

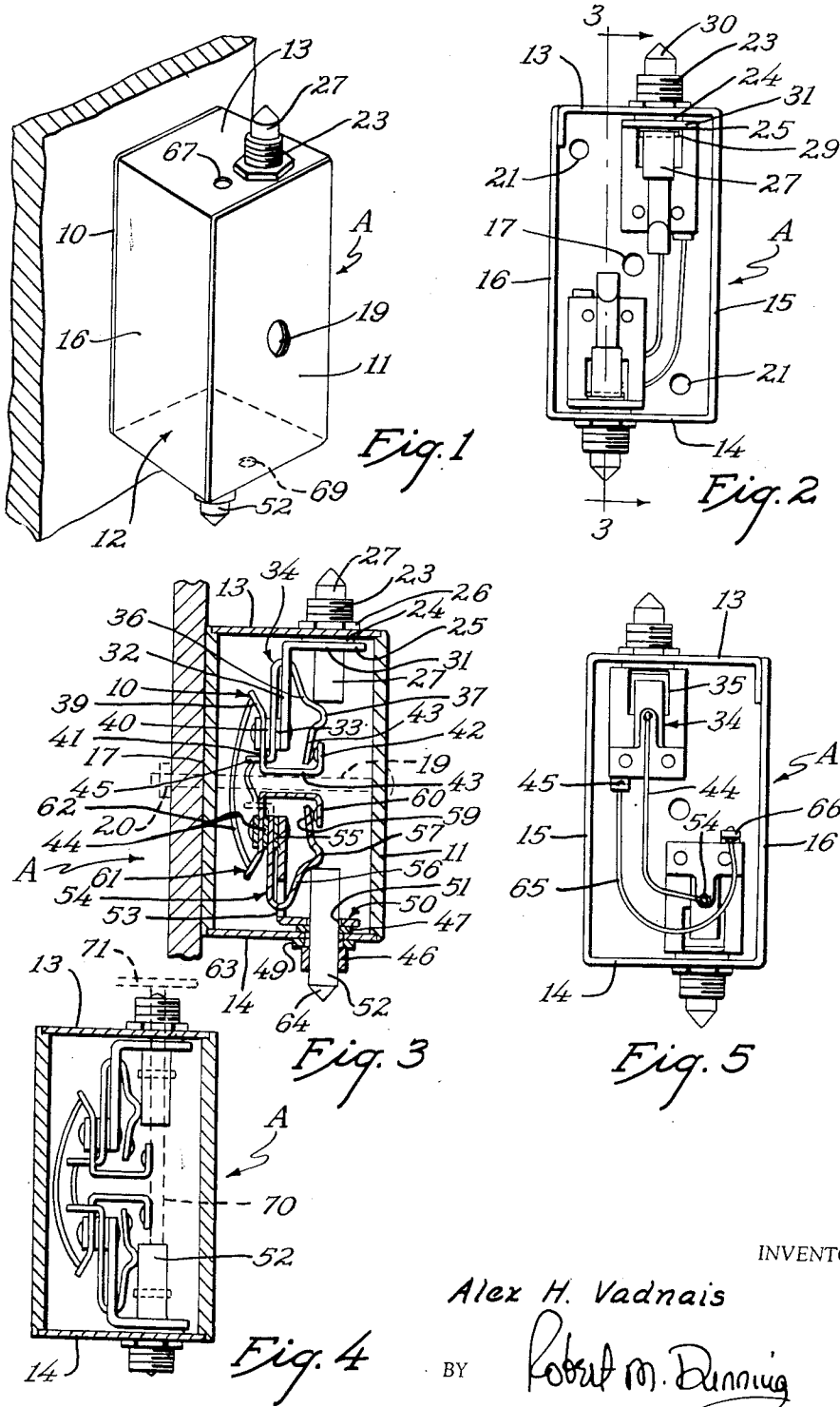
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ALARM SWITCH

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## ALARM SWITCH

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My invention relates to an improvement in alarm switch and deals particularly with a type of switch that can be used in banks and institutions of this type equipped with manually operable burglar alarms.

Various types of switch mechanisms have been employed for setting off burglar alarms. One of the difficulties involved with switches of this type lies in the fact that if they are accidentally actuated, considerable expense and difficulty is usually involved. Such burglar alarms are often connected to suitable mechanism in the police department to immediately warn this department that the bank is being robbed. As a result the various branches of the police service are immediately alerted and considerable trouble and expense is involved. Usually when an employee of the bank accidentally actuates the alarm switch, the employee will refuse to admit doing so for fear of being blamed for the trouble and expense.

The object of the present invention is to provide a burglar alarm switch which includes a pair of switch buttons both of which must be actuated in order to produce the alarm. The switch buttons are mounted on opposite sides of a switch casing so that it is difficult to accidentally actuate both switches through accident. Furthermore, the switch buttons are so mounted that they will stay in depressed position when actuated, thereby making it immediately visible to the employee if one of the buttons is accidentally depressed.

