H. R. MITCHELL.

ELECTRIC SWITCH.

APPLICATION FILED FEB. 15, 1912. RENEWED DEC. 28, 1912.

1,067,936. Patented July 22, 1913.

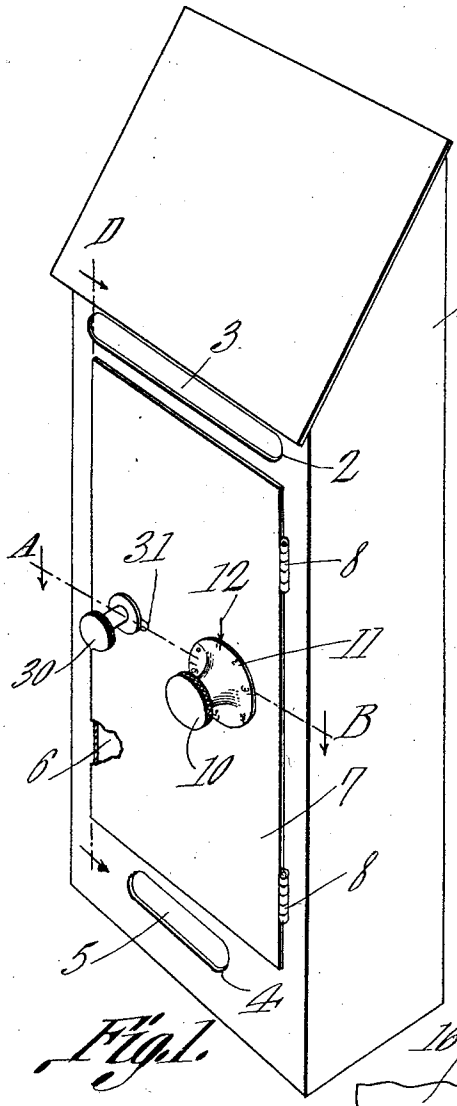


Fig. 1.

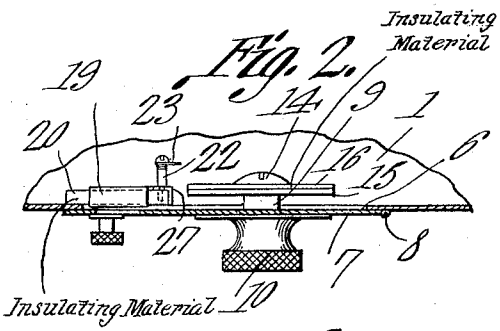


Fig. 2.

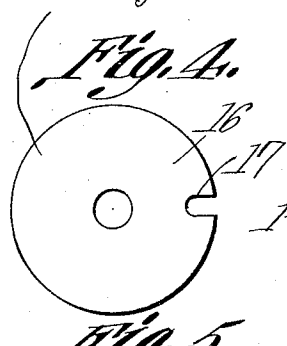


Fig. 4.

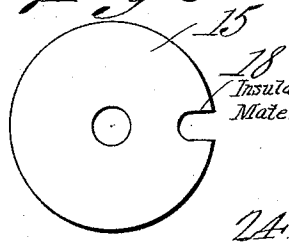


Fig. 5.

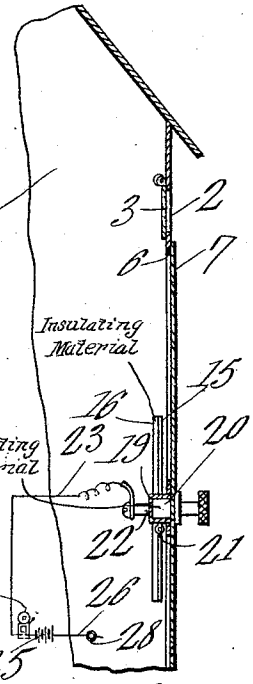


Fig. 3.

