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(54) **Hanging lamp**

(57) It is described a hanging lamp provided with a preferably cylindrical inner body (1) suspendedly fixed by one or more steel cables (2), at least one lamp holder (5) connected with said inner cylindrical body (1) for assembling at least one bulb, one or more diffusers (4) for diffusing light in the environment. The lamp is characterized by comprising a preferably cylindrical outer body (3) for supporting at least one diffuser (4) and housing in its inside at least part of the inner cylindrical body (1). In addition, the lamp comprises means for adjusting the position between the inner cylindrical body (1) and the diffuser (4), or diffusers, assembled in a resting position on the outer cylindrical body (3).

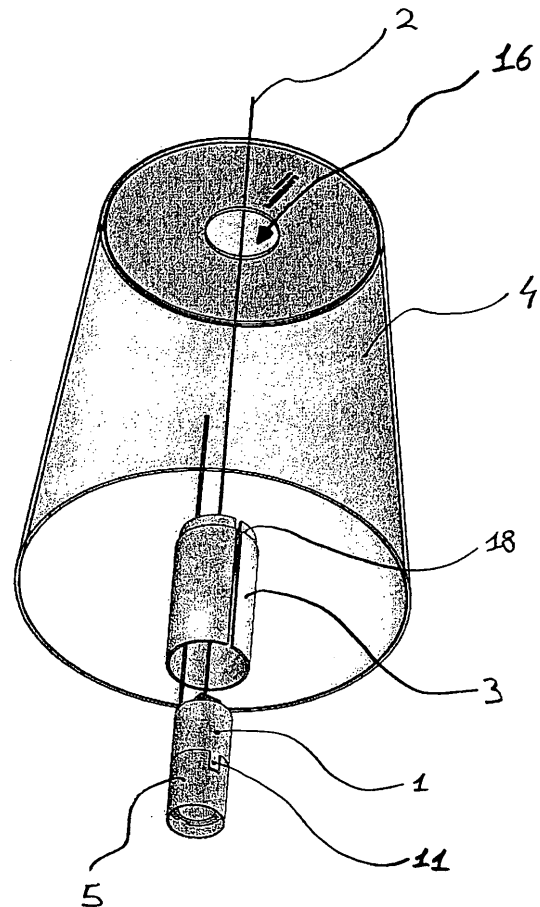


Fig. 1

Description

[0001] The present invention refers to a hanging lamp, and particularly a ceiling lamp.

[0002] With the term hanging lamp it is intended lighting systems mounted to the ceiling, or to hooks or to cantilevered beams, by one or more cables, preferably made of steel, connected to the lamp body.

[0003] The conventional hanging lamps are generally provided with one or more lamp holder, bonded to the lamp body, connected by means of electric cables to the mains. A diffuser, more commonly said lamp shade, is bonded to the lamp in such a way to enclose the bulb, assembled on the lamp holder, and diffuse the light into the environment.

[0004] Generally the diffuser is directly mounted on the lamp holder, or to the lamp body, by a plurality of screws or similar constraining means.

[0005] The assembling and disassembling steps, for replacement of parts or regular maintenance and cleaning, of conventional hanging lamps provide a lot of operations being difficult to carry out also because they have to be carried out at altitude, handling one or more tools.

[0006] In fact, during the assembling the operator constrains the lamp by the steel cable holding the weight of the whole lamp, and in some cases of the diffuser too if this is assembled to the lamp body before the latter is fixed to the ceiling.

[0007] Otherwise if the diffuser is assembled to the ceiling subsequently to the lamp fixing, the operator has to operate on the constraining means of the diffuser, for example a plurality of screws, to fix it to the lamp body.

[0008] Referring to the disassembling steps of the diffuser of conventional hanging lamps, in some cases the steel cable and in some cases the electric cables too have to be disconnected. In other cases it is necessary to operate onto the screws or similar constraining means with convenient tools for releasing the diffuser from the lamp body.

[0009] In addition, the conventional hanging lamps have the problem of correct weight balance.

[0010] In fact, the horizontal and vertical diffuser arrangement, i. e. the correct weight distribution to assure the parallelism to the ceiling, depends on the suspending cable / cables having to be perfectly adjusted.

[0011] Because the lamp is suspendedly assembled, the diffuser inclination is adjusted acting directly onto the suspending cable / cables, so that to obtain a correct weight distribution.

[0012] As mentioned, such operations are particularly difficult because they have to be carried out at altitude, for example while the operator is on a ladder, by means of tools.

