No. 666,628. Patented Jan. 22, 1901.

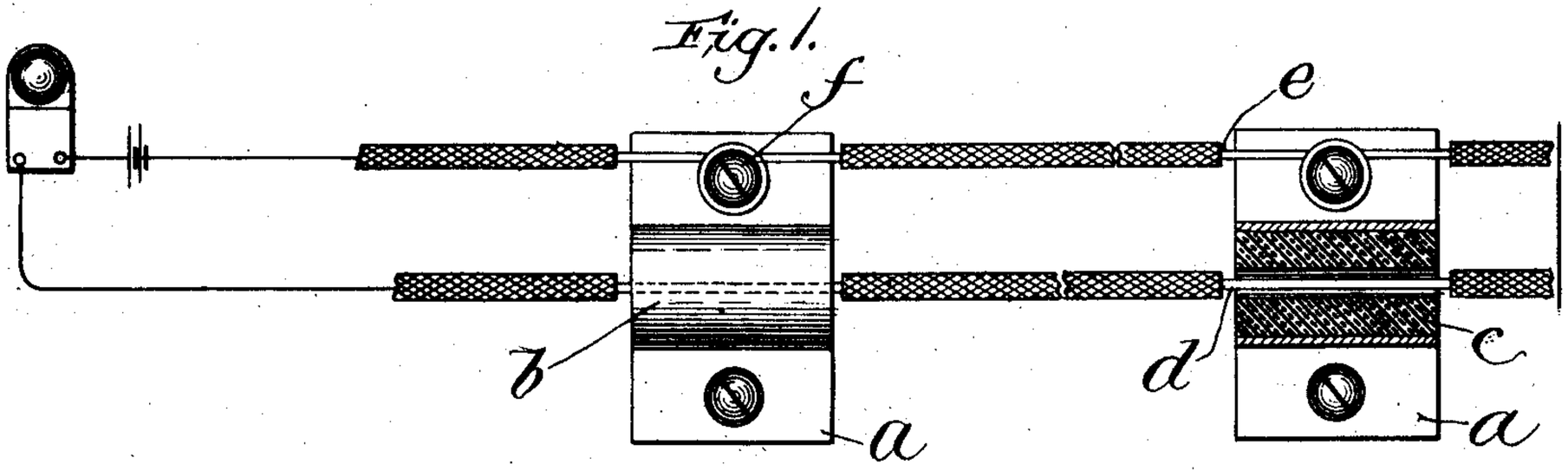
W. J. PARTRIDGE.

FIRE ALARM.

(Application filed July 14, 1900.)

(No Model.)

Fig. 1.



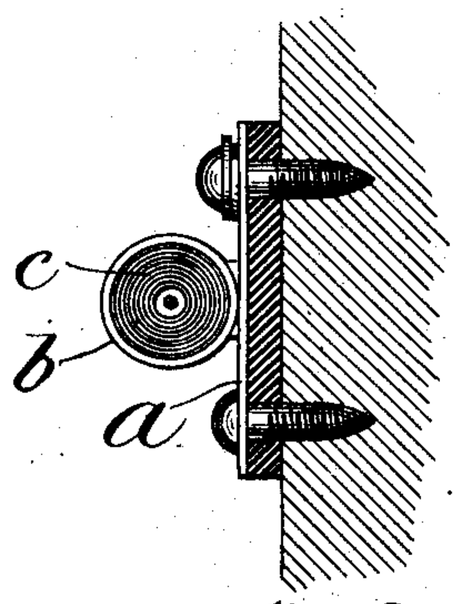


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER J. PARTRIDGE, OF NORWOOD, MASSACHUSETTS, ASSIGNOR TO THE NATIONAL FIRE ALARM COMPANY, OF MAINE.

FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 666,628, dated January 22, 1901.

Application filed July 14, 1900. Serial No. 23,577. (No model.)

To all whom it may concern.

Be it known that I, WALTER J. PARTRIDGE, a citizen of the United States, and a resident of Norwood, county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification.

My invention relates to fire-alarms, and is intended to provide a very simple and efficient means for automatically giving an alarm when the temperature in the building to be protected rises beyond a certain predetermined point.

