Aug. 30, 1932. V. R. DESPARD 1,875,225

LOCK SWITCH

Filed Nov. 27, 1931

FIG. 1.

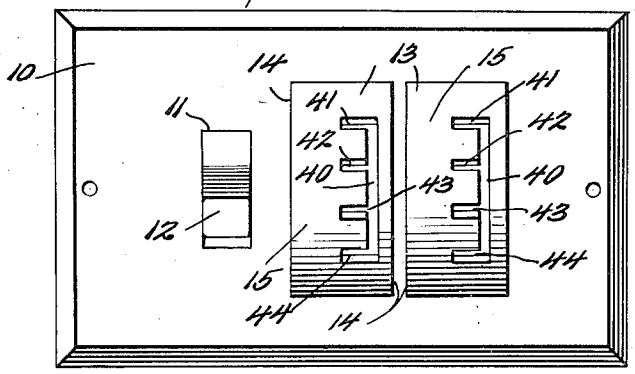


FIG. 2.

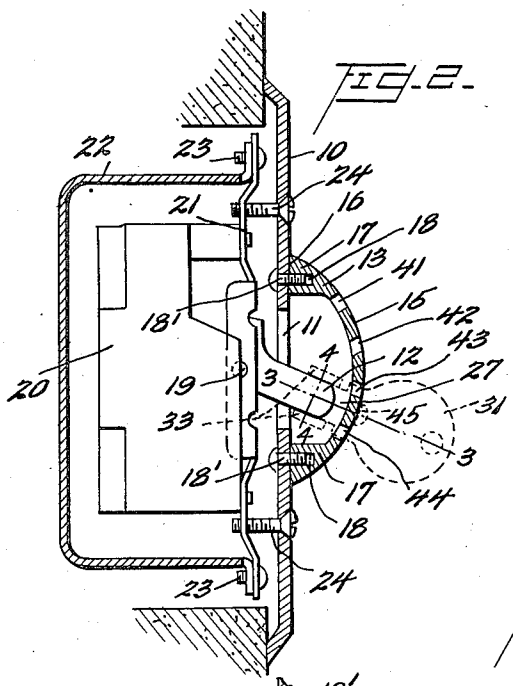


FIG. 3.

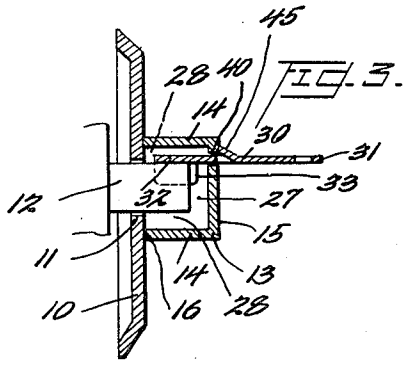


FIG. 4.

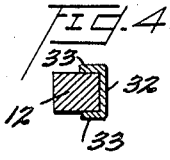


FIG. 5.

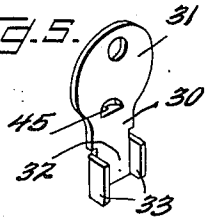
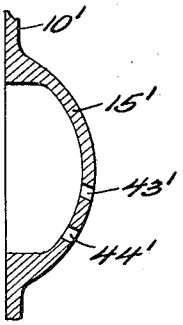


FIG. 6.



Inventor

Victor R. Despard,

By Watson, Cole, Grindle & Grindle

Attorneys

Patented Aug. 30, 1932

1,875,225

UNITED STATES PATENT OFFICE

VICTOR R. DESPARD, OF SYRACUSE, NEW YORK, ASSIGNOR TO PASS & SEYMOUR, INC., OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK

LOCK SWITCH

Application filed November 27, 1931. Serial No. 577,637.

This invention relates to switches and more particularly to key operated switches or lock switches.

It is a general object of the present invention to provide novel and improved switch devices.

More particularly, it is an object of the invention to provide a switch of the tumbler operated type which cannot be used by unauthorized persons or others not in possession of a proper key.

