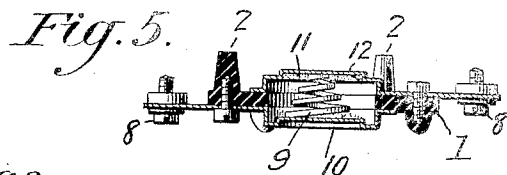
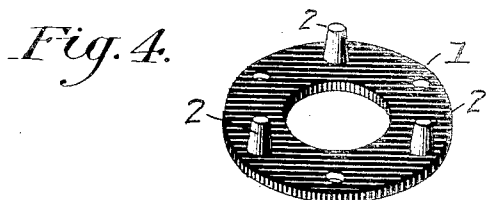
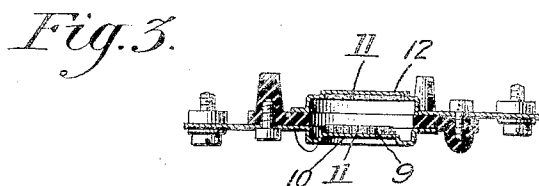
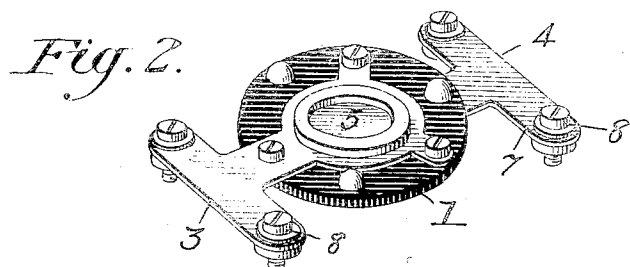
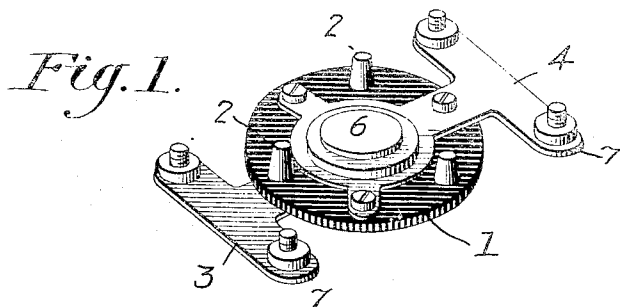


W. W. DEAN.
THERMOSTAT.
APPLICATION FILED MAY 29, 1905.

1,056,638.

Patented Mar. 18, 1913.



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UNITED STATES PATENT OFFICE.

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THERMOSTAT.

1,056,638.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed May 29, 1905. Serial No. 262,915.

To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Thermostats, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to thermostats and more especially to the open circuit class.

The object of the invention is to provide a thermostat for automatic electric fire alarm systems, which will be reliable, efficient and positive in action.

A further object is to so construct the thermostat that there will be no danger of an accidental alarm being sounded. Thermostats with their movable parts composed of metals having different coefficients of expansion are difficult to keep in adjustment, and liable to sound accidental alarms by reason of vibrations caused by shock or otherwise.

Further objects will appear as the specification is read in connection with the accompanying drawings.

The invention consists in the novel features and combination of parts which will be described hereinafter and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a top perspective view; Fig. 2 a bottom perspective view; Fig. 3 a longitudinal section showing the spring contracted; Fig. 4 a detail perspective of the insulating member; and Fig. 5 is a section similar to Fig. 3 but showing the spring distended and the metal retainer fused, etc.

Referring to the drawings, 1 represents a suitable insulating base or plate which is provided on its upper side with spacing lugs 2 adapted to keep the device a sufficient distance from the ceiling or wall. Secured to each side of the insulating plate 1 are terminal members 3 and 4, the former of which is provided with a depressed central portion 5 and the latter of which is provided with a raised central portion 6. Each of these members 3 and 4 is provided with ears 7 to which are secured the usual binding posts 8, two for each ear. The terminal member 3 is provided with a spiral spring 9 of conical formation which is held collapsed upon the raised portion 10 formed by the depression 5, by an easily fusible metal 11. The spring

9 is completely embedded in the fusible metal 11 and is held therein until released by the metal fusing at a predetermined temperature. On the inside of the terminal member 4 in a depression 12 formed by the raised portion 6 on the outside, is placed more of the same fusible metal 11, with which the spring is adapted to contact when released.

It will be evident that the spiral spring may be placed in the depressed portion of the opposite member from the one to which it is now shown attached.

As will be seen by inspection of Fig. 3 the members 3 and 4 are normally separated from each other. When, however, the temperature in the room in which the thermostats are located rises above a given degree, the metal on the inside of the terminal members fuses and releases the spring so that it will contact with the opposite terminal members and thoroughly incorporate itself in the now soft metal 11. This action will close the circuit and ring the alarm.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. In a thermostatic circuit closer, the combination with a pair of circuit terminals having a narrow space between them, of an insulating ring normally separating said terminals, a tapered spiral spring between the terminals and having a tendency to rise in conical form to itself connect the two terminals, and means normally holding said spiral spring pressed with all of its turns in the same plane on one of said terminals, said holding means being adapted to release said spring upon being subjected to a predetermined temperature.

2. In a thermostat, the combination with two fixed contact members one of which is provided with a raised portion, the other of which is provided with a depression, of an insulating plate separating said members, a fusible material connected to each of said members, a spiral spring normally held compressed in the fusible material of one of said members but adapted to be released upon a temperature sufficient to fuse said material and to incorporate itself in the fusible material on the other member.

3. In a thermostatic circuit closer, the combination with a plurality of terminal members, of an insulating plate adapted to

normally separate said members, and provided with an aperture, lugs on said plate adapted to space the plate away from the support on which it rests, fusible material
5 on said members, and a spiral spring embedded in the fusible material on one of said members and adapted to bridge and connect said members through said aperture when released from the fusible material.
10 rial.

4. A thermostatic circuit closer comprising independent terminal members having a narrow space between them, insulating means holding said members apart from
15 each other, and a conical spiral spring between the members normally held flat against one member by fusible means embedding its coils, but adapted to be released at a predetermined temperature and thereupon to project its coils in conical shape so
20 as to itself electrically connect the members.

5. A thermostatic circuit closer comprising independent terminal plates having a narrow space between them, an apertured
25 insulating disk separating said plates, and resilient means normally held between them and flat on one of said plates but adapted at a predetermined temperature to be released and to expand perpendicularly so as to itself
30 bridge said plates through the aperture in the disk.

6. A thermostatic circuit closer, comprising two circuit terminals, insulating means

separating said terminals, fusible conducting material on both of said terminals and a
35 spring embedded in said fusible material on one of the terminals and adapted at a predetermined temperature to be released and effect contact with the other terminal.

7. A thermostatic circuit closer comprising a pair of circuit terminals, an insulating
40 plate separating said terminals, fusible conducting material on each terminal, and a spiral spring normally held compressed upon one terminal by said fusible material, but
45 adapted to be released at a predetermined temperature and thereupon to make contact with the fusible material upon the other terminal.

8. In a thermostatic circuit closer, the combination with a pair of parallel disk terminals
50 of relatively thin metal, insulating material spacing said terminals apart, and forming an inclosed chamber between them, fusible material in a thin layer on the inner face
55 of one of said disks, and a spring confined by said fusible material and adapted to effect contact with the opposite disk terminal.

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

WILLIAM W. DEAN.

Witnesses:

SIDNEY A. BEYLAND,
M. E. MIZER.