(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 097 671 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
08.10.2014 Bulletin 2014/41

(21) Application number: **07805770.0**

(22) Date of filing: **09.08.2007**

(51) Int Cl.:
F21V 21/116 *(2006.01)* ***F21V 17/16*** *(2006.01)*
F21W 131/103 *(2006.01)*

(86) International application number:
PCT/IT2007/000579

(87) International publication number:
WO 2008/018112 (14.02.2008 Gazette 2008/07)

(54) **DEVICE FOR QUICKLY FIXING AN ARMOR TO A ROD OF A STREET LIGHTING POLE**

VORRICHTUNG ZUR SCHNELLEN BEFESTIGUNG EINER ARMATUR AN EINEM STAB EINER STRASSENBELEUCHTUNGSSTANGE

DISPOSITIF POUR FIXER RAPIDEMENT UN BLINDAGE À UNE TIGE D'UN PÔLE D'ÉCLAIRAGE DE RUE

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

(30) Priority: **10.08.2006 IT MI20061616**

(43) Date of publication of application:
09.09.2009 Bulletin 2009/37

(73) Proprietor: **Conchiglia S.p.A.**
42100 Reggio Emilia (IT)

(72) Inventor: **MARTINELLI,Daniele**
I-42100 Reggio Emilia (IT)

(74) Representative: **Ferrari, Barbara**
Botti & Ferrari S.r.l.
Via Cappellini, 11
20124 Milano (IT)

(56) References cited:
EP-A- 0 392 578
EP-A- 1 235 028
AU-B2- 736 250
GB-A- 862 292
GB-A- 1 079 276
US-A- 4 064 432
US-A- 5 975 727

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 097 671 B1

Printed by Jouve, 75001 PARIS (FR)

Description

Technical field

[0001] The present invention relates to a device for quickly fixing an armor to a rod of a street lighting pole, said rod being hollow and provided with an axial bore for housing a plurality of electrical cables, said device comprising at least a socket element, to be fixed to the rod and connected to said electrical cables, and a plug element, to be electrically connected to said socket element.

Known art

[0002] It is known that a street lighting pole comprises a rod and an armor fixed to an end of the rod and provided with a lighting body.

[0003] In particular, the fixing of the armor comprises connecting a structural support of the armor and its fixing to one end of the rod and an electrical connection for providing power to the lighting body. Moreover the rod has another end for fixing it for instance to the road surface or a portion of terrain adjacent to said surface.

[0004] Moreover it is known that the fixing of the armor to the rod (and its removal) are accomplished not only at the first installation of said lighting pole but also during its maintenance operations, for instance for replacing the lighting body, or for cleaning the armor. In particular, it is required to work on the road surface by means of special equipment, such as telescopic ladders or suitable vehicles provided with elevators, in order to operate directly on the armor of the lighting pole.

[0005] Since these equipments are particularly cumbersome, they generally require a traffic deviation, in order to reduce risks for the operators; therefore it is necessary to fix and remove the armor as quickly as possible, so that an operator is able to free the road as soon as the work is done.

[0006] Normally, the electrical connection of the armor provides for the connection of a plurality of electrical cables- which extend internally inside the rod, directly to the lighting body associated with the armor, wherein the lighting poles are usually formed by conical or cylindrical pipes, such an electrical connection comprising a partial extraction of the cables from one end of the rod, their fixing to the lighting body and their re-positioning inside the rod, said cables being suitably oversized with respect to the length of the rod, in order to facilitate the connection with the lighting body. The structural supporting connection provides a fixing of the armor to the rod, moreover allowing a rotation of the same in order to align it so that the lighting body correctly illuminates the road, wherein the final fixing of the armor to the rod, for example by means of a plurality of fixing screws, is completed only after such an orientation operation. It is therefore easily understood how these fixing operations are not particularly quick and do not facilitate an intervention by the operator, with long intervention times and consequently long lasting road blocks.

[0007] Furthermore, from Italian patent application no. 46827A, (EP 0 392 578), a device for facilitating quick mounting of armors for lighting poles is known, which substantially uses a pair of sleeves, which are telescopically coupled and associated to the rod of the lighting pole and to its armor, respectively, on the outer side of the rod.

[0008] Such a device allows quicker insertion and extraction of the armor to and from the rod, with respect to above said traditional method, wherein the auto-centering of the two sleeves is facilitated by means of a pair of guiding boards, which are provided on the same sleeves.

[0009] Nevertheless the solution of above said patent has some drawbacks, in particular because of the fact that the sleeve associated to the rod has to be sized in a way to fit on the rod in contact with the same, so that it is necessary to provide a suitable sleeve for each rod, i.e. depending from the size and flared or curved shape of the lighting pole comprising the rod.

[0010] Moreover, auto-centering by means of guiding plates still requires the operator to find a suitable coupling position between the two sleeves, consisting in rotating the armor at the time of insertion into the rod, in order to determine the correct coupling between the corresponding guiding bushings, and this operation is not particularly quick in case of rain or low visibility or with bulky armors, which are difficult to handle. Moreover, it is not possible to freely orientate the lighting body by rotating the armor, since its position with respect to the rod is constrained by said guiding bushings.

[0011] The structural connection of the sleeve associated to the rod is obtained by means of a pair of screws, extending through the sleeve and clamping the rod, forming a sleeve/rod coupling, which is subject to atmospheric agents, since the whole structure and the through screws are in fact exposed to the outside of the lighting pole.

