

J. B. LOUGHEAD.
 AUTOMATIC FIRE ALARM.
 APPLICATION FILED JAN. 4, 1911.

1,018,509.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.

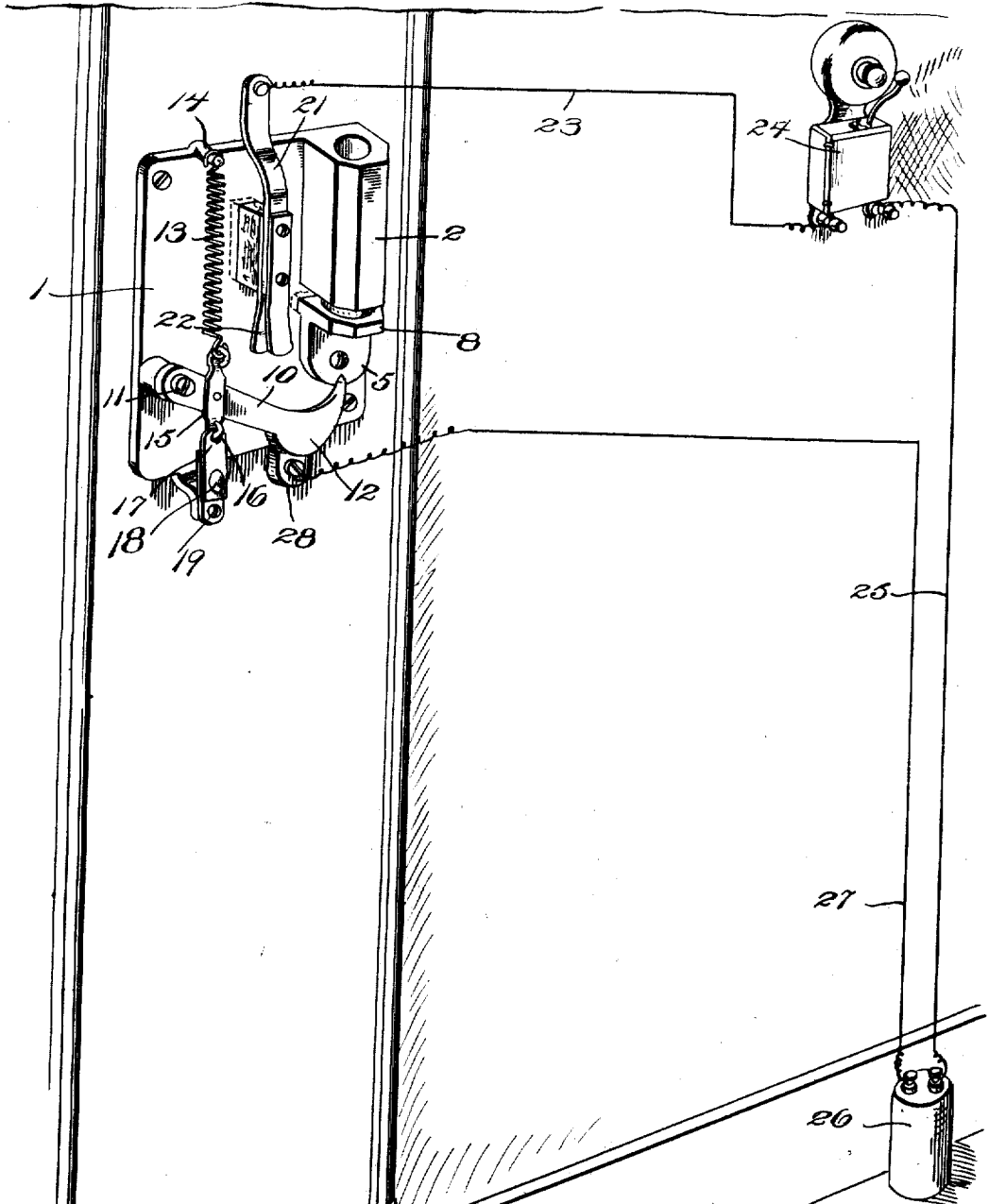


Fig. 1.

