



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
24.06.2009 Bulletin 2009/26

(51) Int Cl.:
F21V 17/16^(2006.01) F21K 7/00^(2006.01)

(21) Application number: **08008953.5**

(22) Date of filing: **14.05.2008**

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

(30) Priority: **19.12.2007 TW 96221594 U**

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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) **Lampshade of a light-emitting diode (LED) lamp**

(57) The present invention provides an improved lampshade (10) of LED lamp, which is assembled onto the port (31) of hold tank (30) on the main body (20) of LED lamp, so that light-reflection modules (50) located between port (31) of hold tank (30) and LED modules (40) in the hold tank (30) are positioned securely; the major characteristics lie in that: the lampshade (10) comprises a circumferential locating edge (11) and a limitation surface (12), of which the circumferential locating edge (11) is adapted with the wall edge of hold tank (30) to define an inner edge (111) and an external edge (112); the limitation surface (12) is recessed into inner edge (111) of the circumferential locating edge (11), and also provided with several through-holes (120) for sleeving and limitation of the light-reflection modules (50); a snapping portion (60) is placed at the coupling portion of the circumferential locating edge (11) and wall edge of the hold tank (30) for positioning of the lampshade (10); with this lampshade (10), the light-reflection modules (50) could be positioned securely and removed easily.

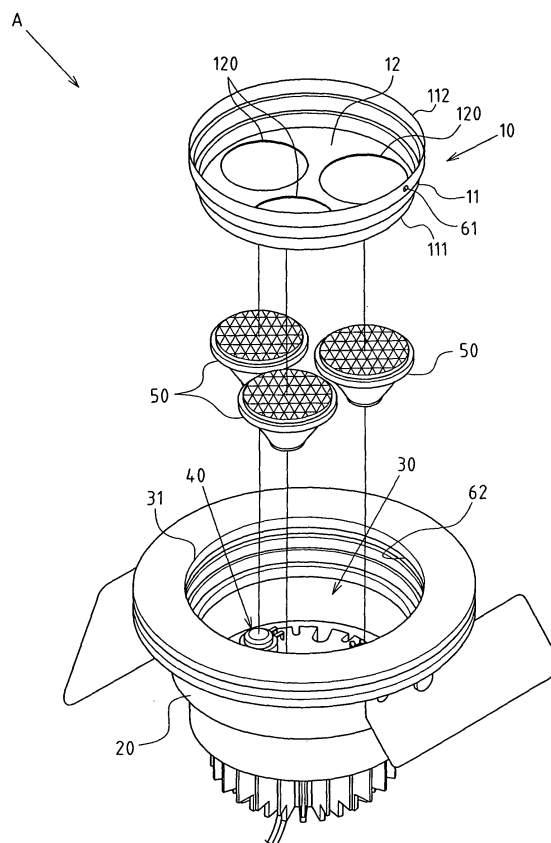


FIG.2

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates generally to a light-emitting diode (LED) lamp, and more particularly to an innovative lamp with an improved lampshade.

2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 37 CFR 1.98.

[0002] An LED lamp generally comprises a main body, LED module, heat-radiating component and lampshade.

[0003] The lampshade of the LED lamp is generally developed from a traditional light shield. However, LEDs in the LED lamp are distributed in a spotted state, so every LED is fitted with a light-reflection module to magnify the light spots, softening the bright light and generating a decorative spotted effect. Considering the assembly and disassembly work, every light-reflection module must be positioned securely.

[0004] Thus, to overcome the aforementioned problems of the prior art, it would be an advancement in the art to provide an improved structure that can significantly improve efficacy.

[0005] Therefore, the inventor has provided the present invention of practicability after deliberate design and evaluation based on years of experience in the production, development and design of related products.

BRIEF SUMMARY OF THE INVENTION

[0006] There is enhanced efficacy of the present invention.

[0007] Through the structures of the lampshade, the circumferential locating edge, limitation surface, through-hole and snapping portion are combined. The circumferential locating edge is adapted to the wall edge of the hold tank, providing the lampshade with a reliable, circular support surface. The limitation surface of the lampshade is recessed into an inner edge of the circumferential locating edge, permitting the light-emitting surface of the light-reflection module to recess slightly and making light-emitting surface aesthetically pleasing. The through-hole on the limitation surface of the lampshade enables rapid sleeving and limitation of the light-reflection modules. With the circumferential locating edge and snapping portion on the wall edge of the hold tank, the lampshade and main body can be positioned and removed rapidly and easily. Thus, the lampshade is formed such that the light-reflection module could be positioned securely and removed easily.

