Sept. 16, 1952 P. B. RICHARDSON ET AL 2,611,061

ELECTRIC SAFETY SWITCH

Filed Jan. 23, 1950

FIG. 1

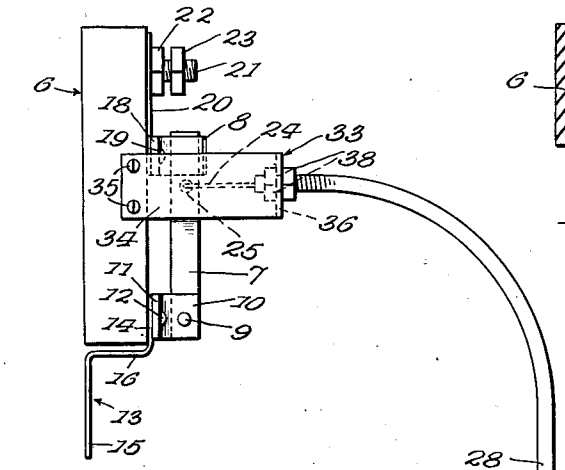


FIG. 3

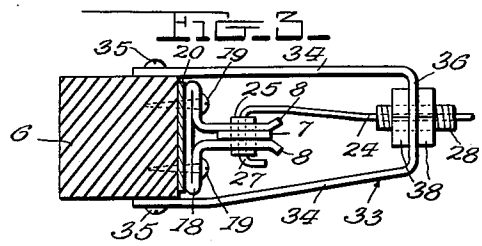


FIG. 4

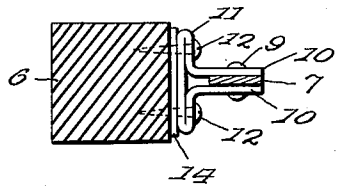


FIG. 2

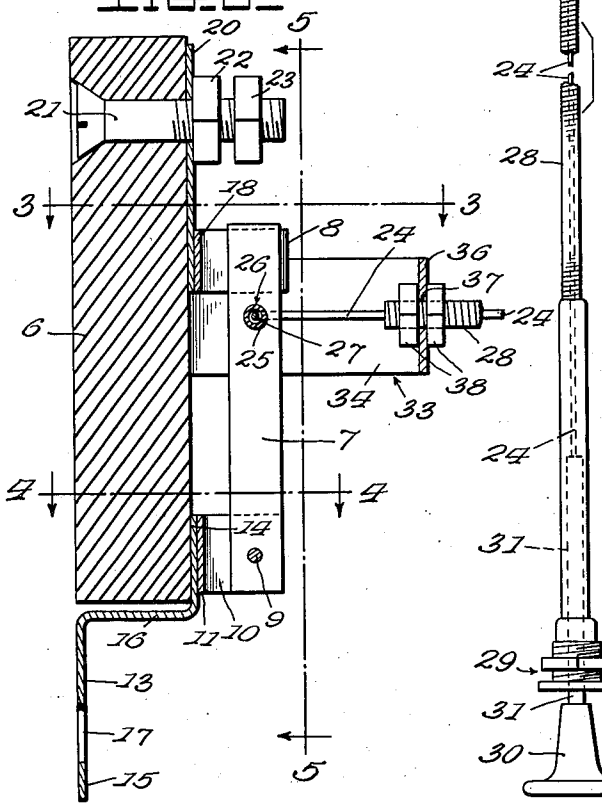
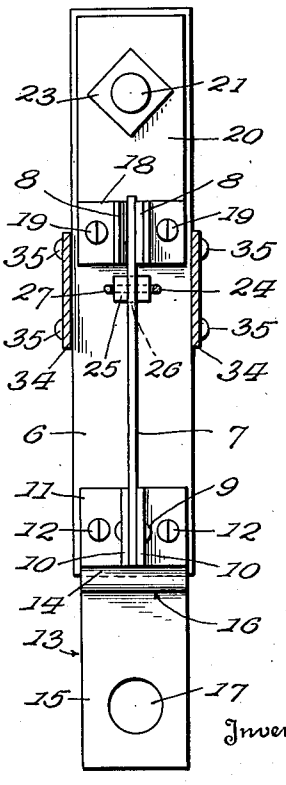


FIG. 5



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ELECTRIC SAFETY SWITCH

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1 Claim. (Cl. 200—161)

1

This invention relates to a new and improved electric switch designed primarily as a safety switch for any desired circuit but not necessarily limited to the performance of a safety function.

The object of the invention is to provide an exceptionally simple and inexpensive switch construction embodying an elongated actuator whereby the switch may be opened and closed from a remote point.

A further object is to provide a novel construction in which the switch is of the simple pivotal blade type and in which the operating means is formed by a conventional push-and-pull wire housed within a guiding and protecting armor which also prevents buckling of said wire.