[0012] The technical problem to be solved by the present invention consists in providing a device for quickly fixing an armor of a street lighting pole, which does not require even a partial intervention for centering the armor of the respective rod, allowing on the other hand a mechanical and electrical connection between the armor and the rod of the lighting pole, independently from the size of the rod or the shape of the lighting pole comprising the rod, overcoming the limitations and drawbacks which still limit the devices for fixing an armor according to the known art.

Summary of the invention

[0013] Above said technical problem is solved by a device comprising a socket element with a sleeve body suitably sized in order to allow its housing inside the rod and at least a catch portion for attaching the same.

[0014] In particular, said sleeve body is formed of insulating material and is partially deformable, and comprises fixing means to increase, by deformation, the vol-

ume of said sleeve body for attaching it to an internal surface of the rod, so that the sleeve body may be extracted from the rod, when the fixing means are not inserted, and blocked, by pressing contact on said internal surface, when the fixing means are in position.

[0015] More particularly the socket element comprises an upper portion with a diameter which is substantially greater than an internal diameter of the rod and a lower portion having a diameter substantially lower than that, wherein the upper portion not only avoids a falling down of the socket element, when the fixing means are not inserted, but also adapts, during mounting operations, to shape and/or diameter of said rod.

[0016] The device also comprises a plug element, to be quickly coupled to said socket element, without a particular orientation.

[0017] The characteristics and advantages of the device according to the invention will be clearly understood by means of the following description of one of its embodiments, which is provided only as an illustrative and not limiting example with reference to the attached drawings.

Brief description of the drawings

[0018]

Fig. 1a schematically shows a street lighting pole according to the present invention.

Fig. 1b schematically shows a device for quickly fixing an armor to a rod of a street lighting pole, the device comprising a plug element and a socket element, according to the present invention.

Fig. 2a schematically shows the socket element of fig. 1,

Fig. 2b schematically shows the plug element of fig. 1.

Detailed description

[0019] With reference to above said figures, 30 generally indicates a street lighting pole according to the invention.

[0020] In particular, the street lighting pole 30 comprises a rod-like body or rod 3 and an armor 2, which are fixed by means of a device 1 for quickly fixing according to the present invention.

[0021] The street lighting pole 30 is for instance a steel pole comprising a rod 3, in particular a hollow or "hollow cavity" rod, i.e. having an internal bore 4, preferably with a circular section, and a predetermined diameter, or a conical, cylindrical or flared pipe. As known, such a street lighting pole 30 may be cylindrical or conically flared at one end, with a circular or polygonal transversal section.

[0022] The armor 2 may be fixed to an upper end 5 of rod 3 in order to be structurally connected to it, with an electrical connection to one or more electrical cables 6, which are disposed inside the rod 3, suitable for providing electrical power to an electrical body inserted in said armor 2.

[0023] To this end, and according to a preferred embodiment, the quick fixing device 1 comprises a socket element 7 provided with a socket body 7b, which in turn comprises electrical socket contacts 12, and a sleeve body 7a, formed by plastic or insulating material, which is partially deformable.

[0024] Advantageously, according to the invention, the sleeve body 7a is sized in order to be inserted in an upper part (corresponding to upper end 5) of rod 3, like a bottle plug.

[0025] Portion 8 of sleeve body 7a, having a diameter equal or minor than the internal diameter d of rod 3, is inserted in said rod 8, whereas its upper portion 9, having a diameter equal or higher than the external diameter of rod 3, provides a thickening 10, suitable for avoiding that the sleeve body 7a falls inside the bore 4.

[0026] More particularly, the insertion of sleeve body 7a in rod 3, along an axial direction of rod 3, causes a compression of toothed surface 10 or its thinning, in order to force the sleeve body 7a into pressing contact against the rod 3, at least along a first part 9a of upper portion 9, while a second part 9b of same portion 9, generally not inserted inside the rod 3, rests in sealing abutment on the upper end 5 of same rod 3.

[0027] Advantageously, in an alternate embodiment of the present invention, the sleeve body 7a is provided with a profile protruding from its external surface. Such profile is constructed in such a way that it is removed at insertion of the sleeve body 7a inside the rod 3 (so as to leave only the second part 9b in sealing abutment against the upper end 5 of rod 3) or it remains in the same position in order to ensure contact with the internal surface of rod 3, if the rod's diameter is smaller (so as to form the first and second part 9a and 9b of portion 9).

[0028] The sleeve body 7a is internally hollow and defines a housing 11 for receiving the electrical cables 6, which are provided on the rod 3, and for housing the socket body 7b, comprising the corresponding electrical socket contacts 12, which are adjacent to electrical cables 6.

[0029] A base 29 of sleeve body 7a, in particular the base inserted in rod 3, comprises an opening 21 for allowing access of electrical cables 6 or its protection sleeve, while a insulating plug 22, inserted on the electrical cables 6 or their sleeve in a tight manner, closes the opening 21 in order to isolate the internal part of socket element 7. More in particular, the base 29 may be integral with the sleeve body 7a or may be separated from it and may be fixed by mechanical means, for example fixing screws, to a surface of sleeve body 7a.

[0030] The sleeve body 7a moreover defines one or more additional seats 13 for rod fixing means 3, comprising one or more threaded bushings 14, which are fixed

on the bottom of additional seats 13, in order to receive respective screws 15.

[0031] More in particular, each seat 13 defines a space with a volume less than that of screw 15, so that, inserting such a screw 15 onto a bushing 14, a compression of at least part of portion 8 against the internal surface of rod 3 is caused, ensuring a pressing contact of the sleeve body 7a against the internal surface of rod 3. In other words, the sleeve body 7a comprises an attachment portion corresponding to at least a part of portion 8, in order to ensure an attachment of socket element 7 to rod 3.

