



(11) **EP 3 703 193 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
02.09.2020 Bulletin 2020/36

(51) Int Cl.:
H01R 13/58 (2006.01) **H01R 33/22** (2006.01)
H01R 13/447 (2006.01)

(21) Application number: **19160094.9**

(22) Date of filing: **28.02.2019**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(72) Inventors:
• **HUANG, Huawei**
Xiamen, Fujian 361009 (CN)
• **HUANG, Xiaojuan**
Xiamen, Fujian 361009 (CN)
• **LIU, Huasheng**
Xiamen, Fujian 361009 (CN)

(71) Applicant: **Xiamen Eco Lighting Co., Ltd.**
Xiamen Fujian 361009 (CN)

(74) Representative: **Proi World Intellectual Property GmbH**
Obermattweg 12
6052 Hergiswil, Kanton Nidwalden (CH)

(54) **INTEGRATED JUNCTION BOX AND LAMP ASSEMBLY THEREOF**

(57) The invention he present invention provides a lamp assembly and an integrated junction box for disposing a light source. The integrated junction box includes a terminal receptacle and a lamp holder. The terminal receptacle includes an outlet opening for receiving an external connecting wire and electrically connecting the external connecting wire to the terminal receptacle. The cover has a rotatable connection with the terminal receptacle. The cover can rotate to form an open status or a tight status between the outlet opening and the cover, for dis-attaching or fixing the external connecting wire. The cover is disposed over the terminal receptacle, and the outlet opening passes above a side wall of the terminal receptacle. The external connecting wire passes through the outlet opening to electrically connect the terminal receptacle. When the cover rotates to the tight status of the outlet opening, the external connecting wire is fixed at the outlet opening. When the cover rotates to the open status of the outlet opening, the external connecting wire can be dis-attached from the outlet opening.

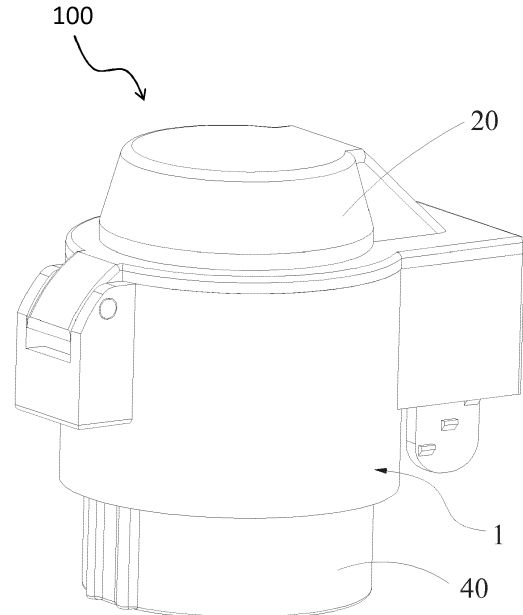


Fig. 1

Description

BACKGROUND OF THE INVENTION

Field of Invention

[0001] The present invention relates to a lamp technology, especially a lamp assembly and an integrated junction box thereof.

Description of Related Art

[0002] For connecting to a power source, a junction box is usual design in the conventional lamp assembly, wherein the lamp holder and the junction box are two separate components, and wiring is necessary for electrically connecting both. The lamp holder and the junction box are manufactured by different tooling moulds, and this arrangement has drawbacks of redundant tooling moulds, high production cost, complicated assembly process, and low yield rate. Further, this prior design has poor interchangeability, since each type of the junction boxes is specified for one wiring type. Moreover, the wiring is fixed on the junction box only with screws, which means a screw driver becomes one key tool for connecting wiring. Therein, the wiring operation will be impossible when no screw driver in hand, such that it is inconvenient for the wiring connection.

SUMMARY OF THE INVENTION

[0003] In view of the above, the present invention provides a lamp assembly and an integrated junction box thereof, to provide a solution for aforementioned redundant tooling mould, high cost, complicated assembly process, and low yield rate in the prior art lamp technology.

[0004] In view of the above purpose, the present invention provides an integrated junction box, which includes a terminal receptacle and a lamp holder fixed to the terminal receptacle. The terminal receptacle includes an outlet opening configured for passing an external connecting wire through, and for the external connecting wire to electrically connect the terminal receptacle. A cover has a rotatable connection with the terminal receptacle, wherein a rotation of the cover to the terminal receptacle forms an open status or a tight status between the outlet opening and the cover, for dis-attaching the external connecting wire from the outlet opening in the open status, or fixing the external connecting wire in the outlet opening in the tight status.

[0005] Besides, the terminal receptacle may include an enclosure, wherein the outlet opening is disposed above a side wall of the enclosure, wherein a plugging plate is disposed on the cover, to be inserted through and to engage a bottom wall of the enclosure.

[0006] Further, at least two gripping protrusions may be separately disposed on the plugging plate along a

direction of inserting the plugging plate through a plugging hole on the bottom wall of the enclosure, for engaging the gripping protrusions.

[0007] In one embodiment, there are two plugging plates disposed on the cover in parallel, and a count of the corresponding plugging holes in the enclosure is two.

[0008] Besides, a wire tying plate may be formed as downward protrusion on the cover, and the wire tying plate includes a plurality of teeth facing a surface of the enclosure; or, the wire tying plate is disposed on the enclosure with an upward protrusion, and includes the plurality of teeth facing a surface of the cover; or, a first tying plate is disposed on the cover and includes a plurality of first teeth facing the surface of the enclosure, and a second wire tying plate is disposed on the enclosure to correspond to the first tying plate, and the second tying plate includes a plurality of second teeth for matching the first teeth.

[0009] Besides, the outlet opening may include a trapezoid slot on a side of the enclosure facing the cover; the cover further includes a wire pressing plate with a trapezoid shape to be inserted into the outlet opening.

[0010] In one embodiment, the enclosure further includes a first accommodating chamber and a second accommodating chamber communicating with a side of the first accommodating chamber. The outlet opening is disposed above a side wall of the second accommodating chamber. The terminal receptacle further includes a terminal set disposed in the first accommodating chamber, wherein the terminal set faces the outside of the integrated junction box through the outlet opening, and the terminal set includes a wiring hole for receiving and fixing the external connecting wire therein.

[0011] In one embodiment, the terminal set further includes a supporting plate and a terminal assembly disposed on the supporting plate. The wiring hole is disposed in the terminal assembly. A plurality of engaging plates are disposed on a bottom of the first accommodating chamber, and the engaging plates comprise a plurality of engaging protrusions to engage the supporting plate when the supporting plate is inserted between the engaging plates from the outside of the first accommodating chamber.

[0012] In one embodiment, two connecting portions are disposed on an opposite side of the enclosure to the outlet opening, and an extrusion is disposed on the cover to have a rotating pin configured to be inserted into the two connecting portions, which respectively have two plugging holes for fitting the rotating pin.

