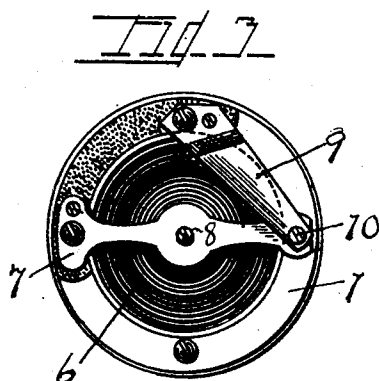
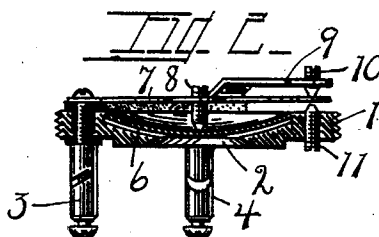
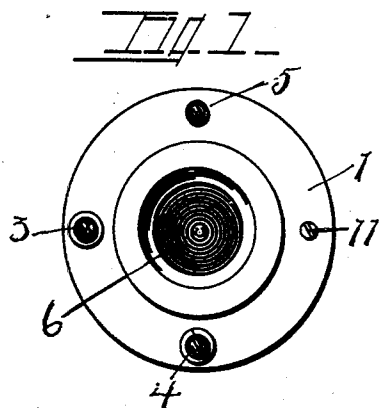


(No Model.)

H. CORTLAND.
DOUBLE ACTING THERMOSTAT.

No. 563,138.

Patented June 30, 1896



WITNESSES
Carl H. Keller.
Maudie Schumacher.

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UNITED STATES PATENT OFFICE.

HARVEY CORTLAND, OF TOLEDO, OHIO.

DOUBLE-ACTING THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 563,138, dated June 30, 1896.

Application filed June 3, 1895. Serial No. 551,479. (No model.)

To all whom it may concern:

Be it known that I, HARVEY CORTLAND, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Double-Acting Thermostats; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to a double-acting thermostat of that character in which a closed electrical circuit is normally maintained and then broken by the thermic condition of a controlling-disk, which by expansion and consequent increased concavity opens the circuit, and by increased or continued expansion further increases in concavity and closes an electrical circuit.

The primary object of my invention is to provide a double-acting thermostat for use in what is now known as "The Cortland Fire-Alarm System," in which by a connection of electrical wiring with any desired number of thermostats, and annunciating mechanism connected with the wiring, a first alarm, designated in the Cortland system a "trouble-alarm," is given at the incipient stage of a fire, and later, should the fire increase, a fire-alarm is given by reason of the second closure of the circuit in the thermostat. This system is more fully described in Letters Patent granted to me October 11, 1892, numbered 484,140, in which an improved thermostat of my invention is employed. The present invention is to simplify the thermostat and employ less parts than in my former construction, thereby allowing of finer adjustment and lessening the danger of disarrangement of the parts.

In the drawings, Figure 1 is a top plan view of the thermostat. Fig. 2 is a cross-section to disclose the construction of the same. Fig. 3 is a bottom plan view.

1 designates the frame, having an opening 2 centrally thereof, binding-posts 3 and 4 in-

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sulated therefrom and binding-post 5 in contact therewith.

6 is a concave disk of hard rubber or analogous material, the edges of which are held firmly by the frame 1.

7 is a finger, one end of which is held rigid and in contact with binding-post 3, the other end being free to move. Located centrally of the finger is a set-screw 8, resting on the concave side of the disk.

9 is a finger held rigid and in contact with binding-post 4.

Set-screw 10 at end of and in electrical connection with finger 9 is normally in contact with the end of finger 7 at ordinary or at any desired temperature. As the heat increases, and it being free to come in contact with disk 6 by means of opening 2, expansion (hence greater concavity of disk) takes place, and the contact between the fingers 7 and 9 is broken. If the heat continues to rise, still greater concavity of the disk takes place, and the end of finger 7 comes in contact with frame 1, through set-screw 10 in electrical connection therewith.

From the foregoing it will be seen that the initial heat flexes the diaphragm and opens the circuit, and the further rise in temperature increases the concavity of the diaphragm, thereby closing the circuit and, when attached to the alarm-signal wires, gives the final or fire alarm.

What I claim is—

A thermostat comprising a frame, a convex flexible diaphragm secured therein, the conducting-fingers 7 and 9 secured to the frame and insulated therefrom, and operated by the diaphragm, the opposite ends of the fingers extending over the opposite side of the frame, and a contact-screw 11 secured directly in the frame beneath the ends of the fingers.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

HARVEY CORTLAND.

Witnesses:

WILLIAM WEBSTER,
ERSKINE H. POTTER.