

April 21, 1925.

B. E. GETCHELL

1,534,516

SAFETY SWITCH

Filed Oct. 31, 1922

2 Sheets-Sheet 1

Fig. 1.

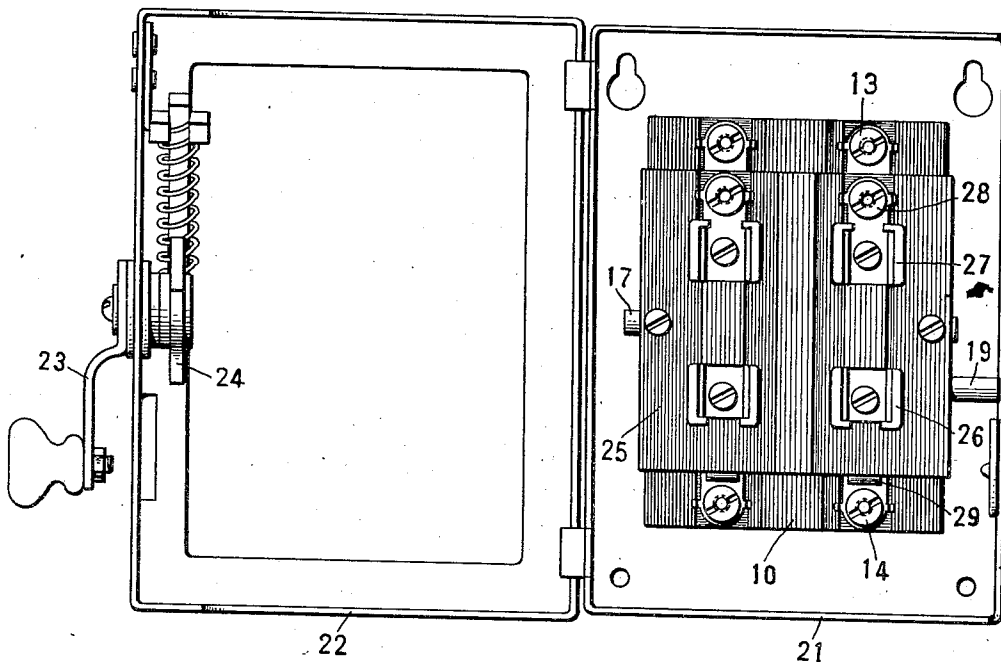


Fig. 2.

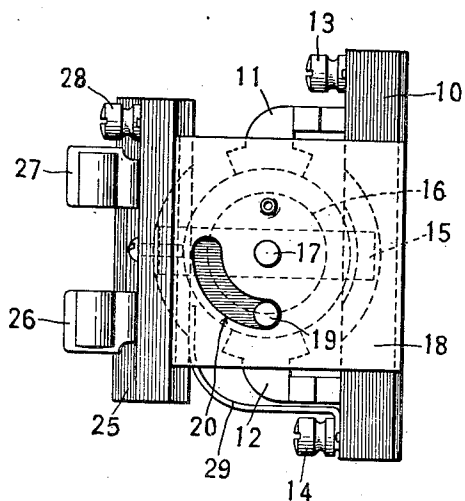
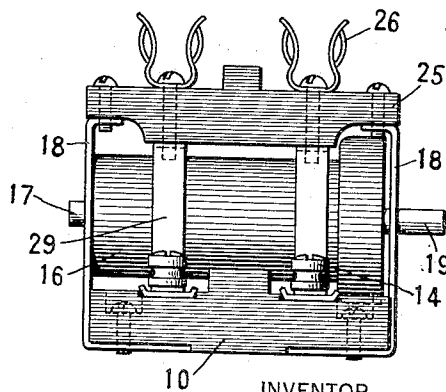


Fig. 3.



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Fig. 5.

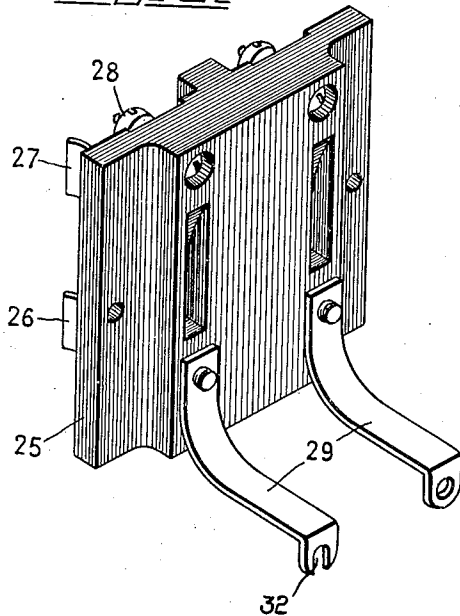


Fig. 7.

