Sept. 4, 1928. 1,682,959

L. GRAYSON

THERMAL CIRCUIT CLOSER

Filed March 9, 1926

Fig. 1.

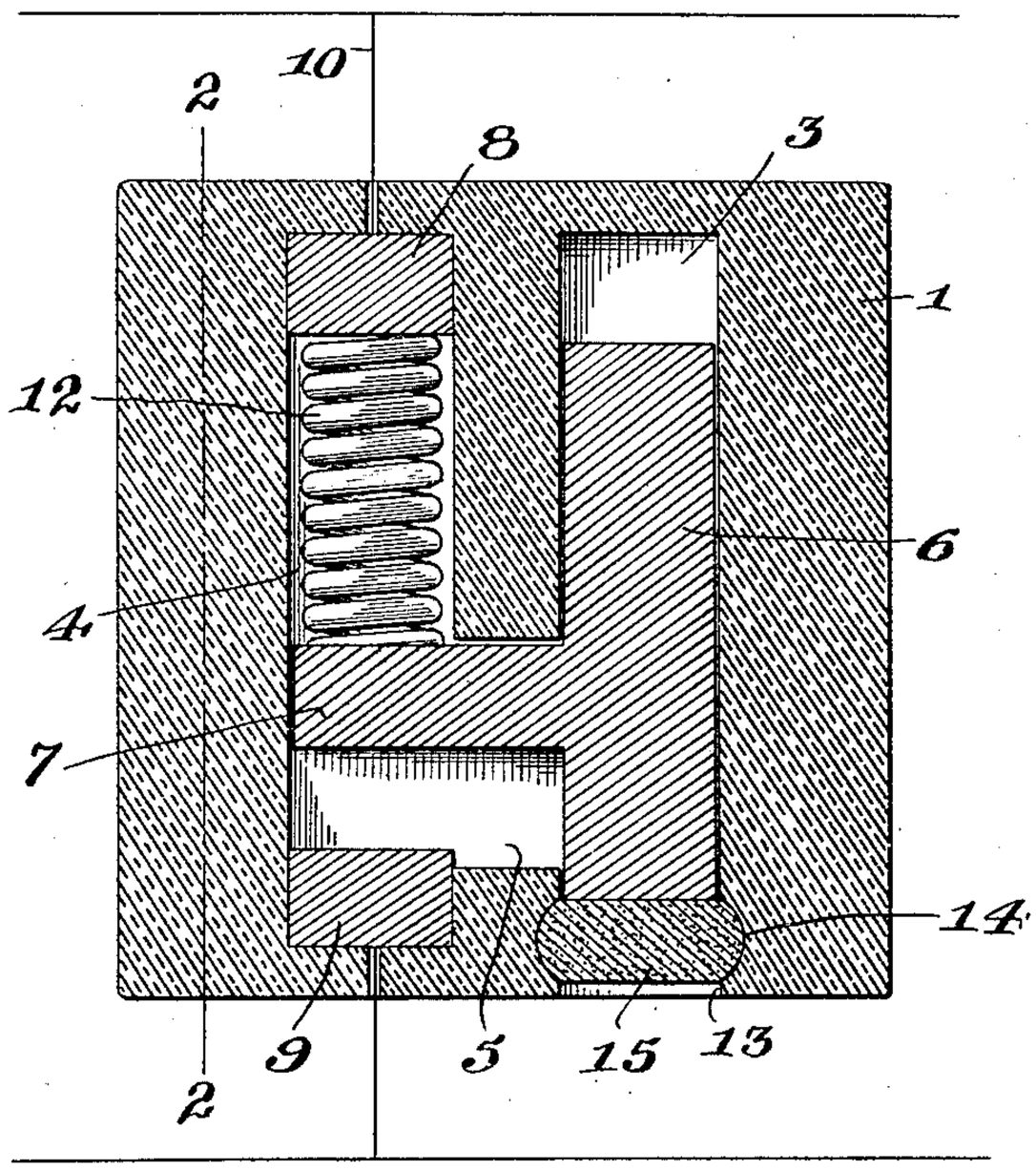
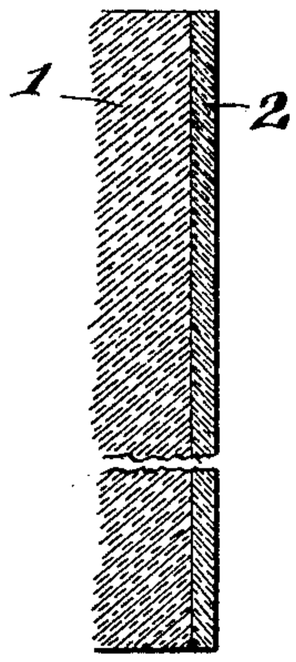


Fig. 2



Inventor

Lloyd Grayson

By Eccleston & Eccleston,

Attorneys

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LLOYD GRAYSON, OF GRAFTON, WEST VIRGINIA.

