May 29, 1962 C. J. AANDEWIEL 3,037,099

MICRO SWITCH

Filed June 4, 1959

Fig. 1

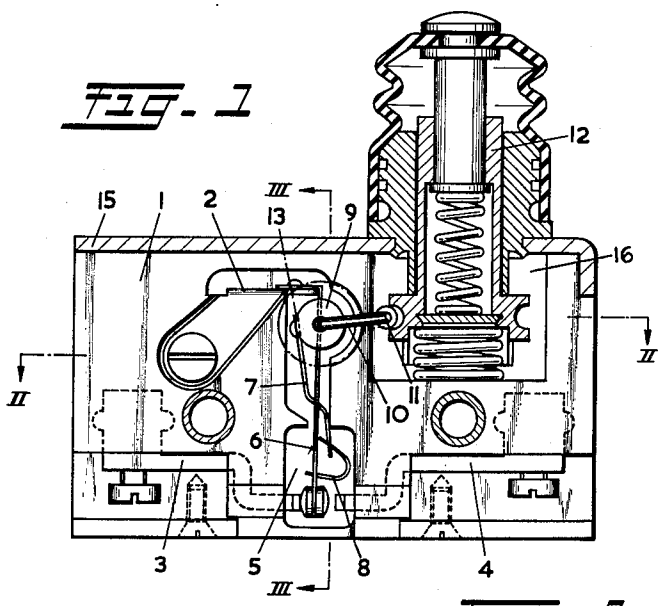


Fig. 2

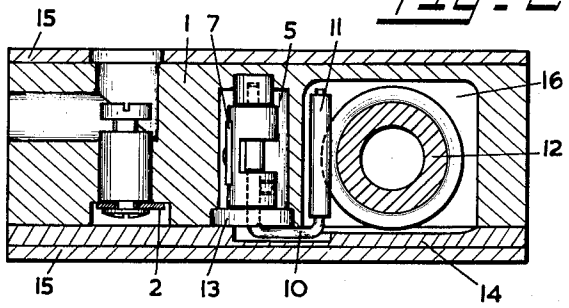
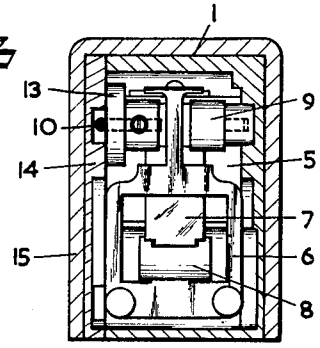


Fig. 3



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MICRO SWITCH

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This invention relates to a micro switch, the switch body of which comprises a block of insulating material having current conductors hermetically sealed therein, which current conductors are accessible from the outside and end in a recess provided in one of the flat walls of the switch body, said recess containing the snap-action mechanism cooperating with said current conductors and being closed by a cover secured to the switch body in sealing relationship therewith.

In this type of switches, which more particularly find application in the aircraft industry, the accommodation of the snap-action mechanism in the switch body, so that said snap-action mechanism is moisture proof sealed from its actuating mechanism and from the ambient atmosphere still constitutes a problem which stands in need of a solution.

The object of the invention is to eliminate the drawbacks attaching to known micro switches by providing an improved construction of the micro switch of the type referred to hereinbefore.

To achieve this end the micro switch according to the invention is characterized in that said switch body comprises a second recess likewise closed by said cover, said second recess being hermetically sealed from the first mentioned recess and containing the mechanism for actuating the snap-action mechanism, the operating shaft of which actuating mechanism passes through the cover in sealing relationship therewith and extends into the path of movement of said actuating mechanism.

According to a feature of the invention the cover may consist of two interconnected parts, one of which is so formed as to constitute a bearing for the operating shaft of the snap-action mechanism.

In order to elucidate the invention an embodiment of the micro switch will be described with reference to the accompanying drawings, in which:

FIGURE 1 is a vertical longitudinal sectional view of the micro switch;

FIGURE 2 is a horizontal sectional view according to line II—II in FIGURE 1;

FIGURE 3 is a vertical sectional view on line III—III in FIGURE 1.

According to the drawing the micro switch comprises a switch body **1**, preferably made from a castable synthetic material, such as Perspex, a trademark registered to Imperial Chemical Industries Limited. Current conductors **2**, **3** and **4** are hermetically sealed in the switch body **1**. Said current conductors are accessible from the outside for connecting a circuit thereto and they end in a recess **5** provided in one of the flat walls of the switch body **1**. Said recess **5** contains a snap-action mechanism cooperating with the current conductors and comprising a resilient conducting strip **6**, an operating arm **7** rotatably supported at its one end and a leaf spring **8** bent in the shape of a U interposed between the strip **6** and the arm **7**. The conducting strip **6** has its one end connected to the current conductor **2** and its other end is movable between the current conductors **3** and **4**. The element **9** supporting the operating arm **7** is mounted for rotation about the axis

of the operating shaft **10**, which is U-shaped and the leg **11** of which extends into a second recess **16** in the body **1**. In this recess, the end of the leg **11** is engaged by and is actuated by a spring-loaded push-button **12**.

The recess **5** in the switch body in which the snap-action mechanism is accommodated is moisture proof sealed by a cover which in the embodiment comprises the part **13** in the form of a bearing through which the actuating shaft **10** passed in sealing relationship therewith and the part **14**. This construction of the cover offers the advantage that the snap-action mechanism can be mounted and its correct action can be checked before the recess **5** is finally and entirely sealed.

The switch body **1** thus provided with all of its parts is finally mounted in a casing **15**, preferably made from metal, which casing at the same time serves as a support for the push-or actuating button **12**.

By applying the invention a micro switch is obtained which can be made from a minimum number of parts, which admits of being assembled in an exceedingly simple manner, whose operative parts can be adjusted with great accuracy until the moment when the mechanism is sealed from the atmosphere and whose vulnerable parts are adequately protected from harmful atmospheric influences. By making the switch body from a transparent material it is possible to check the operation and the condition of the contact means during the use of the micro switch.

I claim:

1. A micro switch, the switch body of which comprises a block of solid insulating material having current conductors hermetically sealed therein, said block having a first recess therein opening out of one side of said block, said current conductors extending from the outside of the block and ending in said first recess, a snap-action switch mechanism in said first recess cooperating with said current conductors, said switch mechanism having an actuating shaft rotatable about its own axis, a sealing bearing over at least part of the opening of said first recess in which said shaft is rotatably mounted and flush with the surface of said block, said switch body having a second recess therein adjacent said first recess and separated therefrom and opening out of said one side of said block, a rigid sealing cover on said one side of said block and having a recess in the surface thereof extending from said one recess in said block to the other recess in said block and sealing said one recess, said shaft having an end extending along said recess in said cover and into said second recess with the end thereof in said second recess, and a mechanism in said second recess for moving the end of said shaft for said snap-action switch for rotating the shaft and actuating the snap-action switch.

2. A micro switch as claimed in claim 1 in which said second recess opens out of another side of said block and has a further cover sealed thereover, said actuating means extending through said cover and being in sealing relationship therewith.

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