April 21, 1953

M. G. CARTER

2,636,091

DOOR OPERATED SWITCH

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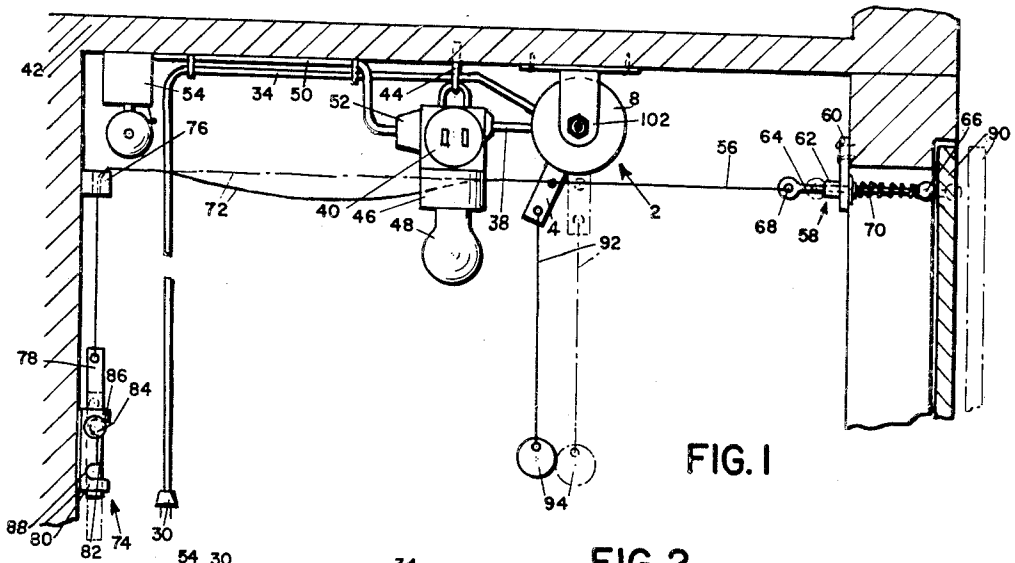