[0032] At least a part of the sleeve body 7a contacting the internal surface of rod 3, preferably the part compressed by tightening the screw 13 to bushing 14, has a inhomogeneous surface, for example comprising concentric raised areas 16 with respect to the sleeve body 7a, which enhance the clamping action upon tightening the screw, since the compression of the raised areas 16 on the rod 3 is facilitated by depressions 17 in the same surface, which are adjacent to raised areas 16.

[0033] As can be seen in fig. 2a, the socket body 7b comprises electrical socket contacts 12a, 12b, to connect in a conventional way the electrical cables 6. These electrical socket contacts in particular comprise a central contact 12b and a peripheral contact 12a, protruding from an insulating holder 24, the peripheral contact 12a being additionally enclosed by an insulating body 23, which protrudes from the same holder 24.

[0034] More particularly, the electrical socket contacts 12a, 12b are structured in order to create a circular or jack-type electrical contact with a corresponding plug element.

[0035] To this end, referring to fig. 2b, advantageously according to the invention, the quick fixing device 1 moreover comprises a plug element 18, which in turn comprises a sleeve body 18a, of plastic or insulating material, which is partially deformable, and a plug body 18b, comprising electrical plug contacts 19a, 19b, to be connected in a conventional way to electrical plug cables 20, which are derived from the armor 2. More in particular, the plug element 18 may be inserted into the armor 2 or may be fixed to it, wherein the electrical plug contacts 19a, 19b protrude from armor 2, in order to facilitate a connection with the socket element 7.

[0036] The electrical plug contacts 19a, 19b are structured so as to create a circular or jack-type electrical contact with the electrical plug contact 12a, 12b inside the rod 3, so that an electrical connection between the plug body 18b and the socket body 7b is produced by inserting the sleeve body 18a of the plug element 18 into the sleeve body 7a of the socket element 7, in an axial direction with respect to the rod 3 and without requiring a specific orientation due to the use of circular or jack-type socket-plug contacts.

[0037] A base 31 of the sleeve body 18a comprises an opening 25 for accessing the electrical cables 20 or a corresponding collecting and protection sleeve. An insulating plug 26, tightly inserted over the electrical cables 20 or their respective sleeve, closes the opening 25 in order to insulate the internal part of the plug element 18.

[0038] The electrical plug contacts comprise a central plug contact 19b and a peripheral plug contact 19a, protruding from a insulating plug holder 27, the peripheral contact 19a being additionally enclosed by an insulating plug element 28, protruding from the same holder 27, suitable for isolating the peripheral plug contact 19a with respect to the central socket contact 12b. In particular, the insulating plug element 28 and the insulating body 23 are provided for facilitating a powering contact between the plug element 18 and the socket element 7.

[0039] Advantageously, the device 1 for quickly fixing the armor 2 on the rod 3 of street lighting pole according to the present invention does not require even a partial intervention for centering the armor 2 on the respective rod 3, since the armor 2 is vertically inserted into the rod 3, with respect to its axis, without requiring a rotation of armor 2 in order to align the socket and plug contacts, since these contacts are of the circular or jack type and due to the coupling between plug element 18 and socket element 7, which does not require any specific orientation.

[0040] The quick fixing device 1 according to the invention moreover provides a mechanical and electrical connection, which lies inside the lighting pole 30, and is therefore protected from atmospheric influences. Advantageously, the quick fixing device 1 according to the invention may be adapted to the size or the shape of the rod 3, due to the particular shape and structure of the sleeve body 7a of the socket element housed in said rod 3, which may be easily inserted into the rod 3 and quickly fixed to the same rod.

[0041] As already shown, the present invention refers also to a lighting pole 30, for example of steel, comprising a hollow rod or "hollow core" rod, i.e. which is provided with an axial bore 4, preferably with a circular section of predetermined diameter, provided with a plurality of electrical cables 6.

[0042] The lighting pole 30 according to the present invention comprises a socket element 7 of the above said type, which is inserted in the upper part of rod 3, suitable for forming a bottle plug and comprising a socket body for connecting respective electrical cables 6 and supporting it inside the rod 3. Electrical socket contacts 12a, 12b are structured so as to form an electrical contact of the circular or jack type, with a corresponding plug element, which is for example associated to an armor 2 for the lighting pole 30.

[0043] Advantageously, the lighting pole 30 according to the present invention is initially provided with cables by connecting the electrical cables 6 to the socket body 7b of socket element 7, in order to quicken the installation of lighting pole 30, not only with reference to its insertion in a supporting base but also facilitating a quick connection of an armor 2 provided with a suitable coupling plug, this coupling being of the circular or jack type and not requiring a specific orientation of the plug in the socket

element 7.

[0044] Moreover the present invention refers to an armor 2 for a lighting pole, provided with a plug element 18, according to the preceding description, comprising electrical plug contacts 19a, 19b, which connect in a conventional way electrical plug cables 20, originating from the armor 2.

[0045] Advantageously, the armor 2 is provided with connection cables 20 for a plug body 18b, in order to quicken the installation of armor 2 of a lighting pole 30, provided with a suitable coupling socket, wherein this coupling is of the circular or jack type, without the need for a specific orientation of the plug element 18 inside the socket.

