

C. D. MILLER.
AUTOMATIC FIRE ALARM.
APPLICATION FILED DEC. 21, 1908.

936,923.

Patented Oct. 12, 1909.

FIG. 1.

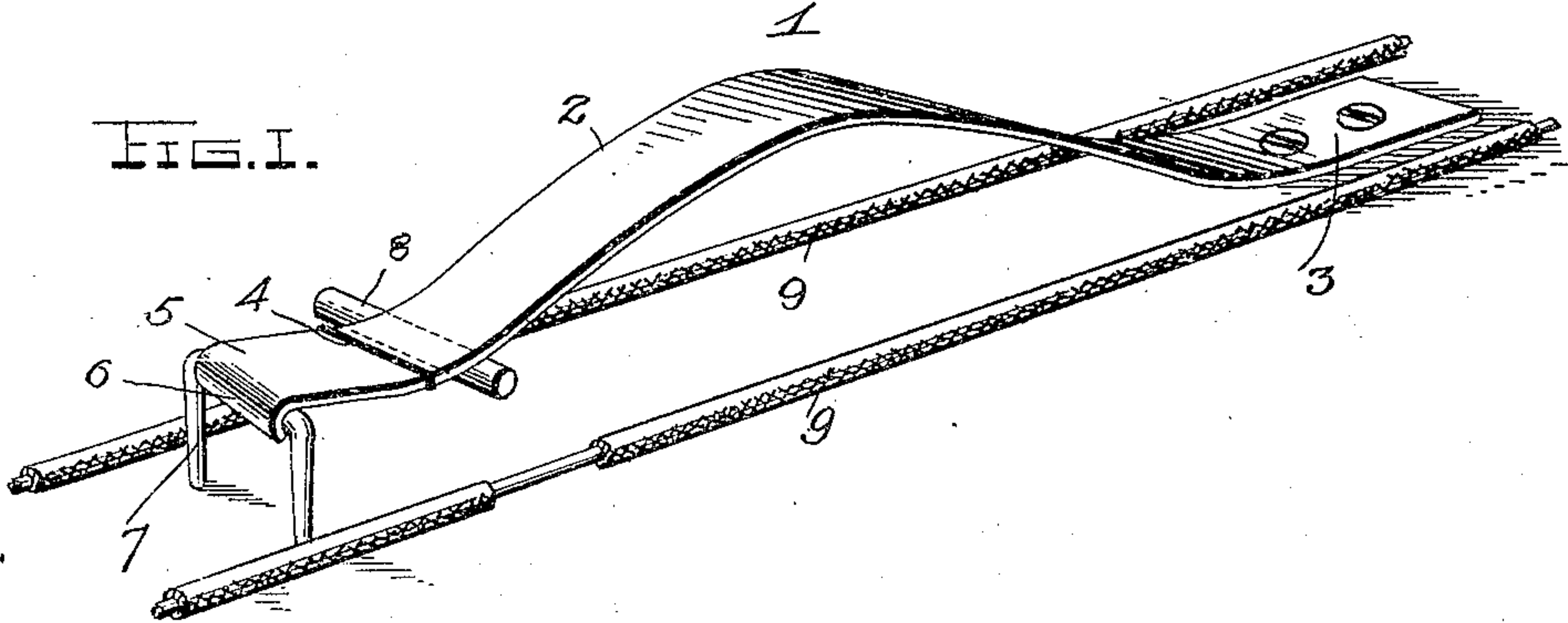


FIG. 2.

