

C. A. DAMON.
 HEATER FOR INCUBATORS AND BROODERS.
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978,990.

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FIG. 1.

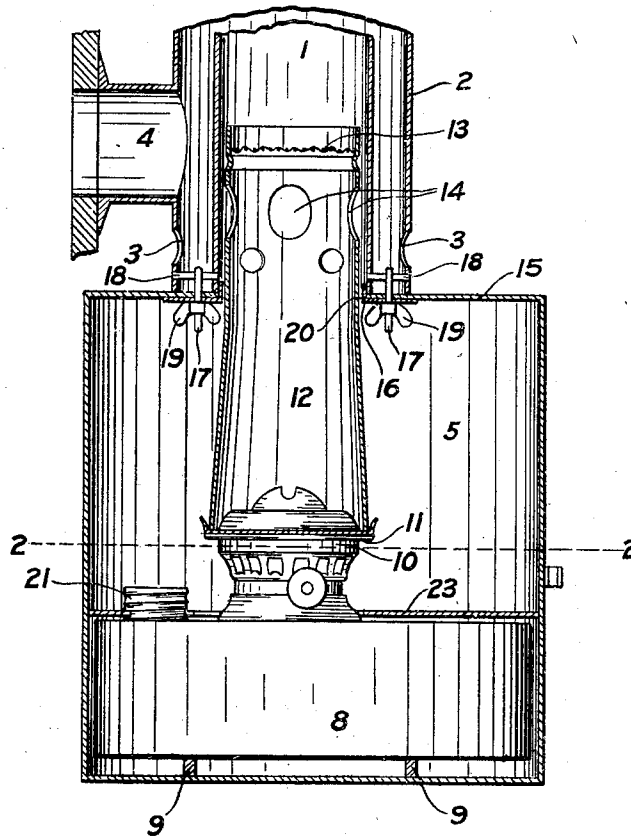
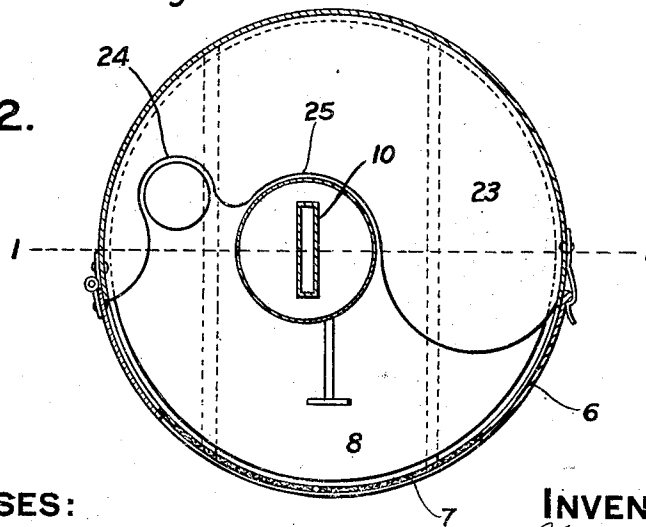


FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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HEATER FOR INCUBATORS AND BROODERS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. DAMON, 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 Incubators and Brooders, of which the following is a specification.

This invention relates to heaters for incubators and brooders of the type in which heat is supplied by a lamp burning kerosene or other suitable fuel.

The object of the invention is to produce a heater of the kind referred to, in the use of which the danger from fire shall be minimized, by so arranging the heater that it shall be impossible to fill the heating lamp while it is in place in the apparatus.

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

In the accompanying drawings, which illustrate the preferred embodiment of the invention, Figure 1 is a vertical section of the heater on the line 1—1 in Fig. 2, and Fig. 2 is a horizontal section of the heater on the line 2—2 in Fig. 1.

The illustrated embodiment of my invention is adapted to be attached to incubators or brooders of well known form, and the novel features of the invention are embodied particularly in the lamp and the lamp box.

The incubator or brooder in connection with which the invention is illustrated is provided with the usual inner and outer heater tubes 1 and 2. The outer tube 2 serves as a hot air tube, and is provided with air inlets 3 near its lower end and with a lateral outlet 4 through which it is connected with the incubator or brooder. To the lower ends of the tubes 1 and 2 I attach a lamp box 5 of cylindrical form, and the lamp box is provided with a lateral door 6 through which the lamp may be inserted in the lamp box. This door is provided with an opening containing wire gauze 7, or other suitable material adapted to permit the entrance of air to the lamp box, but to prevent the passage of a flame.

