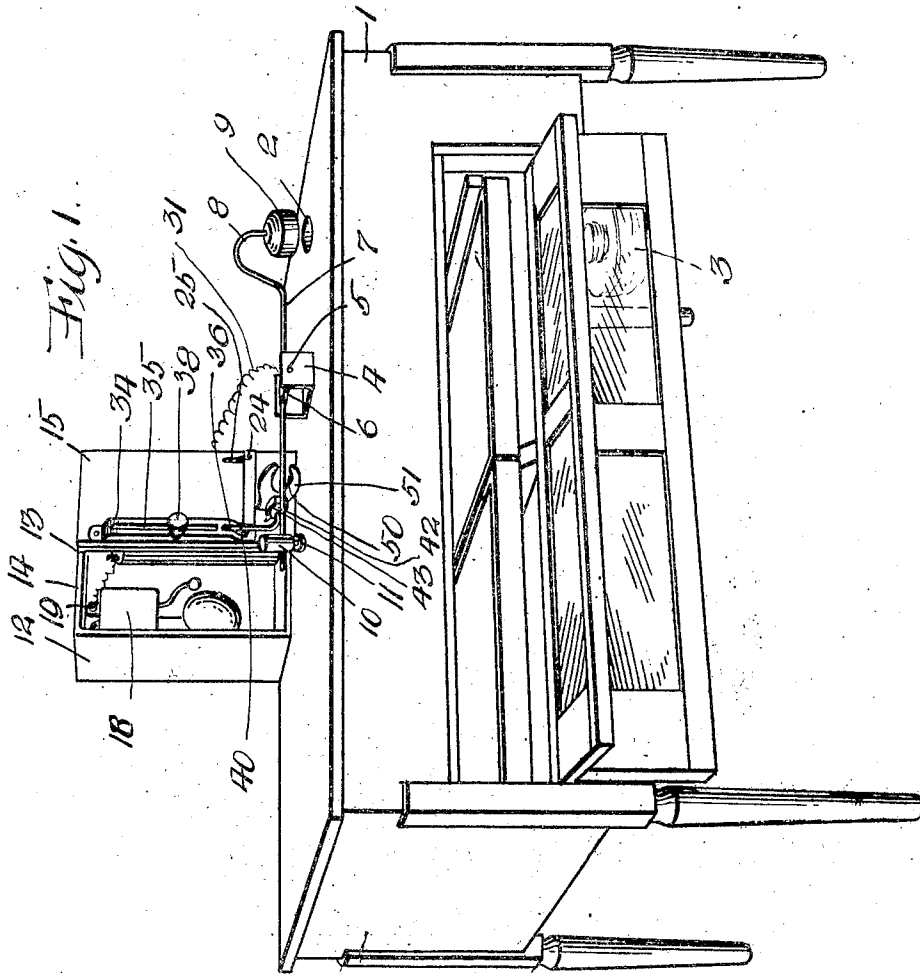


H. R. LIGHTCAP.
 AUDIBLE SIGNAL OR ANNUNCIATOR FOR INCUBATORS.
 APPLICATION FILED OCT. 11, 1911.

1,034,261.

Patented July 30, 1912.
 2 SHEETS-SHEET 1.



WITNESSES

Samuel Payne.

Ralph C. Evert.