An important feature of the invention resides in the provision of a combination switch, i. e. one that can be manually operated by anyone without the use of a key and one which, by a slight change, can be converted into a key-operated switch.

Another important feature of the invention resides in the provision of a shield or hood adapted to be applied to the face plate of a conventional toggle switch having a projecting operating handle, together with a key for projection through a slot in the shield to engage said handle and operate the same, the shield preventing unauthorized operation of the switch.

A further feature of the invention resides in the novel construction of the key for cooperation with the operating handle of a switch of the conventional wall toggle type, either flush mount or surface mount.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawing and following specification wherein is disclosed a single exemplary embodiment of the invention with the understanding, however, that such changes and modifications may be made therein as fall within the scope of the appended claims, without departing from the spirit of the invention.

In the drawing:

Figure 1 is a face view of a multiple switch mounted in a single gang plate and provided with two of the shields or hoods of the present invention and showing a third switch arranged for manipulation without a key;

Figure 2 is a vertical central section through a flush mounted toggle switch with the present invention applied thereto, wherein a single switch is mounted in a single gang box;

Figure 3 is a section on line 3—3 of Fig. 2;

Figure 4 is a section on line 4—4 of Fig. 2, showing the manner in which the key engages the operating handle of the switch;

Figure 5 is a perspective view of a key for use with the present invention; and

Figure 6 is a fragmentary vertical section of a wall plate showing a shield integral therewith.

It has been customary for jobbers in electrical goods to carry a line of lock switches of the type which are operated by a relatively simple key in order to prevent unauthorized operation or tampering with light switches and the like in buildings of public or semi-public type, or to provide outdoor control for show window lights and the like which can be operated by a watchman at desired hours. The jobber must, of course, carry also the conventional line of toggle or tumbler switches for use in homes, public buildings and the like for operating the customary lights and similar appliances. In order to combine these two lines into one, the present invention contemplates a simple attachment to be applied to any conventional toggle switch, either of the surface mount or flush mount type, which effectively prevents unauthorized manipulation of the switch and which provides a simple key for cooperation with the handle of the switch, by passing through apertures in the hood or shield, for controlling the switch.

Referring now to the drawing, and first to Fig. 1, there is seen the conventional wall plate 10 of a flush mount wall switch of the so-called triplet type wherein three tumbler or toggle switches are mounted behind a single-gang size plate. Each switch has projecting through an aperture 11 in the plate, an operating handle 12, usually of insulating material, and most often substantially rectangular in cross section, which handle is adapted to be rocked about an axis beneath the plate to manipulate the switch in the well known manner. The switch is conventional and in the normal condition is

mounted for manipulation at will by anyone, but in order to prevent such manipulation, a shield or hood 13, according to the present invention, may be secured to the face plate and enclosing the handle so that access cannot be had thereto except by a special key to operate through suitable openings in the hood.

The shields or hoods 13 are of such width that three of them can be applied to a single gang plate having a triplet switch therein. This permits them to be used in any combination of switches without interfering with each other or other devices in the switch plate. From Figs. 2 and 3 it can be ascertained that the shields or hoods are preferably of segmental form having the flat sides 14, the arcuate surface 15 connecting them and a substantially flat bottom surface 16 which is open throughout most of its length. In fact the hood is a mere shell of substantially uniform thickness except for the bosses 17 at the ends which are drilled and tapped as at 18 to receive screws 18′ which pass through suitable openings in the face plate 10. These holes can either be provided as standard equipment in the plates, can be drilled as described or can be provided, in plates of moulded insulating material, in the form of a deep depression from the rear, covered by a thin integument which can be broken out quite readily when it is desired to mount a hood on the plate.

The center of the arc of the curved surface 15 is preferably coincidental with the center 19 about which the operating handle 12 of the switch is pivoted.

As seen in Fig. 2, the switch 20 is of conventional form mounted by means of a bridge 21 in a suitable outlet box 22 to which the bridge is secured by the screws 23. The wall plate 10 is secured over the outlet box, for instance, by means of screws 24 in the conventional manner but, if desired, these screws can be made of the type which cannot be withdrawn in order to prevent removal of the face plate and unauthorized manipulation of the switch handle or handles.

