

Aug. 25, 1925.

H. G. BEYER

1,550,868

RECIPROCATING SNAP SWITCH

Filed Oct. 15, 1924

Fig. 1.

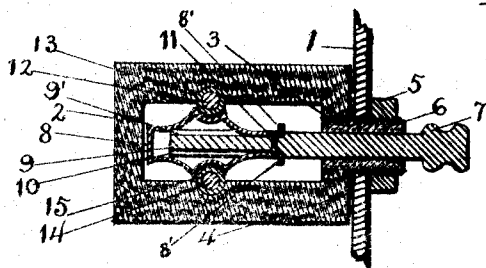


Fig. 2.

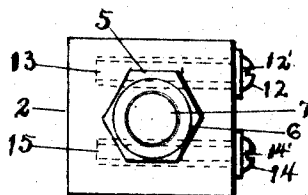


Fig. 3.

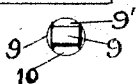


Fig. 4.

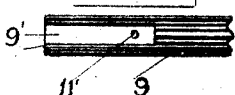


Fig. 5.

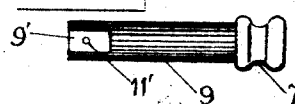


Fig. 6.

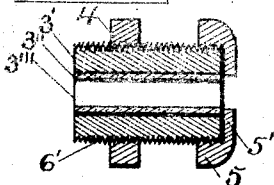


Fig. 7.

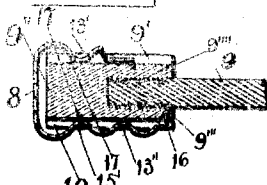


Fig. 8.

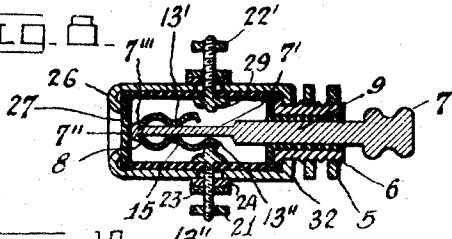


Fig. 9.

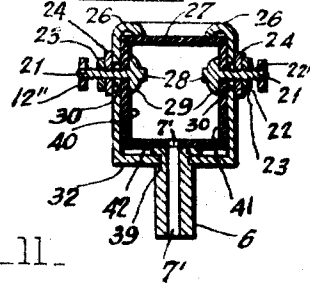


Fig. 10.

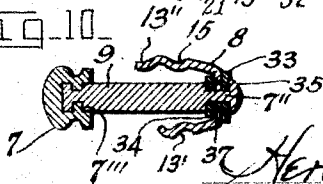
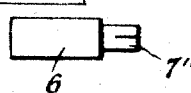


Fig. 11.



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UNITED STATES PATENT OFFICE.

HERBERT G. BEYER, OF BALTIMORE, MARYLAND.

RECIPROCATING SNAP SWITCH.

Application filed October 15, 1924. Serial No. 743,854.

To all whom it may concern:

Be it known that I, HERBERT GEORGE BEYER, a citizen of the United States, and resident of Baltimore city, in the State of Maryland, whose post-office address is 700 Third Avenue, Rognel Heights, Baltimore, Maryland, have invented new and useful Improvements in Reciprocating Snap Switches, of which the following is a specification.

10 This invention relates to reciprocating snap switches for use where an electric light is to be used at intervals of indefinite periods, particularly in connection with parking lights used on automobiles or other vehicles, and has for its objects,

1st. To simplify the construction of this class of switches;

2nd. To lessen the cost of construction of snap switches used for the purposes mentioned;

3rd. To provide a switch with binding post terminals which are directly bridged by a single piece of metal to close the circuit when it is reciprocated.

25 4th. To provide means for securing the switch onto a support, through which means the handle operates the switch.

5th. To provide a continuous corrugated strip of metal spanning the end of the rod which actuates it to close an electric circuit.

30 6th. To provide an insulated bushing for securing the switch to a support, through which bushing the reciprocating rod actuates the switch.

35 7th. To provide an insulated body for a switch in which are secured threaded tubes carrying screws forming binding posts for terminals, and a corrugated circuit closer of one piece of metal reciprocating between the threaded tubes for making and breaking an electric circuit.

Referring to the drawings,

Fig. 1 is a sectional view of my improved reciprocating snap switch.

