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(54) **AN LED FLUORESCENT LAMP WITH ROTARY TYPE INTERNAL SOURCE**

(57) The invention discloses a LED rotary type built-in power source lamp, comprising a lamp tube (1), a power source component (5), a lamp panel component (4), two upper tube holders (3) and two lower tube holders (2); each upper tube holder (3) is provided with lamp pins (9), the power source component (5) and lamp panel component (4) are located in the lamp tube (1); two lower tube holders (2) are respectively sleeved on both ends of the lamp tube (1), the outer side of each lower tube holder (2) is nested with an upper tube holder (3); a pin header (6) is provided between the power source component (5) and the lamp panel component (4) for electrically connecting the power source component (5) with

the lamp panel component (4), pins (61) are provided on the pin header (6); the power source component (5) and the lamp panel component (4) are all provided with jacks (45) welded with the pins (61) and all conducted with the corresponding electric connecting circuit; open ends of the two upper tube holders (3) are all provided with at least a position-adjusting boss (32) and a limit boss (31), the two lower tube holders (2) are all provided with clapboards (24); the joint part between the clapboards (24) and the inner walls of the lower tube holders (2) are provided with at least a position-adjusting stop (22) and limit stop (21). The invention has advantages of excellent connection stability and high electrical property, and can adjust the illuminating angles.

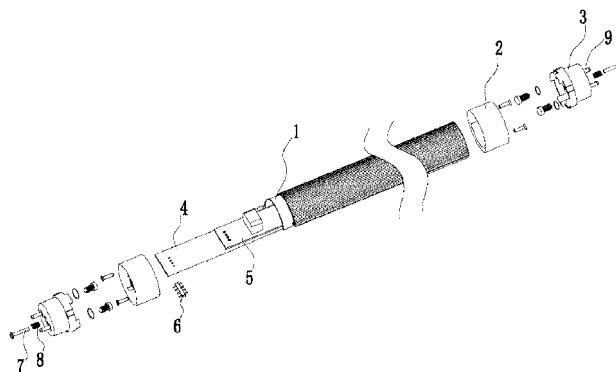


Fig. 1

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Description

Field of the Invention

[0001] The invention relates to a lamp, in particular a LED rotary type built-in power source lamp.

Background of the Invention

[0002] As a sunrise industry, LED has been widely applied in various glowing scenes, in particular in recent years LED luminous efficiency is greatly enhanced with the development of LED technology, and therefore LED is preferred by the lighting market. In indoor lighting, lamps, namely daylight lamps are most commonly used at present. Nowadays there are multiple daylight lamps made by taking LEDs as built-in power sources in the market, which become a new type of lamps replacing the fluorescent lamps.

[0003] However at present the LED built-in power source lamp in the market has two obvious technical disadvantages, firstly the LED power panel and lamp panel are all connected via wires, such a structure will lead unstable connection of the power panel and lamp panel, meanwhile situations such as pressing of wires and breaking of electric wires easily occur when the power panel and lamp panel are installed, and the electric wires also will be influenced by the high voltage and temperature while working; secondly the lamp form taking LED as built-in power source is monotonous and has single function, the lamp tube cannot be adjusted rotatable and cannot meet lighting requirements of people under different work environments.

Summary of the Invention

[0004] The purpose of the invention is to solve above-mentioned prior technical disadvantages and to provide a LED rotary type built-in power source lamp which can promote the connection stability of the power source component and lamp panel component, enhance the electric property and can adjust the illuminating angles freely.

[0005] In order to achieve above purposes, the LED rotary type built-in power source lamp designed in the present invention comprises a lamp tube, a power source component, a lamp panel component, upper tube holders and lower tube holders; two upper tube holders and two lower tube holders are provided, each upper tube holder is provided with lamp pins, the power source component and lamp panel component are located in the lamp tube; two lower tube holders are respectively sleeved on both ends of the lamp tube, the outer side of each lower tube holder is nested with an upper tube holder; wherein a pin header is provided between said power source component and said lamp panel component for electrically connecting the power source component with the lamp panel component, pins conducting correspondingly on both

sides are provided on the pin header; the power source component and the lamp panel component are all provided with jacks welded with the pins and all conducted with the corresponding electric connecting circuit; open ends of said two upper tube holders are all provided with at least a position-adjusting boss and a limit boss, clapboards are provided in the two lower tube holders; the joint part between the clapboards and the inner walls of the lower tube holders are provided with at least a position-adjusting stop and limit stop; the position-adjusting stop and limit stop cooperate with the position-adjusting boss and the limit boss on the open ends of the upper tube holders; wiring holes are provided on the clapboards. In above structure, the power source component and lamp panel component are fixed and connected via the pin header so that the connection is stable and the power source will not sway when in use, and the connection via the pin header has a good electric property, replaces the middle wire connections, avoids the risks of wire pressing and breaking and reduces the influences of high temperature and voltage to the lamp; meanwhile the position-adjusting stops and limit stops in the joint part of the clapboards and inner walls of the lower tube holders cooperate with the position-adjusting bosses and limit bosses in the open ends of the upper tube holders so as to achieve the purpose of adjusting the illuminating angles freely. Preferably, said power source component is located on the upper end of said lamp panel component, four sets of pins are provided on the pin header, four jacks welded with four sets of pins are provided on the power source component and lamp panel component respectively; the open end of each upper tube holder is provided with two position-adjusting bosses and two limit bosses, the two position-adjusting bosses and two limit bosses are all symmetrically arranged and cross distributed along the open end of the upper tube holders; the joint part between the inner wall of each lower tube holder and the clapboards is provided with six position-adjusting stops and two limit stops; the six position-adjusting stops and two limit stops are distributed in a 45° ring along the inner wall of the lower tube holders, and six position-adjusting stops are pairwise symmetrically arranged, two limit stops are symmetrically arranged.