The hood 13 is of such size that there is a slight clearance 27 for the end of the switch handle and clearances 28 at the sides. This not only permits of accommodating slight variations in size of handles in the various makes and styles of switches, but gives clearance for the key which cooperates with the handle.

This key, as seen in Fig. 5, is formed from a simple flat blank 30 having the handle portion 31 and the rectangular portion 32 provided with the wings 33 which are bent up at right angles thereto and at such a distance apart as to fit snugly over the operating handle 12 of the switch as clearly seen in Fig. 4. These wings need not be as wide as the width of the handle but when they are engaged over the handle with the rectangular portion 32 arranged to fit against the side thereof in the plane of movement of the switch, then the handle is loosely engaged and by manipulation of the key can be operated.

To provide for movement of the portion of the key, which is between the handle and the rectangular end, there is provided a slot 40 in the arcuate surface of the hood of a width just slightly greater than the thickness of the material of the key. In order that the key can be inserted to engage the switch handle in either of its positions, and likewise removed, four lateral slots 41, 42, 43 and 44 are provided extending from the slot 40 toward the longitudinal center of the curved surface 15 of the hood, it being appreciated that the slot 40 is approximately in the plane of one side face of the switch operating handle. Slots 41 and 42 are spaced apart a distance equal to the space between the wings 33 of the key, as are also the slots 43 and 44. The distance between the slots 42 and 43 depends to some extent upon the arc of swing of the switch handle.

It will be seen from Figs. 2 and 3 that the key may be inserted through the appropriate set of slots 41, 42 or 43, 44, and the connecting portion of the main slot 40, to engage over the handle of the switch, the inward motion of the key being limited by the engagement of the pressed out lug 45 thereon with the arcuate surface of the hood. The key can now be moved through an appropriate angle to actuate the switch handle to the opposite position and can then be withdrawn with the wings 33 passing through the other set of lateral slots.

By providing the hood and key, which can be made as attachments for any conventional manually operated switch, no additional line of switches need be carried by jobbers, but any standard toggle type switch can be converted into a lock switch by the simple addition of the hood and the use of the key. Portions of a multiple gang switch can be so converted and other portions left for manipulation by anyone. In this way the total stock necessary to be carried by the jobber is practically cut in half, effecting a great saving in investment, storage space, cataloging and the like. It will be appreciated that the hood can be made of insulating material or pressed metal, in order to conform to the material of the switch plate and can be fastened in place either as shown by screws or by any other convenient fastening means.

In Figure 6 is shown a modification in which the hood or shield 15′ for the switch operating handle is formed integral with the wall plate 10′. As shown, the parts are molded of insulating material but could equally as well be formed from metal, if desired. By providing a wall plate with an integral hood,

the work of converting any switch to a lock type switch can be accomplished without any special tool or particular knowledge, for the wall plate of the old type can be replaced by one of the new by simply removing the screws 24 and replacing them in the new plate. Of course, plates can be provided to accommodate various numbers of switches in gangs, as will be appreciated.

The principles of the present invention may be applied in connection with safety switches for service entrance work or for motor controlling switches so that face plates with attachable or integral hoods may be applied to switches of these various types or even the ordinary toggle switches may be used. In such cases it is desirable that the key cannot be withdrawn while the switch is in the "on" position, and for this purpose two of the lateral slots would be eliminated as shown in Figure 6, leaving but those numbered 43′ and 44′. With this construction the key must remain in place when the switch is "on" so that control of the switch is available to anyone for the purpose of shutting it off. By removing the key, however, the switch cannot be closed by those unauthorized.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a switch of the toggle type having a separate cover plate and a projecting manually operable handle, the combination therewith of a hood adapted to be secured to said cover plate to completely enclose said handle, a slot in said hood, a key adapted to pass through and operate in said slot and means on said key to engage the handle to move it with the key.