[0013] An object of the present invention is to overcome the problems of the known previous art and to propose a hanging lamp aiding the assembling - disassembling operations of the lamp diffuser.

[0014] A further object is to provide a hanging lamp

wherein it is possible to adjust the relative position between the diffuser and the lamp body suspended by means of a steel cable or cables.

[0015] These and other objects are obtained by a hanging lamp according to claim 1.

[0016] The hanging lamp according to the present invention comprises a preferably cylindrical inner body suspendedly fixed by one or more steel cables, at least one lamp holder connected with said inner cylindrical body for assembling of at least one bulb and further comprising at least one diffuser for diffusing light in the environment.

[0017] The lamp is characterized by comprising a preferably cylindrical outer body for supporting the at least one diffuser and housing at least part of the inner cylindrical body on its own inside. In fact, the outer cylindrical body has a bigger diameter than the inner cylindrical body and it is shiftable in a resting position onto the higher surface of the inner cylindrical body.

[0018] The outer cylindrical body further comprises at least one cut for passing said at least one steel cable through it when the outer cylindrical body is disposed in a resting position on the inner cylindrical body.

[0019] Said at least one diffuser includes an opening for passing the inner cylindrical body and the lamp holder through it and for preventing the outer cylindrical body from passing through it, in such a way that the at least one diffuser is in a resting position on the outer cylindrical body.

[0020] The lamp according to the present invention comprises means for adjusting the position between the inner cylindrical body and the outer cylindrical body, and the adjusting means are disposed on both the cylindrical bodies and are reciprocally connectible.

[0021] In fact, the means for adjusting the position include at least one toothed guide disposed on the outer cylindrical body and at least one surface provided with teeth on the inner cylindrical body engaging the guide in different positions for adjusting the position between the two cylindrical bodies and then between the diffuser and the inner cylindrical body.

[0022] Advantageously, the lamp fixing onto the ceiling is carried out without the operator has to carry the diffuser weight, allowing the assembly in a subsequent step.

[0023] Further, the assembly and disassembly of the diffuser for the replacement thereof or for carrying out maintenance and cleaning operations are managed in a simple and quick way not being present means fixing the diffuser to the lamp body, such as for example screws and similar.

[0024] In addition, to carry out the diffuser disassembly it is not necessary to release the steel cable allowing the fixing to the ceiling nor to disconnect the power supply cables.

[0025] The adjusting means allow to adjust the relative position between the diffuser and the lamp holder in such a way to allow the correct weight distribution, contrary to what happens in common lamps wherein the diffuser position is directly determined by the suspending cable /

cables of the lamp to the ceiling.

[0026] The adjusting means allow to change the relative position of the diffuser relatively to the inner cylindrical body fixed to the ceiling, independently from the suspending cable or cables positioning.

[0027] Further characteristics and advantages of the present invention will be more evident in the following description, given for illustrative purposes and referring to the attached figures, wherein:

- figure 1 is a perspective view of the hanging lamp according to the present invention in the assembling step;
- figure 2 is a perspective view of the hanging lamp according to the present invention when the assembling steps are ended;
- figure 3 is a perspective view of the inner body of the hanging lamp according to the present invention;
- figure 4 is a perspective view of the outer body of the hanging lamp according to the present invention;
- figure 5 shows in detail the outer body in a resting position on the inner body;
- figure 6 is a view of the plate for the fixing to the ceiling provided with a lid.

[0028] Referring to figure 1, the hanging lamp according to the present invention comprises an inner cylindrical body 1 suspendedly fixed, for example to the ceiling or to a hook or to a cantilevered beam, by a cable 2 preferably made of steel.

[0029] As can be seen particularly referring to figure 2, wherein the lamp is represented when the assembling operations has been carried out, the steel cable 2 carries the whole lamp because the outer cylindrical body 3 and the diffuser 4 are rested on the inner cylindrical body 1 by gravity.

[0030] Figure 3 shows the inner cylindrical body 1 of the lamp in detail. The inner cylindrical body 1 is provided with a seat 12 for connecting the electric cables and with electric contacts in its inside, not shown in figures, allowing the connection of the lamp holder 5 with the mains.

[0031] In fact, the lamp holder 5 is fixed to the lower part of the inner cylindrical body 1 by fixing elements comprising, in the embodiment shown in figures, a couple of clamps 10 and 11, that are preferably coupled by component interference with two corresponding seats (not shown in the appended figures), conveniently shaped, disposed on the outer surface of the lamp holder 5.