Inventor
 J. B. Loughead

Witnesses
 W. P. Woodson
 Juana M. Tallin

By

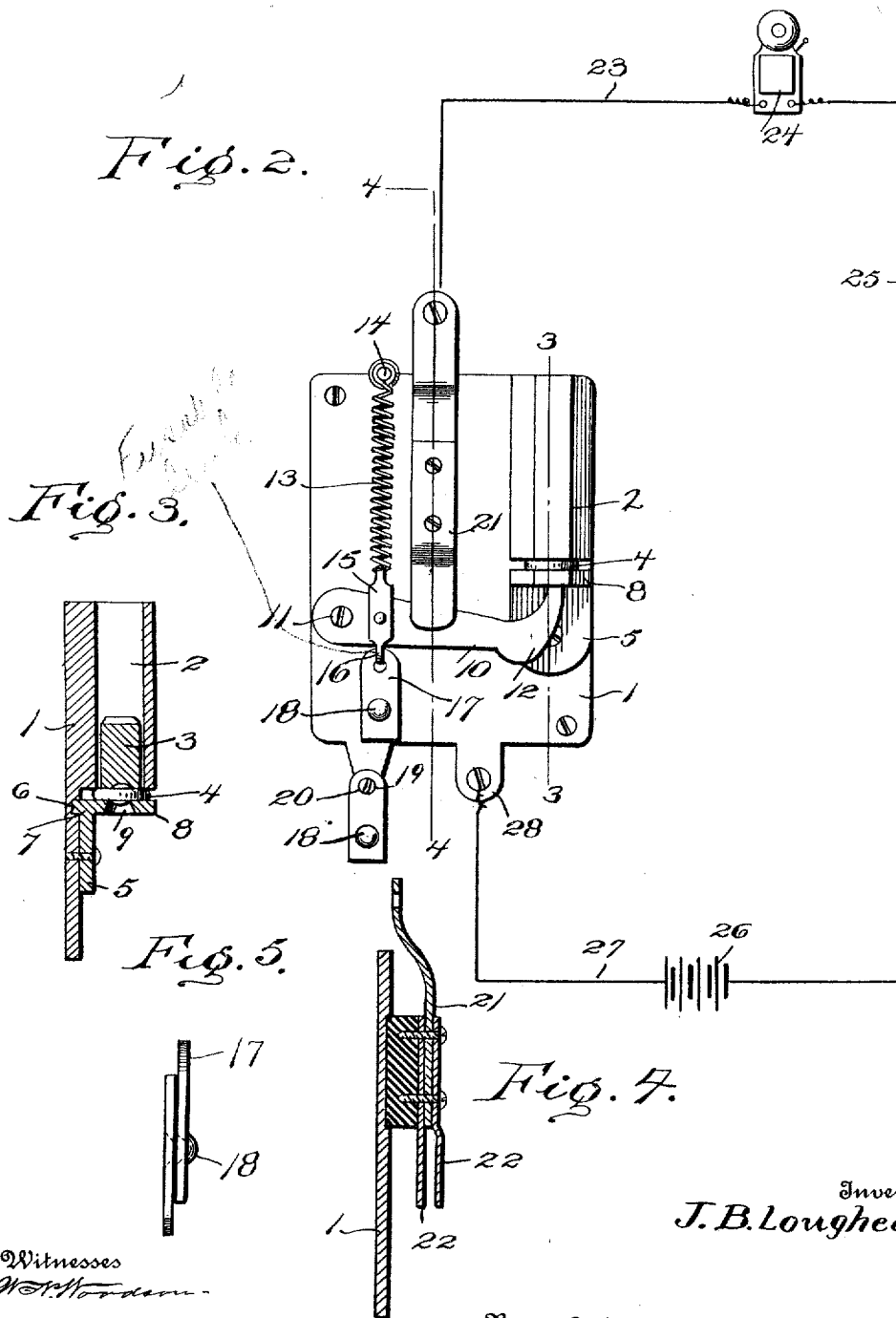
H. A. R. Racy, Attorneys.

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Inventor
J. B. Loughead.

Witnesses
W. H. Fordham
Juana M. Fallin.

By *H. A. S. S. S.* Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH B. LOUGHEAD, OF NEW YORK, N. Y., ASSIGNOR OF ONE-EIGHTH TO GEORGE M. ARMOUR, OF NEW YORK, N. Y.

AUTOMATIC FIRE-ALARM.

1,018,509.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH B. LOUGHEAD, citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Fire-Alarms, of which the following is a specification.

This invention comprehends certain new and useful improvements in fire alarms of the automatic type, and has for its object a simple and efficient construction of device of this character designed to be placed in a room, hallway, shaft of a lift, barn or any other place exposed to the dangers of a fire and so arranged that when a predetermined temperature has been reached, a hammer will be released and automatically produce a detonation, as by striking and firing a blank cartridge held in the apparatus so as to sound an alarm.