[0006] In order to enhance the stability, said upper tube holders and lower tube holders are fixed via tightening elements connecting with reset elements; stepped mounting holes are provided in the upper tube holders, fixing holes coaxial with the stepped mounting holes are provided on the clapboards of the lower tube holders; the tightening elements connecting with reset elements run through the stepped mounting holes and cooperate with the fixing holes, the reset elements are located in the stepped mounting holes.

[0007] In order to bring convenience to rotate and provide limit function, limit pins are provided on said limit bosses, the limit stops are L-shaped and the spacing from the joint part between the horizontal part and the longitudinal part thereof to the inner wall of the lower tube

holders is greater than the thickness of the position-adjusting bosses and smaller than the extending length of the limit pins extending on the limit bosses; the height of the limit stops is higher than the height of the position-adjusting stops; the upper tube holders are drawn out from the position-adjusting stops and the drawing distance is greater than the height of the position-adjusting stops and lower than the height of the limit stops.

[0008] In order to further improve the use safety, an insulation board is provided between said power source component and the lamp panel component, the lower end of the lamp panel component is provided with a lampshade, the lampshade is fixed on the lamp tube; reinforcing ribs are provided on the clapboards between said fixing holes and the inner walls of the lower tube holders; the outer sides of said upper tube holders are provided with tube holder protective sleeves cooperating with the pins; tube plugs are provided in the stepped mounting holes of said upper tube holders, the tube plugs are located in the outer sides of the tightening elements. In the LED rotary type built-in power source lamp of the present invention, the power source component and lamp panel component are fixed and connected via the pin header so that the connection is stable and the power source will not sway when in use, and the connection via the pin header has a good electric property, replaces the middle wire connections, avoids the risks of wire pressing and breaking and reduces the influences of high temperature and voltage to the lamp; meanwhile the position-adjusting stops and limit stops in the joint part of the clapboards and inner walls of the lower tube holders cooperate with the position-adjusting bosses and limit bosses in the open ends of the upper tube holders so as to achieve the purpose of adjusting the illuminating angles freely; meanwhile in order to enhance the stability, said upper tube holders and lower tube holders are fixed via tightening elements connecting with reset elements; in order to promote the installation intensity, reinforcing ribs are provided on the clapboards between said fixing holes and the inner walls of said lower tube holders; in order to bring convenience to rotate and provide limit function, limit pins are provided on said limit bosses, the limit stops are L-shaped and the spacing from the joint part between the horizontal part and the longitudinal part thereof to the inner wall of the lower tube holders is greater than the thickness of the position-adjusting bosses and smaller than the extending length of the limit pins extending on the limit bosses; the height of the limit stops is higher than the height of the position-adjusting stops; the upper tube holders are drawn out from the position-adjusting stops and the drawing distance is greater than the height of the position-adjusting stops and lower than the height of the limit stops; and in order to further enhance the use safety, said power source component is located in the upper end of the lamp panel component, an insulation board is provided between said power source component and the lamp panel component, the lower end of the lamp panel component is provided with a lampshade; at last,

in order to increase the service life, said upper tube holders are provided with tube holder protective sleeves cooperating with the pins; tube plugs are provided in the stepped mounting holes of said upper tube holders.

Description of Figures

[0009]

Figure 1 is an overall structure schematic diagram of Example 1;

Figure 2 is an overall structure schematic diagram of the pin header connection of the power source component and lamp panel component in Example 1;

Figure 3 is an enlarged structure schematic diagram of the pin header connection of the power source component and lamp panel component in Example 1;

Figure 4 is an enlarged structure schematic diagram of the rotatable fitting between the upper tube holders and the lower tube holders in Example 1;

Figure 5 is a structure schematic diagram of the upper tube holder in Example 1;

Figure 6 is a structure schematic diagram of the fitting surfaces between the lower tube holders and the upper tube holders in Example 1;

Figure 7 is an overall structure sectional view of the lock state of the rotatable fitting between the upper tube holders and the lower tube holders in Example 1;

Figure 8 is an overall structure sectional view of the rotatable state of the rotatable fitting between the upper tube holders and lower tube holders in Example 1;

Figure 9 is an overall structure schematic diagram of Example 2;

Figure 10 is an enlarged structure schematic diagram of the rotatable fitting between the upper tube holders and the lower tube holders in Example 2;

Figure 11 is a structure schematic diagram of the fitting surfaces between the lower tube holders and the upper tube holders in Example 2.

[0010] In the figures: lamp tube 1, lower tube holder 2, limit stop 21, position-adjusting stop 22, fixing hole 23, clapboard 24, wiring hole 25, upper tube holder 3, limit boss 31, position-adjusting boss 32, stepped mounting hole 33, limit pin 311, lamp panel component 4, jack 45, power source component 5, pin header 6, pin 61, tightening element 7, reset element 8, lamp pin 9, lampshade 10, tube plug 11, tube holder protective sleeve 12, reinforcing rib 13, insulation board 14.

Detailed Description of Preferred Embodiments

[0011] The invention is further described as follows with combination of attached figures and examples.

