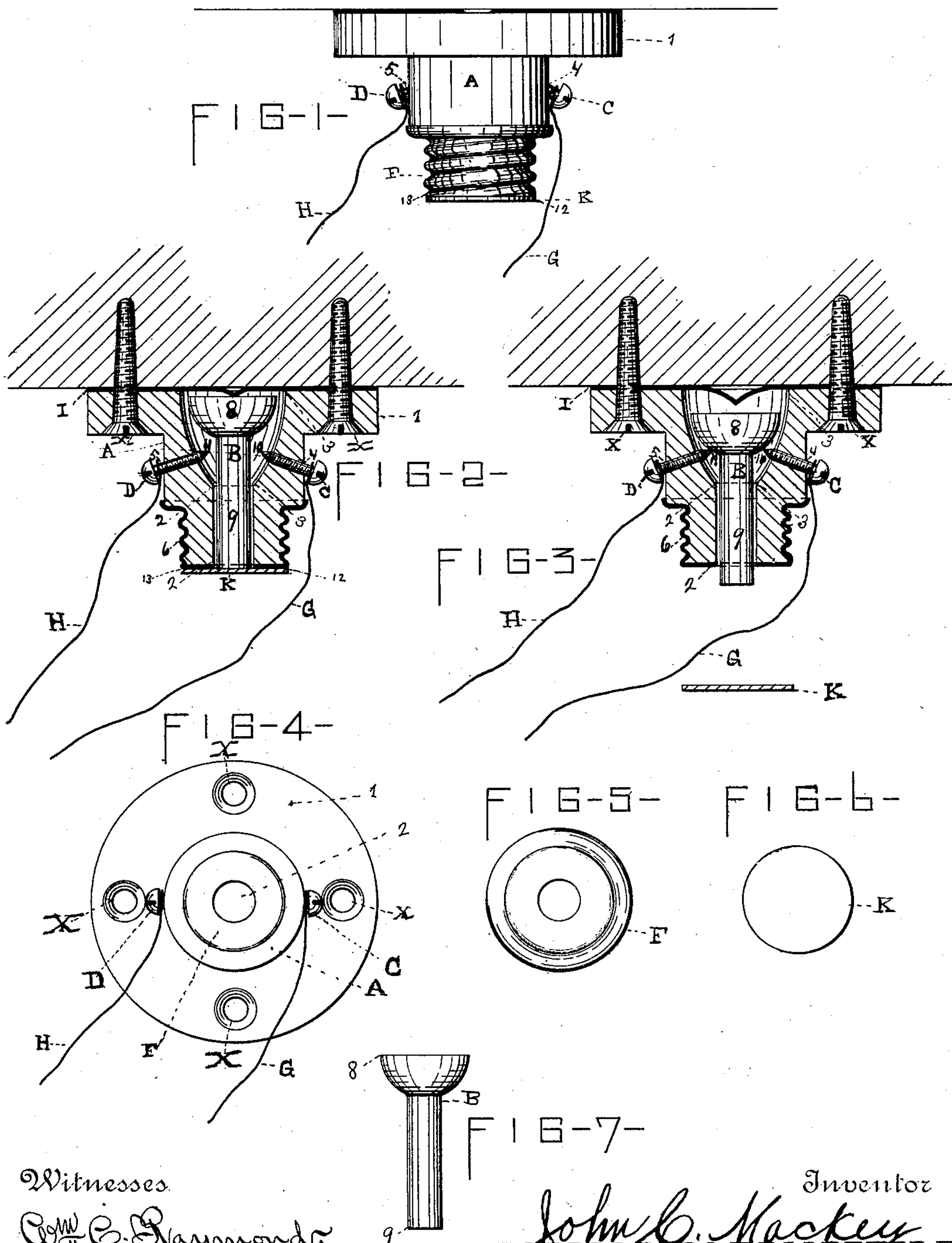


(No Model.)

J. C. MACKEY.  
THERMOTIC CIRCUIT CLOSER.

No. 366,176.

Patented July 5, 1887.



Witnesses

*Wm E. Raymond*

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# UNITED STATES PATENT OFFICE.

JOHN C. MACKEY, OF PHOENIX, NEW YORK.

## THERMOTIC CIRCUIT-CLOSER.

SPECIFICATION forming part of Letters Patent No. 366,176, dated July 5, 1887.

Application filed August 12, 1886. Serial No. 210,633. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. MACKEY, a citizen of the United States, residing at the village of Phoenix, county of Oswego, and State of New York, have invented certain new and useful Improvements in Thermostats, of which the following is a specification, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a thermostat constructed with an open circuit closed by heat acting upon a soldered joint or catch, or a pin, and thereby releasing a drop and pin, or connecting-pin, which operates either entirely by gravity alone to make the connection or a spring can be used bearing against the pin, in which case the pin can operate either vertically or horizontally, together with two connecting-points, the whole being inclosed in a supporting box or body, which is secured to the wall or ceiling and is provided with suitable poles and non-conductors; and the object of my invention is to provide a thermostat constructed with a receiving cup or chamber, inclosing-points with positive and negative connecting electrical lines, and a weighted connecting drop pin or bolt, which may be assisted in its action by a spring held in position when the circuit is open by a supporting plate or catch attached to the thermostat by fusible solder and operating to close the circuit when the fusion of the solder releases the supporting-plate, by the falling of the drop-bolt upon the two connecting-points.

Similar letters and figures of reference refer to like parts throughout the several figures.

