



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
13.05.2020 Bulletin 2020/20

(51) Int Cl.:
F21V 29/51 ^(2015.01) **F21V 29/56** ^(2015.01)
F21V 29/83 ^(2015.01)

(21) Application number: **19180251.1**

(22) Date of filing: **14.06.2019**

(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

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(30) Priority: **07.11.2018 CN 201811320121**

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(54) **LAMP**

(57) The embodiment of the present disclosure provides a lamp, comprising a light source assembly, a lamp body, and a plurality of radiating tubes; wherein, the lamp body comprises a vapor chamber and a mounting ring, the mounting ring is disposed around a periphery of the vapor chamber, the vapor chamber comprises a first edge and a second edge opposite to each other, and a thickness of the vapor chamber gradually increases in a direction from the first edge to the second edge; the light source assembly is connected to the vapor chamber, and two ends of each of the radiating tubes are respectively connected to the mounting ring away from the light source assembly and close to the first edge and the second

edge; in the vapor chamber, a first receiving cavity for holding a cooling liquid is provided close to the first edge, a second receiving cavity for holding a cooling liquid is provided close to the second edge, and a reflux passage connecting the first receiving cavity and the second receiving cavity is provided; a reflux tank connecting the first receiving cavity, the second receiving cavity and the each of the radiating tubes is provided in the mounting ring. The lamp provided by the embodiment of the present disclosure may quickly and completely cool the light source assembly, improve the heat dissipation performance of the light source assembly, and improve the normal service life of the lamp.

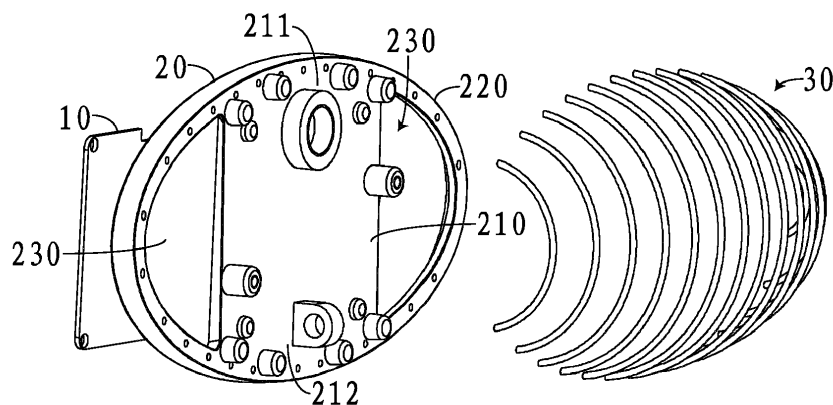


FIG. 1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to the field of lighting technology, and in particular relates to a lamp.

BACKGROUND

[0002] A LED floodlight is a point light source that may illuminate uniformly in all directions, and its illumination range may be arbitrarily adjusted, so it is widely used in daily life.

[0003] At present, components of the floodlights are closely structured, and heat dissipation fins are usually used for heat dissipation. However, this heat dissipation way has poor heat dissipation performance. It is well known that the heat dissipation of the LED lamp is the key to the use of the lamp. If the heat dissipation is poor, the temperature is too high when the LED light source is in use, which will affect the normal service life of the lamp bead, and affect the normal use of the lamp in turn.

SUMMARY

[0004] In view of this, the embodiment of the present disclosure provides a lamp for solving the technical problem that the heat dissipation performance is still poor in the LED floodlight at the present stage.

[0005] The embodiment of the present disclosure provides a lamp, including a light source assembly, a lamp body, and a plurality of radiating tubes; where the lamp body includes a vapor chamber and a mounting ring, the mounting ring is disposed around a periphery of the vapor chamber, the vapor chamber includes a first edge and a second edge opposite to each other, and a thickness of the vapor chamber gradually increases in a direction from the first edge to the second edge;

the light source assembly is connected to the vapor chamber, and two ends of each of the radiating tubes are respectively connected to the mounting ring away from the light source assembly and close to the first edge and the second edge;

in the vapor chamber, a first receiving cavity for holding a cooling liquid is provided close to the first edge, a second receiving cavity for holding a cooling liquid is provided close to the second edge, and a reflux passage connecting the first receiving cavity and the second receiving cavity is provided;

a reflux tank connecting the first receiving cavity, the second receiving cavity and the each of the radiating tubes is provided in the mounting ring.

[0006] Further, the lamp further including a stiffener, where two ends of the stiffener are respectively connected to two ends of the mounting ring away from the light source assembly, and a middle portion of the each of the radiating tubes is connected to the stiffener.