Example 1:

[0012] As shown in Figure 1, the LED rotary type built-in power source lamp provided in the invention comprises a lamp tube 1, a power source component 5, a lamp panel component 4, two upper tube holders 3 and two lower tube holders 2; pins 9 are symmetrically provided on each upper tube holder 3; the power source component 5 and lamp panel component 4 are located in the lamp tube; the power source component 5 is located in the upper end of the lamp panel component 4; two lower tube holders 2 are respectively sleeved on both ends of the lamp tube, the outer side of each lower tube holder 2 is nested with an upper tube holder 3; as shown in Figure 2 and Figure 3, a pin header 6 is provided between the power source component 5 and lamp panel component 4 for electrically connecting the power source component 5 with the lamp panel component 4, pins 61 conducting correspondingly on both sides are provided on the pin header 6; the power source component 5 and the lamp panel component 4 are all provided with jacks 45 welded with the pins 61 and all conducted with the corresponding electric connecting circuit; as shown in Figure 4 and Figure 6, open ends of said two upper tube holders 3 are all provided with two position-adjusting bosses 32 and two limit bosses 31, two position-adjusting bosses 32 and two limit bosses 31 are all symmetrically arranged and cross distributed along the open ends of the upper tube holders 3; the joint part between the inner wall of each lower tube holder 2 and the clapboard 24 is provided with six position-adjusting stops 22 and two limit stops 21; six position-adjusting stops 22 and two limit stops 21 are distributed in a 45° ring along the inner walls of the lower tube holders 2, and six position-adjusting stops 22 are pairwise symmetrically arranged, two limit stops 21 are symmetrically arranged; the position-adjusting stops 22 and limit stops 21 respectively cooperate with the position-adjusting bosses 32 and limit bosses 31 in the open ends of the upper tube holders 3. Of course, the specific number of above-mentioned position-adjusting bosses 32, limit bosses 31, position-adjusting stops 22 and limit stops 21 can be determined in accordance with requirements of achieving different illuminating angles, and more detail examples are omitted herein. Moreover, wiring holes 25 are provided on the clapboards 24.

[0013] As shown in Figure 5, limit pins 311 are provided on said limit bosses 31, the limit stops 21 are L-shaped and the spacing from the joint part between the horizontal part and the longitudinal part thereof to the inner wall of the lower tube holders 2 is greater than the thickness of the position-adjusting bosses 32 and smaller than the extending length of the limit pins 311 extending on the limit bosses 31; the height of the limit stops 21 is higher than the height of the position-adjusting stops 22; the upper tube holders 3 are drawn out from the position-adjusting stops 22 and the drawing distance is greater than the height of the position-adjusting stops 22 and

lower than the height of the limit stops 21.

[0014] The internal connection way of the upper tube holders 3 and lower tube holders 2 is as follows: said upper tube holders 3 and lower tube holders 2 are fixed via tightening elements 7 connecting with reset elements 8, the tightening elements can be screws, bolts and so on, the reset elements can be springs, elastic washer and so on; stepped mounting holes 33 are provided in the upper tube holders 3, fixing holes 23 coaxial with the stepped mounting holes 33 are provided on the clapboards 24 of the lower tube holders 2; the tightening elements 7 connecting with reset elements 8 run through the stepped mounting holes 33 and cooperate with the fixing holes 23, the reset elements 8 are located in the stepped mounting holes 33. The above-mentioned connection way has a good stability.

[0015] In above structure, the power source component 5 and lamp panel component 4 are fixed and connected via the pin header 6 directly so that the connection is stable and the power source will not sway when in use, and the connection via the pin header 6 has a good electric property, replaces the middle wire connections, avoids the risks of wire pressing and breaking and reduces the influences of high temperature and voltage to the lamp; meanwhile the six position-adjusting stops 22 and two limit stops 21 in the joint part of the clapboards 24 and inner walls of the lower tube holders 2 cooperate with the two position-adjusting bosses 32 and two limit bosses 31 in the open ends of the upper tube holders 3 so as to achieve the purpose of adjusting the illuminating angles by 0°, 45°, 90° and -45°.

[0016] In the specific embodiments, when the power source component 5 and lamp panel component 4 are mounted via the pin header 6, the upper ends of the four sets of pins 61 conducting in both sides correspondingly on the pin header 6 are inserted into the four jacks 45 of the power source component 5 and are welded; the lower ends of the four sets of pins 61 conducting in both sides correspondingly on the pin header 6 are inserted into the four jacks 45 of the lamp panel component 4 and also are welded. As shown in Figure 7 and Figure 8, when the lamp tube 1 needs to be rotatably adjusted, users only need to pull and rotate the upper tube holders 3; as the upper tube holders 3 and lower tube holders 2 are connected by the cooperation of the position-adjusting bosses 32, the limit bosses 31, the position-adjusting stops 22 and the limit stops 21, and reset elements 8 are installed in the stepped mounting holes 33 of the upper tube holders 3, when the upper tube holders 3 are pulled, the upper tube holders 3 will move outwards for a distance under the double conditions of the tension effect of the reset elements 8 and the gaps of the joint parts between the upper tube holders 3 and lower tube holders 2, then the upper tube holders 3 are rotated by hands to the next position-adjusting stop 22, then the position-adjusting bosses 32 on the upper tube holders 3 are aligned with the position-adjusting stop 22 on the lower tube holders 2, the upper tube holders 3 and lower tube holders 2

are fastened after a click sound; and the reset elements 8 also return to the original position, as the reset elements 8 have pre-tightening forces, the upper tube holders 3 and lower tube holders 2 will not loose.

Example 2:

[0017] As shown in Figure 9, Figure 10 and Figure 11, the general structure of the LED rotary type built-in power source lamp provided in this example is the same as that in Example 1, however in order to further enhance the use safety, an insulation board 14 is provided between said power source component 5 and lamp panel component 4, the lower end is provided with a lampshade 10, the lampshade 10 is fixed on the lamp tube 1; in order to promote the installation intensity, reinforcing ribs 13 are provided on the clapboards 24 between said fixing holes 23 and the inner walls of the lower tube holders 2; and in order to increase the service life, tube holder protective sleeves cooperating with the lamp pins 9 are provided on said upper tube holders 3; tube plugs 11 are provided in the stepped mounting holes 33 of said upper tube holders 3, and the tube plugs 11 are located in the outer sides of the tightening elements 7.

