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

(54) **ILLUMINATING LAMP**

(57) An illuminating lamp (1, 1a, 1b) includes a lamp (10), a lampshade (30) and N glare adjustment modules (20, 20a, 20b). Each of the glare adjustment modules (20, 20a, 20b) is located between the lamp (10) and the lampshade (30) and arranged along an axis, wherein N is a natural number. Via the abovementioned structure, if $N = 1$, the upper edge of the glare adjustment module (20) is fastened to the lamp (10) and the lower edge of the glare adjustment module (20) is fastened to the lampshade (30) such that the illuminating lamp (1) has a cutoff angle A; if $N \geq 2$, the upper edge of the first glare adjustment module (20a) is fastened to the lamp (10) and the lower edge of the Nth glare adjustment module (20a) is fastened to the lampshade (30) such that the illuminating lamp (1a) has a cutoff angle B, wherein cutoff angle A < cutoff angle B.

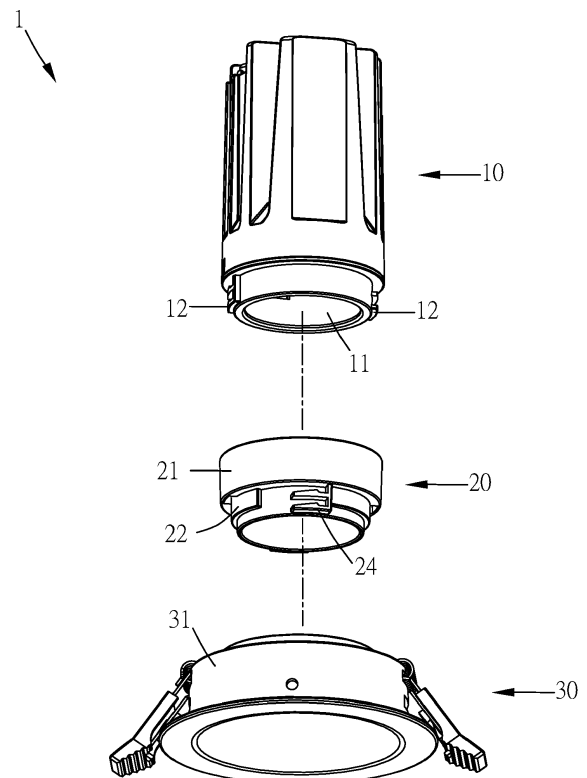


FIG. 1

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to an illuminating lamp; more particularly, the present invention relates to an illuminating lamp having a length that is easily adjustable according to the using requirement to adjust the illumination and the glare rating.

2. Description of the Related Art

[0002] The recessed downlight is a convenient, compact, and beautiful lamp which can be installed in the ceilings of different environments. Lamp manufacturers develop such products with different specifications according to the requirements of different environments.

[0003] However, for the consumer, the demand specifications of lamps have become varied; for example, a bright environment is needed in an office for working, and good lighting with low glare is required to avoid eye fatigue; a slightly dim lighting environment is needed in a cafe or bar to create a cozy atmosphere. Therefore, the lighting manufacturer must produce lamps of various sizes, illumination and glare ratings to meet the market demand. However, producing too many lamps with different specifications will cause the manufacturer's product line to overflow, increase product management costs, and reduce productivity.

[0004] Therefore, there is a need to provide a new lamp which allows easy adjustment of the lamp specifications according to the lighting requirements of different usage scenarios.

SUMMARY OF THE INVENTION

[0005] It is an object of the present invention to provide an illuminating lamp which allows easy adjustment of the length of the lamp according to user requirements so as to adjust the illumination and the glare rating.

[0006] To achieve the abovementioned object, the illuminating lamp of the present invention includes a lamp, a lampshade and N glare adjustment modules, wherein N is a natural number. Each of the glare adjustment modules is located between the lamp and the lampshade and arranged along an axis. Via the abovementioned structure, if $N = 1$, the upper edge of the glare adjustment module is fastened to the lamp and the lower edge of the glare adjustment module is fastened to the lampshade such that the illuminating lamp has a cutoff angle A; if $N \geq 2$, the upper edge of the first glare adjustment module is fastened to the lamp and the lower edge of the Nth glare adjustment module is fastened to the lampshade such that the illuminating lamp has a cutoff angle B, wherein cutoff angle $A < \text{cutoff angle B}$.

[0007] According to one embodiment of the present

invention, each of the glare adjustment modules further includes a first annular housing and a second annular housing; a diameter of the first annular housing is larger than the diameter of the second annular housing, and the second annular housing is connected to the bottom of the first annular housing.

[0008] According to one embodiment of the present invention, each of the glare adjustment modules further includes at least one stacking tube bump and at least one stacking tube latch; the at least one stacking tube bump is disposed on the inside of the first annular housing, and the at least one stacking tube latch is disposed on the outside of the second annular housing.

[0009] According to one embodiment of the present invention, the lamp further includes a lamp holder annular housing and at least one lamp holder latch; the at least one lamp holder latch is disposed on the outside of the lamp holder annular housing.

[0010] According to one embodiment of the present invention, the lamp holder annular housing is located on the inside of the first annular housing, and the at least one lamp holder latch is disposed between the stacking tube bump and the second annular housing.

[0011] According to one embodiment of the present invention, the lampshade further includes a lampshade annular housing and at least one lampshade bump, and the at least one lampshade bump is located on the inside of the lampshade annular housing.

[0012] According to one embodiment of the present invention, the second annular housing of the glare adjustment module which touches the lampshade is located on the inside of the lampshade annular housing, and the at least one stacking tube latch of the glare adjustment module which contacts the lampshade is located under the at least one lampshade bump.

[0013] According to one embodiment of the present invention, if $N \geq 3$, the illuminating lamp has a cutoff angle C, and cutoff angle $A < \text{cutoff angle B} < \text{cutoff angle C}$.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

FIG. 1 illustrates an exploded view of the illuminating lamp in one embodiment of the present invention.

FIG. 2 illustrates a schematic drawing of the illuminating lamp with one stacking glare adjustment module in one embodiment of the present invention.

FIG. 2a illustrates a schematic drawing of the illuminating lamp with two stacking glare adjustment modules in one embodiment of the present invention.

FIG. 2b illustrates a schematic drawing of the illuminating lamp with three stacking glare adjustment modules in one embodiment of the present invention.

