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(54) **ELECTRIFIED TRACK LIGHTING SYSTEM**

(57) Electrified track lighting system, wherein the track (1) has a longitudinal shape (X) with a groove (SC) through which it is possible to insert a connection body (2), and wherein on a face inside the groove of at least an opposite wall (IS) of the track is arranged at least one conductor (1C1 - 1C4), said connection body (2) having a substantially complementary shape with said groove, the connection body (2) comprising at least one expansion element (22A, 22B, 23A, 23B) adapted to project

externally from the connection body so as to stably lock the connection body inside said groove, wherein said expansion element is loaded by a resilient element (SP) and wherein said element expansion has an external surface on which at least one electrode (2C1, 2C2, 2C3, 2C4) is formed/attached, and wherein when the connection body is inserted into said groove, the expansion element presses said at least one electrode against said corresponding at least one conductor.

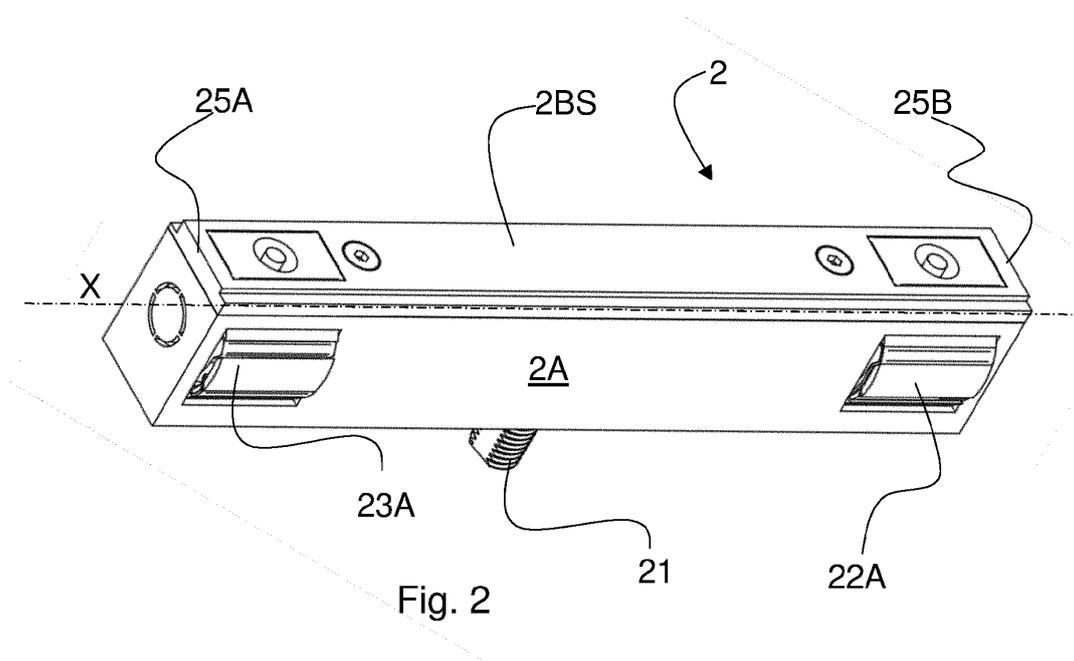


Fig. 2

Description

Field of the invention

[0001] The present invention relates to an electrified track lighting system and in particular to a relative connection body for connecting a light source to the electrified track and to a power supply device for the electrified track and to a device for interconnecting two consecutive electrified tracks.

State of the art

[0002] In the lighting sector, many existing solutions are known for mechanically fixing and electrically connecting lighting devices. One of these is based on the so-called "electrified tracks".

[0003] An "electrified track" is a longitudinally extending guide, which is adapted to be fixed, for example, to a ceiling or a vertical wall of a room. The guide has a longitudinal groove into which a connection body of a lighting device fits.

[0004] The connection body therefore defines a support element for a further lighting body connected to it or, the same connection body can itself define a lighting body.

[0005] Therefore, a guide provides mechanical support and electrical power to one or more lighting devices.

[0006] One of the lighting devices can be positioned anywhere on the guide and can later be moved or removed.

[0007] According to a typical known solution, the connection body of the lighting device has an elongated box-like shape and a shape that is complementary to the guide groove so that it can be inserted while remaining stably connected and extracted from the guide groove. For the mechanical and electrical connection between body and guide, the body is equipped with mechanical connection means and electrical contacts.

[0008] In some cases, it is necessary to use a special tool to disconnect the connection body from the guide.

[0009] DE202013003560 and CN204513291 show electrified tracks according to which the lighting device fits inside the groove defined by the electrified track, according to a movement perpendicular to the longitudinal development of the track itself.

[0010] According to DE202013003560, the disengagement of the lighting body is achieved by operating on a slide button that allows at least one electrical contact to retract into the lighting body, allowing the lighting body to release itself from the track.

[0011] According to CN204513291, the coupling of the lighting body is made mainly by magnets and the electrical contact is made stable by means of a pair of opposing electric plates charged by respective springs, which in operating conditions stably touch electrodes arranged in the track. CN204513291 is more advantageous than DE202013003560 as it is not necessary to act on a

button to disengage the lighting body, but it is sufficient to overcome the force of the magnets.

[0012] Therefore, in CN204513291 there are elements, the magnets, intended to achieve the mechanical coupling between the illuminated body and the track and spring-loaded deformable sheets to ensure the electrical connections.

[0013] On the other hand, in DE202013003560 the same electrical contact acts as a mechanical lock.

[0014] According to all the configurations, the track comprises a bottom wall and two opposite side walls, which define and contribute to defining the longitudinal groove of the guide.

