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(54) LED PLUGGABLE LAMP FACILITATING ASSEMBLY AND PROCESSING METHOD THEREOF

(57) This disclosure discloses an LED pluggable lamp facilitating assembly and a processing method thereof. The LED pluggable lamp includes a light-emitting component (10) including a substrate (11) and LED lamp beads (12) arranged on the substrate; an integrally configured tube body (20) including a first end (21) and a second end (22), and having a base portion (23) for fixing the light-emitting component (10) and a light-transmitting portion (24) opposing to the base portion; a lamp head (30) having conductive elements (31) for connecting to an external power supply, which is disposed at the first end (21) and is welded to an end surface of the first end; a lamp tail (40) disposed at the second end (22) and welded to an end surface of the second end; and a drive power (50) electrically connected to the conductive elements (31) and the light-emitting component (10). This disclosure provides an LED pluggable lamp facilitating assembly. The lamp head (30) and lamp tail (40) are connected to the tube body (20) through welding. The assembly process is simple and convenient, which is conducive to automation production, and the connection is not prone to failure after welding.

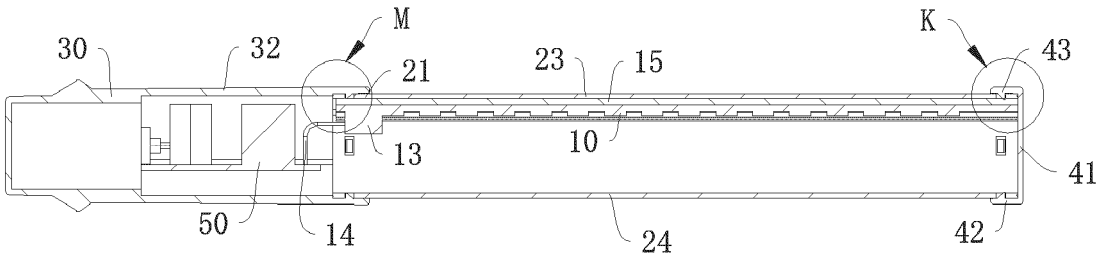

FIG. 4

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to the technical field of lighting devices, and in particular to an LED pluggable lamp facilitating assembly and a processing method thereof.

DESCRIPTION OF THE PRIOR ART

[0002] With the development of technology, LED lighting lamps are applied in various fields. Due to convenience of installation and use, LED pluggable lamps are increasingly favored by users. The existing LED pluggable lamp usually uses screws at both ends of the tube body to connect the lamp head and the lamp tail, which makes assembly difficult and requires the use of tools. The installation steps are cumbersome, the workshop assembly efficiency is low, it is difficult to realize automation production, and the screws are prone to damage, resulting in failure of the connection between the tube body and the lamp head or lamp tail, causing quality problems.

SUMMARY OF THE DISCLOSURE

[0003] The LED pluggable lamp facilitating assembly provided here solves the problems that the assembly of the LED pluggable lamp is cumbersome and inconvenient, and the connection is prone to failure after assembly.

[0004] This disclosure discloses an LED pluggable lamp facilitating assembly, including:

a light-emitting component including a substrate and LED lamp beads arranged on the substrate;
an integrally configured tube body including a first end and a second end, and having a base portion for fixing the light-emitting component and a light-transmitting portion opposing to the base portion;
a lamp head disposed at the first end and welded to an end surface of the first end, the lamp head being provided with a plug and conductive elements for connecting to an external power supply on a side of the lamp head facing away from the tube body;
a lamp tail disposed at the second end and welded to an end surface of the second end; and
a drive power located in the lamp head and electrically connected to the conductive elements and the light-emitting component.

[0005] In the following, several alternatives are provided, but merely as further additions or preferences, instead of as additional limitations to the above-mentioned technical solution. Without technical or logical contradiction, the alternatives can be combined with the above-mentioned technical solution, individually or in combination.

[0006] Optionally, the lamp head further includes a shell, and a side of the shell facing the tube body surrounds the first end of the tube body and the plug is located on a side of the shell facing away from the tube body; and the plug is configured to plug in and match with a socket, and an outer periphery of the plug is further provided with a fastening snap for engaging with the socket.

[0007] Optionally, the shell has step structures located on two sides of the plug respectively, and the conductive elements are two power connection posts which are located on two sides of the plug respectively; and one end of each power connection post is a fixed end connected to a corresponding step structure, the other end extends away from the tube body, and the fixed end extends into an interior of the shell and is provided with an engagement hole on an end surface thereof, and the drive power is provided with leads, and an end of each lead is a rigid rod that is inserted into a corresponding engagement hole.

[0008] Optionally, a plug connector is provided on the substrate and the plug connector is provided with a jack, and the drive power is provided with a pin matching with the jack, thereby realizing electrical connection between the drive power and the light-emitting component through the pin.

[0009] Optionally, the tube body has an axial direction in space, and the first end and the second end are located on two ends in the axial direction respectively; and an insertion direction of the leads into the engagement holes and an insertion direction of the pin into the jack are both in the axial direction.

[0010] Optionally, the tube body has opposite length and width directions in a cross section thereof, the base portion and the light-emitting component are located on one side in the width direction, and the light-transmitting portion of the tube body is located on the other side in the width direction; and the drive power includes a circuit board and a circuit element installed on a side of the circuit board in a thickness direction of the circuit board, and the circuit element, the leads and the pin are all located on the side of the circuit board facing the base portion.

