

(No Model.)

O. A. ENHOLM & T. H. BECK.
THERMOSTATIC FIRE ALARM.

No. 581,544.

Patented Apr. 27, 1897.

Fig. 1.

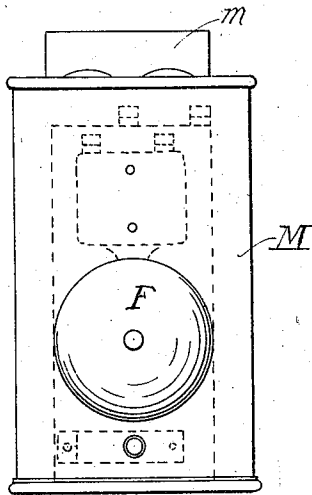


Fig. 3.

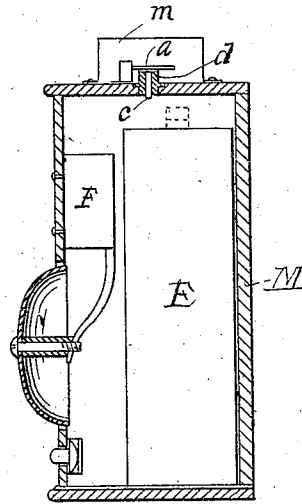
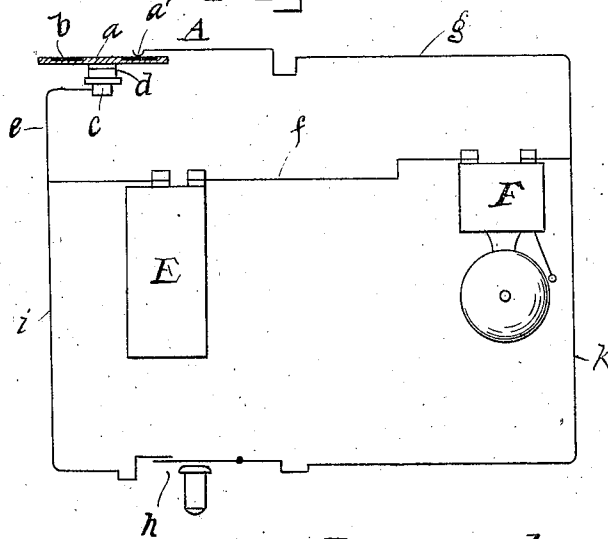


Fig. 2.



Witnesses:

J. B. Bolton.

Geo. W. Allen.

Inventors:

Oscar A. Enholm and
Thomas H. Beck.

By Edwards, Ryan & Lawyer.
his Attorneys.

UNITED STATES PATENT OFFICE.

OSCAR A. ENHOLM AND THOMAS H. BECK, OF NEW YORK, N. Y.

THERMOSTATIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 581,544, dated April 27, 1897.

Application filed November 23, 1896. Serial No. 613,072. (No model.)

To all whom it may concern:

Be it known that we, OSCAR A. ENHOLM and THOMAS H. BECK, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Thermostatic Fire-Alarms, of which the following is a full, clear, and exact specification.

10 This invention relates to thermostatic fire-alarms; and its object is to construct an alarm which shall be efficient in operation, shall be self-contained, and can be placed and removed at will without the usual multiplication of
15 wires or mechanical apparatus necessary with the ordinary fire-alarm of commerce. To accomplish this, we propose to place all the needed parts comprising the apparatus in and on a comparatively small box which may be
20 adapted to be hung upon the wall or stand upon a shelf or other convenient place which shall be capable of continuous and successive use without reconstruction or alteration.

25 A further feature of the invention is the construction of a thermostat in which the electric contact is dependent upon the effect of heat upon a metallic surface covered with wax or paraffin.

30 Generally speaking, the apparatus may be said to consist of a box containing an electric battery, an electric bell, and connecting-wires, the same being placed in the box. On a convenient part of the box is located a thermostat, and on the front side of the box is a testing-button for ascertaining the condition of
35 the battery and bell.

40 The apparatus also comprehends a circuit-closer comprising a depressed disk containing fusible material and a spring adapted to rest thereon, the spring and disk being connected with the respective terminals of the circuit.

45 Our invention will be more fully understood by referring to the description of the form thereof illustrated in the accompanying drawings, in which—

50 Figure 1 represents a front view, partly in section, of a device embodying the invention; and Fig. 2 is a diagram of the parts, showing the circuits. Fig. 3 is a sectional side view of Fig. 1.

