Sept. 14, 1937. H. A. DOUGLAS 2,093,038

MOUNTING MEANS

Filed March 28, 1935

Fig. 1.

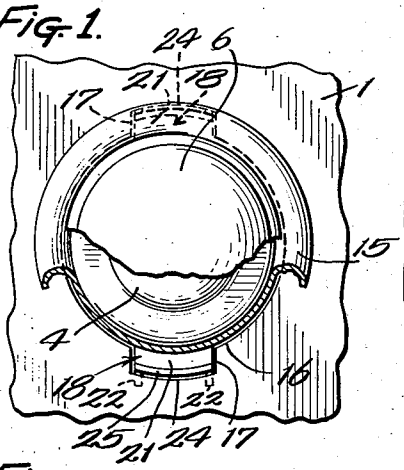


Fig. 2.

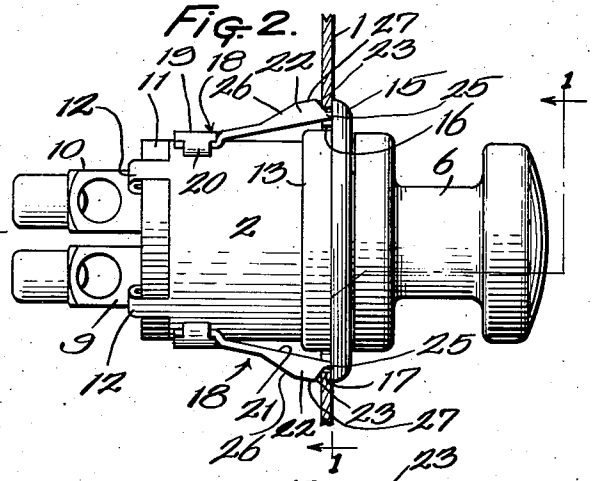


Fig. 3.

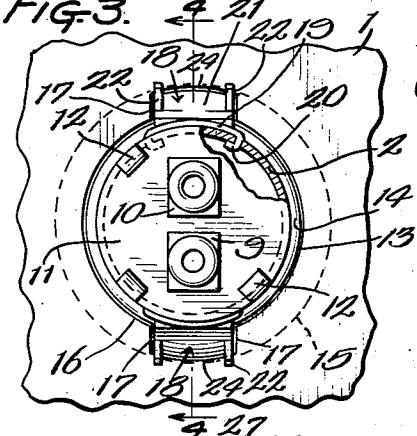


Fig. 4.

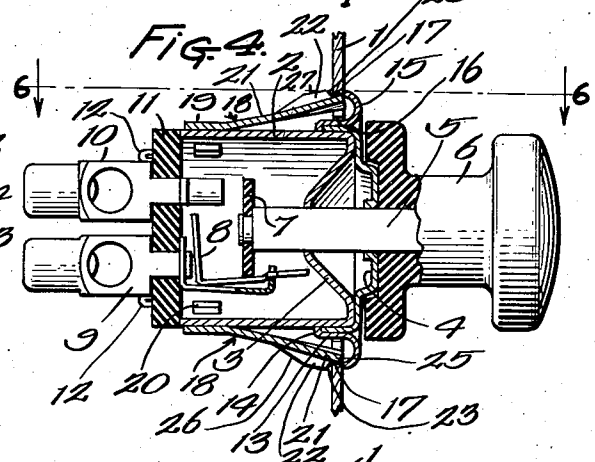


Fig. 5.

