March 6, 1962 W. L. TRAFTON 3,024,336

ADJUSTABLE DOOR SWITCH

Filed Dec. 30, 1958

Fig. 1.

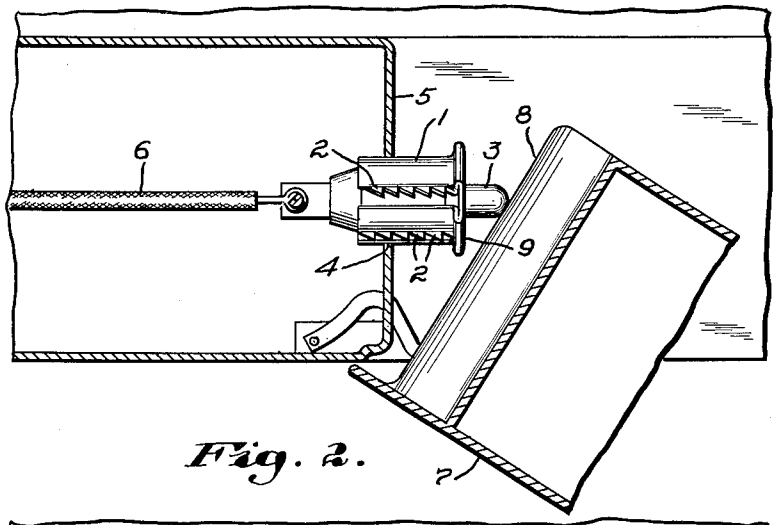


Fig. 2.

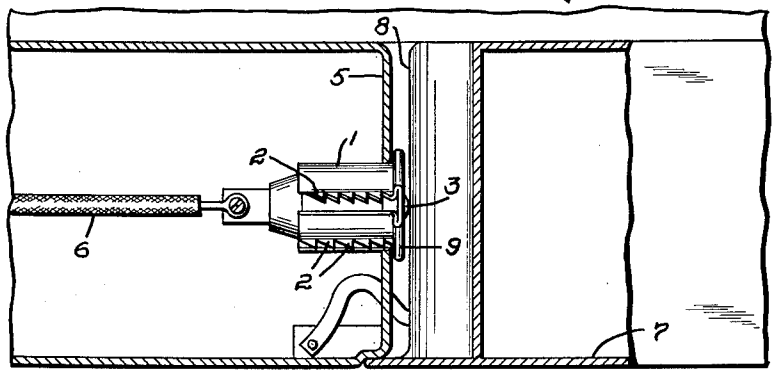


Fig. 3.

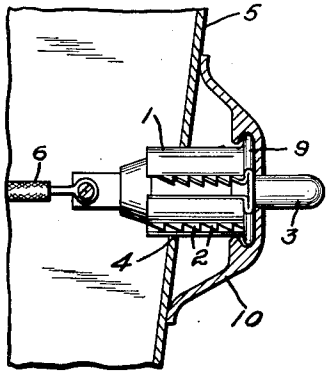


Fig. 4.

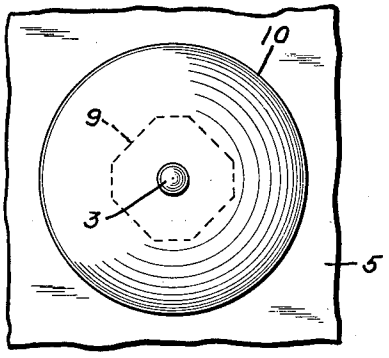
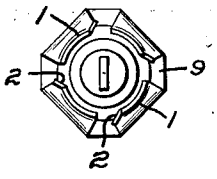


Fig. 5.



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3,024,336

ADJUSTABLE DOOR SWITCH

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My invention aims to provide a new and useful door switch and a new method of mounting the door switch into a door assembly.

My improved method of mounting a door switch may be used in any type of door assembly where a switch is useful in the operation of a light source, but it is particularly useful in connection with the mounting of a switch in the door frame of a motor vehicle. Heretofore it was necessary to use shims to compensate for variations between the door frame and the door because the door frame and the edge of the door are not always parallel. Therefore, an operating plunger of the switch might be broken by closing the door unless the switch body was aligned properly to present the plunger at the proper angle with relation to the door.