[0015] If not specifically excluded in the detailed description below, what is described in this chapter is to be considered as an integral part of the detailed description.

Summary of the invention

[0016] The object of the present invention is to provide a coupling system that is simple to produce and above all simple to use.

[0017] The basic idea of the present invention is to provide the connection body with at least one expansion element loaded by a resilient element to interfere with an internal side wall of the guide groove and in which at least one electrode is arranged on the expansion element, so that said mechanical interference brings said electrode into electrical contact with a complementary conductor stably supported by said inner side wall of the guide groove. In other words, it is the same expansion element that presses the electrode against the conductor integral with the electrified track, blocking the connection body inside the guide groove.

[0018] As in the prior art, a bottom wall and two mutually opposite side walls are defined which contribute to define the guide groove.

[0019] Regardless of the shape of the connection body, a "longitudinal direction" is defined corresponding to the longitudinal direction defined by the guide groove, when the connection body is operationally inserted in the corresponding guide.

[0020] Preferably, the expansion element projects through an opening in a sidewall of the connection body. The expansion element projects, externally to the connection body, with a portion that defines a rounded surface, preferably hemicylindrical, with the generating lines of the hemicylindrical surface parallel with the longitudinal direction. In other words, an expansion element, according to a cross section of the connection body, defines a sort of half moon or involute of a circle (shown in the figures).

[0021] The involute shape of a circle facilitates the insertion of the connection body into the groove, but opposes the disengagement, relatively more than the insertion.

[0022] According to the invention, the electrode is a relatively rigid body not subject to any significant defor-

mation during the engagement/disengagement of the connection body in the groove of the longitudinal guide, unlike CN204513291.

[0023] In particular, the electrode, during this operation, undergoes only a translation and/or rotation.

[0024] Preferably, the expansion body is a relatively rigid and movable body in a relative seat, in order to support the electrode in the retraction/expansion operation, without deforming itself.

[0025] Preferably, the expansion body is made of insulating material or at least coated with insulating material and the electrode intended to come into contact with the complementary conductor stably supported by said inner wall of the guide groove is attached or formed on the relative external surface.

[0026] In the context of the present invention, "formed" means that the electrode can be deposited or uncovered by removal (etching) as for the tracks of an electric board, while the remaining lateral surface of the expansion element is at least coated with insulating material. This is important, especially in relation to the shape of the expansion elements that could short-circuit a conductor with the longitudinal guide during the insertion/disconnection in/from the groove connection body.

[0027] Advantageously, since the expansion element has a semicircular or involute shape of a circle and the guide has opposite walls internally shaped approximately complementary to the expansion element, more electrodes can be arranged on the latter, parallel to each other according to the longitudinal axis, without any short-circuit occurring during the insertion and disconnection of the connection body from the track which can remain powered.

[0028] In fact, unlike DE202013003560, according to the present invention there is no button, which allows to retract the expansion elements, which retract by contact/sliding with the mouth of the groove.

[0029] With reference to Figure 2, it can be clearly seen that the electrodes associated with the expansion elements are arranged in proximity to the side walls 2A and 2B, leaving the outermost portion of the expansion elements free. In other words, the half-moon shape of the expansion elements has the outermost portion projecting from the expansion body, without electrodes. This fact is particularly advantageous because that outermost portion of the expansion elements, at least coated with insulating material, is intended to slide against the mouth in the longitudinal groove which causes the expansion elements to retract, so that only at the end of the insertion operation, the expansion elements expand causing the electrodes to contact the respective conductors without any sliding of the electrodes on the conductors.

[0030] At most there can be an initial sliding of the electrodes 2C1 and 2C3 and a final sliding of the electrodes 2C2 and 2C4 with the mouth of the groove, which is in no way electrically powered, therefore, the operation of insertion and disconnection of the body of connection can be made without electrically disconnecting the rail or

guide.

[0031] Preferably, the connection system comprises two opposing expansion elements which project through two openings arranged on opposite walls of the connection body so as to contact the opposite side walls of the guide groove.

[0032] Taking into account the box-like shape of the guide and the approximately parallelepipedal shape, the expression "opposed expansion elements" is clear to those skilled in the art, that is, facing opposite walls of the parallelepiped connection body.

[0033] Preferably, a resilient element is interposed between the expansion elements.

[0034] Preferably, each half moon has a vertex hinged on a shaft, so as to allow the respective half moon to assume a rotation towards an expanded configuration and a rotation towards a retracted configuration and in which said resilient element forces the two expansion elements towards said expanded configuration.

[0035] The above resilient element is interposed between, preferably the free vertices of the half moons.

[0036] Preferably, both expansion elements are hinged on the same shaft.

[0037] The hinging shafts or the shaft is/are arranged parallel to the longitudinal development of the connection body.

[0038] According to a preferred variant of the invention, the connection body has a longitudinal box-like shape with opposite ends and in which the connection body is equipped with at least one expansion element in each of the ends.

[0039] Preferably, the connection body has an opposing pair of expansion elements at each end.

[0040] Preferably, at least one of the internal faces of the guide is shaped in a complementary way with the external surface of the expansion element which projects through said opening into the side wall of the connection body.

[0041] The dependent claims describe preferred variants of the invention, forming an integral part of this description.