Figure 1 of the accompanying drawings is a side elevation of the improved switch, partly broken away.

Figure 2 is an enlarged longitudinal sectional view.

Figures 3, 4 and 5 are sectional views cut on the correspondingly numbered lines of Figure 2.

In the form of construction herein described, an elongated, rectangular block 6 of insulation constitutes a supporting base for a pivoted switch blade 7 and contacts 8 with which said blade is cooperable to make and break a circuit. This block may be fixedly mounted in any suitable way.

The blade 7 is pivoted at 9 between metal lugs 10 which project from an integral base 11, said base 11 being secured by screws 12 to the front side of the block 6 at one end of the latter. A conducting strip 13 has one of its ends 14 secured between the base 11 and the block 6 by means of the screws 12 which extend through both said base 11 and strip end 14 and are threaded into the block as seen in dotted lines in Figure 4. In the present disclosure, the strip 14 has its end portions relatively offset to dispose its outer end 15 in a plane spaced rearwardly from the inner end 14 and to locate its intermediate portion 16 adjacent one end surface of the block 6. The strip end 15 is formed with an opening 17 instrumental in connecting said end with a binding post or other condutor (not shown).

The contacts 8 are integral with a base 18 which is secured to the front side of the block 6 by screws 19; and a conducting strip 20 which lies longitudinally against said front side of said block 6 has its inner end secured between said front side and said base 18 by means of the screws 19. These screws extend through the base 18 and the strip 20 and are threaded into the block 6, as dotted in Figure 3. A bolt 21 extends forwardly through the block 6 and the outer end of the

2

strip 20 and is provided with two nuts 22 and 23. The nut 22 clamps the strip tightly against the block 6, and the nut 23 coacts with said nut 22 and the bolt 21 is forming a binding post, whereby another conductor (not shown) may be electrically connected with the switch. Thus, when the blade 7 is closed, any electric circuit in which the switch is incorporated, will be completed, and opening of said blade will break said circuit.

A push-and-pull wire 24 is provided for opening and closing the blade 7 while the operator is at a remote point. This blade carries a transverse insulating sleeve 25 friction-fitted or otherwise secured between its ends in an opening 26, and one end of the wire 24 is formed with a return-hand hook 27 which is hooked into said sleeve 25, thereby pivotally connecting said wire 24 with the blade 7 and insulating the former from the latter for safety. A flexible tubular armor 28, preferably of coiled wire, is provided for the wire 24, and serves to guide and protect said wire and to hold it against buckling. One end of this armor 28 is mounted in a novel manner hereinafter described upon the block 6, and the other end of said armor has suitable provision 29 for mounting it on a suitable support. Adjacent the means 29 is an operating knob 30 having a stem 31 to which the outer end of the wire 24 is secured. Obviously, the wire 24 and armor 28 may extend to any required distance from the switch blade 7; and by pulling upon the knob 30, said switch blade 7 may be quickly and easily opened; and by pushing said knob said blade may be closed with equal facility.

A one-piece U-shaped metal bracket 33 rearwardly straddles the block 6 and has the free ends of its side arms 34 secured to opposite sides of said block by means of screws 35. These arms are free from contact with any current-conducting portions of the switch and said arms are disposed at opposite sides of the blade 7. The arm-connecting portion 36 of the bracket 33 is spaced forwardly from the blade 7 and is formed with an opening 37 through which the inner end of the armor 28 extends. Nuts 38 are threaded on this armor end at opposite sides of the bracket portion 36 to adjustably anchor the armor to the bracket 33.

From the foregoing and the accompanying drawing, it will be seen that simple, inexpensive and practical provision has been made for attaining the desired ends, and while preferences have been disclosed, it is to be understood that variations may be made within the scope of the invention as claimed.

We claim:

A switch comprising a base, switch means mounted on said base and including spaced contacts and a cooperating switch blade pivotally mounted at one end and movable in one direction to open the switch and movable in the other direction to close the switch, a U-shaped bracket extending perpendicularly from the base with the free ends of the side arms of the bracket secured to opposite sides of said base in the vicinity of the disengageable contact zone, said bracket straddling the contact zone and the pivoted switch blade with the closed end of the bracket disposed in the path of movement of the free swinging end of said switch blade, an elongated tubular armor secured at one end to and projecting within the closed end portion of said U-shaped bracket and projecting therein a limited distance to limit the swing range of switch blade movement, the other end of said armor being remote from said bracket, a push-and-pull wire slidably extending through said armor, one end of said wire projecting inwardly beyond said one end of said armor and extending in a substantially straight line perpendicular to the pivoted switch blade and connected thereto adjacent its free end, the other end of said wire having an operating handle disposed at said other end of said armor.

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