[0007] Further, where one surface of the vapor chamber away from the light source assembly is connected with a power source, the vapor chamber is provided with a through hole, and a waterproof rubber head for passing through a wire electrically connecting the power source and the light source assembly is provided in the through hole.

[0008] Further, where the light source assembly includes a plurality of LED lamp beads, a PCB board, and a translucent cover;

the PCB board is connected to one surface of the vapor chamber away from the radiating tubes, and the plurality of LED lamp beads are arranged on the PCB board;

the translucent cover is connected to one surface of the vapor chamber away from the radiating tubes, and covers the PCB board therein.

[0009] Further, where the light source assembly further includes a reflection cup, a cup bottom opening portion of the reflection cup is disposed around a periphery of the PCB and is connected to one surface of the vapor chamber away from the radiating tubes, and a cup top opening portion of the reflection cup is in contact with a translucent portion of the translucent cover.

[0010] Further, where the light source assembly further includes a first sealing ring, the first sealing ring is disposed around a periphery of the reflection cup, and two sides of the first sealing ring are respectively in contact with the vapor chamber and the translucent cover.

[0011] Further, the lamp further including a panel, where the panel includes an outer ring and an inner edge, the outer ring is connected to one surface of the mounting ring away from the radiating tubes, and the inner edge is disposed inside the outer ring and is connected to other two edges of the vapor chamber between the first edge and the second edge;

the reflux tank is disposed between the outer ring and the mounting ring, and the reflux passage is disposed between the inner edge and the vapor chamber.

[0012] Further, where the light source assembly is connected to one surface of the inner edge away from the vapor chamber and one surface of the outer ring away from the mounting ring. Further, where a second sealing ring is provided between the panel and the lamp body. Further, the lamp further including a support, where the support includes a first connecting rod, a second connecting rod, and a base;

two ends of the first connecting rod are respectively hinged with one surface of the vapor chamber away from the light source assembly and one end of the second connecting rod, and the other end of the second connecting rod is hinged with the base.

[0013] According to the lamp provided by the embodiments of the present disclosure, a vapor chamber with different thickness and being connected to a light source assembly is provided on a lamp body, such that a cooling liquid contained in receiving cavities provided on two ends of the vapor chamber may circulate in a radiating tube connecting the lamp body in the case of non-uniform

heat, to quickly and completely cool the light source assembly, improve the heat dissipation performance of the light source assembly, and improve the normal service life of the lamp.

BRIEF DESCRIPTION OF DRAWINGS

[0014] In order to describe the technical solutions in the embodiments of the present disclosure or the prior art more clearly, the drawings required to be used for descriptions about the embodiments or the prior art will be simply introduced below. It is apparent that the drawings describe below are some embodiments of the present disclosure. Those of ordinary skill in the art may further obtain other drawings according to these drawings without creative work.

FIG. 1 is a schematic exploded view of a three-dimensional structure of a lamp according to an embodiment of the present disclosure;

FIG. 2 is a cross-sectional view of a lamp body of a lamp according to an embodiment of the present disclosure;

FIG. 3 is a cross-sectional view taken along line A-A of FIG. 2 of a lamp according to an embodiment of the present disclosure;

FIG. 4 is a schematic exploded view of another three-dimensional structure of a lamp according to an embodiment of the present disclosure.

DESCRIPTION OF EMBODIMENTS

[0015] Implementations of the present disclosure will be describe in detail below with reference to the accompanying drawings and embodiments, so that the implementation process of solving the technical problem by applying the technical means and achieving technical effect can be fully understood and implemented.

[0016] Certain terms used throughout the description and claims are used to refer to particular components. Those skilled in the art will understand that hardware manufacturers may call the same component by different nouns. The present description and claims do not use a name difference as a mode for distinguishing the components, but the functional difference of the components is taken as a criterion for distinguishing. The word "comprising" as used throughout the description and claims is an open term and should be interpreted as "comprising but not limited to". "Substantially" means that within an acceptable error range, those skilled in the art will be able to solve the technical problems within a certain error range, basically achieving the technical effects. In addition, the term "coupled" is used herein to include any direct and indirect electrical coupling means. Therefore, if it is described here that a first apparatus is coupled to a second apparatus, it is indicated that the first apparatus may be directly and electrically coupled to the second apparatus or indirectly and electrically coupled to the sec-

ond apparatus through other apparatuses or coupling means. The description is described as an implementation mode for implementing the present disclosure. However, the description is intended to be illustrative of the general principle of the present disclosure, and is not intended to limit the scope of the present disclosure. The scope of protection of the present disclosure is subject to the definition of the appended claims.