[0008] Based upon the structures of the present invention, the circumferential locating edge of the lampshade has a stepped external wall with big and small necks, and the wall edge of the hold tank has a stepped inner

wall with big and small treads. The coupling area of the circumferential locating edge of the lampshade and the wall edge of hold tank could be further expanded for better assembly and positioning effects.

[0009] Based upon the structures of the present invention, a shoulder is formed at one end of the light-reflection module. The shoulder is located in the through-hole of the limitation surface of the lampshade to further securely fix the light-reflection modules.

[0010] Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0011] FIG. 1 shows an assembled perspective view of the preferred embodiment of the present invention.

[0012] FIG. 2 shows an exploded perspective view of the preferred embodiment of the present invention.

[0013] FIG. 3 shows an exploded sectional view of the preferred embodiment of the present invention.

[0014] FIG. 4 shows an assembled sectional view of the preferred embodiment of the present invention.

[0015] FIG. 5 shows a partially enlarged sectional view of portion B of FIG.4.

DETAILED DESCRIPTION OF THE INVENTION

[0016] The features and the advantages of the present invention will be more readily understood upon a thoughtful deliberation of the following detailed description of a preferred embodiment of the present invention with reference to the accompanying drawings.

[0017] FIGS. 1-4 depict preferred embodiments of improved lampshade for an LED lamp of the present invention. The embodiments are only provided for explanatory purposes with respect to the patent claims.

[0018] The lampshade 10 is assembled onto the port 31 of hold tank 30 on the main body 20 of LED lamp A (an embedded light structure), so that light-reflection modules 50 located between port 31 of hold tank 30 and LED modules 40 in the hold tank 30 are positioned securely.

[0019] The lampshade 10 comprises a circumferential locating edge 11 and a limitation surface 12. The circumferential locating edge 11 is adapted with the wall edge of hold tank 30 to define an inner edge 111 and an external edge 112. The limitation surface 12 is recessed into inner edge 111 of the circumferential locating edge 11 and is provided with several through-holes 120 for sleeving and limitation of the light-reflection modules 50. The circumferential locating edge 11 and the wall edge of hold tank 30 are coupled with snapping portion 60.

[0020] Referring to FIGS. 3 and 4, the snapping portion 60 comprises a few locating flanges 61, arranged at in-

tervals on the circumferential locating edge 11 of the lampshade 10, and a circular snapping groove 62 on the wall edge of hold tank 30 of the main body 20. When the lampshade 10 is mounted into the hold tank 30 of main body 20, it could be snapped rapidly into the circular snapping groove 62 via the locating flange 61 for positioning purpose.

[0021] The circumferential locating edge 11 of the lampshade 10 has a stepped external wall with big and small necks, and the wall edge of the hold tank 30 has a stepped inner wall with big and small treads.

[0022] A shoulder 51 is formed at one end of the light-reflection module 50, so that it could be located in the through-hole 120 of the limitation surface 12 of the lampshade 10 to securely fix the light-reflection modules 50.

[0023] Based upon above-specified structures, the present invention is operated as follows:

[0024] Referring to FIGS. 3 and 4, when the port 31 of the hold tank 30 of the main body 20 faces upwards, the light-reflection modules 50 are first placed into hold tank 30 of the main body 20 opposite to the LEDs on LED module 40. Then, the lampshade 10 is assembled into the port 31 of the hold tank 30 of the main body 20. In such a case, the light-reflection modules 50 are fastened into the through-hole 120 on the limitation surface 12 of the lampshade 10 and are positioned through the circumferential locating edge 11 of the lampshade 10 and snapping portion 60 on the wall edge of the hold tank 30. Thus, both lampshade 10 and light-reflection module 50 are fixedly assembled and positioned with the main body 20.

