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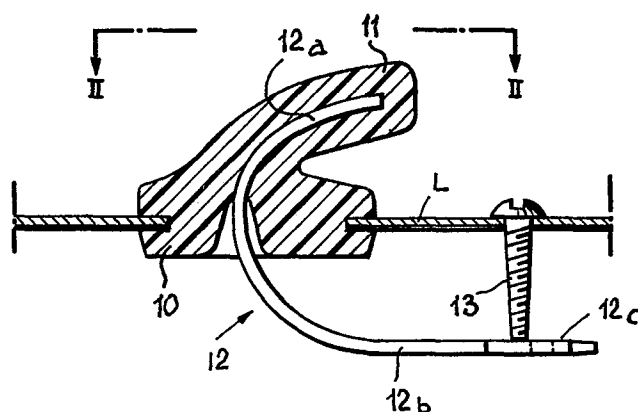
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54 **Switch for auxiliary motor vehicle circuits.**

57 A switch for auxiliary motorvehicle circuits, such as courtesy lamp circuits and the like, comprises an elastomeric material block (10) having a lug extension (11) incorporating a substantially C-like metal foil contact (12), one leg (12a) whereof is embedded in the lug extension (11) and the other leg whereof (12b) being free to engage with a ground rheophore (13), when the lug is not deformed by the motorvehicle door pressure, to close the lamp circuit, and disengage therefrom when the lug (11) is elastically deformed by the pressure applied on the motorvehicle door.

Thus a switch is provided which, in addition to being very simple, reliable in operation, easy to install, does not require any fasteners, such as screws or the like, for the assembling to the motorvehicle door.



This invention relates to a switch for auxiliary motorvehicle circuits in general, and particularly for the circuits of the so-called courtesy lamps, which term designates herein those
5 circuits which are intended to turn on one or more interior lighting lamps in the passenger compartment or other compartments of motorvehicles which are closed by means of doors or protected by gates, upon opening said doors or gates.

10 For controlling the foregoing auxiliary circuits, it is current practice to use pushbutton switches the body or base whereof is secured to the uprights, or respectively to the peripheral edge, of the compartment, the movable pushbutton of said switch
15 being engaged by the door hingedly mounted on said upright, or respectively by the compartment gate, while said door or gate are in their closed positions. The pushbutton has a movable contact which is urged to engage a corresponding fixed contact by the action
20 of a spring, and said contacts are separated, in order to break the circuit electrical continuity, by the action of said door or gate, which move the pushbutton against the bias of the spring.

Such switches have some drawbacks, being above
25 all liable to jamming with some frequency owing to the penetration of water and dirt therein, difficult to install, and what is more important, complicated construction-wise, so that their ultimate cost can be considered excessive with regard to their function.

Thus the invention sets out to eliminate such drawbacks, by providing a switch -- particularly useful for the circuits specified hereinabove -- which is extremely simple, reliable
5 in operation, easy to install, and in particular such that it requires no fasteners, such as screws or the like, of any kind.

According to one aspect of the invention, there is provided a switch for auxiliary motorvehicle circuits, and particularly for motorvehicle courtesy
10 lamp circuits, characterized in that it comprises a block of an elastomeric material having a lug extension incorporating a substantially C-like metal foil contact, one leg whereof is embedded in said lug
15 extension, the other leg being left uncovered to engage with a ground rheophore, when the lug is not deformed by the door or gate pressure, to close the circuit, and disengage therefrom when the lug is elastically deformed by the pressure applied by said door or
20 gate.

The free end of the contact foil or reed is provided with an extension in the form of a "Faston" connector for receiving a corresponding terminal of the circuit lead, and the elastomeric material block,
25 advantageously formed with a polygonal contour, has a groove adapted for receiving the edge of a corresponding polygonal opening formed in the vehicle body metal sheet.

Thus, the switch can be quickly and easily
30 installed by deforming the block to engage said edge with said groove, the reverse operation enabling

the removal of the switch.

