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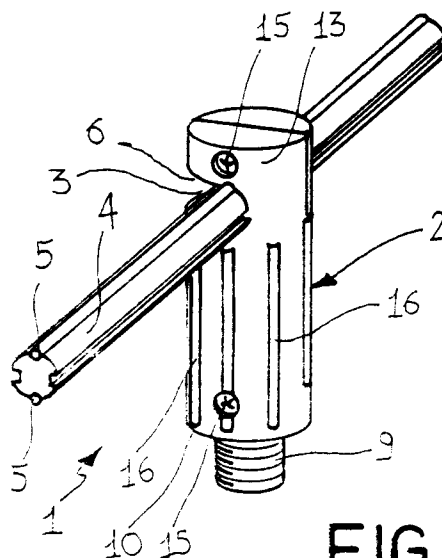
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AT BE CH DE DK ES FR GB IE LI NL PT SE(71) Applicant: **TEKNO-LIT DI ZUCCHINI E LAZZARONI S.r.l.**
Via Martorello 1
I-25014 Castenedolo (Brescia) (IT)(72) Inventor: **Lazzaroni, Mauro**
Via Giovanni Prati 37
I-Rezzato (Brescia) (IT)
Inventor: **Zucchini, Monica**
Viale Venezia 61/E
I-Brescia (IT)(74) Representative: **Righetti, Giuseppe**
Bugnion S.p.A.
Via Carlo Farini, 81
I-20159 Milano (IT)(54) **Shunt and support device for lighting elements.**

(57) A shunt and support device for lighting elements comprises a box-shaped body (2) provided with a through housing (3) arranged to receive a rod-like member (4) passing therethrough, on which two longitudinal electric conductors (5) are disposed. Housed within the box-shaped body are two electric connecting members (7) connecting the conductors (5) to a lighting element fastened to the box-shaped body (2) by a support attachment (9). Coupling between the box-shaped body (2) and rod-like member (4) is carried out by introducing the rod-like member (4) into the through housing (3), through an access opening (6) extending radially from the through housing itself.

**FIG.1****EP 0 675 574 A1**

The present invention relates to a shunt and support device for lighting elements. In particular, the invention pertains to low-voltage lighting elements currently used in indoor lighting systems.

It is known that lighting of civil use premises, such as dwelling houses or office premises, has been widely carried out in recent years by the use of low-tension-operating lighting elements, such as for example spotlights provided with halogen lamps.

Said lighting elements, be they in the form of spotlights or other arrangements, are generally fastened to electrified rods in turn secured to a wall, ceiling or, in the case of lamps, to a supporting frame.

Said lighting elements are fastened to the electrified lamps by means of shunt and support devices, also known as adapters, which, in addition to supporting said lighting elements, also ensure an efficient electric connection between the electrified rods and the lighting elements. Obviously, the structure of the above mentioned adapter devices varies depending on the type of the electrified rods used.

For the above reason, in the course of the present description reference will be exclusively made to electrified rods consisting of a rod-like member provided, on the surface thereof, with a pair of longitudinal electric conductors.

For the purpose of connecting one or more lighting elements to a rod-like member of the above described type, a shunt and support device is presently known which comprises a substantially cylindrical box-shaped body provided with a through housing the shape of which matches that of the rod-like member and inside which said member can be engaged. Provided within the box-shaped body are two electric connecting members adapted to connect the electric conductors disposed on the rod-like member to the lighting element to be powered, which lighting element is generally anchored to a threaded tubular attachment carried by the box-shaped body.

The above described shunt and support device has proved to be very efficient in that it enables the light beam to be easily oriented and ensures a stable and efficient connection both from a mechanical and electrical point of view between the rod-like member and the lighting elements associated therewith.

It is pointed out however that the installation of a lighting system in which the above described shunt and support device is employed is rather arduous.

In fact, for engagement and disengagement of the adapter device to and from the rod-like member; such rod-like member is to be introduced into the housing formed in the box-shaped body of the

adapter device and it is necessary to cause the latter to slide along the rod-like member as far as it reaches the desired positioning. Therefore, if it is required, as a result of a failure for example, to disengage an adapter device, sliding of said adapter along the whole rod-like member must be carried out, which also brings about disengagement of all adapter devices that may be present between the involved device and the free end of the rod-like member. Sometimes, for carrying out the above operation it is even necessary to disengage the rod-like member from the wall to which it is fastened. In fact, the rod-like member is generally supported by two or more supporting elements in turn secured to the wall or ceiling. As can be easily understood, such supporting elements may prevent replacement of the broken shunt device and therefore they too must be disengaged from the rod-like member.

