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SLIDE SWITCHES

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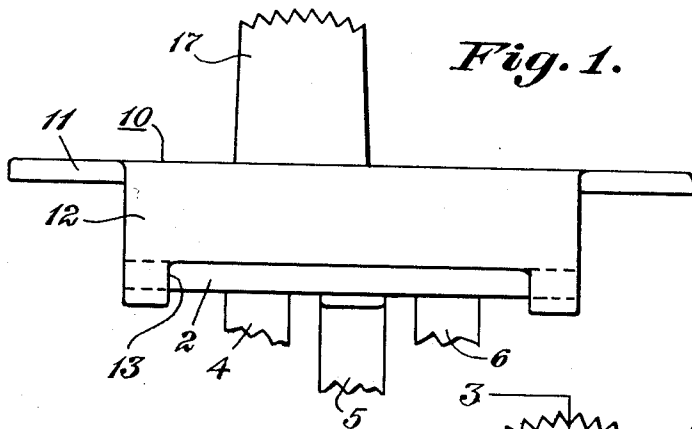


Fig. 1.

Fig. 2.

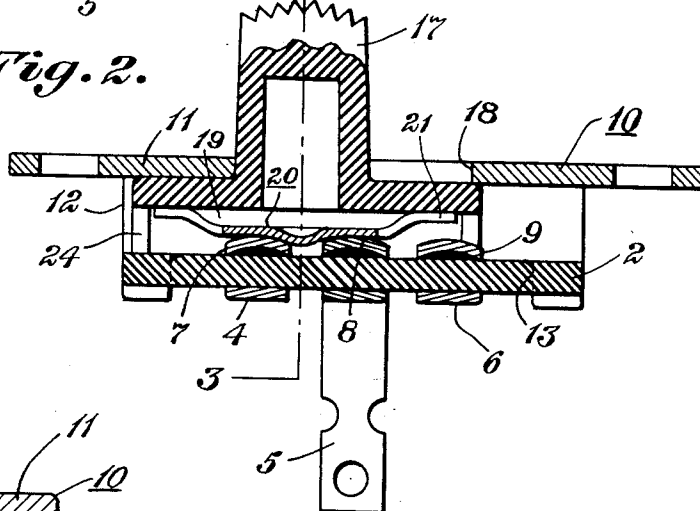


Fig. 3.

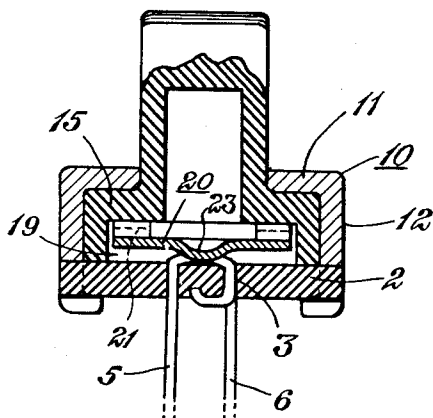


Fig. 4.

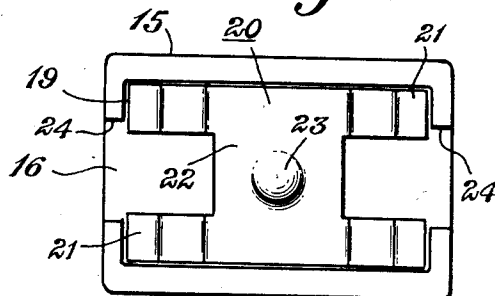
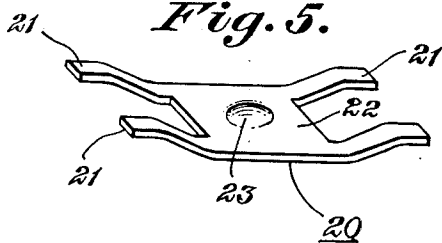


Fig. 5.



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SLIDE SWITCHES

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1 Claim. (Cl. 200—16)

This invention relates to electric switches and more particularly to the type of switch wherein a movable contact is slidable in a predetermined path to different positions in which it engages respectively different combinations of terminal or stationary contacts. Switches of this type are commonly designated slide switches.

