(No Model.)

E. C. C. KROGH.

THERMOSTAT.

No. 497,800. Patented May 23, 1893.

Fig. 1.

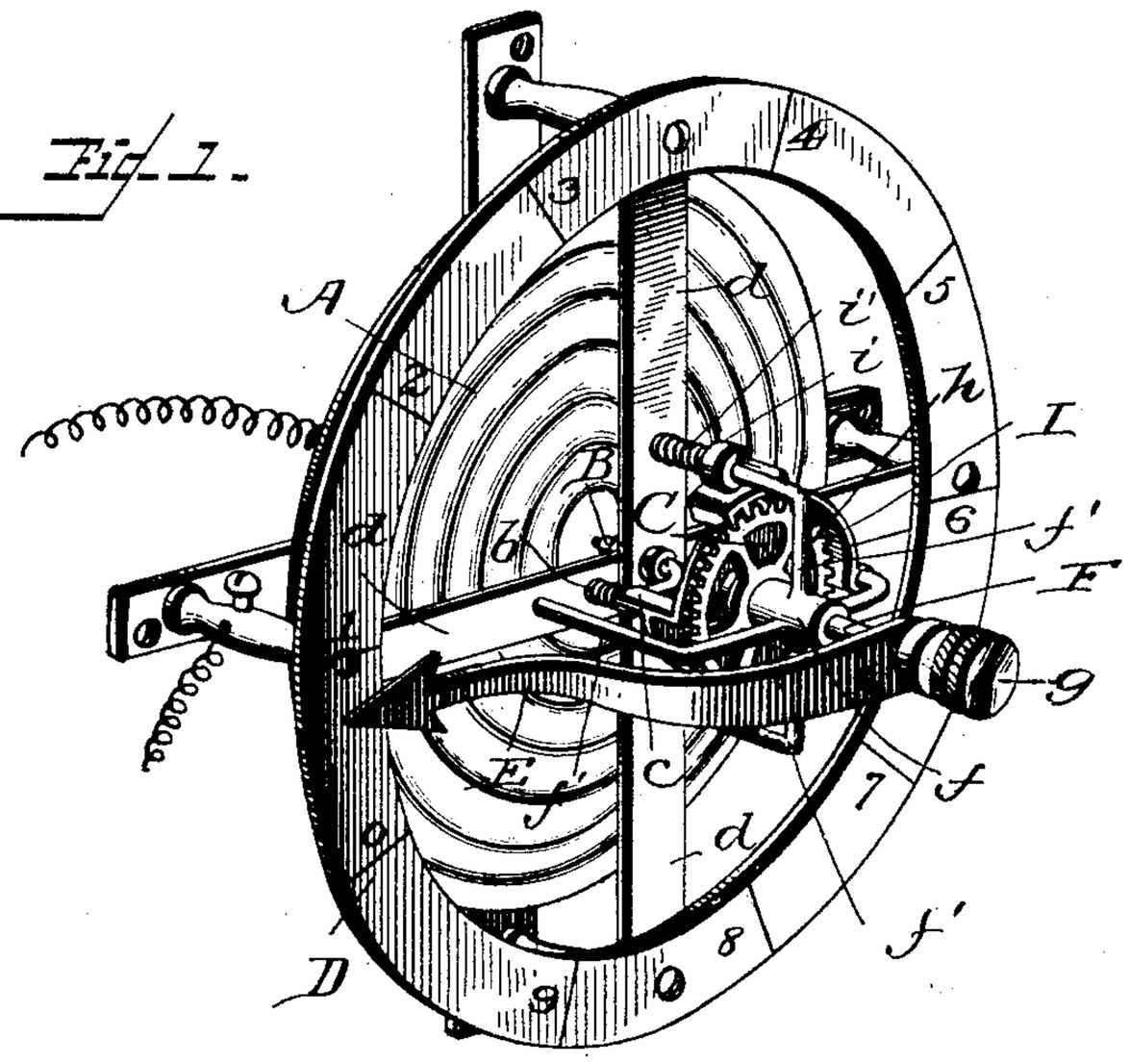


Fig. 2.