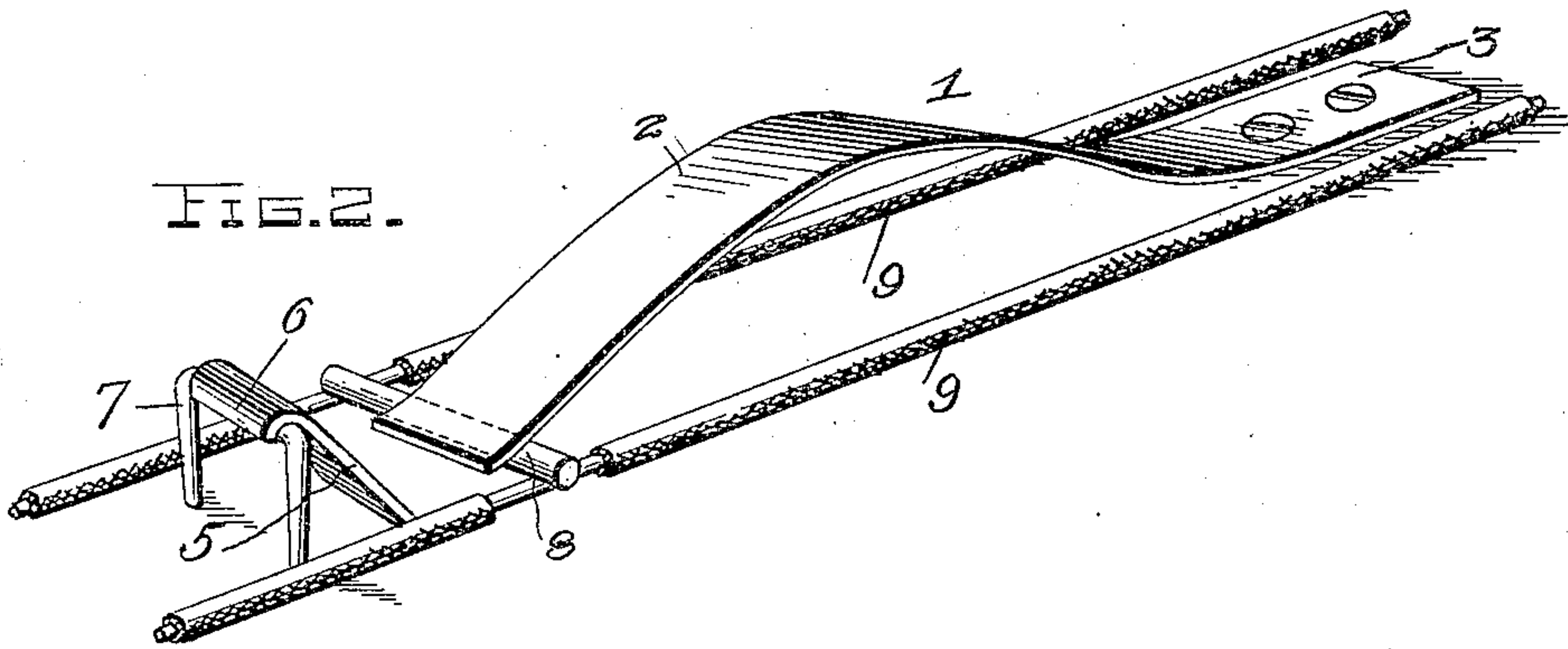


FIG. 3.

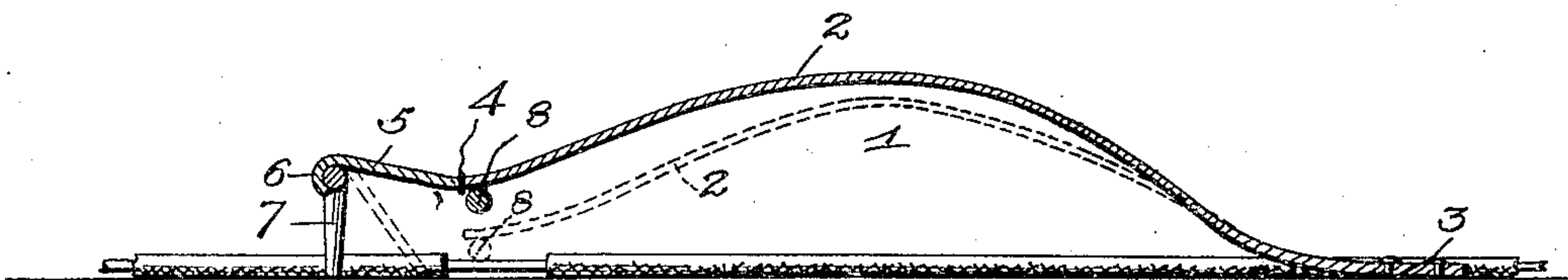
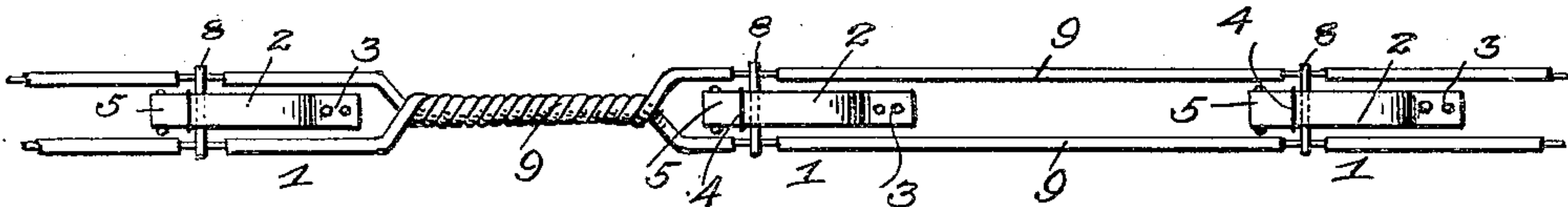


FIG. 4.



