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(54) Lamp with LEDs and batteries

(57) The invention is based on a lamp, indistinctly a floor, table, wall or ceiling lamp, with a base body (3) on which one or more lampshades (1) are established, directly to, or by means of, arms (5) which include a head (6) inside each lampshade, equipped with attachment means to the latter and to the foot (3) or arm (5), on the bottom base of which, and optionally on its top base, a plurality of led diodes (8) are established, which are associated to a circuit (9) housed inside the head (6) that constitutes the lighting means of the lamp and which, by means of a switch (11) are fed by a group of cells (10) or batteries housed in the actual lamp, either inside the head (6), or else inside a housing worked on the base (3), in any case, being accessible through the corresponding practical cover.

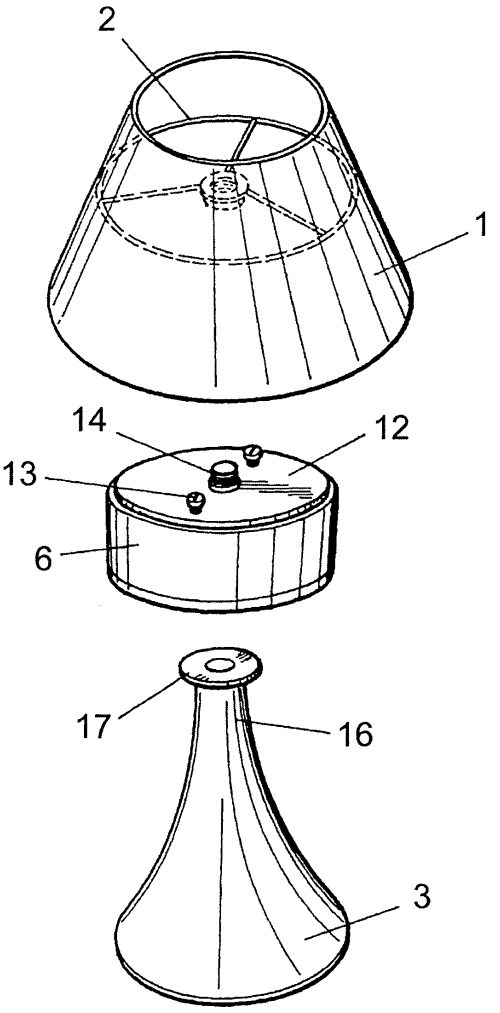

FIG. 1

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Description

OBJECT OF THE INVENTION

[0001] The present invention refers to a lamp that may be indistinctly, a table lamp or a floor lamp, that is to say, those intended to be placed on a bedside table, an auxiliary table, etc, or else on the floor.

[0002] The object of the invention is to obtain an autonomous lamp that does not require connection to the general electrical supply network in order to operate, and that however, in spite of its performance with batteries, involves a high degree of autonomy of the same.

BACKGROUND OF THE INVENTION

[0003] As is already known, the basic and typical structure of a table lamp consists of a foot with greater or lesser height, at the top end of which, a bulb socket for insertion of the corresponding bulb, is attached together with a support, which is generally a metallic framework for a lampshade that covers the bulb, facilitating the indirect falling of the light, generated by the bulb, onto the users.

[0004] Said bulb is fed by the general electric supply network by means of a cord with its corresponding socket plug, and of a switch, in such a manner, that though said cable is partially hidden in the inside of the lamp, specifically crossing through the inside of its foot till it reaches the bulb socket, said cord is mainly visible between the foot of the lamp and the base of the electrical installation socket of the enclosure, which poses a problem including two main aspects, on the one hand, said visible cord has a negative repercussion on the appearance of the enclosure and on the other hand, the energy feeding system restricts the use of the lamp to the adjacent areas of a socket base.

DESCRIPTION OF THE INVENTION

[0005] The lamp proposed by the invention solves in a totally satisfactory manner, the previously described problem, as regards the different aspects commented.