[0013] The present invention further provides a lamp assembly, which includes: a light source; and the aforementioned integrated junction box, wherein the light source is disposed on the aforementioned lamp holder.

[0014] With the embodiment, the benefits of the present invention: in the integrated junction box, the cover is disposed on the terminal receptacle; the outlet opening is disposed on the terminal receptacle, and the external connecting wire is directly through the outlet open-

ing to electrically connect to the terminal receptacle. When the cover rotates to the tight status, the external connecting wire can be fixed; or, when the cover rotates to the open status, the external connecting wire can be dis-attached. Thus, in the present invention, the disposition of the cover can provide similar functions to the prior junction box and the prior lamp holder. Moreover, the conduction wire between the prior junction box and the prior lamp holder can be excluded, such that higher reliability, less tooling mould(s), simpler production process, and higher yield rate can be achieved. Besides, the step of dis-attaching or fixing of the external connecting wire becomes much easier by merely rotating the cover in different directions to the terminal receptacle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The objectives, technical details, features, and effects of the present invention will be better understood with regard to the detailed description of the embodiments below, with reference to the drawings. The figures in the following description are for illustration purpose, but not to limit the scope of the present invention. Those who are skilled in the art can modify the embodiments with reference to the figures, to obtain new embodiments without any creative labor.

Figs. 1 and 2 are two schematic 3D views of the integrated junction box in different angle of view, according to one embodiment of the present invention.

Fig. 3 is a schematic view of the integrated junction box when the cover rotates to an open status between the outlet opening and the cover according to one embodiment of the present invention.

Figs. 4 and 5 are two schematic explosion views of the integrated junction box according to one embodiment of the present invention.

Fig. 6 is a schematic view of the lamp assembly according to one embodiment of the present invention.

Fig. 7 is a schematic view of the integrated junction box with a controlling component according to the present invention.

[0016] The marks in the figures are listed as follows: 100: integrated junction box; 1:terminal receptacle; 10:enclosure; 11:first accommodating chamber; 12: outlet opening; 13: second accommodating chamber; 14: plugging hole; 15: positioning plate; 16: connecting portion; 161: plugging hole; 17: engaging plate; 171: engaging protrusion; 18: second accommodating chamber; 181: boss hole post; 20: over; 21: plugging plate; 22: gripping protrusion; 23: wire pressing plate; 24: wire tying plate; 241: teeth; 25: extrusion; 26: rotating pin; 30: terminal set; 31: supporting plate; 32: terminal assembly;

33:terminal; 34: wiring hole; 35: terminal clamp; 40: lamp holder; 41: communicating hole; 42: aligning hole; 50:controlling component; 60: light source; and 200: lamp assembly.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] The drawings as referred to throughout the description of the present invention are for illustrative purpose only, to show the interrelations between the components, but not drawn according to actual scale.

[0018] The embodiments of the present invention are elaborated in detail below with reference to the figures, wherein the same or similar marks in the figures can refer to the same or similar elements, or elements having the same or similar functions. The embodiments described below with reference to the figures are exemplified and illustrative, but not to limit the scope of the present invention.

[0019] In the specification of the present invention, the terms "length", "width", "upper", "lower", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inside", "outside", etc., are used for illustrating relative positional or directional concept, but not to indicate or imply the precise directional or positional relations between elements, device, operation step, or mechanism in the present invention.

[0020] Moreover, the terms "first" and "second" are used for descriptive purposes only and not to indicate or imply an importance priority, or to limit the number of the features in the disclosure. Thus, features defined by "first" and "second" may include one or more of the features, either explicitly or implicitly. In the present invention, the term of "a plurality" corresponds to two or more; or the term of "a plurality" corresponds to another number if specified otherwise.

[0021] In the present invention, the terms "installation", "connected", "connected", "fixed" and the like, shall be understood broadly; for example, the terms may include a fixed connection or a detachable, unless if defined otherwise. The terms "connected", or "integrated", may be based on mechanical or electrical point of view. The term "connected" can be directly connected, or indirectly connected through an intermediate element, which can be an internal communication between two components or an interaction of two components. Those skilled in the art can understand the meanings according to the specification.

[0022] With reference to Figs. 1 to 5, the present invention provides an integrated junction box 100, which includes a terminal receptacle 1 and a lamp holder 40 fixed to the terminal receptacle 1. The terminal receptacle 1 includes an outlet opening 12 configured for passing an external connecting wire through, to directly and electrically connect the terminal receptacle 1 with the external connecting wire. A cover 20 has a rotatable connection with the terminal receptacle 1, wherein a rotation of the cover 20 to the terminal receptacle 1 forms an open status

(Fig. 3) or a tight status (Fig. 1) between the outlet opening 12 and the cover 20. In the tight status, the cover 20 rotates to form a tight space between the outlet opening 12 and the cover 20 for fixing the external connecting wire in the outlet opening 12. In the open status, the cover 20 rotates to leave an open space above the outlet opening 12 available for dis-attaching the external connecting wire from the outlet opening 12.

[0023] In the aforementioned embodiment, the cover 20 is disposed on the terminal receptacle 1. The outlet opening 12 is disposed above the terminal receptacle 1, and the external connecting wire may directly pass through the outlet opening 12 to electrically connect the terminal receptacle 1. When the cover 20 rotates to the tight status, this operation can fix a portion of the external connecting wire in the outlet opening 12. When the cover 20 opens up (rotates to the open status), it may dis-attach the external connecting wire from the outlet opening 12. The disposition of the cover 20, can integrate the terminal receptacle 1 and the lamp holder 40 into one piece structure. Thus other conducting wires between the terminal receptacle 1 and the lamp holder 40 can be excluded, such that higher reliability, less tooling mould(s), simpler production process, and higher yield rate can be achieved. The cover 20 and the terminal receptacle 1 construct an assembly capable of forming the open status or the tight status without other tools, wherein a step of dis-attaching or fixing of the external connecting wire becomes much easier by merely rotating the cover 20 to/off the terminal receptacle 1.

[0024] Besides, the terminal receptacle 1 may include an enclosure 10. The outlet opening 12 is disposed above a side wall of the enclosure 10. A plugging plate 21 is disposed on the cover 20, to be inserted through and to engage a bottom wall of the enclosure 10. The cover 20, the enclosure 10, and the plugging plate 21 are substantially plastic components, which have good insulation and elastic capabilities. The cover 20 can engage the enclosure 10 with the elastic capability of the plugging plates 21, which provides a convenience of closing and opening the cover 20. When closing the cover 20, a step of pressing downward the cover 20 can make the plugging plates 21 engage the enclosure 10. When opening the cover 20, a step of pulling upward the cover 20 with an elastic deformation in the plugging plates 21 can dis-attach the plugging plates 21 from the enclosure 10.