FIG. 3 illustrates a partial section view of the glare adjustment module in one embodiment of the present invention.

FIG. 4 illustrates a schematic drawing of the glare

adjustment module and the lampshade in the assembled state in one embodiment of the present invention.

FIG. 5 illustrates a schematic drawing of the two glare adjustment modules and the lampshade in the assembled state in one embodiment of the present invention.

FIG. 6 illustrates a section view of the illuminating lamp with one stacking glare adjustment module in one embodiment of the present invention.

FIG. 7 illustrates a section view of the illuminating lamp with two stacking glare adjustment modules in one embodiment of the present invention.

FIG. 8 illustrates a section view of the illuminating lamp with three stacking glare adjustment modules in one embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Please refer to FIG. 1 to FIG. 8, which illustrate the illuminating lamp in one embodiment of the present invention. FIG. 1 illustrates an exploded view of the illuminating lamp in one embodiment of the present invention. FIG. 2 illustrates a schematic drawing of the illuminating lamp with one stacking glare adjustment module in one embodiment of the present invention. FIG. 2a illustrates a schematic drawing of the illuminating lamp with two stacking glare adjustment modules in one embodiment of the present invention. FIG. 2b illustrates a schematic drawing of the illuminating lamp with three stacking glare adjustment modules in one embodiment of the present invention. FIG. 3 illustrates a partial section view of the glare adjustment module in one embodiment of the present invention. FIG. 4 illustrates a schematic drawing of the glare adjustment module and the lampshade in the assembled state in one embodiment of the present invention. FIG. 5 illustrates a schematic drawing of the two glare adjustment modules and the lampshade in the assembled state in one embodiment of the present invention. FIG. 6 illustrates a section view of the illuminating lamp with one stacking glare adjustment module in one embodiment of the present invention. FIG. 7 illustrates a section view of the illuminating lamp with two stacking glare adjustment modules in one embodiment of the present invention. FIG. 8 illustrates a section view of the illuminating lamp with three stacking glare adjustment modules in one embodiment of the present invention.

[0016] As shown in FIG. 1 to FIG. 2b and in FIG. 6, the illuminating lamps 1, 1a, 1b in one embodiment of the present invention can be installed on a ceiling to provide light, and the length of the lamp can easily be changed according to the using requirement to adjust the illumination and the glare rating. The illuminating lamps 1, 1a, 1b include a lamp 10, N glare adjustment modules 20, 20a, 20b, a lampshade 30 and a lighting module 90.

[0017] The lighting module 90 is a light emitting diode

bulb located in the lamp 10 and facing downward to illuminate the lower area. The lamp 10 includes a lamp holder annular housing 11 and two lamp holder latches 12. The bottom of the lamp holder annular housing 11 has an opening. The lighting module 90 is located in the lamp holder annular housing 11, and the light of the lighting module 90 passes through the opening of the lamp holder annular housing 11 to be radiated to the outside. Two lamp holder latches 12 are disposed on the bottom of the outside of the lamp holder annular housing 11. However, the amount of the lamp holder latches 12 is not limited to two; the amount can be changed to be any number of more than one according to the using requirement.

[0018] In one embodiment of the present invention, as shown in FIG. 1 to FIG. 2b, the glare adjustment modules 20, 20a, 20b are located between the lamp 10 and the lampshade 30 and are fastened to the lamp 10 and the lampshade 30. If the number of N is three, the assembly worker can arrange any amount of glare adjustment modules 20, 20a, 20b along an axis according to the lighting requirement to change the length of the glare adjustment modules 20, 20a, 20b and thereby change the cutoff angle to adjust the light effect and the glare rating value. However, the number of N is not limited to three; the number can be changed to other natural numbers according to the design requirement.

[0019] As shown in FIG. 2 and FIG. 6, if $N = 1$, the assembly worker can use only one glare adjustment module 20; the upper edge of the glare adjustment module 20 is fastened to the lamp 10, and the lower edge is fastened to the lampshade 30; at this moment, the overall height of the illuminating lamp 1 is the shortest, and the illuminating lamp 1 has a cutoff angle A. The cutoff angle refers to the angle between a connecting line and a vertical line, wherein the connecting line is between the outermost point of the light source and the edge of the light outlet of the lamp, and the vertical line is through the center of the light source light; according to a well-known optical principle, the size of the cutoff angle and the glare rating value are inversely proportional.

[0020] Therefore, if there is a need to further reduce the glare rating value, then, as shown in FIG. 2a and FIG. 7, if $N = 2$, the assembly worker can stack two glare adjustment modules 20, 20a such that the upper edge of the first glare adjustment module 20 is fastened to the lamp 10 and the lower edge of the second glare adjustment module 20a is fastened to the lampshade 30; at this moment, the overall height of the illuminating lamp 1a is increased, and the illuminating lamp 1a has a cutoff angle B, wherein cutoff angle $A < \text{cutoff angle B}$, and the glare rating value of cutoff angle B is less than the glare rating value of cutoff angle A.

[0021] Moreover, if the assembly worker needs to reduce the glare rating value further, as shown in FIG. 2b and FIG. 8, then if $N = 3$, the assembly worker can stack three glare adjustment modules 20, 20a, 20b such that the upper edge of the top glare adjustment module 20b is fastened to the lamp 10, the upper and lower sides of

the middle glare adjustment module 20a are respectively fastened to the upper and lower glare adjustment modules 20, 20b, and the lower edge of the bottom glare adjustment module 20 is fastened to the lampshade 30; at this moment, the overall height of the illuminating lamp 1b is further increased, and the illuminating lamp 1b has a cutoff angle C, wherein cutoff angle $A < \text{cutoff angle } B < \text{cutoff angle } C$, and the glare rating value of cutoff angle C is less than the glare rating value of cutoff angle B.