[0017] It is also to be noted that terms "include", "contain" or any other variants thereof are intended to include nonexclusive inclusions, thereby ensuring that a commodity or system including a series of elements not only includes those elements but also includes other elements which are not clearly listed or further includes elements intrinsic to the commodity or the system. Under the condition of no more restrictions, an element defined by statement "including a/an" does not exclude existence of another element which is the same in a commodity or system including the element.

Specific Embodiments

[0018] Please refer to FIG. 1, which is a schematic exploded view of a three-dimensional structure of a lamp according to an embodiment of the present disclosure. The lamp includes a light source assembly 10, a lamp body 20, and a plurality of radiating tubes 30.

[0019] Here, the lamp body 20 includes a vapor chamber 210 and a mounting ring 220. The mounting ring 220 is disposed around a periphery of the vapor chamber 210. The vapor chamber 210 includes a first edge 211 and a second edge 212 opposite to each other. A thickness of the vapor chamber 210 gradually increases in a direction from the first edge 211 to the second edge 212. Specifically, the lamp body 20 includes two parts, that is, the vapor chamber 210 and the mounting ring 220. The vapor chamber 210 is connected inside the mounting ring 220, and the vapor chamber 210 is not uniform thickness. The thickness gradually increases in the direction from the first edge 211 to the second edge 212, that is, the first edge 211 is a thinner edge, and the second edge 212 is a thicker edge. Here, it should be noted that the specific shape of the mounting ring 220 is not limited, which may be a rectangular ring shape, a racetrack ring shape, or a circular ring shape. In a preferred embodiment, the specific shape of the mounting ring 220 is an elliptical ring as shown in the drawing. The specific shape of the vapor chamber 210 is not specifically limited. The outer edge of the vapor chamber 210 may be completely connected to the inside of the mounting ring 220, that is, the inside of the mounting ring 220 is completely covered by the vapor chamber 210, and has no hollow portion 230 as shown in the drawing. A preferred embodiment is shown in the drawing. In the preferred embodiment, the outer edge of one part of the vapor chamber 210 is connected to the inside of the mounting ring 220, such as the first edge 211 and the second edge 212 opposite to each other are respectively connected to the inside of

the mounting ring 220, forming the hollow portion 230 at two sides of the vapor chamber 210.

[0020] The light source assembly 10 is connected to the vapor chamber 210, and the specific connection form includes, but is not limited to, a screw connection.

[0021] Two ends of each of the radiating tubes 30 are respectively connected to the mounting ring 220 away from the light source assembly 10 and close to the first edge 211 and the second edge 212. Specifically, the radiating tubes 30 are connected to the side of the mounting ring 220 away from the light source assembly 10, and two ends of the radiating tubes 30 are respectively connected to the mounting ring 220 close to the first edge 211 and the second edge 212, that is, each of the radiating tubes 30 are arranged along a direction from the first edge 211 to the second edge 212. Each of the radiating tubes 30 are spaced apart from each other, and the plurality of radiating tubes 30 are not in contact with the vapor chamber 210, which are also spaced apart from each other by a distance therebetween.

[0022] Please refer to FIG. 2, the vapor chamber 210 is provided with a first receiving cavity 2101, a second receiving cavity 2102, and a reflux passage 2103. Here, the first receiving cavity 2101 is disposed close to the first edge 211, such as disposed on the top of the vapor chamber 210 along the first edge 211. The second receiving cavity 2102 is disposed close to the second edge 212, such as disposed on the bottom of the vapor chamber 210 along the second edge 212. The first receiving cavity 2101 and the second receiving cavity 2102 are oppositely disposed, and they are in communication with each other via the reflux passage 2103. The first receiving cavity 2101 and the second receiving cavity 2102 are used for holding a cooling liquid, and the cooling liquid therein includes, but is not limited to, steamed water.

[0023] In addition, a reflux tank 2201 that communicates the first receiving cavity 2101, the second receiving cavity 2102, and each of the radiating tubes 30 is provided in the mounting ring 220. Specifically, the reflux tank 2201 is disposed inside the mounting ring 220 around a whole lap of the mounting ring 220. The reflux tank 2201 communicates with the first receiving cavity 2101 and the second receiving cavity 2102 respectively, and in connection with two ends of the radiating tubes 30 penetrating into the mounting ring 220, such that each of the radiating tubes 30 communicates with the reflux tank 2201 respectively.

[0024] The implementation method for connecting the lamp body 20 and the radiating tubes 30 includes, but is not limited to, the following method:

putting the lamp body 20 after die-casting into the No. 0 oil to be heated to 200 degree;
putting each of the radiating tubes 30 into a freezer for low temperature treatment to -40 degree; and
mounting the frozen radiating tubes 30 in the holes of the mounting body 220 of the lamp body 20 after heated, to use the principle of materials expand on

heating and contract on cooling to ensure waterproof and seal function of the mounting gap between the radiating tubes 30 and the mounting ring 220.