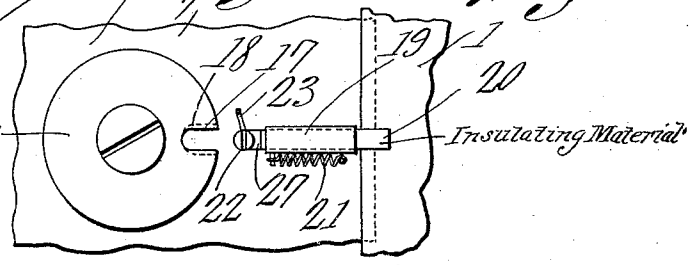


Fig. 6.

Witnesses

J. Tomein

L. F. Wilson.

Harry R. Mitchell, Inventor

by C. A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

HARRY R. MITCHELL, OF NORTH YAKIMA, WASHINGTON.

ELECTRIC SWITCH.

1,067,936. Specification of Letters Patent. Patented July 22, 1913.

Application filed February 15, 1912, Serial No. 677,726. Renewed December 28, 1912. Serial No. 739,155.

To all whom it may concern:

Be it known that I, HARRY R. MITCHELL, a citizen of the United States, residing at North Yakima, in the county of Yakima and State of Washington, have invented a new and useful Electric Switch, of which the following is a specification.

It is the object of this invention to provide an electric switch adapted to be used upon an open signal circuit, the working parts of the switch being carried by a movable closure hinged to a hollow base, said parts being located within the base, so that they cannot be tampered with, the terminals of the switch which come into contact to close the circuit, being parts of a locking mechanism whereby the closure is held in place upon the base, the construction being such that although, under normal conditions, when said terminals are brought together, the circuit will be closed, one of said terminals, nevertheless, may be manipulated to permit an opening of the closure, without operating the signal.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, Figure 1 shows the invention in perspective; Fig. 2 is a fragmental section upon the line A—B of Fig. 1; Fig. 3 is a fragmental section upon the line C—D of Fig. 1; Fig. 4 is a plan of one of the disks which serve to insulate one of the terminals from the other terminal; Fig. 5 is a plan of another disk which constitutes one of the terminals of the switch. Fig. 6 is a fragmental rear elevation of the closure.

In carrying out the invention there is provided a hollow base 1, having an opening 6, adapted to be closed by a door 7, hinged to the base 1, as shown at 8, the door and the base being fashioned from conducting material. Journaled for rotation in the door 7 is a spindle 9, fashioned from conducting material, and having upon its outer end a knob 10, carrying a plurality of indicating characters 11, each of which is adapted to be alined with a mark 12 upon the door 7.

Located within the base 1 and secured to the inner end of the spindle 9 by means of a screw or the like, is a disk 15, fashioned from conducting material, and constituting one of the terminals of the switch. Superposed upon the disk 15 is a disk 16, fashioned from insulating material. The disks are of circular contour, and in the periphery of the disk 16 there is a notch 17, alined with a notch 18 in the periphery of the disk 15. The notch 18 in the conducting disk 15 is larger than the notch 18 in the insulating disk 16, so that the insulating disk 16 overhangs the notch 18 in the conducting disk 15.

Secured to the inner face of the door 7, adjacent its free edge, is a keeper 19, in which is slidably mounted a locking bolt 20, fashioned from insulating material, the bolt 20 being provided with a contact element 27, of conducting material. The contact 27 carries a binding post 22, adapted to receive one end of a conductor 23, connected to one side of a signal 24, in the present instance shown in the form of a bell. From the other side of the signal 24 a conductor leads to a battery 25 or other source of electric energy, the battery 25 being connected by means of a conductor 26 with a binding member 28 secured to the base 1.

