

(19)



(11)

EP 2 955 433 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
14.06.2017 Bulletin 2017/24

(51) Int Cl.:
F21V 21/29 ^(2006.01) *F16M 11/12* ^(2006.01)
F16M 11/28 ^(2006.01)

(21) Application number: **15169940.2**

(22) Date of filing: **29.05.2015**

(54) **JOINT FOR A LIGHTING DEVICE AND LIGHTING ASSEMBLY COMPRISING SAID JOINT**

GELENKSTÜCK FÜR EIN LEUCHTVORRICHTUNG UND BELEUCHTUNGSANORDNUNG MIT
DIESEM GELENKSTÜCK

ARTICULATION POUR UN DISPOSITIF D'ÉCLAIRAGE, ET DISPOSITIF D'ÉCLAIRAGE
COMPRENANT UNE TELLE ARTICULATION

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **13.06.2014 IT BS20140114**

(43) Date of publication of application:
16.12.2015 Bulletin 2015/51

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(56) References cited:
WO-A1-03/087666 ES-A1- 2 326 300

Remarks:

The file contains technical information submitted after
the application was filed and not included in this
specification

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Description

[0001] This invention relates to a joint for a lighting device, and a lighting assembly comprising such a joint.

[0002] As is known, e.g. from ES2326300A1 and WO 03/087666 A1, the articulated connection between a supporting structure and a lighting apparatus is generally made using an articulated element, interposed between them, so that a light beam from such an apparatus can be oriented at will within predetermined freedom degrees. In detail, abovementioned document ES2326300A1 discloses a device according to the preamble of claim 1.

[0003] Changing trends of taste, and the continued search for greater versatility of use, require companies of the industry to develop connections suitable to expand the variety of such movement freedoms, but always with an eye to manufacturing costs.

[0004] This invention belongs in this context, proposing to provide a joint and a lighting assembly able to overcome the above-mentioned drawbacks, and in particular to provide a joint capable of making available, in addition to traditional lighting orientations, an extensible movement of the light source.

[0005] This objective is achieved by means of a joint according to claim 1, and by means of an assembly according to claim 13. The claims dependent on these show variants of preferred embodiments.

[0006] The object of this invention will now be described in detail, with the help of the attached tables, wherein:

- Figures 1 and 2 represent, respectively, a perspective view and a side view of a joint, object of this invention, according to a possible embodiment, this joint being shown in an extracted configuration, and wherein Figure 2 only schematically shows a support structure and a lighting device;
- Figure 3 shows a sectional view along the plane III-III indicated in Figure 2 and further schematically showing an electrical conductor;
- Figure 4 shows a sectional view along the same plane of Figure 3, but in a retracted configuration of the inner body;
- Figure 5 is a sectional view such as that of Figure 3, but with the coupling portion oriented at 90° with respect to the previous representations and with an alternative passage of the electric conductor in the inner body;
- Figure 6 shows an exploded view of the joint according to Figure 1.

[0007] With reference to the above figures, reference number 1 identifies, in its entirety, a joint for a lighting device.

[0008] More precisely, this joint 1 serves to connect the lighting device 102 to a support structure 100 in a moveable manner.

[0009] For example, the support structure 100 could include a formwork, a device base, a support bracket, a fastening element or similar of the lighting device 102.

[0010] This joint 1 comprises an outer body 2 that extends around a longitudinal axis X and is connectable to the support structure 100 for the lighting device.

[0011] Within this description, the terms "axial" or "radial" will refer to orientations with respect to the longitudinal axis X, unless otherwise specified.

[0012] According to a variant, the outer body 2 may be generally or substantially tubular.

[0013] According to a further variant, an axial end portion 2' of the outer body includes an end wall 36, transverse or orthogonal with respect to the longitudinal axis X, that closes, at least in part, a compartment 20 of this body.

[0014] According to a still further variant, the outer body delimits a longitudinal compartment 20, for example of substantially cylindrical shape.

[0015] According to the invention, the outer body 2 delimits within its thickness at least a longitudinal slot 28, for example with a development substantially parallel to the longitudinal axis X, which preferably puts in communication the longitudinal compartment 20 and a space external to the outer body 2.

[0016] According to an embodiment, the end wall protrudes radially externally with respect to an outer surface 38 of the outer body. For example, this end wall makes an abutment ring, in the embodiments shown a of circular shape, against the support structure 100.

[0017] In other words, the end wall serves to locate or to determine the depth of penetration of the outer body in the support structure.

[0018] Preferably, the outer body 2 terminates axially with an exit opening 22 of an inner body 4 described below.

[0019] According to an advantageous variant, the exit opening is formed in correspondence to the end wall 36.

[0020] The joint 1 further comprises an inner body 4 and a coupling portion 6.

[0021] The inner body 4 is hollow and inserted in a telescopically mobile manner in the outer body 2, between a substantially retracted configuration and a partially extracted configuration from said body (Figures 1 or 3).

[0022] For example, the inner body has a generally tubular shape.

[0023] According to a particularly advantageous variant, the inner body 4 comprises a guide portion 18 axial to the outer body 2, and an articulated portion 12, articulated around a second rotation axis R2 and integral in translation between the configurations discussed previously with respect to the guide portion 18.

[0024] For example, the second rotation axis R2 is substantially parallel to the longitudinal axis X.

[0025] In order to make this jointed connection integral in translation, the guide portion 18 could comprise a union stem 40 inserted into a proximal vane 42 of the articulated

portion.

[0026] More precisely, the axial retention of such portions 18, 12 with possibility of rotation about the second rotation axis R2 may be made through a junction component 44 (for example an elastic ring) partially received in seats 46, 46', formed in the thickness of each of the above-mentioned portions.

[0027] For example, the connection through the junction component 44 may be of an irreversible type.

[0028] According to a preferred embodiment, the axial guide portion 18 is shape-coupled, to achieve a prismatic pair, to a cross-section of the longitudinal chamber 20 delimited by the outer body 2.

[0029] In other words, the external outline of the axial guide portion 18 could be in contact, optionally indirectly, with the at least one inner surface 48 that delimits this compartment 20, so as to ensure the axial guidance of the inner body but to prevent rotations of the axial guide portion 18 around the rotation axis R2.

