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(54) **SLIDE SWITCH**

(57) The invention relates to a slide switch, includes an inlet conduct piece, at least one outlet conduct piece, activity conduct piece, a slider, a driving medium, a sleeve and a shift lever, the first end of the activity conduct piece contact the inlet conduct piece, one end of the driving medium is mounted on the slider and can rotate relative to the slider, the other end of the driving medium contacts with the sleeve, the rotating of the sleeve drives the shift lever to rotate, then the second end of the activity conduct piece is driven to swing to contact or leave the outlet conduct piece. With the usage of the slide switch, when the slider slides, the driving lever moves along with the movement of the slider and rotate relative to it, then the sleeve rotates, the sleeve drives the shift lever to rotate, the shift lever drives the activity conduct piece to swing to realize the on-off of the power; the design is ingenious, the structure is concise, labor saving, stable and reliable, it has a long service life and is suitable for big scale application.

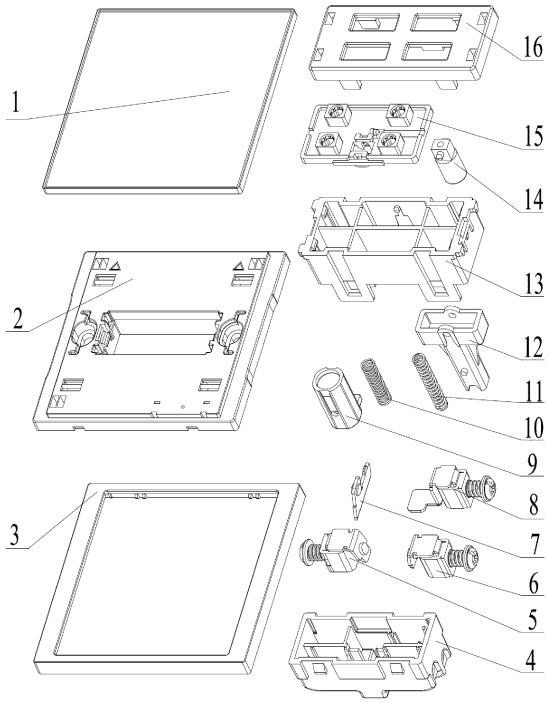

Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The invention generally relates to the technical field of electrical hardware, especially to the technical field of switch, in particular to a slide switch.

BACKGROUND OF THE INVENTION

[0002] At present, the switch on the market has the following two operation modes: the first type is a pull type (i.e., a seesaw type); the second type is a push type (i.e., a top-bottom translation type). The most common switch is a pull-type switch. By pulling the seesaw of the pull-type switch, the seesaw is actuated to realize opening and closing of the switch, wherein the seesaw always maintains a state of one side high and one side low. The push-type switch is designed to press the seesaw down to realize the two states of opening and closing of the switch, wherein the seesaw always has a depth displacement. The switch provided by the present invention is a third operation mode, which is displaced on a plane to realize the pulling of the switch, thereby realizing opening and closing of the switch.

SUMMARY OF THE INVENTION

[0003] The aim of the invention is to overcome the deficiencies of the above-mentioned prior art, and to provide a slide switch capable of achieving a clever design, stable and firm structure, long service life and wide application range.

[0004] In order to realize the above aims, this invention comprising:

the slide switch includes an inlet conduct piece, at least one outlet conduct piece and an activity conduct piece, the first end of the activity conduct piece contact the inlet conduct piece, is characterized in that, the slide switch further comprises a slider, a driving medium, a sleeve and a shift lever, one end of the driving medium is mounted on the slider and can rotate relative to the slider, the other end of the driving medium contacts with the sleeve, the rotating of the sleeve drives the shift lever to rotate, then the second end of the activity conduct piece is driven to swing to contact or leave the outlet conduct piece.

[0005] Preferably, the driving medium is a driving lever, one end of the driving lever is mounted to the slider with a driving lever fixed axle, the other end of the driving lever is inserted into the driving lever accommodate hole of the sleeve.

[0006] Preferably, one end of the shift lever has a shift lever projection, the shift lever projected is locked in a shift lever projection accommodate hole of the sleeve.

[0007] Preferably, the slide switch further comprises a sleeve spring, one end of the sleeve spring is mounted on the driving medium, the other end contacts with the sleeve.

[0008] Preferably, the slide switch further includes a shift lever spring, one end of the shift lever spring is mounted on the shift lever, the other end contacts with the activity conduct piece.

