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(54) **LIGHT SOURCE SYSTEM OF LIGHTING FIXTURE, AND LIGHTING FIXTURE**

(57) The present application discloses a light source system of a lighting lamp and a lighting lamp. The light source system includes a light-emitting body, a first reflector and a second reflector, wherein the first reflector is at least partially sleeved in the second reflector, the first reflector includes a first end and a second end, and the first end is provided with a first light-emitting opening, the first light-emitting opening is located in the second reflector, the second reflector includes a third end and a fourth end, and the third end is provided with a second light-emitting opening; the light-emitting body is arranged in the second reflector, and the second reflector has a first reflecting surface facing towards the light-emitting body; in an optical axis direction of the light-emitting body, an orthographic projection of the first reflecting surface covers an orthographic projection of the light-emitting body; and light emitted by the light-emitting body passes through at least one of the first reflector or the second reflector and then exits from the second light-emitting opening. The technical solution can solve the problem of poor user experience existed in the lighting lamp.

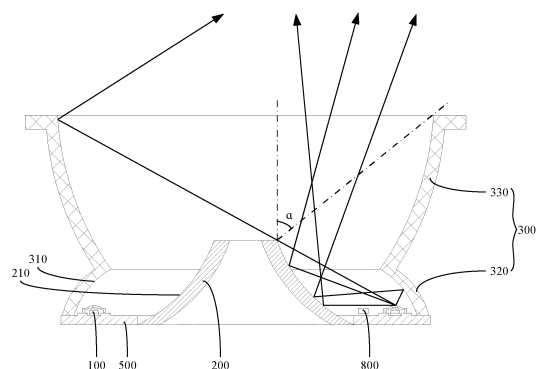


FIG. 1

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Description

TECHNICAL FIELD

[0001] The present application relates to the field of lighting technology, and in particular to a light source system of a lighting lamp and a lighting lamp.

BACKGROUND

[0002] Lighting lamp is widely used in home lighting, commercial lighting, industrial lighting, road lighting, landscape lighting, special lighting and other fields. After long-term development, people have increasingly higher requirements for the performance of the lighting lamp, which brings greater challenges to the structural design of the lighting lamp.

[0003] The lighting lamp adopting a traditional optical solution has light directly emitted from a light-emitting body. In the case where this part of light enters people's eyes, a glare problem may be caused, which will lead to uncomfortable experience for users. Therefore, existing lighting lamp has a problem of poor user experience.

SUMMARY

[0004] The present application discloses a light source system of a lighting lamp and a lighting lamp, which can solve the problem of poor user experience of the lighting lamp.

[0005] In order to solve the above problem, the present application adopts the following technical solutions:

[0006] A light source system of a lighting lamp, including a light-emitting body, a first reflector and a second reflector, wherein the first reflector is at least partially sleeved in the second reflector, the first reflector includes a first end and a second end, and the first end is provided with a first light-emitting opening, the first light-emitting opening is located in the second reflector, the second reflector includes a third end and a fourth end, and the third end is provided with a second light-emitting opening;

the light-emitting body is arranged in the second reflector, and the second reflector has a first reflecting surface facing towards the light-emitting body; in an optical axis direction of the light-emitting body, an orthographic projection of the first reflecting surface covers an orthographic projection of the light-emitting body; and

light emitted by the light-emitting body passes through at least one of the first reflector or the second reflector and then exits from the second light-emitting opening.

[0007] A lighting lamp, including the light source system described above.

[0008] The technical solutions adopted by the present application can achieve the following beneficial effects:

[0009] The light source system disclosed in the embodiments of the present application improves the structure of the light source system of the lighting lamp in the related technology by incorporating the first reflector and the second reflector into the light source system of the lighting lamp, and at the same time, in an optical axis direction of the light-emitting body, the orthographic projection of the first reflecting surface of the second reflector covers the orthographic projection of the light-emitting body, and therefore, the light-emitting body can be blocked by the second reflector. The light source system of the lighting lamp disclosed in the embodiments of the present application can hide the light-emitting body under the premise of normally emitting light, which makes it difficult for the user to see the light-emitting body through the second light-emitting opening, so as to achieve better anti-glare effect, thereby improving the user experience when using the lighting lamp.

