

(No Model.)

E. C. C. KROGH.
THERMOSTATIC INDICATOR AND ADJUSTER.

No. 488,611.

Patented Dec. 27, 1892.

Fig. 1.

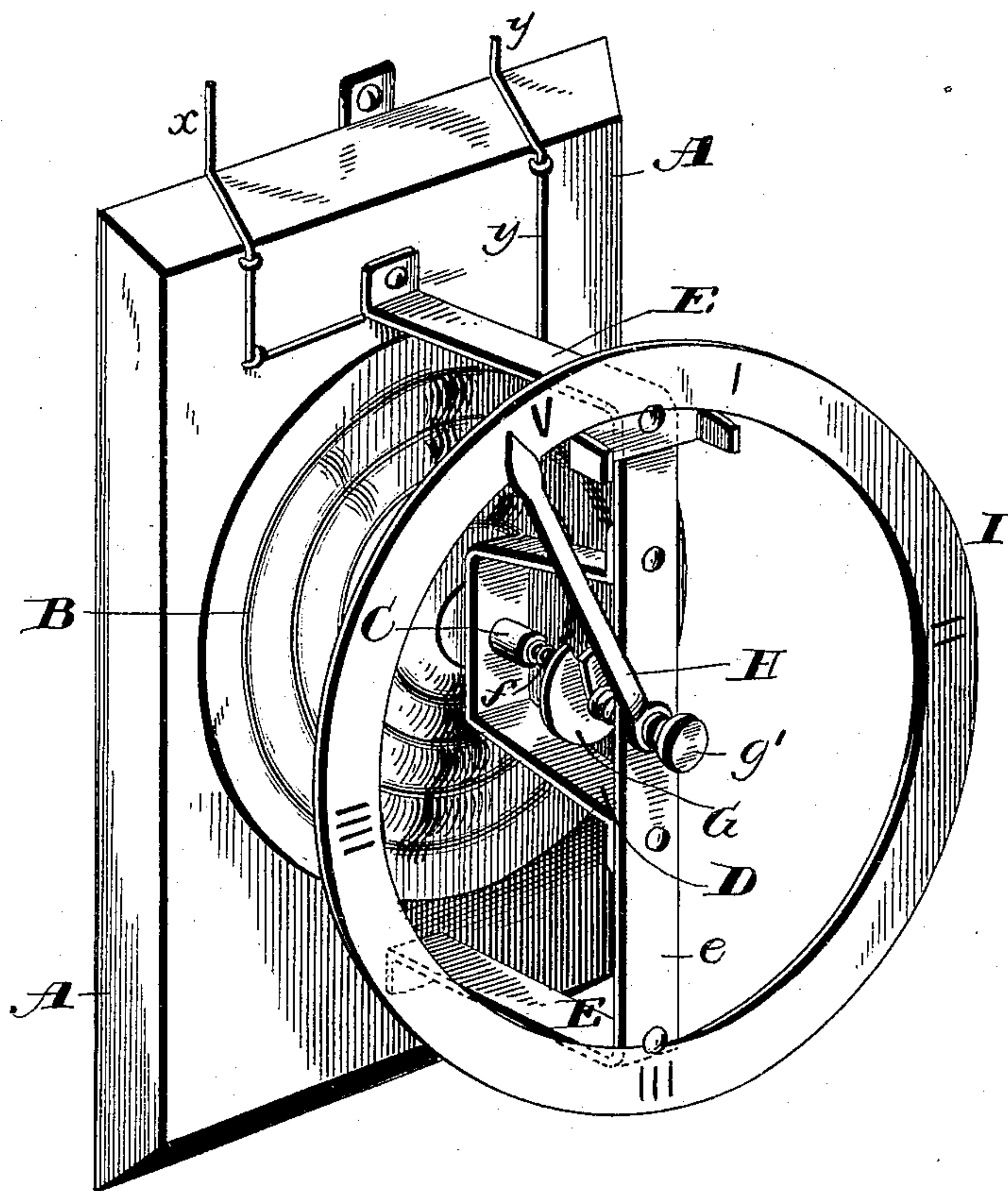
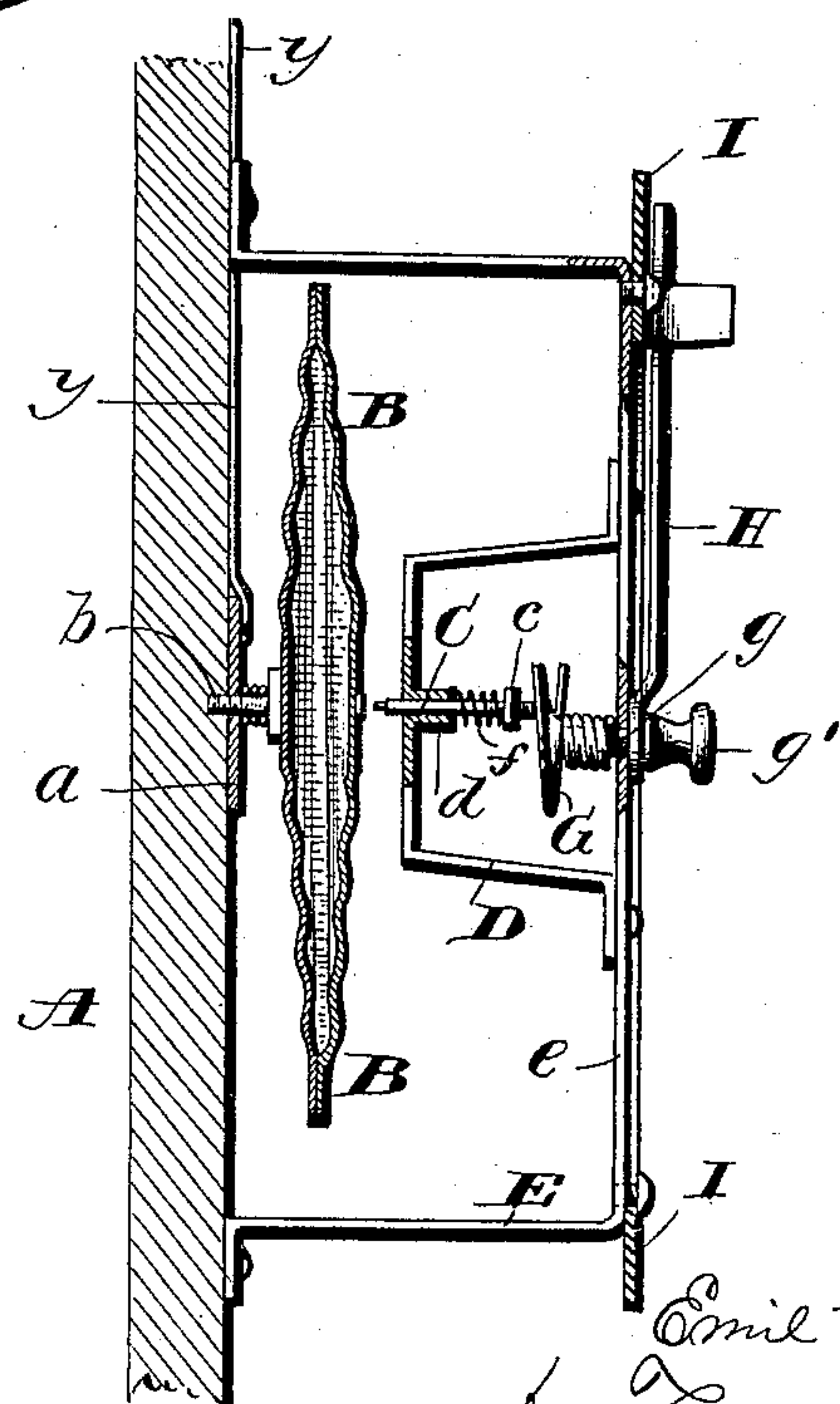