Claims

1. Device (1) for quickly fixing an armor (2) of a street lighting pole (30), of the type comprising a hollow rod (3), said rod being provided with an axial bore (4) for housing a plurality of electrical cables (6), said device (1) comprising a socket element (7), to be fixed to said rod (3) and connected to said electrical cables (6), and a plug element (18), to be electrically connected to said socket element (7), wherein said socket element (7) comprises a sleeve body (7a) provided with at least one attachment portion, **characterized in that** said sleeve body (7a) is sized so as to be enclosed in said rod (3), and **in that** said attachment portion is suitable for fixing said socket element (7) in pressing contact against an internal surface of said rod (3).

2. Device (1) according to claim 1, **characterized in that** said sleeve body (7a) is made of insulating and partially deformable material and comprises at least a housing (13) having a size substantially lower than a volume of at least a corresponding fixing means (15), to be inserted in said housing (13), increasing, by virtue of deformation, the volume of said sleeve body (7a), said sleeve body (7a) being removable from/insertable in said rod (3), when said fixing means (15) are not tightened, and said sleeve body being blocked, in pressing contact against said internal surface of said rod (3), when said fixing means (15) are tightened.

3. Device (1) according to claim 2, **characterized in that** said at least one housing (13) comprises at least a corresponding screwing seat (14) for said fixing means (15).

4. Device (1) according to claim 3, **characterized in that** at least an external surface of said sleeve body (7a) comprises raised areas (16) and depressed areas (17) which constrain said volume of said sleeve body (7a), in order to increase the fixing of said sleeve body (7a) on said internal surface of said rod (3).

5. Device (1) according to claim 4, **characterized in that** said sleeve body (7a) comprises an upper portion (9) having a diameter (d1) substantially greater than a diameter (d) of said rod (3) and which comprises a portion (9a) to be inserted in said rod (3), by compressing it against an internal surface of said rod, and a portion sealingly abutting against said rod (3).

6. Device (1) according to claim 1, **characterized in that** said socket element (7) comprises a socket body (7b) comprising electrical socket contacts (12) to be electrically connected to said electrical cables (6).

7. Device (1) according to claim 6, **characterized in that** said sleeve body (7a) defines a housing (11) for said socket body (7b), a base (29) of said sleeve body (7a), to be inserted into said rod (3), comprising an opening (21) for receiving said electrical cables (6) and an insulating plug (22), for closing it, to be tightly inserted on said electrical cables (6).

8. Device (1) according to claim 6, **characterized in that** said electrical socket contacts (12) comprise a central contact (12b) and a peripheral contact (12a), protruding from an insulating socket holder (24) of said socket body (7b), which provide an electrical contact of the circular or jack type.

9. Device (1) according to claim 8, **characterized in that** said peripheral contact (12a) is enclosed by an insulating body (23), which is in turn protruding from said insulating socket holder (24).

10. Device (1) according to claim 6, **characterized in that** said plug element (18) comprises a sleeve body (18a), made of partially deformable plastic or insulating material, to be inserted in said armor (2).

11. Device (1) according to claim 10, **characterized in that** said plug element (18) additionally comprises a plug body (18b), which in turn comprises electrical plug contacts (19) suitable for connecting a plurality of electrical plug cables (20).

12. Device (1) according to claim 11, **characterized in that** said electrical plug contacts (19) comprise a central plug contact (19b) and a peripheral plug contact (19a), protruding from an insulating plug holder (27) of said plug body (18b), suitable for forming an electrical contact of the circular or jack type.

13. Device (1) according to claim 12, **characterized in that** said peripheral contact (19a) is enclosed by an

insulating plug element (28) protruding from said insulating plug holder (27).

14. Device (1) according to claim 12, **characterized in that** said electrical plug contacts (19a, 19b) form an electrical contact of the circular or jack type with said electrical socket contacts (12a, 12b).

15. Device (1) according to claim 1, **characterized in that** said plug element (18) is inserted in said armor (2).

16. Device (1) according to claim 15, **characterized in that** said plug element (18) is fixed to said armor (2).

17. Street lighting pole (30) of the type comprising at least a hollow or "hollow core" rod (3) with a through bore (4) enclosing a plurality of electrical cables (6) as well as a socket element (7) which is inserted in a portion of said rod (3) and which is electrically connected to said electrical cables (6), **characterized in that** it comprise at least a device (1) for quickly fixing its armor (2) according to any of the preceding claims.

Patentansprüche

1. Vorrichtung (1) zum schnellen Befestigen einer Armatur (2) eines Straßenleuchtenmastes (30) des Typs, der eine hohle Stange (3) umfasst, wobei die Stange (3) mit einem axialen Loch (4) zur Unterbringung einer Vielzahl von elektrischen Kabeln (6) versehen ist, wobei die Vorrichtung (1) ein Buchsenelement (7), das an der Stange (3) zu befestigen und mit den elektrischen Kabeln (6) zu verbinden ist, sowie ein Steckerelement (18), das elektrisch mit dem Buchsenelement (7) zu verbinden ist, umfasst, wobei das Buchsenelement (7) einen Hülsenkörper (7a) umfasst, der mit mindestens einem Befestigungsteil versehen ist, **dadurch gekennzeichnet, dass** der Hülsenkörper (7a) ausgelegt ist, um in der Stange (3) eingefasst zu werden, und dass der Befestigungsteil zum Befestigen des Buchsenelements (7) in Druckkontakt bezüglich einer Innenfläche der Stange (3) geeignet ist.

2. Vorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Hülsenkörper (7a) aus isolierendem und teilweise verformbarem Material hergestellt ist und mindestens ein Gehäuse (13) umfasst, das eine Größe aufweist, die wesentlich kleiner als ein Volumen mindestens eines entsprechenden Befestigungsmittels (15) ist, das in das Gehäuse (13) einzusetzen ist und durch Verformung das Volumen des Hülsenkörpers (7a) vergrößert, wobei der Hülsenkörper (7a) aus der Stange (3) entfernbar/ in die Stange (3) einsetzbar ist, wenn das Befestigungsmittel (15) nicht festgemacht ist, und wobei der Hülsenkörper in Druckkontakt bezüglich der Innenfläche der Stange (3) blockiert ist, wenn das Befestigungsmittel (15) festgemacht ist.

3. Vorrichtung (1) nach Anspruch 2, **dadurch gekennzeichnet, dass** das mindestens eine Gehäuse (13) mindestens einen entsprechenden Verschraubungssitz (14) für das Befestigungsmittel (15) umfasst.

4. Vorrichtung (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** mindestens eine Außenfläche des Hülsenkörpers (7a) erhöhte Bereiche (16) und vertiefte Bereiche (17) umfasst, die das Volumen des Hülsenkörpers (7a) beschränken, um die Befestigung des Hülsenkörpers (7a) an der Innenfläche der Stange (3) zu verstärken.

5. Vorrichtung (1) nach Anspruch 4, **dadurch gekennzeichnet, dass** der Hülsenkörper (7a) einen oberen Teil (9) umfasst, der einen Durchmesser (d1) aufweist, der wesentlich größer als ein Durchmesser (d) der Stange (3) ist, und der einen Teil (9a) umfasst, der durch Zusammendrücken gegen eine Innenfläche der Stange in die Stange (3) einzusetzen ist, und einen Teil, der abdichtend an der Stange (3) anliegt, umfasst.

6. Vorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** das Buchsenelement (7) einen Buchsenkörper (7b) umfasst, der elektrische Buchsenkontakte (12) umfasst, die mit den elektrischen Kabeln (6) elektrisch zu verbinden sind.

7. Vorrichtung (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** der Hülsenkörper (7a) ein Gehäuse (11) für den Buchsenkörper (7b) definiert, wobei eine Basis (29) des Hülsenkörpers (7a), die in die Stange (3) einzusetzen ist, eine Öffnung (21) zum Aufnehmen der elektrischen Kabel (6) und eines isolierenden Steckers (22) für deren Verschließen umfasst, der dicht auf die elektrischen Kabel (6) zu stecken ist.

8. Vorrichtung (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** die elektrischen Buchsenkontakte (12) einen zentralen Kontakt (12b) und einen peripheren Kontakt (12a) umfassen, die von einem isolierenden Buchsenhalter (24) des Buchsenkörpers (7b) hervorstehen und einen elektrischen Kontakt des Ring- oder Jack-Typs bilden.

9. Vorrichtung (1) nach Anspruch 8, **dadurch gekennzeichnet, dass** der periphere Kontakt (12a) von einem isolierenden Körper (23) eingefasst ist, der wiederum von dem isolierenden Buchsenhalter (24) hervorsteht.

10. Vorrichtung (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** das Steckerelement (18) einen Hülsenkörper (18a) umfasst, der aus teilweise verformbarem Kunststoff oder isolierendem Material hergestellt ist und in die Armatur (2) einzusetzen ist.

11. Vorrichtung (1) nach Anspruch 10, **dadurch gekennzeichnet, dass** das Steckerelement (18) zusätzlich einen Steckerkörper (18b) umfasst, der wiederum elektrische Steckerkontakte (19) umfasst, die zum Verbinden einer Vielzahl von elektrischen Steckerkabeln (20) geeignet sind.

12. Vorrichtung (1) nach Anspruch 11, **dadurch gekennzeichnet, dass** die elektrischen Steckerkontakte (19) einen zentralen Steckerkontakt (19b) und einen peripheren Steckerkontakt (19a) umfassen, die von einem isolierenden Steckerhalter (27) des Steckerkörpers (18b) hervorstehen und zum Bilden eines elektrischen Kontakts des Ring- oder Jack-Typs geeignet sind.

13. Vorrichtung (1) nach Anspruch 12, **dadurch gekennzeichnet, dass** der periphere Kontakt (19a) von einem isolierenden Steckerelement (28) eingefasst ist, der von dem isolierenden Steckerhalter (27) hervorsteht.

14. Vorrichtung (1) nach Anspruch 12, **dadurch gekennzeichnet, dass** die elektrischen Steckerkontakte (19a, 19b) einen elektrischen Kontakt des Ring- oder Jack-Typs mit den elektrischen Buchsenkontakten (12a, 12b) bilden.

15. Vorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** das Steckerelement (18) in die Armatur (2) eingesetzt ist.

16. Vorrichtung (1) nach Anspruch 15, **dadurch gekennzeichnet, dass** das Steckerelement (18) an der Armatur (2) befestigt ist.

17. Straßenleuchtenmast (30) des Typs, der mindestens eine hohle oder "Hohlkern" Stange (3) mit einem Durchgangsloch (4) umfasst, das eine Vielzahl von elektrischen Kabeln (6) sowie ein Buchsenelement (7) einfasst, das in einem Teil der Stange (3) eingesetzt ist und das mit den elektrischen Kabeln (6) elektrisch verbunden ist, **dadurch gekennzeichnet, dass** er mindestens eine Vorrichtung (1) zum schnellen Befestigen seiner Armatur (2) nach einem der vorherigen Ansprüche umfasst.