[0032] The outer cylindrical body 3 is so shaped to be able to house in its inside at least part of the inner cylindrical body 1 and of the lamp holder 5 fixed thereto.

[0033] In fact, the outer cylindrical body is hollow and has a diameter bigger than the diameter of the inner cy-

lindrical body 1 and the lamp holder 5.

[0034] In addition, as can be seen in figure 4, the side surface of the outer cylindrical body 3 is provided with a cut 15 disposed on its side surface in a parallel direction at the cylindrical body height.

[0035] As will be better described later on, the cut 15 allows the cable 2 passing inside the outer cylindrical body 3, by doing so the latter may be vertically shifted so that to house at least part of the inner cylindrical body 1 and the lamp holder 5 up to reach the resting position on the higher surface of the inner cylindrical body 1.

[0036] The higher part of the outer cylindrical body 3 includes a portion 18 having a reduced diameter, forming a step 19 on which the diffuser 4 is rested.

[0037] In fact, as can be seen referring particularly to figure 2, the higher surface of the diffuser 4 is provided with a circular opening 16 having a diameter corresponding to the portion of reduced diameter 18 of the outer cylindrical body 3.

[0038] By doing so, the opening 16 of the diffuser 4 accommodates the portion of reduced diameter 18 of the outer cylindrical body 3 so that the higher surface of the diffuser is rested on the step 19 by gravity.

[0039] The opening 16 disposed on the diffuser has such dimensions to allow the inner cylindrical body 1 and the lamp holder passing through it, and to prevent the outer cylindrical body 3 passing through it.

[0040] Means for adjusting the position are disposed on the inner 1 and outer 3 cylindrical bodies, that is means that are able to be coupled in different positions allowing to change the relative position between the two cylindrical bodies.

[0041] More in detail, as shown in figure 4, on the higher part of the outer cylindrical body 3 is disposed an opening 20 with a couple of toothed guides 21 facing the two opening sides.

[0042] Whereas a little block 22 having a parallelepiped shape, provided with toothed side surfaces 23 (figure 3), is disposed on the higher surface of the inner cylindrical body 1.

[0043] In figure 5 the outer cylindrical body 3 is represented in detail in a resting position on the inner cylindrical body 1.

[0044] In fact, the teeth of the side surfaces 23 of the little block 22 having the parallelepiped shape have dimensions compatible with the toothed guides 21 disposed on two sides of the opening 20 of the outer cylindrical body 3.

[0045] The teeth of the little block 22 may be inserted in different positions along the toothed guides 21 vertically sliding therethrough; by doing so it is possible to determine the relative position between the two cylindrical bodies when the outer body 3 is rested on the inner body 1 by gravity.

[0046] The adjusting of the reciprocal position between the two cylindrical bodies 1 and 3 allows to carry out the correct positioning of the diffuser 4.

[0047] In fact, contrary to what happens in the conven-

tional hanging lamps, the diffuser positioning may be adjusted by the adjusting means without acting on the steel cable fixing the lamp to the ceiling or on the fixing means, for example a plurality of screws, bonding the diffuser to the lamp body.

[0048] In fact, the adjusting means allow to change the position of the outer cylindrical body 3 and then the diffuser 4 rested thereon, relatively to the inner cylindrical body 1, allowing the correct barycenter centering of the diffuser 4 and the outer cylindrical body 3 relatively to the inner cylindrical body 1 suspendedly fixed to the ceiling.

[0049] In fact, the correct weight positioning determines the parallelism between the plane detected by the ceiling and the plane passing through the higher surface of the diffuser 4.

[0050] Obviously other means adjusting the reciprocal position may be used, such as for example a screw, a plurality of pins with a plurality of corresponding seats, etc.

[0051] Although it has been explicitly referred to the cylindrical shape of the inner body 1 and outer body 3, these elements may obviously adopt other arrangements provided that the dimensions of the outer body 3 would be such to allow to reach the resting position on the inner body 1 and the opening 16 disposed in the diffuser 4 would be such to allow the inner body 1, not the outer body 3, to pass through it.

[0052] In the shown figures the lamp is fixed to the ceiling by a rosette composed by a plate or support 30 and a lid 31, both shown in figure 6 in detail.

[0053] The plate 30 is fixed to the ceiling by known means for such use and it is provided as well with three couples of holes 32 acting as electric connection cable clamp, as shown in figure 6, particularly referring to the electric cable 33.

