

No. 754,555.

PATENTED MAR. 15, 1904.

M. K. FRED.
AUTOMATIC FIRE ALARM.
APPLICATION FILED MAR. 9, 1903.

NO MODEL.

Fig. 1.

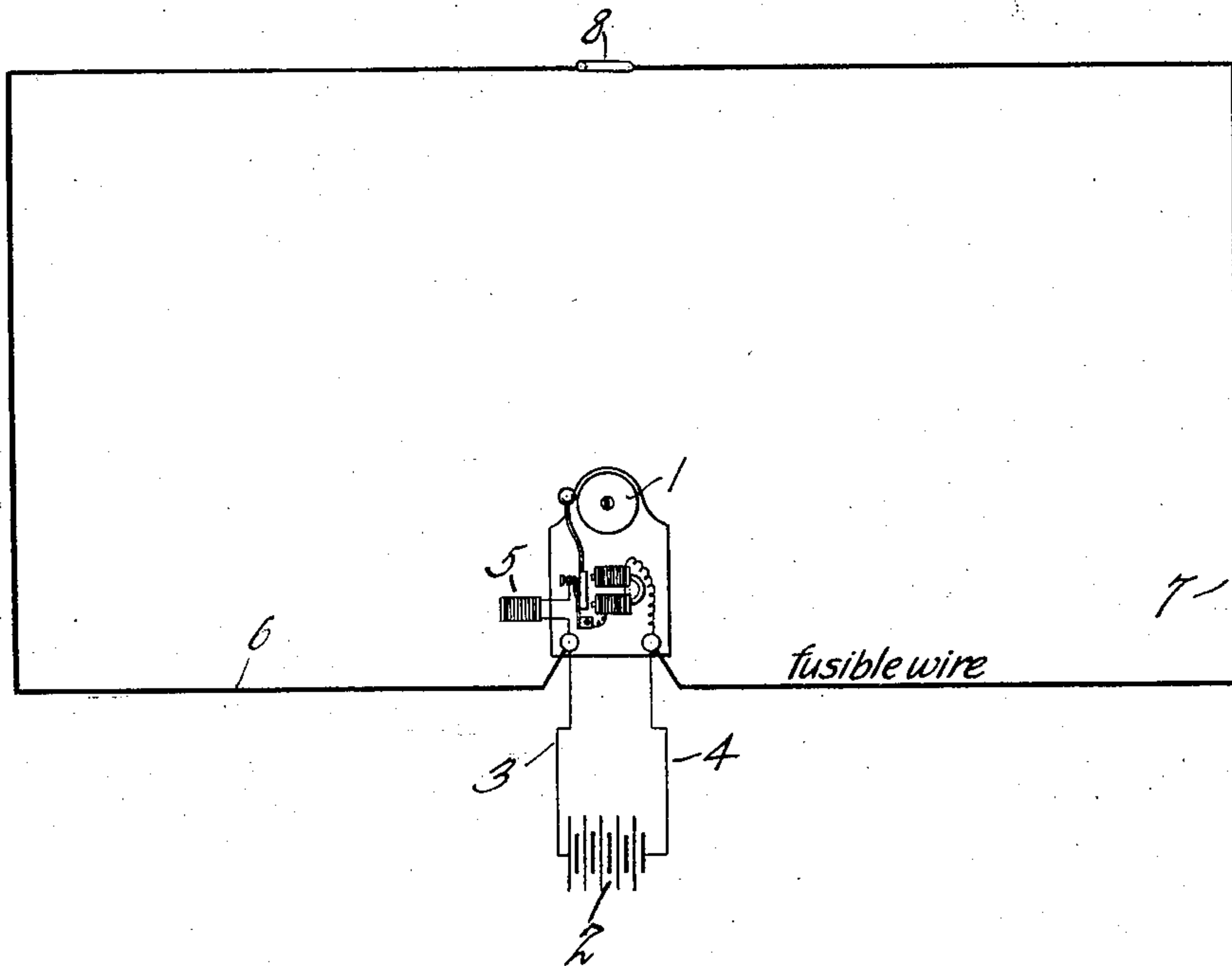
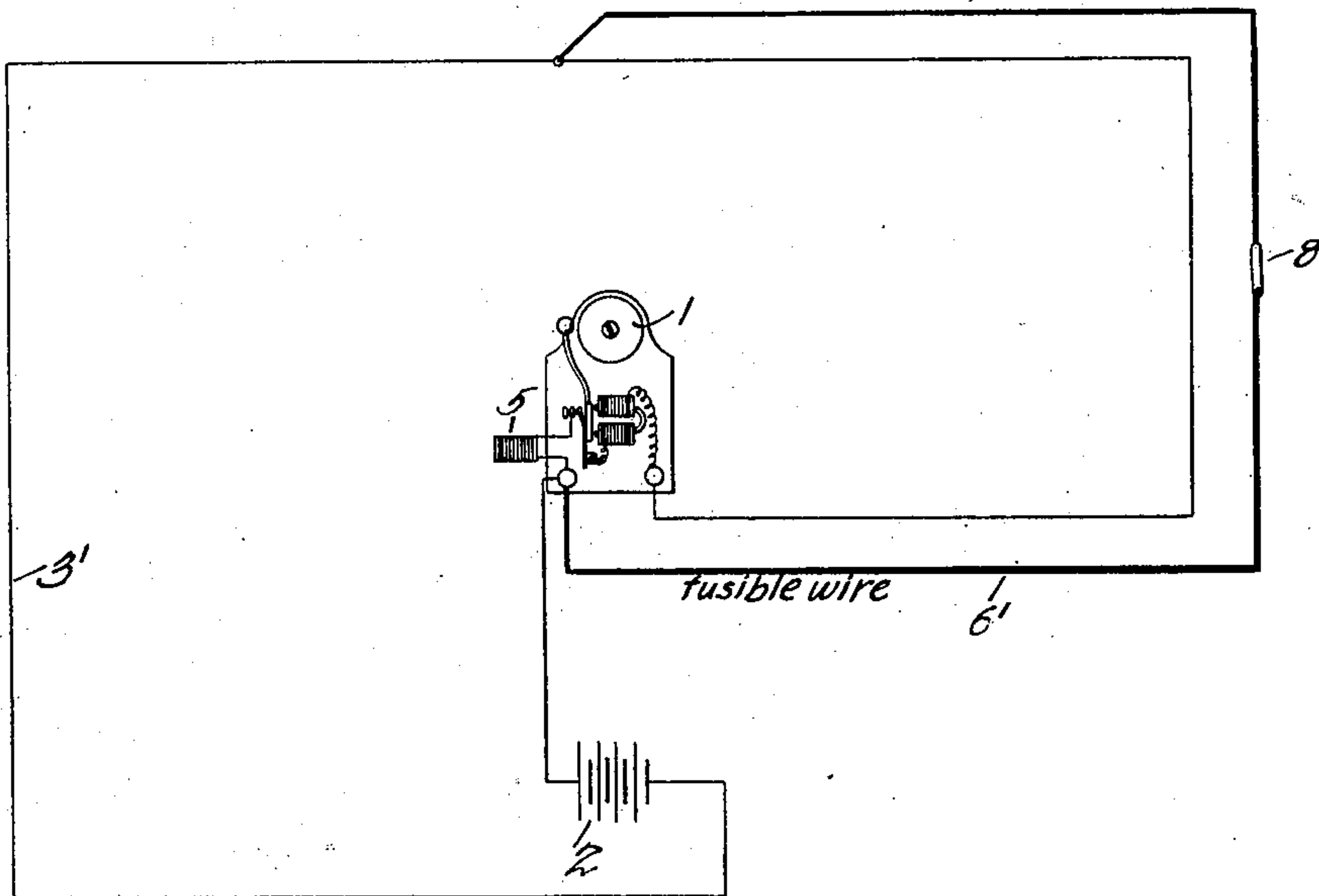


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MASON K. FRED, OF PLEASANTON, TEXAS.

AUTOMATIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 754,555, dated March 15, 1904.