Claims

1. A LED rotary type built-in power source lamp, comprising a lamp tube (1), a power source component (5), a lamp panel component (4), upper tube holders (3) and lower tube holders (2); two upper tube holders (3) and two lower tube holders (2) are provided; each upper tube holder (3) is symmetrically provided with lamp pins (9); the power source component (5) and lamp panel component (4) are located in the lamp tube (1); two lower tube holders (2) are respectively sleeved on both ends of the lamp tube (1), the outer side of each lower tube holder (2) is nested with an upper tube holder (3), **characterized in that** a pin header (6) is provided between said power source component (5) and the lamp panel component (4) for electrically connecting the power source component (5) with the lamp panel component (4), pins (61) conducting correspondingly on both sides are provided on the pin header (6); the power source component (5) and the lamp panel component (4) are all provided with jacks (45) welded with the pins (61) and all conducted with the corresponding electric connecting circuit; open ends of said two upper tube holders (3) are all provided with at least a position-adjusting boss (32) and a limit boss (31), clapboards (24) are provided in said two lower tube holders (2); the joint parts between the clapboards (24) and the inner walls of the lower tube holders (2) are provided with at least a position-adjusting stop (22) and limit stop (21); the position-adjusting stop (22) and limit stop (21) cooperate with the position-ad-

justing boss (32) and the limit boss (31) on the open ends of the upper tube holders (3); wiring holes (25) are provided on the clapboards (24).

2. The LED rotary type built-in power source lamp according to claim 1, **characterized in that** said power source component (5) is located on the upper end of said lamp panel component (4), four sets of pins (61) are provided on the pin header (6), four jacks (45) welded with four sets of pins (61) are provided on the power source component (5) and lamp panel component (4) respectively; the open end of each upper tube holder (3) is provided with two position-adjusting bosses (32) and two limit bosses (31), the two position-adjusting bosses (32) and two limit bosses (31) are all symmetrically arranged and cross distributed along the open end of the upper tube holders (3); the joint part between the inner wall of each lower tube holder (2) and the clapboards (24) is provided with six position-adjusting stops (22) and two limit stops (21); the six position-adjusting stops (22) and two limit stops (21) are distributed in a 45° ring along the inner wall of the lower tube holders (2), and six position-adjusting stops (22) are pairwise symmetrically arranged, two limit stops (21) are symmetrically arranged.

3. The LED rotary type built-in power source lamp according to any preceding claim, **characterized in that** said upper tube holders (3) and lower tube holders (2) are fixed via tightening elements (7) connecting with reset elements (8); stepped mounting holes (33) are provided in the upper tube holders (3), fixing holes (23) coaxial with the stepped mounting holes (33) are provided on the clapboards (24) of the lower tube holders (2); the tightening elements (7) connecting with reset elements (8) run through the stepped mounting holes (33) and cooperate with the fixing holes (23), the reset elements (8) are located in the stepped mounting holes (33).

4. The LED rotary type built-in power source lamp according to any preceding claim **characterized in that** limit pins (311) are provided on said limit bosses (31), the limit stops (21) are L-shaped and the spacing from the joint part between the horizontal part and the longitudinal part thereof to the inner wall of the lower tube holders (2) is greater than the thickness of the position-adjusting bosses (32) and smaller than the extending length of the limit pins (311) extending on the limit bosses (31); the height of the limit stops (21) is higher than the height of the position-adjusting stops (22); the upper tube holders (3) are drawn out from the position-adjusting stops (22) and the drawing distance is greater than the height of the position-adjusting stops (22) and lower than the height of the limit stops (21).

5. The LED rotary type built-in power source lamp according to any preceding claim **characterized in that** an insulation board (14) is provided between said power source component (5) and the lamp panel component (4), the lower end of the lamp panel component (4) is provided with a lampshade (10), the lampshade (10) is fixed on the lamp tube (1); reinforcing ribs (13) are provided on the clapboards (24) between said fixing holes (23) and the inner walls of the lower tube holders (2); the outer sides of said upper tube holders (3) are provided with tube holder protective sleeves (12) cooperating with the lamp pins (9); tube plugs (11) are provided in the stepped mounting holes (33) of said upper tube holders (3), the tube plugs (11) are located in the outer sides of the tightening elements (7).

