past the ends of the baffle plates toward the center of the drum, pass out through the circular baffle 25, enter the chimney 18, pass through the fire screen 19, and out through the wind breaking cap.

In order to supply warm and fresh air to the hover, a hot air flue 27, concentric with the flue 13, is attached to the back wall of the heater box 4, leaving a considerable space around the flue 13. The hot air flue 27 connects the hot air chamber 7 with the interior of the hover drum 15, and projects through an orifice in the side wall of said

drum. The fresh air enters by the inlet 10, is heated in the hot air chamber 7, passing through a fire screen 28 in the hot air flue 27, and thence into the interior of the hover. The fire screen 28 may be utilized as a support for the flue 13.

What I claim is:—

1. In a heater for brooders and incubators, a radiator drum, a flue entering the drum near one side for introducing heated air, baffle plates in the drum formed and arranged to divide the incoming air and conduct it about the periphery of the drum toward the opposite side from said flue, a chimney entering the top of the drum near the opposite side from the flue, and a baffle surrounding the chimney and extending from top to bottom of the drum, the baffle being entirely closed in the upper portion of the drum but having an opening adjacent to the bottom of the drum in the side of the baffle toward the center of the drum.

2. In a heater for brooders and incubators, a radiator drum comprising two cylindrical members fitting together telescopically, said members having co-acting parts adapted to form a bayonet joint, and said members having also openings registering when the members are secured together by said joint, means for supplying heated air to the radiator drum, and a connection between said means and the drum consisting in a flue entering said openings and normally preventing relative rotation of the drum members.

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Witnesses:
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