Witnesses

F. O. Hilton

Inventor
Charles D. Miller

By *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES D. MILLER, OF ST. LOUIS, MISSOURI.

AUTOMATIC FIRE-ALARM.

936,923.

Specification of Letters Patent.

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Application filed December 21, 1908. Serial No. 468,553.

To all whom it may concern:

Be it known that I, CHARLES D. MILLER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Automatic Fire-Alarms; 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.

This invention relates to improvements in automatic circuit closers for electric fire alarm systems.

The object of the invention is to provide an automatic circuit closer of this character adapted to be arranged in various parts of a building whereby in case of fire an alarm will be sounded at a distant point or wherever desired.

A further object is to provide a device of this character which will be efficient and reliable in operation, simple and inexpensive in construction, thus permitting a large number of closers to be installed at frequent intervals throughout a building at a comparatively small expense.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a circuit closer arranged in position for use and showing the parts in an inoperative position; Fig. 2 is a similar view showing the parts in an operative position to close the circuit; Fig. 3 is a longitudinal sectional view showing the parts in an inoperative position in full lines and in an operative position in dotted lines; Fig. 4 is a plan view of a series of circuit closers showing one way in which they may be arranged for use along the rafters or joists of a building.

Referring more particularly to the drawings, 1 denotes the circuit closers each of which comprises a curved or bowed spring metal arm 2 having on one end an attaching portion 3 provided with holes to receive screws or other fastening devices whereby the closer is rigidly secured at one end to rafters, joists or other portions of the building or structure to which they are applied. To the opposite or free end of the spring arm 2 is secured by means of a fusible connection 4, a supporting plate 5, said plate is here shown and is preferably provided on its outer end with a downwardly curved or hook-shaped portion 6 which is adapted to be engaged with or hooked over a suitable support which is here shown and is preferably in the form of a staple 7 which is driven into the structure to which the closer is attached and projects above the same a sufficient distance to hold the supporting plate and end of the spring arm up out of engagement with the structure.

Formed on or connected to the spring arm 2 adjacent to its free end is a transversely disposed circuit closing bar 8, the ends of which project a suitable distance beyond each edge of the spring arm, as shown.

In practice, the circuit conducting wires 9 of the system are arranged along the rafters, joists or other parts of a structure to which the system is applied, said wires being spaced apart in parallel relation where they pass each of the circuit closers, one of said wires passing along each side of the spring arm 2. The wires are spaced apart a distance slightly greater than the width of the spring arm so that when the free end of the same is released from the supporting plate, said end will spring down and engage the projecting ends of the circuit closing bar with the wires thus completing the circuit between the same. The insulation of the wires is removed for a short distance at the point where the circuit closing bar will engage the same when the end of the spring arm is released. If desired, the wires may be brought together and twisted in the form of a single cable between the circuit closers or they may be kept separate and secured in parallel lines along the entire series of closers.

By means of a fire alarm system having circuit closers constructed as herein shown and described, an alarm will be quickly sounded should a fire occur near any of the circuit closers. The fusible connection between the supporting plate and the free end of the spring arm of the circuit closer is of such nature that the same will be quickly fused or melted by action of the heat from the fire without being directly in the blaze.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended
5 claims.

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

1. In a fire alarm system the combination
10 of circuit conducting wires, a circuit closer comprising a spring arm adapted to be secured at one end, a circuit closing bar arranged on said arm, a pivotally mounted supporting member having a fusible connection with the free end of said arm and sup-
15 porting means for said member arranged to hold the free end of said arm and the circuit closing bar normally out of engagement with the circuit conducting wires and whereby
20 when said connection between the supporting member and the end of the arm is fused, said end will move downward and engage said closing bar with the wires of the circuit.

2. In a fire alarm system, circuit conduct- 25
ing wires, a circuit closer comprising a spring arm adapted to be secured at one end, a circuit closing bar arranged on the opposite or
free end of said arm, a supporting plate hav- 30
ing a fusible connection with said free end of the arm, said plate having a hook-shaped outer end, and a supporting staple adapted to be engaged by said hooked end of the
plate whereby said free end of the arm and 35
the circuit closing bar are normally held out of engagement with the circuit conducting wires and whereby when said connection between the supporting plate and end of the
arm is fused, said end will spring down- 40
wardly and engage said closing bar with the wires of the circuit.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES D. MILLER

Witnesses:

FRED A. HAMMEL,
MICHAEL HAMMEL.