BRIEF DESCRIPTION OF DRAWINGS

[0010] In order to explain the technical solutions in the embodiments or background technology of the present application more clearly, the drawings necessary for the embodiments or background technology will be briefly introduced below. Obviously, for those ordinary skilled in the art, other drawings can be obtained according to these drawings without paying creative labor.

FIG. 1 is a schematic structural diagram of a light source system disclosed in an embodiment of the present application, and an arrow line in the figure is a direction of optical path;

FIG. 2 is a schematic structural diagram of a lighting lamp disclosed in an embodiment of the present application.

Brief description of drawing references:

[0011]

100-light-emitting body;
200-first reflector, 210-second reflecting surface, 220-first end, 221-firstlight-emitting opening, 230-second end;
300-second reflector, 310-first reflecting surface, 320-first reflecting portion, 330-second reflecting portion, 340-third end, 341-second light-emitting opening, 350-fourth end;
400-light distribution element, 500-circuit board, 600-shell, 610-inner cavity, 620-opening, 630-bottom wall, 640-side wall, 700-mask, 800-driver.

DETAILED DESCRIPTION

[0012] In order to make objectives, technical details, and advantages of the present application more apparent, the technical solutions of the present application will

be described in a clear and complete way in connection with particular embodiments and corresponding drawings. Apparently, the described embodiments are just a part but not all of the embodiments of the present application. Based on the embodiments in the present application, those ordinary skilled in the art can obtain all other embodiment(s), without any inventive work, which should be within the scope of protection of the present application.

[0013] The technical solutions disclosed by various embodiments of the present application are described in details below in conjunction with the drawings.

[0014] As shown in FIG. 1 and FIG. 2, the embodiments of the present application disclose a light source system of a lighting lamp. The light source system as disclosed includes a light-emitting body 100, a first reflector 200 and a second reflector 300.

[0015] The light-emitting body 100 is a light-emitting device of the light source system. The light-emitting body 100 can usually be an LED light-emitting body. The LED light-emitting body has advantages of high brightness, low heat generation, low energy consumption and long service life. In the embodiments of the present application, the light-emitting body 100 is arranged in the second reflector 300, specifically, at least part of the light-emitting body 100 is arranged in the second reflector 300, specifically, the entire light-emitting body 100 can be arranged in the second reflector 300, which is beneficial for the light emitted by the light-emitting body 100 to be reflected by the second reflector 300 as much as possible.

[0016] The first reflector 200 and the second reflector 300 are both reflective devices of the light source system, which can reflect the light emitted by the light-emitting body 100. The first reflector 200 is at least partially sleeved in the second reflector 300. The first reflector 200 includes a first end 220 and a second end 230, and the first end 220 is provided with a first light-emitting opening 221, the first light-emitting opening 221 is located in the second reflector 300, and light reflected by the first reflector 200 can exit from the first light-emitting opening 221. Optionally, the second end 230 of the first reflector 200 may be located inside the second reflector 300, or be located outside the second reflector 300.

[0017] The second reflector 300 includes a third end 340 and a fourth end 350. The third end 340 of the second reflector 300 is provided with a second light-emitting opening 341, and light reflected by the second reflector 300 can exit from the second light-emitting opening 341. The second reflector 300 has a first reflecting surface 310 facing towards the light-emitting body 100, and in an optical axis direction of the light-emitting body 100, an orthographic projection of the first reflecting surface 310 covers an orthographic projection of the light-emitting body 100, so that the user cannot see the light-emitting body 100 in the case of observing at a position directly facing the second light-emitting opening 341 because of the blocking effect of the first reflecting surface 310.

[0018] The light emitted by the light-emitting body 100 can pass through at least one of the first reflector 200 or the second reflector 300, and then exit from the second light-emitting opening 341, which finally realizes lighting of the lighting lamp. As shown in FIG. 1, a part of the light emitted by the light-emitting body 100 can exit from the second light-emitting opening 341 after passing through the first reflector 310 and the first reflector 200 sequentially. Another part of the light emitted by the light-emitting body 100 can be reflected by the second reflector 300 and then exit from the second light-emitting opening 341. Specifically, the structure of the first reflector 200 and the second reflector 300 can be designed such that there is no part of the light emitted by the light-emitting body 100 that directly exits without being reflected by the first reflector 200 and the second reflector 300.