[0030] According to a further variant, the outer body 2 and the axial guide portion 18 could be shape-coupled to achieve the above-mentioned prismatic pair, through a protective tooth 32 or (semi-)sleeve of the axial guide portion 18 that protrudes in the longitudinal slot 28 delimited in the thickness of the outer body 2.

[0031] According to an embodiment, the axial guide portion 18 has a transverse or radial dimension greater than the transit section through the exit opening 22, so as to achieve an end-stroke towards the extracted configuration.

[0032] In other words, according to this variant, the axial guide portion 18 and this opening (or the transverse wall 46 when provided) could constitute end-stroke means of the inner body 4 with respect to the outer body 2.

[0033] The joint 1 further comprises a coupling portion 6 of said joint to the lighting device 102, connected to the inner body 4 and articulated in relation to the outer body 2 around rotation axes R1, R2 incident to each other.

[0034] According to a variant, the coupling portion 6 comprises an external thread 50, as shown in the tables.

[0035] According to a non-illustrated variant, the coupling portion could comprise an internal thread, or a hollow element with helical threads formed within that element.

[0036] With regards to the rotation axes of R1, R2, these axes are preferably substantially orthogonal.

[0037] Advantageously, the coupling portion 6 is hinged to the inner body 4 about a first rotation axis R1.

[0038] More precisely, the coupling portion could comprise an articulated portion 52 rotatably received in an articulation seat 54 arranged on or in the inner body 2. For example, the articulated portion could comprise a (semi-)spherical part.

[0039] Optionally, the articulated portion 52 - for example between the mentioned threaded and the (semi-)spherical part - could comprise an outer surface 56 that is arranged and/or shaped so as not to be subject to friction forces during the rotation of the coupling portion

about the first rotation axis R1.

[0040] For example, the outer surface 56 could be lowered, thinned or retracted radially with respect to the surfaces that flank it in an axial direction.

[0041] Preferably, the first rotation axis R1 lies in a plane substantially orthogonal with respect to the longitudinal axis X.

[0042] According to a preferred variant, the maximum angle of rotation of the coupling portion 6 about the first rotation axis R1 is smaller than 140°, preferably smaller than 120°, for example equal to or smaller than about 90°.

[0043] According to a further variant, through the articulated portion 12 of the inner body 4, the coupling portion 6 is rotatable about the second rotation axis R2 with respect to the outer body 2.

[0044] In this way, according to these variants, it is possible to obtain an ability of rotation around the two axes, in addition to the discussed telescopic movement.

[0045] Preferably, the joint 1 comprises means for limiting the maximum angle of rotation of the coupling portion 6 around the second rotation axis R2, integrated in such joint. In particular, in the embodiment shown, such means could be integrated between the inner body 4 and the outer body 2.

[0046] According to a preferred variant, the maximum angle of rotation of the coupling portion about the second rotation axis R2 could be substantially equal to, or smaller than, 360°.

[0047] In this description, the term "maximum rotation of 360°" means a rotary movement from 0° to 360° without possibility of rotating further toward increasing angles, but with the sole possibility of rotating in a reverse direction (from 360° to the 0° of departure).

[0048] In order to allow a maximum rotation of 360°, the joint 1 may comprise a movable abutment 14 between the articulated portion 12 and an axial guide portion 18 of the inner body 4. Such abutment 14 - for example a ball or a plate - could be placed in a circumferential groove 16 formed in this articulated portion 12 (or in the guide axial guide portion 18), and could be movable by an axial overhang 58 formed on the other between this axial guide portion 18 (or such articulated portion 12).

[0049] It follows that, according to this variant, the means for limiting the maximum angle of rotation may include the above-mentioned movable abutment 14, circumferential groove 16 and axial overhang 58.

[0050] For example, the movable abutment 14 could be received partly in the circumferential groove 16 and partly in an annular groove 60, inside of which this overhang 58 protrudes axially.

[0051] In the embodiment shown in Figure 6, the axial guide portion 18 delimits the annular groove 60 and, more precisely, said groove is arranged at the union stem 40.

[0052] According to the invention, the coupling portion 6 and the inner body 4 define sections of a cable-transit passage 8, 10 for at least one electrical conductor 200 supplying the lighting device.

[0053] It follows that, in addition to providing for the

mobility of the lamp and of a corresponding light source, the joint according to this variant also allows the transit of the related electrical conductor inside the components described, in order to avoid cables external to the joint.

[0054] According to a particularly advantageous variant, the joint comprises end-stroke means of the inner body 4 with respect to the outer body 2, that act in the extracted configuration and/or in the retracted configuration, advantageously in both these configurations. Preferably, the end-stroke means are integrated between the inner body 4 and the outer body 2.

[0055] According to a further variant, the end-stroke means are configured to snap into the extracted configuration and/or in the retracted configuration.

[0056] Advantageously, the end-stroke means comprise at least one elastic element 24 (for example an O-ring) compressed in an intermediate configuration between the extracted and retracted configurations, and expandable at one or both of these configurations in an undercut or internal groove 26, 26' to prevent the movements of the inner body 4.

[0057] In other words, outside of the undercut or of the internal groove 26, 26', the elastic element 24 lies in a compressed condition by virtue of the restricted space between the inner body 4 and the outer body 2.

[0058] Since the undercut or internal groove 26, 26' form a widening of the space that can be housed by the elastic element, when the latter arrives in correspondence to it, it expands to fix the position of the inner body.

[0059] For example the undercut, the internal groove 26, 26' or their plurality is delimited by the inner surface 48 of the outer body 2.

[0060] According to the variant shown, the elastic element 24 is placed in a lowered seat 62 of the inner body 4 and, specifically, in a lowered seat 62 of the axial guide portion 18. Advantageously, the elastic element 24 projects at least partly outside of the lowered seat, specifically in a radial direction.

[0061] Advantageously, the joint comprises an elastic element 24 or a friction element, interposed between the inner body and the outer body, calibrated in order to prevent movements of the inner body below a predetermined applied force.

[0062] It follows that the telescopic sliding between the above-mentioned bodies takes place only above a certain applied force, for example only when a user wants to cause a certain conversion of the joint.

[0063] According to the variant of Figure 3, the inner body delimits a first axial access 64 for the entry of the electrical conductor 200 in the cable-transit passage 8, 10.

[0064] According to the variant of Figure 5, the inner body 4 comprises at least a second radial entrance 30 for the passage of the electrical conductor 200.

[0065] According to a further variant, the outer body could delimit a second axial access 66 for the entry of the electrical conductor 200 in the cable-transit passage 8, 10.

