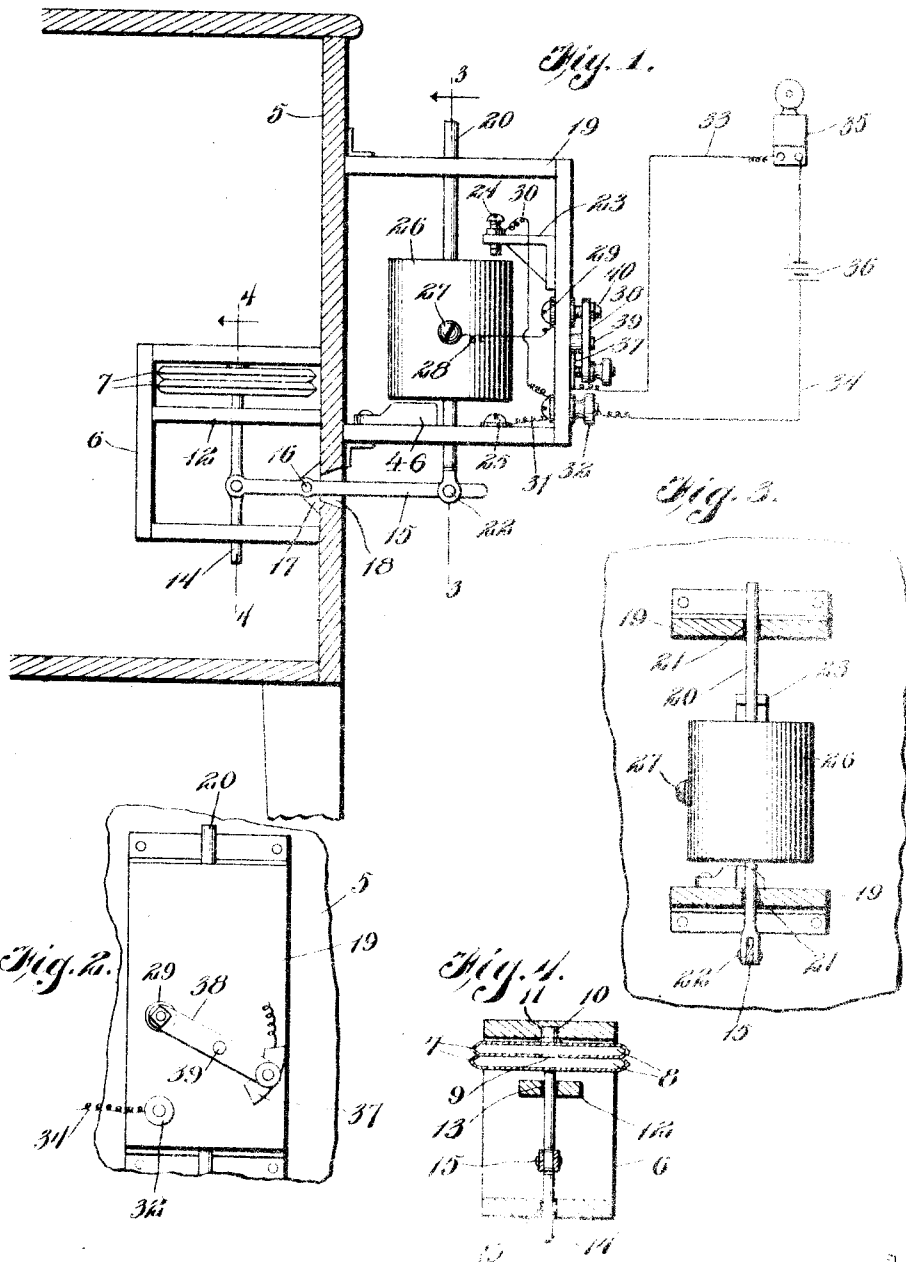


C. W. KELLEY.
INCUBATOR ALARM.
APPLICATION FILED JUNE 26, 1912.

1,064,658.

