Nov. 26, 1946. D. PADILLA 2,411,752

FIRE ALARM CONTACT DEVICE

Filed Feb. 25, 1946

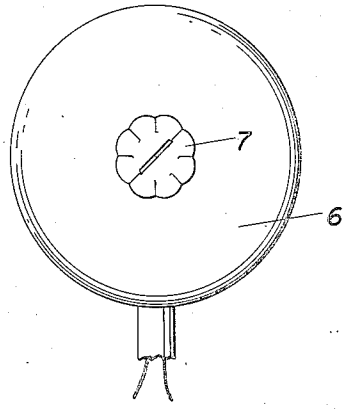

Fig 1

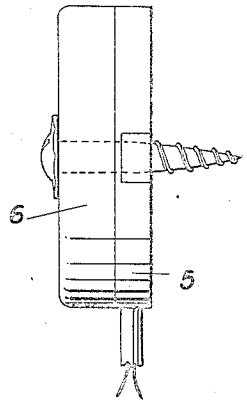

Fig 2

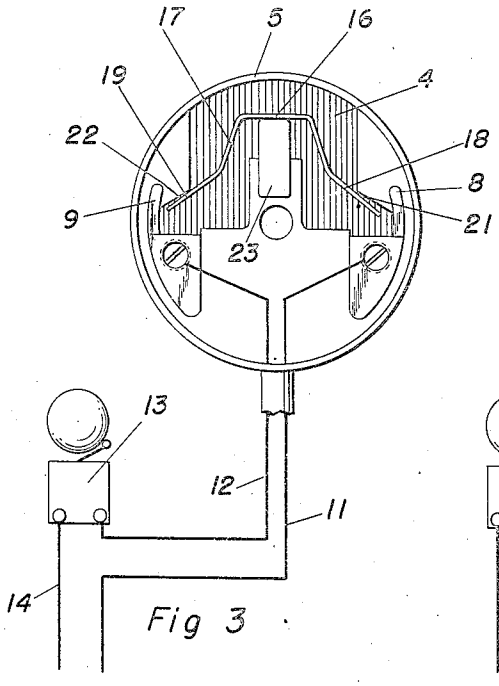

Fig 3

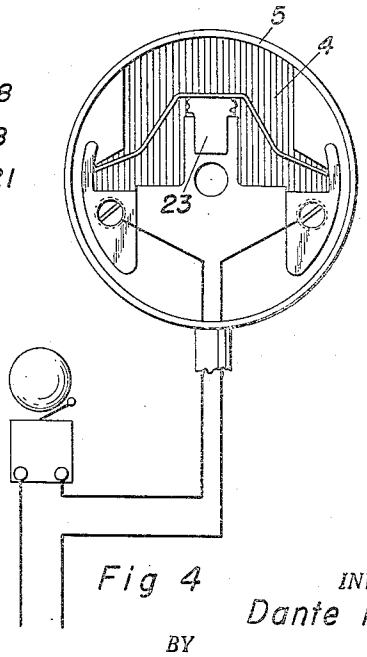

Fig 4

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FIRE ALARM CONTACT DEVICE

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2 Claims. (Cl. 200—142)

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This invention relates to improvements in fire alarms, and has particular reference to a contact mechanism therefor.

The principal object of this invention is to provide a plurality of contact devices which act as switches under certain conditions to close a circuit and cause an alarm, either visual or audible.

A further object of this invention is to produce a device of this character which is neat in appearance and therefore one which will not detract from the appearance of the room in which it is installed; also, a device which is economical to manufacture and easy to install.

A further object is to produce a device wherein the various parts are simple, mechanical units which will be positive in operation under all given conditions and therefore a device which cannot become inoperative.

A further object is to produce a device which may be attached to any ordinary signaling circuit without alteration in its construction or wiring arrangement.

A further object is to provide a device wherein a definite contact is positively assured through the digging action of the ends of the contact spring.

A further object is to provide means whereby the spring tension of the spring contact also serves to cause collapse of the fusible block.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a top plan view of one of my contacts.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a view similar to Fig. 1, with the top removed and showing the wiring diagram, and

Fig. 4 is a view similar to Fig. 3 showing the parts in position to cause an alarm.

Many large fires are due to the fact that they are not discovered until they have gained considerable headway, and it would, therefore, be advantageous if an alarm were sounded at the time of the beginning of rise in heat within a given area.

Applicant has, therefore, devised a switch or contact device wherein a fusible metal block is positioned between a support and a contact spring in such a manner that the spring is kept from completing a circuit between the two contact connected to the alarm circuit. However, upon the heating of the block to a predetermined temperature, the same will become soft and allow the

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spring to move to a position to complete an alarm circuit, so that warning will be given after a predetermined temperature has been reached.

In the accompanying drawing wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the base of my device which is made of any non-conducting material, and the numeral 6 designates the cover therefor.

The base and the cover are mounted at any convenient point by a screw 7.

Within the base 5 I provide a recess 4, in which is mounted a pair of spaced contacts 8 and 9. The contact 8 is connected by a wire 11 to one side of an electrical circuit, while the contact 9 is connected by a wire 12 to an audible signal 13, which signal is in turn connected by a wire 14 to the opposite side of the circuit.

In order to complete the electrical circuit between the contacts 8 and 9 I provide a spring 16 which has a U-shaped portion 17 and a pair of divergent arms 18 and 19, which arms underlie inclined surfaces 21 and 22 respectively formed by the cut away portion of the base 5.

A fusible block 23 is positioned in the base and serves to hold the spring 16 in the position of Fig. 3, and while in this position the spring is under tension, so that the arms 18 and 19 press against the inclined surfaces 21 and 22 respectively.

The result of this construction is that when a fire does occur the temperature of the room where my device is located will rise, and as soon as the same is high enough to melt the fusible block 23 the same will collapse, as shown in Fig. 4.

This collapse is assisted by the downward pressure of the spring, as the ends of the divergent arms 18 and 19 tend to cam along the inclined surfaces 21 and 22 respectively. It is unnecessary, therefore, for the fusible block to reach a point of actual melting but only to the point of softening.

As the spring 16 moves downwardly, the arms 18 and 19 will engage the contacts 8 and 9 respectively, and due to the tendency of spreading, these ends of the spring will dig into the contacts 8 and 9 and thus assure a very good electrical contact between the spring 16 and the contacts 8 and 9; thus the circuit will be completed and the alarm will be caused to function.

It will thus be seen that I have produced a device which will accomplish all of the objects above set forth.

It is to be understood that the form of my invention herewith shown and described is to be

taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A switch for fire alarms, comprising a pair of spaced, vertically arranged contacts, cam surfaces formed adjacent said contacts, a U-shaped spring having diverging arms engaging said cam surfaces, and a fusible block supporting said spring, whereby said arms engage said cam surfaces under tension and maintain said arms out of engagement with said contacts.

2. In a device of the character described, a body portion having a recess formed therein, a pair of contacts mounted on said body portion, cam surfaces formed on said body portion adjacent said contacts, a contacting member having its ends supported out of engagement with said contacts by a fusible block, the ends of said contacting member engaging said cam surfaces whereby when said fusible block is softened by a predetermined heat the ends of said contacting member will be guided by said cam surfaces to engage said contacts to complete an electrical circuit.

DANTE PADILLA.