[0066] According to the invention the longitudinal slot 28 forms a first radial entrance of the electrical conductor 200 in the cable-transit passage 8, 10.

[0067] Optionally, the second radial entrance 30 may be at least partially aligned with the first longitudinal radial entrance of the longitudinal slot 28 in any position of the inner body 4 with respect to the outer body 4.

[0068] According to a particular advantageous variant, the second radial entrance 30 is delimited by at least a part of a protective tooth 32 or of a (semi-) sleeve that projects into the longitudinal slot 28 to protect the electric conductor 200 from cutting forces.

[0069] This invention also covers a lighting device 102 comprising a joint 1 according to any of the previous variants.

[0070] Finally, this invention covers a lighting assembly comprising a support structure 100, at least one lighting device 102 and at least one joint 1, as described, connected to the structure and to the device.

[0071] Preferably, the support structure 100 comprises a structure wall 104 defining a shaped hole 106 shape-coupled to the outer body 2 for anti-rotation of these components.

[0072] In the variant schematically shown in Figures 2 and 6, the shaped hole 106 and the outer body 2 define abutment surfaces 68, 70 reciprocally shaped to define a prismatic pair.

[0073] It follows that, after the outer body has been inserted into said hole, the joint 1 can be firmly joined to the structure wall 104 by means of a locking nut 72 screwed to an external thread 34 formed on the outer body.

[0074] In this way, according to one of the variants discussed above, the structure wall 104 remains locked between the end wall 36 and the locking nut 72.

[0075] Innovatively, the joint covered by this invention allows effectively overcoming the drawbacks noted in relation to the prior art.

[0076] Advantageously, joint covered by this invention is able to achieve discrete positions of use, obtainable in a repeatable and reliable manner.

[0077] Advantageously, the joint covered by this invention is articulated along mutually incident axes, so as to achieve an articulation of 90° in a first direction, and 360° in a second direction incident or orthogonal to the first.

[0078] Advantageously, the joint covered by this invention can be adapted to different uses that, for example, involve a different spatial orientation or a different movement force of the parts described, with minor modifications of the components.

[0079] Advantageously, the joint covered by this invention can be used both in table lamps and suspended lamps.

[0080] Advantageously, the joint covered by this invention is designed to modify its positions only through a significant external intervention, as the tolerances of the mechanical parts have been tested for this purpose.

[0081] Advantageously, the joint covered by this inven-

tion can be used in recessed lamps, since the extractability and orientability described are particularly suitable for such use.

[0082] Advantageously, the joint covered by this invention allows preserving the integrity of the electrical cables passing inside, during both longitudinal and rotational movements.

[0083] More precisely, the joint is suitable to avoid twisting of the cables and, further, to protect them from accidental impacts that could damage the related insulating sheaths.

[0084] Advantageously, the joint covered by this invention is designed to make the cables transit indifferently in an axial and/or radial direction. This results in a high versatility of use.

[0085] Advantageously, the joint covered by this invention constitutes an innovative universal and miniaturized solution in the lighting industry.

[0086] Advantageously, the joint covered by this invention has an extremely reliable and reproducible operation, especially thanks to the techniques described above.

[0087] Advantageously, the joint covered by this invention is suitable to remain aesthetically pleasing even after intensive use, at least as regards the surface finish, for a longer time compared to traditional joints.

[0088] To embodiments of the above-described joint, device and assembly, one skilled in the art, in order to meet specific needs, may make variants or substitutions of elements with others functionally equivalent.

[0089] Moreover, each of the variants described as belonging to a possible embodiment can be realized independently of the other variants described.

Claims

1. Joint (1) comprising:

- an outer body (2), which extends around a longitudinal axis (X) and is connectable to a support structure (100) for a lighting device (102);
- an inner body (4), hollow and inserted in a telescopically movable manner in the outer body (2), between a substantially retracted configuration and a partially extracted configuration from said outer body (2);
- a coupling portion (6) of said joint (1) to the lighting device (102), connected to the inner body (4) and articulated in relation to the outer body (2) around rotation axes (R1, R2) incident to each other;

the coupling portion (6) and the inner body (4) defining sections of a cable-transit passage (8, 10) for at least one electrical conductor (200) supplying said lighting device (102); said joint (1) being **characterized in that** the outer body (2) defines in its thickness

at least one longitudinal slot (28) to make a first radial entrance of the electrical conductor (200) in the cable-transit passage (8, 10).

2. Joint according to claim 1, wherein the coupling portion (6) is hinged to the inner body (4), wherein the maximum angle of rotation of said portion around a first rotation axis (R1) is smaller than 120°, for example smaller than or equal to about 90°.
3. Joint according to claim 1 or 2, wherein the coupling portion (6) is hinged to the inner body (4) about a first rotation axis (R1), and wherein said joint (1) comprises means for limiting the angle of maximum rotation of the coupling portion (6) around a second rotation axis (R2), integrated in said joint.
4. Joint according to any one of the preceding claims, wherein, through an articulated portion (12) of the inner body (4), the coupling portion (6) is rotatable around a second rotation axis (R2) with respect to the outer body (2), wherein the maximum angle of rotation of said coupling portion (6) around said second axis (R2) is preferably equal to or smaller than 360°.
5. Joint according to the previous claim, comprising a moveable abutment (14) between said articulated portion (12) and an axial guide portion (18) of the inner body (4), placed in a circumferential recess (16) made in said articulated portion (12) or in said guide portion (18), and movable by a radial overhang of said guide portion (18) or said articulated portion (12) to allow a maximum rotation of 360°.
6. Joint according to any of the previous claims, wherein the inner body (4) comprises an axial guide portion (18) with respect to the outer body (2), and an articulated portion (12), articulated around a second rotation axis (R2) and integral in translation with said configurations with respect to said guide portion.
7. Joint according to the previous claim, wherein the axial guide portion (18) is shape-coupled with a cross-section of a longitudinal chamber (20) delimited by the outer body (2), to achieve a prismatic pair.
8. Joint according to claims 6 or 7, wherein the outer body (2) terminates axially with an opening for the exit (22) of the inner body (4), the axial guide portion (18) having a transversal dimension greater than the through section of said opening so as to form an end-stroke towards the extracted configuration.
9. Joint according to any one of the preceding claims, comprising end-stroke means of the inner body (4) with respect to the outer body (2), that are configured to snap into the extracted configuration and into the

retracted configuration, integrated between the inner body (4) and outer body (2).