Application filed March 9, 1903. Serial No. 146,965. (No model.)

To all whom it may concern:

Be it known that I, MASON K. FRED, a citizen of the United States, residing at Pleasanton, in the county of Atascosa and State of Texas, have invented a new and useful Automatic Fire-Alarm, of which the following is a specification.

The invention relates to certain improvements in automatic fire-alarm systems of that general class in which the fusing of a current-conducting wire or the like establishes an electric circuit through an alarm of any desired character.

The principal object of the invention is to provide a novel system which may be installed at small cost and in which a current-conducting wire having a low fusing-point is secured in position to the walls or ceiling of a building where it will be exposed to intense heat in case of fire, the wire closing the circuit through the battery, and the severing of the wire at any point, either by fusion or cutting, will cause the sounding of an alarm.

With this and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a diagram of an automatic fire-alarm system arranged in accordance with the invention. Fig. 2 is a similar view illustrating a slightly-modified system.

Referring first to Fig. 1, 1 indicates an electromagnetic bell or other suitable alarm, and 2 a source of electrical energy, which may be a battery or dynamo. The poles of the battery are connected to the binding-posts of the bell by current-conducting wires 3 and 4 to maintain a closed circuit, and the electromagnets are wound to very high resistance, or one or more resistance-coils, as 5, are introduced between the leading-in post and the armature contact-screw, the battery or other source of electric energy being sufficiently powerful to

overcome the resistance and sound the alarm. To the binding-post of the bell or the battery are secured the ends of current-conducting wires 6 and 7, which extend through all the rooms of the building or other place to be protected, the wire being strung in the ordinary manner and the ends of said wires being normally closed by a switch or similar circuit-closing device 8. The wires 6 and 7, being formed of a metal having a low fusion-point, are naturally of small conductivity and high resistance; but owing to the resistance of the coils of the electromagnet and the additional resistance-coil 5 the current from the battery is shunted through the wires 6 and 7 and the bell-magnets are not energized. Should a fire occur or an attempt be made to destroy the alarm by severing the wires, the current will instantly flow through the coils of the electromagnets and sound the alarm. The system is such as to permit the protection of a building of any size by a single wire, which may be readily placed in position and secured near all exposed points where fire would be likely to occur, while the alarm may be placed at some central point in the building or may be in the form of a relay for connection with the ordinary police fire-alarm system. In testing, the circuit-closer 8 is opened in order to break the circuit through the fusible wire.

In the modified system shown in Fig. 2 a wire of low resistance is employed for a portion of the fusible circuit in order to decrease the resistance of the line, as where the fusible wire may be led once through a room or rooms and the circuit completed by a non-fusible wire of higher conductivity. In Fig. 2 the wire 3' is a continuous wire of metal of a comparatively high conductivity extending between the poles of a battery and the binding-posts of the alarm to form a continuous closed circuit, as before described. The wire 6' leads from one of the bell binding-posts through the room or rooms and is then connected with the wire 3' at any desired point in order to complete the circuit. This arrangement of the system is useful in that less battery-power will be required than can be employed where it is only necessary to lead

a single wire once through all of the rooms to be protected.

The fusible wire may be formed of any desired metal or alloy, while the wires 3 and 4
5 are of course of higher conductivity, but preferably of a metal of comparatively high resistance. The resistance of the coils will depend on the length and resistance of the fusible wire, and one or more additional coils or
10 other forms of resistance may be placed in the line when found necessary.

Having thus described my invention, what I claim is—

An automatic fire-alarm system comprising
15 an alarm, a source of electrical energy connected direct in a closed circuit with said

alarm, a wire formed of fusible metal extending throughout the room or rooms to be protected and also connected in closed circuit with the battery, and artificial resistance connected
20 in the line between the alarm and the point of connection of the fusible wire with the battery, such resistance being greater than that offered by the fusible wire.

In testimony that I claim the foregoing as
25 my own I have hereto affixed my signature in the presence of two witnesses.

MASON K. FRED.

Witnesses:

W. M. ABERNETHY,
H. G. MARTIN.