Claims

1. An improved lampshade of LED lamp, which is assembled onto the port of hold tank on the main body of LED lamp, so that light-reflection modules located between port of hold tank and LED modules in the hold tank are positioned securely; said lampshade comprising:

a circumferential locating edge, which is adapted with the wall edge of hold tank to define an inner edge and an external edge;

a limitation surface, which is recessed into inner edge of the circumferential locating edge, and also provided with several through-holes for sleeving and limitation of the light-reflection modules;

a snapping portion, which is placed at the coupling portion of the circumferential locating edge and wall edge of the hold tank for positioning of the lampshade.

2. The improved structure defined in Claim 1, wherein the circumferential locating edge of said lampshade is designed with a stepped external wall with big and small necks, and the wall edge of the hold tank de-

signed with a stepped inner wall with big and small treads.

3. The improved structure defined in Claim 1, wherein a shoulder is formed at one end of the light-reflection module, so that it could be located in the through-hole of the limitation surface of the lampshade.
4. The improved structure defined in Claim 1, wherein said snapping portion comprises a few locating flanges arranged on the circumferential locating edge of the lampshade, and a circular snapping groove on the wall edge of hold tank of the main body.

Amended claims in accordance with Rule 137(2) EPC.

1. An improved lampshade of LED lamp, which is assembled onto the port of hold tank on the main body of LED lamp; there is a light-reflection module located between port of hold tank and LED modules in the hold tank; said lampshade comprising:

a circumferential locating edge, which is adapted with the wall edge of hold tank to define an inner edge and an external edge;

a limitation surface, which is recessed into inner edge of the circumferential locating edge, and also provided with several through-holes for sleeving and limitation of the light-reflection modules;

a snapping portion, which is placed at the coupling portion of the circumferential locating edge and wall edge of the hold tank for positioning of the lampshade.

2. The improved structure defined in Claim 1, wherein the circumferential locating edge of said lampshade is designed with a stepped external wall with big and small necks, and the wall edge of the hold tank designed with a stepped inner wall with big and small treads.

3. The improved structure defined in Claim 1, wherein a shoulder is formed at one end of the light-reflection module, so that it could be located in the through-hole of the limitation surface of the lampshade.

4. The improved structure defined in Claim 1, wherein said snapping portion comprises a few locating flanges arranged on the circumferential locating edge of the lampshade, and a circular snapping groove on the wall edge of hold tank of the main body.