10. Joint according to the previous claim, wherein the end-stroke means comprise at least one elastic element (24), for example an O-ring, compressed in an intermediate configuration between the extracted and retracted configurations, and expandable at one or both of these configurations in an undercut or internal groove (26, 26') to prevent the movements of the inner body (4). 5
11. Joint according to any of the previous claims, wherein the inner body (4) comprises at least a second radial entrance (30) for the passage of the electrical conductor (200), said second entrance being at least partially aligned to the first radial entrance of the longitudinal slot (28) in any axial position of the inner body (4) and being delimited by at least a part of a protective tooth (32) or by a (semi-)sleeve that projects into the longitudinal slot (28) to protect the electric conductor (200) from cutting forces. 10
12. Joint according to any of the previous claims, comprising an elastic element (24) or a friction element, interposed between the inner body and the outer body, calibrated in order to prevent movements of the inner body below a predetermined applied force. 15
13. Lighting assembly comprising a support structure (100), at least one lighting device (102) and at least one joint (1), according to any one of the previous claims, connected to said support structure (100) and to said lighting device (102). 20
14. Lighting assembly according to the previous claim, wherein the support structure (100) comprises a structure wall (104) defining a shaped hole (106) shape-coupled to the outer body (2) for anti-rotation of these components. 25
15. Lighting assembly according to the previous claim, wherein the shaped hole (106) and the outer body (2) define abutment surfaces (68, 70) reciprocally shaped to define a prismatic pair. 30

Patentansprüche

1. Gelenk (1), umfassend: 35
 - einen äußeren Körper (2), der sich um eine Längsachse (X) erstreckt und mit einer Stützstruktur (100) für eine Beleuchtungsanordnung (102) verbindbar ist; 40
 - einen inneren Körper (4), der hohl und auf eine ausfahrbar bewegliche Weise in den äußeren Körper (2) eingesetzt ist, zwischen einer im We-

sentlichen eingezogenen Konfiguration und einer teilweise aus dem äußeren Körper (2) herausgezogenen Konfiguration;

- einen Kopplungsabschnitt (6) des Gelenks (1) mit der Beleuchtungsanordnung (102), verbunden mit dem inneren Körper (4) und angelenkt in Bezug auf den äußeren Körper (2) um zu-einander bzw. aufeinander einfallende Rotationsachsen (R1, R2) herum;

wobei der Kopplungsabschnitt (6) und der innere Körper (4) Abschnitte einer Kabel-Durchgangspassage (8, 10) für mindestens einen elektrischen Leiter (200) definieren, der die Beleuchtungsanordnung (102) versorgt;

wobei das Gelenk (1) dadurch charakterisiert ist, dass der äußere Körper (2) in seiner Dicke mindestens einen Längsschlitz (28) definiert, um einen ersten radialen Eingang des elektrischen Leiters (200) in der Kabel-Durchgangspassage (8, 10) zu bilden.

2. Gelenk nach Anspruch 1, wobei der Kopplungsabschnitt (6) an dem inneren Körper (4) eingehängt ist, wobei der maximale Rotationswinkel des Abschnitts um eine erste Rotationsachse (R1) kleiner als 120° ist, zum Beispiel kleiner als oder gleich ca. 90°.
3. Gelenk nach Anspruch 1 oder 2, wobei der Kopplungsabschnitt (6) an dem inneren Körper (4) eingehängt ist um eine erste Rotationsachse (R1), und wobei das Gelenk (1) Mittel zum Begrenzen des maximalen Rotationswinkels des Kopplungsabschnitts (6) um eine zweite in das Gelenk integrierte Rotationsachse (R2) herum umfasst.
4. Gelenk nach einem der vorangehenden Ansprüche, wobei durch einen gelenkigen Abschnitt (12) des inneren Körpers (4) der Kopplungsabschnitt (6) um eine zweite Rotationsachse (R2) in Bezug auf den äußeren Körper (2) drehbar ist, wobei der maximale Rotationswinkel des Kopplungsabschnitts (6) um die zweite Rotationsachse (R2) vorzugsweise gleich oder kleiner als 360° ist.
5. Gelenk nach dem vorangehenden Anspruch, umfassend eine bewegliche Anlagefläche (14) zwischen dem gelenkigen Abschnitt (12) und einem axialen Führungsabschnitt (18) des inneren Körpers (4), platziert in einer Umfangsvertiefung (16) in dem gelenkigen Abschnitt (12) oder dem Führungsabschnitt (18), und bewegbar durch einen radialen Überhang des Führungsabschnitts (18) oder des gelenkigen Abschnitts (12), um eine Maximalrotation von 360° zu ermöglichen.
6. Gelenk nach einem der vorangehenden Ansprüche, wobei der innere Körper (4) einen axialen Führungsabschnitt (18) in Bezug auf den äußeren Körper (2)

umfasst, und einen gelenkigen Ab-schnitt (12), der um eine zweite Rotationsachse (R2) angelenkt und einstückig in der Übersetzung mit den Konfigurationen in Bezug auf den Führungsabschnitt ist.