Brief description of the figures

[0042] Further objects and advantages of the present invention will become clear from the following detailed description of an example of its embodiment (and its variants) and from the attached drawings given purely by way of non-limiting explanation, in which:

Figure 1 shows an overall perspective view of a track and a connection body and Figure 1a shows an enlargement of one end of the track;

Figure 2 shows an example of a connection body extracted from a respective track;

Figure 3 shows a view with parts removed of the connection body according to the example of Figure 2;

Figure 4 shows a longitudinal section of the connection body according to the example of Figures 2 and 3;

Figure 5 shows a cross section of the connection body according to the example of Figures 2 - 4;

Figures 6 and 7 show an assembly comprising two consecutive tracks, a connection body, a track feeding device and a device for interconnecting the two consecutive tracks.

[0043] The same reference numbers and letters in the figures identify the same elements or components or functions.

[0044] It should also be noted that the terms "first", "second", "third", "upper", "lower" and the like can be used here to distinguish various elements. These terms do not imply a spatial, sequential or hierarchical order for the modified elements unless it is specifically indicated or inferred from the text.

[0045] The elements and features illustrated in the various preferred embodiments, including the drawings, can be combined with each other without however departing from the scope of this application as described below.

Detailed description of exemplary embodiments

[0046] Figure 1 shows an assembly formed by a track or guide 1 in which a connection body 2 is inserted.

[0047] The guide, similar to those of the prior art, has an elongated shape defining a "longitudinal direction" X. Furthermore, the guide has a longitudinal groove 1SC parallel to the longitudinal direction X. This groove is defined by the open box-like profile whose cross section it is substantially C-shaped with three consecutive walls which are approximately flat and perpendicular to each other, of which a bottom wall and two opposite side walls 1S and 1D which contribute to define the same groove.

[0048] The guide is therefore equipped with a pair of opposite walls 1S, 1D and mutually parallel connected by the base wall 1B, or simply "base" or "bottom", perpendicular to the two opposite walls 1S and 1D so as to form a groove Longitudinal 1SC.

[0049] Considering that, the assembly given by the guide and the connection body is of the plug/socket type, then the longitudinal direction X is also attributed to the connection body 2, even if this can have a substantially squat shape, in consideration of the aforementioned coupling.

[0050] The guide can be made of metal, but it can also be made of plastic as long as it is able to guarantee sufficient rigidity by retaining the connection body (s) inside.

[0051] An insulating plate 11 and/or 12 is associated, if necessary, with an internal face of one of the opposite walls 1S to support at least one conductor 1C1, 1C2, 1C3, 1C4.

[0052] If the track is made of insulating material, the insulating plate is not required.

[0053] Evidently, two conductors are enough to power

a light source, nevertheless, more conductors can be provided. Furthermore, they can be arranged on a single insulating plate 11 or 12 or on both 11 and 12 each associated, inside the groove, to one of the opposite walls 1S, 1D as shown in Figures 1 and 1a.

[0054] The conductors are associated with a respective plate or with a wall 1S, 1D so as to project or be contacted inside the groove 1SC.

[0055] The connection body 2, according to the present invention, has an approximately parallelepiped shape and is equipped with at least one expansion element 22A, 22B, 23A, 23B, loaded by a resilient element SP to press and interfere on/with an internal side face of the walls 1S, 1D defining the groove of the guide and in which at least one electrode 2C1, 2C2, 2C3, 2C4 is arranged on the expansion element, so that said mechanical interference simultaneously brings said electrode into electrical contact with a conductor 1C1, 1C2, 1C3, 1C4 stably supported by said inner face of the guide groove, for example by means of the aforementioned plate 11 and/or 12. Preferably, the expansion element projects through an opening OPA, OPB into a side wall 2A, 2B of the connection body. The expansion element projects externally to the connection body, with a portion defining a rounded surface, preferably hemicylindrical, with the generating lines of the hemicylindrical surface parallel with the longitudinal direction X. Preferably, an expansion element 22A, 22B, 23A, 23B, according to a transversal section of the connection body or an axial view such as that of figure 5 defines a sort of half moon.

[0056] This external surface of the expansion element is rounded to facilitate the insertion and possibly also the disconnection of the connection body in/from the groove. Not necessarily all the protruding surface of the expansion element must be rounded. For example, only the portion that interferes with the mouth of the groove can be, that is, with the free edges of the parts of the guide during the insertion or removal of the connection body.

[0057] For example, the free edges of the opposing walls that define the mouth of the groove can be folded inwards to better retain the connection body inside the groove. This implies that the expansion element must retract not only during insertion, but also during disconnection of the connection body from the groove. Therefore, according to a cross section or an axial view with parts removed of the connection body, the surface that projects externally of the expansion element can be faceted, forming for example a polygon. The concept of rounding, therefore, must be linked to the fact that at least during the insertion of the connection body into the groove, the expansion element is shaped to facilitate its retraction, temporary or permanent inside the connection body 2.

[0058] A single expansion element can be sufficient to ensure a stable connection of the connection body inside the guide.

[0059] Preferably, at least one of the opposing walls 1S, 1D has a free edge folded inside the groove to force

the expansion element to retract both during insertion and disconnection of the connection body from the longitudinal guide.

[0060] Preferably, the expansion body is a relatively rigid body which performs a translation and/or rotation inside a relative seat obtained in the connection body, both during the insertion and disconnection movement of the connection body in/from the relative longitudinal guide.

[0061] For the purposes of this description, "relatively rigid" means that there are no appreciable deformations of the component during any of the operating conditions of the device.

[0062] Preferably, the connection system comprises two expansion elements 22A/22B and/or 23A/23B, opposite each other which project through two openings OPA, OPB arranged on opposite walls 2A, 2B of the connection body 2, so as to contact the internal faces of the opposing walls 1S of the guide groove, when the connection body is inserted into the groove 1SC.

[0063] The expression "opposed" in relation to the expansion elements means that they are arranged at approximately the same axial position of the connection body.