An object of my invention is to insert a door switch body partly into a hole in the door or door frame [preferably the frame] and then slam the door closed. This operation will automatically depress the operating plunger and press the switch body to its final assembled position. Thus the switch is automatically set at the proper angle and the proper depth in the frame for further operation of the switch without disturbing the assembly or damaging the plunger.

Another object of my invention is to provide the switch assembly with a flexible diaphragm [if desired] to cover the switch body and whereby the flexible diaphragm is automatically depressed as a part of the method of assembly.

A further object of my invention is to provide a door switch having a body construction that is particularly adapted for automatic assembly according to my improved method.

In the drawings which illustrate preferred embodiments of my invention—

FIG. 1 is a partial plan section of an automobile door assembly and a plan view of a suitable door operable switch in the initial relative positions of my improved assembly method;

FIG. 2 is a view similar to FIG. 1 but showing the parts in the final assembled position after the door has been closed;

FIG. 3 is a sectional view showing a modified form of construction with a flexible diaphragm as a part of the switch assembly;

FIG. 4 is a front elevation of the construction shown in FIG. 3; and

FIG. 5 is an end view of the door operable switch without the flexible diaphragm.

Referring now to FIGS. 1 and 2, I have shown a motor vehicle door assembly of a light operating switch having a body portion **1** provided with a series of notches or ratchet like teeth **2** and a switch operating plunger **3**. The general construction of the switch will be well understood by those skilled in the art.

While my improved switch may be assembled by hand or by a suitable driving tool, I have found an improved method of assembling the switch into the door assembly. First insert the body portion **1** into an aperture **4** in the door frame **5**, as shown in FIG. 1. It will be noted that the body is only inserted far enough to have the first notches or teeth **2** in engaging position. It should also be noted that the proper wiring **6** is attached to the switch and installed through the aperture **4** ahead of the switch. Thereafter the door **7** is slammed closed and the first contact is made by the door flange **8** engaging the plunger **3** [FIG. 1]. As the closing continues, the plunger **3** is depressed into the body **1** and the door flange **8** engages the flange **9** of the body portion **1** thereby forcing the switch into the aperture **4** until the door is completely closed, as shown in FIG. 2. Thereafter, as the door **7** is opened and closed, the plunger **3** is operated in the usual manner. The door frame, door, switch plunger and switch body are easily and quickly brought into proper relative positions with a minimum of assembly time and no shims or other cooperating elements are necessary.

The notches or teeth **2** of the switch body may be as many in number and relation as desired and they may be staggered with relation to each series to provide a screw like thread so that the switch may be easily unscrewed from the door for repair or replacement.

I have found that some installations of door switches are unsightly because of the use of shims or because the angle of the door frame **5** is such that the flange **9** of the switch body **1** sets away from the frame **5**. Therefore, in FIGS. 3 and 4, I have shown the addition of a flexible diaphragm **10** assembled to the flange **9** of the switch. When this diaphragm **10** is used, my improved method of mounting the switch causes the diaphragm **10** to flex [it being cup-shaped FIG. 3] and thereby adjusts itself to the door frame and the switch. Thus, the exposed part of the switch body is covered to provide a finished appearance [FIG. 4] and the plunger **3** passes through an aperture in the diaphragm so that it may be easily operated.

While I have illustrated and described preferred embodiments of my switch and method of assembling, it should be understood that variations thereof may come within the scope of my invention, and therefore, my invention is best defined by the following claim.

I claim:

A door switch of the class described comprising a switch body having a head portion and a body portion secured at one end to said head portion, and at least two flexible mounting portions, each portion being secured at one end to said head portion and extending in spaced relation to said body portion in the direction of the free end of said body portion, said flexible portions being provided with a plurality of notches, said flexible portions being yieldable to permit said body and said flexible portions to pass through an aperture in a support when said head portion is struck a blow whereby said notches will receive the wall portion of said support defining the aperture at a given position of the switch with relation to the support to fixedly secure same therein in aligned operating relationship.

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