In conclusion, while the above described adapter device is very efficient from an operating point of view, it has some practical drawbacks, above all in terms of installation of the same and disassembling from the rod-like member.

Under this situation, it is a fundamental object of the present invention to substantially solve all the drawbacks of the known art by providing a shunt and support device that, while ensuring an efficient electrical and mechanical connection between the lighting element and the electrified rod-like member, at the same time is capable of being engaged to the rod-like member in a simpler and more practical manner as compared to the adapter devices currently in use.

The foregoing and further objects that will become more apparent from the following description are substantially achieved by a shunt and support device for lighting elements comprising: a box-shaped body provided with at least one through housing arranged to receive a rod-like member passing therethrough and exhibiting at least one pair of longitudinal electric conductors on the surface thereof, a support attachment associated with said box-shaped body and arranged to support said lighting element, and electric connecting members housed within said box-shaped body and designed to connect said longitudinal electric conductors to said lighting element, for powering said lighting element, characterized in that said box-shaped body is also provided with an access opening extending radially from said through housing for insertion of said rod-like member into the through housing itself.

Further features and advantages will be best understood from the detailed description of a preferred embodiment of a shunt and support device for lighting elements according to the present invention, given hereinafter by way of non-limiting

example with reference to the accompanying drawings, in which:

- Fig. 1 is a perspective view of a shunt and support device according to the invention engaged to an electrified rod-like member,
- Fig. 2 is a front view of the device in question in an opening condition: and
- Fig. 3 is a sectional view taken along line III-III in Fig. 2

Referring to the drawings, a shunt and support device for lighting elements according to the present invention has been generally identified by reference numeral 1.

The device 1 is comprised of a box-shaped body 2, preferably of cylindrical conformation, provided with a through housing 3 within which a rod-like member 4, having a pair of longitudinal electric conductors 5 on the surface thereof, can be slidably engaged.

Advantageously, the box-shaped body 2 has an access opening 6 extending radially from the through housing 3 to enable insertion of the rod-like member 4 into the through housing itself. It is pointed out that said insertion may take place by snap fitting, forced fitting or other fitting methods. However, preferentially, the access opening 6 exhibits a fitting end 6a, directed towards said through housing 3, which is of smaller width than that of the through housing itself. In addition, in order to facilitate the insertion of the rod-like member into the through housing 3, said access opening 6 is slightly flared outwardly, that is its width is increasingly larger as it moves away from the housing 3.

Referring again to the box-shaped body 2, it is to be noted that said box-shaped body houses two electric connecting members 7 which are arranged to connect the electric conductors 5 to the lighting element. Each of said electric connecting members 7 has one end 7a directly in contact with one of the two longitudinal electric conductors 5 and the other end 7b associated with a connecting terminal 8 to which the end portions of electric connecting wires can be engaged, which wires terminate at the lighting element (not shown) carried by the box-shaped body 2. It is pointed out that the end 7a of each connecting member 7 is bent preferably at 90° and is elastically urged against the respective longitudinal conductor 5.

Also associated with the box-shaped body 2 is a support attachment 9 of tubular conformation, axially emerging from an end surface of the box-shaped body. Such support attachment is outwardly threaded for receiving a correspondingly threaded shank (not shown) carried by the lighting element that in this way is connected to the box-shaped body 2. The electric connecting wires between the lighting element and connecting termi-

nals 8 enter the box-shaped body 2 passing through the support shank 9 and an access opening 11 formed at said end surface 10 of the box-shaped body.

Advantageously, in the embodiment shown, the body 2 is formed of first and second half shells, 12 and 13, mutually engaged along a hinging line 14 extending longitudinally over an outer side surface of the box-shaped body 2. Preferably, the hinging line 14 is embodied by a longitudinal rib directly made during the half shell moulding step.

By virtue of said hinging line 14, the half shells 12 and 13 are mutually engaged in a rotatable manner and can be moved from an opening condition, shown in Figs. 2 and 3, in which access to the inside of the box-shaped body 2 and therefore the electric connecting members 7 is afforded, to an operating condition shown in Fig. 1, in which the box-shaped body is closed upon itself. It is pointed out that, in order to ensure a stable positioning of the half-shells 12 and 13 in the operating condition, locking means is provided which consists for example of a pair of threaded elements 15 carried by the second half-shell 13 and active by screwing on the first half shell 12.

Finally, in order to facilitate grasping of the box-shaped body 2 and improving the aesthetic appearance of same, the outer surface 2a of said box-shaped body is provided with a plurality of longitudinal grooves 16 disposed parallelly and spaced apart the same distance from each other.

After describing the shunt and support device for lighting elements according to the invention mainly as regards structure, installation of same is now illustrated.