[0009] Preferably, the at least one outlet conduct piece includes two outlet conduct pieces: a first outlet conduct piece and a second outlet conduct piece, the activity conduct piece is mounted between the first outlet conduct piece and the second outlet conduct piece, the second end of the activity conduct piece swings between the first outlet conduct piece and the second outlet conduct piece.

[0010] Preferably, the slide switch further includes a bottom shell and an upper shell, the sleeve and shift lever are mounted in the upper shell, and the sleeve and the shift lever are mounted on different heights, the inlet conduct piece and the outlet conduct piece are mounted in the bottom shell, the slider rotatably mounted above the upper shell.

[0011] Preferably, a sleeve fixed hole of the sleeve rotatably mounted on a sleeve fixed axle of the upper shell.

[0012] Preferably, a shift lever fixed hole of the shift lever rotatably mounted on a shift lever fixed axle of the upper shell.

[0013] Preferably, the slide switch further includes a cover board, the cover board is over the upper shell, and the slider is mounted slidably between the cover board and the upper shell.

[0014] Preferably, the slide switch further includes a panel and a baseboard, the upper shell is mounted in the baseboard, the panel is locked in the baseboard, and the slider is connected with the panel.

[0015] Preferably, the slide switch further includes a frame locked on the baseboard.

[0016] Preferably, there is a slide rail on the baseboard, and the panel is set on the baseboard slidably through a slide rail block.

[0017] Preferably, there are slider lock columns on the panel, the slider lock columns are inserted in the panel fixed holes in the slider.

[0018] When the slider of the slide switch according to the present invention is used for sliding, the driving medium moves along with the slider and rotates relative to the slider, and then the sleeve rotates to driving the rotation of shift lever, the swing of the activity conduct piece driving by the shift realizes opening and closing of the slider switch. The upper shell is fixed in the baseboard for easy installation and use. The slider extends out of the upper shell and is connected with the panel for manual driving, and the frame is fastened on the bottom shell to ensure the overall aesthetic appearance of the product; the advantages of the embodiments of the sliding switch according to the present invention are as follows: clever design, simple and labor-saving structure, stable and reliable structure, long service life, suitable for large-scale promotion and application.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019]

Figure 1 is an exploded view of the slide switch of the present invention.
Figure 2 is a schematic structural view of an activity conduct piece of a slide switch of the present invention.
Figure 3 is a schematic view showing the sleeve structure of a slide switch according to the present invention.
Figure 4 is a schematic view of the lever of one embodiment of the sliding switch according to the present invention.
Figure 5 is a structural schematic view of the upper shell of one embodiment of the slide switch according to the present invention.
Figure 6 is a schematic view showing the driving lever structure of one embodiment of the slide switch according to the present invention.
Figure 7 is a schematic view showing the slider structure of one embodiment of the slide switch according to the present invention.
FIG. 8 is a schematic structural view of the panel of one embodiment of the slide switch according to the present invention.
Figure 9 is a schematic view showing the baseboard structure of one embodiment of the slide switch according to the present invention.
Figure 10 is a schematic view of the functional parts of one embodiment of the slide switch according to the present invention.

Reference numbers in figs.:

[0020]

1 Panel

101 : Slide rail block ; 102 : Slider lock column

2 Baseboard

201 : Upper shell fixed jaw ; 202 : Slide rail

3 Frame

4 Bottom shell

5 First outlet conduct piece

6 Second outlet conduct piece

7 Activity conduct piece

701 : Contactor ; 702 : Spring core ; 703 : Inlet conduct piece contact side 8 Inlet conduct piece

9 Sleeve

91 : Shift lever projection accommodate hole ; 92 : Sleeve fixed hole ; 93 : Driving lever accommodate hole

10 Sleeve spring

11 Shift lever spring

12 Shift lever

121 : Shift lever fixed hole ; 122 : Shift lever projection

13 Upper shell

131 : Shift lever fixed axle ; 132 : Sleeve fixed axle

14 Driving lever

141 : Driving lever fixed axle ; 142 : Driving lever slide surface

15 Slider

151 : Driving lever fixed hole ; 152 : Panel fixed hole

16 Cover board

DETAILED DESCRIPTION OF THE INVENTION

[0021] In order to understand the technical content of the present invention clearly, the present invention is further exemplified by reference to the following example.