Revendications

1. Dispositif (1) de fixation rapide d'une coque de protection (2) d'un réverbère (30) du type comprenant une tige (3) creuse, la dite tige étant pourvue d'un alésage axial (4) destiné à loger une pluralité de câbles électriques (6), le dit dispositif (1) comprenant un élément de douille (7) destiné à être fixé sur la dite tige (3) et connecté aux dits câbles électriques (6) et d'un élément de branchement (18) destiné à être électriquement connecté au dit élément de douille (7), dispositif dans lequel le dit élément de douille (7) comprend un corps de gaine (7a) pourvu d'au moins une partie de fixation, **caractérisé en ce que** le dit corps de gaine (7a) est dimensionné de manière à être contenu dans la dite tige (3), et **en ce que** la dite partie de fixation est adaptée pour fixer le dit élément de douille (7) en contact par appui contre une surface interne de la dite tige (3).

2. Dispositif (1) selon la revendication 1, **caractérisé en ce que** le dit corps de gaine (7a) est fait d'un matériau isolant et partiellement déformable et est composé d'au moins un logement (13) de taille substantiellement inférieure au volume d'au moins un moyen de fixation correspondant (15), destiné à être inséré dans le dit logement (13), augmentant, par déformation, le volume du dit corps de gaine (7a), le dit corps de gaine (7a) pouvant être retiré et inséré dans la dite tige (3), quand le dit moyen de fixation (15) n'est pas serré, et le dit corps de gaine étant bloqué, en contact par appui contre la dite surface interne de la dite tige (3), quand le dit moyen de fixation (15) est serré.

3. Dispositif (1) selon la revendication 2, **caractérisé en ce qu'**au moins un logement (13) comprend au moins un fond de vissage (14) pour le dit moyen de fixation (15).

4. Dispositif (1) selon la revendication 3, **caractérisé en ce qu'**au moins une surface externe du dit corps de gaine (7a) comporte des zones saillantes (16) et des zones en creux (17) qui restreignent le dit volume du dit corps de gaine (7a), afin d'augmenter la fixation du dit corps de gaine (7a) sur la dite surface interne de la dite tige (3).

5. Dispositif (1) selon la revendication 4, **caractérisé en ce que** le dit corps de gaine (7a) comporte une partie supérieure (9) ayant un diamètre (d1) substantiellement supérieur au diamètre (d) de la dite tige (3), et qui comprend une partie (9a) devant être insérée dans la dite tige (3), en étant compressée contre une surface interne de la dite tige, et une partie venant en butée de manière étanche contre la dite tige (3).

6. Dispositif (1) selon la revendication 1, **caractérisé en ce que** le dit élément de douille (7) est composé d'un corps de douille (7b) comprenant des contacts électriques de douille (12) pour être électriquement

connectés aux dits câbles électriques (6).

7. Dispositif (1) selon la revendication 6, **caractérisé en ce que** le dit corps de gaine (7a) définit un logement (11) pour le dit corps de douille (7b), une base (29) du dit corps de gaine (7a), destiné à être inséré dans la dite tige (3), comprenant une ouverture (21) pour recevoir les dits câbles électriques (6) et un bouchon isolant (22), pour la fermer, devant être inséré de façon serré sur les dits câbles électriques (6).

8. Dispositif (1) selon la revendication 6, **caractérisé en ce que** les dits contacts électriques de douille (12) comprennent un contact central (12b) et un contact périphérique (12a), dépassant d'un support de douille isolant (24) du dit corps de douille (7b), qui assure un contact électrique de type circulaire ou jack.

9. Dispositif (1) selon la revendication 8, **caractérisé en ce que** le dit contact périphérique (12a) est enclos dans un corps isolant (23), qui lui-même dépasse du dit support de douille isolant (24).

10. Dispositif (1) selon la revendication 6, **caractérisé en ce que** le dit élément de branchement (18) comprend un corps de gaine (18a), fait d'un matériau plastique partiellement déformable ou isolant, devant être inséré dans la dite coque de protection (2).

11. Dispositif (1) selon la revendication 10, **caractérisé en ce que** le dit élément de branchement (18) comprend en outre un corps de branchement (18b) qui lui-même comprend des contacts électriques de branchement (19) appropriés pour connecter une pluralité de câbles de branchement électrique (20).

12. Dispositif (1) selon la revendication 11, **caractérisé en ce que** les dits contacts de branchement électrique (19) comprennent un contact central de branchement (19b) et un contact périphérique de branchement (19a) dépassant d'un support de prise isolant (27) du dit corps de branchement (18b) approprié pour former un contact électrique du type circulaire ou jack.

13. Dispositif (1) selon la revendication 12, **caractérisé en ce que** le dit contact périphérique (19a) est enclos dans un élément de branchement isolant (28) dépassant du dit support de branchement isolant (27).

14. Dispositif (1) selon la revendication 12, **caractérisé en ce que** les dits contacts de branchement électriques (19a, 19b) forment un contact électrique de type circulaire ou jack avec les dits contacts de douille électrique (12a, 12b).

15. Dispositif (1) selon la revendication 1, **caractérisé en ce que** le dit élément de branchement (18) est inséré dans la dite coque de protection (2).

16. Dispositif (1) selon la revendication 15, **caractérisé en ce que** le dit élément de branchement (18) est fixé à la dite coque de protection (2).

17. Réverbère (30) du type comprenant au moins une tige creuse ou à « centre creux » (3) avec un alésage traversant (4) contenant une pluralité de câbles électriques (6) ainsi qu'un élément de douille (7) qui est inséré dans une partie de la dite tige (3) et qui est électriquement connecté aux dits câbles électriques (6), **caractérisé en ce qu'**il comprend au moins un dispositif (1) de fixation rapide de sa coque de protection (2) selon l'une quelconque des revendications précédentes.