Once the necessary electric connections have been carried out between the wires terminating at the lighting element and the connecting terminals 8 carried by the connecting members 7, the first and second half shells, 12 and 13, are closed upon each other to bring the device 1 to its operating condition. At this point it is sufficient to move the box-shaped body 2 close to the rod-like member 4 and introduce said rod-like member 4 into the through housing 3, through the access opening 6.

Advantageously, each time it is deemed necessary to disengage the device 1 from the rod-like member 4, due to a failure for example or for other reasons, it will be sufficient to act on the box-shaped body 2, holding it tight and exerting enough force to enable extraction of the rod-like member 4 from the through housing 3, without other adapter devices that may be associated with the rod-like member being involved in this operation.

The invention achieves important advantages.

In fact, as above said, for engagement and disengagement of the device 1 to and from the

rod-like member 4 it is sufficient to act on the involved device without disengaging from the rod-like member other devices that may be present between the concerned device and the free end of the rod-like member.

The box-shaped body made of two half shells 12, 13 associated with each other by hinging is very advantageous in that in this way access to the inside of the box-shaped body 2 is very simple. In this connection it is pointed out that since the hinging line 14 is made directly during the moulding step, the production costs of the device 1 are reduced.

Modifications and variations may be made to the present device without departing from the scope of the invention as defined in the appended claims.

Claims

1. A shunt and support device for lighting elements comprising:

- a box-shaped body (2) provided with at least one through housing (3) arranged to receive a rod-like member (4) passing therethrough and exhibiting at least one pair of longitudinal electric conductors (5) on the surface thereof;
- a support attachment (9) associated with said box-shaped body (2) and arranged to support said lighting element; and
- electric connecting members (7) housed within said box-shaped body (2) and designed to connect said longitudinal electric conductors (5) to said lighting element, for powering said lighting element, characterized in that said box-shaped body (2) is also provided with an access opening (6) extending radially from said through housing (3) for insertion of said rod-like member (4) into the through housing itself.

2. A device according to claim 1, characterized in that said access opening (6) has one fitting end (6a) provided in said through housing (3) which is of smaller width than that of the through housing itself.

3. A device according to claim 1, characterized in that said access opening (6) is flared outwardly to enable an easy insertion of said rod-like member (4) into the through hole (3).

4. A device according to claim 1, characterized in that each of said electric connecting members (7) has one end (7a) bent and elastically urged against one of said longitudinal electric conductors (5).

5. A device according to claim 1, characterized in that said box-shaped body (2) comprises a first and a second half shell (12 and 13) engaged with each other.

6. A device according to claim 5, characterized in that said first half shell (12) is connected to said second half-shell (13) along a longitudinal hinging line (14), said half shells being rotatably movable with respect to each other about said hinging line from an opening condition in which access to said electric connecting members (7) is possible, to an operating condition in which said half shells (12, 13) are disposed close to each other to define said box-shaped body (2).

7. A device according to claim 6, characterized in that it further comprises locking means associated with said box-shaped body for locking said first half shell (12) to said second half shell (13) in the operating condition.

8. A device according to claim 7, characterized in that said locking means comprises a pair of threaded elements (15) associated with said second half shell (13) and acting by screwing on said first half shell (12).

9. A device according to claim 1, characterized in that said box-shaped body (2) has a substantially cylindrical conformation.

10. A device according to claim 1, characterized in that said box-shaped body (2) has an outer surface (2a) provided with longitudinal ribs (16) parallel to each other and substantially spaced apart the same distance from each other.

11. A device according to claim 1, characterized in that said attachment (9) has a tubular conformation, is externally threaded and emerges axially from an end surface (10) of said box-shaped body (2).