[0019] The light source system disclosed in the embodiments of the present application improves the structure of the light source system of the lighting lamp in the related technology by incorporating the first reflector 200 and the second reflector 300 into the light source system of the lighting lamp; and at the same time, in the optical axis direction of the light-emitting body 100, the orthographic projection of the first reflecting surface 310 of the second reflector 300 covers the orthographic projection of the light-emitting body 100, and therefore, the light-emitting body 100 can be finally blocked by the second reflector 300. The light source system of the lighting lamp disclosed in the embodiments of the present application can hide the light-emitting body under the premise of normally emitting light, which makes it difficult for the user to see the light-emitting body 100 through the second light-emitting opening 341, so as to achieve better anti-glare effect, thereby improving the user experience when using the lighting lamp.

[0020] In the embodiments of the present application, the structure of the first reflector 200 can be varied. In an alternative solution, in a first direction, a cross-sectional area of the first reflector 200 gradually decreases. It should be noted that the first direction here refers to a direction extending from the first light-emitting opening 221 to the second light-emitting opening 341, and the cross-sectional surface of the first reflector 200 is perpendicular to the first direction. In this case, a contour size of the first reflector 200 is gradually reduced, so that on the basis of ensuring reflection effect, more light can be directly emitted onto the second reflector 300 and finally can directly exit through the second light-emitting opening 341 of the second reflector 300. This structure is more beneficial to shortening an optical path for part of the light to exit, and therefore the energy loss of the light can be reduced. Of course, the first reflector 200 can also be of other structures, as long as it can ensure that the light emitted onto the first reflector can be reflected to the second light-emitting opening 341 and then exit through the second light-emitting opening 341 or can be reflected to the second reflector 300 and then reflected to the second light-emitting opening 341 by the second

reflector 300, the embodiments of the present application do not limit a specific shape of the first reflector 200.

[0021] In the same way, the second reflector 300 can have various structures, please refer to FIG. 1 again, in an alternative solution, the second reflector 300 can include a first reflecting portion 320 and a second reflecting portion 330 connected with the first reflecting portion 320, the first reflecting portion 320 and the second reflecting portion 330 are arranged sequentially in the first direction described above; in the first direction, a cross-sectional area of the first reflecting portion 320 gradually decreases, and a cross-sectional area of the second reflecting portion 330 gradually increases; the light-emitting body 100 may be arranged in the first reflecting portion 320, the first reflecting portion 320 is provided with the first reflecting surface 310 described above, the second light-emitting opening 341 is arranged at an end portion of the second reflecting portion 330 facing away from the first reflecting portion 320. This structure is easier to form a blocking structure, so as to realize blocking the light-emitting body 100.

[0022] In a further technical solution, the light-emitting body 100 can be arranged in an end of the first reflecting portion 320 facing away from the second reflecting portion 330, this structure allows the light-emitting body 100 to be closer to the fourth end 350 of the second reflector 300, thereby facilitating an arrangement of the light-emitting body 100; at the same time, the fourth end 350 of the second reflector 300 is farther from the second light-emitting opening 341, which makes it easier to realize blocking the light-emitting body 100. Further, the light-emitting body 100 can be configured to be adjacent to an edge of the first reflecting portion 320, so that the end of the first reflecting portion 320 connected with the second reflecting portion 330 is closer to the optical axis of the light-emitting body 100 relative to the light-emitting body 100. At this time, more parts of the first reflecting portion 320 can block the light-emitting body 100, which is more beneficial for the first reflecting surface 310 to block the light-emitting body 100.

[0023] Specifically, the first reflecting portion 320 and the second reflecting portion 330 can be an integrated structure, and can also be fixed and connected through an assembly process, the embodiments of the present application do not limit specific fixing methods of the first reflecting portion 320 and the second reflecting portion 330.

[0024] As described above, at least part of the first reflector 200 is sleeved in the second reflector 300. In an alternative solution, the first end 220 of the first reflector 200 can be located in the second reflecting portion 330, at this time, a size of the first reflector 200 is larger, so that the light emitted by the light-emitting body 100 can be better reflected into the second reflecting portion 330 and finally exit through the second light-emitting opening 341 by a reflection of the second reflecting portion 330.

[0025] In an alternative solution, a cross-sectional area of an end of the first reflecting portion 320 connected with

the second reflecting portion 330 is a first area, a cross-sectional area of the other end of the first reflecting portion 320 is a second area, and a ratio of the first area to the second area is 0.6~0.9. This structure allows the first reflecting portion 320 not to be tapered excessively to affect the light-emitting amount of the light source system and achieves better blocking effect for the light-emitting body 100 at the same time.