[0022] As shown in FIG. 3 to FIG. 5, each of the glare adjustment modules 20, 20a, 20b further includes a first annular housing 21, a second annular housing 22, two stacking tube bumps 23 and two stacking tube latches 24. The diameter of the first annular housing 21 is larger than the diameter of the second annular housing 22, and the diameter of the first annular housing 21 is also larger than the diameter of the bottom of the lamp holder annular housing 11. The first annular housing 21 is used for covering the lamp holder annular housing 11 or the second annular housing 22 of another glare adjustment module. The second annular housing 22 is connected to the bottom of the first annular housing 21. Two stacking tube bumps 23 are disposed on the inner side of the first annular housing 21, and the two stacking tube bumps 23 are used for fastening the second annular housing 22 to the lamp holder latch 12 or the stacking tube latch 24 of another glare adjustment module. The two stacking tube latches 24 are disposed on the outer side of the second annular housing 22, and the stacking tube latch 24 is used for fastening to the lampshade 30 or the stacking tube bump 23 and the second annular housing 22 of another glare adjustment module. However, the amounts of the stacking tube bumps 23 and the stacking tube latches 24 are not limited to two; the amounts can be changed to any number of more than one according to the design requirement. Further, it is to be known that, although only one stacking tube latch 24 is shown in FIG. 5, persons proficient in the art should understand that another stacking tube latch 24 is located on the opposite side and obscured by the second annular housing 22 such that the another stacking tube latch 24 is not shown in the figure.

[0023] As shown in FIG. 4 to FIG. 5, the lampshade 30 includes a lampshade annular housing 31 and two lampshade bumps 32. The lampshade annular housing 31 is used for covering the second annular housing 22. The two lampshade bumps 32 are located on the inner side of the lampshade annular housing 31, and the lampshade bumps 32 are used for fastening to the stacking tube latch 24; however, the amount of the lampshade bumps 32 is not limited to two and can be changed to another natural number according to the design requirement.

[0024] As shown in FIG. 1, FIG. 2 to FIG. 4, and FIG. 6, if the assembly worker is to assemble the illuminating lamp 1 with only one glare adjustment module 20, the assembly worker can put a glare adjustment module 20 on the lampshade 30 such that the second annular housing 22 of the glare adjustment module 20, which contacts

the lampshade 30, is located on the inside of the lampshade annular housing 31; then the assembly worker can rotate the glare adjustment module 20 such that the two stacking tube latches 24 respectively rotate to positions under the two lampshade bumps 32; at this moment, the lampshade bump 32 is clamped by the stacking tube latch 24 and the first annular housing 21 such that the lampshade bump 32 is fastened to the stacking tube latch 24. Via the fastening between the lampshade bump 32 and the stacking tube latch 24, the lampshade 30 and the glare adjustment module 20 can be combined stably.

[0025] Then the assembly worker can put the lamp 10 on the glare adjustment module 20 such that the lamp holder annular housing 11 is located on the inside of the first annular housing 21; subsequently, the assembly worker can rotate the lamp 10 such that the two lamp holder latches 12 respectively move to be located between the stacking tube bump 23 and the second annular housing 22; at this moment, the lamp holder latch 12 is clamped by the stacking tube bump 23 and the second annular housing 22 and the lamp holder latch 12 can be fastened to the stacking tube bump 23. Via the fastening between the lamp holder latch 12 and the stacking tube bump 23, the lamp 10 and the glare adjustment module 20 can be combined stably; thus, the lampshade 30, the glare adjustment module 20 and the lamp 10 can be combined stably to complete the assembly of the illuminating lamp 1.

[0026] As shown in FIG. 2a, FIG. 3 to FIG. 5, and FIG. 7, if the assembly worker is to use two glare adjustment modules 20, 20a to assemble the illuminating lamp 1, the assembly worker follows the abovementioned steps of combining the glare adjustment module and the lampshade 30 to combine the lampshade 30 with the glare adjustment module 20 stably. Then the assembly worker can put the other glare adjustment module 20a on the glare adjustment module 20 which is already combined with the lampshade 30 such that the second annular housing 22 of the upper glare adjustment module 20a is inserted into the inside of the first annular housing 21 of the lower glare adjustment module 20. Then the assembly worker can rotate the upper glare adjustment module 20a such that the stacking tube latch 24 of the upper glare adjustment module 20a moves to the location between the stacking tube bump 23 and the second annular housing 22 of the lower glare adjustment module 20; at this moment, the stacking tube latch 24 of the glare adjustment module 20a is clamped by the stacking tube bump 23 and the second annular housing 22 of the glare adjustment module 20, and the stacking tube latch 24 of the glare adjustment module 20a is fastened to the stacking tube bump 23 of the glare adjustment module 20; thus, the upper glare adjustment module 20a and the lower glare adjustment module 20 can be combined stably. Finally, the assembly worker can follow the abovementioned steps of combining the glare adjustment module and the lampshade 30 to combine the lampshade 30 with the upper glare adjustment module 20a stably. Thus,

the lampshade 30, the two glare adjustment modules 20, 20a and the lamp 10 can be combined stably to complete the assembly of the illuminating lamp 1a.

[0027] As shown in FIG. 2b and FIG. 8, if the assembly worker is to use three glare adjustment modules 20, 20a, 20b to assemble the illuminating lamp 1, the assembly worker can follow the abovementioned steps of combining the glare adjustment module 20 and the lampshade 30 to combine the lampshade 30 with the glare adjustment module 20 stably. Then the assembly worker can follow the abovementioned steps of combining the two glare adjustment modules 20, 20a to stack and combine the three glare adjustment modules 20, 20a, 20b. Finally, the assembly worker can follow the abovementioned steps of combining the glare adjustment module and the lampshade 30 to combine the lampshade 30 with the upper glare adjustment module 20b stably. Thus, the lampshade 30, the three glare adjustment modules 20, 20a, 20b and the lamp 10 can be combined stably to complete the assembly of the illuminating lamp 1b.

[0028] Via the design of the illuminating lamps 1, 1a, 1b of the present invention, the plurality of the glare adjustment modules can be stacked and combined to form lamps of different lengths; therefore, the assembly worker can easily change the overall length of the lamp according to the lighting needs of the environment so as to adjust the illumination and the glare rating; since the manufacturer does not need to develop different product lines for different lighting needs, the product cost can be reduced and the productivity can be increased.

Claims

1. An illuminating lamp (1, 1a, 1b), comprising:

a lamp (10);
a lampshade (30); and
N glare adjustment modules (20, 20a, 20b), each of the glare adjustment modules (20, 20a, 20b) being located between the lamp (10) and the lampshade (30) and arranged along an axis, wherein N is a natural number;
Via abovementioned structure, if $N = 1$, an upper edge of the glare adjustment module (20) is fastened to the lamp (10) and a lower edge of the glare adjustment module (20) is fastened to the lampshade (30) such that the illuminating lamp (1) has a cutoff angle A;
if $N \geq 2$, the upper edge of the first glare adjustment module (20) is fastened to the lamp and the lower edge of the Nth glare adjustment module (20a) is fastened to the lampshade (30) such that the illuminating lamp (1a) has a cutoff angle B, wherein cutoff angle $A < \text{cutoff angle } B$.