[0025] Further, at least two gripping protrusions 22 may be separately disposed on the plugging plates 21 along a direction of inserting the plugging plate through a plugging hole 14 on the enclosure, wherein the plugging hole 14 is disposed on the bottom wall of the enclosure 10, for engaging the gripping protrusions 22. Corresponding to various inserting depth requirements of the plugging plates 21, different ones of the gripping protrusions 22 on the plugging plate 21 can be used to engage the plugging holes 14; thereby, the outlet opening 12 has an adjustable size. When the external connecting wire is thinner, the plugging plates 21 can have deeper inserting

depths and the outlet opening 12 becomes smaller such that the external connecting wire can be fixed. Or, when the external connecting wire is thicker, the plugging plates 21 can have shallower inserting depths and the outlet opening 12 becomes bigger in correspondence with the thicker external connecting wire. Therefore, the at least two gripping protrusions 22 can be used to adjust the inserting depths of the plugging plates 21, for adjusting the size of the outlet opening 12 for fitting the sizes of the external connecting wires, such that different sizes of the external connecting wires according to various customer's requirements, can be used in the integrated junction box of the present invention. By the size adjustment of the outlet opening 12, the different sizes of the external connecting wires used in the integrated junction box can meet test requirements with a pull force greater than 60N.

[0026] In one embodiment, the gripping protrusions 22 may be in a form of saw teeth.

[0027] In one embodiment, a count of the plugging plates on the cover is two, which are disposed on the cover 20 in parallel, and a count of the corresponding plugging holes on the enclosure 10 are two.

[0028] In one embodiment, a wire tying plate 24 may be formed as downward protrusion on the cover 20, and the wire tying plate 24 includes a plurality of teeth 241 facing a surface of the enclosure 10. Or, the wire tying plate is disposed on the enclosure 10 with an upward protrusion, and includes the plurality of teeth facing a surface of the cover 20; or, a first tying plate is disposed on the cover 20 and includes a plurality of first teeth facing the surface of the enclosure 10, and a second wire tying plate is disposed on the enclosure 10 to correspond to the first tying plate, and the second tying plate includes a plurality of second teeth corresponding to the first teeth.

In Fig. 3, a positioning plate 15 is disposed on the enclosure 10, wherein the positioning plate 15 faces the wire tying plate 24. Thereby, a second positioning function is built inward from the outlet opening 12, and it can provide a further fixing function over the external connecting wires. The teeth 241 on the wire tying plate 24, can increase friction between the wire tying plate 24 and the external connecting wires, for securing that the electrical connection between the external connecting wires and the terminal receptacle 1 is more reliable, to avoid the external connecting wires from falling off. Or, in one embodiment, the wire tying plate 24 is disposed, and the positioning plate 15 is excluded. Or, the wire tying plate 24 may be disposed on the enclosure 10, and the teeth are disposed on the wire tying plate 24 to face a surface of the cover 20. Alternatively, a first tying plate is disposed on the cover 20 and includes a plurality of first teeth facing the surface of the enclosure 10, and a second wire tying plate is disposed on the enclosure 10 to correspond to the first tying plate, and the second tying plate includes a plurality of second teeth corresponding to the first teeth. The teeth on corresponding sides can make the fixing of the external connecting wire more reliable.

[0029] Besides, the outlet opening 12 may include a

trapezoid slot on a side of the enclosure 10 to face the cover 20. The cover 20 may further include a wire pressing plate 23 with a trapezoid shape to be inserted into the outlet opening 12. Corresponding to various inserting depths of the plugging plates 21, the wire pressing plate 23 correspondingly has different inserting depths into the outlet opening 12. Thereby, the outlet opening 12 may have adjustable sizes. By the aforementioned operation of the outlet opening 12 and the wire pressing plate 23, the size adjustment of the outlet opening 12 can be further secured, for fixing various types of the external connecting wires.

[0030] The enclosure 10 is in a quasi-cylindrical shape. The enclosure 10 further includes a first accommodating chamber 11 and a second accommodating chamber 13 communicating with a side of the first accommodating chamber 11 (the second accommodating chamber 13 communicating the first accommodating chamber 11). The first accommodating chamber 11 is also in a quasi-cylindrical shape. The outlet opening 12 is disposed above a side wall of the second accommodating chamber 13. The terminal receptacle 1 further includes a terminal set 30 disposed in the first accommodating chamber 11, wherein the terminal set 30 directly faces the outside of the integrated junction box 100 through the outlet opening 12, and the terminal set 30 includes a wiring hole 34 for receiving and fixing the external connecting wire therein. Specifically, a terminal clamp 35 is disposed on the terminal set 30, wherein when the external connecting wire extends into the wiring hole 34, the external connecting wire can be clamped and fixed by pressing the terminal clamp 35. The external connecting cable can be released by pressing the terminal clamp 35 again.

[0031] The terminal set 30 further includes a supporting plate 31 in a rectangular shape and a terminal assembly 32 disposed on the supporting plate 31. The wiring hole 34 is disposed in the terminal assembly 32. A plurality of engaging plates 17 are disposed on a bottom of the first accommodating chamber 11, and the engaging plates 17 respectively includes a plurality of engaging protrusions 171, each of which includes inward-inclined ramp. When the supporting plate 31 is inserted between the engaging plates 17 by sliding a plurality of edges of the supporting plate 31 along the ramps of the engaging plates 17, the inward-inclined ramps engage the supporting plate 31; thereby the terminal set 30 is secured in the enclosure 10.

[0032] In one embodiment, two connecting portions 16 are disposed on an opposite side of the enclosure 10 to the outlet opening 12, and an extrusion 25 is disposed on the cover 20 with a rotating pin 26, which is configured to be inserted into the two connecting portions 16, wherein the two connecting portions 16 respectively have two plugging holes 161 for fitting the rotating pin 26. Therefore, the rotation connection between the cover 20 and the enclosure 10 can be realized with the connection between the rotating pin 26 and the plugging holes 161.

[0033] In one embodiment, a third accommodating

chamber 18 (Fig. 5) is disposed on a back of the enclosure 10 which is opposite to the first accommodating chamber 11. A lamp holder 40 is partially inserted into and fixed in the third accommodating chamber 18. Specifically, a boss hole post 181 (Fig. 5) is disposed in the third accommodating chamber 18, the lamp holder 40 includes an aligning hole 42 configured to be inserted by the boss hole post 181. The lamp holder 40 may be fixed by a screw inserting into the boss hole post 181. The lamp holder 40 is partially inserted into the third accommodating chamber 18, to assembly the lamp holder 40 on the enclosure 10 to form a one piece structure, such that the entire junction box becomes more compact. The communicating hole 41 communicates the third accommodating chamber 18 and the first accommodating chamber 11, such that the electrical connection between the lamp holder 40 and the terminal set 30 can be realized by the terminal 33 without the prior conducting wire, which makes the internal structure simpler.

[0034] Please refer to Fig. 6, wherein the present invention further provides a lamp assembly 200, which includes: a light source 60; and the integrated junction box 100, wherein the light source 60 is disposed on the lamp holder 40 of the integrated junction box 100. With the one piece structure of the integrated junction box 100, the light source 60 is directly disposed on the lamp holder 40, such that higher reliability, less tooling mould(s), simpler production process, and higher yield rate can be achieved. Besides, wire connection can be done by merely rotating the cover 20 to/off the terminal receptacle 1.