2. In a toggle switch of the manually operable type having a separate cover plate and a projecting operating handle normally adapted to be operated by the fingers, the combination therewith of a hood completely enclosing the handle and providing space for the movement thereof, means securing said hood to said cover plate, a slot in said hood for the operation of a key shank, and a key adapted to pass through said slot and engage about said handle to move the same.

3. In a flush mounted toggle switch having a separate cover plate and a projecting operating handle of insulating material substantially rectangular in cross section, the combination therewith of a hood secured to said plate and enclosing closely the space swept by said handle in operating the switch, the arcuate portion of said hood having a slot therethrough and removable means adapted to operate in said slot and engage about the said handle to actuate the same from outside the hood.

4. A hood for the handle of a toggle switch of the standard, manually operable type having a separate cover plate, said hood having means for mounting it on the cover plate, being formed of the same material and having an opening for the passage of a key to engage said handle.

5. A hood to prevent unauthorized operation of a toggle switch of the type having a projecting handle of insulating material and a separate cover plate, said hood closely defining the space swept by the handle in operating the switch, means to secure the hood to the cover plate, said hood having a passage for a handle engaging key.

6. An attachment for a conventional toggle type wall switch having a face plate and a projecting handle, comprising a hood to prevent unauthorized operation of said handle, said hood comprising a pair of flat segmental walls and a connecting arcuate wall, the open face of the hood being of such configuration as to fit against the face plate, attaching means to secure the hood to the face plate and a switch handle engaging key adapted tc operate through a slot in said arcuate wall.

7. An attachment for a conventional toggle type wall switch having a face plate and a projecting handle, comprising a hood to prevent unauthorized operation of said handle, said hood comprising a pair of flat segmental walls and a connecting arcuate wall, the open face of the hood being of such configuration as to fit against the face plate, attaching means to secure the hood to the face plate, said arcuate wall having a slot therein substantially in the plane of movement of one side of said handle.

8. An attachment for a conventional toggle type wall switch having a face plate and a projecting handle, comprising a hood to prevent unauthorized operation of said handle, said hood comprising a pair of flat segmental walls and a connecting arcuate wall, the open face of the hood being of such configuration as to fit against the face plate, attaching means to secure the hood to the face plate, said arcuate wall having a slot therein substantially in the plane of movement of one side of said handle and a pair of short slots meeting the main slot and spaced apart a distance equal to the width of said handle in its direction of movement.

9. A hood to prevent unauthorized use of a flush mounted, wall type, toggle switch having a projecting operating handle of insulating material and a wall plate, said hood closely defining the space swept by the operating handle when actuating the switch, means to secure the hood to the wall plate, said hood being of such width that three can be mounted side by side for use with triplet switches in single gang wall plates.

10. Means to prevent unauthorized use of a toggle switch having a pivoted handle, including a hood having a slotted arcuate face coaxial with the handle pivot, and a key com-

prising a flat blank having a portion adapted to operate in said slot, a U-shaped end and a lug adapted to engage said arcuate face to limit the inward movement of the key.

11. In a toggle switch of the manually operable type having a cover plate and a projecting operating handle for engagement by the fingers, the combination therewith of a hood completely enclosing the handle and providing space for the movement thereof, a slot in said hood for the operation of a key shank, and a key adapted to pass through said slot and engage around said handle to move the same.

12. A wall plate for a toggle switch including a flat portion adapted to engage the wall, and an outwardly bowed portion adapted to enclose the handle of the switch, said bowed portion being slotted for the insertion and operation of a key.

13. A switch of the toggle type having an operating handle adapted for engagement by the fingers, a cover plate for said switch through which the handle projects, a hood portion on said plate adapted to enclose the path of the handle in moving from one of its positions to another, a key to engage around said handle to operate the same, a slot in said hood for the operation of the key in moving the handle, and an additional slot to permit the insertion and removal of said key only at one position of the handle.

In testimony whereof I hereunto affix my signature.

VICTOR R. DESPARD.