[0054] In the plate 30 other four holes 36 - 39 are realized to allow to fix the steel cable or cables 2.

[0055] In the embodiment herein shown the steel cable 2 is fixed to the hole 36 in a barycentric position, nevertheless the lamp according to the present invention may be fixed to the ceiling by three steel cables fixed in three holes 37 - 39.

[0056] The lid 31 covers the plate 30 and allows the passing of the electric cables and steel cable or cables 2 for fixing the inner cylindrical body 1 to the ceiling through the plurality of holes 35 obtained at its lower surface. The purchaser, or operator assembling the lamp, has not to realize the electric connections because the rosette is preferably sold cabled before.

[0057] The assembling steps of the hanging lamp will be now described according to the present invention, particularly referring to the assembling and adjusting operations of the diffuser 4 on the outer cylindrical body 3.

[0058] The lamp assembling foresees the fixing of the steel cable 2 to the ceiling, or to a hook or to a cantilevered beam, in such a way that the inner cylindrical body 1 would be suspended.

[0059] Advantageously, the lamp provides the assem-

bling of the lamp holder 5 of the outer cylindrical body 3 and the diffuser 4 in steps subsequent to those for fixing the inner cylindrical body 1 to the ceiling.

[0060] By doing so, the operator, during the fixing to the ceiling, has not to carry the weight of the other lamp components and particularly of the diffuser 4, that in some cases could be bulky.

[0061] Subsequently the lamp holder 5 is fixed to the inner cylindrical body 1 by the clamps 10 and 11 engaging the corresponding seats disposed over the outer surface of the lamp holder 5.

[0062] For assembling the diffuser, first the operator passes the inner cylindrical body 1 inside the opening 16 provided on the higher surface of the diffuser 4 and then he / she goes on assembling the outer cylindrical body 3 that, having a bigger diameter than the inner cylindrical body diameter, prevents the diffuser fall. The steel cable 2 and the connecting cables are passed inside the cut 15 disposed on the side surface of the outer cylindrical body 3 and subsequently the latter is vertically shifted up to reach the resting position on the higher surface of the inner cylindrical body 1 (position shown in figure 5).

[0063] During this operation the toothed guides 21 engage the teeth disposed on the side surfaces 23 of the little block 22, and in this step the operator could decide the relative position between the two cylindrical bodies and then could choose the positioning of the diffuser 4 that will be subsequently rested on the outer cylindrical body 3.

[0064] In fact, once the outer cylindrical body 3 is in the rest position on the inner cylindrical body 1, the diffuser is vertically shifted too downwards up to reach the resting position on the higher surface of the outer cylindrical body 3.

[0065] In detail, the circular opening 16 of the diffuser 4 engages the portion 18 having a reduced diameter of the outer cylindrical body 3.

[0066] When the assembling operations are ended, the operator verifies that the higher surface of the diffuser 4 is parallel to the ceiling, if not he / she will change the relative position between the outer cylindrical body 3 and the inner cylindrical body 1, set up before during the assembling step.

[0067] To carry out the adjusting operations and obtain the correct weight balance, the operator raises the outer cylindrical body in such a way that the toothed guides would not engage the teeth of the blocked element and moves it in a new engaging position for the teeth relatively to the guides.

[0068] Such a movement could be carried out several times up to reach the correct weight balance, determined by the relative position between the two cylindrical bodies, and then to reach the horizontal arrangement of the higher diffuser surface relatively to the ceiling.

[0069] As mentioned, the adjusting is advantageously obtained without having to act on the steel cable 2 fixing the lamp to the ceiling and thereby avoiding any tool use.

[0070] The disassembling operations of the diffuser,

for its replacement or cleaning, are considerably simplified relatively to the conventional hanging lamps.

[0071] In fact, the operator raises up the diffuser 4 and the outer cylindrical body 3 that is subsequently disassembled by passing the steel cable 2 and the electric cables through the cut 15 of its side surface.

[0072] By doing so the diffuser 4 may be shifted downwards determining the passing of the inner cylindrical body 1 and the lamp holder 5 through the opening 16 disposed on the higher surface.

[0073] These operations are carried out easily too with no need of tool use.

[0074] It has to be noticed that the hanging lamp according to the present invention allows the use of two or more diffusers, reciprocally equal or different, being rested on the outer cylindrical body as afore described referring to the embodiment provided with only one diffuser. Particularly two similar diffusers may be used, one resting on the other.