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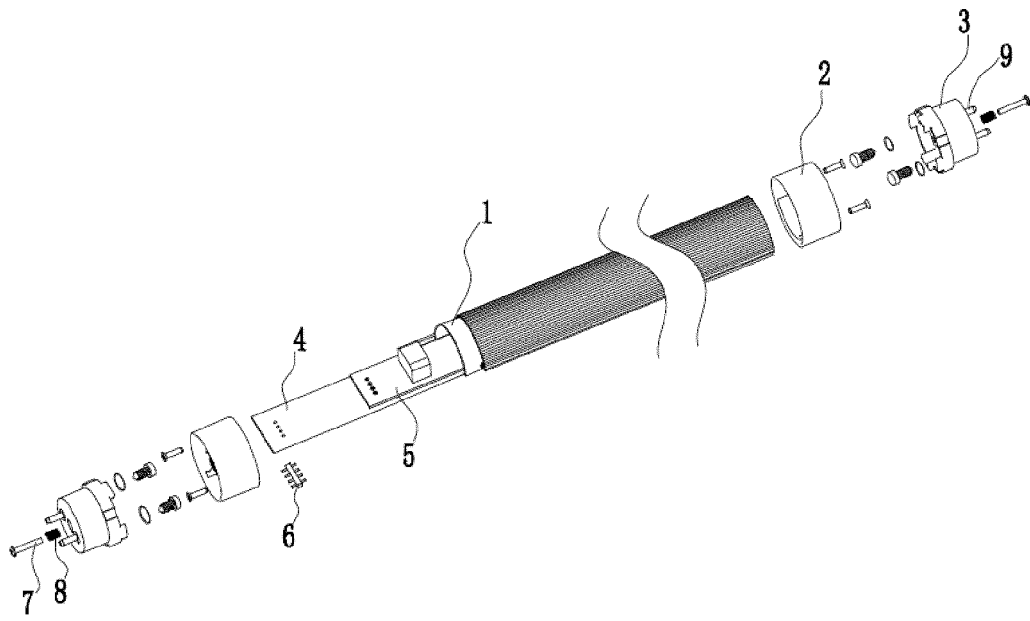


