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(54) **A TRACK ADAPTER AND THE DRIVING POWER SUPPLY AND TRACK LIGHT THEREOF**

EINEN STROMSCHIENENADAPTER SOWIE DESSEN ANTRIEBSSTROMVERSORGUNG UND
STROMSCHIENENLICHT

UN ADAPTATEUR DE VOIE ET SON ALIMENTATION ÉLECTRIQUE ET SON ÉCLAIRAGE DE VOIE

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Description

Technical areas

[0001] The present invention relates to the technical field of track lighting, in particular to a track adapter, a drive power supply with the adapter and a lamp.

Technical background

[0002] A track lamp is a kind of lamp installed on a track, a track lamp is installed with a track adapter in a matching track, the track contains conductive metal sheets on both sides on the inside, and the track adapter has a rotatable conductive metal sheet. When installed, the track lamp above the conductive metal sheet contacts the conductive metal sheets inside the track, the track lamp is electrified, and the track lamp is lit.

[0003] In order to achieve different power supply modes, with multi-wire and multi-loop track lamps, there is the need to set up a plurality of conductive metal sheets, and also the need to set up a phase regulator to adjust the conduction between each conductive metal sheet and the track lamp to enable the enable the track lamp and different conductive metal sheets in the track to be turned on, and the output end of the phase regulator is connected with the driving power supply to supply power to the track lamp.

[0004] The phase adjustment of the conventional track adapter is placed at the bottom of the adapter, which is partially exposed after mounting to the track, making the appearance unattractive and increasing the cost.

[0005] US 2014/134856 A1 discloses a track adapter comprising: a base, fixedly connectable to a lamp, provided with a first central axis; a pick-up post, rotatably provided above said base about said first central axis, the post body provided with a negative conductive sheet and at least two positive conductive sheets, all positive conductive sheets comprising a positive pick-up section and a positive contact extending from said positive pick-up section to the top of said pick-up post, wherein the top of said pick-up post refers to the portion that is first inserted into the track along said first central axis, all positive contacts being spaced about said first central axis, said negative conductive sheet comprising a negative pick-up section; an adjustment conductive part, rotatably provided around said first central axis at the top of said pick-up post, comprising a conductive contact movably connected to the top of said pick-up post, said conductive contact having a moving path passing through all positive contacts; and an adjustment knob, fixedly connected to said adjustment conductive part and with a central axis of rotation coinciding with said first central axis.

[0006] A further track adapter is disclosed in CN 211 146 219 U.

Contents of the invention

[0007] In view of this, the present invention provides a track adapter according to claim 1 to solve the above technical problem.

[0008] In particular, the problem is solved in that said track adapter further comprises a positive conductive connection fixedly connected to said base and kept in constant conduction with said conductive contact by means of a first rotating conductive structure; and that said first rotating conductive structure comprises: a first annular conductive sheet, connected to said positive conductive connector; said adjustment conductive part further comprising: a second annular conductive sheet, fixedly connected to said adjustment knob and pressed and coaxially provided with said first annular conductive sheet by means of an elastic member, said conductive contact being connected to said second annular conductive sheet; a first pivot, set in the middle of the top surface of said pick-up post and inserted in said first annular conductive sheet and said second annular conductive sheet.

[0009] Preferably, the top periphery of said pick-up post is provided with slots arranged at intervals around said first central axis, said positive contacts being set in the corresponding slots.

[0010] Preferably, said adjustment knob is provided with a slotted hole at the bottom of said adjustment knob, the top of said pickup post extends into said slotted hole, and said conductive contact is pressed between the outer wall of said pickup post and the inner wall of said slotted hole.

[0011] Preferably, said positive pick-up section and said positive contact are connected by means of a positive U-connector, said positive U-connector having an opening towards the top of said pick-up post, said pick-up post being provided with a front stopper and a back stopper clamping both sides of said positive U-connector.

[0012] Preferably, said adjustment knob is provided with an arcuate slot on the top surface, the arcuate slot is provided with a notch on the inner side, the outer edge of said second annular conductive sheet extends downwardly to form an arcuate conductive sheet that snaps into said arcuate slot, the extended section being said elastic member, part of said arcuate conductive sheet projecting inwardly to snap into said notch forming said conductive contact.

[0013] Preferably, said negative pick-up section and all positive pick-up sections are divided into two groups arranged on each side of said pick-up post.

[0014] Preferably, said track adapter further comprises a negative conductive connection fixedly connected to said base and kept in constant conduction with said negative conductive sheet by means of a second rotating conductive structure.

[0015] Preferably, said negative conductive sheet further comprises a negative U-connector sheet connected to said negative pick-up section, said negative U-connector sheet being fixed to said pick-up post and in con-

stant contact with said second rotating conductive structure.

[0016] Preferably, said negative conductive connector is provided at one end near said negative conductive sheet with a first conductive surface perpendicular to and intersecting said first central axis; said second rotating conductive structure comprising:

a second conductive surface, provided against said first conductive surface.

a conductive connector electrically connecting said second conductive surface and the negative conductive sheet.

[0017] Preferably, said pick-up post comprises a body provided with individual parts and a housing provided outside said body, said housing being provided with avoidance holes protruding from said positive pick-up section and negative pick-up section.

[0018] A drive power supply comprises a power supply housing and a circuit board provided in said power supply housing, further comprising a track adapter as described above, said base being fixedly connected to said power supply housing.

[0019] Preferably, said pick-up post and said adjustment conductive part are provided in said power supply housing; said power supply housing is provided with a mounting hole at the top for said adjustment knob to be exposed, and at least one side is provided with a pickup hole for said adjustment knob to be exposed, and at least one side is provided with a pick-up hole for said negative conductive sheet and/or positive conductive sheet to protrude.

[0020] Preferably, said negative take-off section is divided into two groups with all positive take-off sections, arranged on each side of said take-off post, and both sides of said power supply housing are provided with take-off holes.

[0021] Preferably, said circuit board is provided on one side of said pick-up post, the plane in which the board body of said circuit board is located being set parallel to said first central axis.

[0022] Preferably, said pick-up post has a turning handle extending from said power supply housing.

[0023] A lamp comprises a lamp holder, said lamp holder provided with a light source assembly, a drive power supply and a track adapter as described above, said base being secured to said lamp holder.

[0024] Preferably, said lamp holder comprises a U-shaped profile with an upward opening and end caps provided at both ends of said U-shaped profile, said light source assembly being provided on the outside of said U-shaped profile and said base being provided on the bottom of the inside of said U-shaped profile; said end caps being provided with a notch to avoid the track.

[0025] Preferably, said pick-up post has a rotating handle extending out of said power supply housing, and a side wall of said U-shaped profile is provided with a strip

hole through said rotating handle.

Technical effects of the present invention:

[0026] The track adapter of the invention, the driving power supply with the adapter and the lamp, the lamp frame of the lamp can wrap the whole track around the design, clean and beautiful, and at the same time solve the problem that it is difficult to adjust the phase when the adapter of the prior art is applied in this kind of lamps and lanterns, the phase adjustment knob is reduced and put on the top of the adapter, which is easy to adjust, solves the above adjustment problems and adapts to more occasions. It makes the structural design of lamps and lanterns more flexible.

Drawings

[0027] Embodiments of the present invention are described below in connection with the accompanying drawings, wherein:

Fig. 1 shows a schematic diagram of the structure of the drive power supply according to an embodiment;

Fig. 2 shows an exploded schematic diagram of the parts of the drive power supply according to the embodiment;

Fig. 3 shows an enlarged schematic of part A of fig. 2;

Fig. 4 shows a schematic of the construction of the pick-up post with the housing removed;

Fig. 5 shows an exploded schematic diagram of the drive power supply according to the embodiment;

Fig. 6 shows an enlarged schematic of part B of fig. 5;

Fig. 7 shows a schematic diagram of the structure of fig. 6 from another angle;

Fig. 8 shows a schematic diagram of the structure of the lamp mounted to the track according to the embodiment;

Fig. 9 shows a schematic diagram of the structure of the lamp according to the embodiment; and

Fig. 10 shows an exploded schematic diagram of the structure of the lamp according to the embodiment.

Specific implementation

[0028] Specific embodiments of the present invention are described in further detail below based on the accompanying drawings. It should be understood that the description of embodiments of the present invention herein is not intended to limit the scope of protection of the present invention.

[0029] As shown in Fig. 1 to 7, the track adapter 1000 of the present invention can be used alone or integrated with the drive power supply, as long as the lower part of the housing of the drive power supply is defined as the base 100. The other components of the track adapter for fixing and mounting can be used, and the rest of the struc-

ture remains unchanged. When the track adapter 1000 is used alone, it is directly connected to the positive and negative terminals of the lamp or the separate drive power supply. This embodiment is illustrated as an example of integration.

[0030] The drive power supply 2000 of this embodiment, comprising a power supply housing 2001, a circuit board 2002 and a track adapter 1000 provided in said power supply housing 2001.