The invention also has for its object an improved apparatus of this character in which the cartridge striking hammer will also constitute the movable member of an electric circuit closing switch and will simultaneously close an electric circuit when the cartridge is fired, so as to actuate an electric gong or annunciator, whereby the device will be able to sound the alarm not only momentarily at the place where the apparatus is located, but also continuously and at a distance, so that the apparatus may be placed, for instance, in a barn and be useful in apprising those in the house more or less remote from the barn, that the apparatus has actuated and that the temperature has therefore risen to a dangerous degree. This is merely given as an example of one adaptation of the device, and it is, of course, understood that other applications will readily suggest themselves to those skilled in the art to which the invention appertains. And the invention also has for its object to simplify and render generally more efficient this class of devices, whereby they may be made more useful and commercially desirable.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following de-

scription and accompanying drawings, in which:

Figure 1 is a perspective view illustrating the application of my invention; Fig. 2 is an elevation thereof; Fig. 3 is a sectional view on the line 3—3 of Fig. 2; Fig. 4 is a similar view on the line 4—4 of Fig. 2; and Fig. 5 is a detail view of the fuse strip employed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The present embodiment of my invention includes a base plate 1 which may be secured to a wall or any other convenient support by screws or similar fastening devices, as shown, the base plate being provided with a casing 2 which constitutes a chamber designed to receive a detonator such as a blank cartridge 3, the chamber being preferably of such size relative to the cartridge intended for the apparatus, that the flanged head 4 of the cartridge will abut against one end of the casing, as clearly illustrated in the drawing. The cartridge is held in place by means of a breech block 5 which includes an attaching portion adapted to be detachably secured to the base plate by a screw or similar fastening device, the attaching portion being preferably formed with a lug 6 entering a slot 7 in the base plate in order to assist in positioning the block, and the block also comprising an outwardly projecting arm 8 adapted to engage the head 4 of the cartridge 3 to hold the cartridge in place and prevent it from flying out when fired. The arm 8 of the block 5 is formed with an opening 9 leading to the firing point of the cartridge.

In order to fire the cartridge, I provide an actuating member 10 which in the present instance is substantially in the form of a hammer, the shank being pivotally connected to the front face of the base plate, as at 11, and the head 12 of the hammer being pointed and adapted to swing into and through the opening 9 of the arm 8 to strike and fire the cartridge. The actuating member 10, when released, is actuated by a contractile spring 13, one end of which is hooked around a stud 14 projecting from the front face of the base plate 1 and the other end of which is hooked to a clip 15 riveted or otherwise secured to the shank of

the actuating member. One end of the clip 15 is formed with a hook 16 adapted to enter an opening formed in a sectional strip 17. The overlapping sections of said strip are held together adhesively by some metal or other substance capable of fusing at a relatively low temperature and are preferably provided with nested protuberances 18, whereby the section will tend to quickly separate when the adhesive substance is fused. The fuse strip 17 is formed at its ends with openings 19, one of said openings being designed to receive the hook 16 of the clip 15 and the other being designed to receive a pin 20, projecting from the front face of the base plate, whereby the actuating member 10 will be normally held in a retracted position with the spring 13 expanded and under tension so that when the predetermined temperature has been reached and the adhesive substance melted, the two parts or sections of the strip 17 will snap apart and permit the actuating member 10 under the influence of the contractile spring 13 to move in a direction to strike and fire the cartridge and thus sound an alarm.

A device embodying the parts hereinbefore described, or equivalents thereof, would manifestly be complete in itself to sound an alarm, but in order that the apparatus may also serve to actuate an annunciator or a gong or the like at a point remote from the place where the apparatus is located, I embody in the device a relatively stationary contact member 21 secured by screws or the like to the base plate 1 in insulated relation thereto, one end of said contact member being forked to produce switch jaws 22 between which the shank of the actuating member 10 is adapted to pass as it strikes the cartridge. The other end of the contact member 21 is preferably extended from one edge of the base plate 1

and is so formed that a wire 23 may be conveniently secured thereto, the wire leading to, say, an electric bell 24 located wherever desired and the bell in turn being connected by a wire 25, battery 26 or other suitable source of supply, and wire 27 to the ear 28 which is formed on the base plate, so as to complete the circuit. It will thus be seen that when the dangerous temperature has been reached, the actuating member 10 will not only fire the cartridge 3, but will close the electric circuit in which the electric bell 24 or other alarm or indicating device is included and thereby sound an alarm or indicate by visual means the fact that the apparatus has actuated and that therefore a dangerous temperature has been reached in the place where the apparatus is located.

Having thus described the invention, what is claimed as new is:

An automatic fire alarm, comprising a base plate, an actuating member pivotally connected thereto to swing thereon, a contractile spring connected to the base plate, a clip connected to the actuating member and extending transversely thereof, the clip being formed at its ends with hooks, one of which is connected to one end of the spring, and a sectional strip formed at its ends with openings, with one of which the other hook of the clip engages, the base plate being provided with a pin engaging the other opening of said strip, the sections of the strip being secured together by a fusible substance, and means secured to the base plate for holding a detonator in the path of movement of said actuating member.

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

JOSEPH B. LOUGHEAD. [L. s.]

Witnesses:

BERNARD MURPHY,
JOSEPH PAONE.