45 Fig. 2 is an end elevation of the same.

Fig. 3 is an end of the operating rod.

Fig. 4 is a section of the operating rod.

Fig. 5 is a modified view of the operating rod.

50 Fig. 6 is a sectional view of the threaded bushing showing an insulated lining inserted in the bushing through which the rod operates the switch.

55 Fig. 7 is a sectional view of a modification of the reciprocating rod carrying an insulated plug into which the rod is threaded,

and onto which is secured the corrugated metal snap circuit closer.

Fig. 8 is a modified view of the corrugated metal circuit closing snap directly secured to a metal reciprocating rod, and fastened to the rod at the end farthest from the handle.

Fig. 9 is a modified sectional view of the switch body 2 illustrating also the modified terminals.

Fig. 10 is a section of another modification of my switch handle, also of the reciprocating rod and attached circuit closer.

Fig. 11 is a side view of the modified bushing 6 before fitting in place.

The numeral 1 is a section of a dashboard of a vehicle or other supporting means for the switch, through which support 1 the bushing 6 passes to secure the bushing 6 to the support 1 by the clamping nut 5 threaded onto the bushing 6.

Behind the support 1 is a threaded washer or nut 4 screwed onto the bushing 6 to accommodate the bushing for varying thicknesses of supports, and by which the face of the switch is more artistically set in position in the vehicle; and when a facing nut 5 shown in Fig. 6 with its facing 5' is used, the function of this nut 4 is self evident for clamping the support 1 between the nuts 4 and 5.

7 is the handle of the reciprocating rod 9 by which the switch is operated.

Onto this reciprocating rod 9 is secured the corrugated circuit closing snap 8 by the pin 11, which corrugated circuit closing snap 8 rests in slots 9' on opposite sides of the rod 9. Above and below this rod 9 are fixed into the insulated body 2 of my switch, two threaded tubes 13 and 15 in which are screwed the binding screws 12 and 14 holding the washers 12' and 14' respectively, forming the terminals of an electric circuit, the said tubes 13 and 15 making the contact points when the corrugated circuit closing snap 8 is moved in the position shown. The insulated body 2 of the switch, is secured to the bushing 6 by any suitable means, such as being made integral with it, or threaded onto it by the threads 3 meshing with the threads 6' on the bushing 6. 11' is the hole in the rod 9 through which the pin 11 inserted to secure the corrugated circuit closing snap 8.

In modified form 9''' is an insulated plug fastened onto the reciprocating rod 9 and onto this insulated plug 9''' is secured the

corrugated circuit closing snap 8 by suitable means such as the tits 16 made integral with the ends of the corrugated circuit closing snap 8.

5 9'' is the end of the insulating plug 9''' over which the corrugated circuit closing snap 8 is made with the corrugations 13' and 15' to close the circuit by direct contact with the tubes 13 and 15 of the switch.

10 9' and 10 are grooves on the rod 9 in which the circuit closing snap 8 moves when sprung into and out of contact with the tubes 13 and 15 of the binding post terminals of the switch.

15 13'' is another corrugation on the circuit closing snap 8 which merely holds the corrugated circuit closing snap 8 out of position for closing the circuit when the switch is out of use, and to prevent the jolting of the vehicle from operating the switch.

20 17 are the under sides of the corrugations 13' and 15' which may rest onto the bottom of the grooves 9' and 10 on the rod 9 when the circuit closing snap 8 is snapped into and out of position for contact with the tubes 13 and 15 of the binding posts of the switch.

30 8' are flared edges of the corrugated circuit closing snap 8 to provide a stop for the handle when the rod 9 is moved.

In modified form 9'''' is the end of the insulating plug 9'' which serves the purpose of a stop for the rod 9.

35 6' are the threads onto the bushing 6 by which the bushing 6 is secured into the body 2 of the switch and whereby the nuts 4 and 5 secure the switch to the support 1.

40 3' is a modified form of the bushing 6 in which a lining 3'' of insulating material is inserted, in the bore 3''' of this bushing lining 3'' the rod 9 reciprocates to operate the switch.

45 In the modified form of the reciprocating rod 9 shown in Figure 8, the rod 9 is reduced in size at 7' and flattened; and at its extreme end is made pin shaped where it passes through the hole 7''' to secure the circuit closing snap 8 to the reciprocating rod 9 by riveting the end 7''.