[0006] For this, and more specifically, said lamp is constituted as from a basic body that may constitute the foot of the lamp when it is a table lamp, or when intended to be placed on the floor, which may constitute the wall attachment plinth when dealing with a wall lamp or the ceiling attachment body in the case of a ceiling lamp, which is the base body on which one or more lamp shades are suspended, with the special particularity in any of the cases, that the actual lampshade support is made up of a cylindrical body in the manner of embellisher, that is attached to the base, and in the interior of which, a printed circuit board is established, with a plurality of led diodes, that is to say, luminescent diodes which project towards the outside of the cylindrical body through a series of orifices drilled on them, on their lower face, and optionally on the top face.

[0007] The reduced energy consumption of these led diodes allows their feeding by means of batteries with a considerable autonomy and without excessive cost.

[0008] The feeding battery assembly of the led diodes may be integrated inside the cylindrical body, in which case, said body shall be equipped with a practical cover for replacement of the batteries, or else these may be housed inside the base body or lamp support, in which case, it shall in turn be equipped with the complementary access cover for replacement of said batteries, as well as with an orifice through which the feeding cord leads from the housing of the batteries to the cylindrical body for feeding the circuit housed in its interior.

[0009] The feeding of said electrical circuit may be activated in any case by means of a switch that may be placed on the lower base of the cylindrical head for easy access to the same, or else on the base body, depending on the arrangement of the batteries, though said feeding may also be carried out by means of remote control.

[0010] If the batteries are housed in the support base, the cylindrical head shall remain directly attached to the base, or else, with the interposition of a tubular arm connecting them and that permits the passage through its interior, of the feeding cords, whilst, if the batteries are housed inside the head, the lower base of said head shall include a permanent magnet in central arrangement and forming integral part of the same, with an additional complementary permanent magnet that finishes off the top end of the base element, in such a manner, that the assembly constituted by the head and the lampshade, is couplable and uncouplable from the foot, in an extremely rapid and simple manner, by means of said magnets. However, the possibility of replacing said magnet attachment system by another rapid coupling system has been provided, s for example, a bayonet system or similar.

DRAWINGS DESCRIPTION

[0011] As complement to the description that has been expounded and with the purpose of aiding to a better understanding of the characteristics of the invention according to a preferred exemplary practical embodiment of the same, a set of drawings have been enclosed, forming integral part of said description, and in which, with illustrative and non limitative character, the following has been represented:

Figure 1 shows, according to a schematic perspective exploded view, a table lamp embodied according to the object of the present invention, in which the feeding batteries of said lamp are housed inside the head.

Figure 2 shows a detailed perspective view of the head that forms part of the lamp of the previous figure, on the side opposite to that shown in Figure 1, specifically on its bottom face.

Figure 3 shows a side elevation view of the lamp of Figure 1, appropriately mounted.

Figure 4 finally shows a diametrical cross sectional detailed view of the lamp of Figure 3, according to the cutting lines A-B of said figure.

Figure 5 shows a side elevational view of an embodiment variant of the lamp that is the object of the invention, in which the electrical feeding batteries of the lamp are arranged on the base body of the lamp.

Figure 6 shows a lamp for a wall, according to a similar representation to that of Figure 5, of those commonly named "Appliqués" (wall lamps).

Figure 7 finally shows a ceiling lamp, also according to a similar representation to that of Figure 5.

PREFERRED EMBODIMENT OF THE INVENTION

[0012] In view of the described figures it can be observed how the lamp proposed by the invention is constituted as any conventional lamp, by means of combining one or more lampshades (1), of any configuration, preferably of translucid material, with its corresponding internal framework (2), and with a base element (3), also of any design or configuration, that constitutes the support base of the lamp on its assembly and to which lampshades (1) are attached, directly to, or through one or more arms (4) that form integral part of the base body (3), which, when dealing with a floor or table lamp, shall constitute a support plinth of the same, as is shown in Figures 1, 3, 4 and 5, when dealing with a wall lamp, shall constitute its means of attachment to the wall, as is observed in Figure 6 and when dealing with a ceiling lamp, shall hang from said ceiling by means of a chain (5), as is shown in Figure 7, said base body (3) being capable of adopting any configuration according to any design lines.

