

T. N. ROBERTS.
Fire-Alarm.

No. 216,576.

Patented June 17, 1879.

Fig. 1.

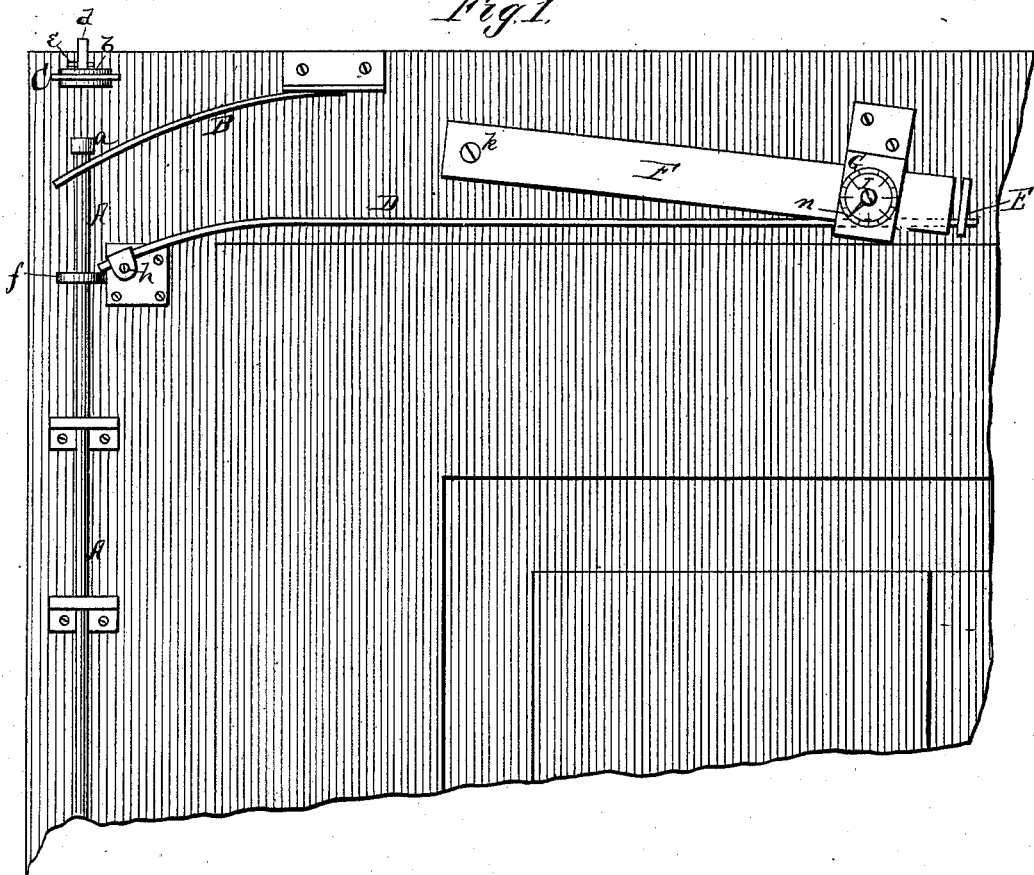


Fig. 2.

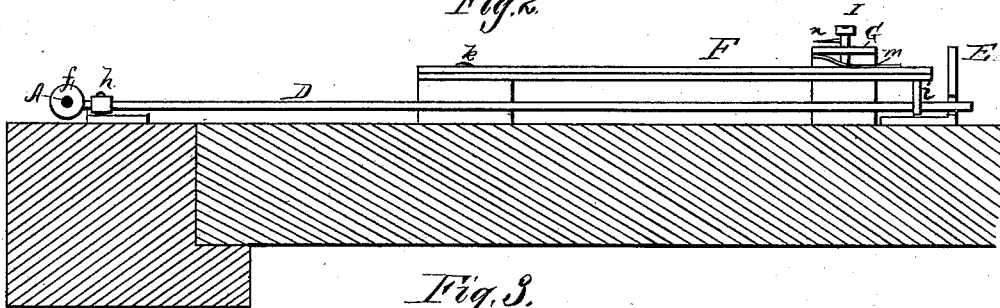
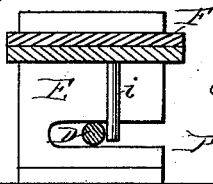


Fig. 3.