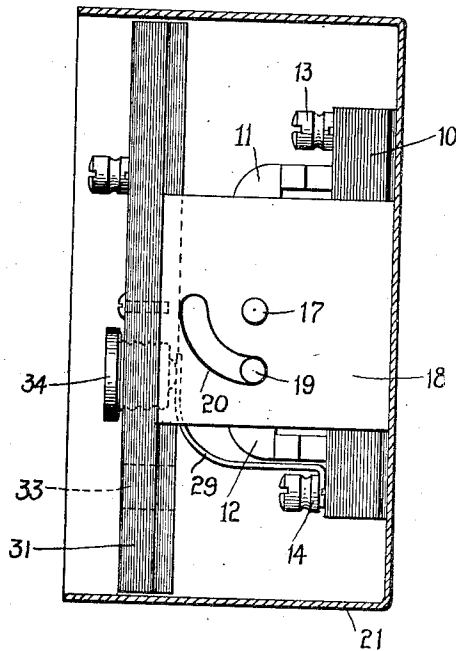


Fig. 4.

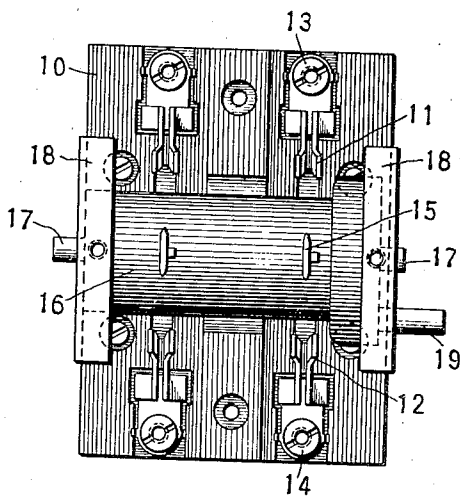
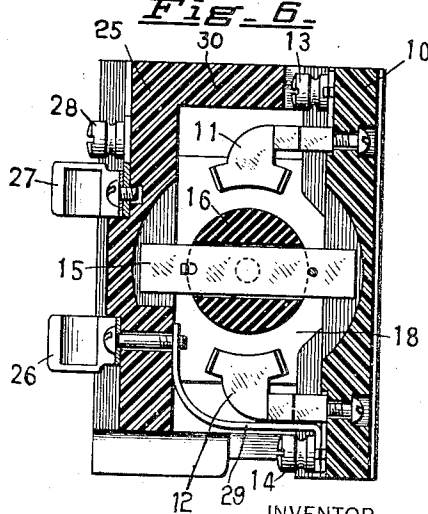


Fig. 6.



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UNITED STATES PATENT OFFICE.

BENJAMIN E. GETCHELL, OF PLAINVILLE, CONNECTICUT, ASSIGNOR TO THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, OF PLAINVILLE, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SAFETY SWITCH.

Application filed October 31, 1922. Serial No. 598,059.

To all whom it may concern:

Be it known that I, BENJAMIN E. GETCHELL, a citizen of the United States of America, residing at Plainville, Connecticut, have invented a new and useful Safety Switch, of which the following is a specification.

My invention relates to switches, which are commonly enclosed, so as to prevent accidental contact with the live parts and prevent access by unauthorized persons.

The main object is to provide a simple and inexpensive form of construction adapted for use in a receptacle or enclosure.

Another object is to provide a simple and reliable form of construction, which can be readily wired and in which the main circuit contacts of the circuit terminals are protected against accidental engagement.

Another object is to provide a construction which may be sold for use with or without a fuse or protective device and with which a protective device may be combined, if desired.

Another object is to provide a construction of the character described in which the protective devices may be readily attached or detached at will.

Another object is to provide a compact, sturdy type of construction, which can be readily wired and inspected and which can be readily re-fused without accidental contact with the live parts of the switch.

In its preferred form the invention contemplates the use of an insulated base carrying the main circuit terminals and contacts and a rotating or oscillating cylindrical contact carrier.

In its preferred form, the contact carrier is supported by brackets; the protective devices are mounted on a separate piece of insulation, which is adapted to constitute a cover or shield for the remainder of the switch construction.

Figure 1 is a face view of a switch embodying the improvements of my invention mounted in a receptacle, which is the subject-matter of another application.

Fig. 2 is a side view of the construction embodying the improvements of the invention claimed herein.

Fig. 3 is an end view of the same.

Fig. 4 is a face view of the main switch parts, with the protective member removed.

Fig. 5 is a perspective view of the protective member.

Fig. 6 is a longitudinal sectional view showing a modified form of the protective member.