[0031] With the power housing 2001 and circuit 2002 board removed, the track adapter 1000 may stand alone, and the track adapter 1000 of this embodiment comprises a base 100, a pick-up post 200, an adjusting conductive part 300 and an adjusting knob 400. The base 100 is used for fixed connection to the lamp 2000, and is provided with a first central axis 101; the base 100 is used for carrying other components, the structure and shape of which may vary, and may also be a structure of a housing to accommodate other components to be mounted therein. The first central axis 101 is set parallel to the direction of insertion of the track adapter 1000 into the track, the pick-up post 200 being set above said base 100 and is rotatable around the first central axis 101; the pick-up post is provided with a negative conductive sheet 201 and at least two positive conductive sheets 202, all positive conductive sheets 202 include positive pick-up sections 2022 and positive contacts 2021 extending from said positive pick-up sections 2022 to the top of said pick-up post 200. All positive contacts 2021 are arranged at intervals around said first central axis 101, said negative conductive sheets 201 include negative pick-up segments 2011; the pick-up post 200 is inserted into the track and rotated to achieve electrical connection with the power supply track, the pick-up post 200 of this embodiment has a negative conductive sheet 201 and at least two positive conductive sheets 202. In the invention, the negative and positive poles are defined as follows: For alternating current, the symbols L, N are used wherein L is the phase line that is positive, and N is the neutral line that is negative. For direct current, + indicates the positive pole and - indicates the negative pole. In standard prior art multi-wire tracks, such as four-wire tracks, which are a standard part, the structure is generally a U-shaped profile, and a plurality of slots extending in the extension direction are arranged on both sides, which are used for setting a conductive metal sheet L1, a conductive metal sheet L2, a conductive metal sheet L3 and a conductive metal sheet N. Of course, all conductive metal sheets can be set on a single side, with different numbers on both sides, and so on. The negative electrode section 2011 and the positive section 2022 of the pick-up post 200 can be set correspondingly. After the pick-up post 200 is extended into the track, the negative electrode section 2011 and the positive section 2022 can be abutting and conducting with the corresponding conductive metal sheet, and the electrical connection can be realized. The track is a standard part, and the connection mode between the pick-up post 200 and the track is not

described as they are prior art.

[0032] The top of the pick-up post 200 refers to the portion that is first inserted into the track along the first central axis 101. All positive conductive sheets 202 comprise a positive pick-up section 2022 and positive contacts 2021 extending from said positive pickup section 2022 to the top of said pick-up post 200, all positive contacts 2021 are spaced around said first central axis 101; an adjustment conductive part 300 is rotatably provided about the first central axis 101 at the top of the pick-up post 200 and comprises a conductive contact 301 movably connected with the top of the pick-up post 200, and the moving path of the conductive contact 301 passes through all positive contacts 2021; the adjusting knob 400 is fixedly connected with the adjustment conductive part 300 and the rotating central axis coincides with the first central axis 101. When the adjusting knob 400 rotates, it drives the adjustment conductive part 300 to rotate so that the conductive contact 301 is electrically connected with a different positive contact 2021.

[0033] In order to facilitate output, the track adapter 1000 also includes a positive conductive connector 500 which is fixedly connected to the base 100 and stays normally conductive with the conductive contact 301 through the first rotational conductive structure 501. The positive conductive connector 500 may electrically connect the positive conductive sheet 202 selected by the adjusting knob 400.

[0034] In order to facilitate the fixing of the edge, the outer periphery of the top of the pick-up post 200 is provided with a slots 203 arranged at intervals around the first central axis 101, and the positive contact 2021 is arranged in the corresponding slot 203. The outer surface of the positive contact 2021 is arranged parallel to the first central axis 101, so that the diameter of the pick-up post 200 can be smaller and more compact. The outer surface of the positive contact 2021 can also be arranged perpendicularly or obliquely with the first central axis 101, so that the technique can also be realized, but in order to increase the diameter of the pick-up post 200.

[0035] A slotted hole 401 is arranged at the bottom of the adjusting knob 400, and the top of the power extraction post 200 extends into the slotted hole 401, and the conductive contact 301 is pressed between the outer wall of the power extraction post 200 and the inner wall of the slotted hole 401.

[0036] In order to improve the elasticity of the positive pick-up section 2022 and improve the reliability of contact with the track, in this embodiment, the positive pick-up section 2022 and the positive electrode contact 2021 are connected by the positive U-connector 2023. The opening of the positive U-connector 2023 faces the top of the pick-off post 200, which is provided with a front stopper 204 and a rear stopper 205 clamping both sides of the positive U-connector 2023.

[0037] The first rotating conductive structure 501 is a structure which can realize rotational electrical connection, and there are many concrete ways to realize it. In

this embodiment, in order to facilitate manufacture and installation, the first rotating conductive structure 501 includes a first annular conductive sheet 5011 connected with the positive conductive connector 500. The adjustment conductive part 300 also comprises a second annular conductive sheet 302 and a first pivot 303. The first pivot 303 is made of copper material and can ensure electrical conductivity. The second annular conductive sheet 302 is fixedly connected with the adjusting knob 400 and is pressed and coaxially arranged with the first annular conductive sheet 5011 through the elastic member 304. The conductive contact 301 is connected with the second annular conductive sheet 302. The first pivot 303 is arranged in the middle of the top surface of the pickup post 200 and inserted into the first annular conductive sheet 302 and the second annular conductive sheet 302. The setting of the elastic member 304 keeps the adjusting conductive part 300 in constant contact with the first annular conductive sheet 5011, thereby maintaining constant conduction.

[0038] The shape and structure of the elastic member 304 can be selected according to the needs, which can be integrated with the second annular conductive sheet 302, or can be split, and an O-ring can be used when a split arrangement is used. In this embodiment, the elastic member 304 is arranged between the second annular conductive sheet 302 and the conductive contact 301. It may also be arranged between the second annular conductive sheet 302 and the first annular conductive sheet 5011, or between the first annular conductive sheet 5011 and the fixing frame, which is fixedly connected with the base 100.

[0039] The top surface of the adjusting knob 400 is provided with an arcuate slot 402, and the inside of the arcuate slot 402 is provided with a notch 4021. In this embodiment, the outer edge of the second annular conductive sheet 302 extends downward to form an arcuate conductive sheet 3021 stuck into the arc groove 402, and the extension section is the elastic member 304. A part of the arc conductive sheet 3021 protrudes inward into the notch 4021 to form the conductive contact 301. That is, the second annular conductive sheet 302, the elastic member 304 and the arc conductive sheet 3021 are integrally molded and manufactured to form the adjustment conductive part 300.

[0040] In the present embodiment, there are three positive conductive sheets 202 but may also be provided with two, four or more. The negative pick-up section 2011 and all positive pick-up sections 2022 are divided into two groups and are respectively arranged on both sides of the pick-up post 200. To facilitate external connection, the track adapter 1000 further comprises a negative conductive connection 600 fixedly connected to the base 100 and kept in constant conduction with the negative conductive sheet 201 by means of a second rotating conductive structure 601.

[0041] The negative conductive sheet 201 further comprises a negative U-connector sheet 2012 connected to

the negative pick-up section 2011, the negative U-connector sheet 2012 is fixed to the pick-up post 200 and in constant contact with the second rotating conductive structure 601.

[0042] There are many forms of second rotating conductive structures 601. In this embodiment, the negative conductive connector 600 is provided with a first conductive surface 602 perpendicular to and intersecting with the first central axis 101. The second rotating conductive structure 601 includes a second conductive surface 6011 and a conductive connector 6012, and the second conductive surface 6011 is arranged against the first conductive surface 602. The conductive connector 6012 is electrically connected to the second conductive surface 6011 and the negative conductive sheet 201.

[0043] In order to facilitate manufacture and installation, in the present embodiment, the pick-up post 200 includes a main body 206 which is provided with individual parts and a housing 207 arranged outside the main body 206. The housing 207 is provided with an avoidance hole 2071 protruding from the positive pick-up section 2022 and the negative pick-up section 2011. The housing 207 includes a left housing 2071 and a right housing 2072 that are fastened to each other, making it more convenient to manufacture and install.

[0044] The drive power supply 2000 of the present embodiment includes a power supply housing 2001, a circuit board 2002 and a track adapter 1000 arranged in the power supply housing, and the base 100 is fixedly connected to the power supply housing 2001. The power supply housing 2001 is divided into two parts, making it easier to install.

[0045] The pick-up post 200 and the adjustment conductive part 300 are arranged in the power supply housing 2001; the top of the power supply housing 2001 is provided with a mounting hole 2003 for exposing the adjusting knob 400. At least one side is provided with a pick-up hole 2004 for the negative conductive sheet 201 and the positive conductive sheet 202 to protrude.

[0046] The negative pick-up section 2011 and all positive pick-up sections 2022 are divided into two groups and are respectively arranged on both sides of the pick-up post 200. Both sides of the power supply housing 2001 are provided with a pick-up hole 2004.

[0047] In order to reduce the overall size of the drive power supply 2000, in the present embodiment, the circuit board 2002 is arranged on one side of the pick-up post 200, and the plane of the board body of the circuit board 2002 is arranged parallel to the first central axis 101.

[0048] In order to facilitate the rotation of the pick-up post 200, the pick-up post 200 is provided with a turning handle 208 protruding from the power supply housing 2001.

[0049] As shown in FIG. 8 to 10, the lamp of the present embodiment includes a lamp holder 3000, which is provided with a light source assembly 4000 and a drive power supply 2000. The light source assembly 4000 includes

a lamp plate 4001 and an optical element 4002.

[0050] The lamp holder 3000 of this embodiment can wrap the entire track in a neat and beautiful design. The lamp holder 3000 includes a U-shaped profile 3001 with an opening upward and end caps 3002 arranged at both ends of the U-shaped profile 3001. The light source assembly 4000 is arranged on the outside of the U-shaped profile 3001, and the base 100 is arranged at the bottom of the inside of the U-shaped profile 3001; the end caps 3002 are provided with a notch 3003 to avoid the track.

[0051] The pick-up post 200 is provided with a rotating handle 208 protruding from the power supply housing 2001, and the side wall of the U-shaped profile 3001 is provided with a strip hole 3006 passing through the rotating handle 204.

[0052] In another embodiment, the lamp includes a lamp holder 3000, which is provided with a light source assembly 4000, a driving power supply 2000 and a track adapter 1000, and the base 100 is fixed on the lamp holder 3000. Drive power supply 2000 and track adapter 1000 are split.