Patented June 10, 1913.

2 SHEETS-SHEET 1.



Witnesses

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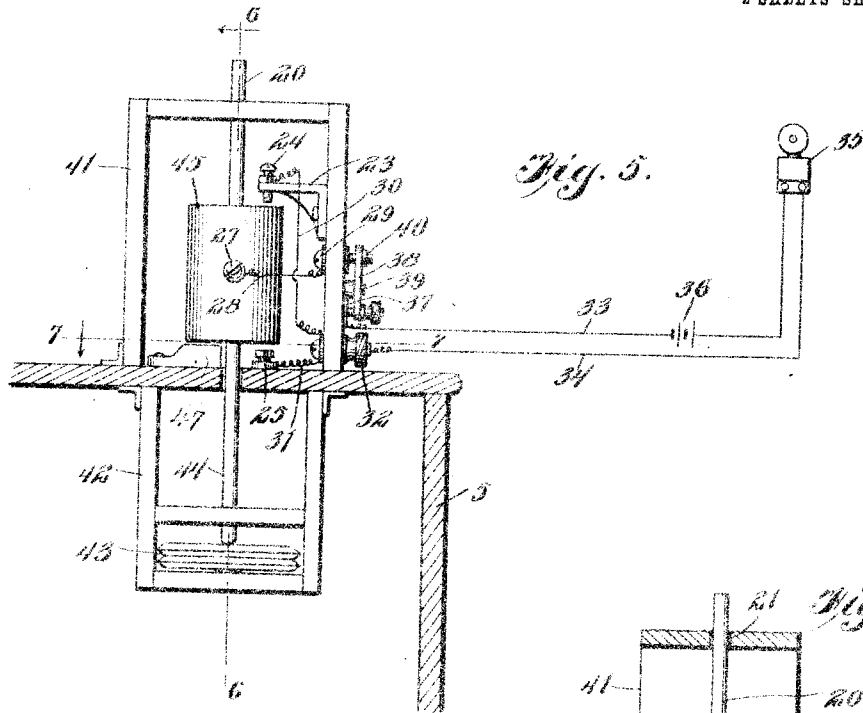


Fig. 5.

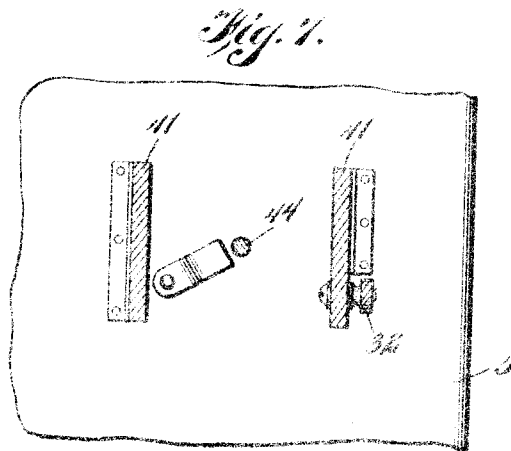


Fig. 7.

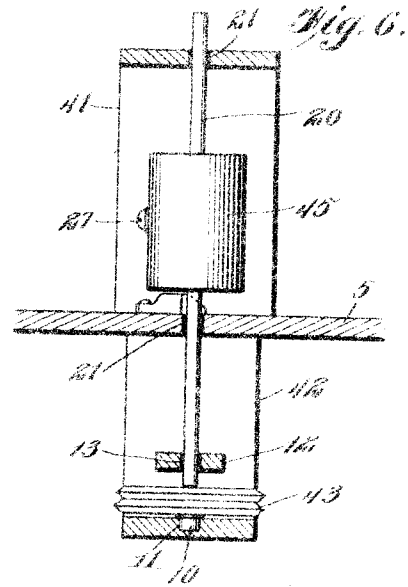


Fig. 6.