I accomplish the above-described result by a thermostat constructed substantially as shown and described in the accompanying drawings, in which—

Figure 1 is a side elevation of my thermostat, showing the body attached to a ceiling and the thimble or cap F screwed over the threaded shank of the body A, while the supporting-plate K is attached, as is shown. It also shows the projecting heads of connecting-screws C and D and the manner of attaching the electrodes G and H to the screws.

Fig. 2 is a vertical section of my thermostat, showing the arrangement of the several parts

when the circuit is open. A is the body of the thermostat, having counter-flange 1, through which screws X X are inserted to hold the spring I in its place and to secure my thermostat to the ceiling. The hole 2 2 passes entirely through the body of my thermostat, but is countersunk at the top into a cup-shaped chamber, 3 3, into which are received the points 10 and 11 of the connecting-screws C and D. This chamber also contains the connecting drop-bolt B in such a manner that it will be supported by the plate or catch K. When the circuit is open, as is shown here, entirely disconnected from the points 10 and 11, this body is provided with holes 4 and 5, through which connecting-screws C and D are inserted, and with a threaded shank, 6, upon which I place the cap or thimble F, which is constructed with an opening at the bottom, corresponding in size with hole 2 in shank of the body A, through which the lower end of stem 9 of the drop-bolt B will pass upon the supporting plate or catch K being taken away. This cap or thimble F is threaded, so that it will screw firmly upon shank 6 and form a shoulder, as shown in Fig. 1. B is the drop bolt of my thermostat, constructed, substantially as shown in the drawings, with a weighted globular-shaped head, 8, having a flat top against which the spring I will press, and also having a stem, 9, which passes through the hole 2 in the body of the thermostat and rests upon the supporting plate or catch K. The head and stem of the drop-bolt are weighted, to give it greater velocity in falling to close the circuit. C and D are connecting-screws with projecting heads. They are inserted from the outside through the body of the thermostat, in holes 4 and 5, in such a manner that the points 10 and 11 are within the chamber 3 3, so that they will come into direct contact with the under surface of head 8 of the drop-bolt B when it falls downward upon fusion of the solder at joints 12 and 13, releasing the supporting-points. Upon the heads of these screws I place, as shown in the drawings, the connecting-wires G and H, which are the electrodes of one or more batteries, and may also connect with any number of similar thermostats on the same circuit. The supporting plate or catch K corresponds in shape and size to the bottom of cap



F, and closes the opening at the bottom of the cap by being soldered upon it at the joints 12 and 13 by a solder which fuses at a given temperature. Its office is to support the weight of drop-bolt B when the circuit is open. The plate K being soldered upon the end of cap F, it supports the drop-bolt B, as shown in Fig. 2. The electrodes G and H being secured to the screws C and D, the thermostat is in readiness for operation. Then the action of heat on supporting-plate K, at joints 12 and 13, fuses the solder which attaches K to the cap F, and as the solder fuses it loses its power of adhesion, and allows supporting plate or catch K to become detached from cap F and to fall off. The support of bolt B having been thus removed, the drop-bolt, by force of gravity, (which action may be accelerated by use of the spring, as shown in the drawings,) falls downward until the under surface of the head 8 of the drop-bolt strikes upon the points 10 and 11 of the two connecting screws C and D, which then arrest its fall and hold it in suspension, as is shown in Fig. 3, which represents the drop-bolt B as having fallen down upon the points 10 and 11 of the screws C and D, and the supporting-plate K detached from the cap or thimble F. As the bolt B is constructed of conducting material, it acts, after having fallen down, as a connector for the electrodes and closes the electrical circuit upon contact with the points 10 and 11.

Fig. 4 is an inverted view of Fig. 1, showing the counter-flange 1, with screw-holes X X for attaching it to the ceiling or wall, the connecting-screws C and D, the electric wires G and H, attached to the connecting-screws, and the cap F, with the plate K soldered upon it.

Fig. 5 is an inverted view of the cap F, showing the hole through which the stem of the drop-bolt passes in falling.

Fig. 6 is an inverted view of the supporting-plate K detached from the cap F.

Fig. 7 shows a side elevation of the drop-bolt B and the details of its construction. For illustration, I may designate wire G as my battery-wire, and wire H as the wire leading to alarm or other devices operating through my thermostat.

My thermostat may be constructed either with or without the spring I. The office of this spring is to accelerate the action of the drop-bolt B, which will fall of its own weight when the thermostat is operating vertically; and when it is desirable to operate the thermostat horizontally, the spring will force the drop-bolt upon the connecting-points. When thus constructed, my thermostat may be used for the purpose of giving an alarm in case of fire, or in operating an automatic electrically-opening valve, and for other purposes of a thermostat.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a thermostat, a body containing a countersunk receiving-chamber, and having a connecting hollow shank threaded to receive an open thimble or cap, provided with a spring operating an automatic drop-bolt, in combination with heat-releasing supporting-plate and electrical supporting-points, constructed substantially as shown and described.

2. In a thermostat, a connecting drop-bolt provided with weighted head and body, together with a stem, in combination with a spring, a supporting-plate secured to the thermostat upon its cap by fusible solder on a heat-releasing joint, and electrically-connected points, contacting with the drop-bolt, constructed substantially as shown and described.

In witness whereof I have hereunto set my hand this 31st day of July, 1886.

JOHN C. MACKKEY.

Witnesses:

GEO. F. HINE,  
FRANK L. STEVENS.