[0011] Optionally, the shell is further connected to the tube body in a snap-fit manner: a first snap is provided on an inner wall of the shell and the tube body is provided with a first snap groove corresponding to the first snap.

[0012] Optionally, an inner wall of the shell is provided with a limiting portion abutting against the tube body and welded with the end surface of the tube body, and the limiting portion is a step surface extending in a circumferential direction of the shell.

[0013] Optionally, the lamp tail is configured as a cap, including a bottom plate and a peripheral edge that extends in a circumferential direction of the bottom plate and surrounds the tube body; and an inner wall of the peripheral edge is provided with a second snap, and the second end is provided with a second snap groove that

matches the second snap so that the peripheral edge and the tube body are connected with each other in a snap fit through the second snap and the second snap groove.

[0014] Optionally, the end surface of the tube body abuts the bottom plate, the bottom plate is provided with a protrusion extending in the circumferential direction of the bottom plate, and the protrusion is melted so that the lamp tail is welded with the tube body.

[0015] This disclosure further provides a processing method for an LED pluggable lamp. The LED pluggable lamp includes a tube body, a light-emitting component located in the tube body, a lamp head and a lamp tail located at two ends of the tube body respectively, and a drive power located in the lamp head. The processing method includes:

installing the light-emitting component into the tube body;
installing the drive power into the lamp head;
pre-positioning the lamp head and the lamp tail on the two ends of the tube body respectively, during which, electrically connecting the drive power and the light-emitting component by plugging; and
fixing the lamp head and the lamp tail to the two ends of the tube body respectively by welding.

[0016] Optionally, the lamp head is provided with a plug and conductive elements for connecting to an external power supply on a side of the lamp head facing away from the tube body, and an end surface of an end of each conductive element extending into an interior of the lamp head is provided with an engagement hole, and the step of installing the drive power into the lamp head includes:

inserting and positioning the drive power into the lamp head in an axial direction of the tube body; and inserting leads of the drive power into corresponding engagement holes.

[0017] Optionally, the step of pre-positioning the lamp head and the lamp tail includes:
disposing the lamp head and the lamp tail respectively around the two ends of the tube body in an axial direction of the tube body, and fitting the same with the tube body by snapping.

[0018] Optionally, the light-emitting component includes a substrate and LED lamp beads arranged on the substrate, a plug connector is provided on the substrate, the plug connector is provided with a jack, and the drive power is provided with a pin that matches the jack.

[0019] The step of electrically connecting the drive power and the light-emitting component includes:
moving the tube body and the lamp head so that the jack and the pin are close to each other until the pin is inserted into the jack in the axial direction of the tube body.

[0020] Optionally, the step of fixing the lamp head and the lamp tail to the two ends of the tube body respectively by welding includes:

confirming that end surfaces of the two ends of the tube body are in contact with the lamp head and the lamp tail respectively; and
applying energy to contact portions to change interface condition of the contact portions until the contact portions are welded and fixed together.

[0021] In the LED pluggable lamp of the present disclosure, the lamp head and the lamp tail are connected to the tube body by welding. The assembly process is simple and convenient, which is conducive to automation production, and the connection is not prone to failure after welding.

BRIEF DESCRIPTION OF DRAWINGS

[0022]

FIG. 1 is a schematic view of an LED pluggable lamp facilitating assembly according to an embodiment of the present disclosure;
FIG. 2 is an exploded view of an LED pluggable lamp facilitating assembly according to an embodiment of the present disclosure;
FIG. 3 is a cross-sectional view along the line of A-A in FIG. 1;
FIG. 4 is a cross-sectional view along the line of B-B in FIG. 1;
FIG. 5 is an enlarged view of portion M in FIG. 4;
FIG. 6 is an enlarged view of portion K in FIG. 4;
FIG. 7 is a cross-sectional view along the line of C-C in FIG. 1;
FIGS. 8 to 10 are schematic views of an LED pluggable lamp facilitating assembly according to an embodiment of the present disclosure from different perspectives with part of the tube body and part of the shell not shown; and
FIG. 11 is a schematic flow chart of a processing method according to an embodiment of the present disclosure.

List of reference signs:

[0023]

10, light-emitting component; 11, substrate; 12, led lamp bead; 13, plug connector; 14, pin; 15, heat sink;

20, tube body; 21, first end; 22, second end; 23, base portion; 24, light-transmitting portion; 25, slide groove; 26, inserting recess;

30, lamp head; 31, conductive element; 31a, engagement hole; 32, shell; 33, first snap; 34, first snap groove; 35, limiting portion; 36, convex rib; 37, plug; 38, fastening snap;

40, lamp tail; 41, bottom plate; 42, peripheral edge; 43, second snap; 44, second snap groove; 45, protrusion; 50, drive power; 51, lead.

DDESCRIPTION OF EMBODIMENTS

[0024] The technical solutions according to the embodiments of the present disclosure will be described clearly and fully in combination with the drawings according to the embodiments of the present disclosure. Obviously, the described embodiments are not all embodiments of the present disclosure, but only part of the embodiments of the present disclosure. Based on the disclosed embodiments, all other embodiments obtained by those skilled in the art without creative work fall into the scope of this specification.

[0025] It should be noted that, when a component is "connected" with another component, it may be directly connected to another component or may be indirectly connected to another component through a further component. When a component is "provided" on another component, it may be directly provided on another component or may be provided on another component through a further component.