FIG. 1

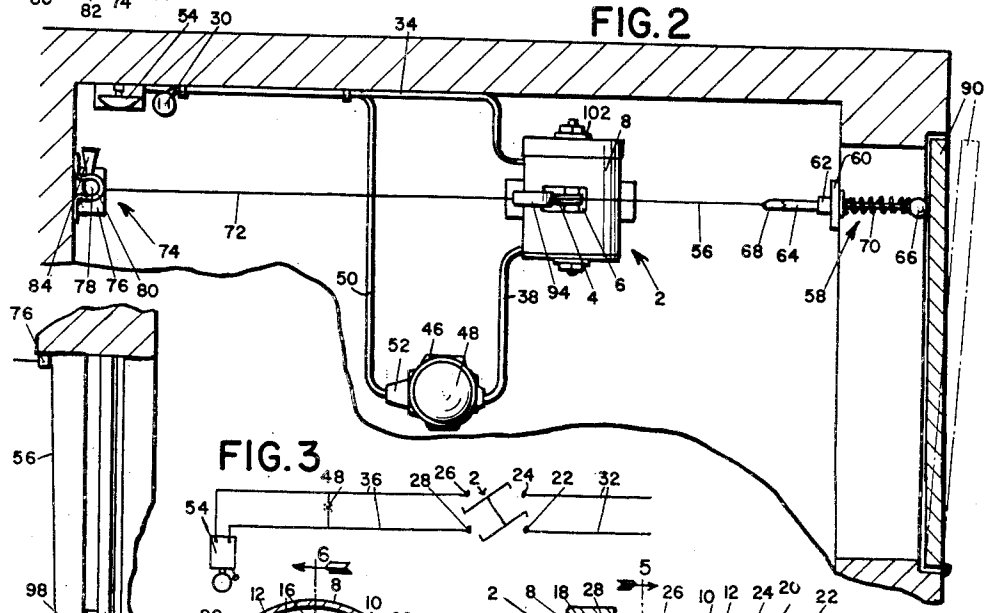

FIG. 2

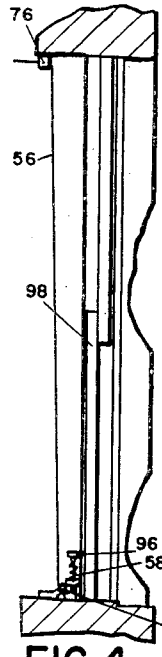

FIG. 4

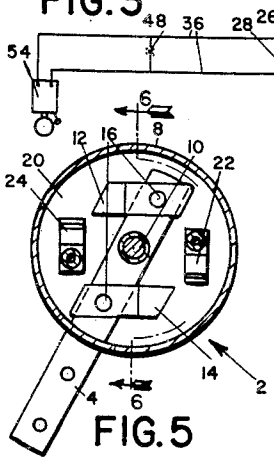

FIG. 5

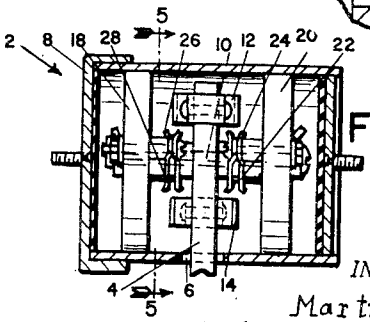

FIG. 6

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DOOR OPERATED SWITCH

Martin G. Carter, Kilgore, Tex.

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3 Claims. (Cl. 200—54)

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This invention relates to improvements in burglar alarms of the class in which a window, or door or other closures become the medium of actuation for the alarm.

An object of the invention is to provide an alarm of this type that is inexpensive to manufacture, easily installed and designed to be used also as a light switch.

The burglar alarm embodying the invention may be used in homes or offices, on automobiles or any other place where access is obtained through a closure.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing a preferred form of the invention has been shown.

Figure 1 is a front view of a preferred embodiment of my invention;

Fig. 2 is a bottom plan view of the same;

Fig. 3 is a wiring diagram;

Fig. 4 is a fractional diagrammatic side view showing a modified arrangement of the device;

Fig. 5 is a cross-sectional enlarged detail view of a switch on the line 5—5 of Fig. 6; and

Fig. 6 is a side elevation of the switch mechanism as it appears with the switch casing shown in section on the line 6—6 of Fig. 5.

Similar reference characters refer to similar parts throughout the several views.

In the drawing the numeral 2 denotes a switch, which preferably is a double pole switch. The switch 2 has an actuating lever 4 extending through a slot 6 from the housing 8. The lever 4 is pivotally mounted on a bolt 10 and is made of insulating material, and has a pair of U-shaped conductive members 12 and 14 secured to it by means of rivets 16 or the like. Within the housing 8 there are a pair of insulating disks 18 and 20 to which are secured resilient contact members 22, 24, 26, and 28. The members 22 and 24 are connected to a source of current, for instance to a contact plug 30 (Fig. 1) by means of a pair of wires 32 which are united in a cable 34, and the members 26 and 28 are connected to a pair of wires 36, which are united to a cable 38. The cable 38 is connected to any suitable current distributor, for instance to a plug-in socket 40, which may be suspended from a ceiling 42 of a

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room within a building by means of a hook 44 or the like. A lamp socket 46, which holds an electric light bulb 48 is connected to one outlet of the socket 40, and a cable 50 is connected by means of a plug 52 to another outlet of the socket 40. The cable 50 is connected to an alarm 54. Additional cables (not shown) may be connected to the socket 40 for providing electric current for other lamps (not shown) or for any other alarm devices or the like inside or outside of the building. When the lever 4 is in the position shown in full lines the electric circuit is interrupted at the contact members 22, 24, 26 and 28. When the lever 4 is in the position indicated in dash-and-dotted lines in Fig. 1, the electric circuit is closed. While I prefer to use the above described double pole switch it is obvious that any other suitable type of switch also can be used.

The lever 4 is connected by means of a string 56, or by a thin wire or the like to a buffer member 58. The latter preferably consists of a base plate 60 to which is stationarily secured a sleeve member 62, and through the latter is slidably extended a rod 64, one end of which is provided with a ball 66 while its other end 68 is ring-shaped and has connected thereto the string 56. A spring 70 is interposed between the ball 66 and the plate 60 and tends to move the rod 64 from the position shown in full lines to the position indicated in dash-and-dotted lines in Fig. 1.

A second string 72 or the like connects the lever 4 to a thumb latch 74. At least a portion of the string 72 preferably is in longitudinal alignment with the string 56, while the rest of the string 72 is slidably extended through a guide member 76. The thumb latch 74 consists of a rod 78, which is rotatable and shiftable in a sleeve member 80 that is provided with a longitudinal notched slot 82 (Fig. 1). A handle 84 is secured to and radially extends from the rod 78 and is adapted for engaging alternatingly one of the notches 86 and 88 of the member 80.