Fig. 1

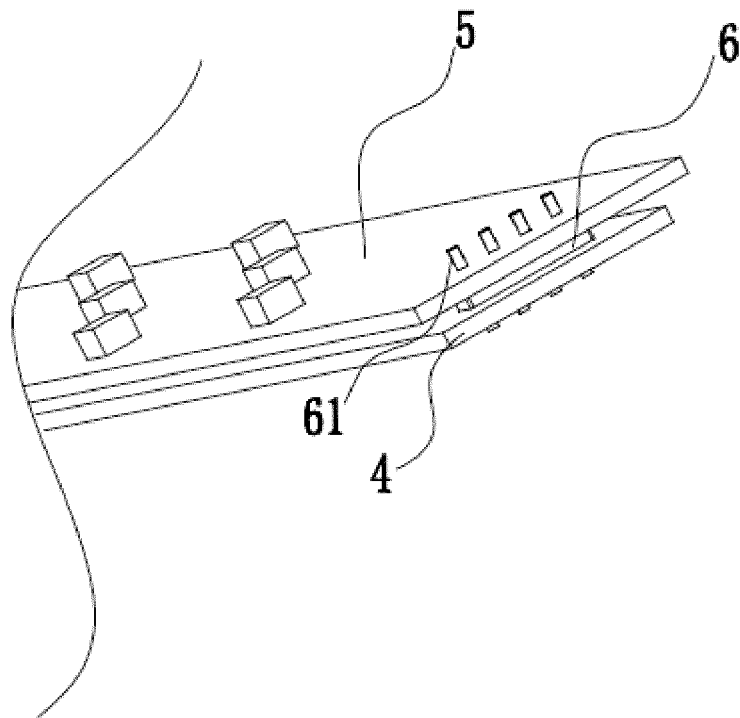


Fig. 2

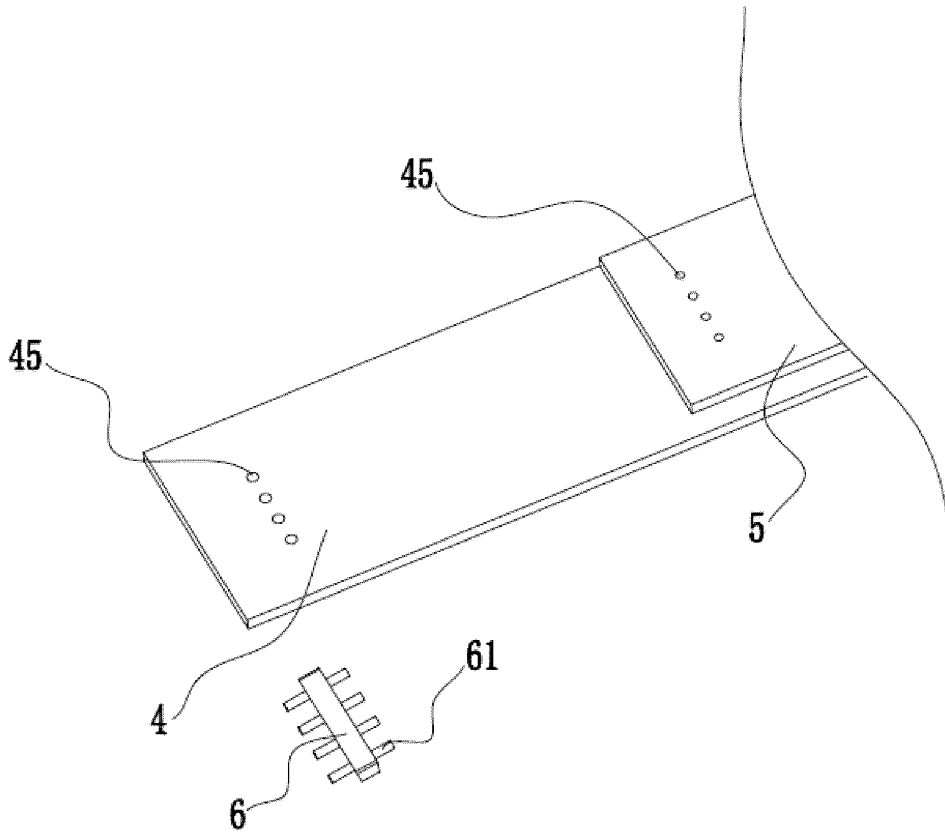


Fig. 3

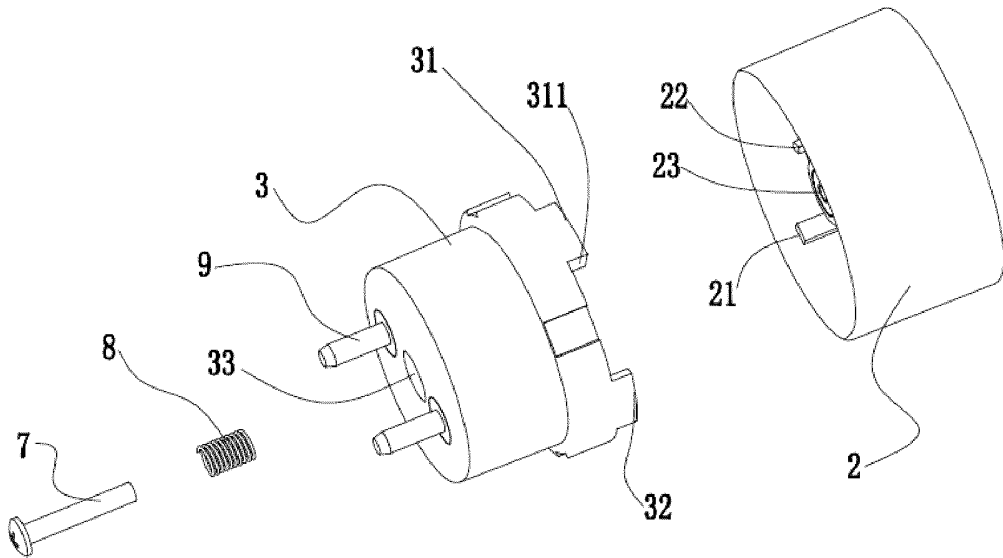


Fig. 4

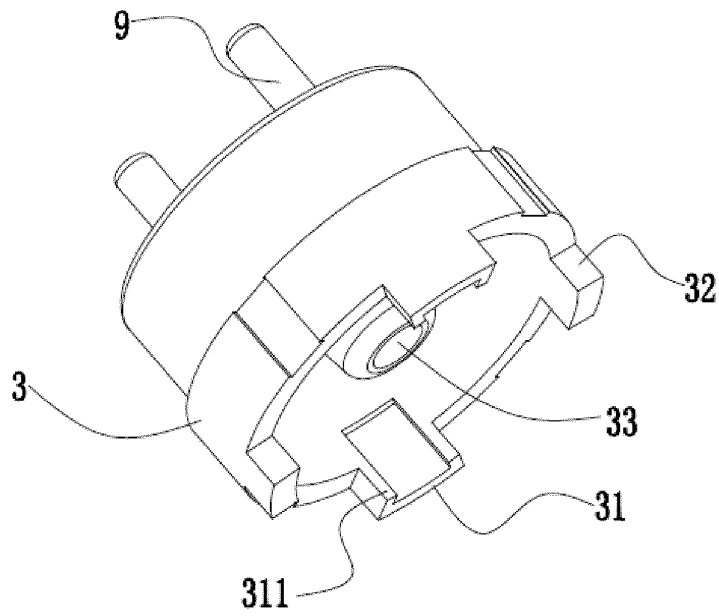


Fig. 5

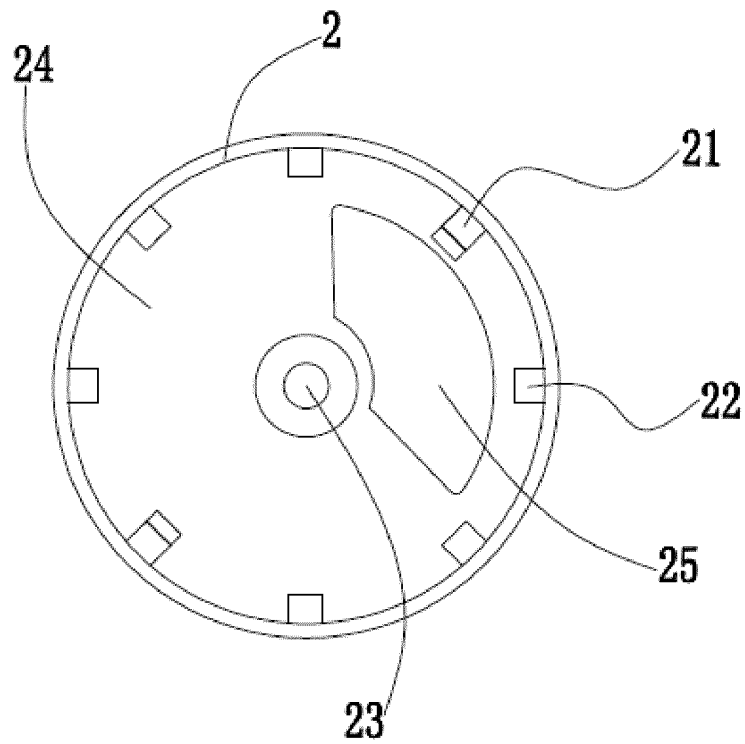


Fig. 6

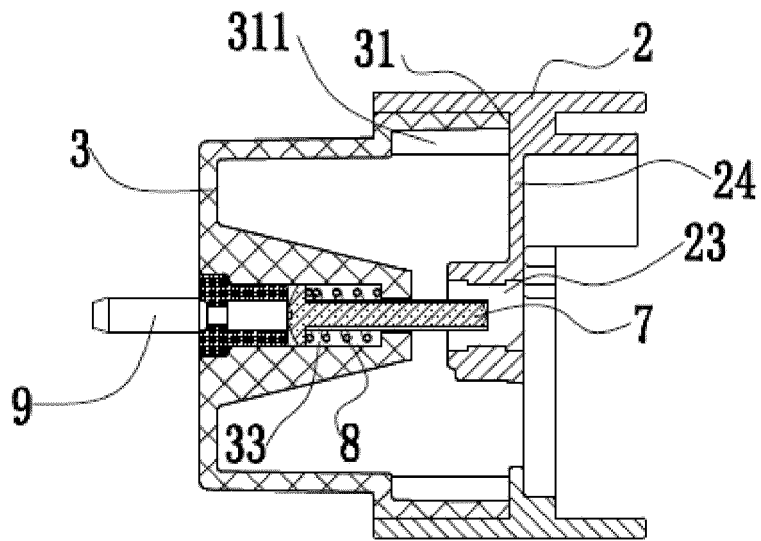


Fig. 7

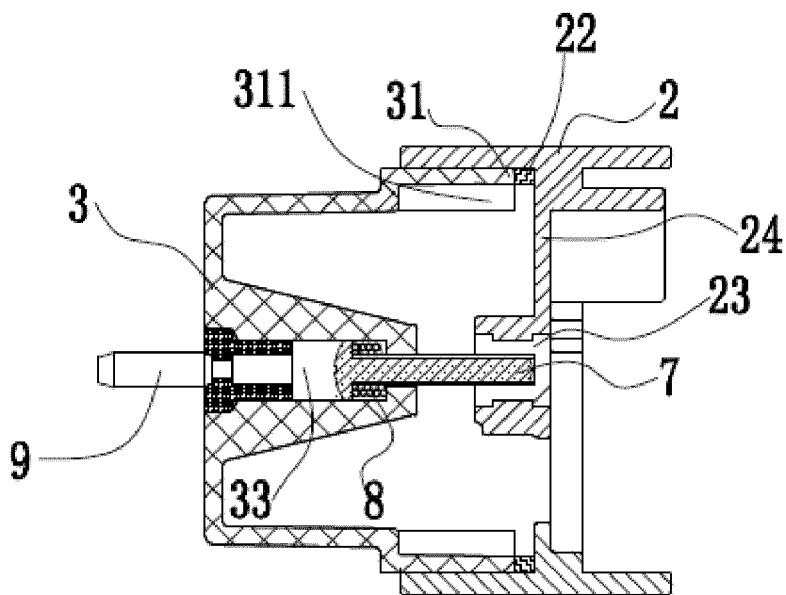


Fig. 8

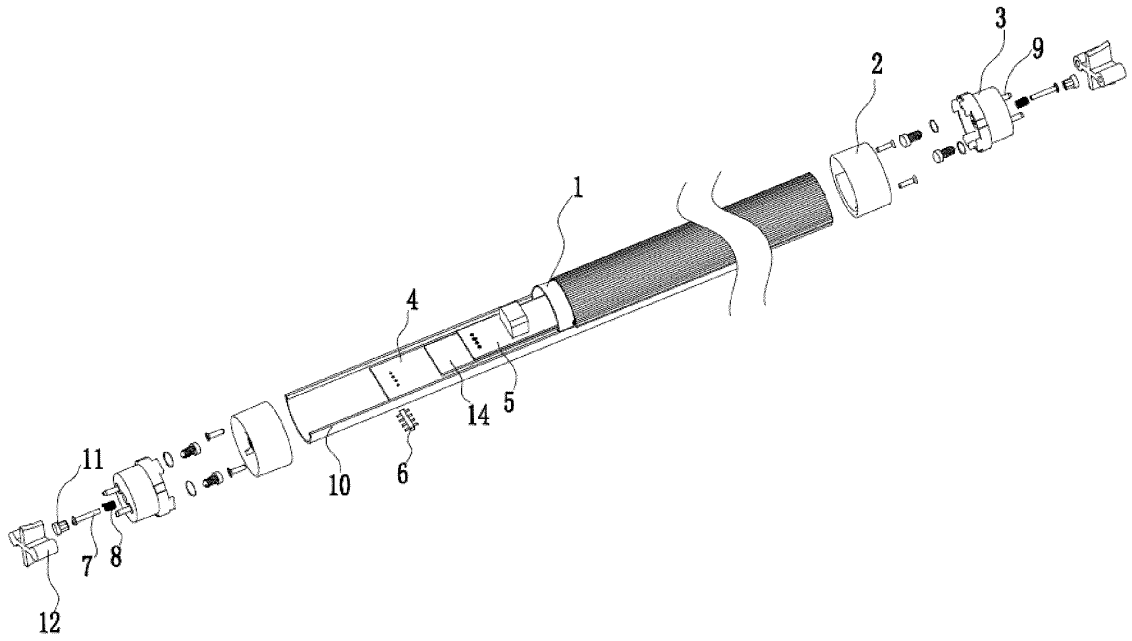


Fig. 9

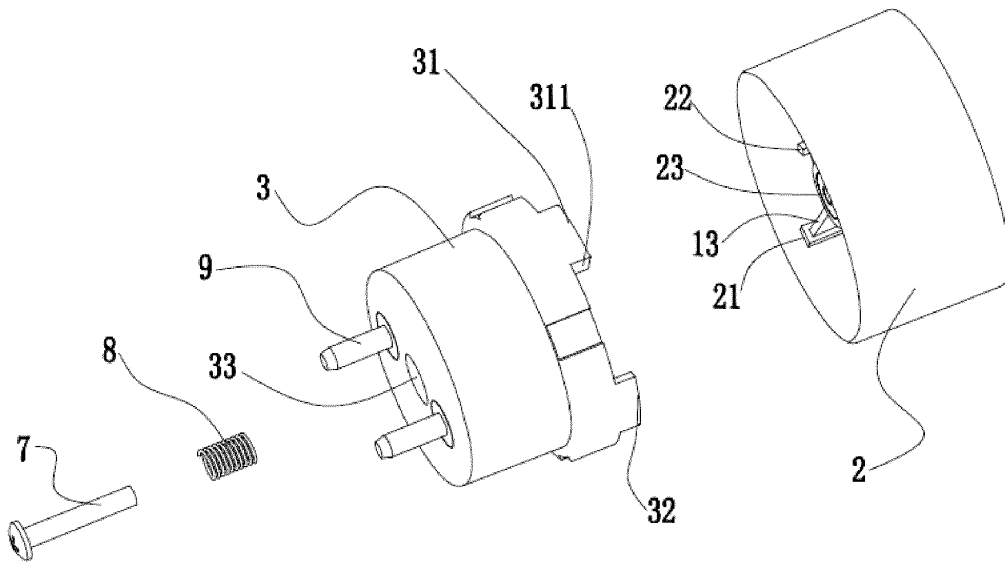


Fig. 10

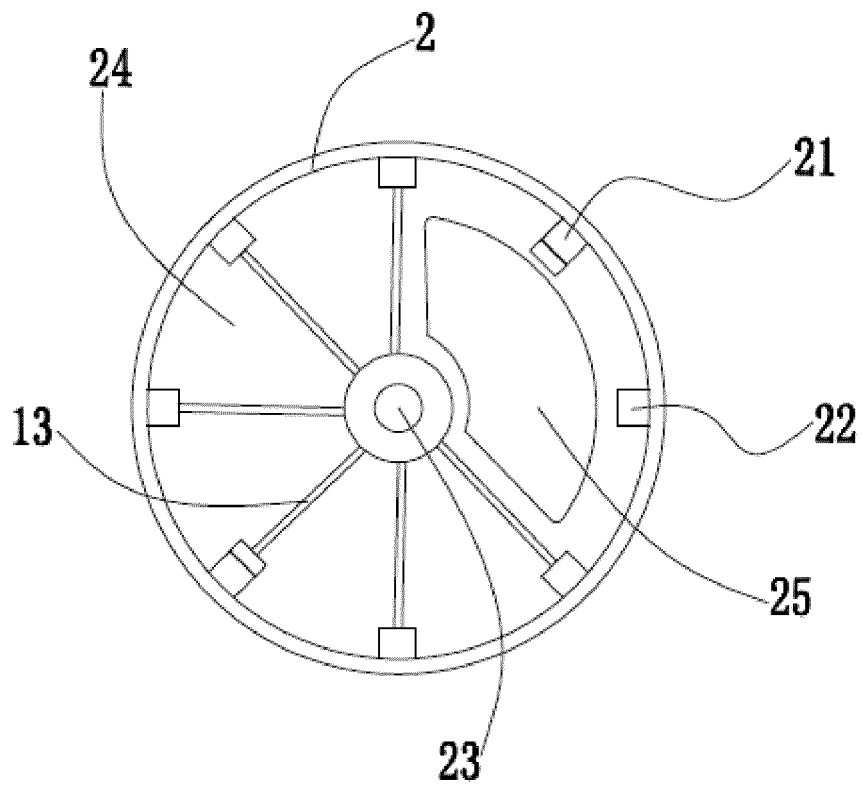


Fig. 11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2011/079760**A. CLASSIFICATION OF SUBJECT MATTER**

See the extra sheet

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)

IPC: F21S, F21V, F21Y 101/02, H01L 33

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, CPRS, CNTXT, EPODOC, WPI, SIPOABS, DWPI: light emitting diode, LED, lamp, rotat+, pin header, daylight

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 201568909 U (GENERAL LUMINAIRE (SHANGHAI) LIMITED), 01 September 2010 (01.09.2010), description, paragraphs 0031-0035, and figures 1-2	1-2