INVENTOR

H. R. Lightcap.

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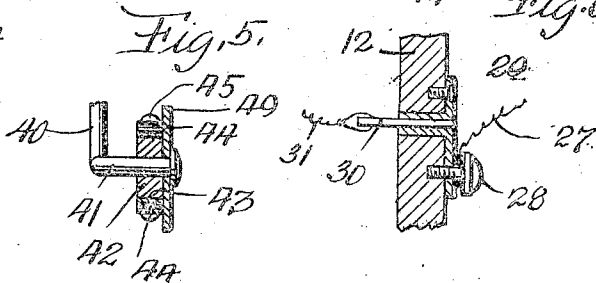
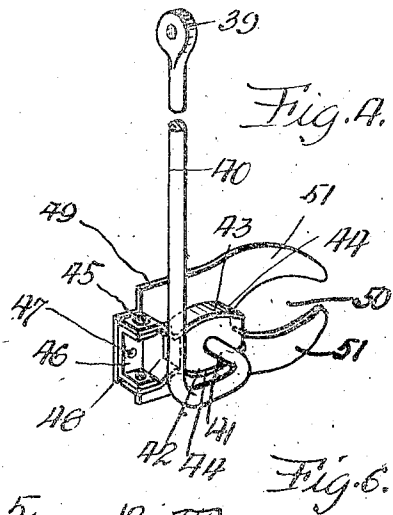
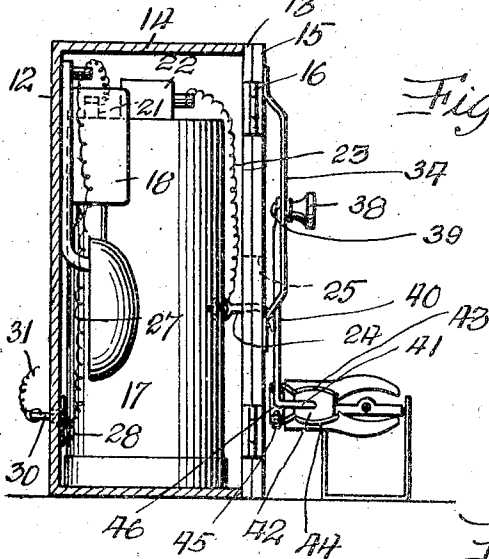
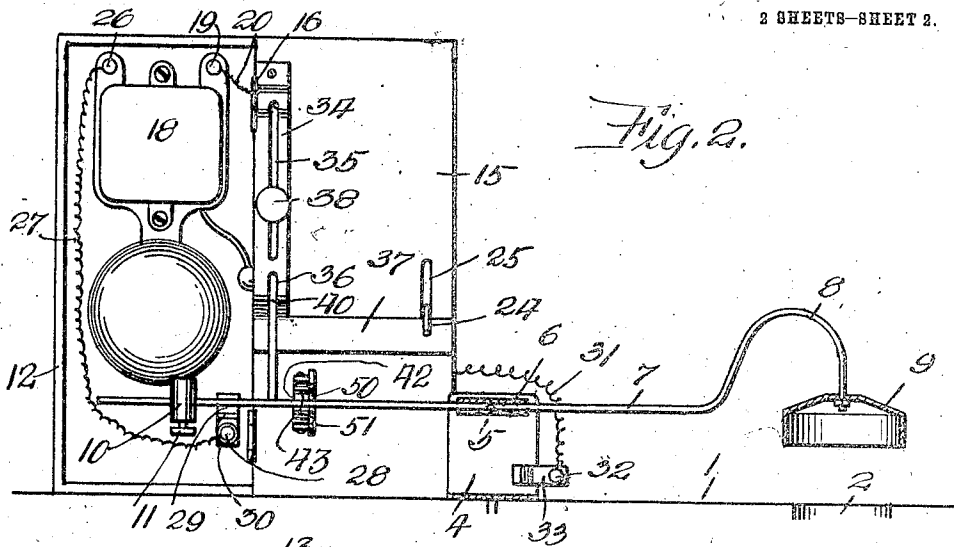
ATTORNEYS

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UNITED STATES PATENT OFFICE.

HARRY RUSSELL LIGHTCAP, OF GREENSBURG, PENNSYLVANIA.

AUDIBLE SIGNAL OR ANNUNCIATOR FOR INCUBATORS.

1,034,261.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed October 11, 1911. Serial No. 654,188.

To all whom it may concern:

Be it known that I, HARRY RUSSELL LIGHTCAP, a citizen of the United States of America, residing at Greensburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Audible Signals or Annunciators for Incubators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an audible signal or annunciator for incubators, and the primary object of my invention is to provide a thermal alarm that is positive in its action, durable and applicable to various types of incubators.