In Figs. 1 and 2 an embodiment of my invention is shown installed in a room and adapted to be actuated by a door 90. The parts are so located and arranged that the spring 70 of the buffer member is compressed by the door when the latter is closed and that thereby the string 56 is under tension when the lever 4 is in that position in which the electric circuit is interrupted; and further under the above named conditions the string 72 is loose as shown in full lines when the handle 84 of the thumb latch 74 engages the notch 86. Thus upon opening of the

door 90, the spring 70 will expand and force the parts 64 and 56 to move toward the right-hand side, thereby moving the lever 4 to the position indicated by dash-and-dotted lines in Fig. 1, so that the electric circuit will be closed for sounding the alarm 54 and switching on the light bulb 48.

The purpose of the thumb latch 74 is to prevent the buffer member 58 from closing the electric circuit when no burglar protection or the like is needed, for instance in day time, by inserting the handle 84 into the notch 88, so that the string 72 is under tension, as indicated by dash-and-dotted lines in Fig. 1.

If the handle 84 is inserted into the notch 86 and the door 90 is closed, the light bulb 48 can be switched on or off by pulling laterally a third string 92, which is suspended from the handle 4 and provided at its lower end with a disk 94 or a ring or the like. If the bell 54 is not to be switched on or off with the light bulb 48, the plug 52 can be removed from the socket 50.

Various variations and/or combinations of protection and utilization can be accomplished by means of the embodiment of my invention. For instance the light bulb 48 can be disconnected from the socket 50, so that only the alarm 54 will be actuated; or the plug 52 can be disconnected, so that only the light will be switched on or off by the device; or additional lighting fixtures can be connected, so that the device can be used as a master switch as well as an individual switch. Moreover, the device can be used for being actuated also by other closures or means of egress and ingress. For instance, the buffer member 58 can be attached vertically to a window frame (Fig. 4), so that a small block 96 mounted to a sash 98 will cause a compression of the spring 70 as long as the window is closed. In this case the string 56 passes around a pulley 100 and through a member 76, from which it extends to the lever 4, of the switch 2. The latter may be secured by means of a bracket 102 to the ceiling or to a wall or the like. Thus an opening of the window will have the same effect as the opening of the door 90 hereinbefore described.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

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

1. An electric safety guard switching device comprising a double pole switch adapted for closing an electric light and alarm circuit and having an actuating lever which is in a first position when said circuit is open and in a second position when said circuit is closed, a resilient buffer being mounted on a building near a means of egress and ingress thereto in such a manner that it is held in compressed position by said means as long as said means is closed connected to said actuating lever, and means for temporarily keeping said resilient buffer compressed irrespective of the opening of said means of ingress and egress, said buffer being connected to said lever in such a manner that upon its moving from its compressed position to its expanded position it will move the lever from its first position into its second position.

2. An electric safety guard switching device comprising a double pole switch adapted for closing an electric light and alarm circuit and having an actuating lever which is in a first position when said circuit is open and in a second position when said circuit is closed, a resilient buffer being mounted within a building near a means of egress and ingress thereto in such a manner that it is held in compressed position by said means as long as said means is in its closed position, a first string extended between said lever and said buffer having one end secured to said buffer and the other end to said lever, means for temporarily keeping said resilient buffer compressed irrespective of the opening of said means of ingress and egress, and a second string secured with one end to said last mentioned means and with its other end to said lever, said first string being under tension when said buffer is compressed thereby said lever being in its first position in which said circuit is interrupted by said switch, and said first string causing said lever to move into its second position when said buffer is allowed to expand by the opening of said means of egress and ingress.

3. A device of the character described comprising a switch adapted for closing an electric light and alarm circuit and having an actuating lever which is in a first position when said circuit is open and in a second position when said circuit is closed, a resilient buffer being mounted within a building near a means of egress and ingress thereto in such a manner that it is held in compressed position by said means as long as said means is in its closed position, a first string extended between said lever and said buffer having one end secured to said buffer and the other end to said lever, a thumb latch secured within the building at a distance from said switch, and a second string secured with one end to said thumb latch and with its other end to said lever, said first string being under tension when said buffer is compressed thereby said lever being in its first position in which said circuit is interrupted by said switch and said first string causing said lever to move into its second position when said buffer is allowed to expand by the opening of said means of egress and ingress, and said thumb latch being adapted for keeping said lever in the above mentioned first position by means of said second string.

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No references cited.