Claims

1. A track adapter (1000) comprising:

a base (100), fixedly connectable to a lamp (2000), provided with a first central axis (101);
 a pick-up post (200), rotatably provided above said base (100) about said first central axis (101), the post body provided with a negative conductive sheet (201) and at least two positive conductive sheets (202), all positive conductive sheets (202) comprising a positive pick-up section (2022) and a positive contact (2021) extending from said positive pick-up section (2022) to the top of said pick-up post (200), wherein the top of said pick-up post (200) refers to the portion that is first inserted into the track along said first central axis (101), all positive contacts (2021) being spaced about said first central axis (101), said negative conductive sheet (201) comprising a negative pick-up section (2011);
 an adjustment conductive part (300), rotatably provided around said first central axis (101) of said pick-up post (200), comprising a conductive contact (301) movably connected to said pick-up post (200), said conductive contact (301) having a moving path passing through all positive contacts (2021); and
 an adjustment knob (400), fixedly connected to said adjustment conductive part (300) and with a central axis of rotation coinciding with said first central axis (101);
characterized in that the adjustment conductive part (300) is provided at the top of said pick-up post (200) and the conductive contact (301)

is movably connected to the top of said pick-up post (200),
 wherein said track adapter (1000) further comprises a positive conductive connection (500) fixedly connected to said base (100) and kept in constant conduction with said conductive contact (301) by means of a first rotating conductive structure (501);
 and that said first rotating conductive structure (501) comprises:

a first annular conductive sheet (5011), connected to said positive conductive connector (500);
 said adjustment conductive part (300) further comprising:

a second annular conductive sheet (302), fixedly connected to said adjustment knob (400) and pressed and coaxially provided with said first annular conductive sheet (5011) by means of an elastic member (304), said conductive contact (301) being connected to said second annular conductive sheet (302);

a first pivot (303), set in the middle of the top surface of said pick-up post (200) and inserted in said first annular conductive sheet (5011) and said second annular conductive sheet (302).

2. The track adapter (1000) according to claim 1, **characterized in that** the top periphery of said pick-up post (200) is provided with slots (203) arranged at intervals around said first central axis (101), said positive contacts (2021) being set in the corresponding slots (203).

3. The track adapter (1000) according to claim 2, **characterized in that** said adjustment knob (400) is provided with a slotted hole (401) at the bottom of said adjustment knob (400), that the top of said pick-up post (200) extends into said slotted hole (401), and that said conductive contact (301) is pressed between the outer wall of said pickup post (200) and the inner wall of said slotted hole (401).

4. The track adapter (1000) according to claim 2, **characterized in that** said positive pick-up section (2022) and said positive contact (2021) are connected by means of a positive U-connector (2023), said positive U-connector (2023) having an opening towards the top of said pick-up post (200), said pick-up post (200) being provided with a front stopper (204) and a back stopper (205) clamping both sides of said positive U-connector (2023).

5. The track adapter (1000) according to claim 1, **characterized in that** said elastic member (304) is provided between said second annular conductive sheet (302) and said conductive contact (301). 5
6. The track adapter (1000) according to claim 1, **characterized in that** said adjustment knob (400) is provided with an arcuate slot (402) on the top surface, the arcuate slot (402) is provided with a notch (4021) on the inner side, the outer edge of said second annular conductive sheet (302) extends downwardly to form an arcuate conductive sheet (3021) that snaps into said arcuate slot (402), the extended section being said elastic member (304), part of said arcuate conductive sheet (3021) projecting inwardly to snap into said notch (4021) forming said conductive contact (301). 10
7. The track adapter (1000) according to any of claims 1 to 6, **characterized in that** said negative pick-up section (2011) and all positive pick-up sections (2022) are divided into two groups arranged on each side of said pick-up post (200). 20
8. The track adapter (1000) according to any of claims 1 to 6, **characterized in that** said track adapter (1000) further comprises a negative conductive connection (600) fixedly connected to said base (100) and kept in constant conduction with said negative conductive sheet (201) by means of a second rotating conductive structure (601). 25 30
9. The track adapter (1000) according to claim 8, **characterized in that** said negative conductive sheet (201) further comprises a negative U-connector sheet (2012) connected to said negative pick-up section (2011), said negative U-connector sheet (2012) being fixed to said pick-up post (200) and in constant contact with said second rotating conductive structure (601). 35 40
10. The track adapter (1000) according to claim 8, **characterized in that** said negative conductive connector (600) is provided at one end near said negative conductive sheet (201) with a first conductive surface (602) perpendicular to and intersecting said first central axis (101); said second rotating conductive structure (601) comprising: 45
 - a second conductive surface (6011), provided against said first conductive surface (602);
 - a conductive connector (6012) electrically connecting said second conductive surface (6011) and the negative conductive sheet (201).
11. The track adapter (1000) according to any of claims 1 to 6, **characterized in that** said pick-up post (200) comprises a body (206) provided with individual 50
 - parts and a housing (207) provided outside said body (206), said housing (207) being provided with avoidance holes (2071) protruding from said positive pick-up section (2022) and negative pick-up section (2011).
12. A drive power supply (2000) comprising a power supply housing (2001) and a circuit board (2002) provided in said power supply housing, **characterized in that** it further comprises a track adapter (1000) according to any of claims 1 to 11, said base (100) being fixedly connected to said power supply housing (2001). 55
13. The drive power supply (2000) according to claim 12, **characterized in that** said pick-up post (200) and said adjustment conductive part (300) are provided in said power supply housing (2001); said power supply housing (2001) is provided with a mounting hole (2003) at the top for said adjustment knob (400) to be exposed, and at least one side is provided with a pick-up hole (2004) for said negative conductive sheet (201) and/or said positive conductive sheet (202) to protrude.
14. The drive power supply (2000) according to claim 12, **characterized in that** said negative pick-up section (2011) all positive take-off sections (2022) are arranged in two groups with on both sides of said pick-up post (200), and that both sides of said power supply housing (2001) are provided with pick-up holes (2004).
15. The drive power supply (2000) according to any of claims 12 to 14, **characterized in that** said circuit board (2002) is provided on one side of said pick-up post (200), the plane in which the board body of said circuit board (2002) is located being set parallel to said first central axis (101).
16. The drive power supply (2000) according to any of claims 12 to 14, **characterized in that** said pick-up post (200) has a turning handle (208) extending from said power supply housing (2001).
17. A lamp comprising a lamp holder (3000), said lamp holder (3000) provided with a light source assembly (4000), a drive power supply (2000) and a track adapter (1000) according to any of claims 1 to 11, said base (100) being fixed to said lamp holder (3000).
18. A lamp comprising a lamp holder (3000), **characterized in that** said lamp holder (3000) is provided with a light source assembly (4000) and a drive power supply (2000) according to any of claims 12 to 16.
19. The lamp according to claim 18, **characterized in**

that said lamp holder (3000) comprises a U-shaped profile (3001) with an upward opening and end caps (3002) provided at both ends of said U-shaped profile (3001), said light source assembly (4000) being provided on the outside of said U-shaped profile (3001) and said base (100) being provided on the bottom of the inside of said U-shaped profile (3001); said end caps (3002) being provided with a notch (3003) to avoid the track.

20. The lamp according to claim 18, **characterized in that** said pick-up post (200) has a rotating handle (208) extending out of said power supply housing (2001), and a side wall of said U-shaped profile (3001) is provided with a strip hole (3006) through said rotating handle (204).

Patentansprüche

1. Stromschienenadapter (1000), umfassend:

einen Sockel (100), der fest mit einer Lampe (2000) verbunden werden kann und mit einer ersten Mittelachse (101) versehen ist;
einen Aufnahmestift (200), der drehbar über der Basis (100) um die erste Mittelachse (101) vorgesehen ist, wobei der Stiftkörper mit einer negativen leitenden Schicht (201) und mindestens zwei positiven leitenden Schichten (202) versehen ist, wobei alle positiven leitenden Schichten (202) einen positiven Aufnahmeabschnitt (2022) und einen positiven Kontakt (2021) umfassen, der sich von dem positiven Aufnahmeabschnitt (2022) zum oberen Ende des Aufnahmestifts (200) erstreckt, wobei sich die Oberseite der Aufnahmesäule (200) auf den Abschnitt bezieht, der zuerst in die Spur entlang der ersten Mittelachse (101) eingeführt wird, wobei alle positiven Kontakte (2021) um die erste Mittelachse (101) herum beabstandet sind, wobei die negative leitende Folie (201) einen negativen Aufnahmeabschnitt (2011) umfasst;
ein leitendes Einstellteil (300), das drehbar um die erste Mittelachse (101) der Aufnahmesäule (200) vorgesehen ist und einen leitenden Kontakt (301) aufweist, der beweglich mit der Aufnahmesäule (200) verbunden ist, wobei der leitende Kontakt (301) einen Bewegungspfad aufweist, der durch alle positiven Kontakte (2021) verläuft; und
einen Einstellknopf (400), der fest mit dem leitenden Einstellteil (300) verbunden ist und dessen zentrale Drehachse mit der ersten zentralen Achse (101) zusammenfällt;
dadurch gekennzeichnet, dass das leitende Einstellteil (300) an der Oberseite der Aufnahmesäule (200) vorgesehen ist und der leitende

Kontakt (301) beweglich mit der Oberseite der Aufnahmesäule (200) verbunden ist, wobei der Stromschienenadapter (1000) ferner eine positive leitende Verbindung (500) umfasst, die fest mit der Basis (100) verbunden ist und mittels einer ersten rotierenden leitenden Struktur (501) in konstanter Verbindung mit dem leitenden Kontakt (301) gehalten wird;
und dass die erste rotierende leitende Struktur (501) umfasst:

eine erste ringförmige leitende Platte (5011), die mit dem positiven leitenden Verbinder (500) verbunden ist;
wobei das leitende Einstellteil (300) weiterhin umfasst:

ein zweites ringförmiges leitfähiges Blatt (302), das fest mit dem Einstellknopf (400) verbunden ist und mittels eines elastischen Elements (304) an das erste ringförmige leitfähige Blatt (5011) gepresst und coaxial damit versehen ist, wobei der leitfähige Kontakt (301) mit dem zweiten ringförmigen leitfähigen Blatt (302) verbunden ist;
einen ersten Drehzapfen (303), der in der Mitte der oberen Fläche der Aufnahmesäule (200) angeordnet ist und in die erste ringförmige leitende Platte (5011) und die zweite ringförmige leitende Platte (302) eingesetzt ist.