Another object of this invention is to provide an audible electric signal that can be adjusted to sound an alarm when the temperature of an incubator is slightly raised or lowered, the alarm notifying the attendant of the incubator that the same requires attention to insure a perfect incubation of the contents of the incubator.

A further object of this invention is to provide a portable electric alarm that can be easily placed upon an incubator and connections made for sounding an alarm when there is a change of temperature, the alarm mechanism being arranged in a compact casing that can be easily opened and proper connections made for operation in connection with an incubator.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings, wherein:—

Figure 1 is a perspective view of an incubator provided with the alarm, Fig. 2 is an enlarged front elevation of the alarm mechanism, Fig. 3 is a vertical sectional view of the same, Fig. 4 is a perspective view of a detached adjustable contact, Fig. 5 is a cross sectional view of the same, and Fig. 6 is a detail sectional view of a plug adapted to form part of the alarm mechanism.

The reference numeral 1 denotes an in-

cubator of the ordinary and well known type having a hot air flue 2 beneath which is located a lamp or heating medium 3 of the incubator. Arranged upon the top of the incubator is a U-shaped metallic bearing 4 and fulcrumed in said bearing by a pin 5 is a sleeve 6 supporting a rod 7. One end of the rod is hook-shaped, as at 8 and provided with a bell or dome 9 directly above the flue 2. The opposite end of the fulcrumed rod 7 has an adjustable counterbalance weight 10 that is fixed upon said rod by a set screw 11.

Resting upon the top of the incubator 1 adjacent to the weighted end of the rod 7 is a rectangular casing 12 having the front wall 13 thereof provided with an opening 14 that can be closed by a door 15, which is hinged, as at 16 to the edge of the front wall 13. Located within the casing 12 is a battery 17 or other source of electric energy and a conventional form of electric bell 18. The bell 18 has the binding post 19 thereof connected by a wire 20 to the binding post 21 of the battery 17, and said battery has the other binding post 22 thereof connected by a wire 23 to a pivoted hook 24 carried by an end wall of the casing 12. The front wall 13 of the casing and the door 15 have registering slots 25 providing clearance for the hook 24. The other binding post 26 of the bell 18 is connected by a wire 27 to a binding post 28 carried by the rear wall of the casing 12, and this binding post is supported by a plug socket 29 that extends through the rear wall of the casing 12. The socket 29 is adapted to receive a plug 30 to which is attached a wire 31. The opposite end of the wire 31 is connected by a screw 32 to a clasp 33 that is pivotally connected to one of the side arms of the bearing 4. Secured to the inner side of the door 15 at the hinged edge thereof is a vertical bracket 34 having a longitudinal slot 35, an opening 36 and an arm 37 that extends crosswise of the door to the free edge thereof. Engaging this arm is the hook 24 adapted to place the bracket 34 in the electric circuit of the alarm mechanism, as will presently appear. Adjustably mounted in the bracket 34 by a set screw 38 is an eye

39 carried by the upper end of a rod 40 extending through the opening 36 into the bracket. The lower end of the rod 40 is bent to provide a crank 41 upon which is mounted a block 42 having convex upper and lower faces 43. Engaging the convex faces 43 are flat springs 44 having the ends thereof secured by screws 45 or other fastening means to the ends of a strap 46 secured, as at 47 to the reduced end 48 of a contact piece 49. The contact piece 49 is loosely mounted upon the crank 41 and the end of said piece is bifurcated or slotted, as at 50 to provide contact arms 51. The contact arms 51 are arranged whereby the rod 7 will extend through the slot 50 and the tilting movement of the rod 7 causes said rod to contact with one of the arms 51.