7. Gelenk nach dem vorangehenden Anspruch, wobei der axiale Führungsabschnitt (18) form-gekoppelt mit einem Querschnitt einer durch den äußeren Körper (2) begrenzten Längskammer (20) ist, um ein prismatisches Paar zu erzielen. 5
8. Gelenk nach Anspruch 6 oder 7, wobei der äußere Körper (2) axial mit einer Öffnung für den Ausgang (22) des inneren Körpers (4) abschließt, wobei der axiale Führungsabschnitt (18) eine größere transversale Abmessung als der Durchgangsabschnitt der Öffnung hat, um einen Endhub zur herausgezogenen Konfiguration hin zu bilden. 10
9. Gelenk nach einem der vorangehenden Ansprüche, umfassend Endhub-Mittel des inneren Körpers (4) in Bezug auf den äußeren Körper (2), die konfiguriert sind, um in die herausgezogene Konfiguration und in die eingezogene Konfiguration einzuschnappen, integriert zwischen dem inneren Körper (4) und dem äußeren Körper (2). 20
10. Gelenk nach dem vorangehenden Anspruch, wobei die End-hub-Mittel mindestens ein elastisches Element (24) umfassen, zum Beispiel einen O-Ring, komprimiert in einer Zwischenkonfiguration zwischen der herausgezogenen und eingezogenen Konfiguration, und erweiterbar an einer oder beiden dieser Konfigurationen in einer unterschrittenen oder inneren Nut (26, 26'), um Bewegungen des inneren Körpers (4) zu verhindern. 30
11. Gelenk nach einem der vorangehenden Ansprüche, wobei der innere Körper (4) mindestens einen zweiten radialen Eingang (30) für den Durchgang des elektrischen Leiters (200) umfasst, wobei der zweite Eingang zumindest teilweise ausgerichtet ist zum ersten radialen Eingang des Längsschlitzes (28) in jeglicher axialer Position des inneren Körpers (4) und begrenzt ist durch zumindest einen Teil einer Schutzzacke (32) oder durch eine (Halb-) Hülse, die in den Längsschlitz (28) hineinragt, um den elektrischen Leiter (200) vor Schnittkräften zu schützen. 35
12. Gelenk nach einem der vorangehenden Ansprüche, umfassend ein elastisches Element (24) oder ein Reibungselement, zwischengefügt zwischen den inneren Körper und den äußeren Körper, kalibriert, um Bewegungen des inneren Körpers unterhalb einer vorbestimmten angewandten Kraft zu verhindern. 40
13. Beleuchtungsanordnung umfassend eine Stütz-

struktur (100), mindestens eine Beleuchtungsvorrichtung (102) und mindestens ein Gelenk (1), nach einem der vorangehenden Ansprüche, verbunden mit der Stützstruktur (100) und der Beleuchtungsvorrichtung (102). 5

14. Beleuchtungsanordnung nach dem vorangehenden Anspruch, wobei die Stützstruktur (100) eine Strukturwand (104) umfasst, die ein geformtes Loch (106) definiert, das mit dem äußeren Körper (2) für eine Drehblockierung dieser Komponenten form-gekoppelt ist. 10
15. Beleuchtungsanordnung nach einem der vorangehenden Ansprüche, wobei das geformte Loch (106) und der äußere Körper (2) Anlageflächen (68, 70) definieren, die wechselseitig geformt sind, um ein prismatisches Paar zu definieren. 15

Revendications

1. Articulation (1) comprenant :

- un corps extérieur (2), qui s'étend autour d'un axe longitudinal (X) et peut être raccordé à une structure de support (100) pour un dispositif d'éclairage (102) ;
- un corps intérieur (4), creux et inséré de manière télescopiquement mobile dans le corps extérieur (2), entre une configuration sensiblement rétractée et une configuration partiellement extraite dudit corps extérieur (2) ;
- une partie d'accouplement (6) de ladite articulation (1) au dispositif d'éclairage (102), raccordée au corps intérieur (4) et s'articulant par rapport au corps extérieur (2) autour d'axes de rotation (R1, R2) incidents l'un vis-à-vis de l'autre ;

la partie d'accouplement (6) et le corps intérieur (4) définissant des sections d'un passage de transport de câble (8, 10) pour au moins un conducteur électrique (200) alimentant ledit dispositif d'éclairage (102),

ladite articulation (1) étant **caractérisée en ce que** le corps extérieur (2) définit dans son épaisseur au moins une fente longitudinale (28) pour créer une première entrée radiale du conducteur électrique (200) dans le passage de transport de câble (8, 10). 45

2. Articulation selon la revendication 1, dans laquelle la partie d'accouplement (6) s'articule sur le corps intérieur (4), dans laquelle l'angle de rotation maximum de ladite partie autour d'un premier axe de rotation (R1) est inférieur à 120°, par exemple inférieur ou égal à environ 90°. 50

3. Articulation selon la revendication 1 ou 2, dans la-

- quelle la partie d'accouplement (6) s'articule sur le corps intérieur (4) autour d'un premier axe de rotation (R1), et dans laquelle ladite articulation (1) comprend un moyen pour limiter l'angle de rotation maximale de la partie d'accouplement (6) autour d'un deuxième axe de rotation (R2), intégré dans ladite articulation.
4. Articulation selon l'une quelconque des revendications précédentes, dans laquelle, par le biais d'une partie articulée (12) du corps intérieur (4), la partie d'accouplement (6) peut tourner autour d'un deuxième axe de rotation (R2) par rapport au corps extérieur (2), dans laquelle l'angle de rotation maximale de ladite partie d'accouplement (6) autour dudit deuxième axe de rotation (R2) est de préférence égal ou inférieur à 360°.
 5. Articulation selon la revendication précédente, comprenant une butée mobile (14) entre ladite partie articulée (12) et une partie de guide axiale (18) du corps intérieur (4), placée dans un évidement circonférentiel (16) créé dans ladite partie articulée (12) ou dans ladite partie de guide (18), et mobile par une avancée radiale de ladite partie de guide (18) ou ladite partie articulée (12) pour permettre une rotation maximale de 360°.
 6. Articulation selon l'une quelconque des revendications précédentes, dans laquelle le corps intérieur (4) comprend une partie de guide axial (18) par rapport au corps extérieur (2), et une partie articulée (12), s'articulant autour d'un deuxième axe de rotation (R2) et intégrée en translation avec lesdites configurations par rapport à ladite partie guide.
 7. Articulation selon la revendication précédente, dans laquelle la partie de guide axial (18) est accouplée en forme avec une section transversale d'une chambre longitudinale (20) délimitée par le corps extérieur (2), pour obtenir une paire prismatique.
 8. Articulation selon les revendications 6 ou 7, dans laquelle le corps extérieur (2) se termine axialement avec une ouverture pour la sortie (22) du corps intérieur (4), la partie de guide axial (18) ayant une dimension transversale supérieure à la section transversale de ladite ouverture de manière à former une fin de course vers la configuration extraite.
 9. Articulation selon l'une quelconque des revendications précédentes, comprenant un moyen de fin de course du corps intérieur (4) par rapport au corps extérieur (2), qui est configuré pour s'encaster dans la configuration extraite et dans la configuration rétractée, intégré entre le corps intérieur (4) et le corps extérieur (2).
 10. Articulation selon la revendication précédente, dans laquelle le moyen de fin de course comprend au moins un élément élastique (24), par exemple un joint torique, comprimé dans une configuration intermédiaire entre les configurations extraite et rétractée, et pouvant s'étendre dans l'une ou les deux de ces configurations dans un dégagement ou une rainure interne (26, 26') pour empêcher les déplacements du corps intérieur (4).
 11. Articulation selon l'une quelconque des revendications précédentes, dans laquelle le corps intérieur (4) comprend au moins une deuxième entrée radiale (30) pour le passage du conducteur électrique (200), ladite deuxième entrée étant au moins partiellement alignée sur la première entrée radiale de la fente longitudinale (28) dans toute position axiale du corps intérieur (4) et étant délimitée par au moins une partie d'une dent de protection (32) ou par un (demi-)manchon qui se projette dans la fente longitudinale (28) afin de protéger le conducteur électrique (200) des forces de découpe.
 12. Articulation selon l'une quelconque des revendications précédentes, comprenant un élément élastique (24) ou un élément de friction, interposé entre le corps intérieur et le corps extérieur, calibré afin d'empêcher les déplacements du corps intérieur sous une force appliquée prédéterminée.
 13. Ensemble d'éclairage comprenant une structure de support (100), au moins un dispositif d'éclairage (102) et au moins une articulation (1), selon l'une quelconque des revendications précédentes, raccordée à ladite structure de support (100) et audit dispositif d'éclairage (102).
 14. Ensemble d'éclairage selon la revendication précédente, dans lequel la structure de support (100) comprend une paroi de structure (104) définissant un trou façonné (106) accouplé en forme au corps extérieur (2) pour l'anti-rotation de ces composants.
 15. Ensemble d'éclairage selon la revendication précédente, dans lequel le trou façonné (106) et le corps extérieur (2) définissent des surfaces de butée (68, 70) façonnées de façon réciproque pour définir une paire prismatique.