[0025] Of course, the above implementation method is merely an example, and other methods may also be used, such as the form of applying waterproof sealant on the mounting gap between the radiating tubes 30 and the mounting ring 220, to ensure the seal function therebetween. Please refer to FIG. 3, when the lamp of the embodiment of the present disclosure is applied in use, the heat generated by the light source assembly 10 is transmitted to the vapor chamber 210. Since the thickness of the second edge 212 is greater than the first edge 211, the temperature of the vapor chamber 210 close to the second edge 212 is greater than the temperature of the vapor chamber 210 close to the first edge 211, that is, the temperature of the cooling liquid in the second receiving cavity 2102 is greater than the temperature of the cooling liquid in the first receiving cavity 2101. The cooling liquid in the second receiving cavity 2102 is convectively moved upward in the radiating tubes 30 under the influence of temperature, and the heat is absorbed by the tube wall of the radiating tubes 30 while cooling liquid convectively moving upward in the radiating tubes 30. The upward convective cooling liquid in the radiating tubes 30 is cooled in the radiating tubes 30 and finally collected in the first receiving cavity 2101. The cooling liquid flowing back to the first receiving cavity 2101 flows back to the second receiving cavity 2102 along the reflux passage 2103 under the influence of temperature difference and gravity. Thereby, the convection circulation of the cooling liquid in the vapor chamber 210 is completed. Relying on the convective motion of the cooling liquid in each of the radiating tubes 30, the heat in the cooling liquid is conducted to each of the radiating tubes 30 and then radiated to the air outside the lamp to achieve the heat dissipation, to quickly and completely cool the light source assembly 10, improve the heat dissipation performance of the light source assembly 10, and improve the normal service life of the lamp. This water-cooling heat dissipation method enhances the heat dissipation effect of the lamp, and provides benefit to designing a large overall power lamp by using a smaller lamp volume and a lighter lamp weight.

[0026] Further, in conjunction with FIG. 4, in other preferred embodiments of the present disclosure, in order to improve the rigidity of each of the radiating tubes 30 and the stability of the connection with the mounting ring 220, the lamp further includes a stiffener 40. Here, two ends of the stiffener 40 are respectively connected to the two ends of the mounting ring 220 away from the light source assembly 10, and the middle portion of each of the radiating tubes 30 is connected to the stiffener 40. Specifically, the stiffener 40 is an arc-shaped structure, two ends thereof are respectively connected to the two ends of the mounting ring 220, and an opening portion of the arc-shaped structure faces the mounting ring 220

away from the light source assembly 10. The stiffener 40 is disposed across the middle of the radiating tubes 30. In the preferred embodiment, the stiffener 40 is provided with a plurality of punching holes, and the radiating tubes 30 are respectively disposed in the plurality of punching holes to achieve the connection with the stiffener 40. Here, since each of the radiating tubes 30 is also an arc-shaped structure, a spindle structure is formed by each of the radiating tubes 30, the stiffener 40 and the lamp body 20. The curved surface of the spindle shape is a heat dissipating surface in contact with the outside air, and the heat dissipation performance of the lamp can be further improved by increasing the contact area with the outside air.

[0027] In addition, one surface of the vapor chamber 210 away from the light source assembly 10 is connected with a power source 50. Here, the vapor chamber 210 is provided with a through hole 510, and a waterproof rubber head 520 for passing through a wire electrically connecting the power source 50 and the light source assembly 10 is provided in the through hole 510. Specifically, the waterproof rubber head 520 is disposed in the through hole 510 on the vapor chamber 210, and is used to pass through the wire to electrically connect the power source 50 and the light source assembly 10, such that the power source 50 provides electric power to the light source assembly 10. Here, the waterproof function of the lamp can be improved by the arrangement of the waterproof rubber head 520 to ensure the electrical safety of the lamp. Further, the light source assembly 10 includes a plurality of LED lamp beads (not shown), a PCB board 110, and a translucent cover 120.

[0028] Here, the PCB board 110 is connected to one surface of the vapor chamber 210 away from the radiating tubes 30, and the plurality of LED lamp beads are arranged on the PCB board 110; and the translucent cover 120 is connected to one surface of the vapor chamber 210 away from the radiating tubes 30, and covers the PCB board 110 therein. Specifically, the PCB board 110 is connected to one surface of the vapor chamber 210 away from the radiating tubes 30 by a screw connection or the like, and the translucent cover 120 is a trough type structure, the bottom portion of the trough type structure is a transparent structure, and an opening portion of the trough type structure is disposed cover the vapor chamber 210 to cover the PCB board 110 therein, such that the light emitted from the plurality of LED beads arranged on the PCB board 110 is transmitted through the bottom portion to the outside of the lamp.