Assuming that the alarm mechanism is in position for operation, as shown in Figs. 1 and 2, a rise or change in the temperature within the incubator raises or lowers the bell or dome 9, causing the rod 7 to engage one of the contact arms 51. The contact piece 49 will be slightly moved and immediately restored to its normal position by the springs 44 when the rod 7 is moved out of engagement with the arms 51. By yieldably mounting the contact piece 49 upon the rod 40, a positive contact is assured between said rod and one of the contact pieces, besides the fulcrum of the rod is not strained as though the end of the rod was firmly held by one of the contact pieces. Immediately upon the rod engaging one of the contact pieces, the circuit is as follows: from the binding post 22 by wire 23 to the pivoted hook 24, through said hook and the arm 37 to the rod 40 within the bracket 34, through said rod and one of the contact pieces to the rod 7, through said rod and the bearing 4 to the clasp 33, by wire 31 to the plug 30, binding post 28 by wire 27 to the binding post 26 of the bell 18, and by wire 20 from the binding post 19 to the binding post 21 of the battery. The bell 18 is sounded to attract the attention of the attendant of the incubator in order that the attendant can regulate the lamp or heating medium 3 to obtain a proper temperature within the incubator. When the device is not in use, the clasp 33 is detached, also the plug 30, said clasp, plug and wire 23 being placed within the casing 12. The hook 24 is then swung inwardly and the door 15 can be closed. By adjusting the arm 40, the contact piece 49 can be correctly positioned relatively to the rod 7, for instance for obtaining a more positive action when the temperature rises than when the temperature lowers, and vice versa, this being possible by adjusting the rod 40 whereby one of the arms 51 will be in closer proximity to the rod than the other arm.

From the foregoing it will be observed that the thermal alarm includes a heat actuated rod that is arranged in a normally open circuit adapted to be closed by a movement of said rod to sound an electric bell or other audible signal. The parts of the alarm are compactly arranged and can be disposed of as an attachment for incubators or as a separate alarm device for various purposes.

What I claim is:--

1. In a thermal alarm for incubators, a casing, a hinged door carried thereby and adapted to close said casing, a battery arranged in said casing, an audible alarm within said casing, an adjustable contact piece supported by the inner side of said door and normally in an open circuit with said alarm and said battery, and a fulcrumed heat actuated rod extending through the end of said contact piece when said door is open to contact with said contact piece and close said circuit.

2. In a thermal alarm for incubators, a casing having a hinged door, a battery arranged in said casing, an audible alarm within said casing, an adjustable contact piece supported by the inner side of said door and normally in an open circuit with said alarm and said battery, a fulcrumed heat actuated rod extending through the end of said contact piece when said door is open to contact with said contact piece and close said circuit, and means including a plug carried by the rear wall of said casing and pivoted hook carried by the inner side of one of the end walls of said casing and adapted to control said circuit.

3. In a thermal alarm for incubators, the combination with a fulcrumed heat actuated rod, of a casing, a hinged door carried by said casing, a battery located in said casing, a bell arranged in said casing, an adjustable and yieldable contact piece supported by the inner side of said door and adapted to be engaged by said rod, and a pivoted hook carried by the inner side of the end wall of said casing and adapted to extend through the front wall of said casing and said door when said door is in an open position to establish in conjunction with the contact piece of said door a normally open circuit between said bell, battery, rod and contact piece adapted to be closed by a movement of said rod.

4. In a thermal alarm for incubators, the combination with a casing, an electrically operated signal arranged within said casing, a hinged door carried by said casing, an adjustable contact piece carried by said door, a fulcrumed heat actuated rod in a normally open circuit with said electrically operated signal and adapted to engage said contact piece to close said circuit to operate

said signal, and means including a plug carried by the rear wall of said casing and a pivoted hook carried by the inner side of the end wall of said casing and adapted to
5 place said rod and said contact piece in a normally open circuit with said electrically operated signal.

In testimony whereof I affix my signature in the presence of two witnesses.

HARRY RUSSELL LIGHTCAP.

Witnesses:

· MAX H. SROLOVITZ,
CHRISTINA T. HOOD.