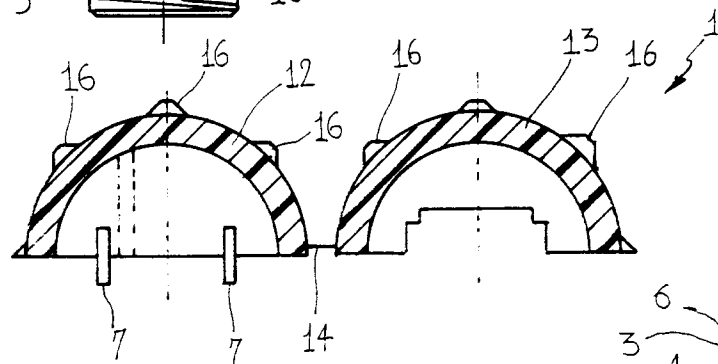
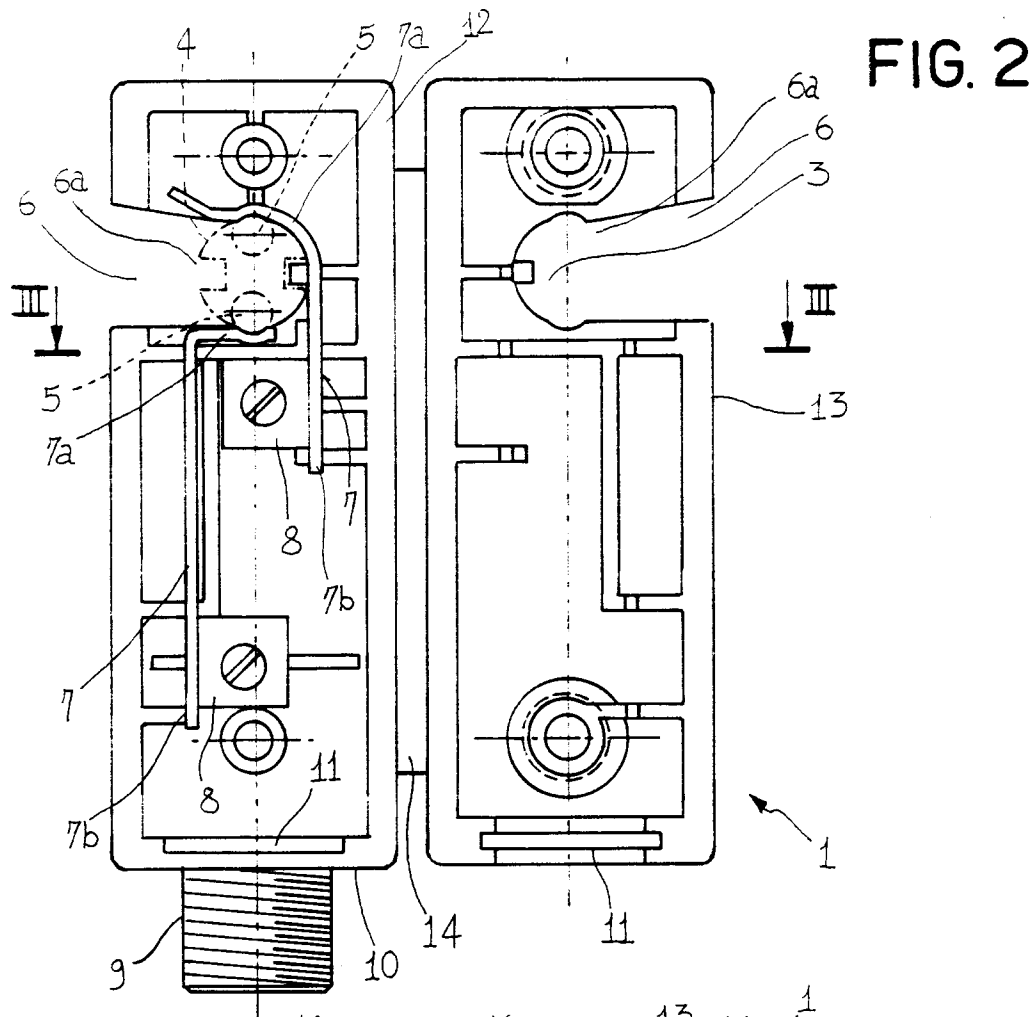


FIG. 3

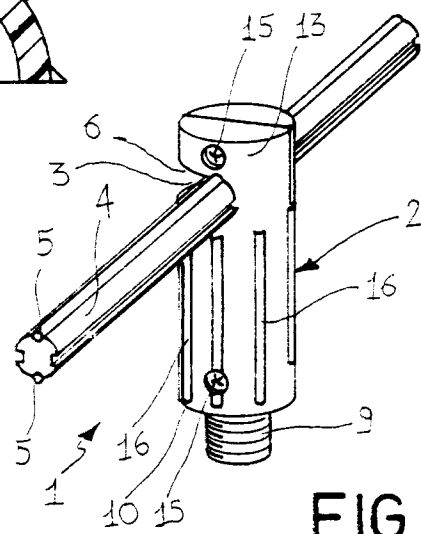


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 94 83 0341

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y A	DE-U-89 14 263 (TUMALSKI) * the whole document * ---	1 2-11	H01R25/14
Y A	EP-A-0 515 316 (TEKNO-LIT) * the whole document * ---	1 2-11	
A	DE-U-90 03 475 (LICENTIA) * the whole document * ---	1-11	
A	DE-C-37 39 616 (APEL UWE) * figure 9 * ---	1-5	
A	EP-A-0 515 315 (TEKNO-LIT) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H01R F21V
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 July 1995	Examiner Durand, F
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