2. Stromschienenadapter (1000) nach Anspruch 1, **dadurch gekennzeichnet, dass** der obere Umfang der Aufnahmesäule (200) mit Schlitzen (203) versehen ist, die in Abständen um die erste Mittelachse (101) herum angeordnet sind, wobei die positiven Kontakte (2021) in die entsprechenden Schlitze (203) eingesetzt sind.
3. Stromschienenadapter (1000) nach Anspruch 2, **dadurch gekennzeichnet, dass** der Einstellknopf (400) mit einem Langloch (401) am Boden des Einstellknopfes (400) versehen ist, dass sich die Oberseite des Aufnahmestiftes (200) in das Langloch (401) erstreckt und dass der leitende Kontakt (301) zwischen die Außenwand des Aufnahmestiftes (200) und die Innenwand des Langloches (401) gepresst ist.
4. Stromschienenadapter (1000) nach Anspruch 2, **dadurch gekennzeichnet, dass** der positive Aufnahmeabschnitt (2022) und der positive Kontakt (2021) mittels eines positiven U-Verbinders (2023) verbunden sind, wobei der positive U-Verbinder (2023) eine Öffnung in Richtung der Oberseite der Aufnahmesäule (200) aufweist, wobei die Aufnahmesäule

(200) mit einem vorderen Stopper (204) und einem hinteren Stopper (205) versehen ist, die beide Seiten des positiven U-Verbinders (203) einklemmen.

5. Stromschienenadapter (1000) nach Anspruch 1, **dadurch gekennzeichnet, dass** das elastische Element (304) zwischen der zweiten ringförmigen leitenden Platte (302) und dem leitenden Kontakt (301) vorgesehen ist. 5
6. Stromschienenadapter (1000) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Einstellknopf (400) an der Oberseite mit einem bogenförmigen Schlitz (402) versehen ist, wobei der bogenförmige Schlitz (402) an der Innenseite mit einer Kerbe (4021) versehen ist, die Außenkante der zweiten ringförmigen leitenden Platte (302) sich nach unten erstreckt, um eine gebogene leitende Platte (3021) zu bilden, die in den gebogenen Schlitz (402) einschnappt, wobei der verlängerte Abschnitt das elastische Element (304) ist, wobei ein Teil der gebogenen leitenden Platte (3021) nach innen vorsteht, um in die Kerbe (4021) einzurasten, die den leitenden Kontakt (301) bildet. 10 15 20 25
7. Stromschienenadapter (1000) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** der negative Aufnahmeabschnitt (2011) und alle positiven Aufnahmeabschnitte (2022) in zwei Gruppen unterteilt sind, die auf jeder Seite der Aufnahmesäule (200) angeordnet sind. 30
8. Stromschienenadapter (1000) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** der Stromschienenadapter (1000) außerdem eine negative leitende Verbindung (600) umfasst, die fest mit der Basis (100) verbunden ist und mittels einer zweiten rotierenden leitenden Struktur (601) in ständiger Verbindung mit der negativen leitenden Platte (201) gehalten wird. 35 40
9. Stromschienenadapter (1000) nach Anspruch 8, **dadurch gekennzeichnet, dass** das negative leitende Blatt (201) ferner ein negatives U-Verbindungsblatt (2012) umfasst, das mit dem negativen Aufnahmeabschnitt (2011) verbunden ist, wobei das negative U-Verbindungsblatt (2012) an der Aufnahmesäule (200) befestigt ist und in ständigem Kontakt mit der zweiten rotierenden leitenden Struktur (601) steht. 45 50
10. Stromschienenadapter (1000) nach Anspruch 8, **dadurch gekennzeichnet, dass** der negativ leitende Verbinder (600) an einem Ende in der Nähe der negativ leitenden Platte (201) mit einer ersten leitenden Oberfläche (602) versehen ist, die senkrecht zu der ersten Mittelachse (101) steht und diese schneidet; wobei die zweite rotierende leitende Struktur (601) Folgendes umfasst: 55

eine zweite leitende Fläche (6011), die gegen die erste leitende Fläche (602) vorgesehen ist; einen leitenden Verbinder (6012), der die zweite leitende Oberfläche (6011) und die negative leitende Schicht (201) elektrisch verbindet.

11. Stromschienenadapter (1000) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** die Aufnahmesäule (200) einen Körper (206), der mit einzelnen Teilen versehen ist, und ein Gehäuse (207) umfasst, das außerhalb des Körpers (206) vorgesehen ist, wobei das Gehäuse (207) mit Ausweirlöchern (2071) versehen ist, die aus dem positiven Aufnahmeabschnitt (2022) und dem negativen Aufnahmeabschnitt (2011) herausragen. 10 15 20 25
12. Antriebsstromversorgung (2000) mit einem Stromversorgungsgehäuse (2001) und einer in dem Stromversorgungsgehäuse vorgesehenen Leiterplatte (2002), **dadurch gekennzeichnet, dass** sie ferner einen Stromschienenadapter (1000) nach einem der Ansprüche 1 bis 11 umfasst, wobei die Basis (100) fest mit dem Stromversorgungsgehäuse (2001) verbunden ist. 30 35 40 45 50
13. Antriebsstromversorgung (2000) nach Anspruch 12, **dadurch gekennzeichnet, dass** der Aufnahmestift (200) und das leitende Einstellteil (300) in dem Stromversorgungsgehäuse (2001) vorgesehen sind; das Stromversorgungsgehäuse (2001) mit einem Montageloch (2003) an der Oberseite versehen ist, damit der Einstellknopf (400) freiliegt, und mindestens eine Seite mit einem Aufnahmeloche (2004) versehen ist, damit die negative leitende Schicht (201) und/oder die positive leitende Schicht (202) herausragen. 55
14. Antriebsstromversorgung (2000) nach Anspruch 12, **dadurch gekennzeichnet, dass** der negative Abnehmerabschnitt (2011) und alle positiven Abnehmerabschnitte (2022) in zwei Gruppen zu beiden Seiten des Abnehmerpfostens (200) angeordnet sind, und dass beide Seiten des Stromversorgungsgehäuses (2001) mit Abnehmerlöchern (2004) versehen sind. 60 65 70 75 80 85 90 95
15. Antriebsstromversorgung (2000) nach einem der Ansprüche 12 bis 14, **dadurch gekennzeichnet, dass** die Leiterplatte (2002) auf einer Seite der Aufnahmesäule (200) vorgesehen ist, wobei die Ebene, in der sich der Plattenkörper der Leiterplatte (2002) befindet, parallel zur ersten Mittelachse (101) angeordnet ist. 100 105 110 115 120 125 130 135 140 145 150
16. Antriebsstromversorgung (2000) nach einem der Ansprüche 12 bis 14, **dadurch gekennzeichnet, dass** die Aufnahmesäule (200) einen Drehgriff (208) aufweist, der sich von dem Stromversorgungsge- 155 160 165 170 175 180 185 190 195 200

häuser (2001) aus erstreckt.

17. Lampe mit einer Lampenfassung (3000), wobei die Lampenfassung (3000) mit einer Lichtquellenanordnung (4000), einer Antriebsstromversorgung (2000) und einem Stromschienenadapter (1000) nach einem der Ansprüche 1 bis 11 versehen ist und der Sockel (100) an der Lampenfassung (3000) befestigt ist. 5
18. Lampe mit einer Lampenfassung (3000), **dadurch gekennzeichnet, dass** die Lampenfassung (3000) mit einer Lichtquellenanordnung (4000) und einer Antriebsstromversorgung (2000) nach einem der Ansprüche 12 bis 16 versehen ist. 10
19. Lampe nach Anspruch 18, **dadurch gekennzeichnet, dass** die Lampenfassung (3000) ein U-förmiges Profil (3001) mit einer nach oben gerichteten Öffnung und Endkappen (3002) umfasst, die an beiden Enden des U-förmigen Profils (3001) vorgesehen sind, wobei die Lichtquellenbaugruppe (4000) an der Außenseite des U-förmigen Profils (3001) vorgesehen ist und der Sockel (100) am Boden der Innenseite des U-förmigen Profils (3001) vorgesehen ist; wobei die Endkappen (3002) mit einer Kerbe (3003) versehen sind, um die Schiene zu vermeiden. 20
20. Lampe nach Anspruch 18, **dadurch gekennzeichnet, dass** die Aufnahmesäule (200) einen Drehgriff (208) aufweist, der sich aus dem Stromversorgungshäuser (2001) heraus erstreckt, und dass eine Seitenwand des U-förmigen Profils (3001) mit einem Streifenloch (3006) durch den Drehgriff (204) versehen ist. 25