A feature of the present invention lies in the provision of a switch which may be actuated by a pair of spaced switch operating push buttons. These push buttons are slidable into the casing or into a suitable tubular guide extending into the casing. The buttons are provided with substantially conical ends, only the tapered portion of which projects from the housing or tubular guide when the button is depressed. As a result it is impossible to easily pull the button outwardly or to manually reset the button after it has been depressed.

A further feature of the present invention lies in the fact that the conical ends on the switch operating push buttons leave a lasting impression upon the fingers of the operator for a substantial time after the switch has been actuated. The switch buttons do not move inwardly easily. Substantial inward force by the fingers is necessary in order to depress the buttons. The pointed ends on the buttons engage into the fingers and leave a depression which remains on the fingers

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for at least thirty minutes after the switch has been actuated. As a result it is impossible for an employee to actuate the alarm with the fingers without making it possible by examination to determine which employee was responsible for the act.

A further feature of the present invention lies in the fact that the switch buttons are preferably off-set out of longitudinal alignment. An opening is provided in the casing opposite each of the plungers which actuate the switches. As a result a suitable tool may be inserted into the casing to engage against the end of each plunger in order to reset the plunger into its normal operating position.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of the switch showing the outward construction thereof.

Figure 2 is an elevation view of the switch with the front cover plate removed.

Figure 3 is a sectional view through one of the switch mechanisms, the position of the section being indicated by the line 3—3 of Figure 2.

Figure 4 is an elevation view of the switch mechanism the outer enclosure being shown in section showing the switches in depressed condition.

Figure 5 is a rear elevation view of the switch mechanism, the outer enclosure being shown in section.

The switch is indicated in general by the letter A. The switch A is provided with a rear closure plate 10, a front closure plate 11, and a rectangular sleeve like body 12 connecting the front and rear closures. The sleeve 12 includes a top wall 13, a bottom wall 14, and parallel side walls 15 and 16.

A threaded aperture 17 is provided in the rear closure plate 10 and is designed to accommodate an anchoring bolt 19 which is designed to hold the switch assembled. The switch may be held in place by means 20 on the connecting bolt 19, or may be held in place by suitable screws or bolts extending through the apertures 21 in the rear panel 10.

The switch casing encloses a pair of spaced switches which are connected in parallel. Each switch includes a threaded tubular sleeve 23 having a collar 24 near one end thereof to which an angle bracket 25 is secured. The sleeve 23 extends through the top panel 13 of the switch

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enclosure and is held in place by a suitable nut 26 or other such device. A button 27 is slidably supported in the threaded sleeve 23. The button 27 is limited in its outward movement by a pin 29 which extends through the button at a point spaced from the lower end thereof. As indicated in the drawings, the upper end of the button 27 is conically shaped as indicated at 30.

The angle bracket 25 is provided with a horizontal flange 31 to which the collar 24 is attached. This flange 31 is provided with an aperture aligned with the aperture through the sleeve 23 so that the push button 27 may slide freely therethrough. The angle bracket 25 is similarly provided with a downwardly extending flange 32 which acts as a support for a part of the switch mechanism. Insulated from the bracket by a suitable insulator 33, I provide a spring arm 34. The spring arm 34 extends upwardly parallel to the bracket flange 32 and is bent at its upper end to extend through an aperture 35 in the bracket flange 32. The forwardly and downwardly projecting portion 36 of the spring arm 34 forms a hump 37 in the path of movement of the button 27.

A U-shaped contact 39 is spaced from the spring arm 34 by insulator means 40. This bracket 39 includes a pair of upwardly extending flanges 41 and 42 connected by horizontally extending flange 43. The flange 42 supports a suitable contact which is engageable with the spring arm 37 and normally in the path of movement thereof.

It will be seen that if one side of an electrical circuit is connected to the spring arm 34 and the other side of the circuit is connected to the U-shaped bracket 39, a circuit is closed when the lower extremity 43 of the spring arm 36 is in engagement with the contact on the bracket flange 42. However, when the button 27 is pressed downwardly the spring arm 34 will be urged to the left as viewed in the figures from the position shown in Figure 3 to the position shown in Figure 4. As will be noted in this position the circuit is broken through these two contacts. The upper end of the flange 41 of the bracket 39 serves as a means of connection with the conductor 44 while an out-turned lip 45 on the spring arm 34 forms a means of electrical connection with this side of the circuit. The lip 45 is laterally off-set from the U-shaped bracket 39 so as to hold these elements electrically spaced.