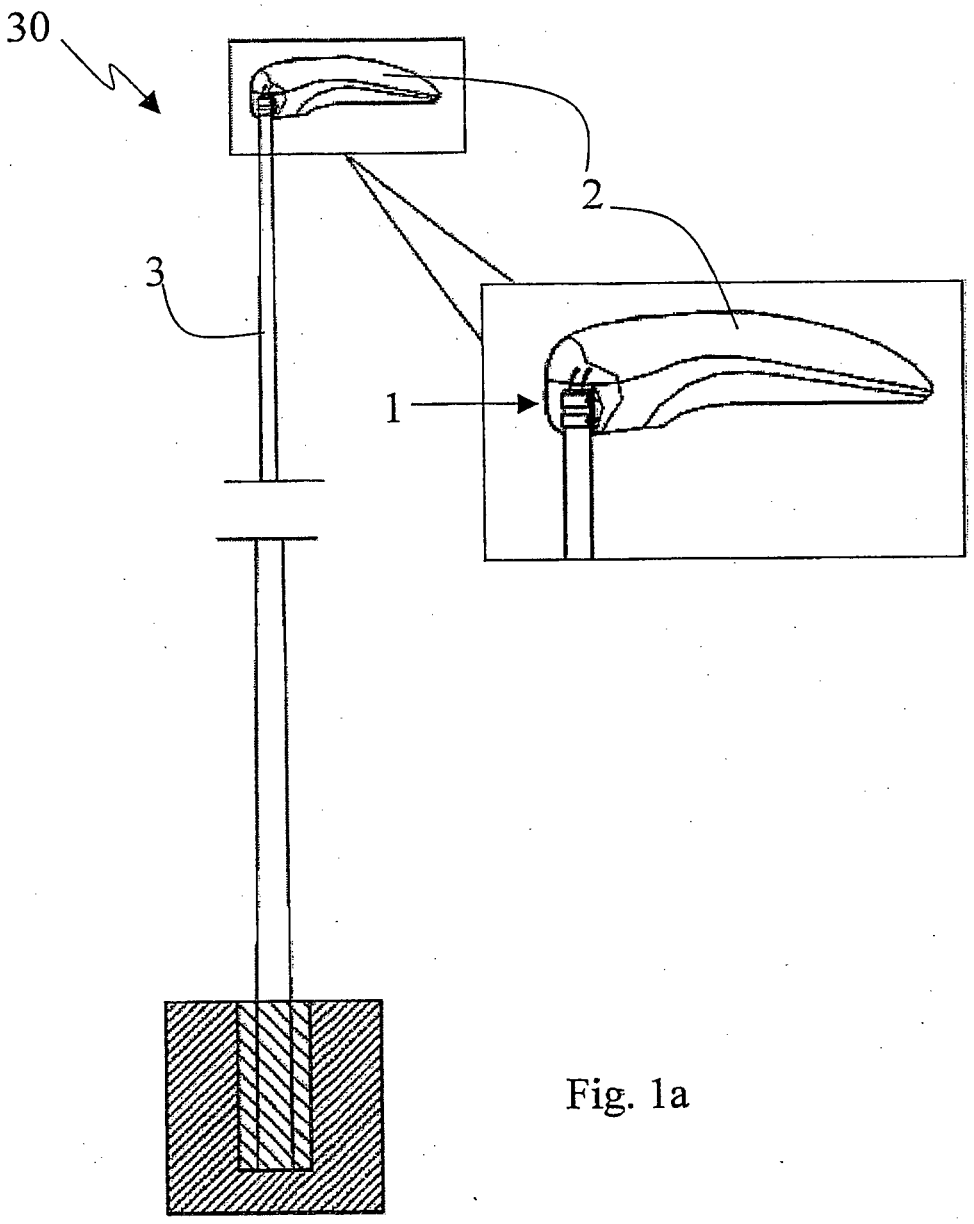


Fig. 1a

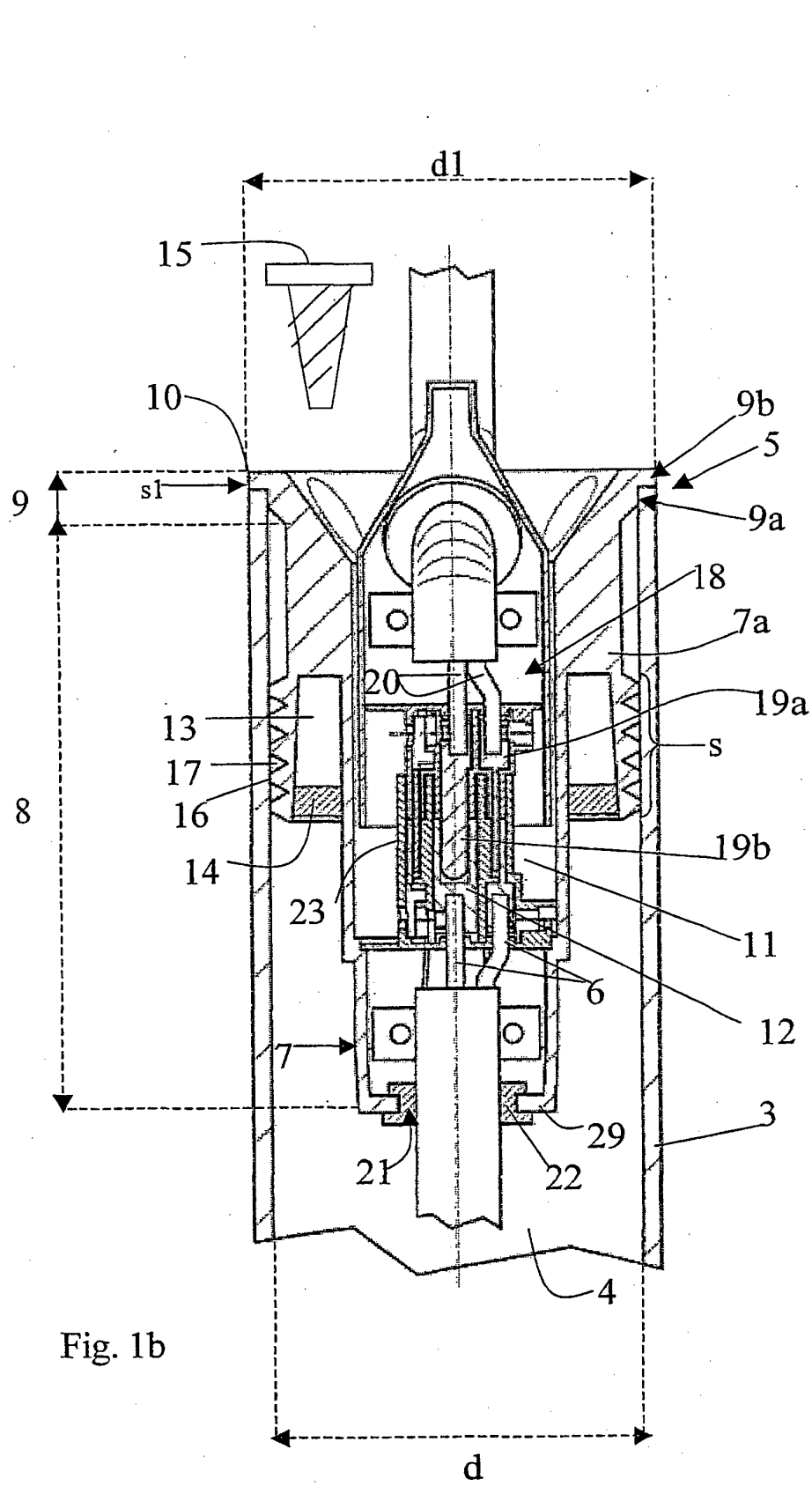

1
d1
15
10
9b
5
9
s1
9a
18
7a
20
19a
13
s
17
16
8
14
19b
23
11
6
12
7
3
29
21
22
4
d

Fig. 1b