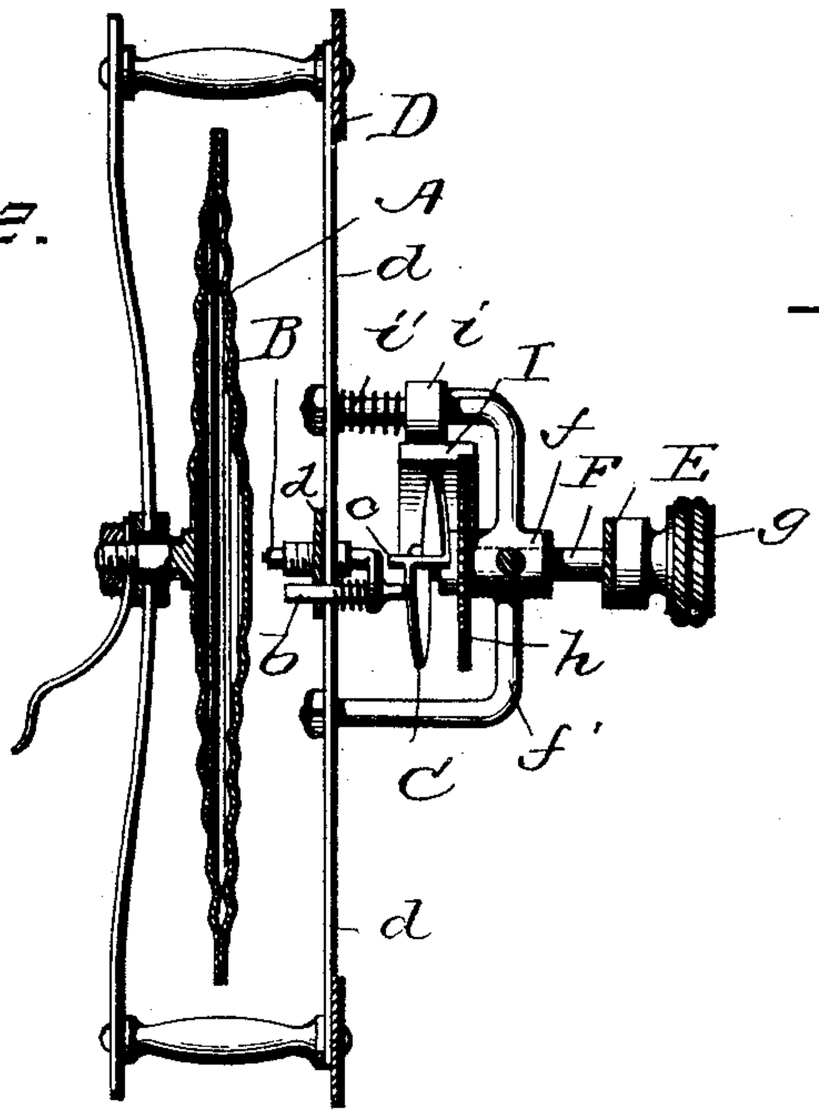
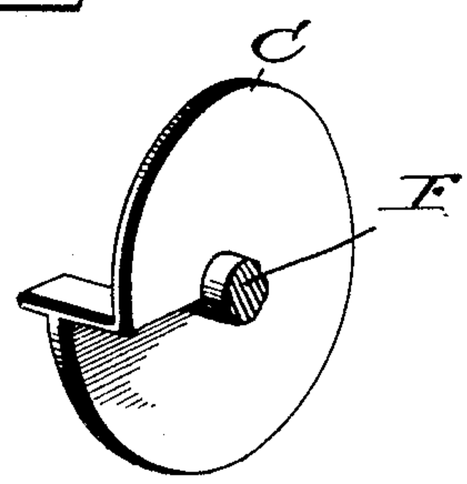


Fig. 3.



Witnesses
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Inventor
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By Attorney Franklin H. Krogh

UNITED STATES PATENT OFFICE.

EMIL C. C. KROGH, OF MONMOUTH, ILLINOIS, ASSIGNOR OF ONE-HALF TO S. D. McGOVERN AND THOS. B. McGOVERN, OF SAME PLACE.

THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 497,800, dated May 23, 1893.

Application filed January 11, 1893. Serial No. 458,047. (No model.)

To all whom it may concern:

Be it known that I, EMIL C. C. KROGH, a citizen of the United States, residing at Monmouth, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Thermostats; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 a part of this specification.