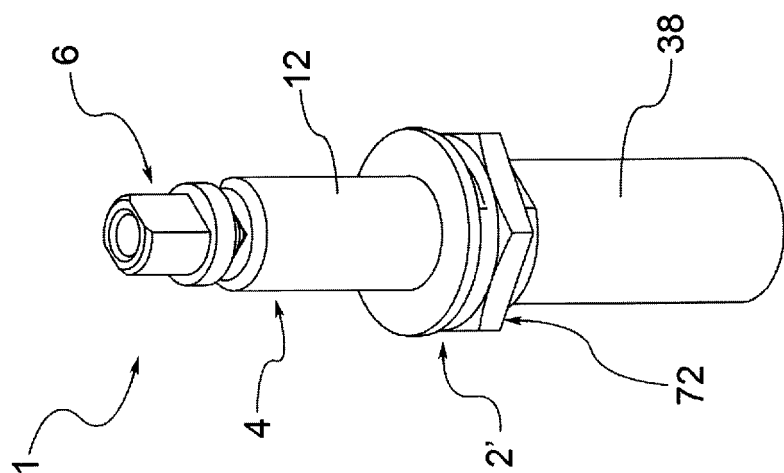


FIG. 1

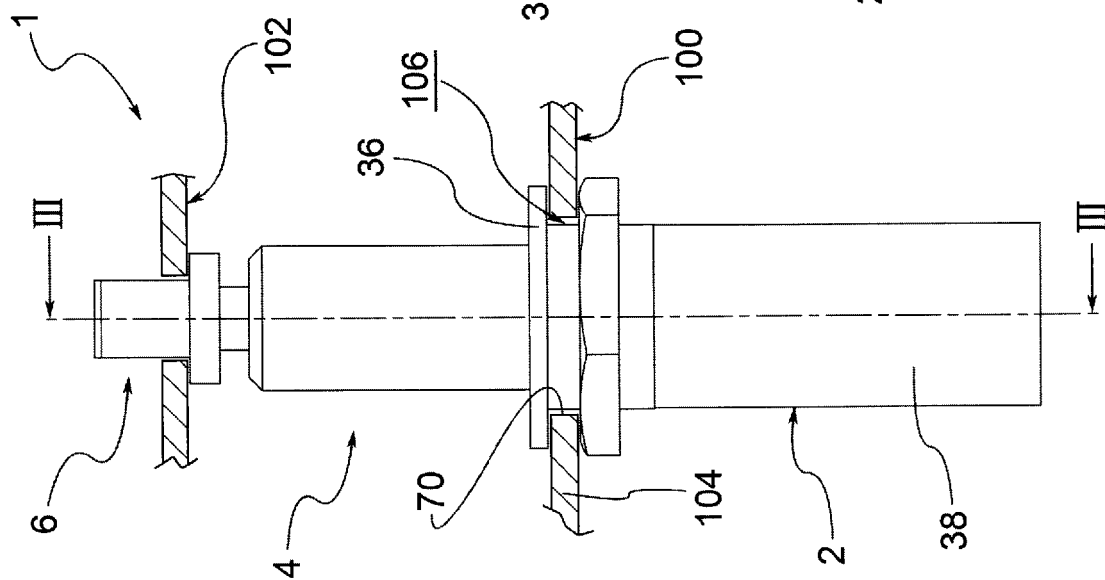


FIG. 2

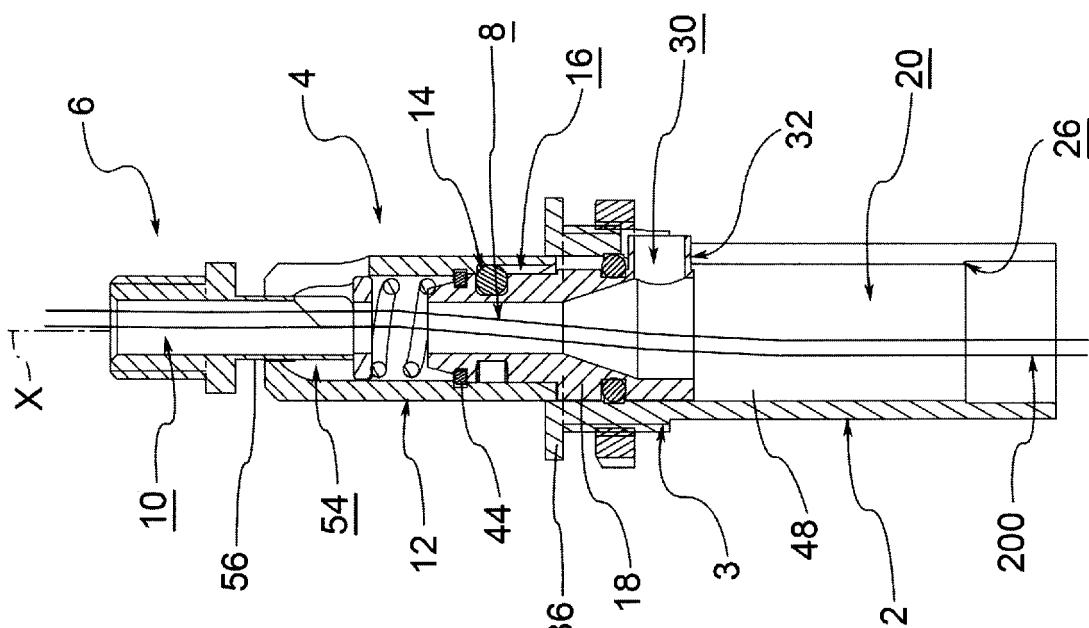