Fig. 2.



Witnesses
C. J. Williamson,
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Inventor
Emil C. C. Krogh,
by Franklin H. Hough,
his Atty

UNITED STATES PATENT OFFICE.

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

THERMOSTATIC INDICATOR AND ADJUSTER.

SPECIFICATION forming part of Letters Patent No. 488,611, dated December 27, 1892.

Application filed September 2, 1892. Serial No. 444,872. (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 Thermostatic Indicators and Adjusters; 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.

This invention relates to fire-alarms of the class employing an electric circuit to actuate the alarm; which circuit is normally broken, or 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.

The object of the invention, is the provision of a simple and thoroughly efficient thermostat, for the purpose named, which, among other important features shall be capable of convenient and certain adjustment to act at different temperatures.

To this end the invention consists in the construction and combination of parts hereinafter specified and illustrated in the accompanying drawings, in which;

Figure 1, is a perspective view of the device, and, Fig. 2, is a section thereof.

The invention is to be applied either to the side walls or the ceiling of the apartment to be protected, and it may be directly fastened thereto or placed upon a base or plate A, as shown, that is fitted for convenient application, to the desired place. To such base, if used, is mounted at the center, a drum, or capsule B, consisting of two, thin, readily yielding circular plates, that are generally externally convex, and are corrugated by a concentric series of corrugations, to add to their elasticity. These plates are hermetically sealed or soldered together at their outer edges and the space between them is completely filled, to the entire exclusion of air, with alcohol. The side of the drum thus made, adjacent to the base A, carries a screw *b*, which engages a threaded opening in a me-

tallic plate *a*, attached to said base, and thus the drum is attached to said base.

The drum B constitutes one terminal of the electric circuit, and carries at the center of its outer face a piece of platinum for contact with the platinum tipped platinum contact-point of a rod C, that constitutes the other terminal of the circuit. The rod C passes through and is guided and supported by a hollow boss *d* carried by a bracket D that is attached to and projects from the cross-bar *e* of a light metal frame E, that is secured to the base A and straddles the drum B, but having no electrical connection therewith. The rod C is made longitudinally movable to and from the drum, to enable different degrees of expansion of the latter to place them in contact, in order that the device may be set to act at various temperatures. It is moved away from the drum by a coiled spring *f* encircling it and interposed between the end of the boss *d* and a nut *c* upon the rod. The nut *c* is provided to permit the tension of the spring to be varied. To move the rod inward, or toward the drum, its outer end is engaged by a spiral cam G, that is carried on the inner end of a shaft journaled in the cross-bar *e*. Rotation of the cam in one direction, will move the rod inward against the pressure of the spring *f*, while an opposite rotation will permit the rod to be moved outward under stress of the spring. On its outer end, close to the bar *e* the shaft *g* carries a hand or pointer H, whose outer end travels over a numbered dial I, in the form of a ring, that is supported on the cross-bar D, while to turn the shaft conveniently, it is provided with a head or knob *g'*. The numbers on the dial have reference to certain degrees of temperature at which it is desired to have the alarm act, and in conjunction with the pointer H affords a most ready and certain means of adjustment. The device is placed in a circuit with the bell and annunciator, by the wires *x* and *y*, one of which is connected to the plate *a*, and the other to the metal frame E. On the outbreak of a fire in its immediate vicinity and the consequent rise in temperature, the drum B will expand under the action of the imprisoned alcohol, and at the predetermined temperature, contact with the rod C and close

the circuit, and actuate the signal, which, if an annunciator, will immediately disclose the location of the fire.

5 The device can be readily placed in circuit with any type of annunciator, and without extra wiring, and if desired, can be connected with bells throughout a building thereby alarming all occupants of the existence of a fire in the same. A thing obviously of great
10 value in a hotel. It can be used as an ordinary room call, and thus have its operative condition constantly tested, and, if desired, it can be placed in circuit with a signal in neighboring fire engine houses, serving thus
15 to promptly notify the fire department of the existence of a fire, and its locality.

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

In combination with the temperature-actuating contact of a thermostat, a longitudinally movable rod forming the other contact, the spring for moving said rod in one direction, the cam for moving it in the other direction, and the indicator, substantially as described. 25

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

EMIL C. C. KROGH.

Witnesses:

STEPHEN D. MCGOVERN,
GEORGE PUGH.