SPRING DETENT AND TERMINAL STRUCTURE IN A SLIDE SWITCH

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Inventor
Bernard J. Golbeck

By: Hogues, Deady, Hogue, Cullen & Stalman

ATTORNEYS
SPRING DETENT AND TERMINAL STRUCTURE IN A SLIDE SWITCH

Bernard J. Golbeck, Crystal Lake, Ill., assignor to Oak Manufacturing Co., a corporation of Delaware

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The device of this invention includes a body 10 which is an elongate rectangular generally tray shaped member or rigid material. The body 10 includes a top 11 and a pair of depending side walls 12 and 13. Extending downwardly from the side walls 12 and 13 are a pair of lugs, indicated generally at 14, which are capable of grippingly secure an insulating terminal board 15 within the body 10. The terminal board 15 is normally rectangular member of plastic material. The board 15 has notches, indicated generally at 34, formed at each corner to receive the lugs 14 which pass downwardly therethrough and fold under the board 15. A series of terminal receiving means, or apertures 35 are formed in the board to receive the terminals which are secured thereto.

Also ensuised within the body 10 is a switch carrier means or button 16 having its manually engageable surface or finger grip 17 extending upwardly through a rectangular slot 18 formed in the top 11 of the body 10. The slot 18 is so formed as to allow lateral movement of the finger grip 17, and consequently the button 16, within the body 10 to effectuate selective positioning within the switch. The movable switch members or contact shoes 20 are enclosed within the body 10 and are carried by the switch carrier means 16. The switch means or shoes 20 are made of conductive material such as spring metal. They are flared at either end to encourage the shoes to be guided onto the terminals in their lateral path of travel in the switch.

Partially enclosed within the body 10 are the conductive members or terminals 21 which are secured to the terminal board 15. The terminals 21 are thin elongate bars of conductive material which have fastening means or bars 36 and 36a formed to intermediate thereof and extending normal to the faces thereof for piercing the terminal board and locking the terminals therein. Shoulders 37 and 37a are formed on either side of the terminal above the bars 36 and 26c and outwardly project normal thereto to position the terminals 21 in the board 15. This method of making the terminal allows a relatively large slot to be blanked in the terminal board which means that sturdy punches may be used to form the apertures 35. This type of terminal also allows the switch to be made smaller even though the terminals are spaced farther apart because the fastening surface of a terminal is extremely narrow. Formed at opposite ends of the terminals are contact means 38 and post means 39 for facilitating the appropriate electrical connections.

The button 16 is formed of rigid insulating material. It is disposed for sidable movement within the body 10 and is tightly embraced therein. A pair of channels 26 and 27, are formed on either side of a central rib 25 to allow free passage of the button 16 over the top of the terminals 21. Recesses 28 and 29 are formed in channels 36 and 36a for retaining the contact shoes 20 which are carried in the button 16. The recesses 28 and 29 retain the shoes 20 against lateral movement. The shoes are held in the channels and are prevented from dropping therefrom by the center terminal 21a which extends upwards a greater distance than the terminals on each side thereof. Depending upon the selected position of the switch, either of the ears 30 and 31 of the shoes 20 will always be in contact with the terminal 21a, thus constantly retaining the shoe 20 within the recess 28 or 29 of the channels 26 and 27, respectively.

A pair of resilient members or springs 23 and 23a are integrally formed in the top 11 of the body 10. These springs are formed contiguous with the slot 18 and along the longitudinal extent thereof. Each spring 23 and 23a has a resilient locking surface or locking portion 24 and 24a, respectively, for locking the switch in a selected po-
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3. In a slide switch having a body with terminals mounted thereon, switch means, comprising: a movable switch member adapted for selective engagement with said terminals, switch carrier means having the switch member carried in channels therein, said switch carrier means including a manually engageable surface projecting from a portion of said switch carrier for moving the switch on and off and a manually engageable surface provided with said terminals, cover means enclosing the switch carrier means in said body, said cover having a slot formed therein for allowing linear travel of said manually engageable surface and therefore said switch carrier means, said cover means including a pair of springs formed therein along the longitudinal extent of each side of said slot and contiguous therewith, each spring adapted to bear against a portion of said switch carrier means below said cover to maintain said switch member in the channels in said switch carrier means and in contact with said terminals.

4. The switch of claim 3 wherein each spring has a notch formed intermediate the ends thereof projecting below the plane of the latter ends thereof and each of said terminals has detent surfaces formed on the top thereof for mating with the notches in the springs to maintain the carrier in preselected switching positions.

5. In a slide switch having a body with terminals mounted thereon, switch means, comprising: a movable switch member adapted for selective engagement with said terminals; switch carrier means having channels facing the terminals and recesses in the channels with the switch member mounted in said recesses, said switch carrier means including a manually engageable surface projecting from a portion thereof; cover means holding the switch carrier means in said body, a slot formed in said cover for allowing linear travel of said manually engageable surface, a pair of slits in said cover adjacent either said of said slot and generally coextensive with the longitudinal extent thereof forming leaf springs in said cover contiguous therewith, said springs adapted to bear against a portion of the switch carrier below the cover to maintain the switch in the recess of the channels of said switch carrier and in electrical contact with the terminals as said switch carrier is moved to preselected switching positions.

6. A slide switch for use in electrical circuits having a body with a terminal board mounted thereon, comprising: a plurality of terminals mounted on said terminal board, said terminals comprising thin, flat, elongate members of conductive material and having fastening means formed intermediate their ends including piercing surfaces formed on each side of said terminals extending outwardly therefrom and normal to one face thereof, said surfaces adapted to pierce the terminal board and maintain the terminal thereon; means for limiting the travel of the terminal board including a pair of shoulders positioned above said piercing surfaces and only slightly projecting outward from each side of the member generally normal to said piercing surface and being spaced above the top of said piercing surface a distance less than the thickness of the terminal board in said terminal board is to be mounted.

1. A terminal adapted to be mounted in a terminal board, comprising: a substantially thin, flat, elongate member of conductive material; fastening means formed intermediate the ends of said member including piercing surfaces formed on each side of said terminal extending outwardly therefrom and normal to one face thereof, said surfaces adapted to pierce the terminal board and maintain the terminal thereon; means for limiting the travel of the terminal board including a pair of shoulders positioned above said piercing surfaces and only slightly projecting outward from each side of the member generally normal to said piercing surface and being spaced above the top of said piercing surface a distance less than the thickness of the terminal board in said terminal board is to be mounted.

2. A terminal adapted to be mounted in a terminal board, comprising: a thin, flat, elongate member of conductive material, fastening means formed intermediate the ends of said member including piercing surfaces formed on each side of said member bent upon the member to provide small projections extending generally normal to one face of the member, said portions adapted to pierce the terminal board and maintain the terminal thereon; and means for limiting the travel of the terminal board including a pair of shoulders projecting only slightly outward from either side of said member, said shoulders comprising the remainder of either side of said member above the bent portions thereof.
slot and along the longitudinal extent thereof, each spring having a locking surface formed intermediate the ends thereof and extending downward relative to said cover to bear against said switch carrier means to urge the switch member into electrical contact with the terminal; and a pair of detent surfaces formed on said switch carrier means on each side of said manually engageable surface, said detent surfaces operably associated with said spring means locking portion to maintain said switch carrier in a preselected position.

7. The switch of claim 6 wherein said terminal piercing surfaces comprise portions of either side of the terminal member bent upon the member to provide small projections extending generally normal to one face of the member and said terminal shoulders comprise the remainder of either side of the member above the bent portions thereof.

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BERNARD A. GILHEANY, Primary Examiner.