[0029] Further, the light source assembly further includes a reflection cup 130 and a first sealing ring 140.

[0030] Here, the reflection cup 130 is a cup-shaped structure with two ends open, a cup bottom opening portion is disposed around a periphery of the PCB board 110 and is connected to one surface of the vapor chamber 210 away from the radiating tubes 30, and a cup top opening portion is in contact with a translucent portion of the translucent cover 30. The translucent portion here is

the bottom portion of the trough type structure. It is well known that the illumination angle of the LED lamp bead is generally large, then the light is bound to be illuminated onto the trough wall of the translucent cover 120 of the trough type structure. If the trough wall is a translucent structure as well, light emission phenomenon will appear on the lamp, which will affect the illumination effect of the lamp. And if the trough wall is an opaque structure, there is bound to a light loss caused by the light irradiation, which will affect the light utilization rate. The above situation can be effectively avoided by the arrangement of the reflection cup 130, which works as reflecting the side light emitted by the LED lamp beads to illuminate towards the bottom portion of the trough type structure and finally being projected from the lamp.

[0031] The first sealing ring 140 is disposed around the periphery of the reflection cup 130, and the two sides are respectively in contact with the vapor chamber 210 and the translucent cover 120. Here, the first sealing ring 140 is a tubular structure having two opening ends. One opening end is connected to one surface of the vapor chamber 210 close to the PCB board 110, and the other opening end is connected to the translucent cover 120. Specifically, the inner wall of the first sealing ring 140 is sleeved on the periphery of the reflection cup 130, and the outer wall of the first sealing ring 140 is in contact with the inner trough wall of the trough type structure, such that the structure can improve the seal function of the light source assembly 10, and improve the safety of the lamp when it in use.

[0032] In addition, the lamp further includes a panel 60, which includes an outer ring 610 and an inner edge 620. Here, the outer ring 610 is connected to one surface of the mounting ring 220 away from the radiating tubes 30, the inner edge 620 is disposed inside the outer ring 610 and is connected to other two edges of the vapor chamber 210 between the first edge 211 and the second edge 212, the reflux tank 2201 is disposed between the outer ring 610 and the mounting ring 220, and the reflux passage 2103 is disposed between the inner edge 620 and the vapor chamber 210.

[0033] Specifically, the panel 60 is a structure corresponding to the lamp body 20. Here, the outer ring 610 is corresponding to the mounting ring 220. The mounting ring 220 has a trough body recessed inward, and the outer ring a 610 is covered on the trough body forming the reflux tank 2201. The inner edge 620 is corresponding to the other two edges of the vapor chamber 210 other than first edge 211 and the second edge 212. The other two edges of the vapor chamber 210 other than first edge 211 and the second edge 212 have passages recessed inward, and the inner edge 620 is covered on the passages forming the reflux passage 2103. The above is merely exemplary in nature and does not constitute a limitation of the invention. Further, the light source assembly 10 is connected to one surface of the inner edge 620 away from the vapor chamber 210 and one surface of the outer ring 610 away from the mounting ring 220.

Specifically, the outer circumference of the PCB board 110 is respectively connected to one surface of the inner edge 620 away from the vapor chamber 210 and the outer ring 610 away from the mounting ring 220, such that the heat light generated by the source assembly 10 can be quickly and completely transferred to the vapor chamber 210 to further improve the heat dissipation performance of the lamp.

[0034] In addition, in order to ensure the seal function of the reflux tank 2201, the first receiving cavity 2101, the second receiving cavity 2102, and the reflux passage 2103, a second sealing ring 630 is provided between the panel 60 and the lamp body 20. Here, the shape of the second sealing ring 630 is same with the shape of the panel 60, and the second sealing ring 630 is pressed to be connected to the lamp body 20 through the panel 60.

[0035] Further, in order to make the illumination angle of the lamp adjustable to increase the serviceable range of the lamp, the lamp further includes a support 70. The support 70 includes a first connecting rod 710, a second connecting rod 720, and a base 730.

[0036] Here, two ends of the first connecting rod 70 are respectively hinged with one surface of the vapor chamber 210 away from the light source assembly 10 and one end of the second connecting rod 720, and the other end of the second connecting rod 720 is hinged with the base 730.