[0026] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by a person skilled in the art. The terms in the description of the present disclosure are used to describe specific embodiments, and not to limit the present disclosure. The term "and/or" used herein includes one or more of the listed options in any combinations, or the combination of all of the listed options.

[0027] As shown in FIGS. 1 to 2, the present disclosure discloses an LED pluggable lamp facilitating assembly, including a light-emitting component 10, an integrally configured tube body 20, a lamp head 30, a lamp tail 40 and a drive power 50. The light-emitting component 10 includes a substrate 11 and LED lamp beads 12 arranged on the substrate 11. The integrally configured tube body 20 includes a first end 21 and a second end 22, and has a base portion 23 for fixing the light-emitting component 10 and a light-transmitting portion 24 opposing to the base portion 23. FIG. 7 shows that the cross-section of the tube body 20 has opposite length and width directions. For example, the horizontal direction as shown in FIG. 7 is the width direction, and the base portion 23 and the light-emitting component 10 are located on one side in the width direction and the light-transmitting portion 24 of the tube body 20 is located on the other side in the width direction.

[0028] The light emission of the LED lamp beads 12 is directed toward the light-transmitting portion 24. Nonetheless, the base portion 23 and the light-transmitting portion 24 are not strictly divided regarding the distribution thereof or distinguished regarding the material thereof. For example, all portions of the integrally configured tube body 20 can be made of a light-transmitting material.

[0029] The lamp head 30 includes a shell 32. The lamp head 30 is provided with a plug 37 on the side facing away from the tube body 20, and conductive elements 31 for external power supply. The lamp head 30 is arranged at the first end 21, and the side of the shell 32 facing the tube body 20 surrounds the first end 21 and is welded with the end surface of the first end 21. The plug 37 is used to plug in and match an external socket, and the outer periphery of the plug 37 is further provided with a fastening snap 38 for engaging with the socket. Further, the socket is electrically connected to the conductive elements 31 to provide power to the LED lamp beads 12.

[0030] The lamp tail 40 is arranged on the second end 22 and is welded with the end surface of the second end 22. The drive power 50 is electrically connected to the conductive elements 31 and the light-emitting component 10.

[0031] The end surface of the first end 21 of the tube body 20 is welded with the lamp head 30, and the end surface of the second end 22 of the tube body 20 is welded with the lamp tail 40, facilitating the assembly of the LED pluggable lamp and mechanical automation production, so that the lamp head 30 and the lamp tail 40 would not be easily separated from the tube body 20 after welding. Welding can also provide better sealing.

[0032] In some embodiments, as shown in FIGS. 3 to 6, the opening of the shell 32 surrounds the tube body 20, and the inner wall of the shell 32 is provided with a first snap 33. The tube body 20 surrounded by the shell 32 is provided with a first snap groove 34. The shell 32 and the tube body 20 are in a snap fit. A plurality of first snap grooves 34 can be provided. For example, both sides of the tube body 20 in the width direction of the cross section thereof can each be provided with one or two first snap grooves 34, and both sides in the length direction of the cross section can each be provided with one first snap groove 34. Accordingly, the first snaps 33 match with the first snap grooves 34 regarding the position and number thereof.

[0033] The inner wall of the shell 32 is further provided with a limiting portion 35 that abuts the tube body 20. The limiting portion 35 is a step surface extending along the circumferential direction of the shell 32. The limiting portion 35 is welded with the tube body 20 after ultrasonic treatment.

[0034] In some embodiments, as shown in FIGS. 2 to 4, the inner wall of the shell 32 is provided with convex ribs 36 extending in the axial direction of the shell 32. The convex ribs 36 and the inner wall of the shell 32 clamp and fix the drive power 50 in the shell 32.

[0035] Referring to FIGS. 8 to 10, the shell 32 has step structures on both sides of the plug 37. The conductive elements 31 are two power connection posts, which are respectively located on two sides of the plug 37. One end of the power connection post is a fixed end connected to the corresponding step structure and the other end extends away from the tube body 20. The fixed end also extends into the interior of the shell 32, and is provided

with an engagement hole 31a on the end surface. The drive power 50 located in the lamp head 30 is provided with leads 51. The end of the lead 51 is a rigid rod that is inserted into the corresponding engagement hole 31a. That is, the lead 51 at one end of the drive power 50 is inserted into the interior of the conductive element 31 and connected to the external power supply.

[0036] The substrate 11 of the light-emitting component 10 is provided with a plug connector 13. The plug connector 13 is provided with jacks. The other end of the drive power 50 is provided with pins 14 that match the plug connector 13 to realize electrical connection between the drive power 50 and the light-emitting component 10. The drive power 50 is electrically connected to the external power supply and the light-emitting component 10 in a plug-in manner, which is more convenient to assemble than the traditional welding method.

[0037] The pins 14 include two pins arranged side by side, each of which is roughly L-shaped and extends from the circuit board of the drive power 50 in the thickness direction of the circuit board and then bends toward the light-emitting component 10 until engaging with the plug connector 13.

[0038] The tube body 20 has an axial direction in space, and the insertion direction of the lead 51 into the engagement hole 31a as well as the insertion direction of the pin 14 into the jack are both in the axial direction. Therefore, when assembling the tube body 20 and the lamp head 30, the pins 14 and the plug connector 13 are also connected simultaneously.