FIG. 3

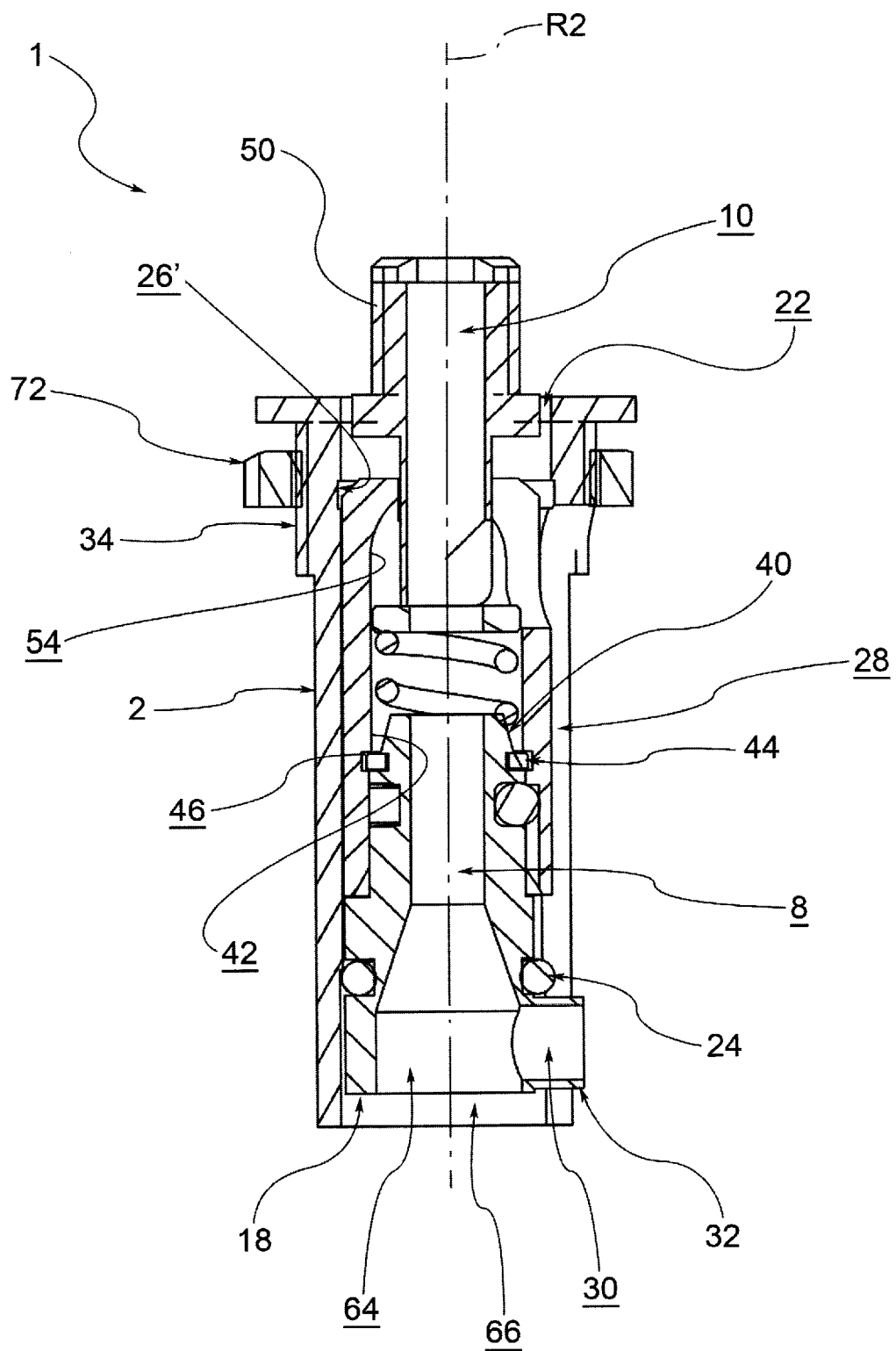


FIG.4

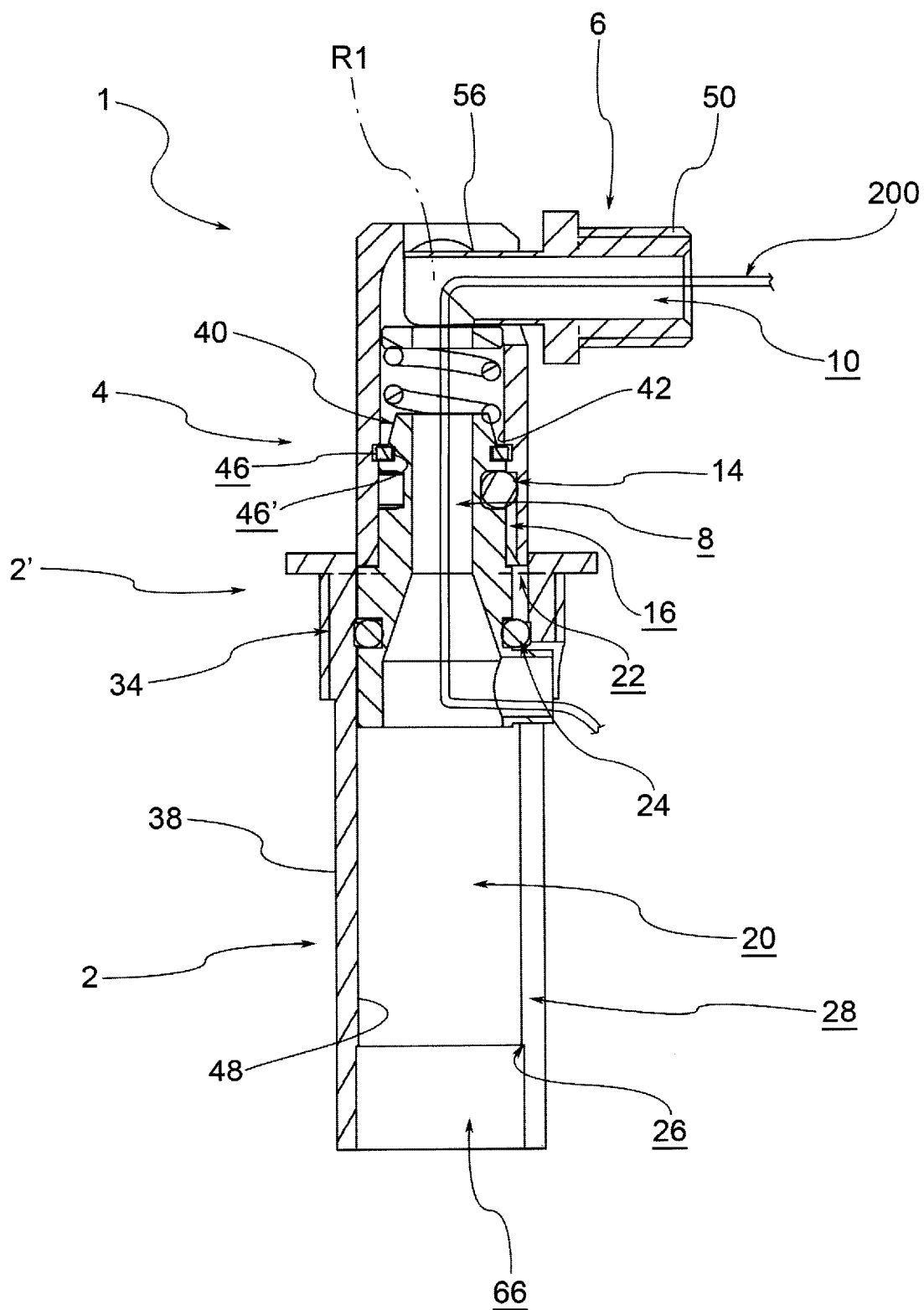


FIG.5