My invention relates to fire alarms of the class employing an electric circuit to actuate the alarm, which circuit is normally open, but is closed by the action of a thermostat actuated by a rise in the temperature in the surrounding atmosphere due to the presence of a fire.

More especially my object is the improvement of the thermostat shown in my patent, No. 488,611, issued December 27, 1892, whereby the same may be employed as an ordinary push-button type of circuit closer as well as operating as a thermostat circuit closer.

To this end, and others to appear, the invention consists in the construction and combination of parts hereinafter specified, and shown in the accompanying drawings, in which—

Figure 1, is a perspective view of my device; Fig. 2,—a view partially in section and partly in elevation, and Fig. 3, a detail perspective view of the contact adjusting cam.

As in my patent referred to, I employ an alcohol filled drum or capsule A, that constitutes one terminal of the electric circuit, an adjustable rod B constituting the other terminal, a spiral cam C to adjust said rod, dial D and a pointer or indicator E.

The cam C is mounted on the inner end of a shaft F journaled in a bearing or sleeve *f* that is supported by an open frame of four rods *f'*, secured to two diametrically extending bars *d*, *d*. Upon its outer end the shaft F is provided with an enlargement or button *g* by which it may be rotated, and also moved longitudinally inward, to carry the rod B into contact with the capsule A and thus close the circuit. The hand or pointer E is carried by said shaft F. The rod B does not engage the cam, as in my patent referred to, but a second rod *b* is employed which is connected to a lateral extension of the rod B. A coiled spring encircling the rod *b* presses the same yieldingly against the cam. This arrangement of the rods enables me to have the capsule A and the dial D concentric, instead of eccentric, as is the case with my patented device.

To prevent the rod *b'* from passing out of contact with the spiral cam C when the latter is rotated from its highest to its lowest surface, I provide a projection *c* to strike said pin and thus limit the rotation of the cam.

As the frequent use of the device as an ordinary call, might dis-arrange the adjustment of the device to a certain temperature, I have provided a lock to prevent such derangement, consisting of a toothed wheel *h* mounted on the shaft F, and a pawl I to co-operate therewith. Said pawl is made quite wide, as shown, so as to always engage the wheel, whatever may be the position to which it may be moved by the longitudinal movements of the shaft. The pawl is held locked in engagement with the teeth of the wheel, by a collar *i* mounted on one of the rods *f'* which engages the side of the pawl. Said collar is normally held outward in engagement with the pawl by a coiled spring *i* encircling one of the rods *f'*. To disengage the pawl from the wheel it is simply necessary to press the collar inward against the tension of the spring until it is out of the path of outward swing of the pawl.

It will be seen that with the additions made to my patented device, I have materially increased its utility, and without in any degree detracting from its uses as an automatic fire-alarm, as regards its functions as a thermostat, it operates in exactly the same way as said patented device, and possesses the same advantages.

The operation of the device constructed as above described is substantially as follows: Normally the capsule A is out of contact with the contact B, but when the temperature of the atmosphere, due to the presence of a fire, rises sufficiently, the capsule A is expanded until it contacts with the terminal B, thus completing the circuit and sounding an alarm,

as in my patent hereinbefore referred to. Should it be desired to sound an alarm for any reason when the temperature is not sufficiently high to expand the capsule, the push button *g* is pushed inward, which brings the contact B against the capsule and closes the circuit.

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

1. In combination with the temperature actuating contact of a thermostat, the longitudinally movable rod forming a contact, held normally away from the other, the adjusting cam, the longitudinally movable shaft carrying said cam, and the locking device consisting of the toothed wheel, the pawl and the collar, to hold said shaft from rotation when moved longitudinally, substantially as described.

2. In combination with a temperature actuating contact of a thermostat, the longitudinally movable contact rod held normally from the other, the adjusting cam, the longitudinally movable shaft carrying said cam, the toothed wheel to hold said shaft from rotating, and the spring pressed collar to engage said pawl.

3. In combination with the temperature actuating contact of a thermostat, the longitudinally movable contact rod forced normally from the other, the eccentric rod engaging the cam, and a spring around said rod, the adjusting spiral cam to move said rod and the stop to limit rotary movement of the cam, substantially as described.

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

EMIL C. C. KROGH.

Witnesses:

T. C. PATTERSON,

T. B. MCGOVERN.