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(54) **General-purpose switch**

(57) General-purpose switch of application in decorative panelling of electrical appliances which has a one-piece support (1) formed in a single moulding operation which guarantees its reliability and which allows the coupling of the different pushbuttons and the direct actuation thereof. Specifically, the general-purpose switch of the invention incorporates channels which transmit light (2) emitted by LED and some pairs of securing spring-lugs (3) on each of which independent pushbuttons (4) are coupled, each of said securing spring-lugs (3) having orifices (5) intended for the insertion of anchoring elements (6) located on the rear face of the pushbutton (4), which pushbutton in turn has a central appendage (7) which penetrates between the spring-lugs (3) when the pushbutton (4) is pressed, and impinges on a switch of the electronic card activating the operation and the corresponding LED.

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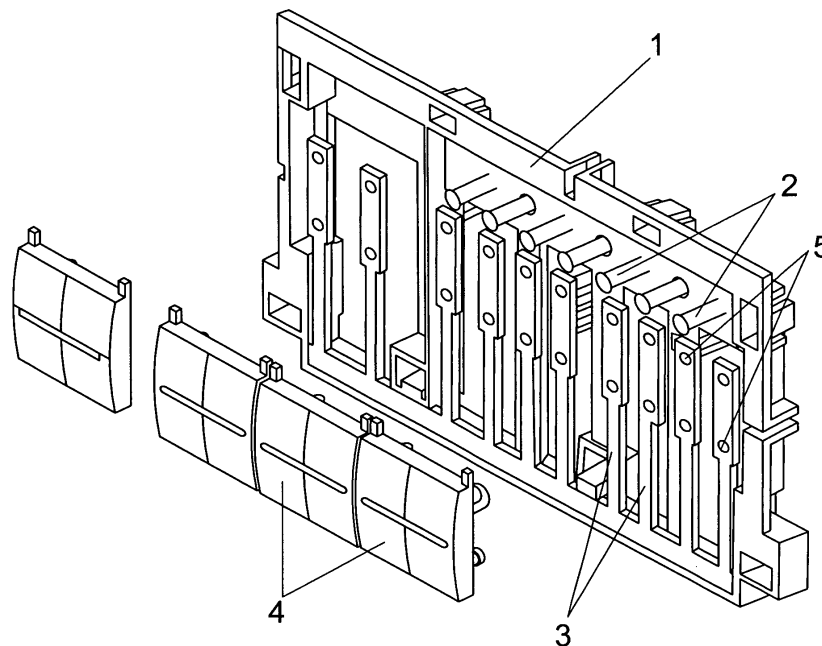


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a general-purpose switch of preferable application on decorative panelling of electrical appliances.

[0002] An object of the invention is that the switch support includes channels to transmit light from the LED and means for coupling independent pushbuttons and that this is formed in a single moulding operation to guarantee its dimensional reliability prior to the insertion thereof in the decorative panel without incurring in a lack of precision produced by repeated moulding operations.

[0003] A further object of the invention is that the support allows the coupling of the pushbuttons and the direct actuation of these on the switches of an electronic card usually located behind the panel for activation of the different functions of the appliance.

BACKGROUND OF THE INVENTION

[0004] The decorative panelling of electrical appliances incorporates pushbuttons which are activated for operating the unit and are part of a switch which is usually formed from several pieces of different types of material which are moulded on other previously moulded pieces.

[0005] In general the switch consists of a support which is manufactured in PC/ABS and on this support a piece of another material, POM, is moulded which comprises a member from which emerge frontally securing lugs terminated in the pushbuttons, in correspondence with which lugs emerge at the rear, and facing said securing lugs, some actuation lugs. The securing lugs tilt when the pushbutton is pressed, and these in turn impinge by means of an appendage on the actuation lugs. The actuation lugs swivel through contact with the securing lugs and they are provided with an end protuberance which impinges on a switch located on an electronic card located behind the panel for activation of the circuit and illumination of the corresponding LED. The channels that transmit the light from the LED are formed in transparent polycarbonate or methacrylate and they are likewise moulded on the PC/ABS support.

[0006] The pieces described are clearly differentiated and moulded some on top of others. These moulding operations on pieces already moulded make the manufacturing and finishing process more difficult and expensive, and they also define some constructional limitations in connection with the possibility of mounting pushbuttons of other shapes or dimensions, since the pushbuttons are always fastened to the securing lugs and these, in turn, through the intervention of the member, to the support.

[0007] The use of different materials, as well as the moulding operations on moulded pieces, means that deficiencies occur with regard to the finish, and also that unequal distances are obtained between the channels

transmitting light from the LED and the pushbuttons, which results in an unsatisfactory assembly of the switch on the decorative panel in which holes and specific distances have been implemented for the insertion of these elements.