Revendications

1. Un adaptateur de voie (1000), comprenant 40
 - un culot (100) qui peut être relié de manière fixe à une lampe (2000) et qui est pourvu d'un premier axe central (101) ;
 - une tige de réception (200) prévue de manière rotative au-dessus de la base (100) autour du premier axe central (101), le corps de la tige étant muni d'une couche conductrice négative (201) et d'au moins deux couches conductrices positives (202), toutes les couches conductrices positives (202) comprenant une partie de réception positive (2022) et un contact positif (2021), s'étendant de la partie de réception positive (2022) à l'extrémité supérieure de la tige de réception (200), le sommet de la tige de réception (200) faisant référence à la partie insérée en premier dans la piste le long du premier axe central (101), tous les contacts positifs (2021) étant es-

pacés autour du premier axe central (101), la feuille conductrice négative (201) comprenant une partie de réception négative (2011) ; un élément de réglage conducteur (300) prévu de manière à pouvoir tourner autour du premier axe central (101) de la colonne de réception (200) et ayant un contact conducteur (301) connecté de manière mobile à la colonne de réception (200), le contact conducteur (301) ayant un chemin de déplacement passant par tous les contacts positifs (2021) ; et un bouton de réglage (400) qui est solidaire de la pièce de réglage conductrice (300) et dont l'axe central de rotation coïncide avec le premier axe central (101) ; **caractérisé en ce que** l'élément conducteur d'ajustement (300) est prévu sur la face supérieure de la colonne de réception (200) et le contact conducteur (301) est connecté de manière mobile à la face supérieure de la colonne de réception (200), l'adaptateur de voie (1000) comprenant en outre une connexion conductrice positive (500) connectée de manière fixe à la base (100) et maintenue en connexion constante avec le contact conducteur (301) au moyen d'une première structure conductrice tournante (501) ; **et en ce que** la première structure conductrice rotative (501) comprend une première plaque conductrice annulaire (5011) connectée au connecteur conducteur positif (500) ; dans lequel l'élément d'ajustement conducteur (300) comprend en outre une seconde feuille conductrice annulaire (302) reliée de manière fixe au bouton de réglage (400) et pressée contre la première feuille conductrice annulaire (5011) au moyen d'un élément élastique (304) et pourvue de manière coaxiale avec celle-ci, le contact conducteur (301) étant relié à la seconde feuille conductrice annulaire (302) ; un premier pivot (303) disposé au centre de la surface supérieure de la colonne de réception (200) et inséré dans la première plaque conductrice annulaire (5011) et la seconde plaque conductrice annulaire (302).

2. L'adaptateur de voie (1000) selon la revendication 1, **caractérisé en ce que** la périphérie supérieure de la colonne de réception (200) est pourvue de fentes (203) espacées autour du premier axe central (101), les contacts positifs (2021) étant insérés dans les fentes (203) correspondantes.
3. L'adaptateur de voie (1000) selon la revendication 2, **caractérisé en ce que** le bouton de réglage (400) est pourvu d'un trou oblong (401) au fond du bouton de réglage (400), **en ce que** la face supérieure de

- la broche de réception (200) s'étend dans le trou oblong (401) et **en ce que** le contact conducteur (301) est pressé entre la paroi extérieure de la broche de réception (200) et la paroi intérieure du trou oblong (401).
4. L'adaptateur de voie (1000) selon la revendication 2, **caractérisé en ce que** la section de réception positive (2022) et le contact positif (2021) sont connectés au moyen d'un connecteur en U positif (2023), le connecteur en U positif (2023) ayant une ouverture vers le haut de la colonne de réception (200), la colonne de réception (200) étant munie d'une butée avant (204) et d'une butée arrière (205) qui serrent les deux côtés du connecteur en U positif (2023).
 5. L'adaptateur de voie (1000) selon la revendication 1, **caractérisé en ce que** l'élément élastique (304) est prévu entre la deuxième plaque conductrice annulaire (302) et le contact conducteur (301).
 6. L'adaptateur de voie (1000) selon la revendication 1, **caractérisé en ce que** le bouton de réglage (400) est pourvu d'une fente arquée (402) sur le côté supérieur, la fente arquée (402) étant pourvue d'une encoche (4021) sur le côté intérieur, le bord extérieur de la deuxième plaque conductrice annulaire (302) s'étendant vers le bas, pour former une plaque conductrice incurvée (3021) qui s'enclenche dans la fente incurvée (402), la partie allongée étant l'élément élastique (304), une partie de la plaque conductrice incurvée (3021) faisant saillie vers l'intérieur pour s'enclencher dans l'encoche (4021) qui forme le contact conducteur (301).
 7. L'adaptateur de voie (1000) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la section de réception négative (2011) et toutes les sections de réception positives (2022) sont divisées en deux groupes disposés de chaque côté de la colonne de réception (200).
 8. L'adaptateur de voie (1000) selon l'une des revendications 1 à 6, **caractérisé en ce que** l'adaptateur de voie (1000) comprend en outre une liaison conductrice négative (600) solidaire de la base (100) et maintenue en liaison permanente avec la plaque conductrice négative (201) au moyen d'une seconde structure conductrice rotative (601).
 9. L'adaptateur de voie (1000) selon la revendication 8, **caractérisé en ce que** la feuille conductrice négative (201) comprend en outre une feuille de connexion négative en U (2012) connectée à la section de réception négative (2011), la feuille de connexion négative en U (2012) étant fixée à la colonne de réception (200) et étant en contact permanent avec la
- seconde structure conductrice rotative (601).
10. L'adaptateur de voie (1000) selon la revendication 8, **caractérisé en ce que** le connecteur conducteur négatif (600) est pourvu, à une extrémité proche de la plaque conductrice négative (201), d'une première surface conductrice (602) perpendiculaire au premier axe central (101) et coupant celui-ci ; la deuxième structure conductrice rotative (601) comprenant ce qui suit :
 - une seconde surface conductrice (6011) prévue contre la première surface conductrice (602) ;
 - un connecteur conducteur (6012) qui connecte électriquement la seconde surface conductrice (6011) et la couche conductrice négative (201).
 11. L'adaptateur de voie (1000) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la colonne de réception (200) comprend un corps (206) pourvu de pièces individuelles et un boîtier (207) prévu à l'extérieur du corps (206), le boîtier (207) étant pourvu de trous d'évitement (2071) qui font saillie de la partie de réception positive (2022) et de la partie de réception négative (2011).
 12. Une alimentation électrique d'entraînement (2000) comprenant un boîtier d'alimentation (2001) et une carte de circuit imprimé (2002) prévue dans le boîtier d'alimentation, **caractérisée en ce qu'elle** comprend en outre un adaptateur de voie (1000) selon l'une des revendications 1 à 11, la base (100) étant solidaire du boîtier d'alimentation (2001).
 13. L'alimentation électrique d'entraînement (2000) selon la revendication 12, **caractérisée en ce que** la broche de réception (200) et l'élément de réglage conducteur (300) sont prévus dans le boîtier d'alimentation électrique (2001) ; le boîtier d'alimentation électrique (2001) est pourvu d'un trou de montage (2003) sur le côté supérieur pour exposer le bouton de réglage (400), et au moins un côté est pourvu d'un trou de réception (2004) pour permettre à la couche conductrice négative (201) et/ou à la couche conductrice positive (202) de faire saillie.
 14. L'alimentation électrique d'entraînement (2000) selon la revendication 12, **caractérisée en ce que** la section de prélèvement négative (2011) et toutes les sections de prélèvement positives (2022) sont disposées en deux groupes de part et d'autre du poteau de prélèvement (200), et **en ce que** les deux côtés du boîtier d'alimentation électrique (2001) sont pourvus de trous de prélèvement (2004).
 15. L'alimentation électrique d'entraînement (2000) selon l'une quelconque des revendications 12 à 14, **caractérisée en ce que** la carte de circuit imprimé

(2002) est prévue sur un côté de la colonne de réception (200), le plan dans lequel se trouve le corps de la carte de circuit imprimé (2002) étant disposé parallèlement au premier axe central (101).

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16. L'alimentation électrique d'entraînement (2000) selon l'une quelconque des revendications 12 à 14, **caractérisée en ce que** la colonne de réception (200) comprend une poignée rotative (208) qui s'étend depuis le boîtier d'alimentation électrique (2001). 10
17. Un luminaire comprenant une douille de lampe (3000), dans lequel la douille de lampe (3000) est munie d'un ensemble de source lumineuse (4000), d'une alimentation électrique d'entraînement (2000) et d'un adaptateur de rail conducteur (1000) selon l'une quelconque des revendications 1 à 11, et le culot (100) est fixé à la douille de lampe (3000). 15 20
18. Le luminaire comprenant une douille de lampe (3000), **caractérisée en ce que** la douille de lampe (3000) est munie d'un ensemble de sources lumineuses (4000) et d'une alimentation électrique d'entraînement (2000) selon l'une quelconque des revendications 12 à 16. 25
19. Le luminaire selon la revendication 18, **caractérisée en ce que** la douille de lampe (3000) comprend un profilé en forme de U (3001) avec une ouverture orientée vers le haut et des capuchons d'extrémité (3002) prévus aux deux extrémités du profilé en forme de U (3001), l'ensemble de source lumineuse (4000) étant prévu sur le côté extérieur du profilé en forme de U (3001) et le culot (100) étant prévu au fond du côté intérieur du profilé en forme de U (3001); dans lequel les capuchons d'extrémité (3002) sont pourvus d'une encoche (3003) pour éviter le rail. 30 35 40
20. Le luminaire selon la revendication 18, **caractérisé en ce que** la colonne de réception (200) comporte une poignée rotative (208) qui s'étend à l'extérieur du boîtier d'alimentation (2001), et **en ce qu'**une paroi latérale du profilé en U (3001) est pourvue d'un trou en forme de bande (3006) à travers la poignée rotative (204). 45 50 55