[0039] The drive power 50 includes a circuit board and circuit elements installed on one side of the circuit board in the thickness direction. The circuit elements, leads 51 and pins 14 are all located on the side of the circuit board facing the base portion 23. In some embodiments, as shown in FIG. 7, the light-emitting component 10 is further provided with a heat sink 15, the base portion 23 of the tube body 20 is provided with a slide groove 25, and the heat sink 15 is installed in the slide groove 25. The heat sink 15 is provided with an inserting recess 26 in the middle, and the substrate 11 is inserted therein in the heat sink 15 to dissipate heat for the light-emitting component 10 during use.

[0040] The base portion 23 of the tube body 20 and the light-emitting component 10 are located on one side of the tube body 20 in the width direction of the cross section thereof, and the light-transmitting portion 24 of the tube body 20 is located on the other side in the width direction.

[0041] In some embodiments, the lamp tail 40 is a configured as a cap, including a bottom plate 41 and a peripheral edge 42 that surrounds the tube body 20. The inner wall of the peripheral edge 42 is provided with a second snap 43, the second end 22 is provided with a second snap groove 44, and the lamp tail 40 and the tube body 20 are in a snap fit. The end surface of the tube body 20 abuts against the bottom plate 41. The bottom plate 41 is provided with a protrusion 45 extending in the circumferential direction of the bottom plate. After ultrasonic treatment, the protrusion 45 melts so that the lamp tail 40 is welded with the tube body 20. A plurality of second snap grooves 44 can be provided. For example, reference may be made to the arrangement of the first snap grooves 34, and the same applies to the second snap grooves 43.

[0042] Referring to FIG. 11, an embodiment of the present disclosure further provides a processing method for an LED pluggable lamp. The LED pluggable lamp can be the LED pluggable lamp according to the above embodiments. For example, the LED pluggable lamp includes the tube body 20, the light-emitting component 10 in the tube body 20, the lamp head 30 and the lamp tail 40 located at two ends of the tube body 20, respectively, and the drive power 50 located in the lamp head 30. The processing method in this embodiment includes:

installing the light-emitting component 10 into the tube body 20; and

installing the drive power 50 into the lamp head 30, wherein the lamp head 30 is provided with the plug 37 on the side facing away from the tube body 20 and the conductive elements 31 for connecting the external power supply; the conductive element 31 can be fixed to the lamp head in advance and the end surface of the conductive element 31 that extends into the interior of the lamp head 30 is provided with an engagement hole 31a; during installation, the drive power 50 is inserted and positioned into the lamp head 30 in the axial direction of the tube body and the leads 51 of the drive power 50 are inserted into the corresponding engagement holes 31a simultaneously.

[0043] The conductive element 31 generally has a tubular structure. After the lead 51 is inserted into the conductive element 31, it extends out of the side of the conductive element 31 facing away from the tube body 20. Then, a radial clamping force can be applied to the conductive element 31, so that the conductive element 31 is partially deformed to fasten the lead 51, and the excess section of the lead 51 extending out can be cut off.

[0044] The lamp head 30 (together with the drive power 50) and the lamp tail 40 are pre-positioned at two ends of the tube body 20 respectively. During pre-positioning, the lamp head 30 and the lamp tail 40 respectively surround two ends of the tube body 20 in the axial direction of the tube body 20 for pre-positioning, and after that, they are engaged with the tube body 20 respectively by means of snap fit (via the first snaps 33 and the first snap grooves 34, and the second snaps 43 and the second snap grooves 44), and the drive power 50 and the light-emitting component 10 are electrically connected in a plug-in manner.

[0045] The light-emitting component 10 includes a substrate 11 and LED lamp beads 12 arranged on the substrate 11. The substrate 11 is provided with a plug

connector 13. The plug connector 13 is provided with jacks. The drive power 50 is provided with pins 14 that match the jacks. For a circuit connection, the jacks and the pins 14 approach each other as the tube body 20 and the lamp head 30 approach each other until they are inserted one in the other in the axial direction of the tube body 20. The jack penetrates the plug connector 13 to adapt to different insertion depths of the pin 14.

[0046] The lamp head 30 and the lamp tail 40 are fixedly connected to the two ends of the tube body 20 by welding. Specifically, it is confirmed that the two end surfaces of the tube body 20 are in contact with the lamp head 30 and the lamp tail 40, respectively; energy is applied to the contact portions, for example by ultrasonic method, etc., so that the interface condition of the contact portions can be changed after applying energy until the contact portions are welded and fixed together.

[0047] The technical features of the above embodiments can be arbitrarily combined, and not all possible combinations of the technical features of the above embodiments have been described for the sake of brevity of description. However, as long as there is no contradiction in the combination of these technical characteristics, such combination should be regarded as falling into the scope of this specification. When the technical features in different embodiments are shown in the same figure, it can be considered that the figure also discloses a combined embodiment of various embodiments involved.

[0048] The above-described embodiments only illustrate several embodiments of the present disclosure, and the description thereof is specific and detail, but should not be construed as limiting the scope of the patent disclosure. It should be noted that, for those of ordinary skill in the art, several modifications and improvements can be made without departing from the concept of the present disclosure, all of which fall into the protection scope of the present disclosure. Therefore, the protection scope of the present disclosure should refer to the appended claims.

Claims

1. An LED pluggable lamp facilitating assembly, comprising:

   a light-emitting component comprising a substrate and LED lamp beads arranged on the substrate;
   an integrally configured tube body comprising a first end and a second end, and having a base portion for fixing the light-emitting component and a light-transmitting portion opposing to the base portion;
   a lamp head disposed at the first end and welded to an end surface of the first end, the lamp head being provided with a plug and conductive elements for connecting to an external power supply on a side of the lamp head facing away from the tube body;
   a lamp tail disposed at the second end and welded to an end surface of the second end; and
   a drive power located in the lamp head and electrically connected to the conductive elements and the light-emitting component.