The primary object of the invention is to provide in a slide switch a movable contact element in a form that may readily be produced at a cost considerably less than the cost of such forms of element as have been produced heretofore for effecting a like function in similar switches. It is also an object of the invention to provide a mounting arrangement for a slide switch movable contact element that assures accurate location of the contact relative to its cooperating parts. In the attainment of these objects a feature of the invention resides in a movable contact member of simple form such as may be readily and inexpensively produced in a punch press. This movable contact member comprises a thin resilient plate of suitable material slightly bent to present area on one side of the plate for engagement with a supporting carrier or actuator while area on the opposite side of the plate is located to be opposed by stationary contact elements. The movable and stationary contact elements are accommodated entirely within a recess in an actuator arranged to be manipulated by a button that is integral with the actuator and extended through a slot in the wall of the switch housing. Resiliency of the movable contact member or plate yieldably effects its respective engagement with its supporting carrier and the stationary contacts opposed to the carrier. Also by virtue of resiliency of the movable contact, a detent thereon, is permitted to pass over a stationary contact but is normally effective to yieldably resist movement of the movable contact and its actuator.

In the drawing—

Fig. 1 is a side view of a type of slide switch with which the improvement comprising my invention may be employed.

Fig. 2 is a longitudinal sectional view of the switch shown in Fig. 1.

Fig. 3 is a transverse sectional view on line 3—3 of Fig. 1.

Fig. 4 is a bottom plan view of a movable contact element and its carrier or actuator.

Fig. 5 is a perspective view of a movable contact member.

Referring to the drawing, housing parts of the switch shown are characteristic of a slide switch and comprise a base of insulation material and a metal mounting plate. The base plate 2 is slotted as at 3 to receive spaced terminals 4, 5 and 6 which present within the switch housing, slightly rounded stationary contacts 7, 8 and 9. To form the interior of the switch housing,

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mounting plate 10 is of channel shape and comprises a top 11 and sides 12 which engage base plate 2, the latter being notched at the corners as at 13 to receive fastening lugs 14 extended from sides 12. Within this housing which is rectangular in transverse section is an actuator 15 comprising a somewhat elongated base 16 presenting top, bottom and side surfaces to freely engage respectively adjacent surfaces within the housing so that the actuator may readily be slid longitudinally therein. A button 17 by which actuator 15 is movable, extends through a slot 18 in mounting plate 10. The ends of slot 18 form stops to limit sliding movement of the actuator. Within the base of actuator 15 is a shallow rectangular recess 19 and within this recess is a bridging contact 20, movable in a path extending over stationary contacts 7, 8 and 9. This bridging contact may be positioned to engage either contacts 7 and 8 or 8 and 9.

In a preferred form, bridging contact 20, see Figs. 4 and 5, is of H-shape, with the sides terminating in fingers 21 and with the bar or mid-section 22 of the H relatively wide. The four extremities 21 of this H-shaped plate 20, when it is assembled with actuator 15, are closely adjacent corners of rectangular recess 19, so that the contact and its carrier are definitely maintained in register. Thus as actuator 15 is reciprocated in the path wherein it is guided by walls of the switch housing, contact 20 is accurately located in whatever selected position to which it may have been moved relative to stationary contacts 7, 8 and 9.

To provide for desirably firm engagement between contact 20 and opposing stationary contacts 7, 8 and 9, the H-shaped plate comprising said contact, is made of resilient material so that extremities 21, when suitably bent or displaced from the plane of the bar section 22, form spring fingers for engagement with carrier or actuator 15.

It is desirable that an arrangement be provided for yieldably resisting movement of contact 20 from either of the selected positions to which said contact may have been moved. For this purpose a detent as 23 is effective and may be formed in the bar section 22 of contact 20. Thus with actuator 15 together with contact 20 located in the position in which they are shown in Fig. 2, detent 23 is between stationary contacts 8 and 9 and will effect resistance to movement of the contact from this relationship, inasmuch as spring tension of fingers 21 must be overcome before detent 23 can pass over stationary contact 8. At each end of actuator 15 the wall of recess 19 is apertured as at 24 to permit passage over contacts 7 and 9 respectively as the actuator is moved from one of its contact bridging positions to the other.

It will be understood that movable contact 20, as well as other parts of the switch illustrated, may be made in other forms than those shown without departure from the scope of the invention as defined by the claim.

What I claim is:

In a slide switch, a housing providing a guideway therein with one wall of said housing comprising a mounting plate having a slot therein, end walls formed by said slot, terminals presenting stationary contacts within said housing on one side of said guideway, an actuator comprising a body portion movable in said guideway and having a button extended therefrom through said slot in said mounting plate, said actuator being supported for bodily movement limited by said end walls formed by said slot, said actuator being formed with a recess in the side thereof opposite said stationary contacts, and a bridging contact member entirely within the recess in

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said actuator, said bridging contact member comprising an H-shaped thin substantially flat plate adapted to occupy the recess in said actuator with resilient extremities of said plate located adjacent respective corners of said recess and bearing against the bottom of the recess, said extremities of the plate being displaced from the plane of the flatwise extent of the midportion thereof so that said midportion yieldably engages certain of said stationary contacts.

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