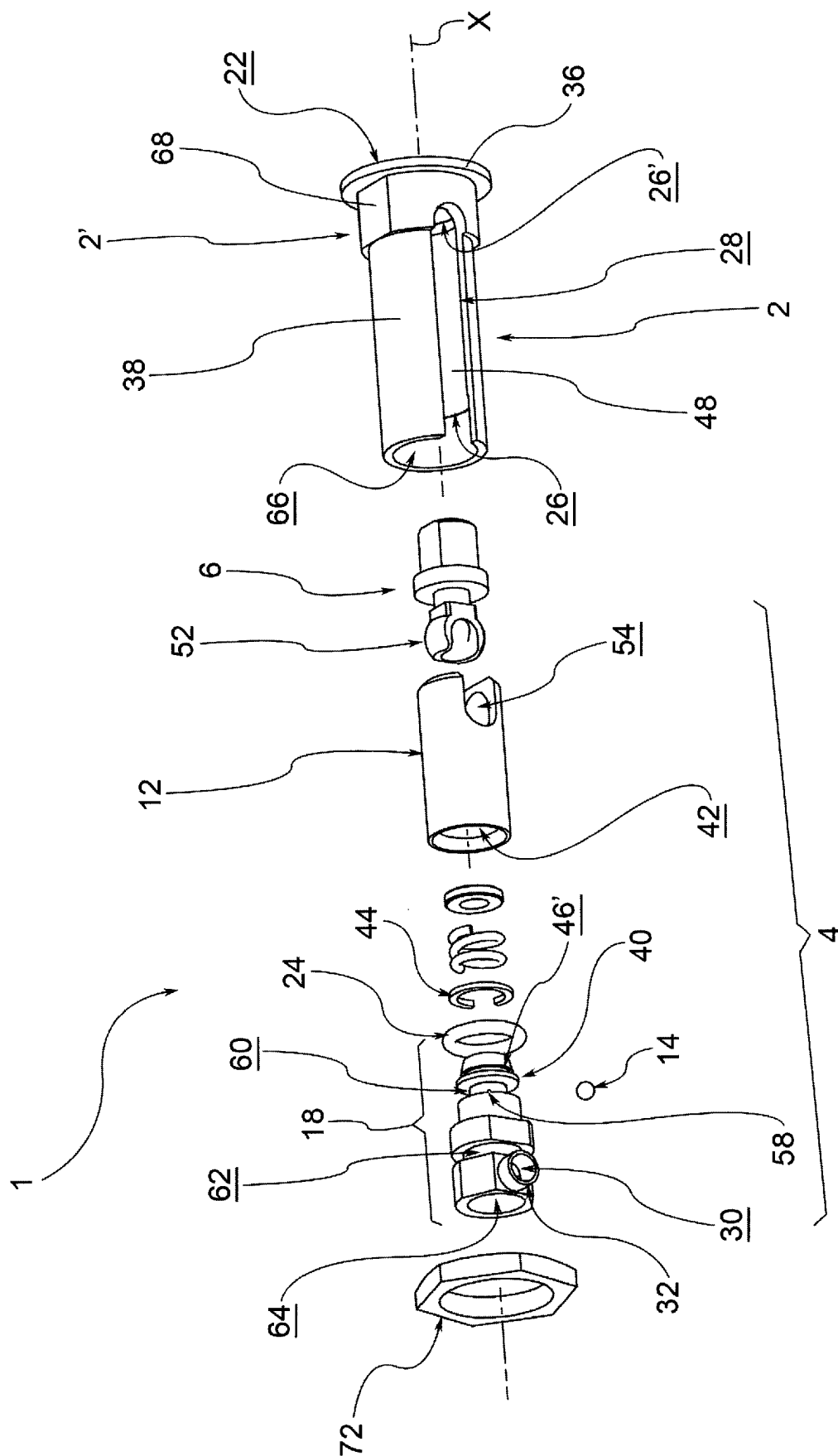


FIG.6

REFERENCES CITED IN THE DESCRIPTION

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