[0022] A slide switch according to a embodiment of the present invention is provided, comprising a panel 1, a baseboard 2, a frame 3, a bottom shell 4, a first outlet conduct piece 5, a second outlet piece 6, a activity conduct piece 7, an inlet conduct piece 8, a sleeve spring 10, a sleeve 9, a shift lever spring 11, a shift lever 12, a upper shell 13, a driving lever 14, a slider 15, and a cover board 16.

[0023] The upper shell 13 is disposed on the bottom shell 4, and the inlet conduct piece 8, the first outlet conduct piece 5 and the second outlet conduct piece 6 are all disposed in the bottom shell 4, and the activity conduct piece 7 abuts against the inlet conduct piece 8 and is located between the first and second outlet conduct piece 5, 6.

[0024] The sleeve 9 and the shift lever 12 are mounted in the upper shell 13, the shift lever spring 11 is mounted in the shift lever 12, and the other end is in contact with the activity conduct piece 7 for abutting against the activity conduct piece 7, and the shift lever 12 is rotated to drive the swing of activity conduct piece 7, and the sleeve 9 and the shift lever 12 are mounted at different heights, and the rotation of the sleeve 9 drives the shift lever 12

to rotate.

[0025] The cover board 16 is covered on the upper shell 13, and the slider 15 is slidably disposed between the cover board 16 and the upper shell 13. The driving lever 14 is mounted on the slider 15 and is rotatable, and the other end is inserted into the sleeve 9. The sleeve spring 10 is mounted in the driving lever 14 and the other end of the sleeve spring is in contact with the sleeve 9.

[0026] When the slider 15 is slid, the driving lever 14 moves with the slider 15 while rotating relative to the slider 15, and drives the sleeve 9 to rotate. The sleeve 9 drives the shift lever 12 to rotate, and the rotation of shift lever 12 drives the swing of the activity conduct piece 7, thereby realizing on and off of the slide switch.

[0027] The upper shell 13 is fixed in the baseboard 2 for easy installation and use. The slider 15 extends from the upper cover 16 and is connected with the panel 1 so as to be driven by hand. The frame 3 is fastened to the baseboard 2 to ensure the overall aesthetic appearance of the product..

[0028] Parts 4 to 16 are assembled into functional parts and fixed in the baseboard 2.

[0029] The panel 1 is stuck on the sliding rail 202 of the baseboard 2 by the sliding track card 101, and can slide along the sliding rail, wherein the slider lock column 102 is inserted into the panel fixed hole 152 of the slider 15 to drive the slider 15 to slide.

[0030] The sliding of the panel 1 causes the movement of the slider 15 such that the driving lever 14 follows the movement while rotating relative to the slider 15, and the driving lever slide surface 142 is inserted into the driving lever accommodate hole 903.

[0031] The sleeve 9 is mounted on the sleeve fixed axle 132 through the sleeve fixed hole 902, and is rotatable thereabout, and the driving lever 14 drives the sleeve 9 to rotate.

[0032] The shift lever 12 is mounted on the shift lever fixed axle131 through the shift lever fixed hole 121, and is rotatable therearound, and the shift lever projection 122 is stuck in the shift lever projection accommodate hole 901.

[0033] When the sleeve 9 rotates, the shift lever projection accommodate hole 901 drives the shift lever projection 122 to move, and the shift lever 12 rotates to drive the activity conduct piece 7 to swing, and the contactor 701 is in contact with (or separated from) the first outlet conduct piece 5 (or the second outlet conduct piece 6) to achieve switching on and off.

[0034] When the slider of the slide switch according to the present invention is used for sliding, the driving medium moves along with the slider and rotates relative to the slider, and then the sleeve rotates to driving the rotation of shift lever, the swing of the activity conduct piece driving by the shift realizes opening and closing of the slider switch. The upper shell is fixed in the baseboard for easy installation and use. The slider extends out of the upper shell and is connected with the panel for manual driving, and the frame is fastened on the bottom shell to ensure the overall aesthetic appearance of the product; the advantages of the embodiments of the sliding switch according to the present invention are as follows: clever design, simple and labor-saving structure, stable and reliable, long service life, suitable for large-scale promotion and application.

[0035] In the present specification, the present invention has been described according to the particular embodiments. But it is obvious that these embodiments can be modified or changed without departure from the spirit and scope of the present invention. Therefore, the specification described above is exemplary only and not intended to be limiting.