Further features and advantages will become apparent from the following detailed description, in conjunction with the accompanying drawing, where:

- 5 Figure 1 is a cross-sectional view of a switch according to the invention, showing it as installed;
 Figure 2 is a top plan view of said switch;
 Figure 3 is a front elevation view thereof; and
 Figures 4 and 4a are side elevation views
10 showing the switch in the closed and open conditions thereof, respectively.

As may be noted from the drawings, this switch comprises essentially a block 10 of an elastomeric material, advantageously of either natural or
15 synthetic rubber, which has a lug extension 11 capable of undergoing elastic fold-over deformation relatively to the block. The lug incorporates one leg 12_a of a metal foil contact 12, of substantially C-like configuration; said contact being indefor-
20 mable and advantageously formed from either hard bronze or brass.

The other leg 12_b of the contact 12 is free and has an extended end 12_c in the form of a connector, advantageously of the "Faston" type, and adapted for
25 receiving a corresponding terminal provided at the end of the circuit lead (not shown). Said free end 12_b of the contact 12 is adapted for engaging a ground rheophore 13, comprising a screw or the like, which is provided in a corresponding seat adjacent the
30 switch, with the lug 11 in the non-deformed

condition. By contrast, when a force is applied to the lug which tends to press it onto the block 10 -- that is to fold the lug together on the block -- the end 12_b of the foil contact 12 is caused to rotate and move away from the rheophore 13, thus breaking the circuit electrical continuity.

It will be appreciated, therefore, how by installing the switch I on a fixed portion of the vehicle body, such as on an upright M, with the lug facing the movable portion formed by the door or gate P (Figures 4-4_a) and the door or gate in the open position, the lug 11 will be in the non-deformed condition 11_a, thereby the portion 12_b of the contact 12 can engage the rheophore 13 to close the circuit (Figure 4). By contrast, in the closed position, the door or gate will squeeze the lug 11 and cause said foil portion to separate from the corresponding rheophore (Figure 4_a), thus opening the circuit.

As shown in the drawing, the block 10 is provided with a peripheral groove 10_a adapted for receiving the edge of a corresponding opening formed through the metal sheet L of the vehicle body, thereby the switch can be readily mounted and removed by elastically deforming the block such as to mutually engage, respectively disengage, said groove and edge. Advantageously, to prevent the switch from rotating relatively to the seat, the contour of the block and corresponding edge are made polygonal.

Of course, the effects of this invention

will also extend to designs which achieve the same results on the basis of the same inventive concept.

CLAIMS

1 1. A switch for auxiliary motorvehicle circuits,
2 and particularly for courtesy lamp circuits,
3 characterized in that it comprises a block (10) of an
4 elastomeric material having a lug extension (11)
5 incorporating a substantially C-like metal foil contact (12)
6 one leg (12_a) whereof is embedded in said lug extension,
7 the other leg (12_b) being left uncovered to engage with
8 a ground rheophore (13) when the lug (11) is not
9 deformed by the door or gate pressure, to close the
10 circuit, and disengage therefrom when the lug (11) is
11 elastically deformed by the pressure applied by said
12 door or gate.

1 2. A switch according to Claim 1, wherein the
2 free end of the contact reed is provided with an
3 extension (12_c) in the form of a connector for receiving
4 a corresponding terminal of the electric circuit lead.

1 3. A switch according to Claims 1 and 2, wherein
2 said elastomeric material block has a groove (10_a)
3 adapted for receiving the edge of a corresponding
4 opening formed through the vehicle body metal sheet,
5 the switch being installed and removed by elastically
6 deforming said block (10).