[0026] In order to ensure that the light emitted by the light-emitting body 100 can be reflected reliably, in a sectional surface parallel to the first direction described above, an included angle between the first direction and a line connecting the first light-emitting opening 221 and the second light-emitting opening 341 is less than or equal to 45°. This arrangement allows the second light-emitting opening 341 to be converged as far as possible relative to the first light-emitting opening 221, so that even if the light emitted by the light-emitting body 100 is not reflected by the first reflector 200, it will be reflected by the second reflector 300, thereby improving the lighting effect of the light source system.

[0027] As described above, the first reflector 200 plays a role of reflection. The first reflector 200 may have a second reflecting surface 210 facing towards the light-emitting body 100, the second reflecting surface 210 can be a conical surface; in an alternative solution, the second reflecting surface 210 can be an arc surface, and the second reflecting surface 210 can be bent towards a side away from the light-emitting body 100, this structure can increase an area of the second reflecting surface 210, so that more light can reach the second reflecting surface 210 and then be reflected by the second reflecting surface 210. At the same time, the second reflecting surface 210 can reflect more light to the second reflector 300, so that the light homogenization effect of the entire light source system is better.

[0028] In a specific implementation, the second end 230 of the first reflector 200 can be located outside the second reflector 300 to prevent the first reflector 200 from being entirely located inside the second reflector 300, which results in the problem of occupying larger internal space of the second reflector 300; in this way, it's more beneficial to reflecting light.

[0029] In the embodiments of the present application, the number of the light-emitting body 100 may be one, or at least two. In order to improve lighting intensity, in an alternative solution, the number of the light-emitting body 100 can be at least two, these light-emitting bodies 100 are arranged in a circumference direction of the second reflector 300 and finally can form a ring-shaped light-emitting structure to realize light homogenization effect in multiple directions.

[0030] In a further technical solution, the light source system disclosed in the embodiments of the present application may further include at least one light distribution element 400, the light distribution element 400 covers an outer side of the light-emitting body 100, and the light distribution element 400 can distribute light emitted from

the light-emitting body 100. The light distribution element 400 may be a light-homogenizing device or a light-concentrating device. The embodiments of the present application do not limit a specific type of the light distribution element 400.

[0031] In an alternative solution, the number of the light distribution element 400 described above can be one or at least two, and the light distribution element 400 can only cover a part of the light-emitting body 100. However, in order to avoid mutual interference, the number of the light distribution element 400 is equal to the number of the light-emitting body 100, and each light distribution element 400 covers on one light-emitting body 100, that is to say, each light-emitting body 100 is independently equipped with one light distribution element 400 to distribute light for it independently; the light distribution element 400 covers an outer side of the light-emitting body 100, so that the optical interference between the light-emitting bodies 100 can be alleviated, and at the same time, the light distribution efficiency of each light-emitting body 100 can be improved, thus the lighting effect of the entire light source system is better.

[0032] In a preferred solution, the plurality of light distribution elements 400 may be of an integrated structure. During an assembly process, the plurality of light distribution elements 400 are assembled as a whole without individual installation, thereby facilitating assembly and improving assembly efficiency.

[0033] In some other embodiments, the light distribution member 400 can also be a ring-shaped element, and one and the same light distribution element 400 covers a plurality of light-emitting bodies 100 arranged in a same circumference direction. This embodiment can reduce the number of the light distribution members 400, and therefore, it is convenient to quickly assemble the light source system.

[0034] Optionally, the light distribution element 400 can be a lens, specifically a convex lens or a concave lens, and can also be a lens group. Lens has better light distribution effect and a relatively simple structure. In a further technical solution, the light distribution element 400 may be a planoconvex lens, or a cover-shaped lens with an accommodating space. Specifically, the light-emitting body 100 may be located in the accommodating space. In this case, the light distribution element 400 can not only play the role of light distribution, but also can play a role of protecting the light-emitting body 100.

[0035] In the embodiments of the present application, the fourth end 350 of the second reflector 300 is an opened end. Specifically, in the light source system disclosed in the embodiments of the present application, an opening of the fourth end 350 of the second reflector 300 can be sealed by a circuit board 500, and the light-emitting body 100 can be fixed on the circuit board 500, which provides an installation position for the light-emitting body 100. Specifically, the light-emitting body 100 may be electrically connected to the circuit board 500, and then be supplied with power by the circuit board 500.