The lower switch mechanism is identical with that previously described. The threaded sleeve 46 extends through the bottom wall 14. A collar 47 on this sleeve engages against the inner surface of the panel 14, while a nut 49 engages against the outer surface thereof to hold the sleeve in place. An angle bracket 50 is connected to the collar 47 in any suitable manner. This angle bracket 50 includes an aperture 51 through which the push button 52 may extend. The vertical flange 53 of the angle bracket 50 acts to support a spring arm 54 which is insulated from the angle bracket by an insulator 55. The spring arm 54 includes an upwardly and forwardly extending arm 56 having a bump or forward projection 57 thereupon. The upper extremity 59 of the spring arm 54 supports a contact cooperable with a contact on the flange 60 of the U-shaped bracket 61.

The U-shaped bracket 61 is supported by the vertical flange 53 of the U-shaped bracket and is insulated from the spring arm 54 by an in-

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ulator 62. The arm 54 extends through an aperture 63 in the bracket 60 and the hump 57 extends in the path of movement of the push button 27.

It will be noted that the push buttons 27 and 52 are provided with conical outer ends 30 and 64 respectively. As the push button 52 is moved upwardly, the spring arm 54 is urged away from the contact or flange 60, thereby opening the circuit.

As indicated in Figure 5 of the drawings, the two switches are connected in parallel. As indicated in this figure, a conductor 44 connects the U-shaped bracket 39 with the U-shaped bracket 61. A similar conductor 65 connects the rearwardly extending projection 45 of one spring arm 34 with the projection 66 on the spring arm 54. Thus the circuit may be closed through either of the switches and as long as one switch is not actuated, it remains closed. The alarm circuit is of a type which must be broken to actuate the alarm. When both switches are actuated the spring arms 34 and 54 are both spaced from their respective contacts and the circuit is completely broken. At this point the alarm is actuated.

As indicated in Figure 1 of the drawings, an aperture 67 is provided in the top panel 13 in alignment with the push button 52. A similar aperture 69 is provided in the bottom panel 14 in alignment with the push button 27. These apertures 67 and 69 are designed to accommodate a resetting tool 70 illustrated in dotted outline in Figure 4 of the drawings. This resetting tool comprises an elongated shank having a head 71 at its outer end by means of which the shank may be actuated. By dropping this shank 70 through the aperture 67 until the end of the shank engages against the top end of the push button 52, this push button may be pushed downwardly into its usual position shown in Figure 3 of the drawings. Similarly by inserting the tool through the aperture 69 and pressing upwardly upon the lower end of the push button 27, the button may be manually reset from the position shown in Figure 4 to the position shown in Figure 5.

My device has been found extremely effective for its intended purpose and has been found difficult to operate accidentally. At the same time, the device may be readily operated whenever it is necessary. The fact that the push buttons stay depressed provides an indication of which switch was actuated. Furthermore, to prevent false alarms the ends of the push buttons provide a lasting impression in the fingers which remains a sufficient length of time so that the switch operator may be detected by examination.

In accordance with the patent statutes, I have described the principles of construction and operation of my burglar alarm switch, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. An alarm switch including a support, a pair of switches secured to said support, said switches being connected in parallel, separate means for actuating each switch, said means including a pair of push buttons having outer finger engaging ends, said push buttons, when depressed, remaining in depressed switch actuating position

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until manually reset, and manual resetting means engageable with the inner push button ends.

2. The construction described in claim 1 and including pointed conical outer ends on said push buttons.

3. A burglar alarm switch including a housing, a pair of switches supported in said housing and electrically connected for parallel operation, a pair of push buttons slidably supported by opposite ends of said housing, said push buttons being off-set out of longitudinal alignment, each of said push buttons cooperating with a switch to actuate the same, each switch including a resilient part frictionally engaging its push button in depressed position, each of said push buttons normally remaining depressed when once depressed, said housing having openings therethrough in longitudinal alignment with each of said push buttons, said openings being designed to accommodate a push button resetting device capable of engaging the inner push button ends.

4. An alarm switch device for use in alarm circuits, the device including a casing, a pair of switches mounted within said casing and electrically connected for parallel operation, and means for actuating said switches, said actuating means including a push button cooperable with each switch to actuate the same, the push buttons being off-set from one another in the casing, means frictionally engaging said push buttons upon depression thereof, and push button guides encircling the outer ends of said push

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buttons in depressed position whereby said outer ends cannot be engaged for retraction.

5. The construction described in claim 4 in which the housing is provided with openings therethrough in alignment with said push buttons so as to accommodate a push button resetting device.

6. An alarm switch including a casing, a pair of tubular guides supported in offset relation on opposite sides of said casing, a push button axially slidably supported in each tubular guide, a spring having cam means in the path of movement of each push button, cooperable contacts opened and closed by movement of each spring by its corresponding push button, said push buttons having ends which retract into said tubular guides when in depressed position so that said push buttons cannot be pulled outwardly, said springs holding said push buttons frictionally engaged in depressed position, said casing having openings therein spaced from said push buttons to admit an instrument for pushing the push buttons outwardly.

ALEX. H. VADNAIS.

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