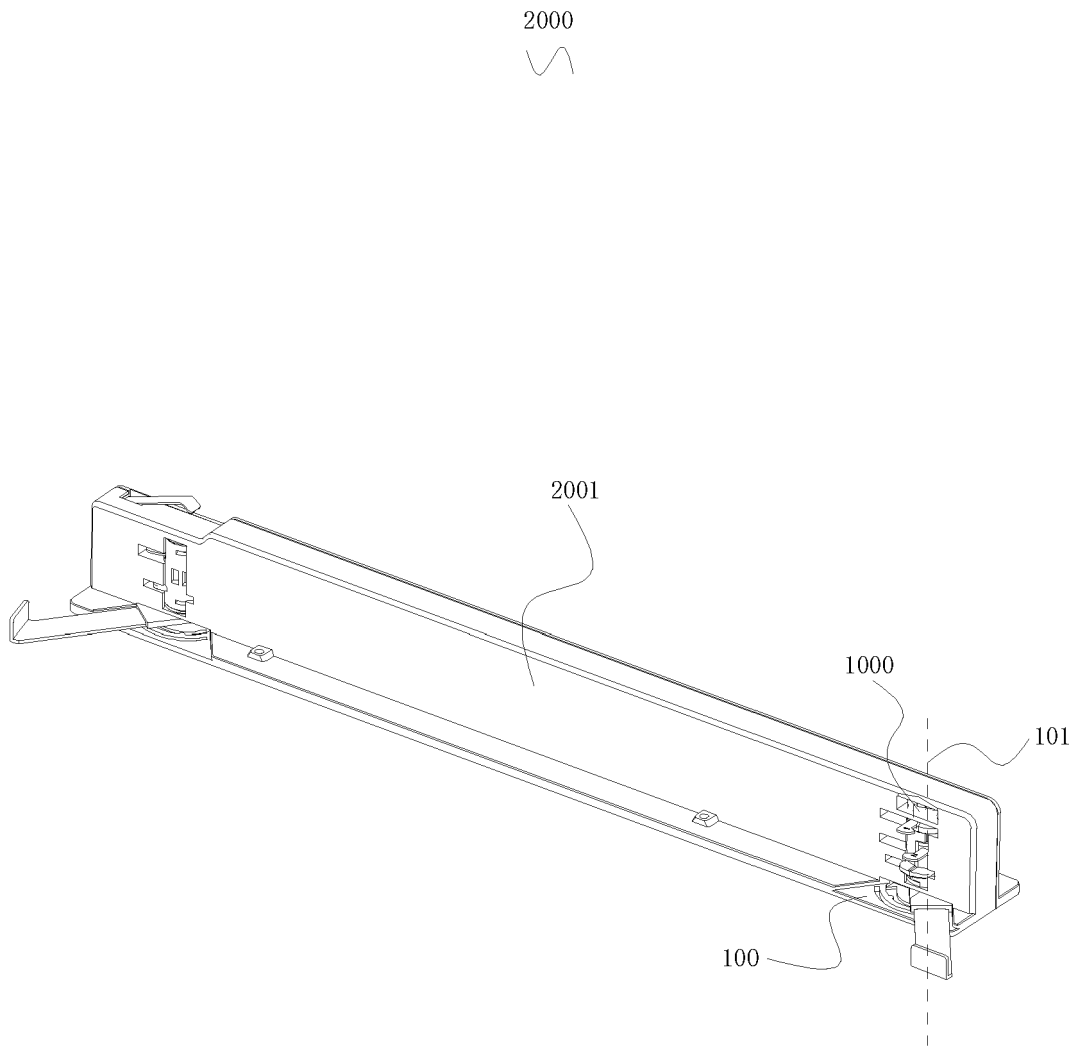


Figure 1

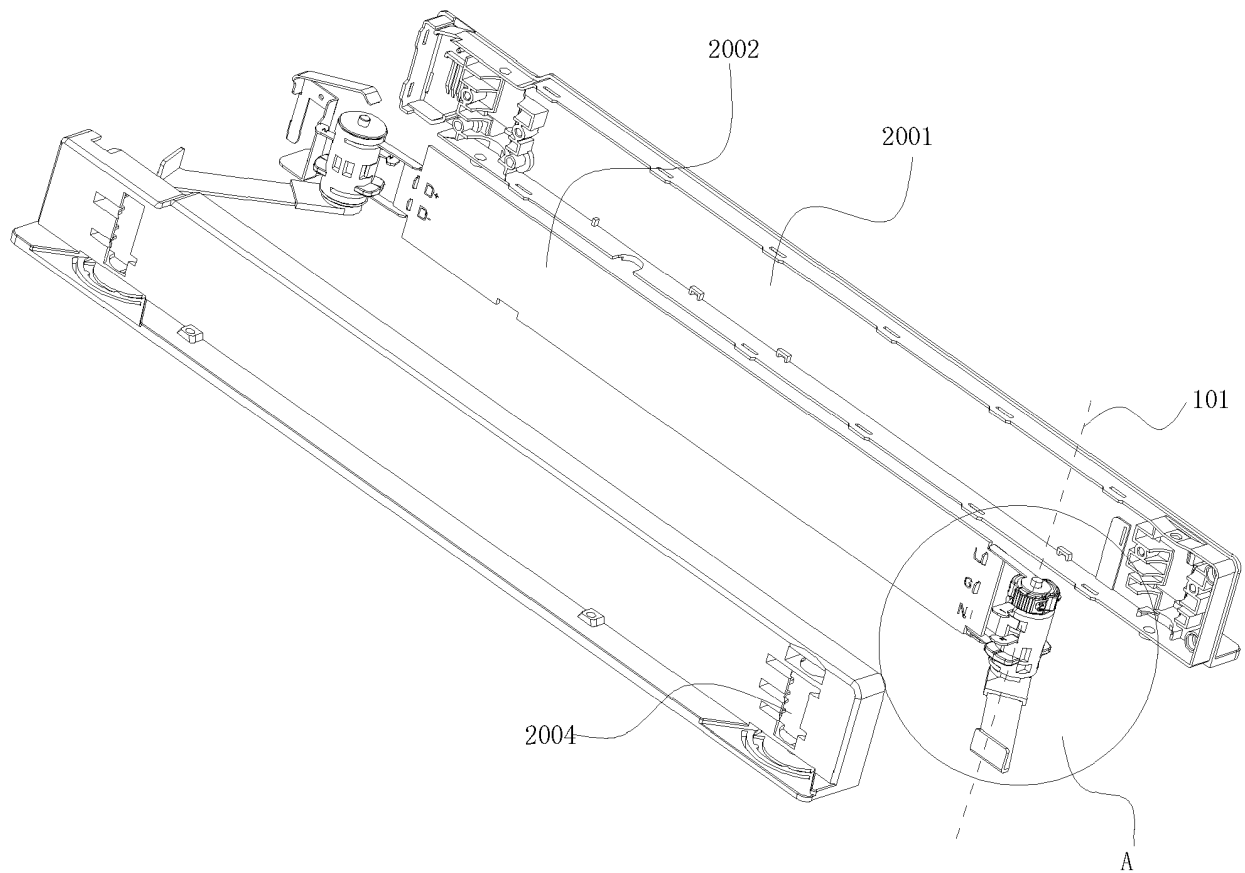


Figure 2

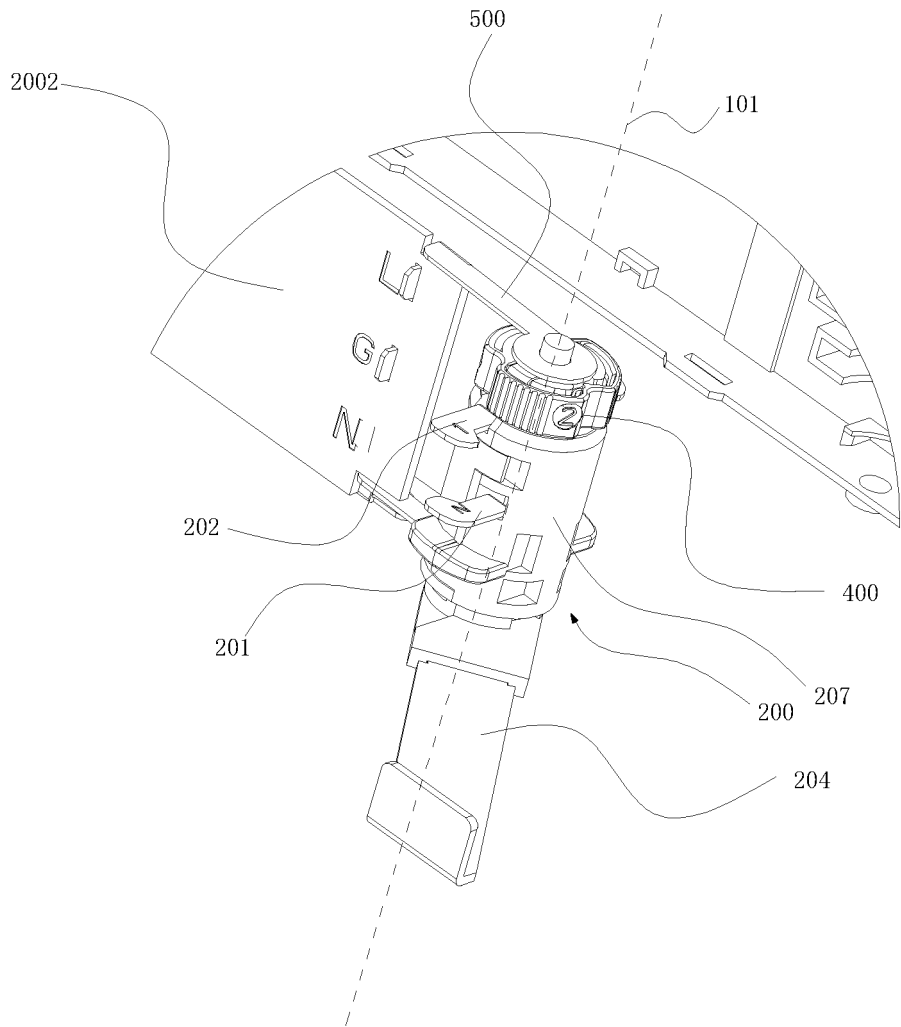