[0036] In a further technical solution, the circuit board 500 can be fixedly connected with the second reflector 300, and the second reflector 300 can be installed by using the circuit board 500 as a base during the entire assembly process of the lighting lamp. At the same time, the circuit board 500 can further block off the opening of the fourth end 350 of the second reflector 300, thereby preventing the light emitted by the light-emitting body 100 from leaking from the opening of the fourth end 350 of the second reflector 300.

[0037] In a further technical solution, a heat sink is provided on a side of the circuit board 500 facing away from the light-emitting body 100, and the heat sink can play a role in heat dissipation. The heat sink can be made of materials that can dissipate heat efficiently, for example, the heat sink can be made of stainless steel or aluminum material. Alternatively, the heat sink can be designed as a mechanism that is easier to dissipate heat. For example, the heat sink includes a plurality of heat dissipation pins or fins distributed in an array.

[0038] The heat sink can be directly bonded and fixed with the circuit board 500 through a thermally conductive adhesive layer. In this case, the heat generated by the circuit board 500 and the light-emitting body 100 arranged thereon during operation can be quickly transferred to the heat sink through the thermally conductive adhesive layer, and finally transferred to the entire lighting lamp through the heat sink to achieve quick heat dissipation.

[0039] Based on the light source system disclosed in the embodiments of the present application, the embodiments of the present application further disclose a lighting lamp, and the lighting lamp as disclosed includes the light source system described in the above embodiments.

[0040] The lighting lamp disclosed in the embodiments of the present application can be a down-light lamp, a spot-light lamp, and so on, and the embodiments of the present application do not limit a specific type of the lighting lamp.

[0041] In an alternative solution, the lighting lamp disclosed in the embodiments of the present application may further include a circuit board 500 and a shell 600, the light-emitting body 100 is arranged on the circuit board 500, and the circuit board 500 is arranged on a bottom wall 630 of the shell 600, thereby improving the installation strength of the circuit board 500. At this time, the light-emitting body 100 may be located between a side wall 640 of the shell 600 and the first reflector 200; or, the light-emitting body 100 is located between the second reflector 300 and the first reflector 200. Relatively speaking, in the case where the light-emitting body 100 is located between the second reflector 300 and the first reflector 200, the second reflector 300 can surround the light-emitting body 100 to better reflect light.

[0042] Further, the lighting lamp can further include a mask 700, the shell 600 has an inner cavity 610 and an opening 620, the mask 700 is installed at the opening

620, and the mask 700 and the shell 600 form an optical cavity, and the light source system is arranged in the light source cavity, that is, both the first reflector 200 and the second reflector 300 are arranged in the optical cavity, and an orientation of the first light-emitting opening 221 is consistent with an orientation of the opening 620. The light emitted by the light-emitting body 100 is reflected by the first reflector 200 and the second reflector 300 and then exits from the mask 700, and the mask 700 can further improve the light homogenization effect of the lighting lamp.

[0043] Optionally, the second reflector 300 may be fixed between the mask 700 and the bottom wall 630 of the shell 600; or, the second reflector 300 is fixed between the mask 700 and the circuit board 500. These two arrangement modes both can better ensure that the light exits through the mask 700 after being reflected, thereby improving the lighting effect of the lighting lamp.

[0044] In order to drive the light source system in a better way, the lighting lamp may further include a driver 800, and the driver 800 is arranged on the circuit board 500. Optionally, the driver 800 may be arranged on the side of the circuit board 500 facing towards the first light-emitting opening 221, or may be arranged on the side of the circuit board 500 facing away from the first light-emitting opening 221, which is not limited in the embodiments of the present application.

[0045] The embodiments of the present application described above focus on differences between various embodiments, and different optimization features of the various embodiments can be combined to form better embodiment(s) as long as they are not contradictory, which will not be repeated considering simplicity of the text.

[0046] The above descriptions are only examples of the present application, and are not intended to limit the present application. Various modifications and variations of the present application will occur to those skilled in the art. Any modification, equivalent replacement, improvement, etc. made within the spirit and principle of the present application shall be included within the scope of the claims of the present application.