[0035] With reference to Fig. 7, the integrated junction box 100 may further include a controlling component 50. According to the present invention, the controlling component 50 includes at least one of a dimmer controller, a proximity sensor, a timer, a wireless controller, and an ambient light sensor.

[0036] For example, when the controlling component 50 includes the dimmer controller, which may control a brightness of the light source 60. Further, when the controlling component 50 includes the dimmer controller and the proximity sensor, the controlling component 50 may control the brightness of the light source 60, according to an object sensing result obtained by the proximity sensor. When the object is approaching to the integrated junction box 100, the brightness of the light source 60 is controller to be higher. When the object is leaving from the integrated junction box 100, the brightness of the light source 60 is controller to be lower.

[0037] In one embodiment, when the controlling component 50 includes the proximity sensor but no dimmer controller, the controlling component 50 can sense the approaching object to determine to turning on the light source disposed on the integrated junction box.

[0038] In one embodiment, when the controlling component 50 includes the timer, the controlling component 50 can control the light source 60 to turn off after a time period of turning on the light source 60. In one embodi-

ment, the time period can be since turning on the light source 60 by sensing the approaching object.

[0039] In one embodiment, when the controlling component 50 includes the wireless controller, the controlling component 50 can receive a wireless signal to determine to turning on the light source 60.

[0040] In one embodiment, when the controlling component 50 includes the ambient light sensor, the controlling component 50 can sensing an ambient light status to determine to turning on/off the light source 60 disposed on the integrated junction box. For example, when the ambient light sensor determines a daylight status, the controlling component 50 turns off the light source 60; or, when the ambient light sensor determines a nighttime status, the controlling component 50 turns on the light source 60.

[0041] The present invention has been described in considerable detail with reference to certain preferred embodiments thereof. It should be understood that the description is for illustrative purpose, not for limiting the scope of the present invention. Those skilled in this art can readily conceive variations and modifications within the spirit of the present invention. Besides, an embodiment or a claim of the present invention does not need to attain or include all the objectives, advantages or features described in the above. The abstract and the title are provided for assisting searches and not to be read as limitations to the scope of the present invention. It is not limited to each of the embodiments described hereinbefore to be used alone; under the spirit of the present invention, two or more of the embodiments described hereinbefore can be used in combination. For example, two or more of the embodiments can be used together, or, a part of one embodiment can be used to replace a corresponding part of another embodiment.

Claims

1. An integrated junction box (100), comprising:

a terminal receptacle (1), comprising an outlet opening (12) configured for passing an external connecting wire through, to electrically connect the terminal receptacle (1);

a cover (20), having a rotatable connection with the terminal receptacle (1), wherein a rotation of the cover (20) to the terminal receptacle (1) forms an open status or a tight status between the outlet opening (12) and the cover (20), for dis-attaching the external connecting wire from the outlet opening (12) in the open status, or fixing the external connecting wire between the outlet opening (12) and the cover (20) in the tight status; and

a lamp holder (40), fixed to the terminal receptacle (1).

2. The integrated junction box of claim 1, wherein the terminal receptacle further comprises an enclosure and the outlet opening is disposed above a side wall of the enclosure, wherein a plugging plate is disposed on the cover, to be inserted through and to engage a bottom wall of the enclosure.

3. The integrated junction box of claim 2, wherein at least two gripping protrusions are separately disposed on the plugging plate along a direction of inserting the plugging plate through a plugging hole on the enclosure, wherein the plugging hole is disposed on the bottom wall of the enclosure, for engaging the gripping protrusions.

4. The integrated junction box of claim 3, comprising two plugging plates, which are disposed on the cover in parallel, and a count of the corresponding plugging holes on the enclosure are two.

5. The integrated junction box of claim 2, wherein a wire tying plate is formed as downward protrusion on the cover, and the wire tying plate comprises a plurality of teeth facing a surface of the enclosure; or, the wire tying plate is disposed on the enclosure with an upward protrusion, and the wire tying plate is disposed on the enclosure and comprises the plurality of teeth facing a surface of the cover; or, a first tying plate is disposed on the cover and comprises a plurality of first teeth facing the surface of the enclosure, and a second wire tying plate is disposed on the enclosure to correspond to the first tying plate, and the second tying plate comprises a plurality of second teeth corresponding to the first teeth.

6. The integrated junction box of claim 2, wherein the outlet opening comprises a trapezoid slot on a side of the enclosure facing the cover; the cover further comprises a wire pressing plate with a trapezoid shape to be inserted into the outlet opening.

7. The integrated junction box of claim 2, 3, 4, or 5, wherein the enclosure further comprises a first accommodating chamber and a second accommodating chamber communicating with a side of the first accommodating chamber, the outlet opening disposed above a side wall of the second accommodating chamber, the terminal receptacle further comprising a terminal set disposed in the first accommodating chamber, the terminal set facing to the outside of the integrated junction box through the outlet opening, and the terminal set comprising a wiring hole for receiving and fixing the external connecting wire therein.

8. The integrated junction box of claim 7, wherein the terminal set comprises a supporting plate and a terminal assembly disposed on the supporting plate;

the wiring holes are disposed in the terminal assembly; a plurality of engaging plates are disposed on a bottom of the first accommodating chamber, and comprise a plurality of engaging protrusions to engage the supporting plate when the supporting plate is inserted between the engaging plates. 5

9. The integrated junction box of claim 2, wherein two connecting portions are disposed on opposite sides of the enclosure to the outlet opening, and an extrusion is disposed on the cover to have a rotating pin configured to be inserted into the two connecting portions, which respectively have two plugging holes for fitting the rotating pin. 10

10. The integrated junction box of claim 1, further comprising a dimmer controller, for controlling a brightness of a light source disposed on the integrated junction box. 15

11. The integrated junction box of claim 1, further comprising a proximity sensor, for sensing an approaching object to determine to turning on a light source disposed on the integrated junction box. 20

12. The integrated junction box of claim 11, further comprising a timer, for controlling the light source to turn off after a time period of turning on a light source by sensing the approaching object. 25

13. The integrated junction box of claim 1, further comprising a wireless controller, for receiving a wireless signal to determine to turning on a light source disposed on the integrated junction box. 30

14. The integrated junction box of claim 1, further comprising an ambient light sensor, for sensing an ambient light status to determine to turning on/off a light source disposed on the integrated junction box. 35

15. A lamp assembly (200), comprising:
 a light source (60); and
 an integrated junction box (100) according to any one of claims 1 to 14; 40
 wherein the light source (60) is disposed on the integrated junction box (100). 45