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UNITED STATES PATENT OFFICE

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INCUBATOR-ALARM.

1,064,658.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed June 26, 1912. Serial No. 705,991.

To all whom it may concern:

Be it known that I, CLYDE W. KELLEY, a citizen of the United States, residing at Wellington, in the county of Collingsworth and State of Texas, have invented new and useful Improvements in Incubator-Alarms, of which the following is a specification.

The invention relates to indicator or audible signals, and more particularly to the class of electric alarms for incubators.

The primary object of the invention is the provision of an alarm in which the temperature within an incubator when falling below or rising above a predetermined degree will effect the closing of a circuit for the sounding of an alarm thereby signifying to a person that the incubator requires attention for regulating the temperature therein.

Another object of the invention is the provision of an alarm in which a thermostat will become disturbed for the closing of an electric circuit when any variance in the temperature occurs within the body of the incubator whereby an alarm may be sounded, the alarm being disposed at any suitable point or locality and the mechanism for the closing of the circuit may be readily and easily mounted upon an incubator either at the side or top thereof, of any ordinary well-known construction.

A further object of the invention is the provision of an alarm of this character in which a switch is arranged whereby the alarm may be sounded either upon the rising or lowering of the temperature above and below a predetermined point within an incubator. In other words, the alarm will be sounded only when the temperature rises or only when the temperature lowers therein as may be desired.

A still further object of the invention is the provision of an electric alarm of this character which is simple in construction, reliable and efficient in its purpose, and inexpensive in manufacture.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts as will be hereinafter more fully described, illus-

trated in the accompanying drawings, and 50 pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a fragmentary vertical longitudinal sectional view through an incubator showing the alarm mechanism constructed in accordance with 55 the invention applied thereto. Fig. 2 is a side elevation of one form of the alarm mechanism. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a sectional view on the line 4—4 of Fig. 1. Fig. 5 is 60 a view similar to Fig. 1 showing a modified form of alarm mechanism. Fig. 6 is a sectional view on the line 6—6 of Fig. 5. Fig. 7 is a sectional view on the line 7—7 of Fig. 5.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals 5 designates a portion of an incubator of any 70 ordinary well-known type, in which is arranged a thermostat presently described.

Mounted on one of the end walls of the incubator 5 is a substantially rectangular-shaped frame 6, in which is mounted the 75 thermostat which comprises a pair of circular-shaped expansible bodies or shells 7, forming air chambers 8 therein, the same being in communication with each other through a central passage 9, the bodies or 80 shells 7 being preferably constructed from metal, which will expand and contract when subjected to varying degrees of temperature. Formed on and rising from the outer face of one of the bodies 7 centrally thereof is a 85 boss or lug 10, the same being loosely engaged in a socket 11, formed in one end wall of the frame 6, so as to prevent the lateral displacement of the thermostat when mounted in the said frame. Formed in the frame 90 is a shelf or partition, 12, the same and the opposite end of the frame 6 being formed with alining openings 13, in which are slidably fitted the follower rod 14, which is adapted to be acted upon by the thermostat 95 for the shifting thereof and this rod is pivotally connected to a rocking lever 15 fulcrumed upon a pivot 16 mounted in bear

ings 17 in said frame 6, the lever 15 being extended through an elongated slot 18 and the end walls of the incubator 5 to the exterior thereof for controlling and actuating an electric alarm mechanism presently described.

Mounted exteriorly upon the end of the incubator 5 is a frame 19 in which is arranged circuit closing mechanism which comprises a vertically disposed slidable guide rod 20, the same being loosely engaged in guide openings 21 formed in opposite ends of the frame 19 and has its lower end pivoted at 22 to the outer end of the rocking lever 15.