[0064] Preferably, a resilient element SP, that is to say a rubber pad, or an air piston or a spiral spring, is interposed between the expansion elements so as to bring them towards an expansion condition.

[0065] It is evident that according to the present invention, the connection body is inserted into the groove by means of a movement perpendicular to the longitudinal shape of the guide by inserting one end at a time or simultaneously both ends of the connection body in relation to the length, i.e. to the maneuverability of the same, and the number of expansion elements distributed along the connecting body.

[0066] In particular, the expansion condition brings the expansion elements into the condition of maximum outward projecting from the connection body 2. Preferably, this projecting or expansion condition can be limited by the transverse dimensions of the groove, so as to guarantee pressure of contact between electrodes and respective conductors.

[0067] The position of the electrodes 2C1 - 2C4 is such that, in a condition of contact of the expansion elements with the internal faces of the walls 1S, they contact the conductors 1C1 - 1C4, therefore, the electrodes and the conductors are arranged so as to be in reciprocal electrical contact when the connection body is inserted in the groove in order to electrically power a lighting body supported or defined by the connection body itself.

[0068] With reference to Figure 5, the electrodes 2C1 - 2C4 are set in the respective expansion elements for molding/injection. Obviously, the expansion elements are made of suitably printable plastic material. Or the electrodes are inserted in special axial guides made in the expansion elements.

[0069] In both cases, the expansion elements are

made entirely of insulating material.

[0070] It is not excluded that they may be made of conductive material suitably coated with insulating material. In this case, the electrodes are isolated from the expansion elements. Preferably, each half moon has a vertex VA, VB hinged on a shaft SH, so as to allow the respective half moon 22A (or 23A) and 22B (or 23B) to assume an expanded configuration by rotating around said shaft SH and a configuration retracted, rotating in the opposite direction to the preceding one, in which said resilient element forces the two expansion elements towards said expanded configuration.

[0071] The fact that the expansion element has the shape of a half moon or similar does not imply that the expansion elements must be coupled. In other words, as foreseen in the present description, the connection body can be equipped with one or more expansion elements on a single face 2A or 2B. Evidently, in this case, the spring that loads the expansion element is interposed between a fixed part of the connection body and the relative expansion element.

[0072] The presence of the shaft and the relative hinging of the expansion elements is not essential as the OPA and OPB openings in combination with the effect of the resilient element are in themselves sufficient to keep the expansion elements in the correct position.

[0073] A single SP resilient element is interposed between the half moons of a pair of expansion elements, forcing their simultaneous expansion.

[0074] Preferably, only one resilient element SP is interposed between the free vertices of the half moons of the same pair.

[0075] In the absence of the shaft SH, the resilient element can be interposed between the expansion elements in a medial position of the respective development according to the view of figure 5.

[0076] Preferably, the openings OPA and OPB retain the expansion elements defining an end stop for the expansion configuration. Excessive expansion could lead to an undesirable situation in which the expansion elements interfere with the insertion of the connection body into the groove.

[0077] Preferably, both expansion elements are hinged on the same shaft SH.

[0078] The hinging shafts or shaft SH is arranged parallel to the longitudinal development X of the connection body 2.

[0079] Preferably, the connection body 2 has a base side 2BS intended to face the base wall 1B of the guide 1. This side 2BS is integral with the frame of the connection body. Thus, for example, a connection element 21 is connected to this base side 2BS which serves to support a lighting body known per se. Furthermore, the shaft SH on which the expansion elements are pivoted by means of a support arm SUP is connected to this base side 2BS.

[0080] An electrical board and/or electrical cables are electrically connected with the electrodes 2C1 - 2C4 be-

ing arranged inside the connection body.

[0081] According to a preferred variant of the invention, the connection body has a longitudinal box-like shape with opposite ends and in which the connection body is equipped with at least one expansion element in each of the ends 25A and 25B.

[0082] Preferably, the connection body has an opposing pair of expansion elements at each end for a total of four expansion elements arranged in pairs of two.

[0083] Obviously, in relation to the length of the connecting body, in the longitudinal direction, the number of expansion elements can be increased. Furthermore, also the elastic constant of the resilient element SP can be suitably varied.

[0084] When the resilient element consists of a metal spring, this can be interposed as shown in figure 5 between the free ends of the expansion elements or it can be keyed onto the shaft SH and act, by means of opposite ends, on both of the expansion elements of a pair, hinged on the same shaft SH.

[0085] Preferably, at least one of the internal walls of the guide is shaped in a complementary way with the external surface of the expansion element, which projects through said opening into the side wall of the connection body. Figure 1A, in fact, shows that the plate 11 or 12 is concave with an approximately complementary shape with the surface that projects externally of the expansion element. This is to improve the retention of the connection body inside the 1SC groove.

[0086] Preferably, the expansion element is made of insulating material, or the electrode is suitably insulated with respect to the expansion element, which in itself does not act as an electrical contact for the connection body, but rather as a support element of the electrode.

[0087] Preferably, the internal faces of the opposite walls 1S, 1D comprise axial guides in order to be able to receive the plates 11 and 12 only axially. In other words, the plates can be engaged and withdrawn from their respective guides only axially.

[0088] According to a preferred variant of the invention, the internal face of the base part 1B of the track comprises a bar made of ferromagnetic material or magnetic elements, while the connection body comprises corresponding magnetic or ferromagnetic elements in the external face of the wall 2BS, so as to make tighter the interconnection between track and connecting body.

[0089] Figures 6 and 7 show the application of the same concepts described in connection with the connection body 2 to a power supply SUPP which has the purpose of electrically powering the conductors 1C1, 1C2, 1C3, 1C4 integral with the opposite walls 1S and 1D.