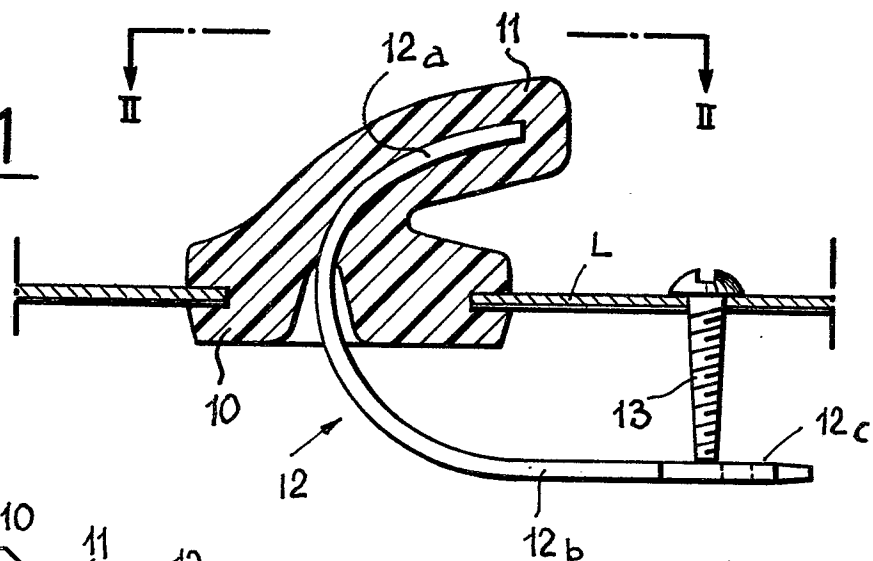
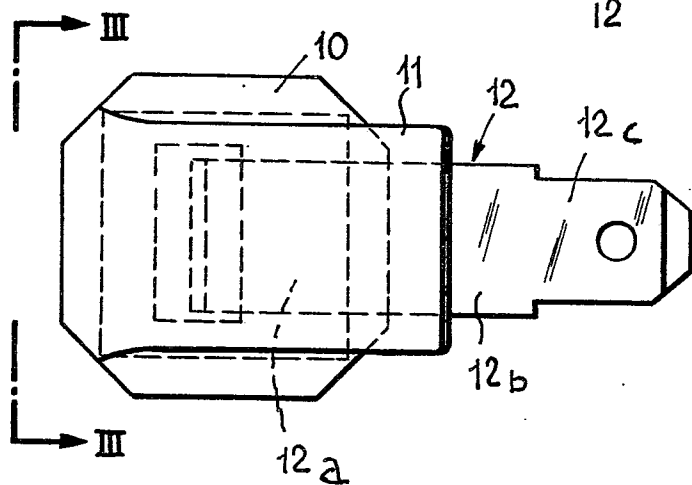
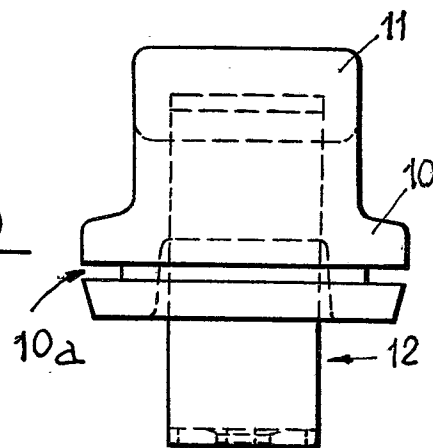
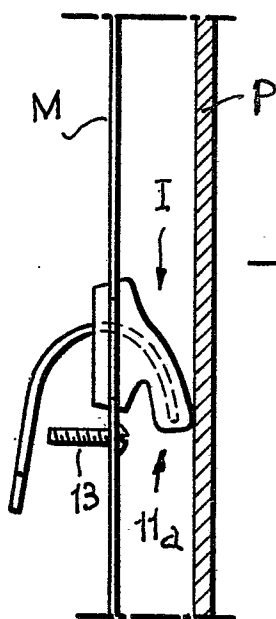
1 4. A switch according to the preceding claims,
2 wherein the block (10) has such a countour as to fit
3 that of the edge of the corresponding seat in vehicle
4 body.

1 5. A switch according to Claim 4, wherein said
2 countour is of polygonal shape.

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1 6. A switch according to the preceding claims,
2 wherein the ground rheophore (13) comprises a screw
3 arranged adjacent the switch accommodating seat.

1 7. A switch according to the preceding claims,
2 wherein the block and related lug extension are made
3 of natural or synthetic rubber.

Fig. 1Fig. 2Fig. 3Fig. 4aFig. 4