2. The LED pluggable lamp facilitating assembly according to claim 1, wherein the lamp head further comprises a shell, and a side of the shell facing the tube body surrounds the first end of the tube body and the plug is located on a side of the shell facing away from the tube body; and
   the plug is configured to plug in and match with a socket, and an outer periphery of the plug is further provided with a fastening snap for engaging with the socket.

3. The LED pluggable lamp facilitating assembly according to claim 2, wherein the shell has step structures located on two sides of the plug respectively, and the conductive elements are two power connection posts which are located on two sides of the plug respectively; and
   wherein one end of each power connection post is a fixed end connected to a corresponding step structure, the other end extends away from the tube body, and the fixed end extends into an interior of the shell and is provided with an engagement hole on an end surface thereof, and wherein the drive power is provided with leads, and an end of each lead is a rigid rod that is inserted into a corresponding engagement hole.

4. The LED pluggable lamp facilitating assembly according to claim 3, wherein a plug connector is provided on the substrate and the plug connector is provided with a jack, and the drive power is provided with a pin matching with the jack, thereby realizing electrical connection between the drive power and the light-emitting component through the pin.

5. The LED pluggable lamp facilitating assembly according to claim 4, wherein the tube body has an axial direction in space, and the first end and the second end are located on two ends in the axial direction respectively; and
   an insertion direction of the leads into the engagement holes and an insertion direction of the pin into the jack are both in the axial direction.

6. The LED pluggable lamp facilitating assembly according to claim 5, wherein the tube body has opposite length and width directions in a cross section thereof, the base portion and the light-emitting component are located on one side in the width direction,

and the light-transmitting portion of the tube body is located on the other side in the width direction; and the drive power comprises a circuit board and a circuit element installed on a side of the circuit board in a thickness direction of the circuit board, and the circuit element, the leads and the pin are all located on the side of the circuit board facing the base portion.

7. The LED pluggable lamp facilitating assembly according to claim 2, wherein the shell is further connected to the tube body in a snap-fit manner, and wherein a first snap is provided on an inner wall of the shell and the tube body is provided with a first snap groove corresponding to the first snap.

8. The LED pluggable lamp facilitating assembly according to claim 2, wherein an inner wall of the shell is provided with a limiting portion abutting against the tube body and welded with the end surface of the tube body, and the limiting portion is a step surface extending in a circumferential direction of the shell.

9. The LED pluggable lamp facilitating assembly according to claim 1, wherein the lamp tail is configured as a cap, comprising a bottom plate and a peripheral edge that extends in a circumferential direction of the bottom plate and surrounds the tube body; and an inner wall of the peripheral edge is provided with a second snap, and the second end is provided with a second snap groove that matches the second snap so that the peripheral edge and the tube body are connected with each other in a snap fit through the second snap and the second snap groove.

10. The LED pluggable lamp facilitating assembly according to claim 9, wherein the end surface of the tube body abuts the bottom plate, the bottom plate is provided with a protrusion extending in the circumferential direction of the bottom plate, and the protrusion is melted so that the lamp tail is welded with the tube body.

11. A processing method for an LED pluggable lamp, wherein the LED pluggable lamp comprises a tube body, a light-emitting component located in the tube body, a lamp head and a lamp tail located at two ends of the tube body respectively, and a drive power located in the lamp head, and the processing methods comprises steps of:

installing the light-emitting component into the tube body;
installing the drive power into the lamp head;
pre-positioning the lamp head and the lamp tail on the two ends of the tube body respectively, during which, electrically connecting the drive power and the light-emitting component by plugging; and
fixing the lamp head and the lamp tail to the two ends of the tube body respectively by welding.

12. The processing method for the LED pluggable lamp according to claim 11, wherein the lamp head is provided with a plug and conductive elements for connecting to an external power supply on a side of the lamp head facing away from the tube body, and an end surface of an end of each conductive element extending into an interior of the lamp head is provided with an engagement hole, and wherein the step of installing the drive power into the lamp head comprises:

inserting and positioning the drive power into the lamp head in an axial direction of the tube body; and
inserting leads of the drive power into corresponding engagement holes.

13. The processing method for the LED pluggable lamp according to claim 11, wherein the step of pre-positioning the lamp head and the lamp tail comprises:
disposing the lamp head and the lamp tail respectively around the two ends of the tube body in an axial direction of the tube body, and fitting the same with the tube body by snapping.

14. The processing method for the LED pluggable lamp according to claim 13, wherein the light-emitting component comprises a substrate and LED lamp beads arranged on the substrate, a plug connector is provided on the substrate, the plug connector is provided with a jack, and the drive power is provided with a pin that matches the jack; and
the step of electrically connecting the drive power and the light-emitting component comprises:
moving the tube body and the lamp head so that the jack and the pin are close to each other until the pin is inserted into the jack in the axial direction of the tube body.

15. The processing method for the LED pluggable lamp according to claim 11, wherein the step of fixing the lamp head and the lamp tail to the two ends of the tube body respectively by welding comprises:

confirming that end surfaces of the two ends of the tube body are in contact with the lamp head and the lamp tail respectively; and
applying energy to contact portions to change interface condition of the contact portions until the contact portions are welded and fixed together.