Figure 3

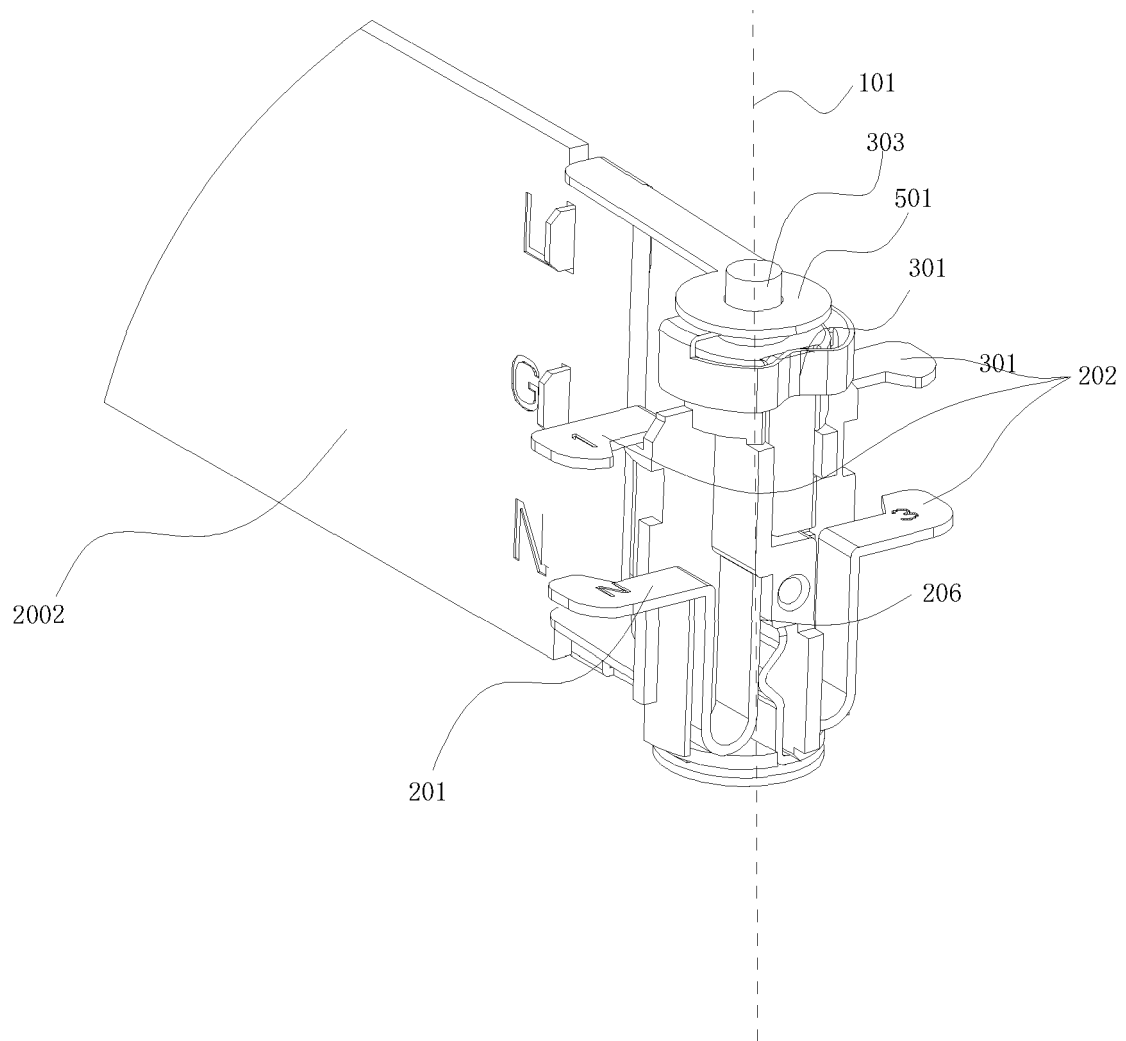


Figure 4

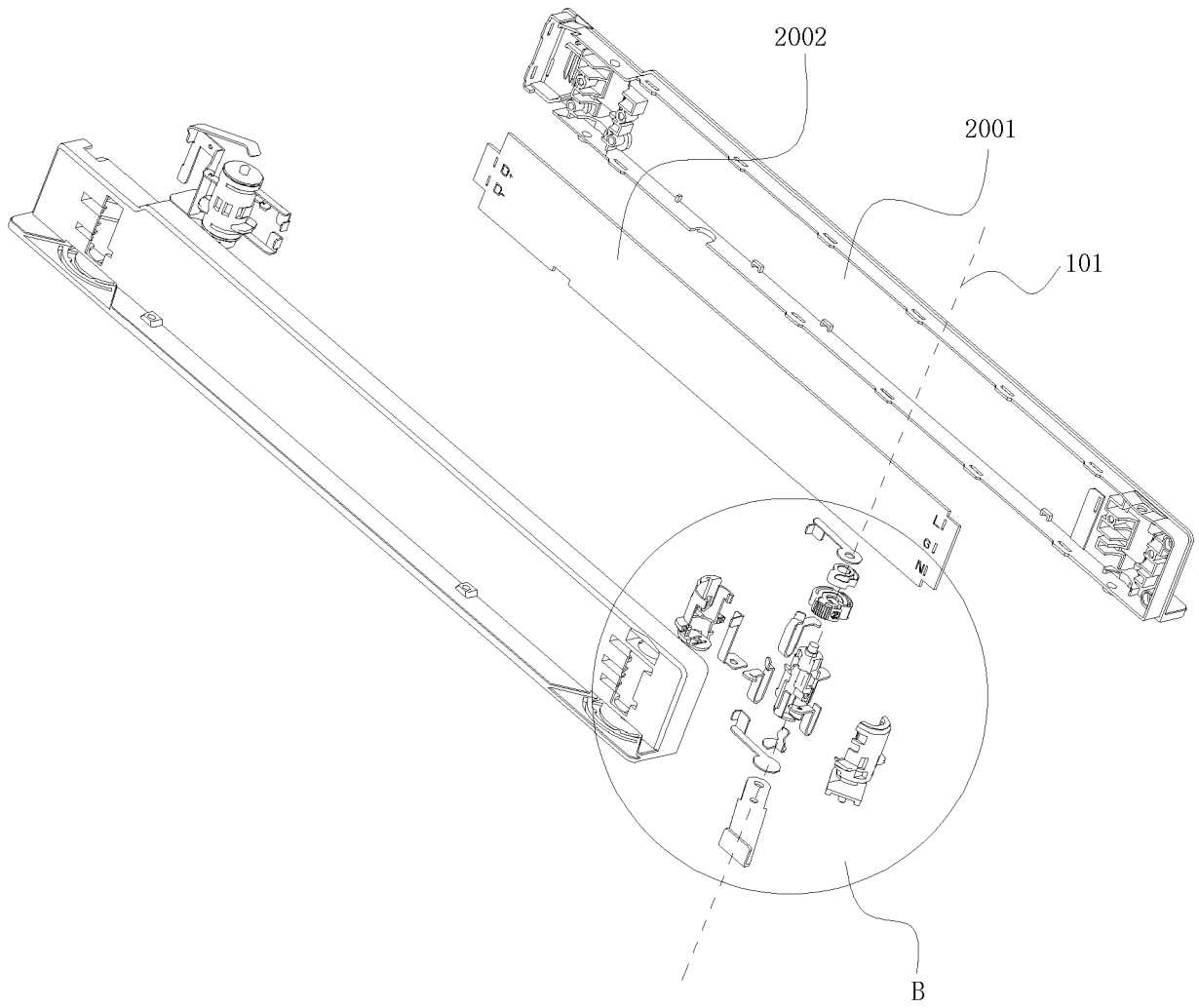


Figure 5