Claims

1. A light source system of a lighting lamp, comprising a light-emitting body (100), a first reflector (200) and a second reflector (300), wherein

the first reflector (200) is at least partially sleeved in the second reflector (300), the first reflector (200) comprises a first end (220) and a second end (230), and the first end (220) is provided with a first light-emitting opening (221), the first light-emitting opening (221) is located in the second reflector (300), the second reflector (300) comprises a third end (340) and a fourth end (350), and the third end (340) is provided with a

second light-emitting opening (341); the light-emitting body (100) is arranged in the second reflector (300), and the second reflector (300) has a first reflecting surface (310) facing towards the light-emitting body (100); in an optical axis direction of the light-emitting body (100), an orthographic projection of the first reflecting surface (310) covers an orthographic projection of the light-emitting body (100); light emitted by the light-emitting body (100) passes through at least one of the first reflector (200) or the second reflector (300) and then exits from the second light-emitting opening (341).

2. The light source system according to claim 1, wherein a direction extending from the first light-emitting opening (221) to the second light-emitting opening (341) is a first direction, and in the first direction, a cross-sectional area of the first reflector (200) gradually decreases.

3. The light source system according to claim 2, wherein the second reflector (300) comprises a first reflecting portion (320) and a second reflecting portion (330) connected with the first reflecting portion (320), the first reflecting portion (320) and the second reflecting portion (330) are arranged sequentially in the first direction,

in the first direction, a cross-sectional area of the first reflecting portion (320) gradually decreases, a cross-sectional area of the second reflecting portion (330) gradually increases, the light-emitting body (100) is arranged in the first reflecting portion (320), and the first reflecting portion (320) is provided with the first reflecting surface (310).

4. The light source system according to claim 3, wherein the light-emitting body (100) is arranged in an end of the first reflecting portion (320) facing away from the second reflecting portion (330).

5. The light source system according to claim 4, wherein the light-emitting body (100) is configured to be adjacent to an edge of the first reflecting portion (320).

6. The light source system according to claim 3, wherein the first end (220) of the first reflector (200) is located in the second reflecting portion (330).

7. The light source system according to claim 2, wherein a cross-sectional area of an end of the first reflecting portion (320) connected with the second reflecting portion (330) is a first area, a cross-sectional area of the other end of the first reflecting portion (320) is a second area, and a ratio of the first area to the

second area is 0.6~0.9.

8. The light source system according to claim 1, wherein a direction extending from the first light-emitting opening (221) to the second light-emitting opening (341) is a first direction, in a sectional surface parallel to the first direction, an included angle between the first direction and a line connecting the first light-emitting opening (221) and the second light-emitting opening (341) is less than or equal to 45 °.
9. The light source system according to claim 1, wherein the first reflector (200) has a second reflecting surface (210) facing towards the light-emitting body (100), the second reflecting surface (210) is an arc surface, and the second reflecting surface (210) is bent towards a side away from the light-emitting body (100).
10. The light source system according to claim 1, wherein the second end (230) of the first reflector (200) is located outside the second reflector (300).
11. The light source system according to claim 1, wherein the number of the light-emitting body (100) is at least two, and the at least two light-emitting bodies (100) are arranged in a circumference direction of the second reflector (300).
12. The light source system according to claim 11, wherein the light source system further comprises at least one light distribution element (400), which covers an outer side of the light-emitting body (100).
13. The light source system according to claim 12, wherein the number of the light distribution element (400) is at least two, and the number of the light distribution element (400) is equal to the number of the light-emitting body (100), and an outer side of each light-emitting body (100) is covered by one light distribution element (400); or, the light distribution element (400) is a ring-shaped element, and one and the same light distribution element (400) covers a plurality of light-emitting bodies (100) arranged in a same circumference direction.
14. The light source system according to claim 12, wherein the light distribution element (400) is a lens.
15. A lighting lamp, comprising the light source system according to any one of claims 1 to 14.
16. The lighting lamp according to claim 15, wherein the lighting lamp further comprises a circuit board (500) and a shell (600), the light-emitting body (100) is arranged on the circuit board (500), and the circuit board (500) is arranged on a bottom wall (630) of

the shell (600),

the light-emitting body (100) is located between a side wall (640) of the shell (600) and the first reflector (200); or, the light-emitting body (100) is located between the second reflector (300) and the first reflector (200).