[0008] The possibility of obtaining a switch which does not require the carrying out of repeated moulding operations, in which there are also the means to facilitate the independent coupling of pushbuttons in order to guarantee versatility in assembly, is made feasible by the invention that is disclosed below.

DESCRIPTION OF THE INVENTION

[0009] The general-purpose switch that constitutes the object of this invention provides a satisfactory solution in accordance with an alternative embodiment to those employed to date to achieve the intended flexibility and precision, fundamentally incorporating a support which includes channels transmitting light from the LED and spring-lugs for securing pushbuttons, incorporated in a single piece configured preferably in transparent polycarbonate and, the independent pushbuttons formed preferably in ABS.

[0010] The support so incorporated is formed in a single moulding operation ready for its insertion in the decorative panel without incurring in a lack of precision produced by repeated moulding operations, obtaining great dimensional reliability in the support which is mounted on the decorative panel in this way. The support has the means necessary to facilitate the coupling of the pushbuttons and so that they impinge on the switches of the electronic card located behind the panel for activation of the different functions of the electrical appliance.

[0011] Before mounting the support on the decorative panel the independent assembly is carried out of each of the pushbuttons on individual securing spring-lugs, which are provided with orifices into which penetrate anchoring elements defined on the rear face of said pushbuttons.

[0012] The pushbuttons incorporate likewise on their rear face a central appendage which, in the situation of assembling the anchoring elements on the securing spring-lugs, will be housed in the space defined between said securing spring-lugs, and facing the switch of the electronic card located on the rear part thereof, in such a way that on pressing the pushbutton, the appendage is displaced and penetrates into the orifice defined between the two spring-lugs and impinges on the switch activating the corresponding operation, as well as the LED indicating this activation, being made visible through the light-transmitting channels.

[0013] The conformation of the support in a single piece determines that the orifices of the securing spring-lugs will be obtained in an equidistant position with respect to the channels which transmit the light of the LED, which likewise signifies that there is an equal distance between said transmitting channels and the pushbut-

tons, when coupled, guaranteeing great dimensional reliability.

[0014] Likewise high assembly speed and flexibility are guaranteed, since it will be possible to couple different types of pushbutton with different shapes or designs according to the type of decorative panel, provided the distance between the anchoring elements of the pushbutton in question coincides with the distance between the orifices of the securing spring-lugs.

DESCRIPTION OF THE DRAWINGS

[0015] To complete the description being made and with the object of assisting in a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment thereof, accompanying this description as an integral part thereof, is a set of drawings wherein by way of illustration and not restrictively, the following has been represented:

Figure 1.- It shows a view in perspective of the support of the general-purpose switch and the independent pushbuttons facing the spring-lugs for securing these.

Figure 2.- It shows a view in perspective of the support of the general-purpose switch in which the pushbuttons are seen coupled on the support.

Figure 3.- It shows a rear view of the pushbutton with its anchoring elements facing the orifices of the spring-lugs for securing the support.

PREFERRED EMBODIMENT OF THE INVENTION

[0016] The general-purpose switch object of this invention is preferably of application for its assembly on the decorative panel of an electrical appliance in which are to be found the switches of an electronic card for activation of the different functions of the appliance, and it fundamentally comprises a one-piece support (1) obtained by means of a single moulding operation in transparent polycarbonate which incorporates some light-transmitting channels (2) of the LED and some pairs, of flexible and parallel securing spring-lugs (3), on each one of which are coupled independent pushbuttons (4).

[0017] Each securing spring-lugs (3) has one or more orifices (5) which, in correspondence with the respective orifices (5) of the other lug constituting the pair, are intended for the insertion of some anchoring elements (6) defined on the rear face of the pushbutton (4), it being foreseen that the pushbutton (4) also has a central appendage (7) on its rear face, which appendage penetrates between the securing spring-lugs (3) that constitute the pair when the pushbutton (4) is pressed, and impinges on the switch of the electronic card activating the corresponding operation, as well as the LED indicating this activation, being made visible through the light-

transmitting channels (2).

[0018] The fact that the support piece (1) consists of a single piece signifies that the orifices (5) of the securing spring-lugs (3) will always be obtained in the same relative position with respect to the light transmitting channels (2) of the LED, which likewise implies that an equal distance will exist between said transmitting channels (2) and the pushbuttons (4) already mounted on said orifices (5), which will provide a guaranteed assembly when coupling the support (1), with its pushbuttons (4), on the decorative panel.

