Aug. 23, 1927. 1,639,952

N. R. MAYOZA

MULTIPLE PLURAL SWITCH

Filed Feb. 4, 1926

Fig. 1.

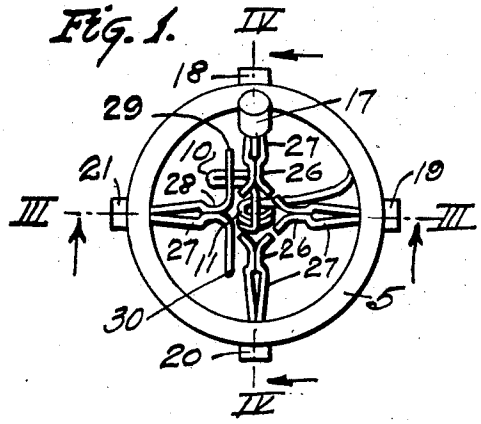


Fig. 2.

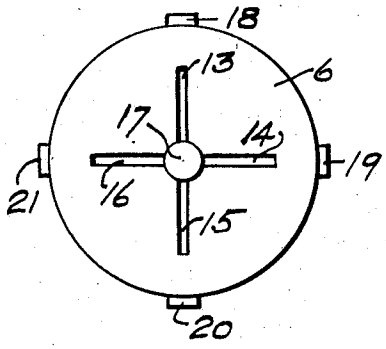


Fig. 3.

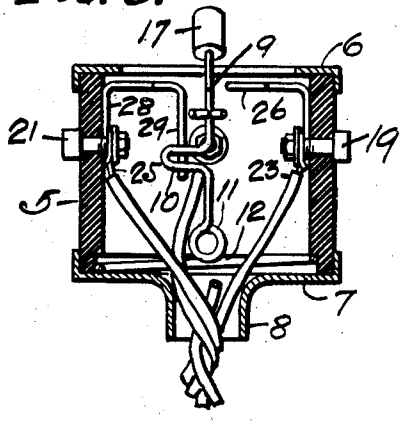
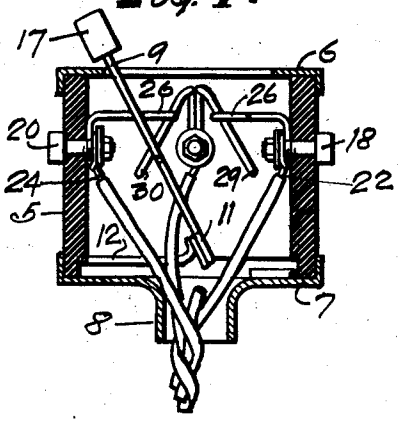


Fig. 4.



INVENTOR

Nathan R. Mayoza

BY

J. H. Weatherford

ATTORNEY

Patented Aug. 23, 1927. 1,639,952

UNITED STATES PATENT OFFICE.

NATHAN R. MAYOZA, OF MEMPHIS, TENNESSEE

MULTIPLE PLURAL SWITCH.

Application filed February 4, 1926. Serial No. 85,847.

This invention has general reference to a switch for controlling a plurality of electric circuits, and in which provision is made for one or more positions of the control lever in which two or more circuits are closed; but relates more specifically to a form of switch of the said general character which is particularly adapted for controlling the audible-visual signals of an automobile.

The principal objects of the present invention are:—

First, to provide a switch having a resiliently-movable control-lever by which a plurality of circuits may be closed selectively, and having means, within the switch casing, for retaining said lever in a plurality of different circuit-closing positions, when moved manually thereto;

Second, to provide such a switch in which certain individual positions of the control lever result in the closing of a plurality of circuits; and

Third, to provide a switch embodying the foregoing features, and which may be small, compact, strong and durable, immune from disarrangement from vibration or shock, and may readily be attached to a hollow support, such as a spoke or the post of the steering-wheel of an automobile.

The means by which the foregoing and other objects are accomplished by my invention, and the manner of their accomplishment, readily will be understood from the following description on reference to the accompanying drawings, in which—

Fig. 1 is a top plan view of my improved switch, with the cover removed from the casing.

Fig. 2 is a similar view, with the cover in place.

Fig. 3 is a section, taken substantially on line III—III of Fig. 2.

Fig. 4 is a section, taken substantially on line IV—IV of Fig. 2.

Referring now to the drawings in detail, the switch casing comprises a hollow cylinder of dielectric material, such as bakelite or vulcanized rubber, indicated by reference numeral 5, having a removable top cover 6 and a separable base 7, either or both of which may be made of aluminum, or any other metal desired, though the base should be a good conductor, since it preferably serves as a ground connection, and said top and base may be secured to said cylinder in any preferred manner. To facilitate attaching the switch to a hollow support, the base 7 has a hollow neck 8, which may be annular, or of any other cross-sectional configuration desired.