Claims

1. A slide switch, the slide switch includes an inlet conduct piece, at least one outlet conduct piece and an activity conduct piece, the first end of the activity conduct piece contact the inlet conduct piece, is **characterized in that**, the slide switch further includes a slider, a driving medium, a sleeve and a shift lever, one end of the driving medium is mounted on the slider and can rotate relative to the slider, the other end of the driving medium contacts with the sleeve, the rotating of the sleeve drives the shift lever to rotate, then the second end of the activity conduct piece is driven to swing to contact or leave the outlet conduct piece.

2. The slide switch according to claim 1, is **characterized in that**, the driving medium is a driving lever, one end of the driving lever is mounted to the slider with a driving lever fixed axis, the other end of the driving lever is inserted into the driving lever accommodate hole of the sleeve.

3. The slide switch according to claim 1, is **characterized in that**, one end of the shift lever has a shift lever projection, the shift lever projected is locked in a shift lever projection accommodate hole of the sleeve.

4. The slide switch according to claim 1, is **characterized in that**, the slide switch further includes a sleeve spring, one end of the sleeve spring is mounted on the driving medium, the other end contacts with the sleeve.

5. The slide switch according to claim 1, is **characterized in that**, the slide switch further includes a shift lever spring, one end of the shift lever spring is mounted on the shift lever, the other end contacts with the activity conduct piece.

6. The slide switch according to claim 1, is **characterized in that**, the at least one outlet conduct piece

includes two outlet conduct pieces: a first outlet conduct piece and a second outlet conduct piece, the activity conduct piece is mounted between the first outlet conduct piece and the second outlet conduct piece, the second end of the activity conduct piece swings between the first outlet conduct piece and the second outlet conduct piece.

7. The slide switch according to claim 1, is **characterized in that**, the slide switch further includes a bottom shell and an upper shell, the sleeve and shift lever are mounted in the upper shell, and the sleeve and the shift lever are mounted on different heights, the inlet conduct piece and the outlet conduct piece are mounted in the bottom shell, the slider rotatably mounted above the upper shell.

8. The slide switch according to claim 7, is **characterized in that**, a sleeve fixed hole of the sleeve rotatably mounted on a sleeve fixed axis of the upper shell.

9. The slide switch according to claim 7, is **characterized in that**, a shift lever fixed hole of the shift lever rotatably mounted on a shift lever fixed axis of the upper shell.

10. The slide switch according to claim 7, is **characterized in that**, the slide switch further includes a cover board, the cover board is over the upper shell, the slider is mounted slidably between the cover board and the upper shell.

11. The slide switch according to claim 7, is **characterized in that**, the slide switch further includes a panel and a baseboard, the upper shell is mounted in the baseboard, the panel is locked in the baseboard, the slider is connected with the panel.

12. The slide switch according to claim 11, is **characterized in that**, the slide switch further includes a frame locked on the baseboard.

13. The slide switch according to claims 11, is **characterized in that**, there is a slide rail on the baseboard, the panel is set on the baseboard slidably through a slide rail block.

14. The slide switch according to claims 11, is **characterized in that**, there are slider lock columns on the panel, the slider lock columns are inserted in the panel fixed holes in the slider.