[0090] This power supply, therefore, comprises a terminal board or a connector to be connected to one or more electrical cables.

[0091] Similarly, a interconnection device CONN of two consecutive electrified tracks 1 and 1' is shown.

[0092] The interconnection device can have longitudinal development like the connection body 2 to intercon-

nect two coaxial tracks, but it could also be angled to allow the interconnection of consecutive non-coaxial tracks, for example if it is desired to form an L-shaped guide.

5 **[0093]** According to a preferred variant of the invention, the interconnection element is formed in two rigid parts, each equipped with at least one expansion element and the two rigid parts are interconnected by flexible electrical cables.

10 **[0094]** This allows to electrically interconnect also two guides that are neither coaxial nor coplanar.

[0095] This device embodies the concepts described above and includes at least one expansion element or two consecutive expansion elements with the respective electrodes connected in parallel, so that the insertion of the interconnection device CONN across two consecutive tracks allows them to be electrically interconnected ensuring continuity in the electrical circuit along the overall track.

15 **[0096]** Beyond the expansion elements on which the electrodes are attached/formed, there are no further elements designed to protrude to block the connection body inside the groove.

20 **[0097]** The electrode can have a concave cross section in order to receive the corresponding conductor inside the concavity.

25 **[0098]** A main advantage of the present solution is that the electrodes and the related expansion elements do not undergo a deformation in the insertion/disconnection of the connection body of the relative guide therefore the risk of fatigue breakage is greatly reduced.

30 **[0099]** Thus, the connection body can be inserted and disconnected thousands of times without the risk of breakage.

35 **[0100]** The electrodes formed or attached to the expansion elements are connected to the internal electrical elements in any manner known to the person skilled in the art.

40 **[0101]** Implementation variants of the described non-limiting example are possible, without however departing from the scope of protection of the present invention, including all the equivalent embodiments for a person skilled in the art, to the content of the claims.

45 **[0102]** From the above description, the person skilled in the art is able to realize the object of the invention without introducing further construction details.

Claims

50 1. Electrified track lighting system in which

- the track (1) has a longitudinal shape (X) with a groove (SC) in which it is possible to insert a connection body (2), and in which on a lateral face inside the groove of at least one opposite wall (1S, 1D) of the track there is at least one conductor (1C1 - 1C4),

- said connection body (2) having a substantially complementary shape with said groove,

the connection body (2) comprising at least one expansion element (22A, 22B, 23A, 23B) adapted to project externally from the connection body so as to stably block the connection body inside said groove, wherein said element expansion element is loaded by a resilient element (SP) and wherein said expansion element has an external surface at least coated with insulating material in/on which at least one electrode (2C1, 2C2, 2C3, 2C4) is formed/attached, and wherein when the connection body is inserted in said groove, the expansion element presses said at least one electrode against a corresponding said at least one conductor.

2. A system according to claim 1, wherein said electrode is a relatively rigid body rigidly supported by said expansion element.
3. System according to any one of claims 1 or 2, wherein said expansion element is relatively rigid and arranged to undergo a translation and/or rotation in a respective seat of the connection body during an operation of insertion/disconnection of the connection body into/from the groove (SC).
4. System according to any one of the preceding claims, wherein a portion of said expansion element projecting from said connection body is at least partially rounded to facilitate retraction of the expansion element during an operation of insertion or removal of the expansion body from the groove.
5. System according to any one of the preceding claims, wherein the connection body comprises at least one pair of expansion elements (22A, 22B; 23A, 23B) arranged so as to project from opposite walls of the connection body.
6. System according to claim 5, wherein only one resilient element (SP) is interposed between said expansion elements defining said pair of expansion elements.
7. System according to claim 5 or 6, wherein said connection body comprises a pair of opposite walls (2A, 2B) comprising a pair of opposite openings (OPA, OPB) through which said expansion elements projecting outwardly defining said pair, wherein each of said openings is adapted to define an end stop for an expansion configuration of the at least one expansion element.
8. System according to any one of the preceding claims, wherein said expansion element is hinged to a shaft (SH) parallel to said longitudinal extension

(X) in operating conditions of the connection body.

9. System according to any one of the preceding claims, wherein said expansion element, according to an axial view of the connection body, has the shape of a half moon or an involute circle.
10. System according to claim 9, wherein said expansion element, according to an axial view of the connecting body, has the shape of a half-moon or an involute of a circle having a first vertex (VA, VB) hinged to said shaft (SH) and a vertex opposite to the first, loaded by said resilient element (SP).
11. System according to any one of the preceding claims, wherein, during the insertion/disconnection of the connection body of the groove, said expansion element is shaped so as to slide against a mouth of the groove, keeping the respective at least one electrode spaced from an additional mismatched conductor.
12. System according to any one of claims 1 to 11, wherein at least one electrode is arranged on the respective expansion element in a position spaced from an outermost portion of the expansion element, so that said outermost part of the expansion element expansion strips against a mouth of the groove during an insertion/disengagement of the connection body, keeping the respective at least one electrode spaced from any conductor inside the groove before the connection body is completely inserted into the groove, avoiding reciprocal sliding between an electrode and a non-corresponding conductor.
13. System according to any one of the preceding claims, further comprising a
 - power supply (SUPP) and/or
 - a coupling device (CONN),
 having a substantially complementary shape with said groove, comprising at least one expansion element (22A, 22B, 23A, 23B) adapted to project externally from the connection body so as to stably block the connection body inside said groove, wherein said expansion element is loaded by resilient element (SP) and wherein said expansion element has an external surface at least coated with insulating material in/on which at least one electrode (2C1, 2C2, 2C3, 2C4) is formed/attached, and in wherein when the connection body is inserted in said groove, the expansion element presses said at least one electrode against said corresponding at least one conductor.
14. Power supply (SUPP) or interconnection device (CONN) between two consecutive guides for an

electrified track lighting system comprising a connection body (2) according to any one of the preceding claims 1 - 13.