2. The illuminating lamp (1, 1a, 1b) as claimed in Claim 1, wherein each of the glare adjustment modules (20,

20a, 20b) further comprises a first annular housing (21) and a second annular housing (22); a diameter of the first annular housing (21) is larger than the second annular housing (22), and the second annular housing (22) is connected to a bottom of the first annular housing (21).

3. The illuminating lamp (1, 1a, 1b) as claimed in Claim 2, wherein the each of the glare adjustment modules (1, 1a, 1b) further comprises at least one stacking tube bump (23) and at least one stacking tube latch (24); the at least one stacking tube bump (23) is disposed on the inside of the first annular housing (21) and the at least one stacking tube latch (24) is disposed on an outside of the second annular housing (22).

4. The illuminating lamp (1, 1a, 1b) as claimed in Claim 3, wherein the lamp (10) further comprises a lamp holder annular housing (11) and at least one lamp holder latch (12); the at least one lamp holder latch (12) is disposed on an outside of the lamp holder annular housing (11).

5. The illuminating lamp (1, 1a, 1b) as claimed in Claim 4, wherein the lamp holder annular housing (11) is disposed on the inside of the first annular housing (21), and the at least one lamp holder latch (12) is located between the stacking tube bump (23) and the second annular housing (22).

6. The illuminating lamp (1, 1a, 1b) as claimed in Claim 5, wherein the lampshade (30) further comprises a lampshade annular housing (31) and at least one lampshade bump (32), and the at least one lampshade bump (32) is disposed on an inside of the lampshade annular housing (31).

7. The illuminating lamp (1, 1a, 1b) as claimed in Claim 6, wherein the second annular housing (22) of the glare adjustment module (20, 20a, 20b) which contacts the lampshade (30) is located on the inside of the lampshade annular housing (31), and the at least one stacking tube latch (24) of the glare adjustment module (20, 20a, 20b) which contacts the lampshade (30) is located under the at least one lampshade bump (32).

8. The illuminating lamp (1b) as claimed in Claim 7, wherein if $N \geq 3$, the illuminating lamp (1b) has a cutoff angle C, and cutoff angle $A < \text{cutoff angle } B < \text{cutoff angle } C$.

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

1. An illuminating lamp (1, 1a, 1b), comprising:

- a lamp (10);
 a lampshade (30); and
 N glare adjustment modules (20, 20a, 20b),
 each of the glare adjustment modules (20, 20a,
 20b) being located between the lamp (10) and
 the lampshade (30) and arranged along an axis,
 wherein N is a natural number, and the illumi-
 nating lamp (1, 1a, 1b) is so configured that the
 amount of the glare adjustment modules (20,
 20a, 20b) is changeable between $N = 1$ and N
 ≥ 2 ;
 via abovementioned structure, if $N = 1$, an upper
 edge of the glare adjustment module (20) is fas-
 tened to the lamp (10) and a lower edge of the
 glare adjustment module (20) is fastened to the
 lampshade (30) such that the illuminating lamp
 (1) has a shielding angle A;
 if $N \geq 2$, the upper edge of the first glare ad-
 justment module (20) is fastened to the lamp
 and the lower edge of the Nth glare adjustment
 module (20a) is fastened to the lampshade (30)
 such that the illuminating lamp (1a) has a shield-
 ing angle B, wherein
 shielding angle A < shielding angle B.
2. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 1, wherein each of the glare adjustment modules (20,
 20a, 20b) further comprises a first annular housing
 (21) and a second annular housing (22); a diameter
 of the first annular housing (21) is larger than the
 second annular housing (22), and the second annu-
 lar housing (22) is connected to a bottom of the first
 annular housing (21).
3. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 2, wherein the each of the glare adjustment modules
 (1, 1a, 1b) further comprises at least one stacking
 tube bump (23) and at least one stacking tube latch
 (24); the at least one stacking tube bump (23) is dis-
 posed on the inside of the first annular housing (21)
 and the at least one stacking tube latch (24) is dis-
 posed on an outside of the second annular housing
 (22).
4. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 3, wherein the lamp (10) further comprises a lamp
 holder annular housing (11) and at least one lamp
 holder latch (12); the at least one lamp holder latch
 (12) is disposed on an outside of the lamp holder
 annular housing (11).
5. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 4, wherein the lamp holder annular housing (11) is
 disposed on the inside of the first annular housing
 (21), and the at least one lamp holder latch (12) is
 located between the stacking tube bump (23) and
 the second annular housing (22).
6. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 5, wherein the lampshade (30) further comprises a
 lampshade annular housing (31) and at least one
 lampshade bump (32), and the at least one lamp-
 shade bump (32) is disposed on an inside of the
 lampshade annular housing (31).
7. The illuminating lamp (1, 1a, 1b) as claimed in Claim
 6, wherein the second annular housing (22) of the
 glare adjustment module (20, 20a, 20b) which con-
 tacts the lampshade (30) is located on the inside of
 the lampshade annular housing (31), and the at least
 one stacking tube latch (24) of the glare adjustment
 module (20, 20a, 20b) which contacts the lampshade
 (30) is located under the at least one lampshade
 bump (32).
8. The illuminating lamp (1b) as claimed in Claim 7,
 wherein the amount of the glare adjustment modules
 (20, 20a, 20b) is changeable to at least three, the
 illuminating lamp (1b) has a shielding angle C, and
 shielding angle A < shielding angle B < shielding
 angle C.