50 The switch body 2 is preferably a struck up hollow form from sheet material open at one end 38 and made with a hole 39 at the opposite end and at definite position in opposite sides the holes 30 are made to receive the terminal binding posts 21.

55 Inside of the body 2 in Figure 9 are inserted four more or less square washers of insulating material 40 and 41 carrying the binding posts 21 in fixed positions with their contact ends 28 and shoulders 29 arranged to mate with the corrugations 13' and 13'' and 15 of the snap circuit-closer 8. After the bushing 6 has been fixed in the hole 39 in the body 2 by folding the end 32 in the body 2 and after
65 inserting the insulating washer 42 in the

body and after the insulating washers 40 and 41 carrying the binding posts 21 are inserted in the body 2, then the reciprocating rod 9 is inserted into the bushing 6 passing through the hole 7' and the handle 7 is secured over the end of the reciprocating rod 9 extending beyond the body 2 by pressing the sides of the handle 7 into depressions 7''' in the rod 9. Before inserting the rod 9 the washer 42 is inserted in the body 2 after the bushing 6 has been secured in position in the body 2.

The depressions in the rod 9 may be any form 7''' or may be annular or semi-annular as I do not wish to limit myself to any particular method of securing the handle 7 to the reciprocating rod 9 of my switch.

After inserting the reciprocating parts of my switch, the inclosing end insulating piece 27 is inserted in the body 2 and the edges of the said body at 26 are folded over to secure the insulating end in place.

I do not care to limit myself to any particular shape or design of the body 2.

The holes through which the binding posts 21 pass through the sides of the body 2 are larger than the binding posts 21 to provide insulating spaces 30 to keep the said binding posts 21 out of contact with the said body 2.

The insulating washers 24 are placed onto the binding posts 21 and are secured in place by the nuts 12'' and 23.

The space 22 between the nuts 12'' and 23 is for to receive the wire terminals of a circuit after which the nut 12'' is turned until it secures the wire in place.

The heads or inner ends 28 of the binding posts 21 fit into the depressions 13', 13'' and 15 of the circuit closer snap 8.

In Fig. 10 the reciprocating rod 9 has a reduced end 7'' onto which is slid the insulating washer 34, then the snap circuit closing piece 8 having a hole 37 larger than the end 7'' to insulate it from the said end 7'', then follows another insulating washer 33 after which the end 7'' is folded over at 35.

While showing several plans to assemble the reciprocating parts of my switch, I do not care to limit myself to any particular method of assembling the same.

What I claim is:—

1. In a switch provided with a body, a plurality of binding posts extending within said body and suitably insulated from each other, one end of each of said binding posts extending outside of said body and provided with means for securing the terminals of an electrical circuit, a rod operable between said binding posts within said body and provided with a contact maker provided with two legs, one leg of which is provided with means for normally maintaining same in contact with one of said binding posts, and both of said legs provided with means for maintain-
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ing a closed circuit with both of said binding posts.

2. In a switch described in claim 1, provided with a threaded means secured to said
5 body through which threaded means the rod operates the contact maker, said threaded means engaging nuts whereby the switch is secured to a support.

3. In a switch described in claim 1, the
10 contact maker provided with corrugations or depressions where the contact is made.

4. In a switch provided with a plurality of terminals and means for attaching the wires of an electrical circuit to said
15 terminals, a body surrounding said terminals and provided with a guide for a reciprocating rod, a reciprocating rod extending outside of said guide and operating within the switch body to move a contact maker
20 secured to said rod, the contact maker being provided with two depressions or corrugations in one leg of said contact maker and

one depression or corrugation in the opposite leg of the said contact maker, the leg provided with the two depressions or corrugations being always in electrical contact with one of the said terminals while the circuit is made or broken by the leg of the contact maker provided with one depression or corrugation.

5. In a switch, a body therefor lined with insulating material, binding posts forming terminals on the inside of said body at sides opposite each other and insulated from said body, an end insulation secured in said body
35 by turning the edges of said body over said end insulation.

6. In a switch, a contact maker for an electric circuit provided with two legs, one leg of which is provided with means for
40 maintaining an open circuit and also provided with means for maintaining a closed circuit.

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