50

55

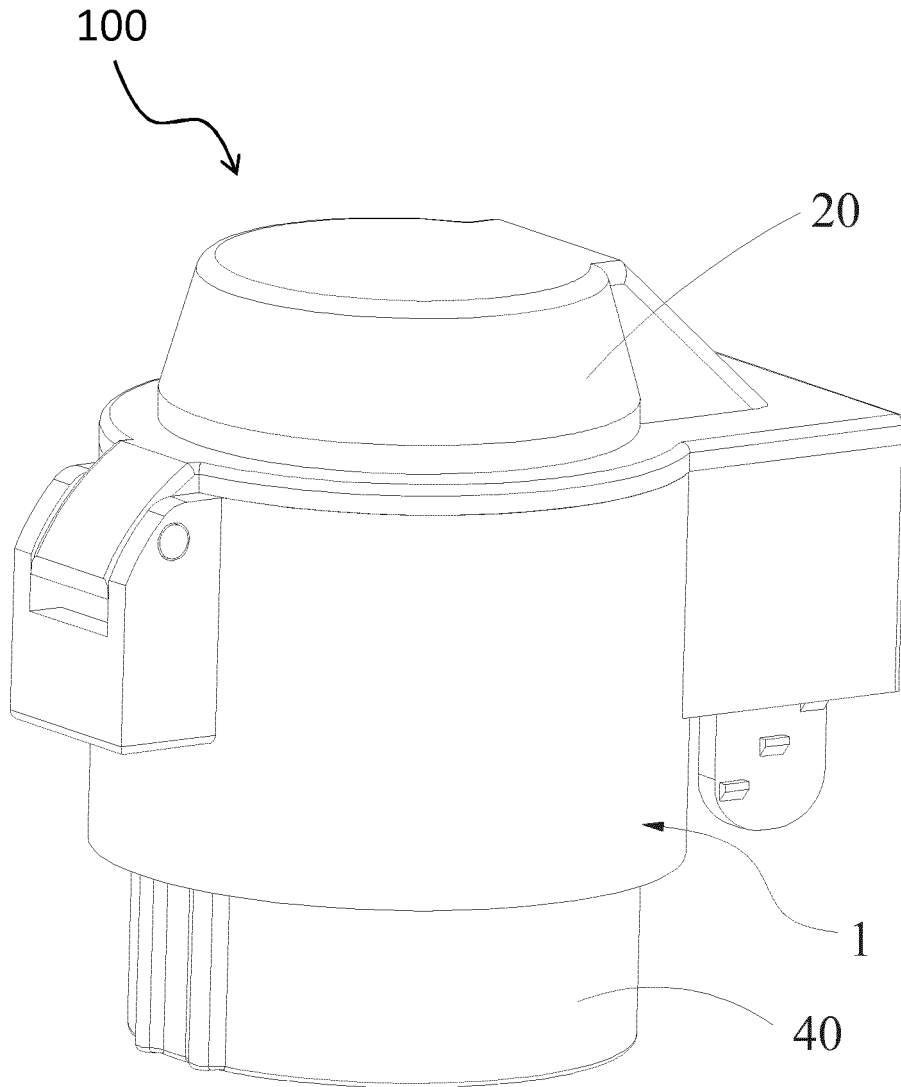


Fig. 1

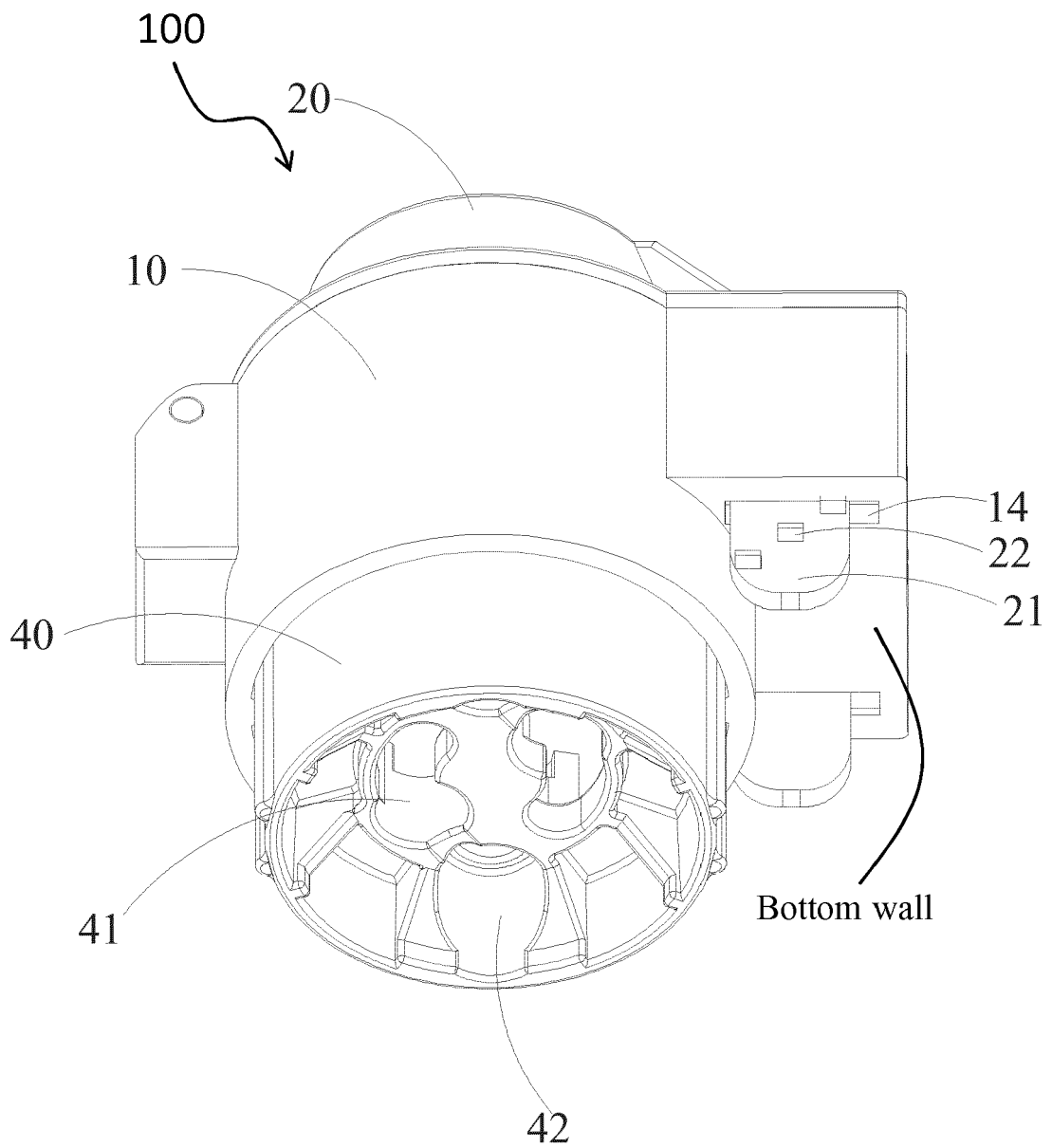


Fig. 2

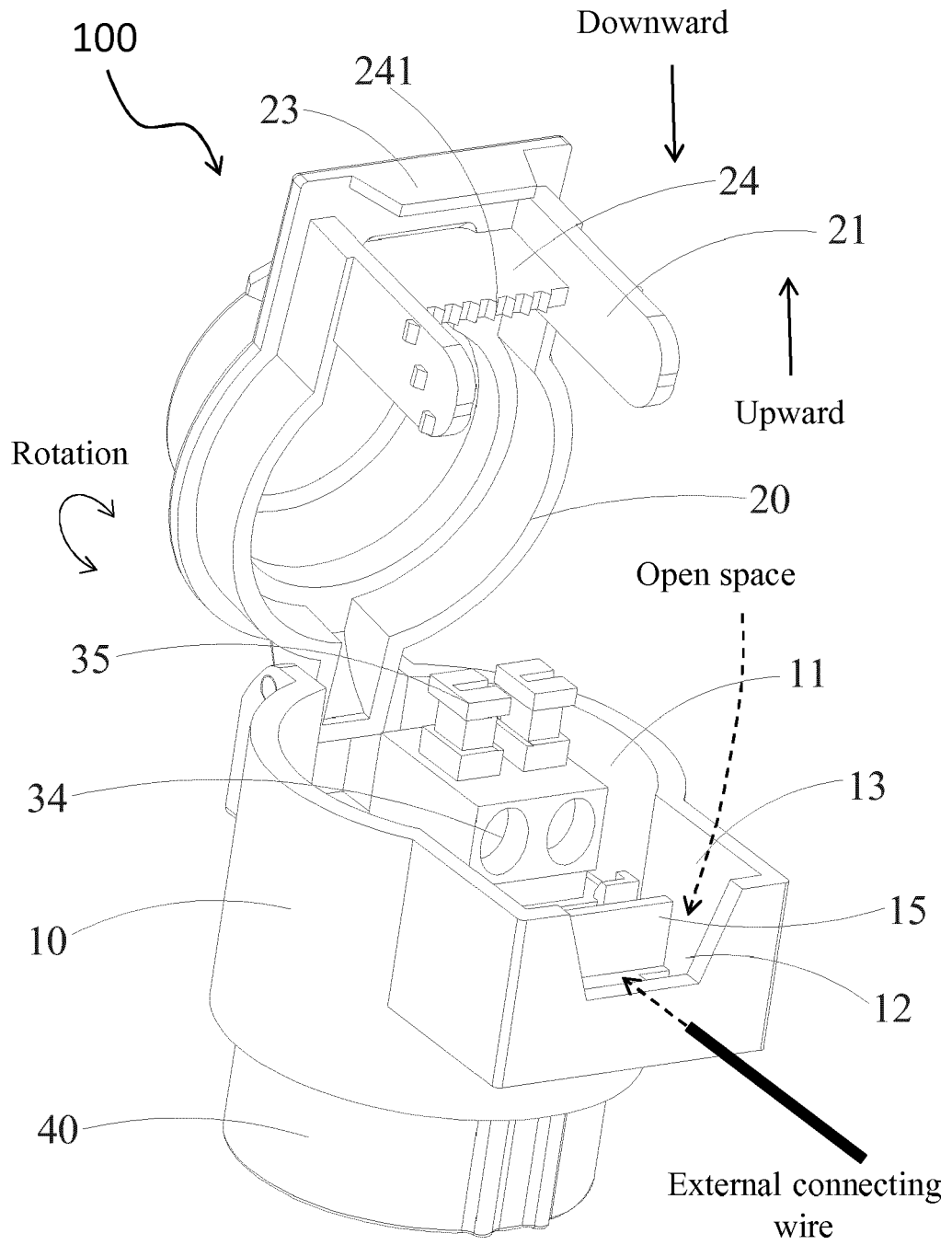


Fig. 3

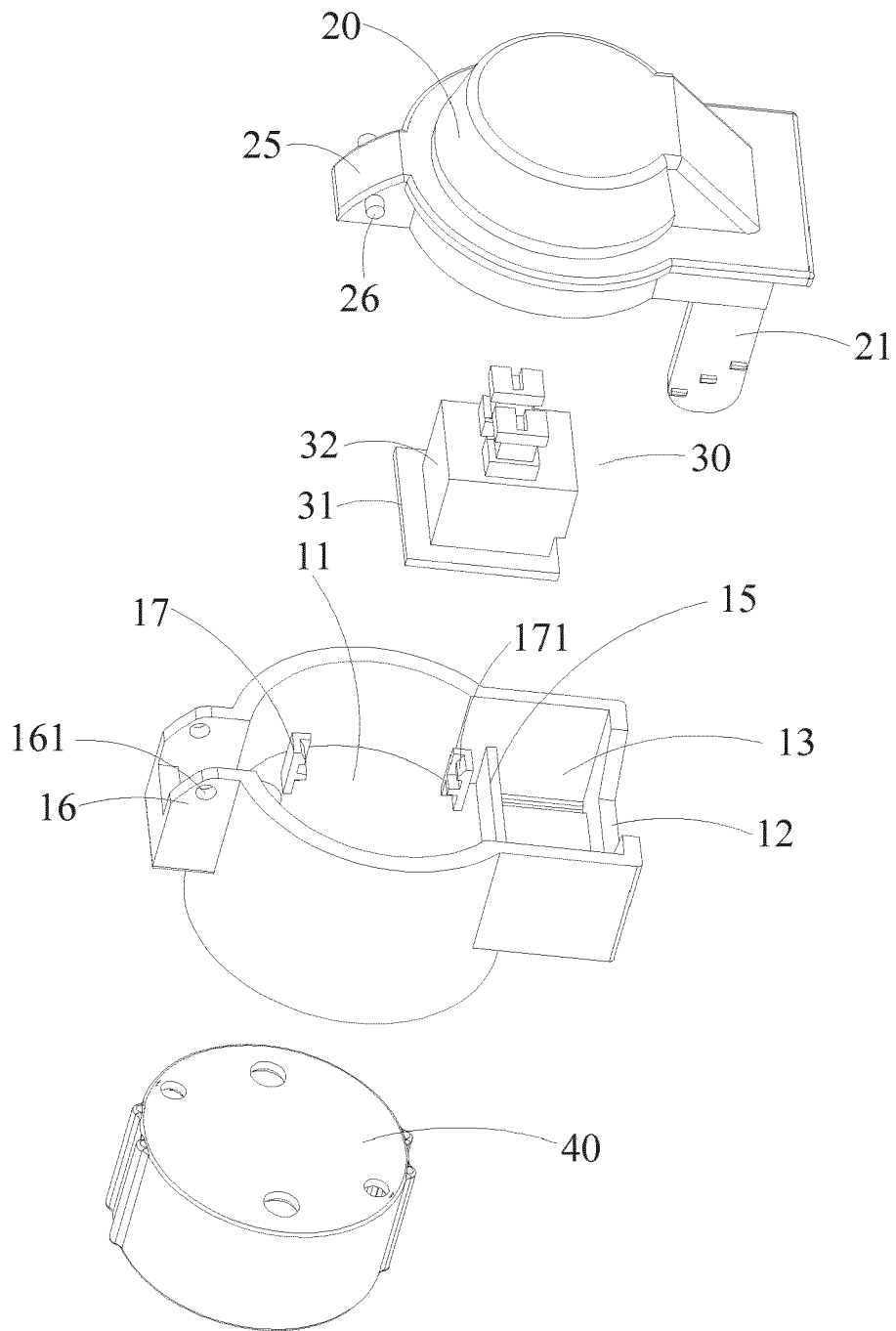


Fig. 4

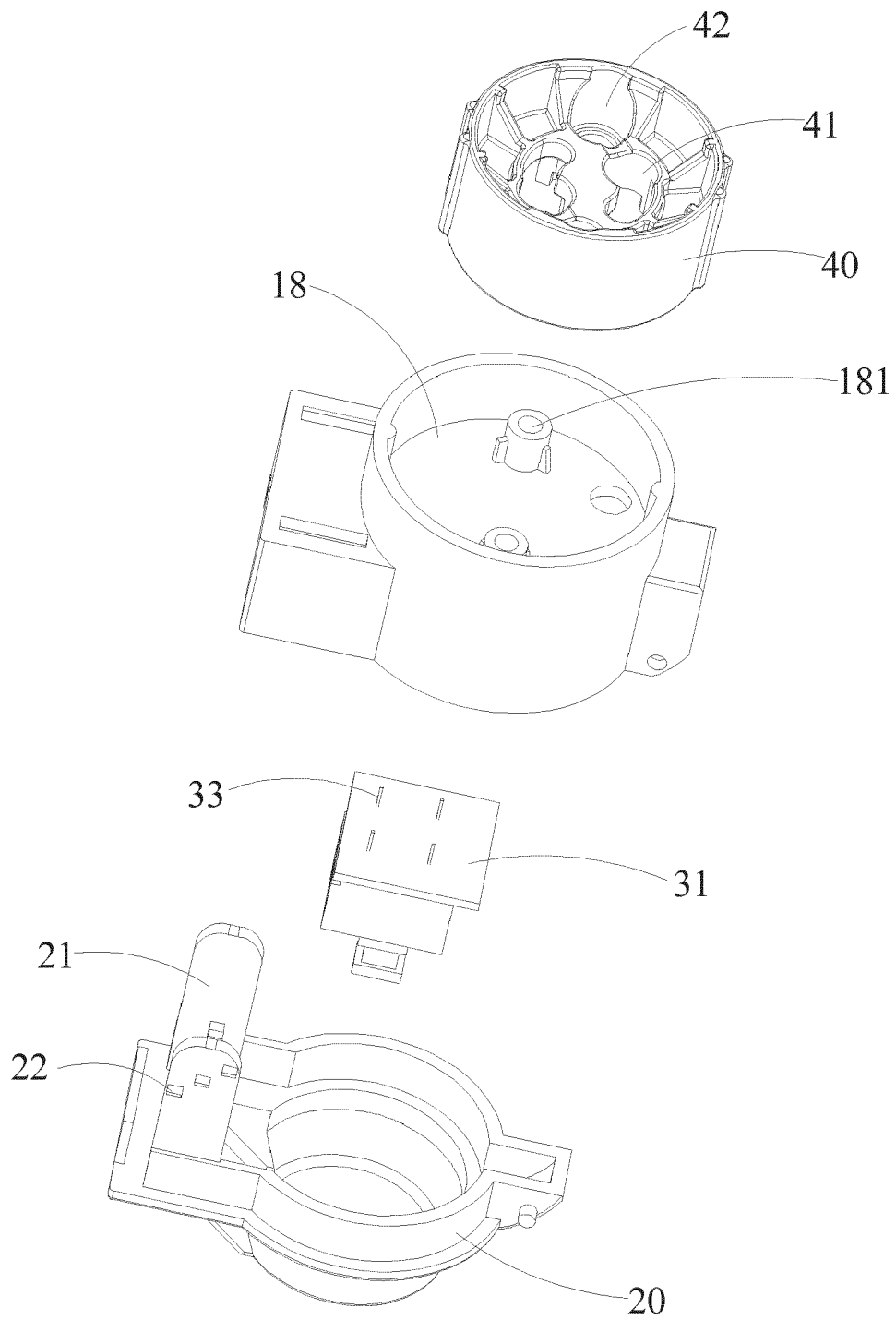


Fig. 5

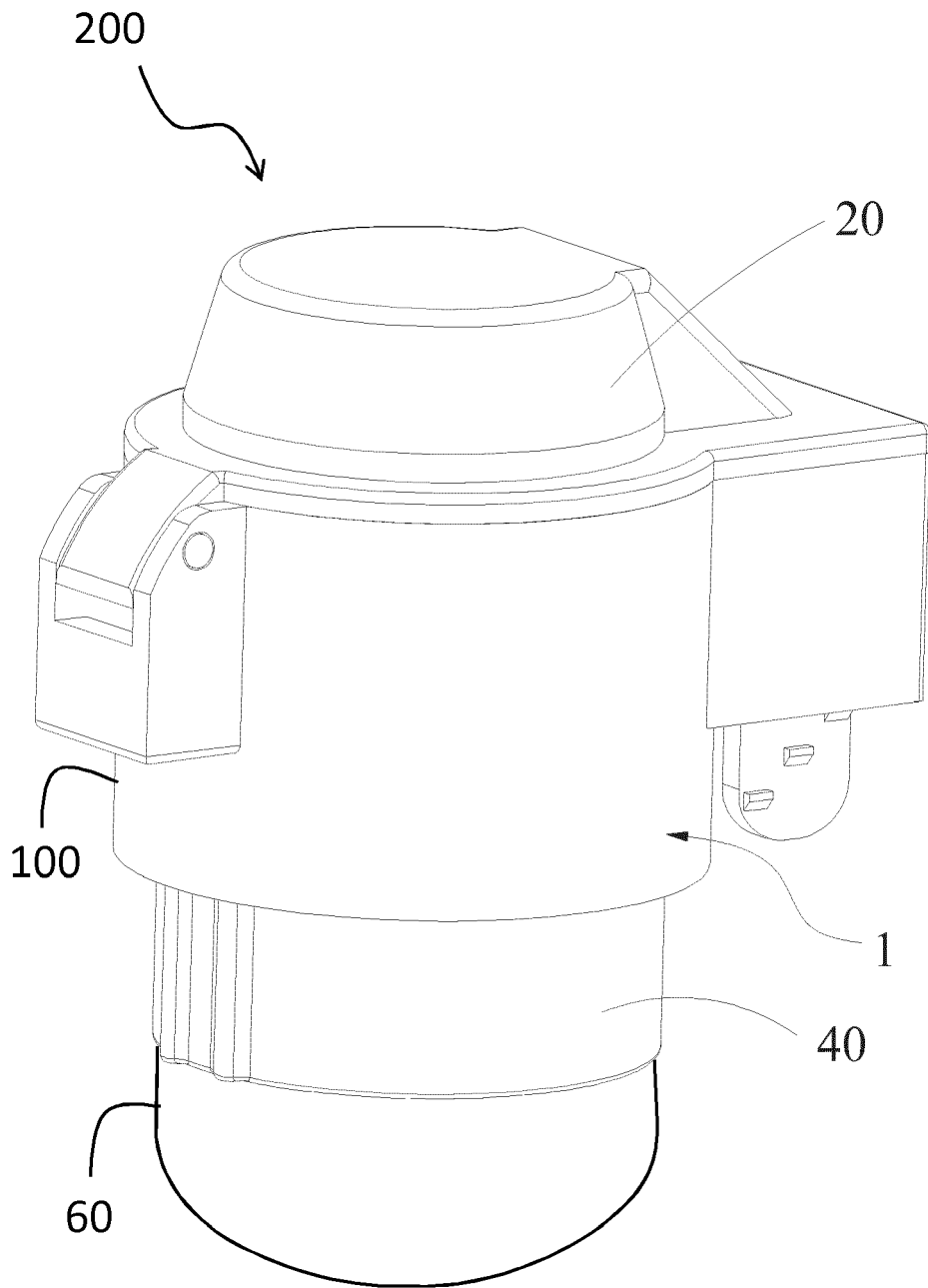


Fig. 6

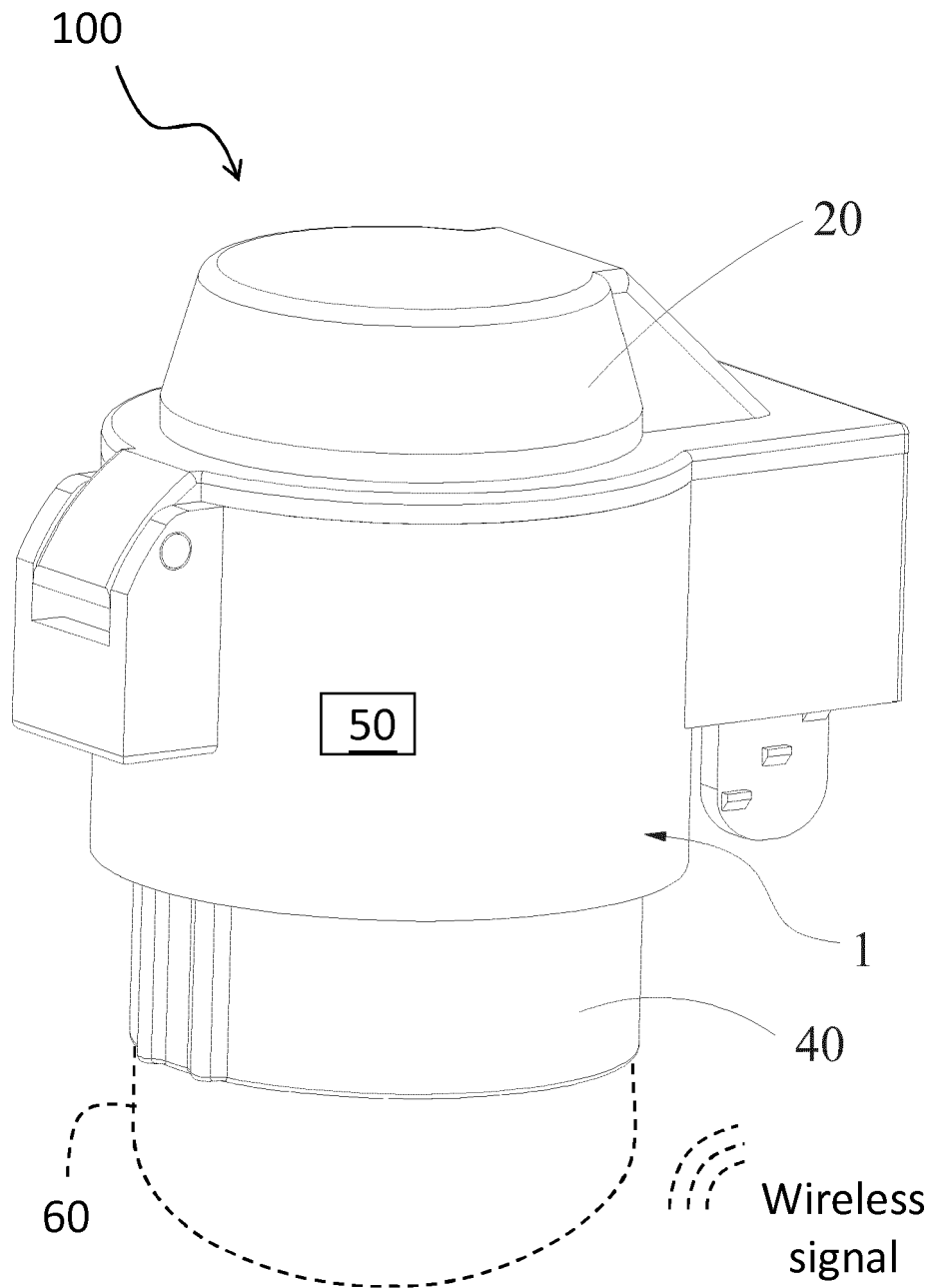


Fig. 7



EUROPEAN SEARCH REPORT

Application Number
EP 19 16 0094

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	GB 2 322 484 A (ILLUMA LIGHTING LTD [GB]) 26 August 1998 (1998-08-26) * abstract; figure 1 *	1-15	INV. H01R13/58 H01R33/22
Y	US 5 474 467 A (CHEN MING-HSIUNG [TW]) 12 December 1995 (1995-12-12) * figure 1 *	1-15	ADD. H01R13/447
Y	FR 2 981 433 A1 (LUCIBEL SA [FR]) 19 April 2013 (2013-04-19)	5	
A	* figures 6,7 *	1	
A	US 6 010 356 A (HALE SCOT J [US] ET AL) 4 January 2000 (2000-01-04) * figure 8 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			H01R F21V
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 September 2019	Examiner Corrales, Daniel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03/82 (P04/C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 19 16 0094

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-09-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2322484 A	26-08-1998	NONE	
US 5474467 A	12-12-1995	NONE	
FR 2981433 A1	19-04-2013	FR 2981433 A1 WO 2013057418 A1	19-04-2013 25-04-2013
US 6010356 A	04-01-2000	CA 2290215 A1 US 6010356 A US 6135808 A	19-05-2000 04-01-2000 24-10-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82