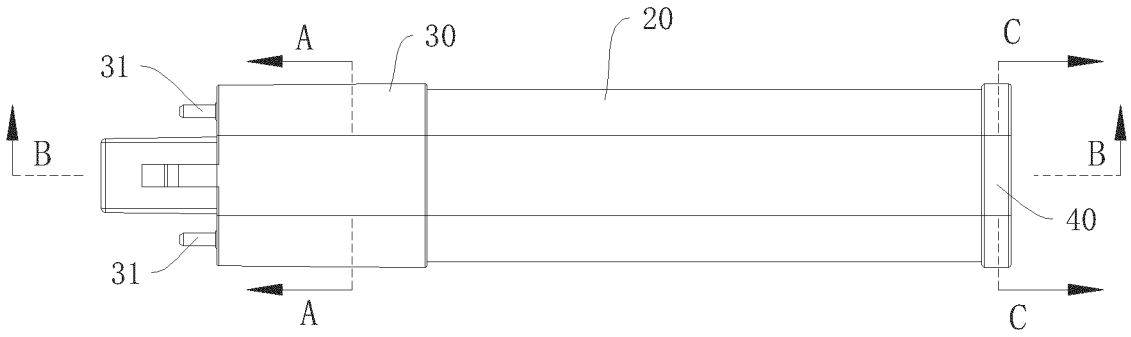
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FIG. 1

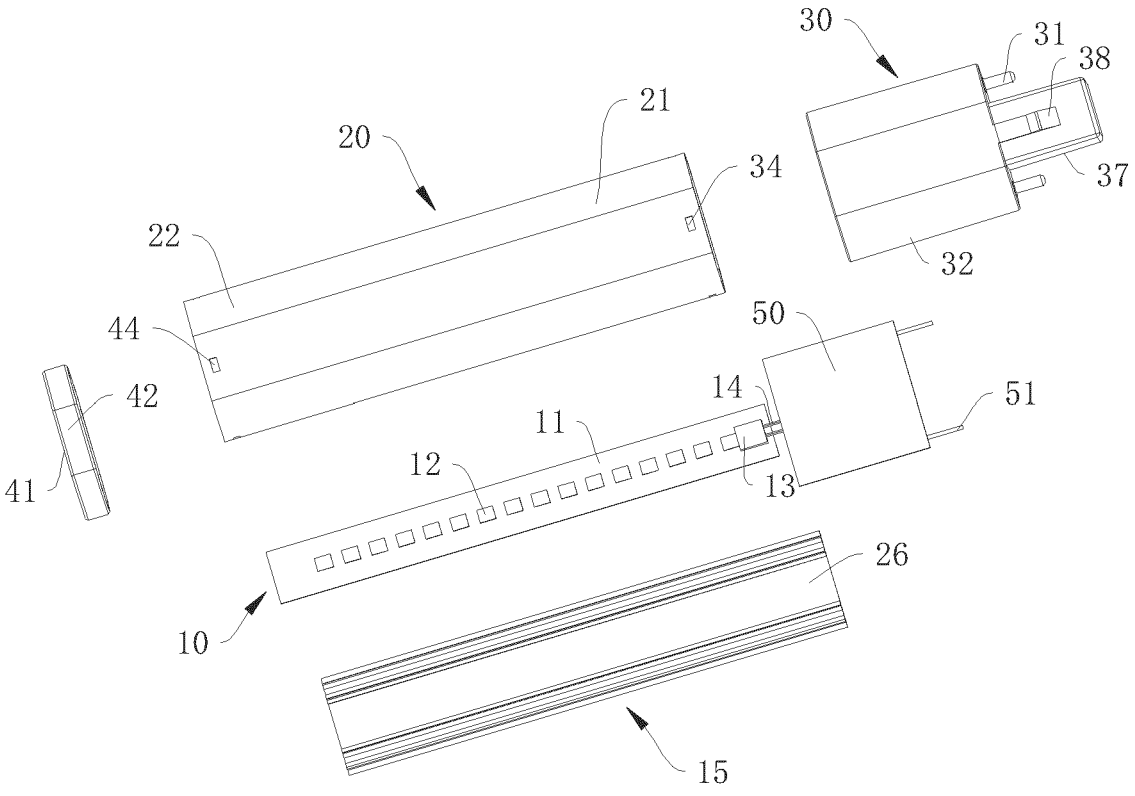
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FIG. 2