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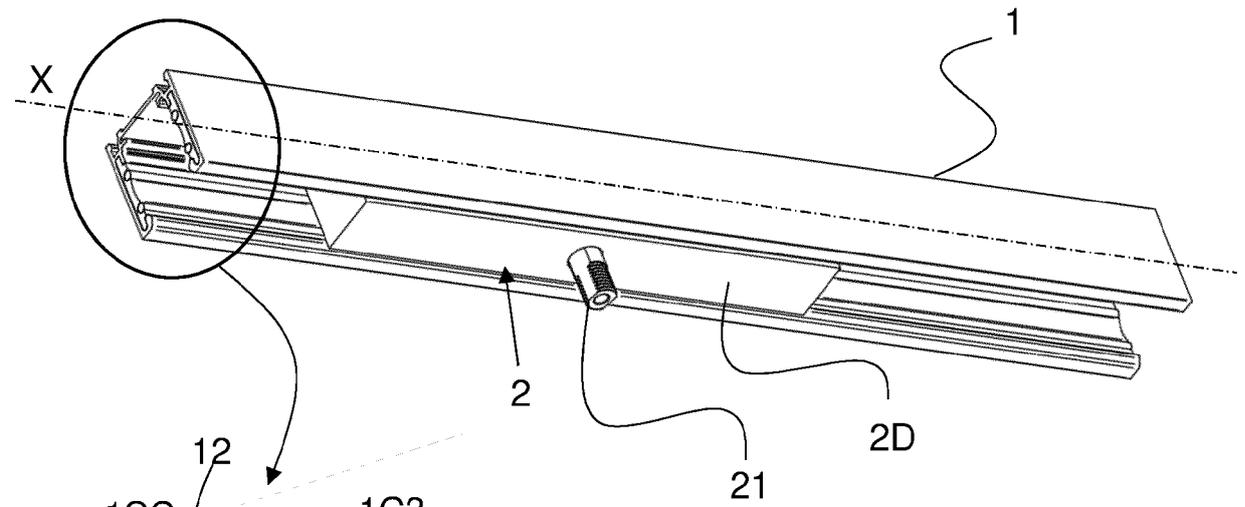