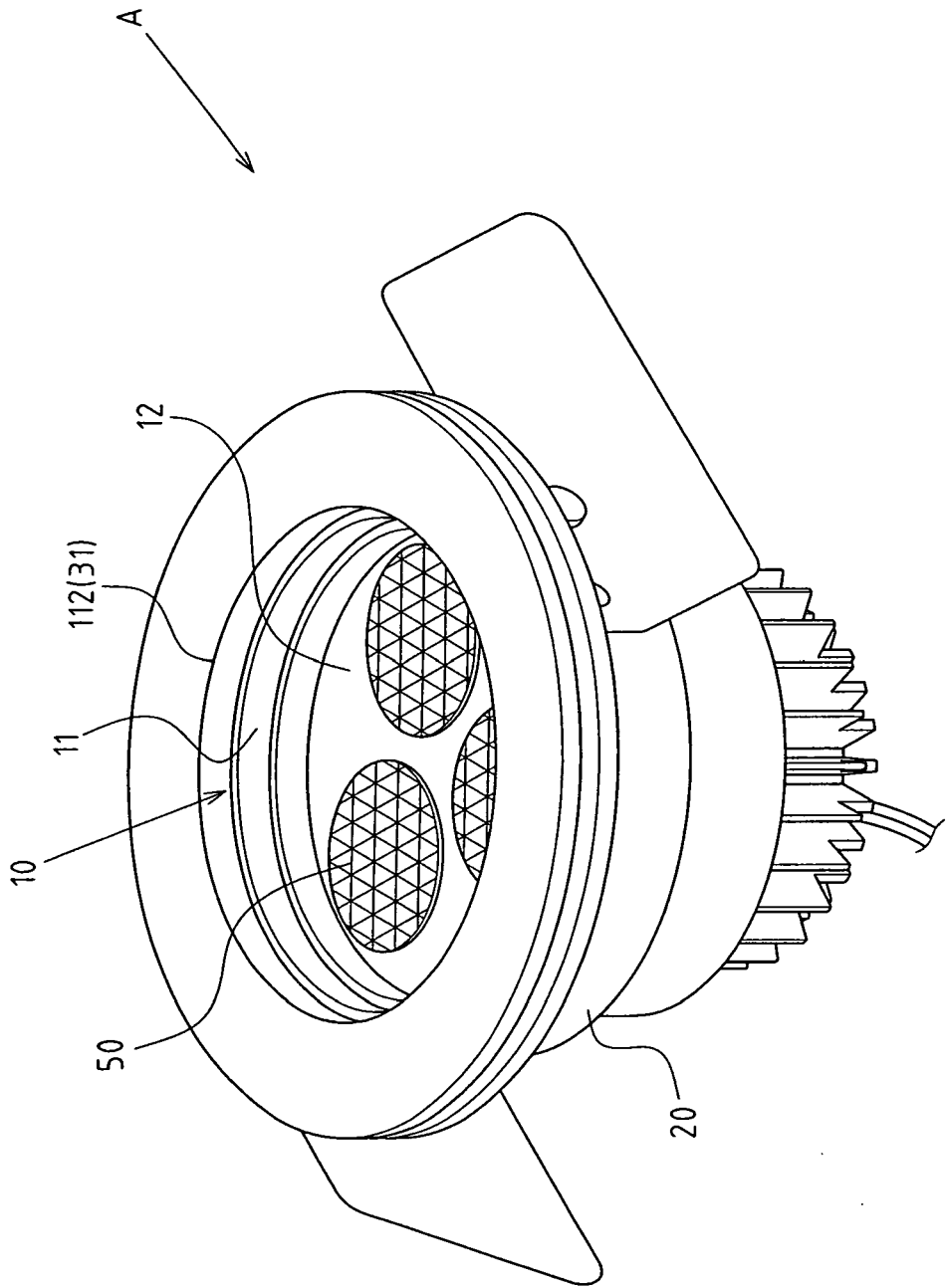


FIG.1

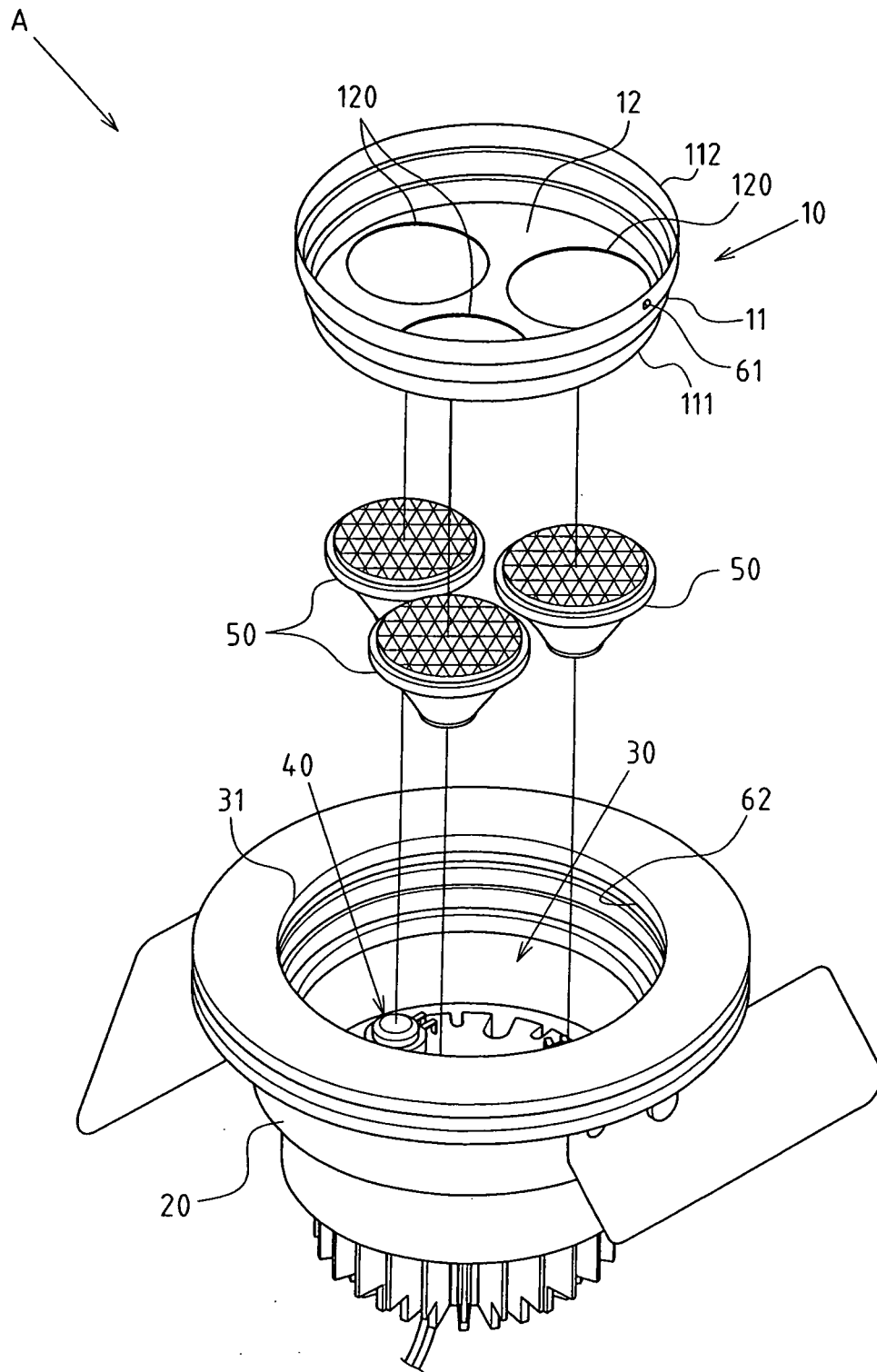


FIG.2

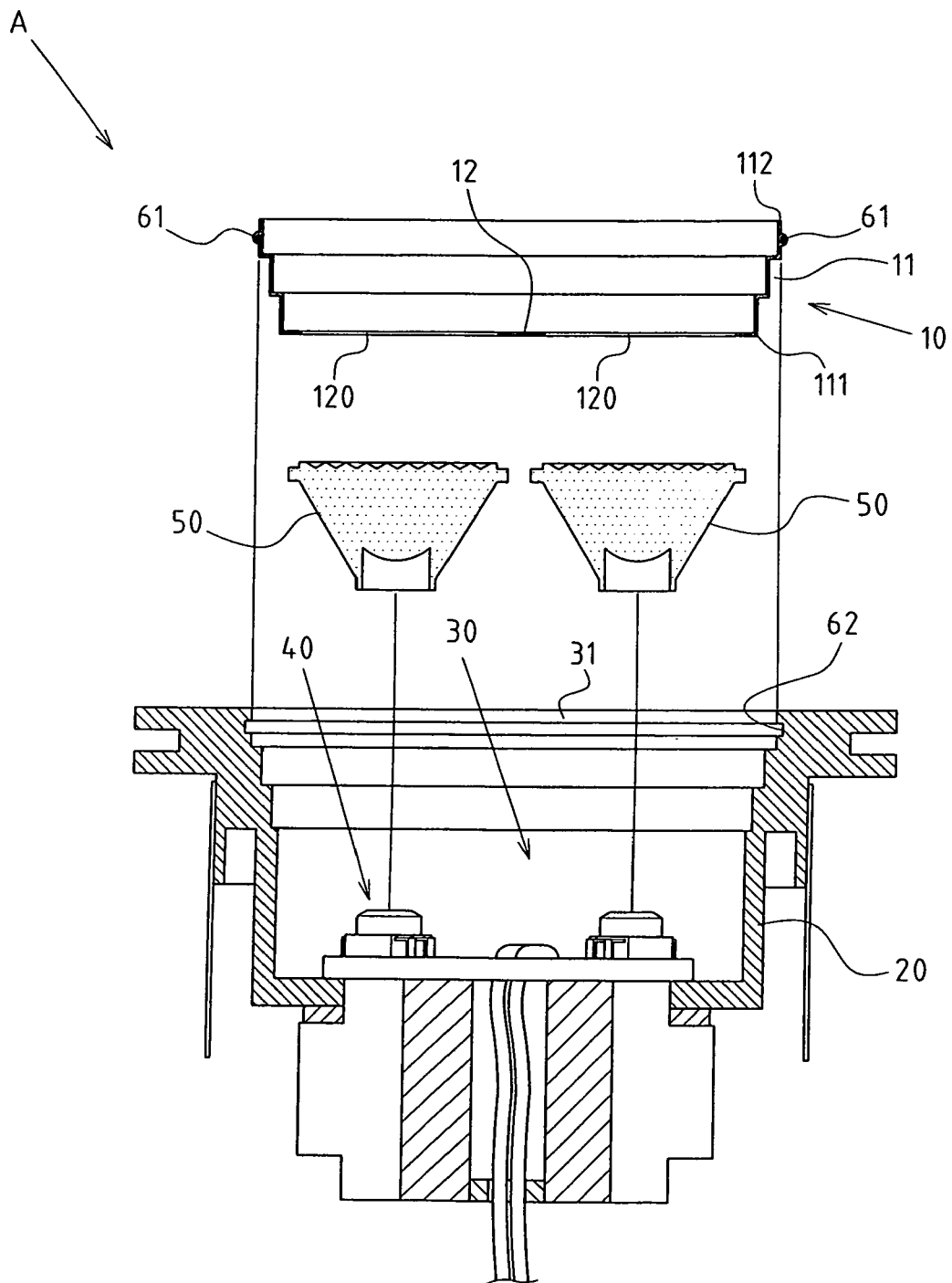


FIG.3

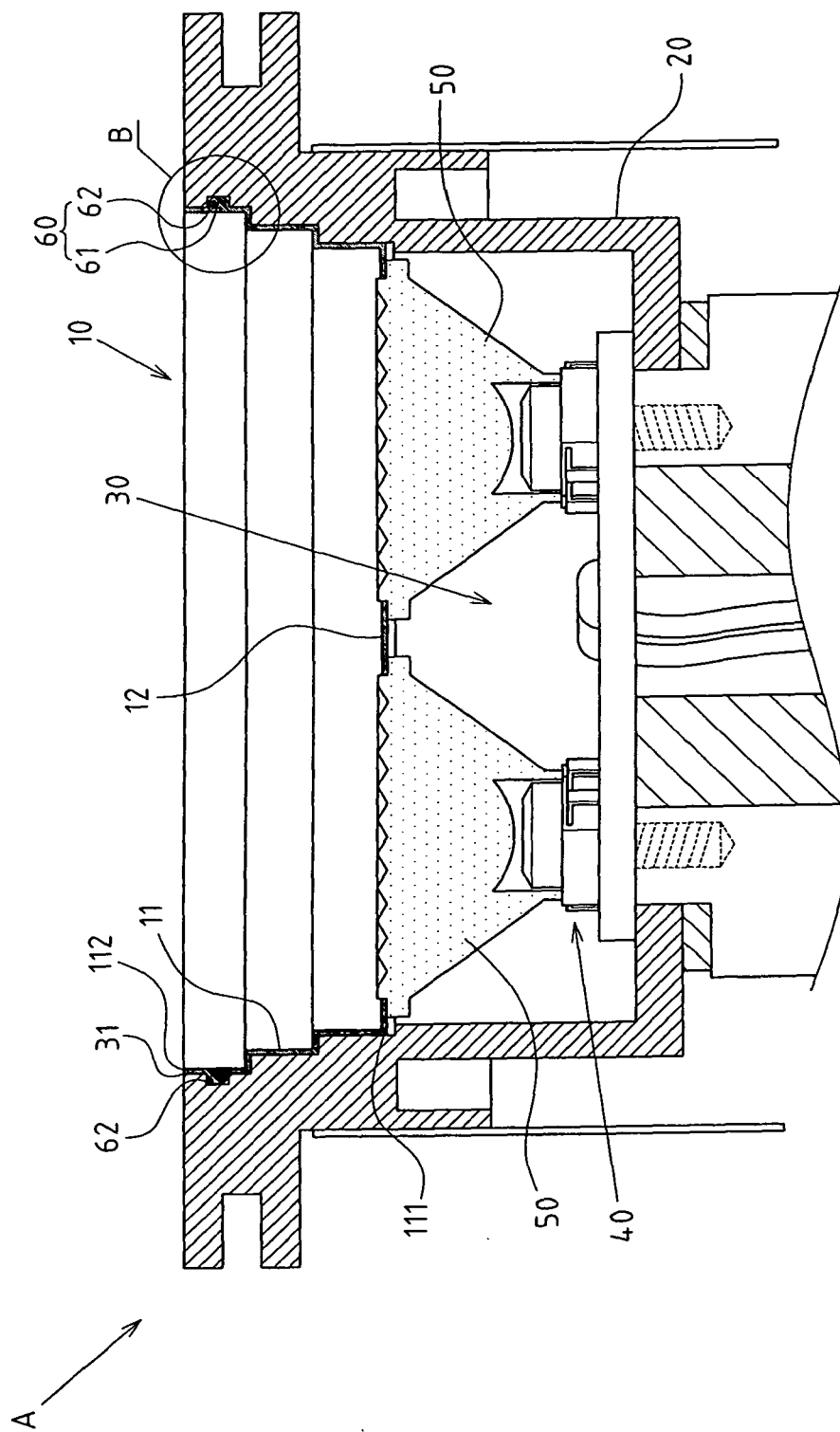


FIG.4

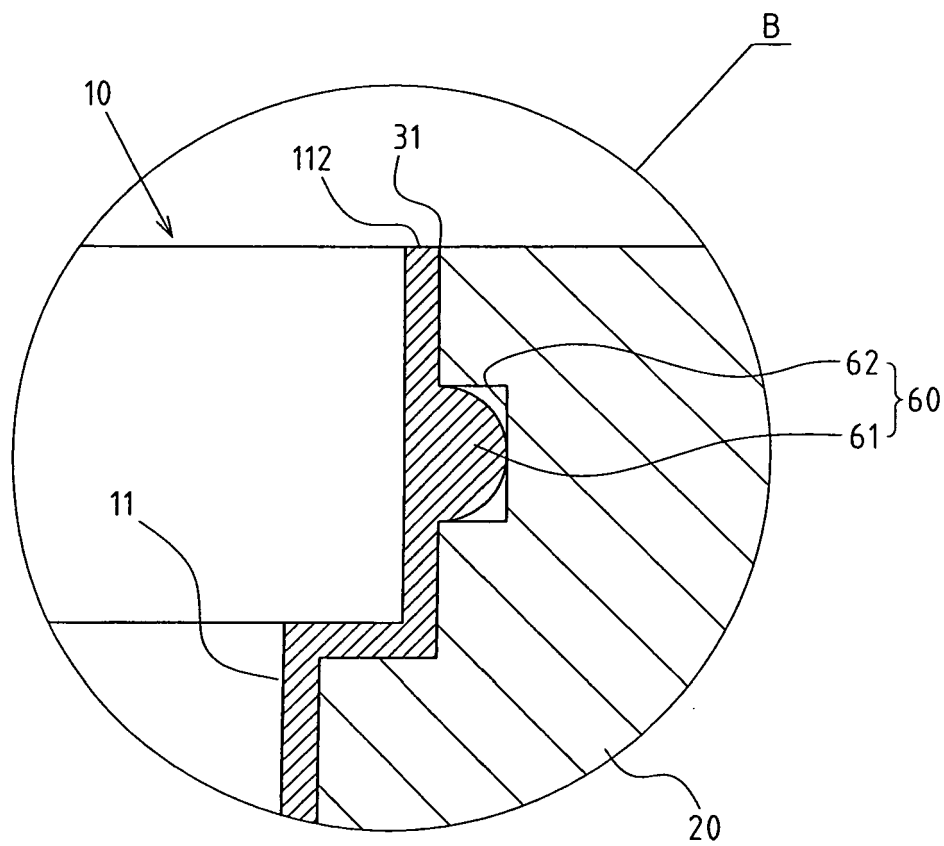


FIG.5



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 08 00 8953

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	DE 203 10 313 U1 (SHU KUO FEN [TW]) 18 December 2003 (2003-12-18) * the whole document *	1,4	INV. F21V17/16 F21K7/00
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A	-----	2,3	
A	EP 1 710 495 A (IGUZZINI ILLUMINAZIONE [IT]) 11 October 2006 (2006-10-11) * column 3, line 12 - line 25 * * figures 1-3 * -----	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			F21K F21V
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 August 2008	Examiner Lange, Christian
CATEGORY OF CITED DOCUMENTS		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	
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			

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EPO FORM 1503 03.82 (P04C01)

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

EP 08 00 8953

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-08-2008

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EPO FORM P0459

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