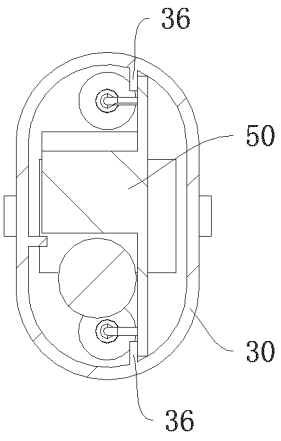

FIG. 3

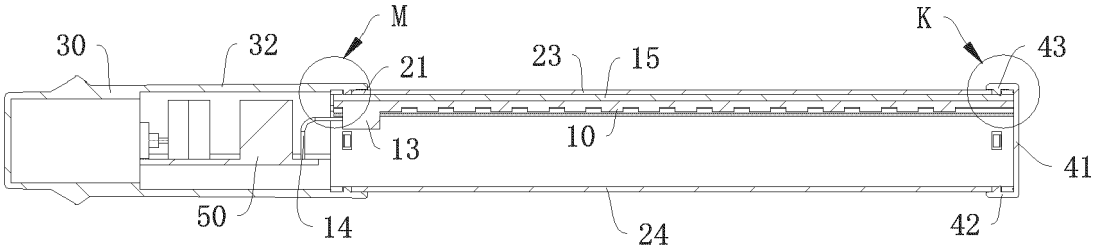

FIG. 4

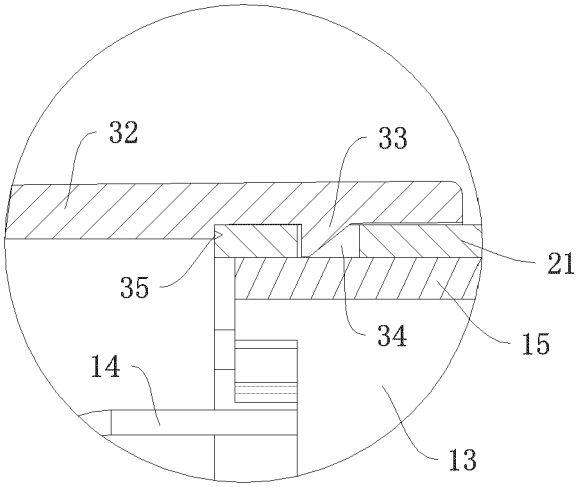

FIG. 5

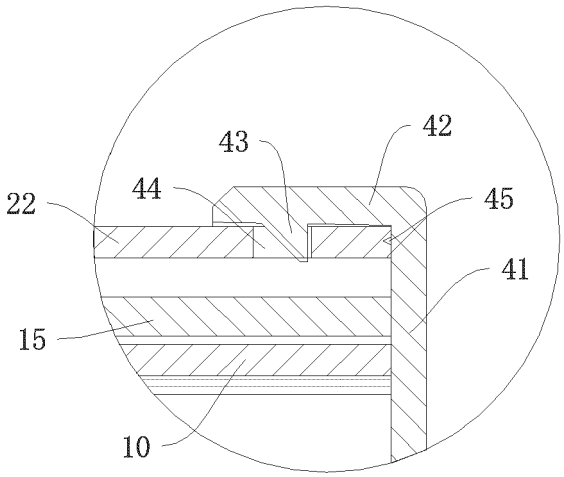

FIG. 6

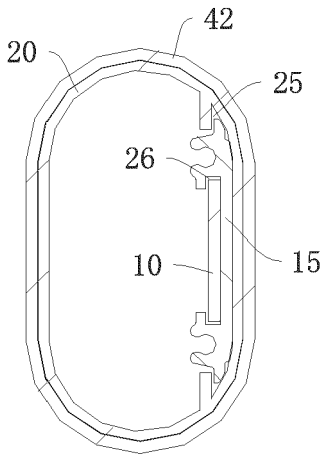

FIG. 7

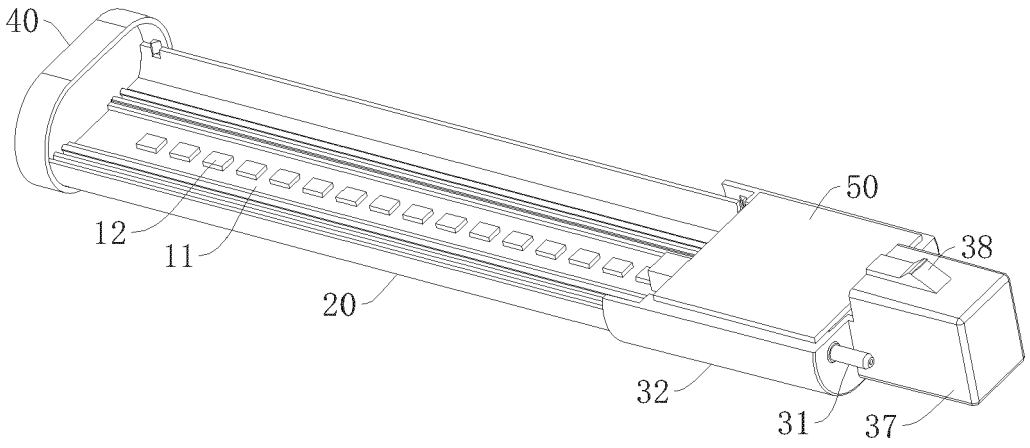

FIG. 8

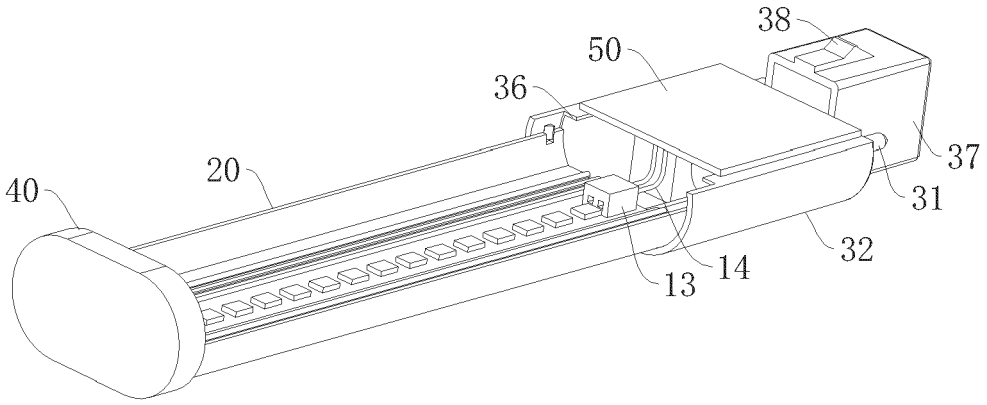

FIG. 9

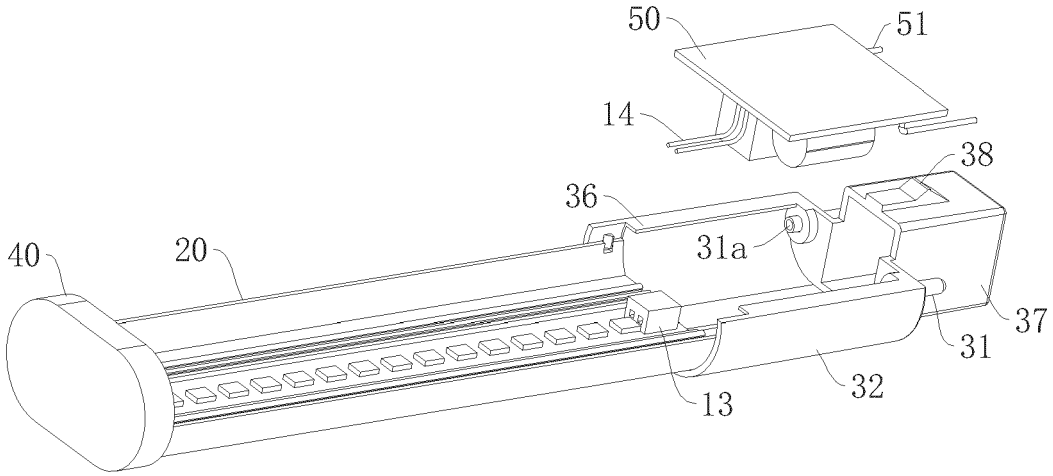

FIG. 10

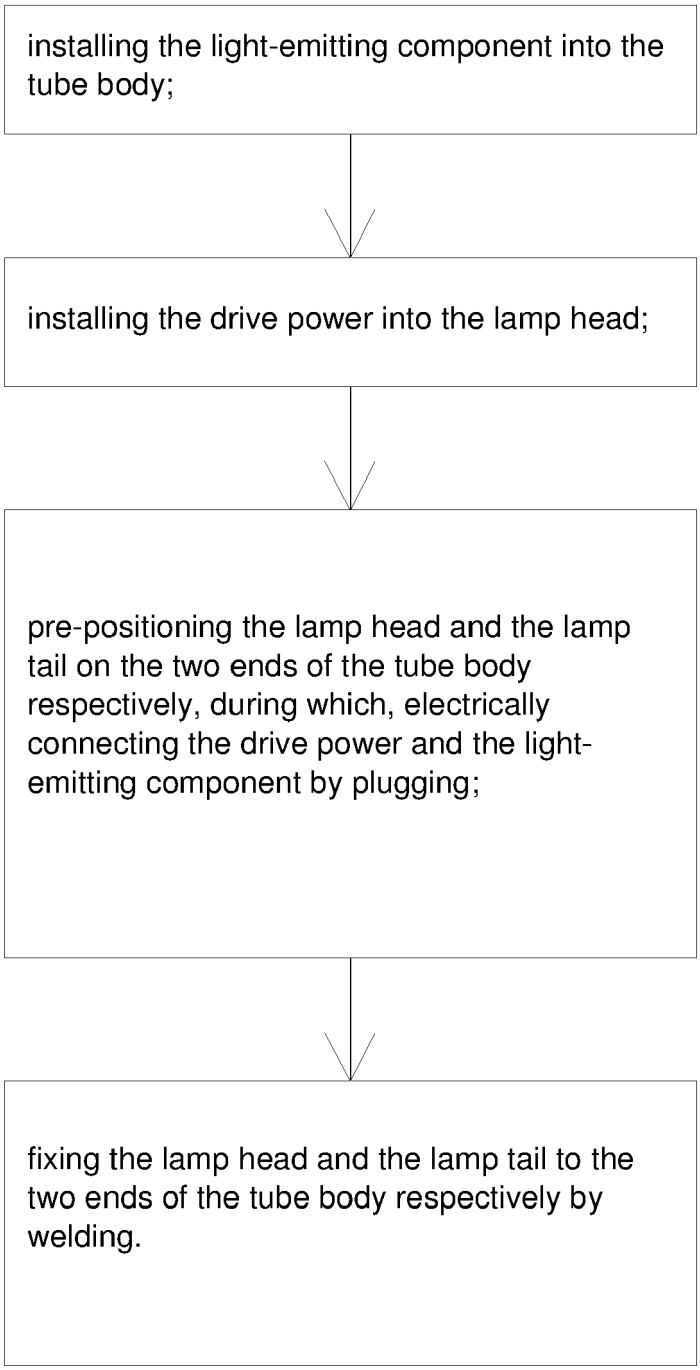
installing the light-emitting component into the tube body;
installing the drive power into the lamp head;
pre-positioning the lamp head and the lamp tail on the two ends of the tube body respectively, during which, electrically connecting the drive power and the light-emitting component by plugging;
fixing the lamp head and the lamp tail to the two ends of the tube body respectively by welding.

FIG. 11

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EUROPEAN SEARCH REPORT

Application Number
EP 24 16 0217

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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F21K F21V F21Y

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	12 July 2024	Allen, Katie

CATEGORY OF CITED DOCUMENTS

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12-07-2024

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