A control lever 9, of resilient wire, such as spring steel or other metal that is a good conductor, and preferably in one piece, is bent to form an offset 10 and a helix 11, and terminates in a helical, or semi-helical, portion 12, adapted to be sprung into, and retained in, a recess between a cut-away portion of the end of the cylinder 5 and the base 6, the shape and dimensions of said lever being such that it tends to remain central with respect to said cylinder. The upper end of said lever extends through an opening in the top 6, from which four slots, 13, 14, 15 and 16 respectively, radiate at right-angles to each other, and said lever terminates in a button 17, made of any preferred dielectric material. In line with said slots, four binding posts, 18, 19, 20 and 21 respectively, are mounted symmetrically in the cylinder 5, each being threaded at its inner end, and provided with a nut and a washer, and said posts serving as terminals for four wires, 22, 23, 24 and 25 respectively, each of which is insulated, and all of which lead together through the neck 8 of the base 7 of the switch casing, and thence to their connections with the various units of the wiring system in which the switch is used.

To each of the binding posts 18, 19 and 20, is attached a contact-clip 26, of resilient wire of low resistance, bent to U-shape where it is secured to the binding post, having two legs extending upward therefrom, and said legs being bent inwardly, substantially at right-angles, and being first separated and then brought together, to form a normally-closed slot 27, as shown clearly in Fig. 1. To binding post 21 is similarly attached a contact-clip 28, which is partly of the same configuration as the other clips, and has the slot 27, but also has diverging legs 29 and 30, in position to be contacted with by the offset portion 10 of the control lever, in certain positions of said lever.

As a typical illustration of the use of my improved switch, let it be assumed that the neck 8, and hence the control lever 9, is grounded; that the wire connected with the binding post 18 leads to the visual signal of an automobile indicating a right-hand turn;

that binding post 19 is connected with the horn, or other audible signal; that a visual signal connected with binding post 20 indicates a left-hand turn; and that the wire leading from binding post 21 is connected with a visual signal indicating a stop. Under these assumed conditions, if the switch lever be moved into either slot 13 or slot 15, thereby making contact with the clips connected with binding posts 18 or 20, respectively, the offset 10 will at the same time be brought into contact with one of the legs of clip 28, and thus the "turn" signal will be accentuated, by having the "stop" signal shown coincidentally therewith. When, however, the control lever is moved into slot 14, only the signal connected with binding post 19 will be actuated, and movement of said lever into slot 16 will cause actuation of only one signal.

When moved manually into any one of the slots in the top 6, a sufficient distance to close the circuit or circuits affected by such movement, the control lever will be retained yieldingly in circuit-closing position, due to its entry into slot 27 of the contact-clip, until released manually therefrom, such release being effected by radial movement of said lever.

Various modifications of minor details of my improved switch doubtless readily will suggest themselves to those skilled in the art to which it appertains, and I therefore do not desire to be limited to the exact forms of construction or arrangement of parts that are shown and described herein.

Having now fully disclosed the invention, what is claimed is:—

1. A switch, comprising a casing having a plurality of individual contacts therein, and a control lever movable selectively into engagement with said contacts, said lever being bent to helical form, whereby it is yieldingly retained normally in neutral position.

2. A switch, comprising a casing having a plurality of individual contacts therein, and a control lever being bent to helical form, and resiliently movable selectively into engagement with said contacts, each of said contacts embodying means for engaging said lever at a distance from the helix thereof, and thereby retaining said lever yieldingly in circuit-closing position.

3. A switch, comprising a hollow cylindrical casing having a plurality of individual wires leading thereinto, a binding post for each of said wires, a contact member within said casing connected with each of said binding posts, said contact members extending radially inward, and each comprising two resilient parts substantially contacting intermediate their length and being spaced apart at each side of said contacting portion, and a control lever resiliently movable selectively into engagement between the parts of said contact members, and past said contacting portions thereof, whereby it will be yieldingly retained in such engagement, an extension for each of the inner ends of one pair of said contact-member parts, continuing outward and downward in a tangential plane, and a lateral extension from said lever embodying means for engaging one of said extensions, during engagement of said lever with another of said contact members.

4. A switch, comprising a hollow casing having a plurality of individual wires leading thereinto, a binding post for each of said wires, a contact member within said casing connected with each of said binding posts, said contact members extending radially inward, and each comprising two resilient parts, substantially contacting intermediate their length and being spaced apart at each side of said contacting portions; and a control lever resiliently movable selectively into engagement between the parts of said contact members, and past said contacting portions thereof, whereby it will be yieldingly retained in such engagement, continuations of the inner ends of one pair of said contact members, said continuations each extending outward and downward in a tangential plane, and a lateral extension from said lever embodying means for engaging one of said extensions, during engagement of said lever with another of said contact members.

In testimony of the foregoing, I affix my signature.

NATHAN R. MAYOZA.