Fig. 7 is a sectional view showing another modification.

The insulating base 10 may be formed of any suitable material and carries switch contact jaws 11 and 12, having terminals 13 and 14. The movable switch contacts 15 are in the form of blades, loosely carried by the cylinder 16, which has hubs 17 pivoted in the side brackets 18. One end of the cylinder 16 has a projecting pin 19, adapted to oscillate in a slot 20 in one of the side brackets. This pin 19 constitutes what may be termed an operating member.

A receptacle in the particular form illustrated in Fig. 1 has a body portion 21 and a cover 22 hinged thereto. The cover in this particular form carries a handle 23 and a quick break mechanism including a plate 24 adapted to engage the pin 19 when the cover of the box is closed.

The insulating member 25 is suitably secured to the outer ends of the bracket 18 and constitutes a shield or guard for the main switch contact. As shown in the drawing it also carries the clips 26 and 27 for a cartridge type fuse.

A binding post or circuit terminal 28 is connected to one of the fuse clips. The other fuse clip is connected to a terminal 14 of the switch by means of a strip 29, so that when the switch is closed, the circuit through one side passes from the line terminal 13 through stationary contact jaw 11, movable contact blade 15, contact jaw 12, terminal 14, strip 29, fuse clip 26 and from there through the fuse (not shown) to the clip 27 and thence to the load terminal 28. Before the switch box can be opened, the circuit must be opened through the switch and the fuses may be readily removed or inserted at will without any danger.

It should be noted that the construction herein shown and described may be used without the fuse clips, in which event, the circuit through one side of the switch would pass from line terminal 13 through contacts 11, 15 and 12 to the load terminal 14.

In case it is desired to more completely

enclose the switch members, a guard 25 may be provided with flanges such as 30, as illustrated in Fig. 6, which extend across the switch above the contacts 11 and 12 and together with the brackets 18 and the base 10 form a complete enclosure for the stationary and movable contacts of the switch.

Another modification (Fig. 7) is to make the top member 31 long enough and wide enough to practically fill the space in the box in which case it would be impossible to reach the contacts or wires of the switch proper, except by first entirely removing the top member. In such a construction the strips 29 might be slotted as at 32 (Fig. 5) for engagement with the screws under the nuts 14 and the nuts would then be tightened up by entering a screw driver through suitable holes 33 in the top member.

In this form I have shown a plug type fuse 34 to be used in place of the cartridge type for which the clips 26 and 27 are intended. It should be understood that the types of clips and fuses or other protection devices are unimportant to this invention.

Obviously the top member may be sealed in position by means of any one of several well known methods.

In the case of a non-fused switch the fuse clips 26—27 would be omitted and the insulating guard member would be secured in position. The guard member forms a means for protecting either a fused switch or a non-fused switch.

I claim:

1. In a convertible switch construction, a switch unit comprising an insulating base provided with appurtenant switch parts and terminals in combination with a fuse unit comprising an insulating base having fuse clips mounted thereon together with means for securing the fuse unit in position over the switch parts and for detachably securing the fuse clips in circuit with the poles of the switch unit.

2. In an electric switch, a switch unit including switching means and appurtenant terminals in combination with a detachable fuse unit having fuse clips mounted thereon

together with means for detachably securing said fuse unit in position over said switch unit and for connecting the fuse clips in circuit with the corresponding poles of the switch.

3. In an electric switch, an insulating base, oppositely disposed switch contacts with appurtenant line and load terminals carried by the opposite ends of said base, a switch blade movable between said contacts, side brackets secured to said base, a guard member detachably secured to said brackets and extending over the switch contacts and over the switch blade, line and load side fuse clips carried by said guard member and means for readily attaching the line side fuse clips with the load side switch terminals.

4. In an electric switch, an insulating base, switch members including line and load side terminals mounted on said base, brackets mounted on the base, a guard plate member detachably mounted on the brackets independently of said switch members, line and load side fuse clips carried by the guard plate member and means for detachably connecting the line side fuse clips with the load side terminals carried by the base.

5. In an electric switch, an insulating base, line and load side terminals carried thereby, switch contacts connected with said terminals, a movable switch member mounted between said switch contacts, supports on said base, an insulating guard member mounted on said supports over said switch member, line and load side fuse clips mounted on said guard member and means for detachably connecting the line side fuse clips with the load side switch terminals.

6. In an electric switch, a base member, a switch mounted thereon including line and load terminals, supports carried by said base, an insulating guard member detachably secured to said supports over said switch and independent thereof, fuse clips mounted on said guard member and means for detachably connecting the said fuse clips in circuit with the switch terminals.

BENJAMIN E. GETCHELL.