[0075] According to the present invention diffusers of different shapes may be easily assembled and replaced on the lamp too, provided that the diffuser is provided with such an opening to allow the passing of the inner cylindrical body but not of the outer cylindrical body for remaining in a resting position on it.

nectible.

5. Lamp according to claim 4, wherein said means for adjusting the position between said inner body (1) and said outer body (3) include at least one toothed guide (21) on said outer body (3) and at least one surface (23) provided with teeth on said inner body (1), said teeth engaging said guide in different positions for adjusting the position between said inner body and said outer body.
6. Lamp according to any one of the preceding claims wherein said inner body (1) includes at least one seat (12) for connecting electric cables.
7. Lamp according to any one of the preceding claims, **characterized in that** said inner (1) and outer (3) bodies are cylindrical.

Claims

1. Hanging lamp comprising an inner body (1) suspendedly fixed by at least one cable (2), at least one lamp holder (5) fixed to said inner body (1) for assembling at least one bulb, at least one diffuser (4), **characterized by** comprising an outer body (3) for supporting said at least one diffuser (4) and housing at least part of said inner body (1) on its own inside, said outer body (3) having a cross - section of bigger dimensions than said inner body (1) and being vertically shiftable in a resting position onto the higher surface of said inner body (1).
2. Lamp according to claim 1 wherein said outer body (3) comprises at least one longitudinal cut (15) for passing said at least one steel cable (2) through it, for manually assembling said outer body (3) in said resting position on said inner body (1).
3. Lamp according to claim 1 or 2 wherein said at least one diffuser (4) is in resting position on said outer body (3), said diffuser comprising at least one opening (16) for passing said inner body (1) and said at least one lamp holder (5) through it and for preventing said outer body (3) from passing through it.
4. Lamp according to claim 1 or 2 comprising means (21, 23) for adjusting the position between said inner body (1) and said outer body (3), said means being disposed on both bodies and being reciprocally con-