[0037] Specifically, one surface of the vapor chamber 210 away from the light source assembly 10 is provided with a connecting hole 80, both ends of the first connecting rod 710 and the second connecting rod 720 are also provided with connecting holes 80, and the base 730 is also provided with a connecting hole 80. The connecting hole 80 on the vapor chamber 210 is hinged with the connecting hole 80 on one end of the first connecting rod 710 by a connecting bolt 90, to realize a relative rotation between the lamp body and the first connecting rod 710. The connecting holes 80 on the two ends of the second connecting rod 720 are respectively hinged with the connecting hole 80 on the other end of the first connecting rod 710 and the connecting hole 80 on the base 730, to respectively realize relative rotations between the second connecting rod 720 and the first connecting rod 710 and between the second connecting rod 720 and the base 730.

[0038] It should be noted that, in the case that the structures do not conflict, the structures of each part mentioned in the above embodiments may be combined with each other. To avoid repetition, the technical solutions obtained after the combination are not describe herein again, but are the technical solutions obtained after combination should also fall within the scope of protection of the present disclosure.

[0039] It is finally to be noted that the above embodiments are adopted not to limit but only to describe the technical solutions of the present invention. Although the present invention has been describe with reference to the abovementioned embodiments in detail, those of or-

dinary skill in the art should know that modifications may still be made to the technical solutions recorded in each embodiment or equivalent replacements may be made to part of technical features therein. These modifications or replacements do not make the essences of the corresponding technical solutions depart from the spirit and scope of the technical solutions of each embodiment of the present invention.

Claims

1. A lamp, comprising a light source assembly, a lamp body, and a plurality of radiating tubes; wherein, the lamp body comprises a vapor chamber and a mounting ring, the mounting ring is disposed around a periphery of the vapor chamber, the vapor chamber comprises a first edge and a second edge opposite to each other, and a thickness of the vapor chamber gradually increases in a direction from the first edge to the second edge; the light source assembly is connected to the vapor chamber, and two ends of each of the radiating tubes are respectively connected to the mounting ring away from the light source assembly and close to the first edge and the second edge; in the vapor chamber, a first receiving cavity for holding a cooling liquid is provided close to the first edge, a second receiving cavity for holding a cooling liquid is provided close to the second edge, and a reflux passage connecting the first receiving cavity and the second receiving cavity is provided; a reflux tank connecting the first receiving cavity, the second receiving cavity and the each of the radiating tubes is provided in the mounting ring.
2. The lamp according to claim 1, further comprising a stiffener, wherein, two ends of the stiffener are respectively connected to two ends of the mounting ring away from the light source assembly, and a middle portion of the each of the radiating tubes is connected to the stiffener.
3. The lamp according to claim 1, wherein, one surface of the vapor chamber away from the light source assembly is connected with a power source, the vapor chamber is provided with a through hole, and a waterproof rubber head for passing through a wire electrically connecting the power source and the light source assembly is provided in the through hole.
4. The lamp according to claim 1, wherein, the light source assembly comprises a plurality of LED lamp beads, a PCB board, and a translucent cover; the PCB board is connected to one surface of the vapor chamber away from the radiating tubes, and the plurality of LED lamp beads are arranged on the PCB board;

the translucent cover is connected to one surface of the vapor chamber away from the radiating tubes, and covers the PCB board therein.

5. The lamp according to claim 4, wherein, the light source assembly further comprises a reflection cup, a cup bottom opening portion of the reflection cup is disposed around a periphery of the PCB and is connected to one surface of the vapor chamber away from the radiating tubes, and a cup top opening portion of the reflection cup is in contact with a translucent portion of the translucent cover. 5
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6. The lamp according to claim 5, wherein, the light source assembly further comprises a first sealing ring, the first sealing ring is disposed around a periphery of the reflection cup, and two sides of the first sealing ring are respectively in contact with the vapor chamber and the translucent cover. 15
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7. The lamp according to any one of claims 1 to 6, further comprising a panel, wherein, the panel comprises an outer ring and an inner edge, the outer ring is connected to one surface of the mounting ring away from the radiating tubes, and the inner edge is disposed inside the outer ring and is connected to other two edges of the vapor chamber between the first edge and the second edge; 25
the reflux tank is disposed between the outer ring and the mounting ring, and the reflux passage is disposed between the inner edge and the vapor chamber. 30
8. The lamp according to claim 7, wherein, the light source assembly is connected to one surface of the inner edge away from the vapor chamber and one surface of the outer ring away from the mounting ring. 35
9. The lamp according to claim 7, wherein, a second sealing ring is provided between the panel and the lamp body. 40
10. The lamp according to claim 7, further comprising a support, wherein, the support comprises a first connecting rod, a second connecting rod, and a base; 45
two ends of the first connecting rod are respectively hinged with one surface of the vapor chamber away from the light source assembly and one end of the second connecting rod, and the other end of the second connecting rod is hinged with the base. 50