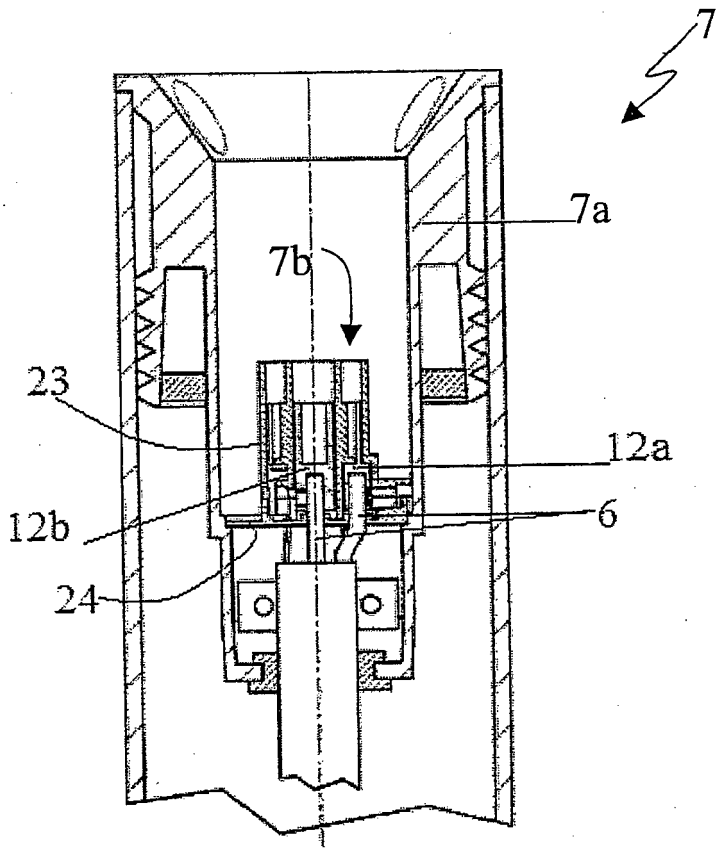


Fig. 2a

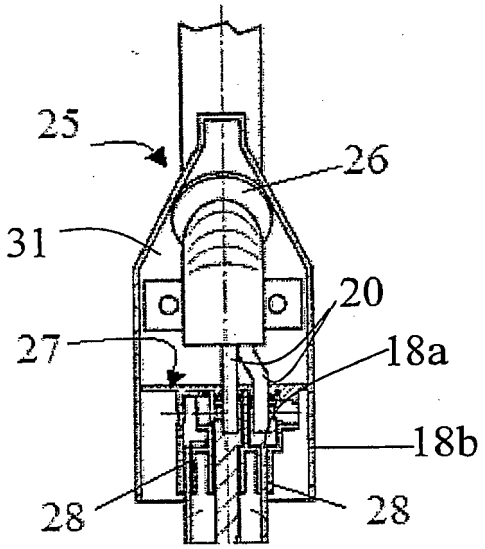


Fig. 2b

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- IT 46827 A **[0007]**
- EP 0392578 A **[0007]**