[0013] Therefore, according now, to the invention, between lampshade (1) and the base element (3), a small cylindrical hollow head (6) is established, on which lower base (7) a plurality of orifices for installation of respective led diodes (8) are established, preferably in circumferential alignment, that constitute the light beams of the lamp, and which are arranged on a printed circuit plate (9) housed inside said head (6). However, and as has been previously indicated, a second group of led diodes may be arranged on the top surface of the head (6).

[0014] This printed circuit (9) is fed by a group of cells or batteries (10) in such a manner, that it is autonomous, that is to say, that it does not require connection to the general electrical supply network.

[0015] Said batteries (10) may be housed inside the actual head (6) or else in an appropriately dimensioned housing worked on the base element (3).

[0016] If the batteries (10) are housed inside the actual head (6), the latter shall include a switch (11) also established on the bottom base of said head, together with the led diodes (8) for easy accessibility to the same, being provided with a top cover (12) that is worked in collaboration with a pair of small screws (13) arranged diametrically opposite, whilst said cover includes in its centre, a neck or threaded stem (14) for coupling the metallic framework (2) associated to the lampshade (1), specifically by means of a central bulb socket (15) threaded in correspondence.

[0017] If diodes also exist on the top base, said screws of the cover shall be placed on the sides of the head so as not to interfere during the installation of said diodes.

[0018] Finally, it has been provided that for the attachment of the head (6) to the top end (16) of the base element or foot (3), said head (6) shall centrally include a discoid magnet (17) on its bottom base (7) forming perfect integral part of the same, and which is complementary with another magnet (18) of equal size and configuration, that finishes off the top end (16) of base (3), in such a manner, that with a suitable orientation of said magnets (17) and (18), they constitute a union point that forms integral part of head (6) to the base (3), which however, is easily dismountable. In spite of this, said attachment system may be replaced by a bayonet system or any other system that offers the same services of rapidity and ease during assembly and disassembly.

[0019] If batteries (10) are housed in the base body (3), as in the lamps shown in Figures 5 to 7, said base body shall have a practical cover, for through access to said batteries (10), the printed circuit plate (9) being connected to said batteries by means of a feeding cord (19) that runs through the interior of the base body (3), as in the case of the arm or arms (5), if they exist. The described structure is complemented with a switch that may be a conventional manual activation switch, which in the case of the wall lamp and especially of ceiling lamps, may be materialized in a switch that is activated by means of a cord or chain of suitable length so as to be accessible from the floor, or may even be materialized in a remote control, in which case, and inside said base body, a corresponding receiver circuit of the control waves shall be established, and which shall be in turn, activator of the led feeding circuit.

Claims

1. Lamp, indistinctly floor, table, wall or ceiling lamp, of the type that includes a base support body, wall attachment or ceiling suspension, that constitutes the support base of the lamp, on which one or more lampshades of any configuration are established, directly to, or by means of arms (5), **characterized in that** in the interior of the lampshade / s (1), a head (6) is established, provided with means of attachment to the lampshade and to the foot (3) or arm (5), on whose bottom base, and optionally, on its top

base, a plurality of led diodes (8) are established, which are associated to a circuit (9) housed inside the head (6), that constitute the lighting means of the lamp and that, by means of a switch (11), are fed by a group of cells or batteries (10) housed in the actual lamp.

2. Lamp, according to Claim 1, **characterized in that** the batteries (10) are housed inside the head (6), said head including on its bottom base, the light switch (11).

3. Lamp, according to Claim 1, **characterized in that** the batteries (10) are housed inside a compartment worked on the support base (3), in such a manner, that they connect by means of cords (19) inside the lamp structure, to the circuit (9) housed in the head or heads (6), having access to these through a practical cover.