Fig. 1

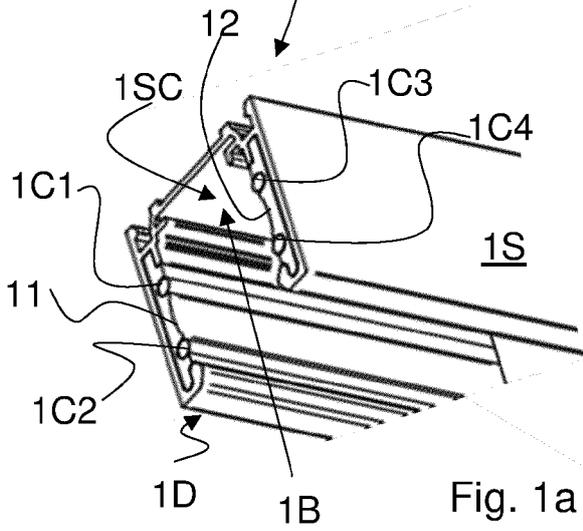


Fig. 1a

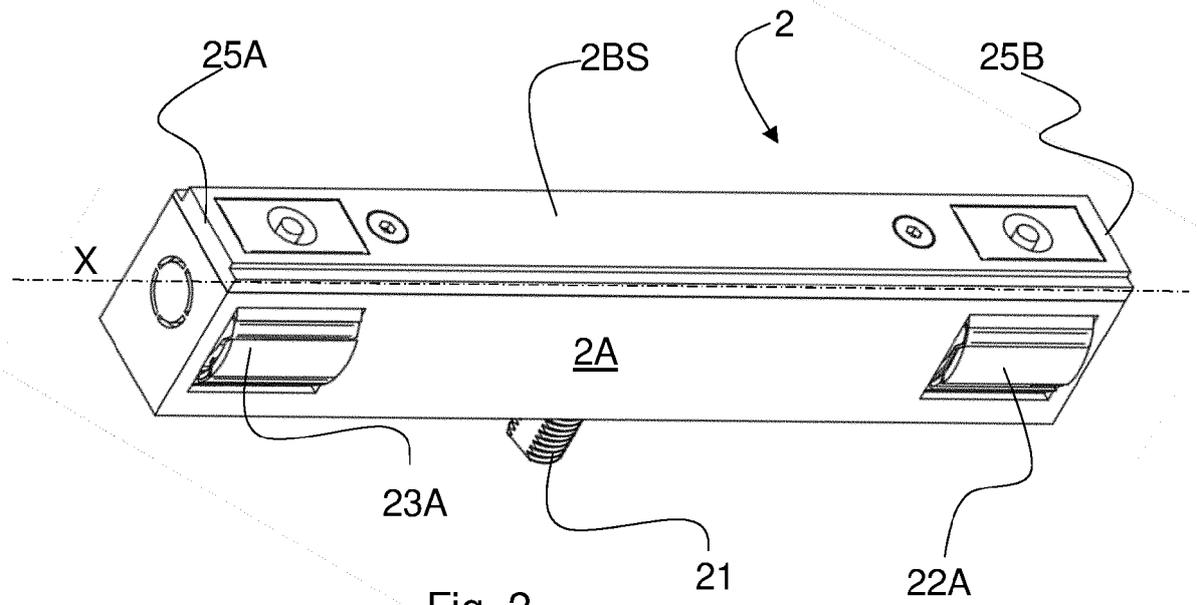


Fig. 2

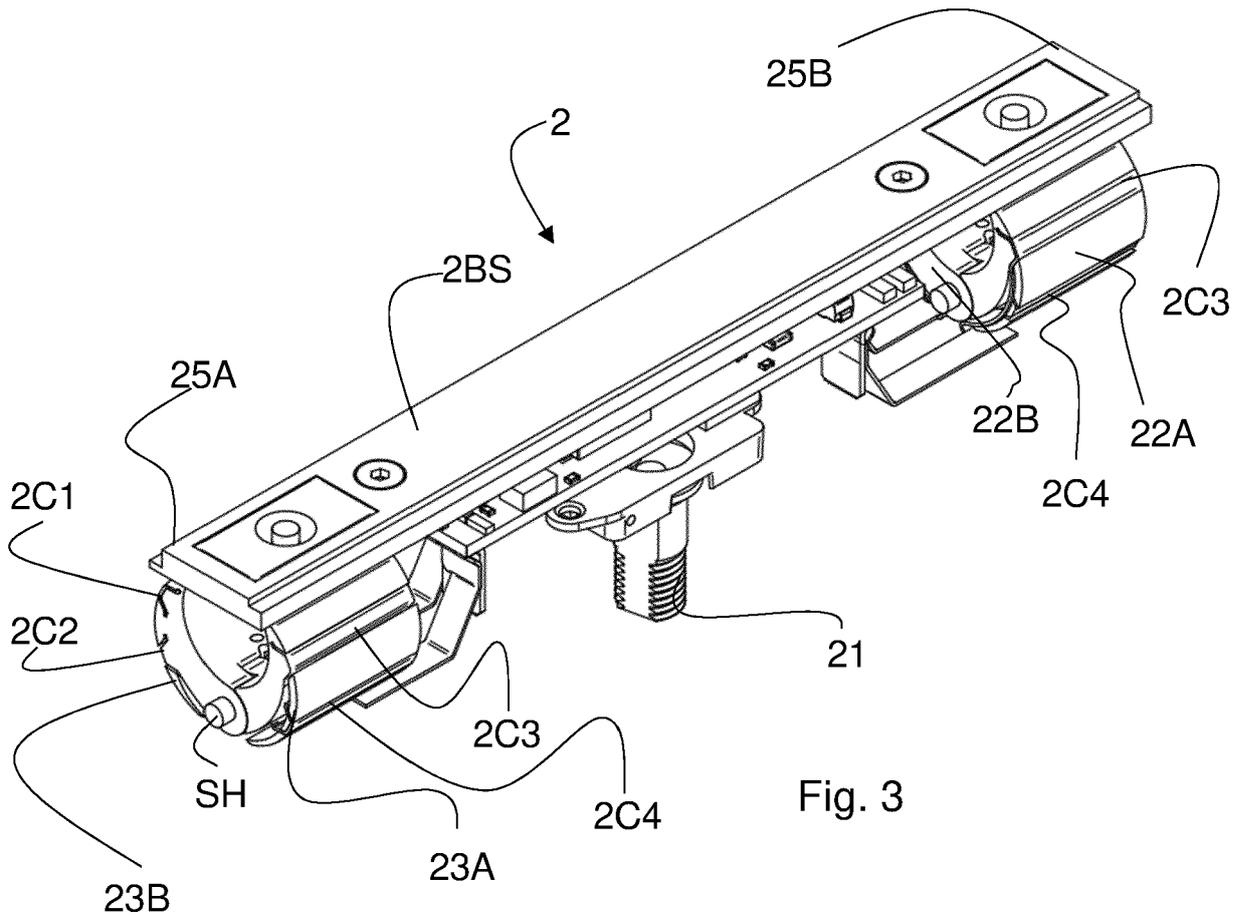


Fig. 3

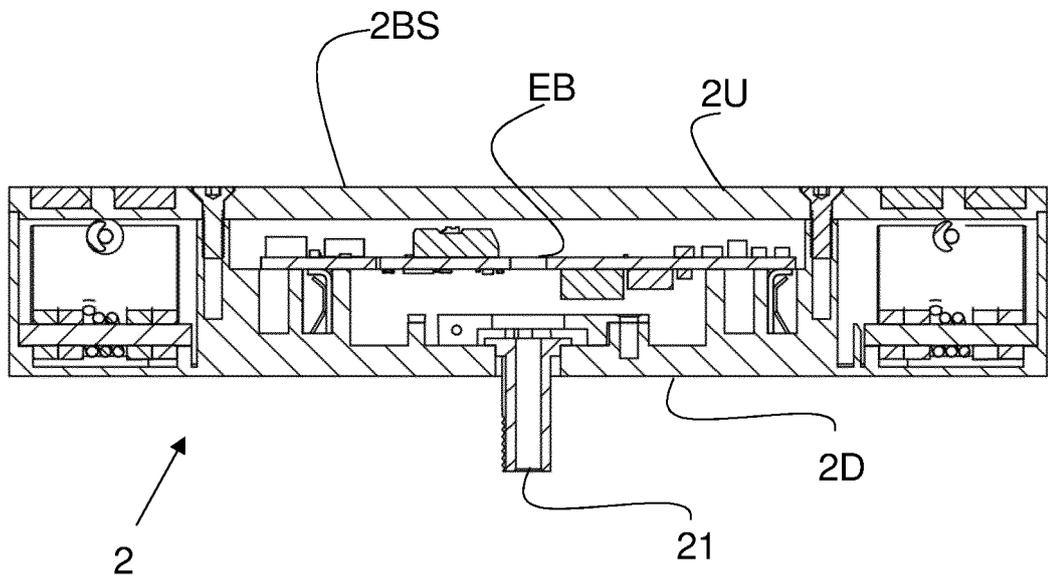