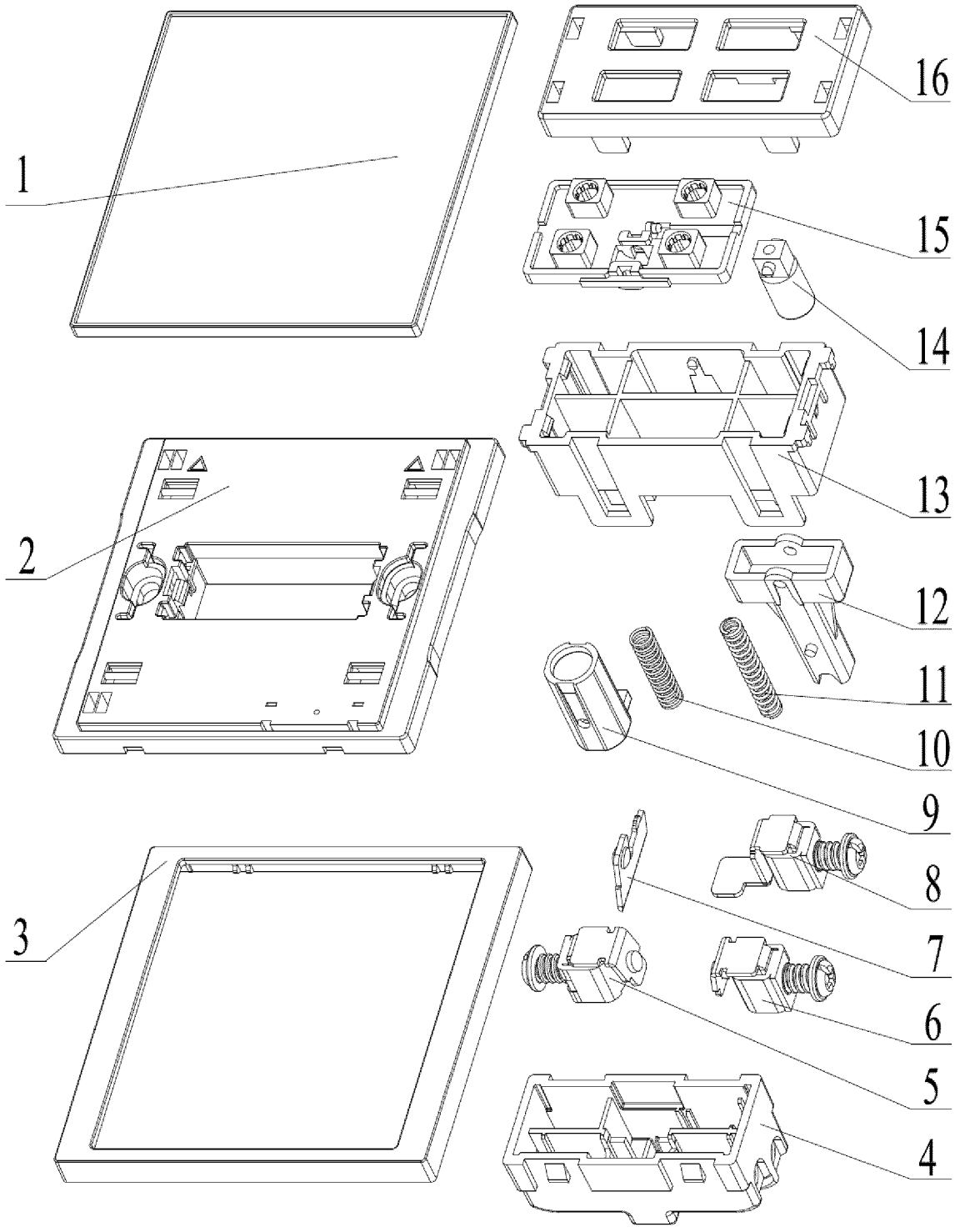

Fig. 1

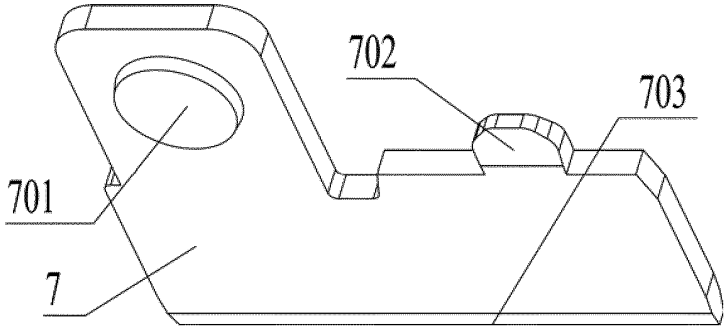

Fig. 2

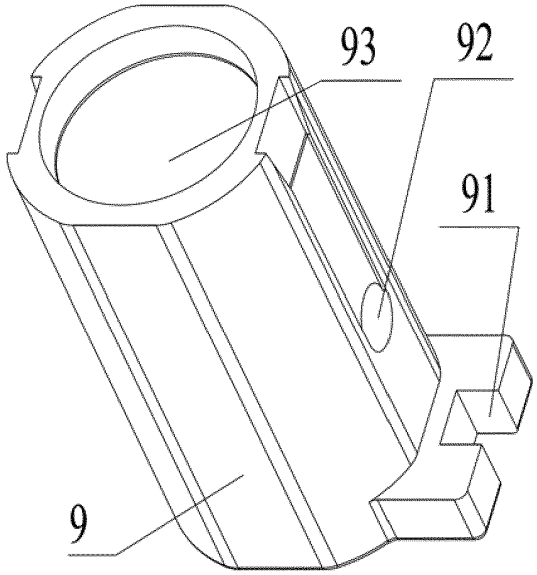

Fig. 3

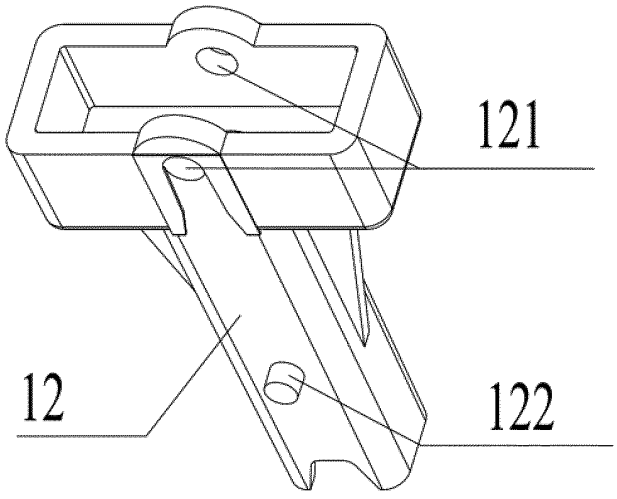

Fig. 4

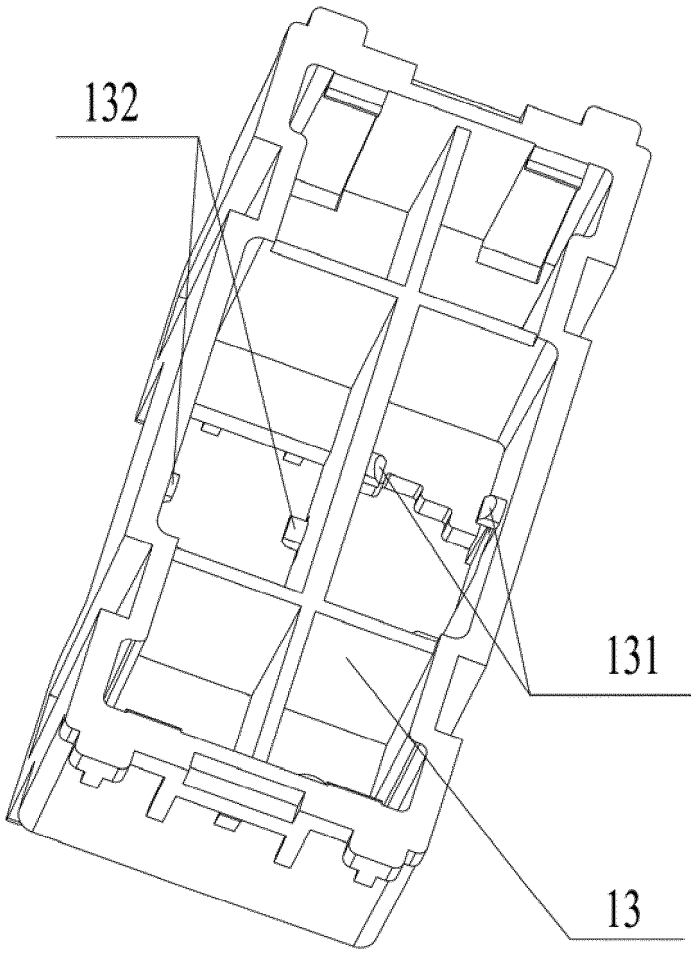

Fig. 5

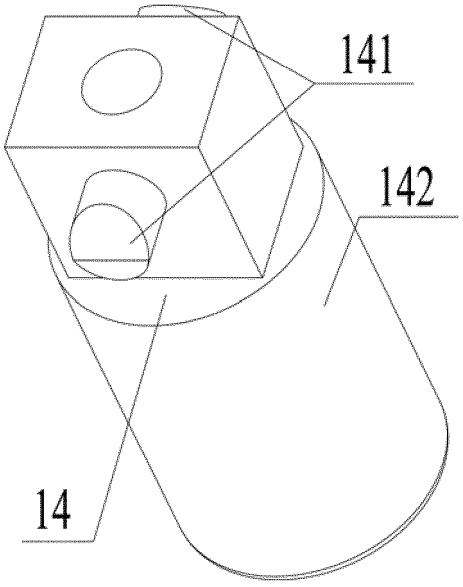

Fig. 6

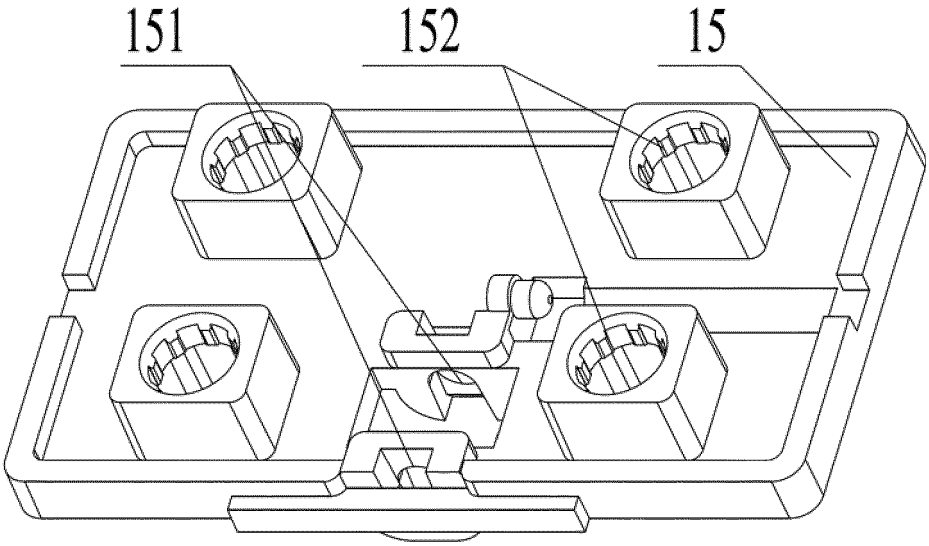

Fig. 7

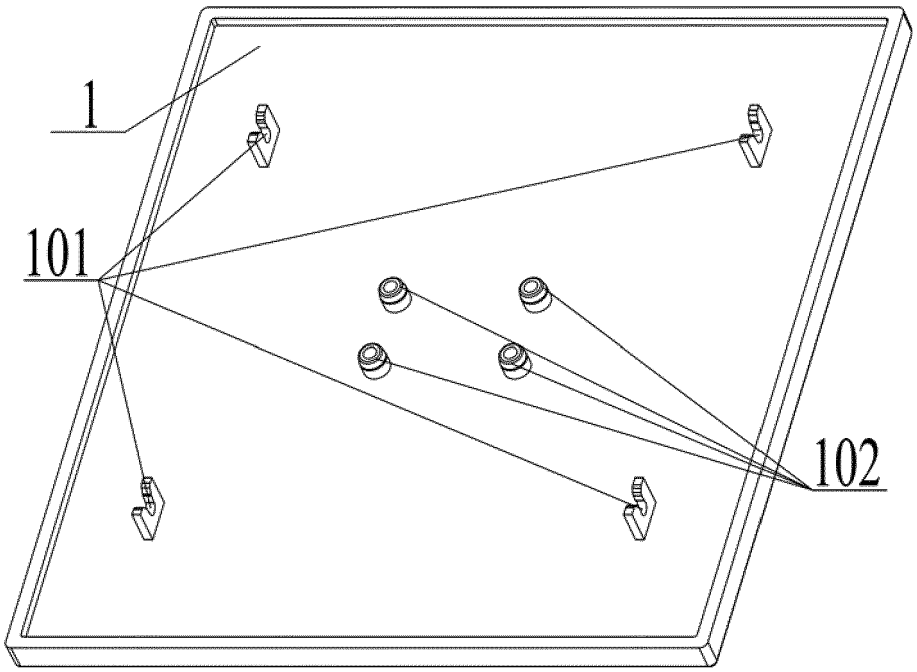

Fig. 8

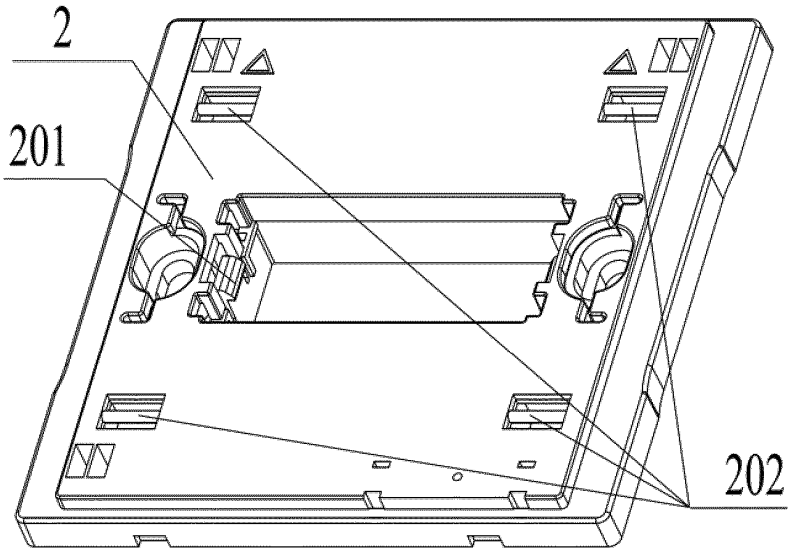

Fig. 9

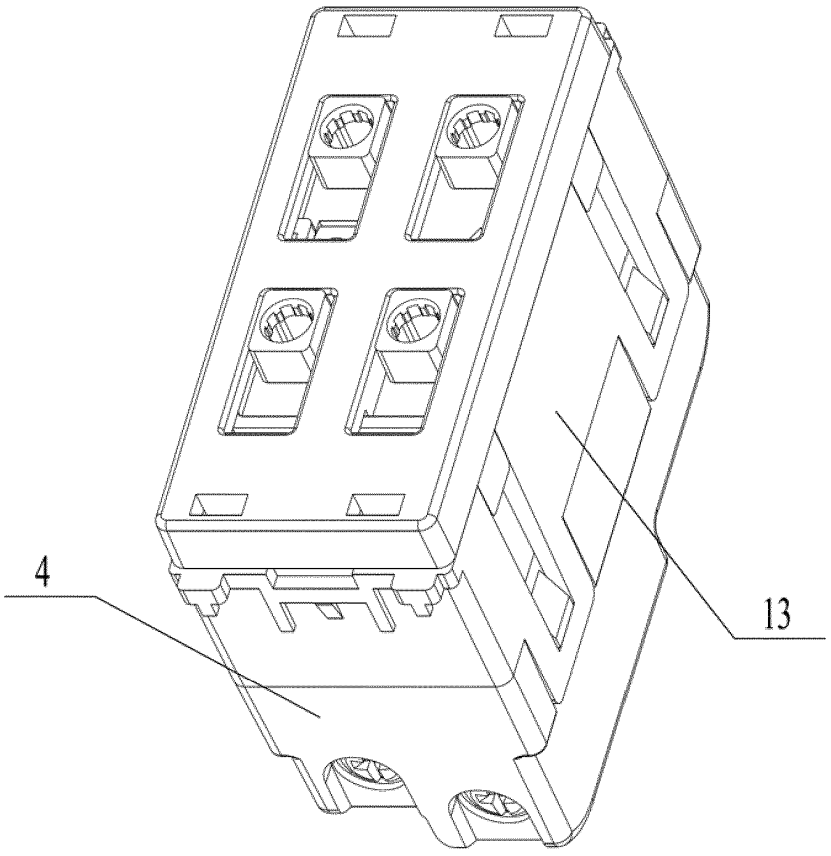

Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2017/080688

A. CLASSIFICATION OF SUBJECT MATTER

H01H 15/10 (2006.01) i; H01H 15/16 (2006.01) i
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H01H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, DWPI, CNKI: push, stir, translation, switch, rod, slide, move, support, rotate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 103151208 A (SIMON ELECTRIC (CHINA) CO., LTD.), 12 June 2013 (12.06.2013), description, paragraphs 25-42, and figures 1-6	1-14
PX	CN 205656994 U (SIMON ELECTRIC (CHINA) CO., LTD.), 19 October 2016 (19.10.2016), claims 1-14	1-14
PX	CN 105914078 A (SIMON ELECTRIC (CHINA) CO., LTD.), 31 August 2016 (31.08.5016), claims 1-14	1-14
A	US 4072834 A (ERG IND CORP LTD.), 07 February 1978 (07.02.1978), the whole document	1-14

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 May 2017 (26.05.2017)	**11 July 2017 (11.07.2017)**
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer **TANG, Wen** Telephone No.: (86-10) **010-62412177**

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2017/080688

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 103151208 A	12 June 2013	CN 103151208 B	22 April 2015
CN 205656994 U	19 October 2016	None	
CN 105914078 A	31 August 2016	None	
US 4072834 A	07 February 1978	FR 2330132 A1	27 May 1977
		DE 2630356 A1	05 May 1977
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		GB 1490430 A	02 November 1977
		FR 2330132 B3	30 March 1979

Form PCT/ISA/210 (patent family annex) (July 2009)