A retractile spring 21 is connected at one end to the door 7, the other end of the retractile spring 21 being connected to the locking bolt 20. The spring 21 operates to maintain the end of the locking bolt 20 projected, so as to engage with the inner face of the base 1, thereby to maintain the door 7 in closed position. Said end of the locking bolt 20 projects far enough beyond the edge of the doorway 6 so that if the locking bolt is slid inwardly until it engages with the conducting disk 15, the outer end of the bolt will still be engaged with the base 1, and thus the door 7 cannot be opened. By rotating the knob 10, one of the characters 11 may be alined with the mark 12, to bring the notches 17 and 18 in the disks 16 and 15, respectively, into alinement with the locking bolt 20. Under such circumstances, the inner end of the locking bolt may recede into the alined notches 17 and 18, freeing the outer end of the locking bolt from engagement with the receptacle 1, whereupon the door may be swung into open position.

Presupposing that the disks 15 and 16 are

so positioned that the notches 17 and 18 are out of alinement with the locking bolt 20, if the locking bolt 20 be slid toward the disks, through the instrumentality of a spindle 30, connected, with the locking bolt, and located upon the outside of the door 7, the spindle 30 moving in a slot 31 in the door 7, the contact 27 may be brought into engagement with the conducting disk 15. Under such circumstances, the following circuit is established; the battery 25, the conductor 26, the binding post 28, the base 1, the door 7, the spindle 9, the disk 15, the contact 27, the binding post 22, the conductor 23, the bell 24, and the conductor from the bell to the battery 25. The bell 24 will thereupon ring. When, however, the notches 17 and 18 are alined with the locking bolt 20, as shown in Fig. 4, if the locking bolt be slid inwardly, so that the door 7 may be opened, the inner end of the locking bolt will recede into the notches. However, owing to the fact that the notch 17 in the insulating disk 16 is smaller than the notch 18 in the conducting disk 15, the circuit will remain open when the inner end of the locking bolt 20 recedes into the notches 17 and 18.

If desired, the base 1 may be in the form of a receptacle, adapted to receive mail matter, and under such circumstances, the receptacle may be provided above the door 7 with a letter slot 2, closed by means of a flap 3, there being a slot 4 in the front wall of the receptacle, below the door-way 6, the slot 4 being closed by a transparent plate 5, whereby the contents of the receptacle may be inspected.

Having thus described the invention, what is claimed is:—

1. An electric switch comprising a hollow base and a door hinged thereto, both being fashioned from conducting material; a locking bolt slidable upon the inside of the door and adapted to engage the base to hold the door closed, the bolt being fashioned from insulating material and being accessible from the outer face of the door; a spindle rotatable in the door and accessible from the outside of the door; a conducting disk carried by the inner end of the spindle, the periphery of the disk being adapted to be engaged by the bolt, to prevent the bolt from moving out of engagement with the base, the disk having a notch in its periphery, into which one end of the locking bolt may recede, to permit the other end of the locking bolt to move out of engagement with the base; a conducting element upon the bolt adapted to engage the disk, said element being provided with means for receiving a conductor; means upon the base for receiving a conductor; and indicating elements upon the outer face of the door and upon the outer face of the spindle, for positioning the notch to receive the bolt.

2. An electric switch comprising a hollow base and a door hinged thereto, both of which are fashioned from conducting material; a locking bolt slidable upon the inside of the door and adapted to engage the base to hold the door closed, the bolt being fashioned from insulating material, and being accessible from the outside of the door; a spindle rotatable in the door and accessible from the outside of the door; a conducting disk carried by the inner end of the spindle, the periphery of the disk being engageable by the bolt, to hold the bolt engaged with the door, there being a notch in the disk, into which one end of the bolt is adapted to recede, to free the bolt from engagement with the base; a conducting element upon the bolt, adapted to engage the periphery of the disk, said element being provided with means to receive a conductor; means upon the base to receive a conductor; indicating elements upon the outer end of the spindle and upon the door, for positioning the notch to receive one end of the bolt; and insulating material around the periphery of the notch, whereby the circuit will remain open when the bolt is moved into the notch.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY R. MITCHELL.

Witnesses:

BERTHA WICKERSHAM,

BYAM HOUFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."