17. The lighting lamp according to claim 16, wherein the lighting lamp further comprises a mask (700), the shell (600) comprises an opening (620), the mask (700) is installed at the opening (620), and the mask (700) and the shell (600) form an optical cavity, and the first reflector (200) and the second reflector (300) both are arranged in the optical cavity.
18. The lighting lamp according to claim 17, wherein the second reflector (300) is fixed between the mask (700) and the bottom wall (630) of the shell (600); or, the second reflector (300) is fixed between the mask (700) and the circuit board (500).
19. The lighting lamp according to claim 16, wherein the lighting lamp further comprises a circuit board (500) and a driver (800), the light-emitting body (100) is arranged on the circuit board (500), the circuit board (500) is arranged on the bottom wall (630) of the shell (600), and the driver (800) is arranged on the circuit board (500).
20. The lighting lamp according to claim 15, wherein the lighting lamp is a down-light lamp or a spot-light lamp.

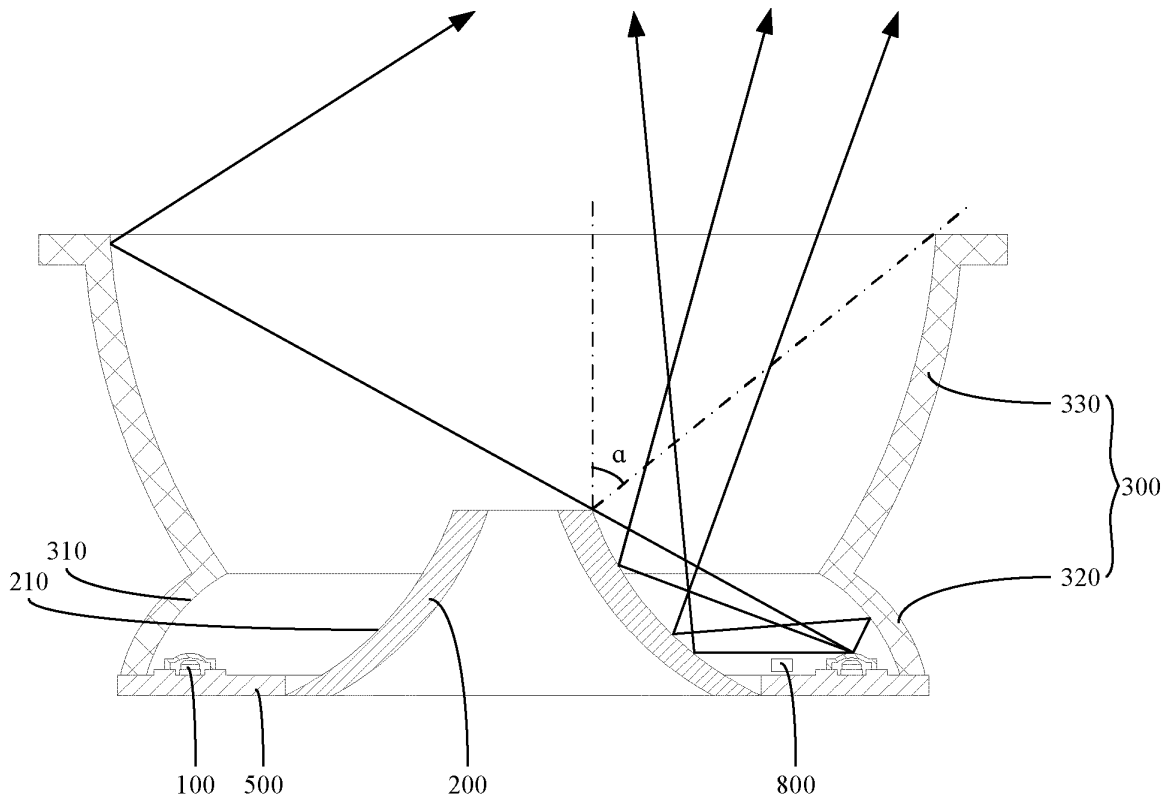


FIG. 1

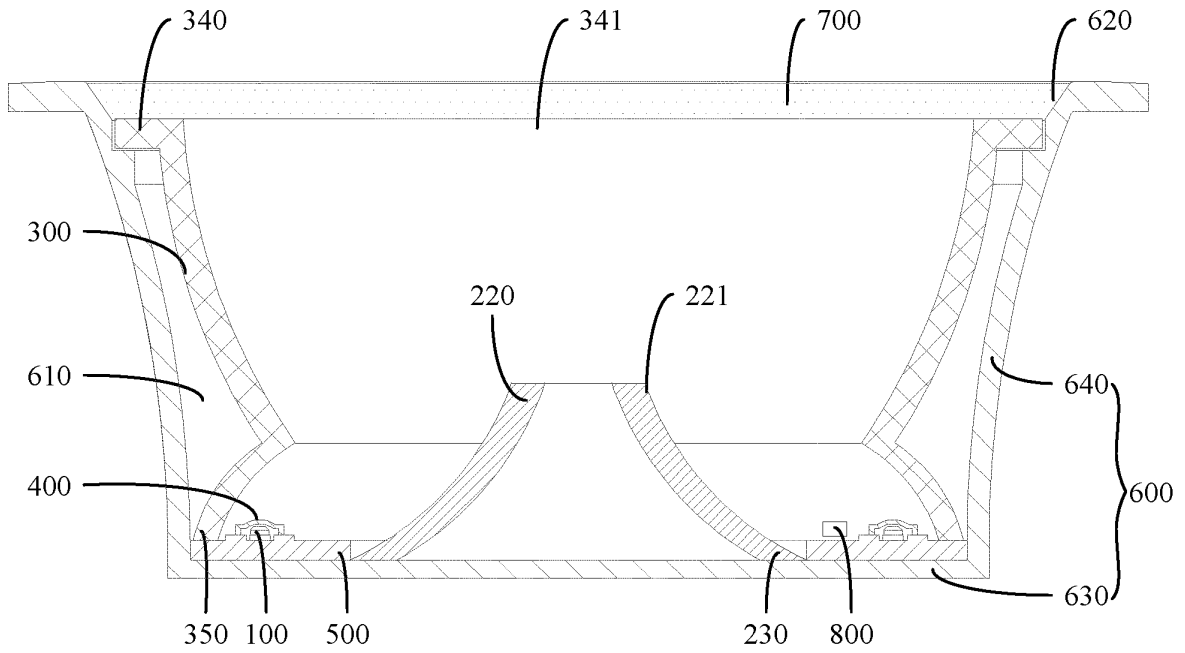


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2021/119053

5	A. CLASSIFICATION OF SUBJECT MATTER	
	F21K 9/68(2016.01)i; F21V 7/04(2006.01)i; F21Y 115/10(2016.01)i	
	According to International Patent Classification (IPC) or to both national classification and IPC	
10	B. FIELDS SEARCHED	
	Minimum documentation searched (classification system followed by classification symbols)	
	F21V	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)	
	CNPAT, CNKI, WPI, EPODOC: 照明, 灯, 防眩, 眩光, 反射, 反光, 遮挡, 覆盖, 第二, 弧形, 曲面, 弯曲, illumin+, light+, lamp, emit+, glar+, diffus+, reflect+, second, block+, shield+	