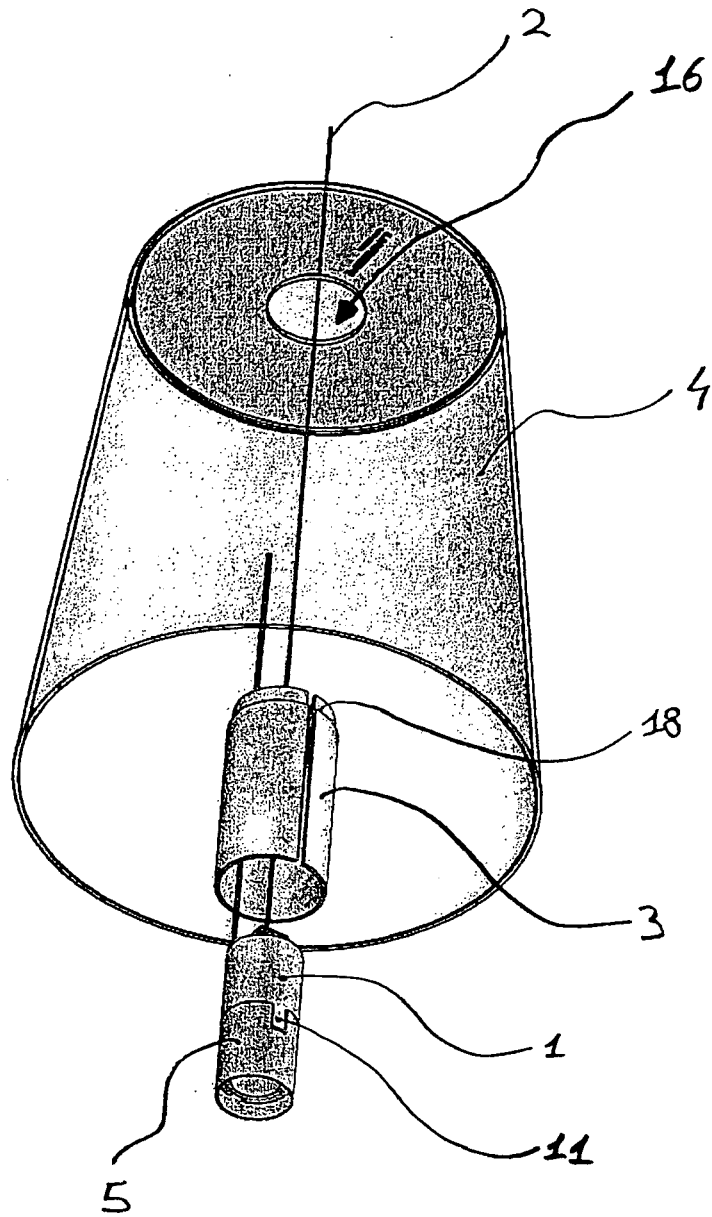


Fig. 1

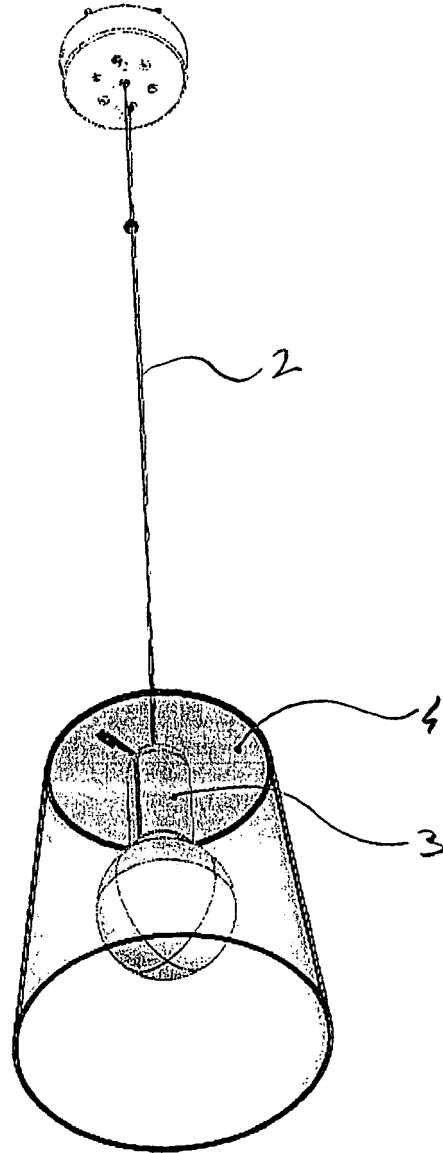


Fig. 2

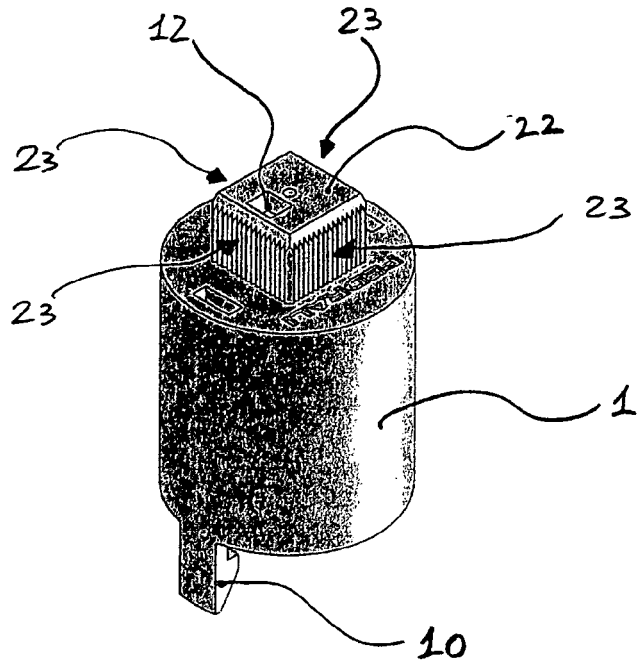


Fig. 3

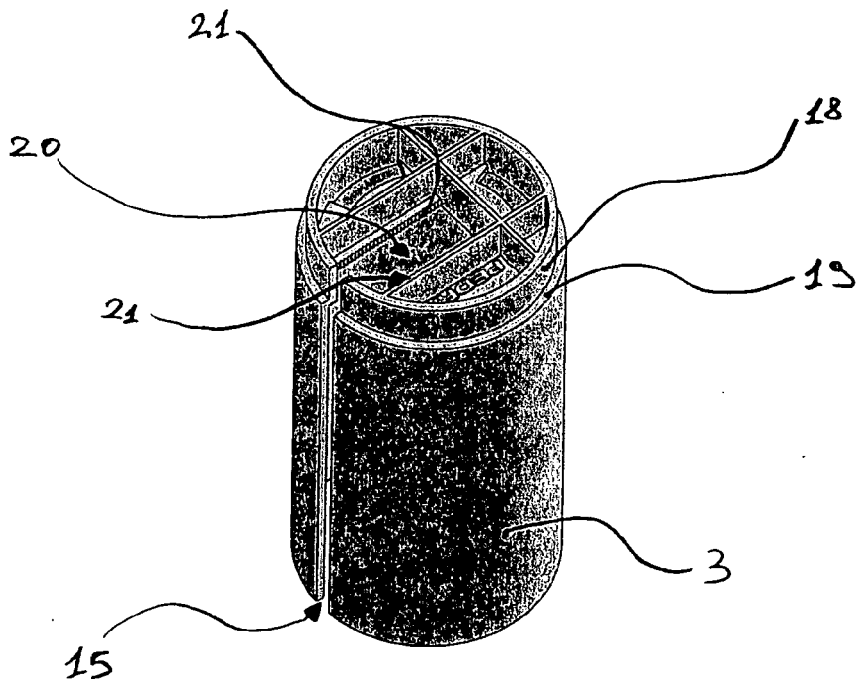


Fig. 4

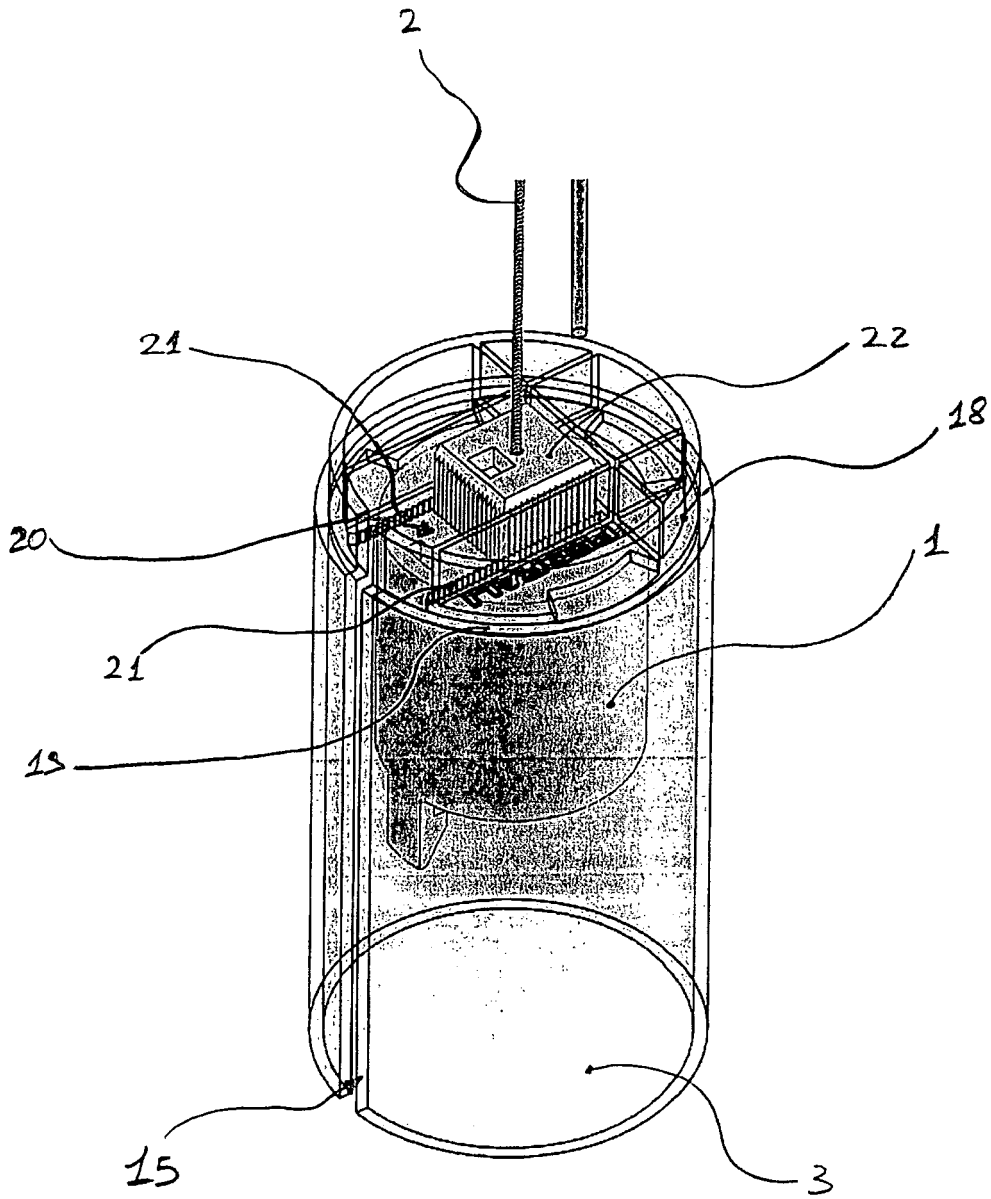


Fig. 5

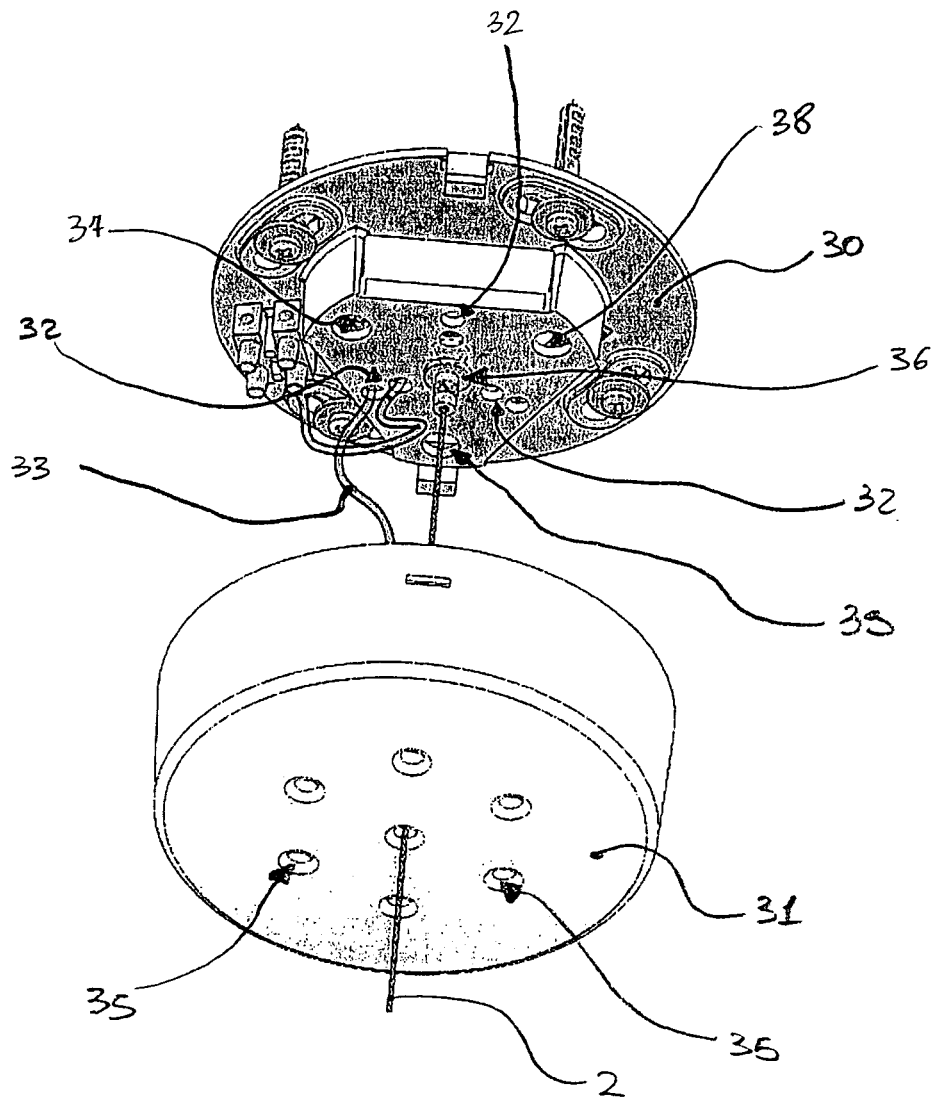


Fig. 6



EUROPEAN SEARCH REPORT

Application Number
EP 10 00 3822

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	DE 731 240 C (BUENTE & REMMLER) 4 February 1943 (1943-02-04) * figures 1, 2 *	1-3,6,7	INV. F21V17/06 F21V21/008
X	----- US 3 258 239 A (LEE GREEN FREDERIC) 28 June 1966 (1966-06-28) * column 1, line 41 - column 2, line 44; figures 2, 3 *	1,3,4,6	
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			TECHNICAL FIELDS SEARCHED (IPC)
			F21V F21S
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 7 July 2010	Examiner Allen, Katie
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 00 3822

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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07-07-2010

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