In the drawings, A is a metallic spring, and

a a metallic disk having a depression filled with wax or paraffin or otherwise coated with said wax in such manner that the wax will be presented to the contact-point *a'* upon the spring. The wax or paraffin is represented in the drawings by the reference-letter *b*.

It is to be understood that the term "wax" used herein and in the claims appended hereto is intended to cover all forms of wax or paraffin or similar substances.

c is a shaft upon which the disk *a* is carried, and *d* is a busheling or bearing to hold shaft *c* in upright position, the shaft being capable of rotation therein.

65 *E* represents a battery of any suitable type, and *F* a bell or other alarm. Wire *e* connects disk *a* through shaft *c* with one terminal of the battery, wire *f* connects the other terminal of the battery with the bell, wire *g* connects the bell with spring *A*, and spring *A* normally rests upon the paraffin *b* upon disk *a*, thereby forming a circuit interrupted by the paraffin or wax.

75 *h* represents a circuit-closing device, and *i* and *k*, respectively, represent wires connecting the terminals of the circuit-closing device with the battery and the bell.

80 The operation of the above-described apparatus is substantially as follows: At the normal temperature the wax on disk *a* prevents contact between the point of spring *A* and disk *a*, thereby maintaining a break in the current. If the temperature rises to a dangerous degree—say, for instance, 125° Fahrenheit—the wax in disk *a* melts, allowing the contact-point of spring *A* to press down upon the metallic surface of the disk. The circuit is thus completed and the alarm will sound. Should the wax melt from any cause other than that of an actual fire in the apartment in which the apparatus is located, the thermostat can be reset as soon as the wax hardens by simply rotating the disk on shaft *c*, which will bring a different and unmelted portion of the wax on disk *a* under the spring, thus breaking the contact again. It may be noted in this connection that the hardening of the wax itself will raise the contact-point out of contact with the disk, but to do so the spring should be light and have a curved surface resting against the wax, substantially as

shown in the drawings. This, however, is a matter of adjustment and will have to be varied to suit the circumstances of each case.

An independent circuit-closing device may be provided to sound the alarm without melting the wax, if desired. Such a device is illustrated by the reference-letter *h* in the drawings. However, if preferred, a wax or paraffin contact may be used here also, where it is desired to place the thermostatic circuit-closers in various parts of the building or apartment.

A further advantage and improvement attained by us is the construction of an apparatus of this character which may be compactly embodied in one box or receptacle. Heretofore such apparatus has been cumbersome and difficult to install by reason of the fact that its various parts have been located at different places.

We have constructed an apparatus, as illustrated in Fig. 1, wherein the various parts are close together. *M* represents a suitable casing within which is mounted the alarm *F*. *n* is a suitable opening in the casing through which the alarm partly projects, the magnets thereof being located inside the casing. By this arrangement the magnets and operating parts of the alarm are protected from dust, &c., and the alarm itself gives forth the same clear and loud tone as when located entirely upon the outside of the casing. Upon the outside of the box is placed the wax contact device, the latter being protected from dust, &c., by a suitable covering-plate *m*. The circuit-wires are arranged substantially as hereinbefore described.

It is to be understood that we do not herein limit ourselves to the exact construction shown and described, as it is obvious that the various parts may be altered, reversed, or equivalents substituted therefor without de-

parting from the spirit or terms of our invention.

Having thus described our invention, we claim—

1. In an electric thermostatic alarm, the combination with the circuit, of a rotatable recessed disk containing fusible material, and a spring, one end of which rests on the surface of the wax, said disk and said spring being connected with the terminals of said circuit, for the purpose set forth.

2. In an electric thermostatic alarm, the combination with the circuit, of a circular rotatably-mounted disk having upwardly-turned edges, a body of fusible material contained in said disk, and a spring normally resting upon said fusible material, whereby different portions of said body of fusible material may be brought under the spring, said spring and said disk being connected with the respective terminals of the circuit, substantially as described.

3. In a thermostatic alarm, the combination of a casing, an opening therein, an alarm in said casing extending partly through said opening, a battery in said casing, a rotatable recessed disk supported upon the outside of said casing, fusible material contained in said recessed disk, a spring normally resting upon said fusible material, a covering-plate over said disk and spring, and connections between said alarm, spring, disk and battery to complete an electric circuit therethrough, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

OSCAR A. ENHOLM.
THOMAS H. BECK.

Witnesses:

C. V. EDWARDS,
M. A. RYAN.