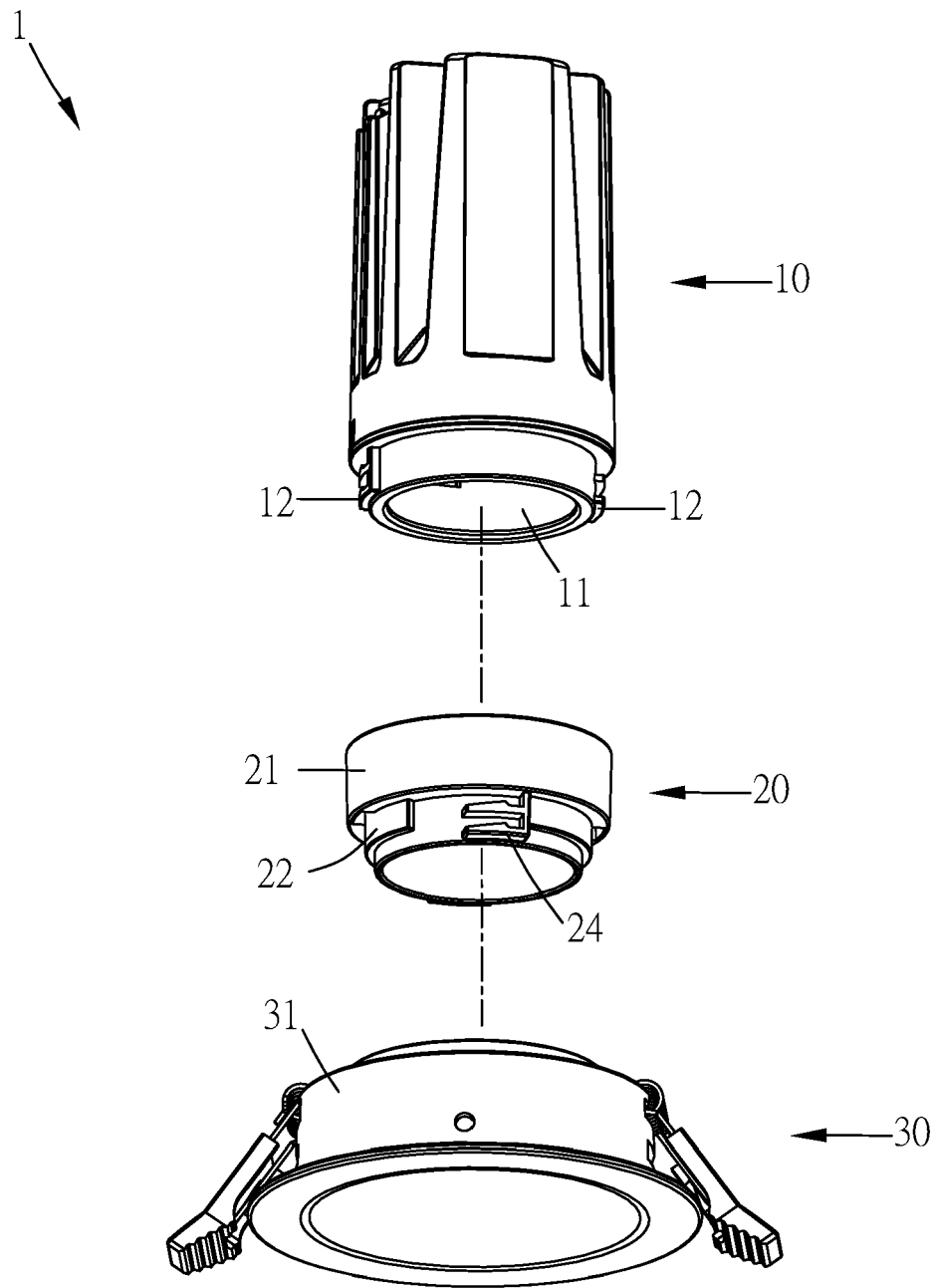


FIG. 1

FIG. 2

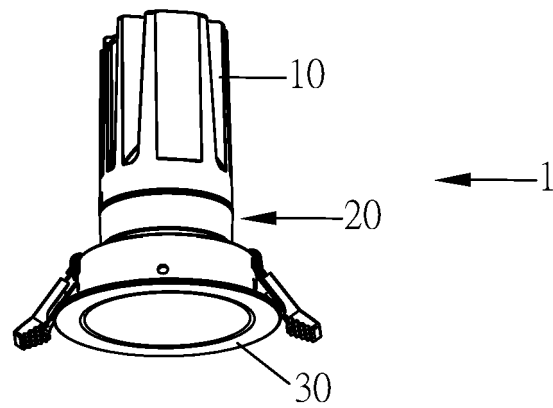


FIG. 2a

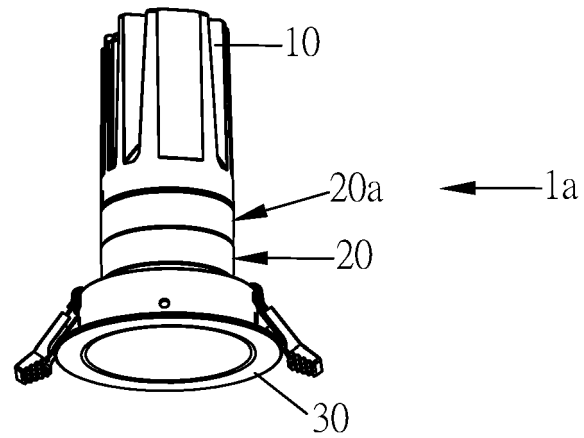
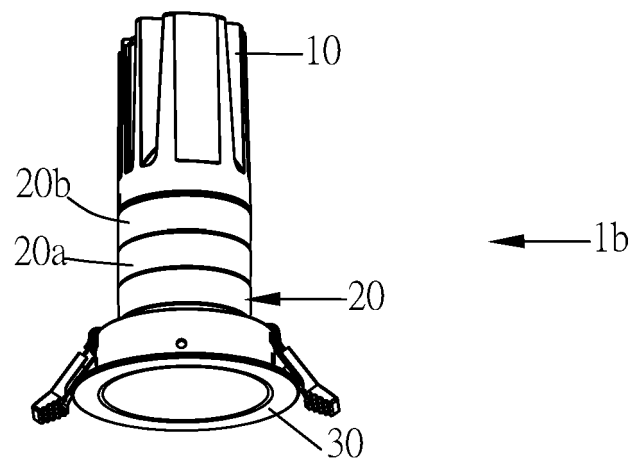