The lamp comprises a font 8 of cylindrical form which substantially fills the lower portion of the lamp box. The font rests upon supports 9, by which it is raised a short distance above the bottom of the lamp box so as to provide a space to receive any

oil which may leak from the lamp. The burner 10 of the lamp is of any ordinary or suitable construction, and is provided with a chimney plate 11 upon which the lamp chimney 12 is supported. The font 8 is provided with a filling opening closed by the usual cap 21. One object of the invention, as hereinbefore stated, is to prevent the lamp from being filled while in place in the lamp box owing to the danger of fire which arises from filling the lamp when it is burning. To this end provision is made by which it is necessary to insert the lamp in the lamp box with the filling opening so far removed from the door as to be practically inaccessible, and to require the removal of the lamp from the lamp box when the lamp is to be filled. To insure the proper position of the lamp in the lamp box, the lamp box is arranged eccentrically with respect to the heater tube 1, and the lamp burner and chimney are similarly eccentric with respect to the font. The chimney is arranged to project upwardly into the tube 1, and to fit it closely, and, owing to the eccentric arrangement of the parts, the chimney will not properly engage the tube 1 and the chimney plate 11 if the font is inserted in the lamp box in any other than the proper position with the filling opening removed from the door. To assist the operator in inserting the lamp in the proper position in the lamp box, a horizontal plate 23 is fixed in the lamp box, and is recessed, as shown in Fig. 2, to receive the burner and the filling cap 21. When the lamp is in place in the lamp box, the burner rests in a recess 25 in the plate 23, while the filling cap rests in a recess 24, and thus the position of the lamp is conveniently determined without care on the part of the operator.

To cause the lamp to be automatically extinguished in case the wick is turned too high, so that the lamp smokes, the upper open end of the chimney 12 is provided with a diaphragm of wire gauze 13, and with lateral perforations 14 below the wire gauze. When the lamp is operating normally, the products of combustion pass partly through the wire gauze and partly through the perforations 14 into the tube 1. In case the lamp smokes, however, the smoke impinges directly upon the wire gauze and the soot soon clogs the gauze so that it is impervious to the products of combustion. The trans-

verse perforations 14 are so restricted by the adjacent walls of the tube 1 that they do not afford in themselves a sufficient outlet for the products of combustion, and the lamp is therefore smothered and extinguished.

A collar 20 on the lamp box acts to locate the lamp box properly with respect to the tubes 1 and 2, and also makes a close joint between the lamp box and the tube 1. The lamp box is held in place by means of two hooks 17 which pass through the top of the lamp box, and engage pins 18 fixed in the tubes 1 and 2. Thumb nuts 19 are threaded upon the lower ends of the hooks to draw the lamp box tightly against the lower ends of the heater tubes.

My invention is not limited to the construction hereinbefore described and illustrated in the accompanying drawings, but may be embodied in other forms within the nature of the invention as it is defined in the following claims.

I claim:—

1. A heater having, in combination, a lamp box provided with a lateral lamp receiving opening, a lamp provided with an eccentrically-arranged filling opening, and means for insuring the insertion of the lamp in the lamp box with the filling opening in a position inaccessible through the lamp receiving opening.

2. A heater having, in combination, a lamp box provided with a chimney opening and a lateral lamp receiving opening, and a lamp provided with a chimney arranged to engage said chimney opening when the lamp is in position in the lamp box, the lamp hav-

ing a font provided with a filling opening at one side of the chimney and the font being arranged eccentrically with respect to the chimney so that to engage the chimney properly with the chimney opening the font must be turned to a position in which the filling opening is distant from the lamp receiving opening in the lamp box.

3. A heater having, in combination, a lamp box provided with a chimney opening and a lateral lamp receiving opening, a lamp provided with a chimney arranged to engage said chimney opening when the lamp is in position in the lamp box and with a font having a filling opening at one side of the chimney, the font being arranged eccentrically with respect to the chimney so that to engage the chimney properly with the chimney opening the font must be turned to a position in which the filling opening is distant from the lamp receiving opening in the lamp box, and means located in the lamp box for arresting the lamp font in proper position therein.

4. In an incubator heater the combination of a lamp provided with a filling opening, and a lamp casing formed with a lamp receiving opening, said lamp receiving opening affording access to the casing above the lamp, said casing formed to receive the lamp only when the filling opening is in a position which prevents the filling of the lamp while in the casing.

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Witnesses:

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