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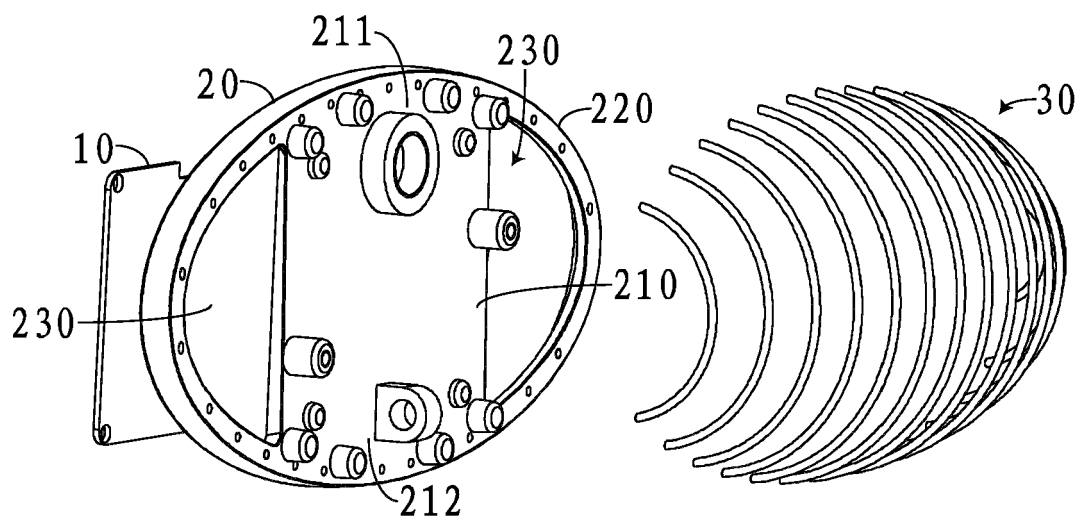