THERMAL CIRCUIT CLOSER.

Application filed March 9, 1926 Serial No. 93,519.

This invention relates to circuit closers for fire alarm systems such as disclosed in my copending application, Serial No. 97,691, filed March 26, 1926, and has for its object to provide such a device which has destructible means normally sustaining a contact in a position to retain the alarm circuit open, and which, when the means supporting the contact is destroyed by fire, heat or in any other way will close the circuit and cause a bell or other signal to be operated at any suitable and convenient point.

A further object of the invention resides in the provision of such a device which may be made at low cost, and which comprises very few parts; which may be readily installed in houses or factories in an inconspicuous manner to automatically sound an alarm, and which is so constructed that it will not readily get out of order.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawing; in which

Figure 1 is a greatly enlarged vertical section through the box, contacts and fusible plug; the spring being shown in side elevation, and

Figure 2 is a vertical section on line 2—2 of Figure 1.

Referring to the drawing in greater detail the numeral 1 designates a casing made of any suitable insulating material such as hard rubber or the like and provided with a cover 2 also formed of insulating material.

As hereinbefore indicated it is an object of the present invention to provide a heat-responsive switch of simple and inexpensive construction, and to this end the casing 1 is provided with two parallel channels 3 and 4 and a transverse passageway 5 all stamped in the insulating material at the time the casing is formed.

Mounted for sliding movement within the channel 3 is a movable contact element 6 carrying the laterally extending contact 7. This contact 7 and its support 6 may be integrally formed of some conducting material as shown in Figure 1, or the two parts may be separately formed and attached together. In the latter case the element 6 of course might be made of non-conducting material.

Fixedly mounted in opposite ends of the channel 4 are the contact pieces 8 and 9 to which are connected the line wires 10 and 11 respectively leading to the source of power, alarms, etc. Also mounted in the channel 4 is a compression spring 12 which is in engagement with the fixed contact 8 and the upper surface of the movable contact 7. The construction would of course force the movable contact 7 into engagement with the contact 9 were it not for the fact that the contact 7 is normally held in its upper position in a manner now to be described.

It will be noted that the channel 3 extends entirely through one end of the casing 1 as indicated by the numeral 13 and this portion of the channel is formed with a recess 14 adapted to form a seat for the plug 15 formed of any suitable fusible material. This plug of course, is placed in position after the element 6 and contact 7 are forced upwardly as shown in Figure 1 thereby holding the spring 4 compressed and in inoperative position.

In practice, the device which is many times smaller than the illustrated size may be placed on the molding in a room or supported on the wires themselves. Should the temperature of the room, store, or the like become excessively high due to a fire the plug will be destroyed and the spring 4 will force the movable contact 7 into engagement with the fixed contact 9 thereby closing the circuit, the current passing through line wire 10 contact 8 spring 12, contacts 7 and 9, line wire 11 to the alarms, etc.

From the foregoing description taken in connection with the accompanying drawing it will be apparent that I have devised an extremely cheap and simple heat-controlled circuit closer, and yet one which is durable and reliable in operation. It should be noted however, that the accompanying drawing is intended to be merely illustrative of one form of the invention and should not be considered in any limiting sense except in so far as defined by the accompanying claims.

What I claim as new and desire to secure by Letters Patent is:

1. A thermal circuit closer comprising a casing having a pair of parallel channels therein, and a communicating passageway therebetween, fixed contacts in one of said channels, a movable contact in alignment with said fixed contacts, a rod slidably mounted in the other of said channels and

forming a support for said movable contact, electric conducting means in contact with one of said fixed contacts and said movable contact for biasing the latter toward the other fixed contact, and fusible means for normally holding said biasing means inoperative.

2. A thermal circuit closer comprising a casing of insulation material having a pair of parallel channels therein and a transverse passageway communicating therewith, a pair of fixed electric contact members positioned in opposed ends of one of said parallel channels, a T-shaped movable contact element having its head slidably mounted in the other of said channels and its leg extending through said passageway with its end in alignment with said first-named contacts, a spring engaging one of said fixed contacts and said movable contact so as to bias the latter toward the other fixed contact, and fusible means for normally holding said spring inoperative.

3. A thermal circuit closer comprising a casing having a pair of parallel channels therein, a communicating passage between said channels, and an opening through one end of the casing and communicating with one of said channels, fixed contacts in one of said channels, a movable contact in alignment with said fixed contacts, a rod slidably mounted in the other of said channels and forming a circuit for said movable contact, electric conducting means in contact with one of said fixed contacts and said movable contact for biasing the latter toward the other fixed contact, and fusible means secured in the opening in the end of the casing for normally holding said biasing means inoperative.

LLOYD GRAYSON.