FIG. 2b



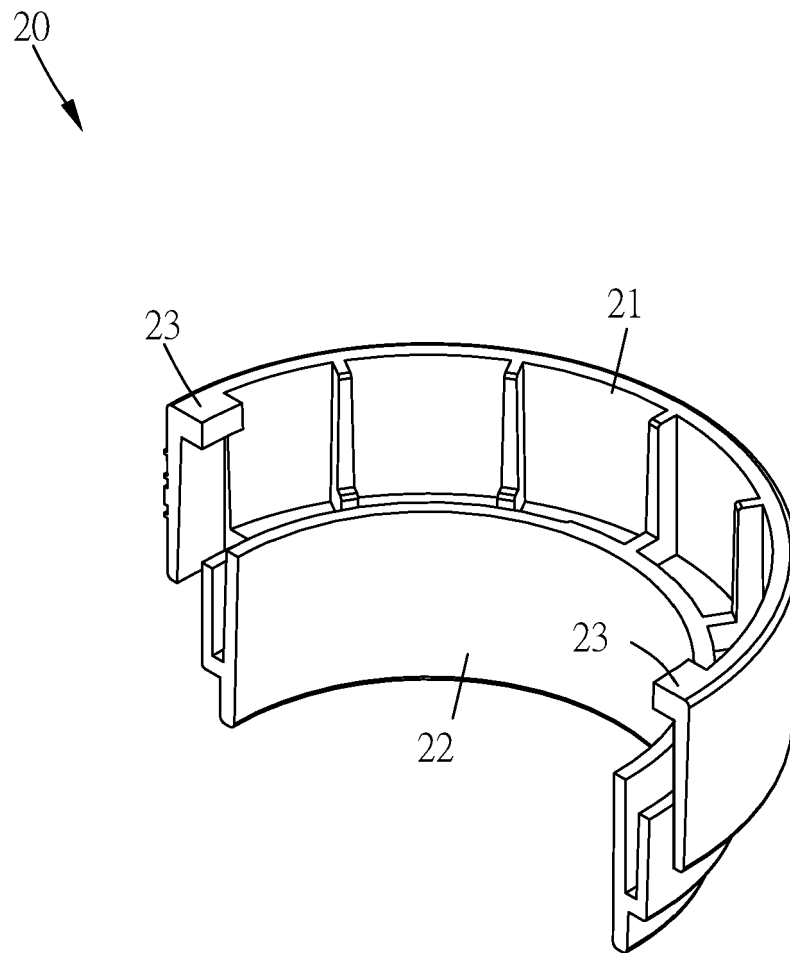


FIG. 3

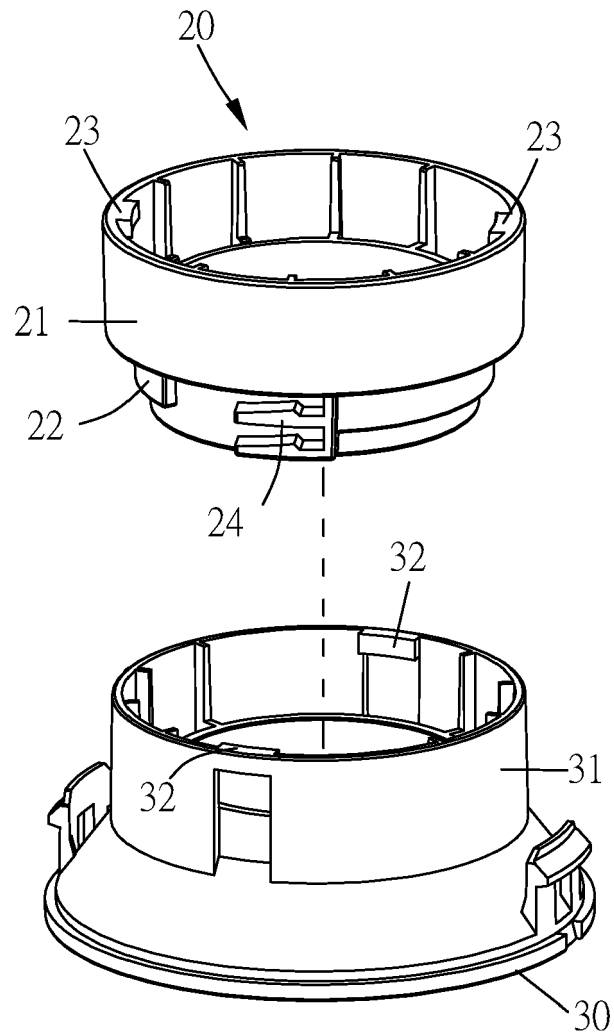


FIG. 4

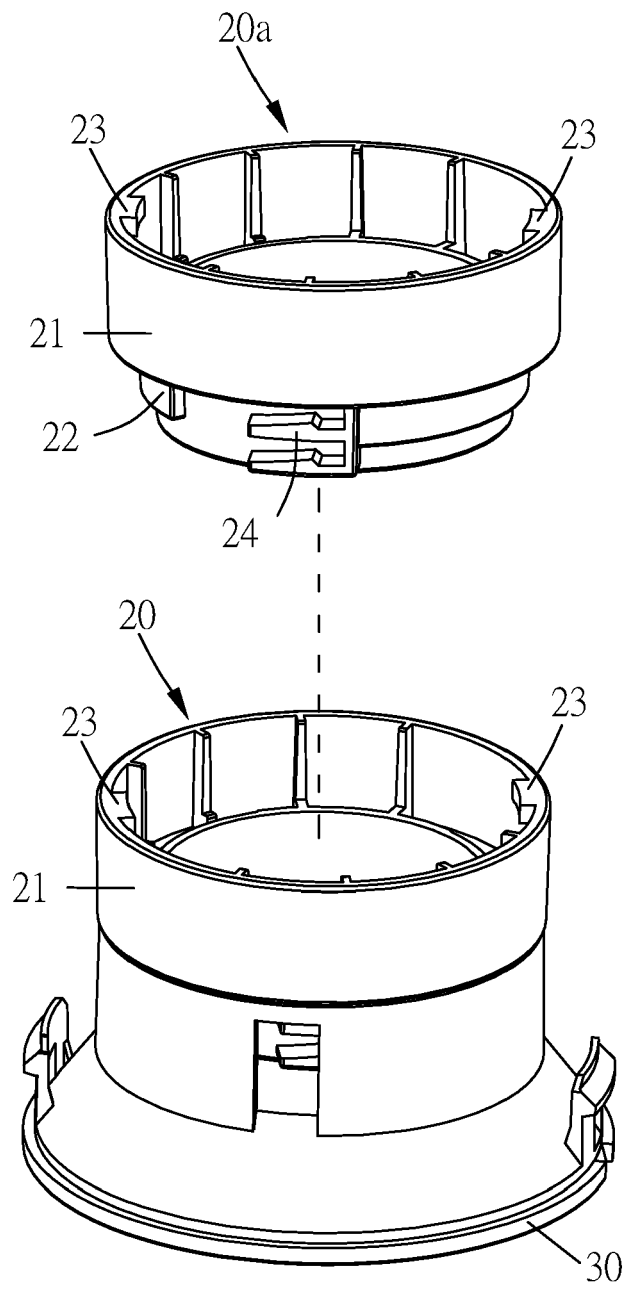


FIG. 5

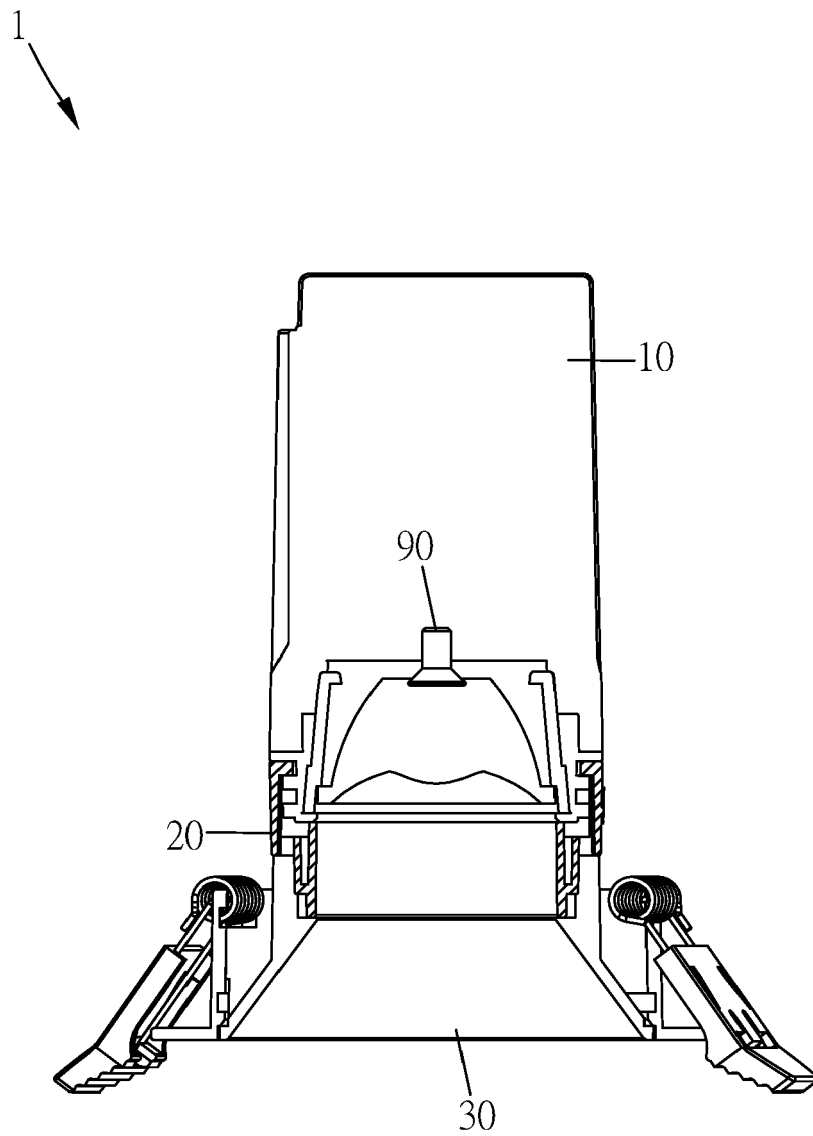


FIG. 6

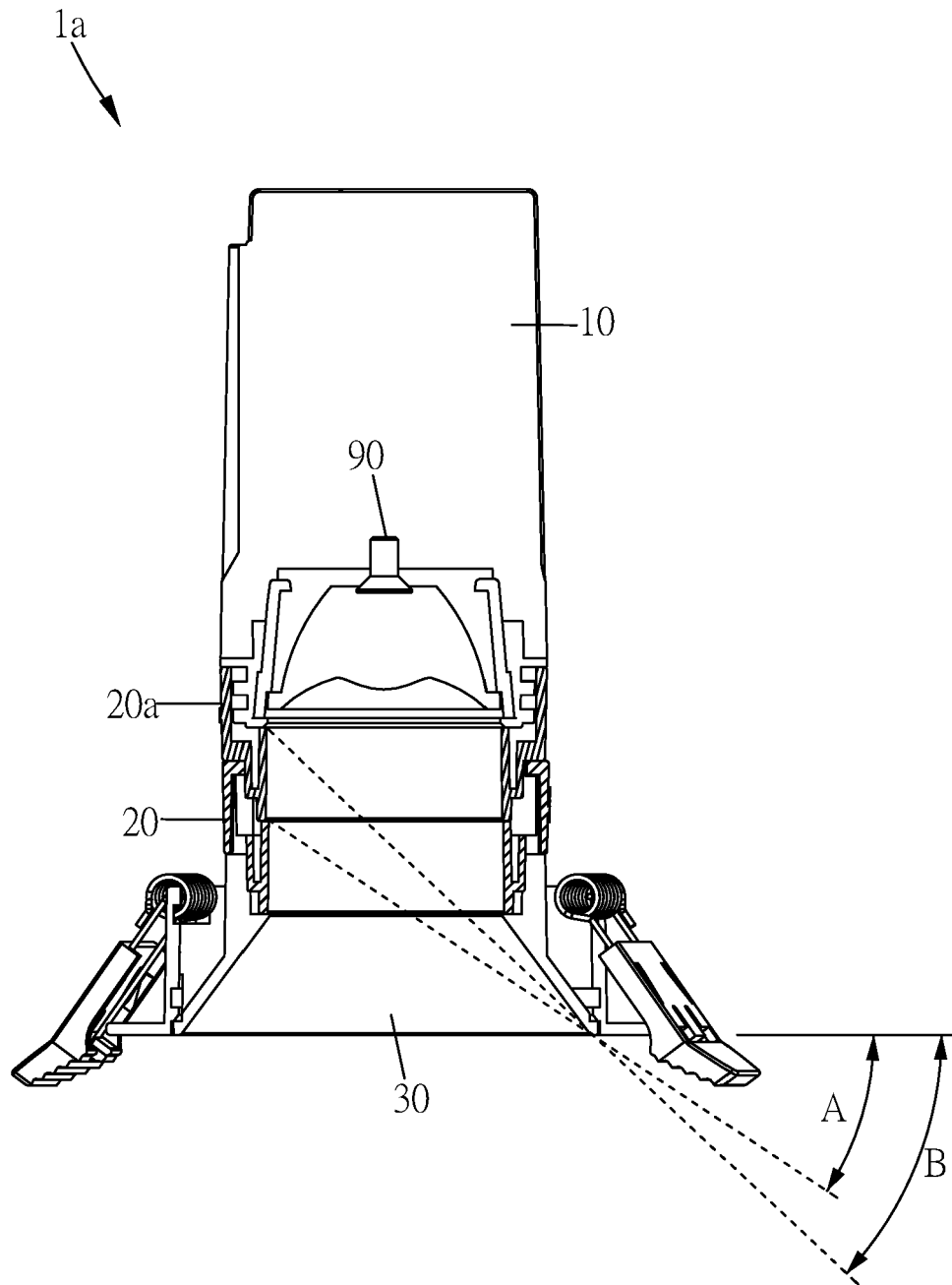


FIG. 7

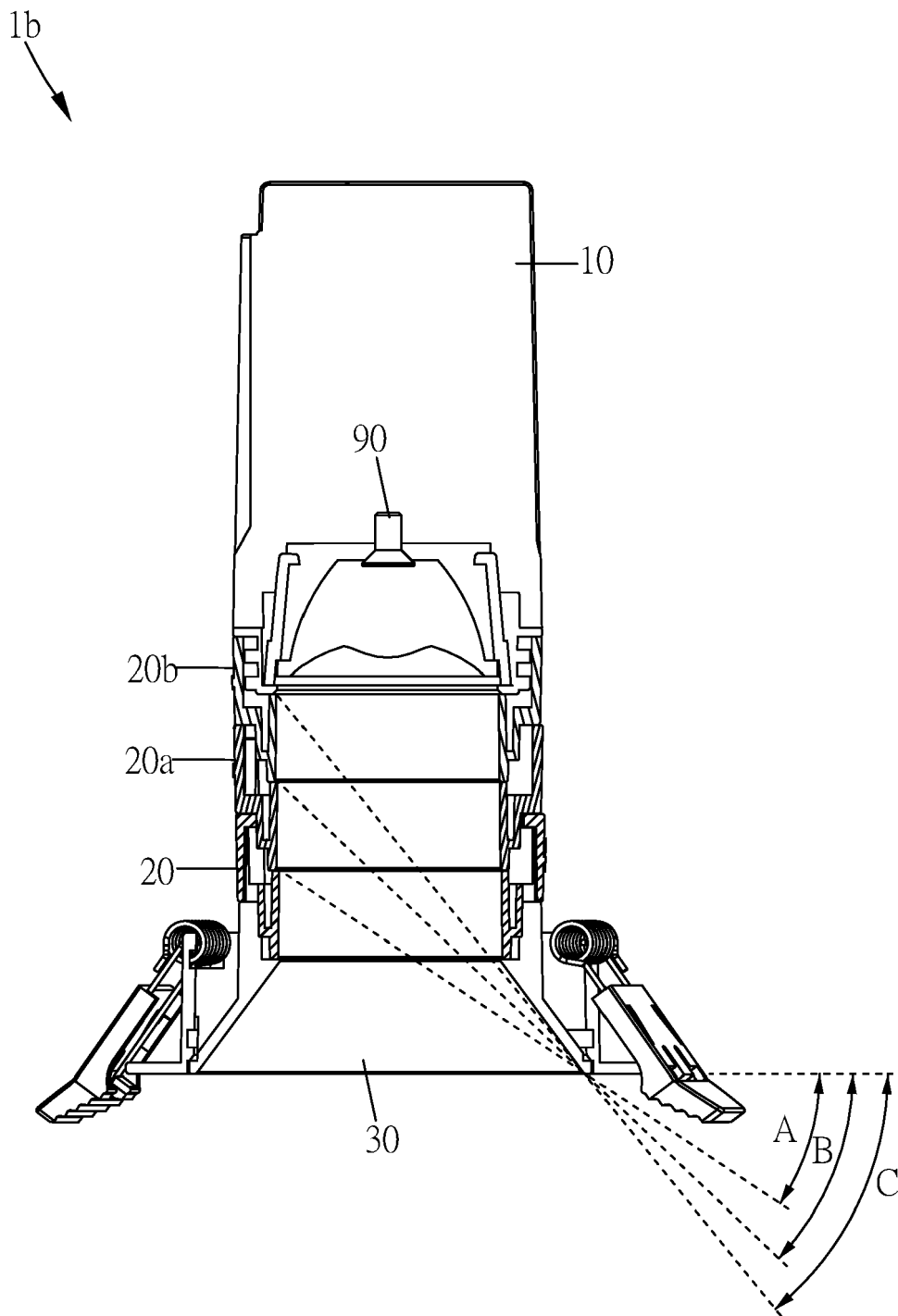


FIG. 8



EUROPEAN SEARCH REPORT

Application Number

EP 22 17 2015

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 202 580 872 U (CIXI GUOXING ELECTRONIC CO LTD) 5 December 2012 (2012-12-05) * paragraph [0017] - paragraph [0020] * * figures 1-4 *	1	INV. F21V1/12 F21V17/14 F21S8/02 F21V17/02
X	US 2013/083525 A1 (KOO WON-HOE [KR] ET AL) 4 April 2013 (2013-04-04) * paragraph [0050] - paragraph [0065] * * figures 1-4 *	1-7	ADD. F21S2/00
X	US 2017/082271 A1 (BEAUSOLEIL DAVID M [US]) 23 March 2017 (2017-03-23) * paragraph [0075] - paragraph [0094] * * figures 1-4 *	1	
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A	CN 104 214 616 A (OCEANS KING DONGGUAN LIGHTING TECH CO LTD ET AL.) 17 December 2014 (2014-12-17) * paragraph [0030] - paragraph [0044] * * figures 1-6 *	1-8	TECHNICAL FIELDS SEARCHED (IPC) F21S F21V
A	US 5 465 199 A (BRAY DOUGLAS R [US] ET AL) 7 November 1995 (1995-11-07) * column 3, line 14 - column 5, line 28 * * figures 3-7 *	1-8	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 September 2022	Examiner Demirel, Mehmet
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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