FIG. 1

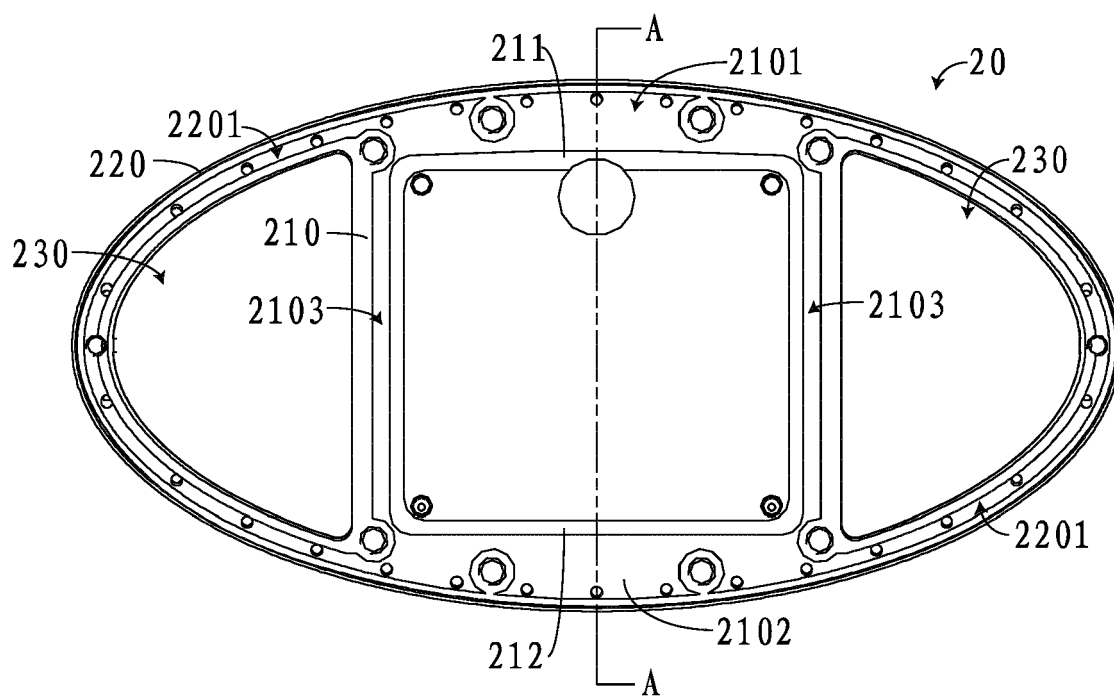


FIG. 2

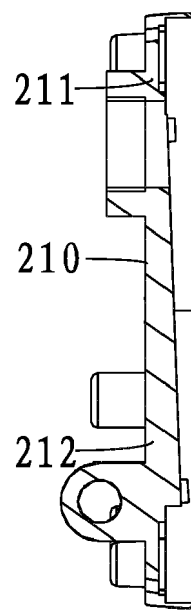


FIG. 3

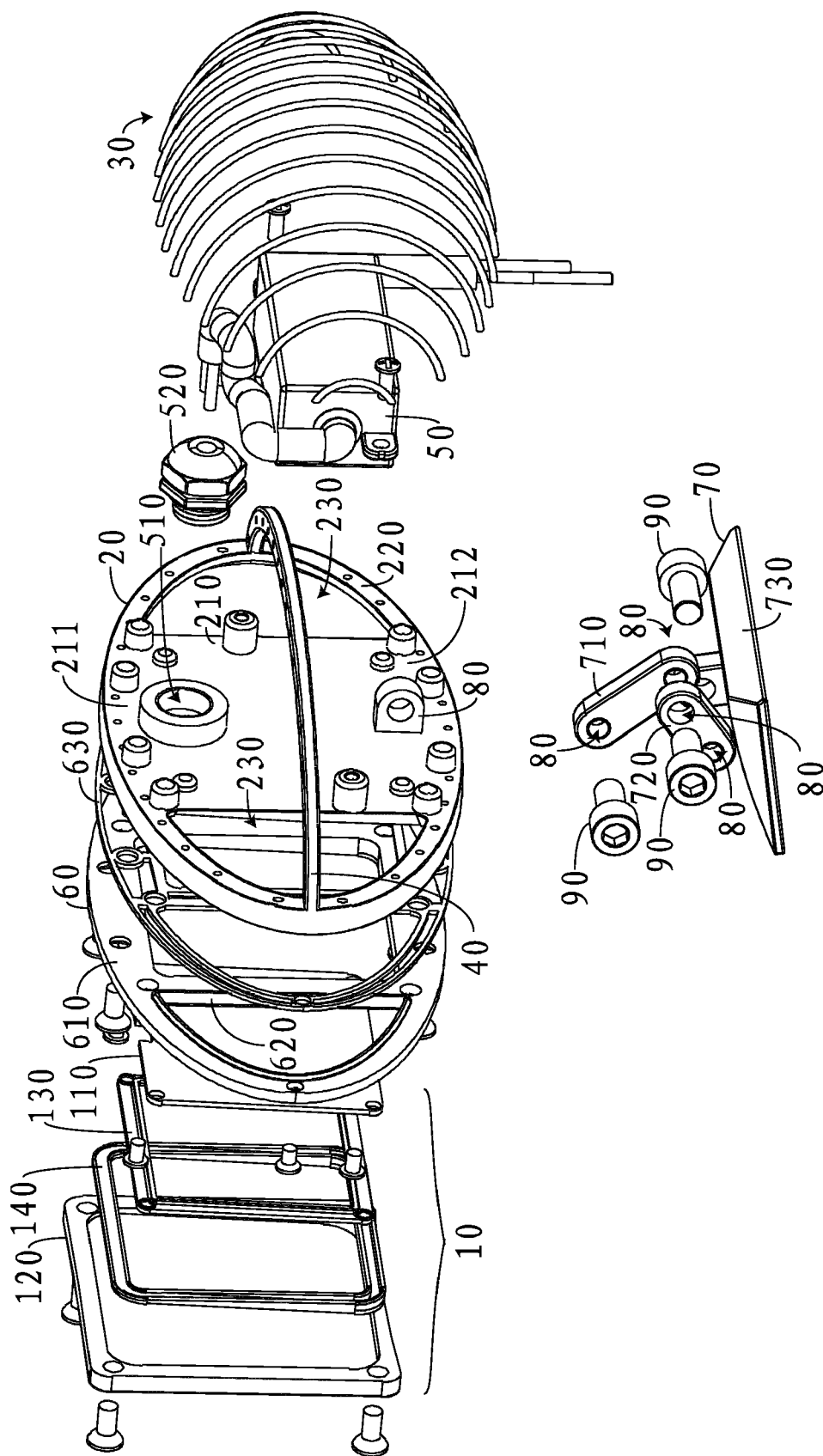


FIG. 4



EUROPEAN SEARCH REPORT

 Application Number
 EP 19 18 0251

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 November 2019	Examiner Kebemou, Augustin
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			

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 EPO FORM 1503 03/02 (P04C01)

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

EP 19 18 0251

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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