Fig. 4

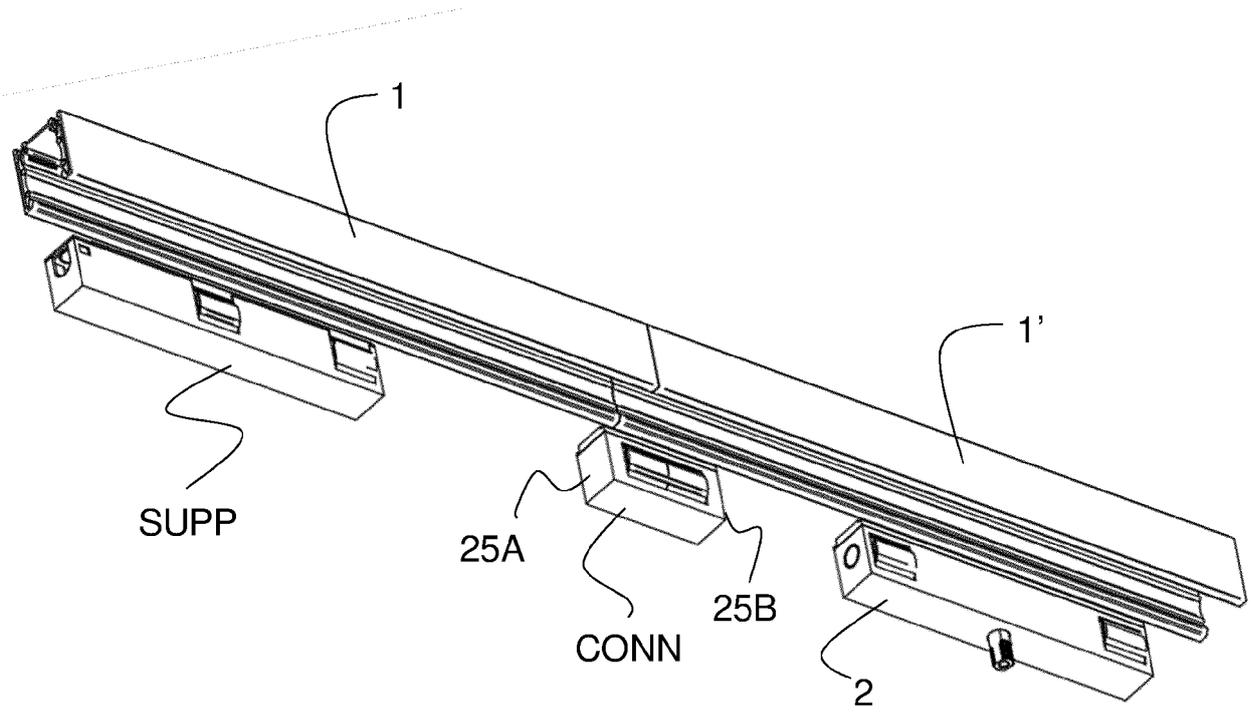


Fig. 6

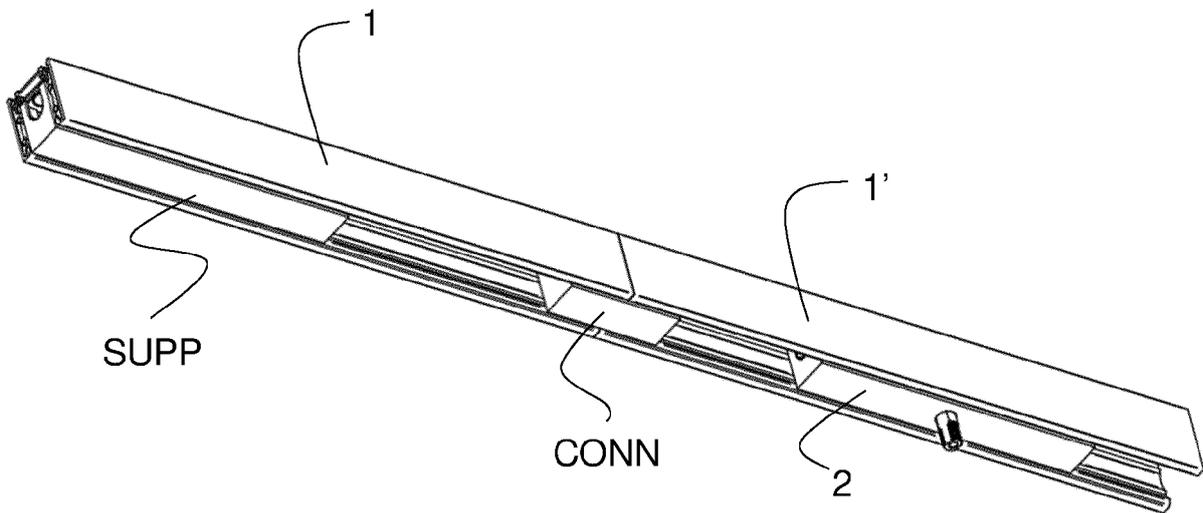


Fig. 7



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