Claims

1. General-purpose switch of application for the incorporation thereof on the decorative panel of an electrical appliance on which are to be found the switches of an electronic card for activation of the different functions of the appliance, **characterised in that** it comprises a one-piece support (1) obtained by means of a single moulding operation in transparent polycarbonate which integrates some light-transmitting channels (2) of the LED and some pairs of flexible and parallel securing spring-lugs (3), on each one of which independent pushbuttons (4) are coupled.
2. General-purpose switch according to claim 1 **characterised in that** each securing spring-lug (3) has at least one orifice (5), which in correspondence with the respective orifice (5) of the other lug constituting the pair, are intended for the insertion of some anchoring elements (6) defined on the rear face of the pushbutton (4), it being foreseen that the pushbutton (4) has likewise on its rear face a central appendage (7) which penetrates between the securing spring-lugs (3) constituting the pair when the pushbutton (4) is pressed, and impinges on a switch of the electronic card activating the corresponding operation, as well as the LED indicating this activation, being made visible through the light-transmitting channels (2).

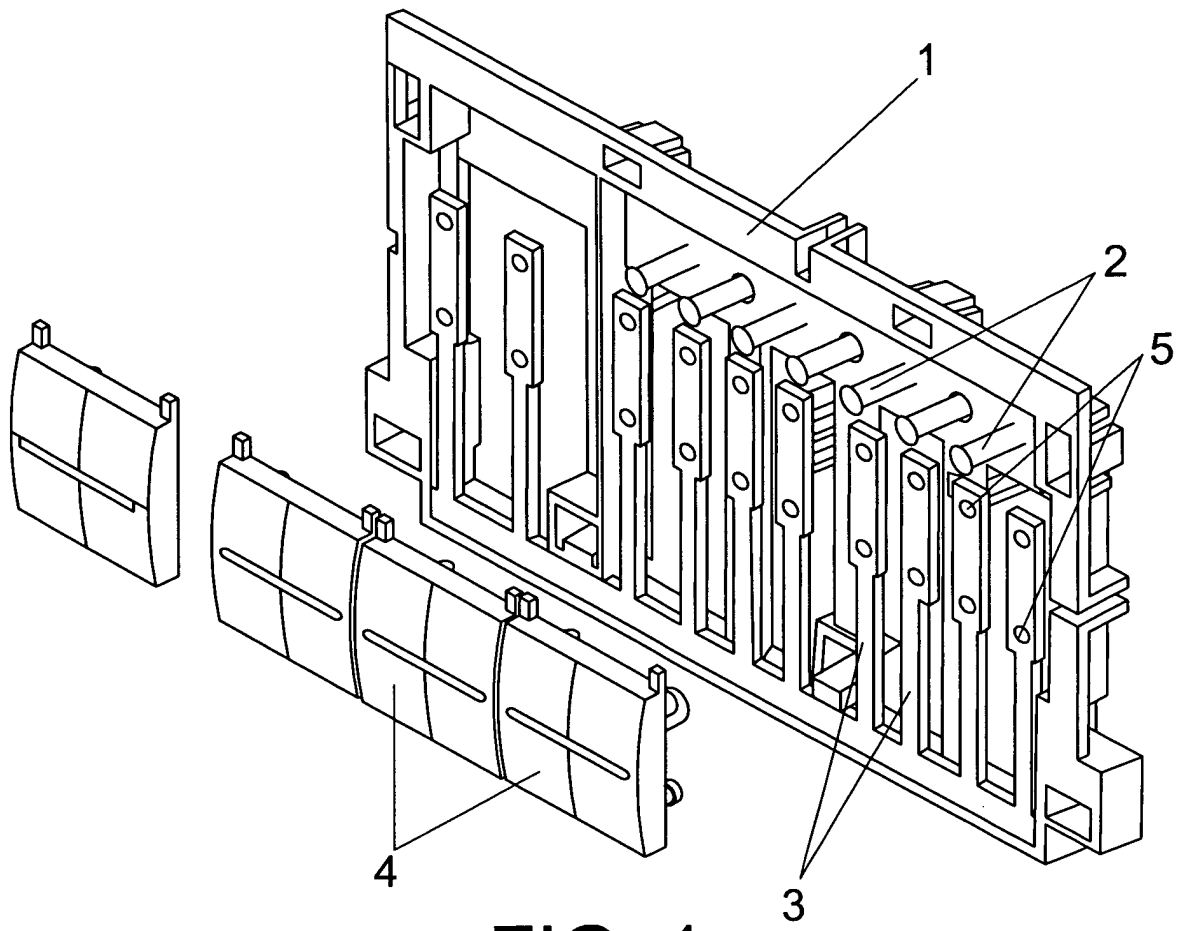


FIG. 1