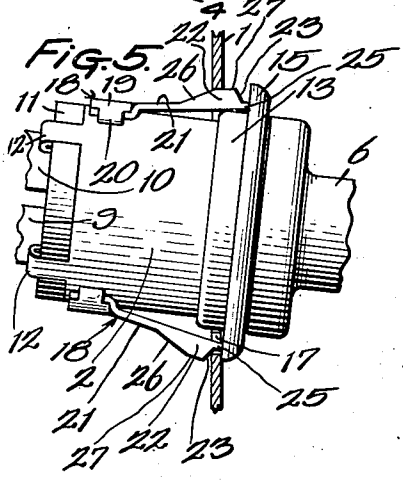
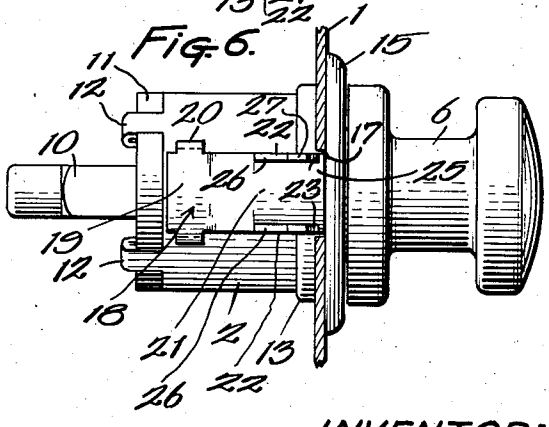


Fig. 6.



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MOUNTING MEANS

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Application March 28, 1935, Serial No. 13,390

5 Claims. (Cl. 248—27)

This invention relates to improvements in mounting means and more particularly to a means for mounting a switch or casing on the instrument board of an automotive vehicle.

It is an object of this invention to provide a simple, inexpensive and efficient means for mounting a switch, switch casing or instrument casing upon the instrument board of an automotive vehicle which can be readily attached and detached as needed.

With these objects in view, reference is made to the accompanying sheet of drawings which illustrates a preferred embodiment of this invention with the understanding minor changes may be made without departing from the scope thereof.

In the drawing:

Figure 1 is a view in front elevation of a portion of an instrument board illustrating an embodiment of this invention with parts broken away and partly in section.

Figure 2 is a view in side elevation showing the instrument board in section and indicating by the broken line 1—1 the section shown in Figure 1.

Figure 3 is a view in rear elevation of Figure 1, with parts broken away and partly in section.

Figure 4 is a view in section taken on the line 4—4, Figure 3.

Figure 5 is a fragmentary view similar to Figure 2 showing the position assumed by the mounting means as it is attached or detached.

Figure 6 is a top plan view of Figure 4 looking in the direction of the arrows 6—6.

In the embodiment illustrated, a push and pull switch is shown mounted upon an instrument board 1. The switching mechanism is carried within a cylindrical metallic casing 2. The switching mechanism may be of any desirable type, such as this applicant's prior patent, No. 1,956,379, of April 24, 1934. It is preferable to provide the outer end of the casing 2 with a perforated reentrant closure 3 and a cap 4 correspondingly perforated secured over the said end. An operating rod 5 is mounted to be reciprocated through the perforations in the end closure 3 and cap 4 by a knob 6, preferably of insulating material, mounted upon the outer end. An actuator 7, preferably of insulating material, is mounted upon the inner end of the rod 5 to tilt a current continuing bridge 8 to make and break a circuit between the contact posts 9 and 10 passing through and secured to a contact carrier disc 11, of insulating material, secured to the open end of the casing 2 by integral fingers 12 extending therefrom.

As shown in Figure 4, the cap 4 not only limits the inward movement of the knob 6 but also embraces the outer wall of the closed end of the casing 2. This figure also illustrates, in section, an exterior engaging cylindrical member 13 mounted upon the circumference of the cap 4 embracing the end of the casing 2. The inner end of the member 13 is provided with an inturned annular flange 14 adapted to engage the inner wall of the embracing cap 4 and limit the outward movement of the member 13. The other end of the member 13 is continued on the arc of a circle to form a curved exterior flange 15 adapted to engage the exterior of the instrument board 1.