Mounted on one side wall of the frame 19 and projecting inwardly thereof is a bracket 23, on which is carried an upper contact 24, while mounted in the bottom end of the wall of the said frame 19 is a lower contact 25, the said upper and lower contacts being disposed in the path of movement of a circuit closing element 26 in the form of an adjustable sleeve surrounding the guide rod 20, and is adjustably secured thereto by means of a binding screw 27, which also forms a contact for the connection of a branch current wire 28, the same being also connected with a switch contact 29 mounted in the side wall of the said frame 19. Connected with the upper and lower contacts 24 and 25 are branch current wires 30 and 31 respectively, the same being also connected to a contact 32 common thereto and mounted in the side wall of the frame 19. Arranged within an electric circuit including conductor wires 33 and 34, is a bell and a source of electric energy, such as a battery 36, the conductor wire 33 being connected with a switch contact plate 37 secured to the side wall of the frame 19 in the path of movement of a switch blade or finger 38, the same being pivoted at 39 to the said side wall of the frame 19, and carries a contact 40 engageable with the contact 29, the contact wire 34 being connected with the contact 32 so that when the switch blade or finger 38 is engaged with the plate 37 and contact 40, the circuit will be closed through either of the branch wires 30 or 31 when the circuit closing element 26 engages the upper or lower contact 24 and 25, thereby sounding the bell 35 for signaling purposes, it being understood of course that the switch blade or finger 38 when disengaged from the contact 29 will sustain the electric circuit open and thereby prevent the sounding of the bell 35 when the circuit closing element 26 engages with either the upper or lower contacts 34 and 35.

When the temperature within the incubator 5 rises or lowers above or below a predetermined degree the thermostat arranged therein will actuate the circuit closer

for the sounding of the bell 35 arranged within said circuit, thereby signaling an attendant of the temperature condition of the incubator.

In Figs. 5, 6 and 7 there is shown a slight modification of the alarm mechanism wherein the circuit closing frame 41 is mounted upon the top of the incubator 5, while the frame 42 supporting the thermostat 43 is also mounted upon the top of the incubator and depends therefrom in alinement with the frame 41, so that the guide rod 44 carrying the circuit closing element 45 will extend through the top of the incubator and the frame 42, so as to engage with the thermostat 43 whereby the latter will actuate the said rod 44 for operating the circuit closing element 45, the electric circuit being arranged identically with the electric circuit hereinbefore described, and the circuit closing element will control the same for the sounding of an audible signal on the rising or falling of the temperature within the incubator above or below a predetermined degree of temperature.

In both the preferred and modified forms of the invention there is shown spacer blocks 46 and 47, respectively, which are designed to limit the movement of the circuit closing elements 26 and 45 in one direction, as will be clearly apparent, so that it will be impossible for the said circuit closing elements to engage the contacts 25 when the spacer blocks are positioned for engagement with the said elements.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction and operation of the invention will be clearly understood, and therefore, a more extended explanation has been omitted.

What is claimed is:—

1. The combination with an incubator, of a frame mounted exteriorly thereof, a thermostat supported interiorly of the incubator, an electric circuit having a bell therein, contacts arranged in spaced relation on the frame and connected with said circuit, a sliding rod mounted in said frame, a cylindrical body carried by said rod and engageable with either of said contacts, an electric connection between said body and said circuit and having a cut-out, and a lever pivotally mounted on the incubator and having connection with said rod and thermostat.

2. The combination with an incubator, of a frame mounted exteriorly thereof, a thermostat supported interiorly of the incubator, an electric circuit having a bell therein, contacts arranged in spaced relation on the frame and connected with said circuit, a sliding rod mounted in said frame, a cylindrical body carried by said rod and engageable with either of said contacts, an electric

connection between said body and said circuit and having a cut-out, a lever pivotally mounted on the incubator and having connection with said rod and thermostat, and
5 means mounted on the frame and movable into the path of the said body to hold the same out of engagement with one of the contacts.

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

CLYDE WANDS KELLEY.

Witnesses:

J. B. CASELEBERRY,
J. T. MORGAN.