A		3-9
Y	CN 201787366 U (NINGBO ANDY OPTOELECTRONIC CO., LTD.), 06 April 2011 (06.04.2011), description, paragraphs 0023-0025, and figures 1-8	1-2
A		3-9
Y	CN 101545595 A (BEIJING VAST DIGITAL CO., LTD.), 30 September 2009 (30.09.2009), description, page 4, lines 2-9, and figure 2	1-2
A		3-9

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

* Special categories of cited documents:	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“A” document defining the general state of the art which is not considered to be of particular relevance	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“E” earlier application or patent but published on or after the international filing date	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“&” document member of the same patent family
“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 20 March 2012 (20.03.2012)	Date of mailing of the international search report 03 May 2012 (03.05.2012)
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 CHANG, Jianjun Telephone No.: (86-10) 62412112

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

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2011/079760

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 201475725 U (NINGBO GUANTONG OPTOELECTRONIC TECHNOLOGY CO., LTD.), 19 May 2010 (19.05.2010), description, paragraphs 0026-0030, and figures 1-8	1-2
A		3-9
A	CN 201507891 U (FANG, Xijun), 16 June 2010 (16.06.2010), the whole document	1-9

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

INTERNATIONAL SEARCH REPORT
 Information on patent family members

International application No. PCT/CN2011/079760

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 201568909 U	01.09.2010	None	
CN 201787366 U	06.04.2011	None	
CN 101545595 A	30.09.2009	None	
CN 201475725 U	19.05.2010	None	
CN 201507891 U	16.06.2010	None	

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

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2011/079760

CONTINUATION: A. CLASSIFICATION OF SUBJECT MATTER

F21S 9/00 (2006.01) i

F21V 23/06 (2006.01) i

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