Witnesses:
W. C. McArthur
John C. Rogers

Inventor:
T. A. Roberts,

Wm. Ryanides & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

THEOPHILUS N. ROBERTS, OF COLUMBIA, SOUTH CAROLINA.

IMPROVEMENT IN FIRE-ALARMS.

Specification forming part of Letters Patent No. **216,576**, dated June 17, 1879; application filed April 22, 1879.

To all whom it may concern:

Be it known that I, THEOPHILUS N. ROBERTS, of Columbia, in the county of Richland and State of South Carolina, have invented certain new and useful Improvements in Automatic Fire-Alarms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of an automatic fire-alarm, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a front view of my alarm placed upon a door-frame. Fig. 2 is a longitudinal section, and Fig. 3 a cross-section, of the same.

My automatic fire-alarm may be arranged in any part of a room and in any position, and it is constructed as follows:

A represents a vertical rod moving in suitable guides, and its upper end formed or provided with a hammer, *a*. This rod is thrown upward by means of a spring, B, so that the hammer will explode a cartridge against the cartridge-anvil C.

This cartridge anvil or holder is simply a round metal disk, between which and another disk, *b*, the cartridge is held.

The cartridge is annular in form, and a pin, *d*, is passed through the two disks and cartridge, and the parts held together in place by means of a key, *e*, through said pin *d*, as shown.

On the rod A at a suitable point is rigidly secured a disk or collar, *f*, which is to catch on the short arm of a long lever, D, pivoted on a stud, *h*, in close proximity to the vertical rod A.

The long arm of the lever D fits in a slot in a metallic guide, E, and rests upon a pin, *i*, which is firmly secured in and projects from a compound strip or thermic bar, F. When in this position the short arm of the lever D

presses down the rod A by being on top of the disk *f*, so that the hammer *a* will be removed from the cartridge anvil or holder C.

In the drawings I show two thermic bars, F, but any desired number may be used, connected in such a way that being fixed firmly by a screw or rivet, *k*, at one end, their other end is free to move, and to this free end the pin *i* is secured.

When, by the action of heat, this thermic bar or compound strip is thrown outward the pin *i* moves with them and passes from under the long arm of the lever D, releasing the same, so that it will descend in the slot of the guide E and fall down suddenly by the action of the spring B on the rod A, the collar *f* of which rested against the under side of the short arm of the lever. As soon as the long arm of the lever D is released from the pin *i*, the spring B acts suddenly and causes the hammer *a* on the upper end of the rod A to explode the cartridge.

The thermic bars are to be made so that at a certain temperature—say, 125° to 130° Fahrenheit—they will bend enough toward the side of the least expansible metal to cause the pin *i* to be drawn away from the lever D.

The temperature at which the thermic bars are to operate and produce the above result may be regulated by means of a counter-force pressing against them in a direction opposite to that in which they will move or bend by the action of heat. This counter-force consists of a spring, *m*, fastened at one end to the under side of a dial, G, and having the other or free end pressing against the thermic bars.

Through the dial G is passed a screw, *l*, which presses against the spring *m*, and by turning said screw the tension of said spring can easily be regulated to accomplish the object sought—namely, to regulate the action of the thermic bars.

A pointer, *n*, is attached to the screw *l* to show on the dial at what temperature the device has been set to act in the manner designed.

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

1. The combination of the thermic bars F, with pin *i*, the lever D, and rod A, with ham-

mer *a* and disk *f*, substantially as and for the purposes herein set forth.

2. In a fire-alarm, the combination of the thermic bars *F*, lever *D*, rod *A*, spring *B*, and anvil *C*, all constructed and arranged to operate substantially in the manner described.

3. The combination, in a fire-alarm, of the thermic bars *F*, pin *i*, spring *m*, dial *G*, pointer *n* with rod *A*, disk *f*, lever *D*, spring *B*, and

anvil *C*, all arranged to operate substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THEOPHILUS NUNEZ ROBERTS.

Witnesses:

FITZ W. McMASTER,
D. B. DE SAUSSURE.