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
	Category*	Citation of document, with indication, where appropriate, of the relevant passages
		Relevant to claim No.
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25	PX	CN 212408319 U (SUZHOU OPPL LIGHTING CO., LTD. et al.) 26 January 2021 (2021-01-26) claims 1-20
	PX	CN 111998239 A (SUZHOU OPPL LIGHTING CO., LTD. et al.) 27 November 2020 (2020-11-27) description paragraphs [0030]-[0035], claims 1-23, figure 3
30	PX	CN 212408322 U (SUZHOU OPPL LIGHTING CO., LTD. et al.) 26 January 2021 (2021-01-26) description paragraphs [0030]-[0035], claims 1-23, figure 3
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35	X	CN 111433511 A (KOITO MANUFACTURING CO., LTD.) 17 July 2020 (2020-07-17) description paragraphs [0040]-[0053], paragraphs [0150]-[0156], figures 1, 11
	<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.	
40	* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
	"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
	"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
45	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
	"O" document referring to an oral disclosure, use, exhibition or other means	
	"P" document published prior to the international filing date but later than the priority date claimed	
	Date of the actual completion of the international search	Date of mailing of the international search report
	23 November 2021	17 December 2021
50	Name and mailing address of the ISA/CN	Authorized officer
	China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China	
55	Facsimile No. (86-10)62019451	Telephone No.

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