4. Lamp, according to Claims 1 and 2, **characterized in that** said head includes a practical top cover (7) said cover including, in a central arrangement, a threaded neck (14) for attachment of the metallic framework head of the lampshade (1).

5. Lamp, according to the previous Claims, **characterized in that** said diodes (8) are established in circumferential alignments on one or both bases of the head, relatively adjacent to its surroundings.

6. Lamp, according to Claims 1, 2, 4 and 5, **characterized in that** on the bottom base of head (6), a permanent magnet (17) is placed inside the circumferential alignment of diodes (8), centrally arranged, forming integral part of said head (6), with another permanent magnet (18) collaborates, and which forms integral part of the top end (16) with complementary foot, in such a manner, that both magnets constitute the movable attachment means of the head to the foot, replaceable by any other rapid coupling means, such as for example, a bayonet system.

7. Lamp, according to Claims 1 and 3, **characterized in that** the circuit (9) is constituted by a printed circuit plate with diodes (8) on both faces, that externally emerge from the head (6) by means of appropriately dimensioned formed orifices, said head adopting a cylindrical configuration that constitutes the sustention means of the lampshade (1).

8. Lamp, according to Claims 1, 3 and 7, **characterized in that** the base body includes in addition to the feeding batteries of the led diodes (8), a direct activation switch, for remote control, by means of a chain or similar, or remote control by means of a cordless control.