Heretofore it has been proposed to employ an open electric circuit in connection with a mechanism for closing the circuit operated by a thermostat. It has also been proposed to employ a fusible conducting material so situated as to form a connecting medium for closing the circuit when the material is melted or fused.

It is the object of this invention, however, to provide an alarm system that shall be much cheaper to install and that shall be so simple in its operation as to be practically free from any likelihood of getting out of order.

The gist of my invention consists in separating the wires or conductors of an electric circuit by means of an easily-fused non-conducting substance so arranged that upon the melting of the non-conductor the circuit becomes automatically closed without the intervention of any mechanism whatever.

In the accompanying drawings I have illustrated one of the modes of embodying my said invention.

Figure 1 is an elevation showing the device as it appears when applied to the side wall of a building. Fig. 2 is a vertical sectional view through one of the supporting-brackets.

In the practice of my invention I provide a series of brackets or supports adapted to contain a quantity of some non-insulating material that will melt or soften readily at the proper temperature. In the form of support herein shown I employ a plate *a*, provided with a hollow sleeve *b*. The sleeve *b* is partly filled with a non-conducting composition *c*. This non-conducting composition may be made of wax combined with suitable ingredients, which may be varied according to the degree of heat that it is desired that the composition shall withstand. Any composition of this kind which is a good insulator may be employed for this purpose. As herein shown, this composition is molded in the form of a hollow cylinder or core, through which one of the wires *d* of the electric circuit is passed. At the point where the wire passes through the bracket or support the insulation is removed. The return-wire *e* of the electric circuit may pass from bracket to bracket, so as to form a permanent electrical connection that is at all times in electrical contact with the various brackets or supports. A convenient arrangement for effecting this is shown in the drawings, and consists in passing said return-wire between the head of the fastening-screw *f* and the plate *a*, the wire *e* being thus held in firm contact with the bracket or support.

The operation of the device is as follows: In case the fire becomes started in the vicinity of one of the brackets, as soon as the temperature of the bracket or support reaches the melting-point of the composition the composition becomes too soft to support the weight of the wire. Consequently the wire sinks through the insulating material until it rests in contact with the metal of the bracket. The bracket thus serves to short-circuit the current, and any suitable signal, such as an alarm-bell, may be operated by the action of the current established.

Of course it will be understood that the form of the bracket is capable of very great variation, the essential thing being to maintain a portion of the bracket in electrical contact with one wire of the circuit while insulating the bracket by a fusible non-conductor from the other wire, so that upon the melting or softening of the composition the insulated wire is allowed to form an electrical contact with the bracket.

Without then attempting to set forth all the changes in form, construction, and arrangement which may be made in my invention or all the uses to which it may be applied, what I claim is—

1. A fire-alarm system comprising a series of brackets or supports having an electrical contact with one wire of an open circuit, and

being insulated from the other wire which they support by an easily-fused non-conducting material so arranged that on the softening of the non-conductor, the insulated wire sags and forms an electric contact with the bracket thus closing the electric circuit to operate a suitable signal, substantially as described.

2. A bracket or support for an electric wire containing an easily-melted non-conducting substance arranged to normally support the wire out of electrical contact with the bracket combined with one of the wires of an open circuit which is free to fall of its own weight to form an electrical contact with the bracket when the non-conductor is softened or removed, substantially as described.

3. The combination of a supporting-bracket, an electric wire of an open circuit forming a contact therewith, the other wire of said circuit supported by means of said bracket, an easily-melted non-conducting substance interposed between the bracket and the latter wire to form normally an insulating medium between said wire and the bracket substantially as described.

4. The combination of the bracket provided with the tubular holder, a hollow core of easily-melted non-conducting material retained in said holder, an electric wire passed through said core so as to be insulated thereby from the bracket, and a return-wire supported in electrical contact with the bracket substantially as described.

In witness whereof I have hereunto set my hand this 9th day of July, 1900.

WALTER J. PARTRIDGE.

In presence of—

GEO. N. GODDARD,

K. A. DUGAN.