The instrument board 1 is provided with a circular aperture 16 to receive snugly the casing 2 when inserted from the front and be engaged by the curved annular flange 15 of the exterior engaging member. The aperture is provided with radial extensions or slots 17, preferably two in number and diametrically arranged, as shown in Figure 3, to receive the interior engaging spring members 18. These spring members are preferably each provided with an end 19 curved concentric to the casing 2 having outstanding fingers 20 adapted to be passed through receiving apertures in the casing 2 and bent back on the inside, as shown in Figure 3, to secure the spring members to the casing. The spring members are provided with flat portions 21 extending upward from the curved ends 19 and normally terminate adjacent the outer edge of the curved annular flange 15, as shown in Figure 4. The outer free edges of the flat portions 21 are each struck up to form parallel wedge members 22. Instrument boards of automotive vehicles are usually of a standard thickness of sheet metal. The object of the wedge members is to provide a wedge surface to engage the interior of the board and force the exterior in secure contact with the engaging surface of the exterior curved annular flange 15 and at the same time provide means to depress the spring member 18 when assembling or removing. To this end, the wedge members 22 are each provided with an inclined surface 23 departing upwardly and inclined rearwardly and set back from the free ends of the spring members 18 sufficiently when passed through the slots 17 to engage with a wedging action the instrument board 1, as shown in Figures 2, 4, and 5. The slots 17 are terminated on a cross surface 24 concentric to the aperture 16 and of a sufficient diameter as to be covered on the outer side of the board 1 by the flange 15. The free ends 25 of the spring members 18 are curved in a like manner, as shown

in Figure 1. The wedge members 22 are provided with inclined surfaces 26 departing from the main body of the spring members 22 at a less degree of incline than the wedging surfaces 23 and are joined at the top thereto by a surface 27 parallel to the spring member flat parts 21 a sufficient distance thereabove to depress the spring member 18 to allow assembling upon the instrument board 1, as shown in Figure 5.

What I claim is:

1. In combination: a support, having an aperture; a body, having an abutment, said body being adapted to be disposed through said aperture to a predetermined position whereby said abutment engages one surface of said support; and a plurality of resiliently movable members, adapted to be resiliently moved towards said body when said body is inserted through said aperture, and then biased away from said body to engage the opposite surface of said support when said body has been moved to predetermined position, said members being of channel cross-section at least adjacent the support-engaging portion thereof.

2. In combination: a support, having an aperture; a body, having an abutment, said body being adapted to be disposed through said aperture to a predetermined position whereby said abutment engages one surface of said support; and a plurality of resilient members, springable radially with respect to said body, and adapted to be moved towards said body when said body is inserted through said aperture, and then springable away from said body to engage the opposite surface of said support when said body has been moved to predetermined position, said resilient members being of channel cross-section at least adjacent the support-engaging portion thereof.

3. In combination: a support, having an aperture, said aperture having a plurality of recesses provided in its margin; a body, having an abutment, said body being adapted to be disposed through said aperture to a predetermined position whereby said abutment engages one surface of said support; and a plurality of resilient members, springable radially with respect to said body, and adapted to be moved towards said body when said body is inserted through said aperture, and then springable away from said body to engage the opposite surface of said support when said body has been moved to predetermined position, each of said resilient members being of channel cross-section at least adjacent the surface-engaging portion thereof, and having a portion disposed within a respective recess to prevent relative rotational movement between said body and said support.

4. In combination: a support, having an aperture; a body, having an abutment, said body being adapted to be disposed through said aperture to a predetermined position whereby said abutment engages one surface of said support; and locking means carried by said body, and constructed and arranged to move toward said body and clear the margin of said support aperture when said body is inserted through said aperture, and move away from said body and engage the opposite surface of said support when said body is moved to said predetermined position, said locking means having portions interlocking with portions of said support to prevent relative rotational movement of said body with respect to said support when said body is in said predetermined position.

5. In combination: a support, having an aperture provided with a plurality of spaced recesses in its margin; a body, having an abutment, said body being adapted to be disposed through said aperture to a predetermined position whereby said abutment engages one surface of said support; and a plurality of resilient locking members carried by said body, and constructed and arranged to move toward said body and clear the margin of said support aperture when said body is inserted through said aperture, and move away from said body and engage the opposite surface of said support when said body is moved to said predetermined position, at least one of said resilient members having a portion interlocking with the margins of a respective recess to prevent relative rotational movement of said body with respect to said support when said body is in said predetermined position.

HARRY A. DOUGLAS.