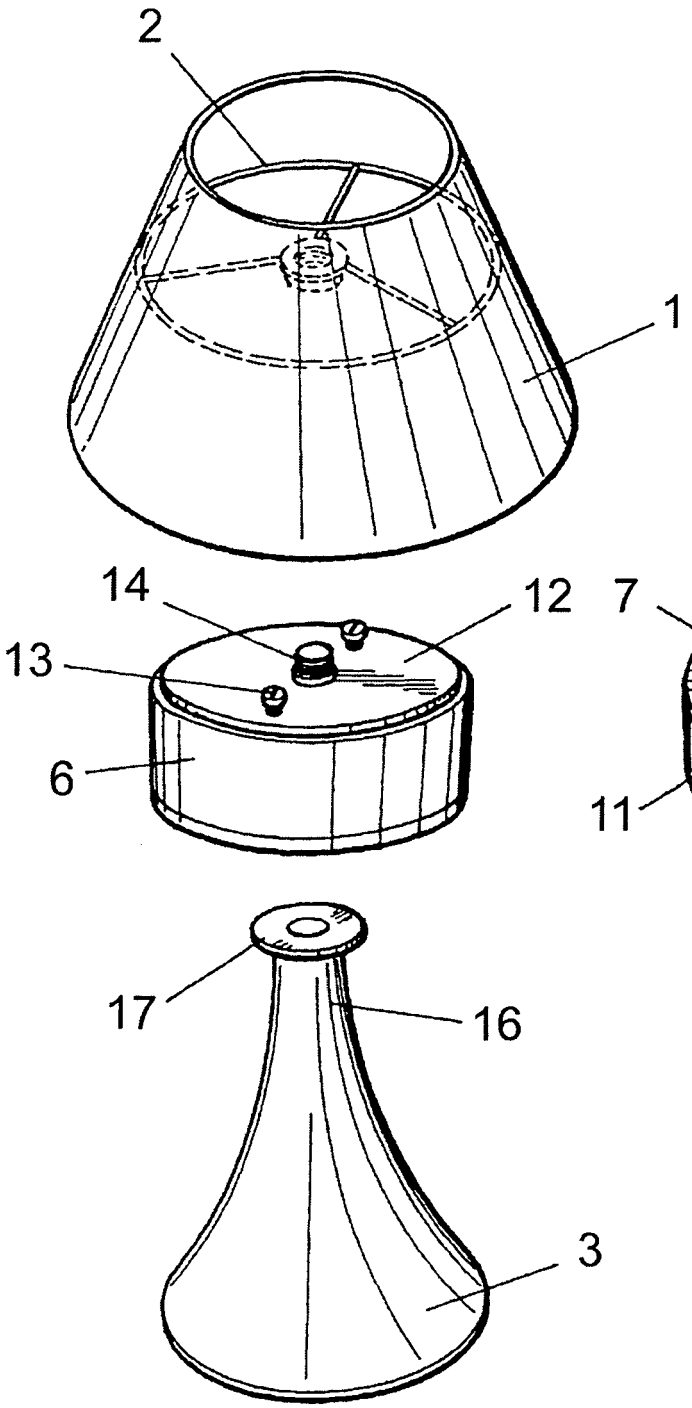

FIG. 1

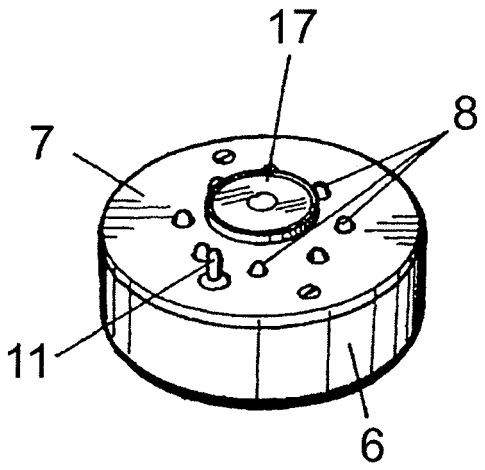

FIG. 2

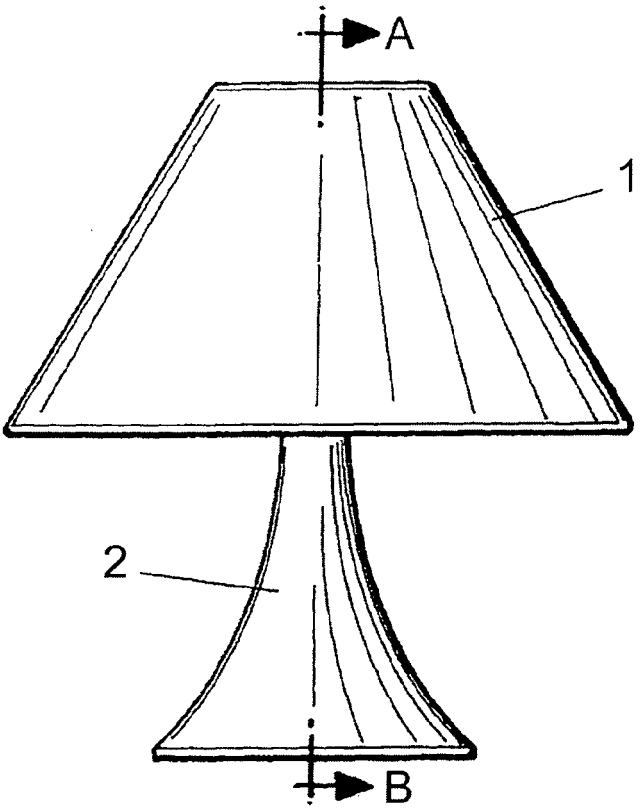

FIG. 3

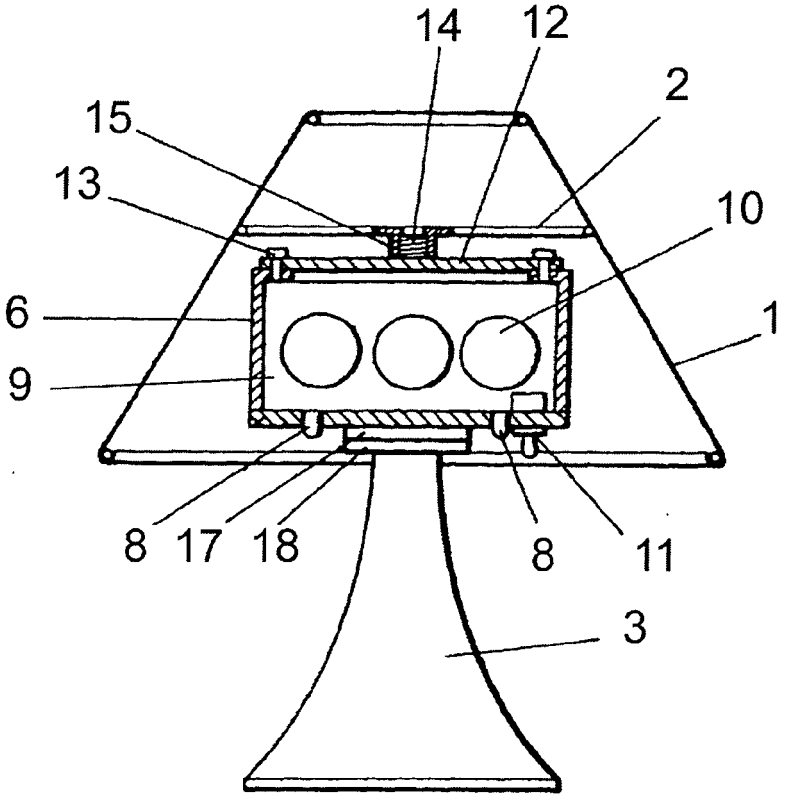

FIG. 4
A-B

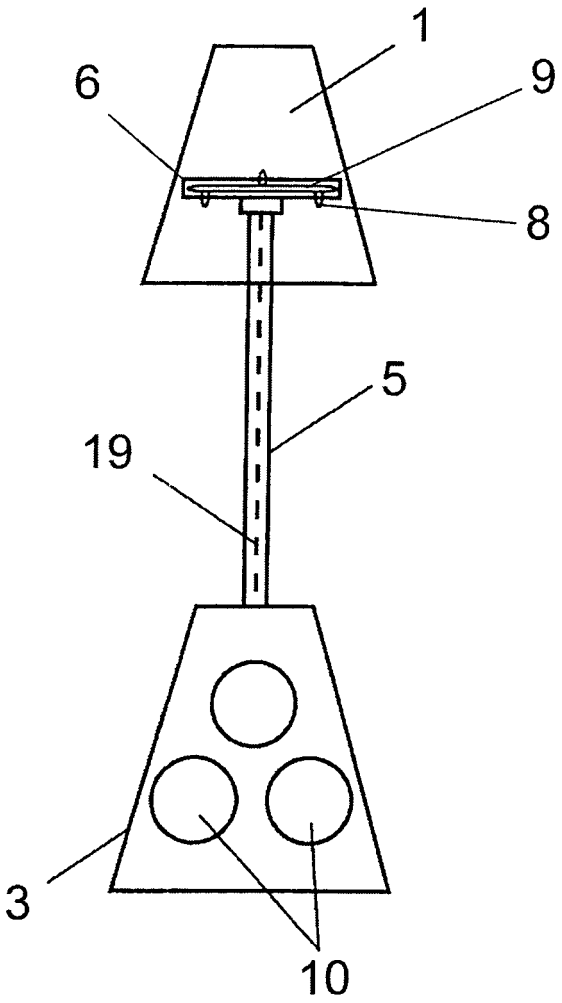

FIG. 5

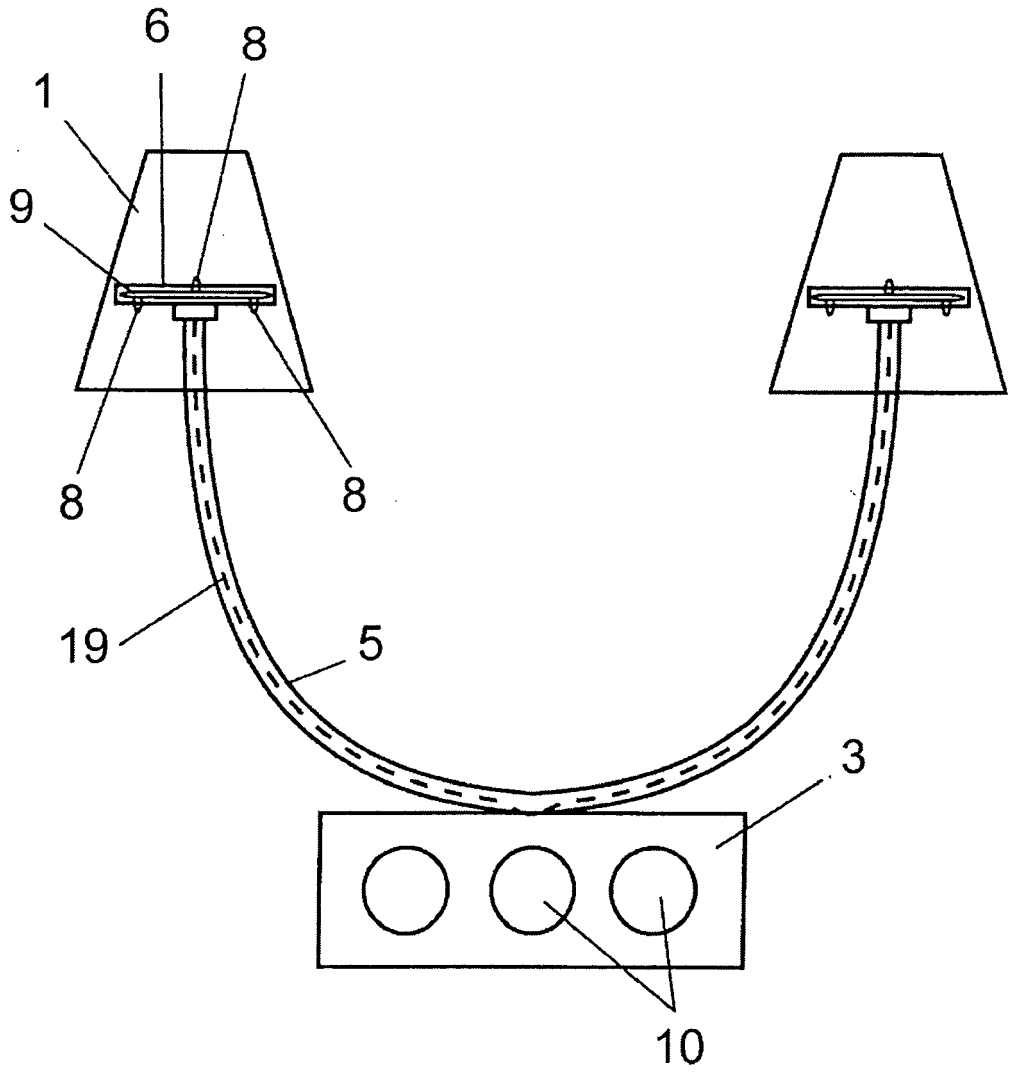

FIG. 6

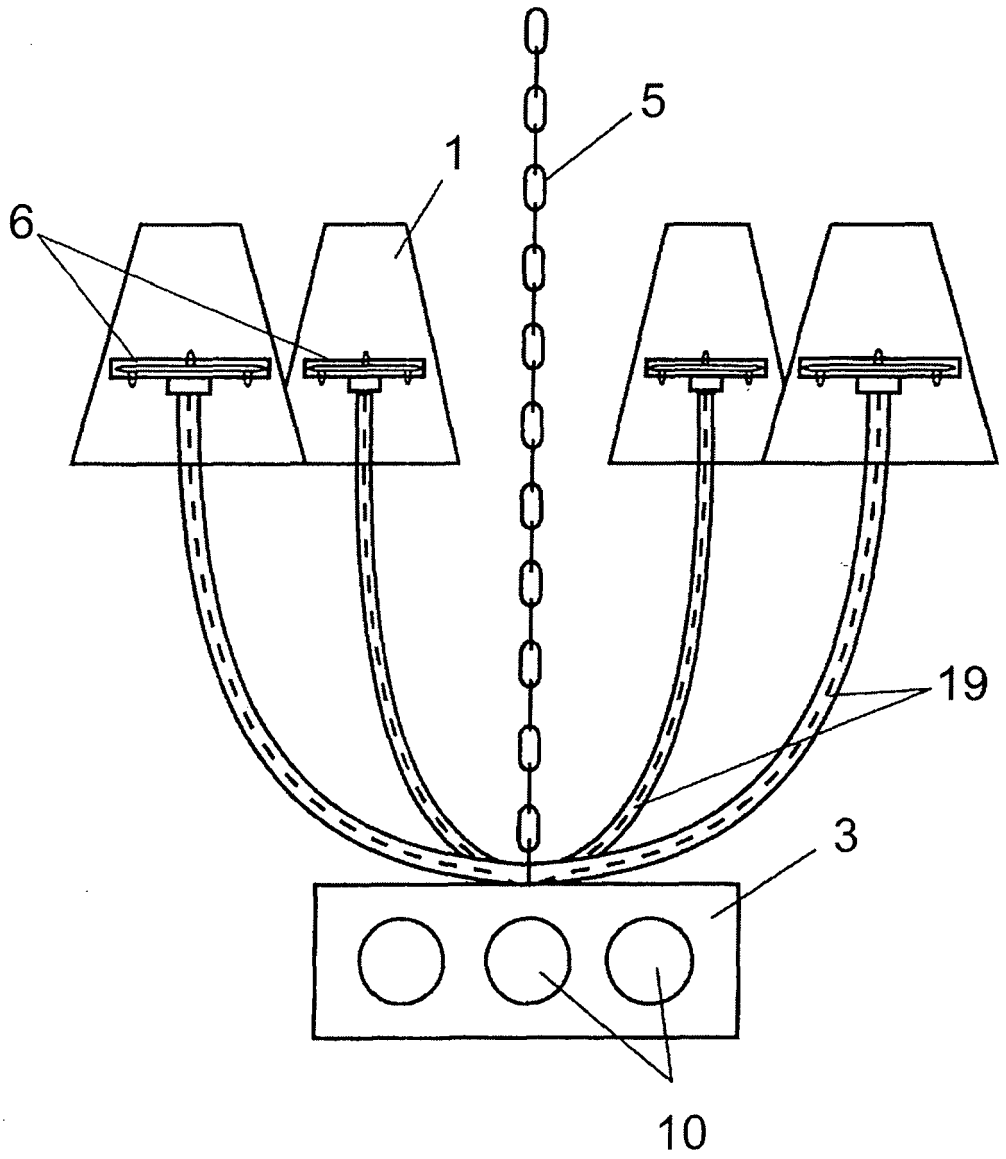

FIG. 7

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 38 0030

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 203 14 900 U1 (MAAS & ROOS LICHTWERBUNG GMBH) 20 November 2003 (2003-11-20) * page 2, line 19 - page 5, line 14; figure 1 * -----	1-8	INV. F21S9/02 F21S13/02 F21S13/12
A	WO 03/089838 A (ENGLAND, GRAHAM; ENGLAND, PETER; EDDERSHAW, PHILIP) 30 October 2003 (2003-10-30) * page 4, paragraph 3 - page 4, paragraph 3; figure 6 * -----	1-8	ADD. F21Y101/02
A	DE 202 06 201 U1 (GIERLING, ILKA) 8 August 2002 (2002-08-08) * page 13, line 7 - page 15, line 2; figure 3 * -----	1-8	
A	WO 02/052190 A (ZHANG, CHEN) 4 July 2002 (2002-07-04) * abstract; figures 1-3 * -----	1-8	

TECHNICAL FIELDS SEARCHED (IPC)
F21L F21S F21K F21Y

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 June 2006	Bagge Af Berga, H

CATEGORY OF CITED DOCUMENTS

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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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14-06-2006

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