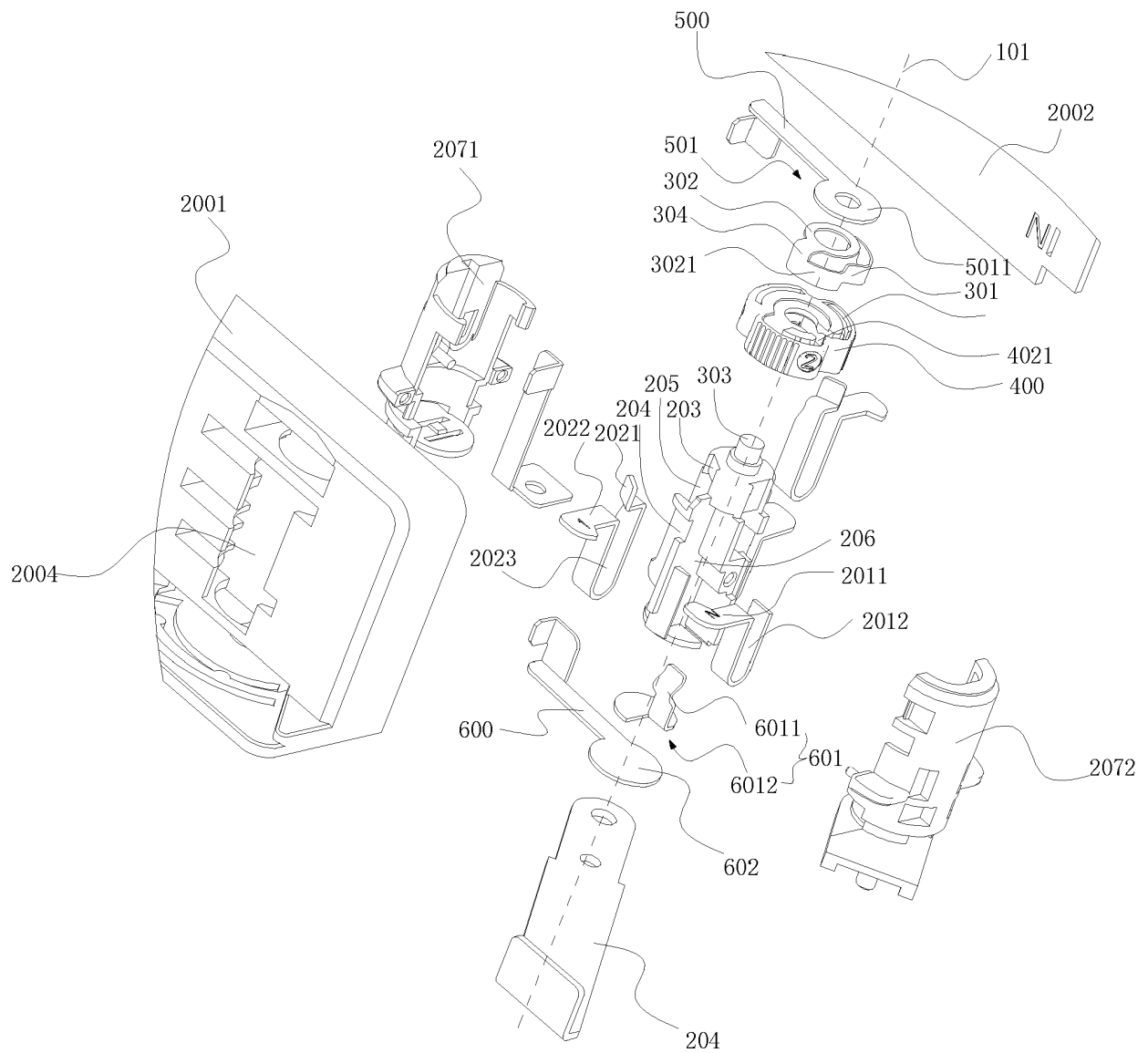


Figure 6

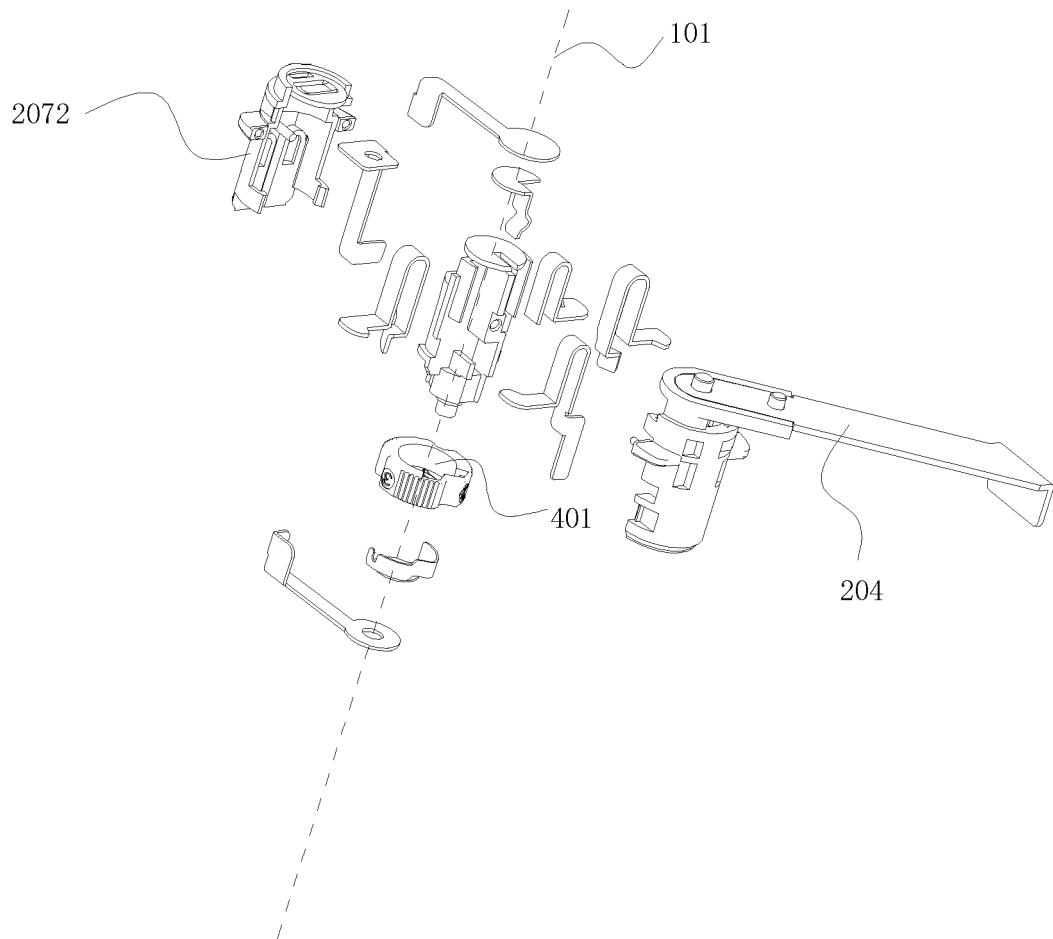


Figure 7

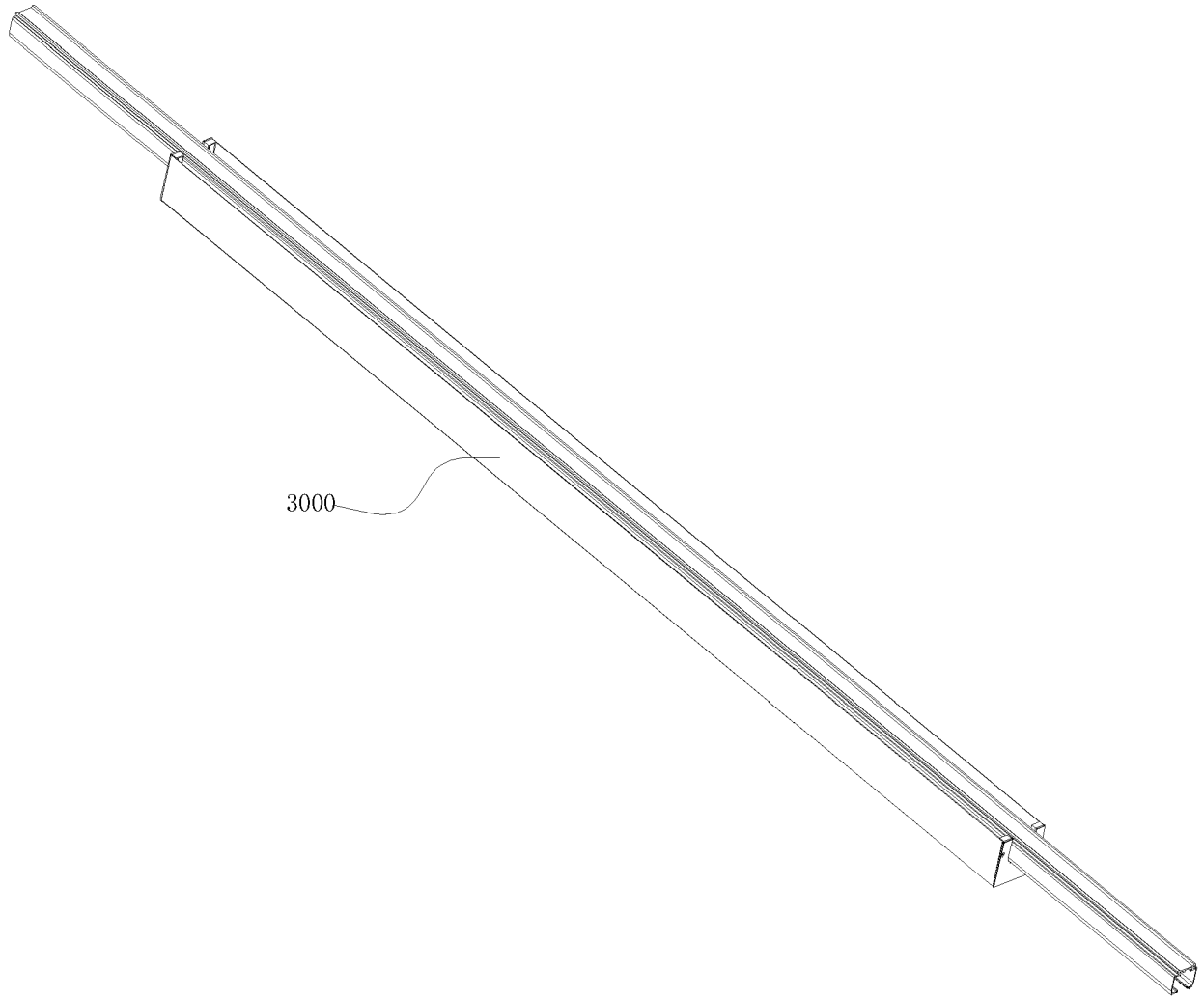


Figure 8

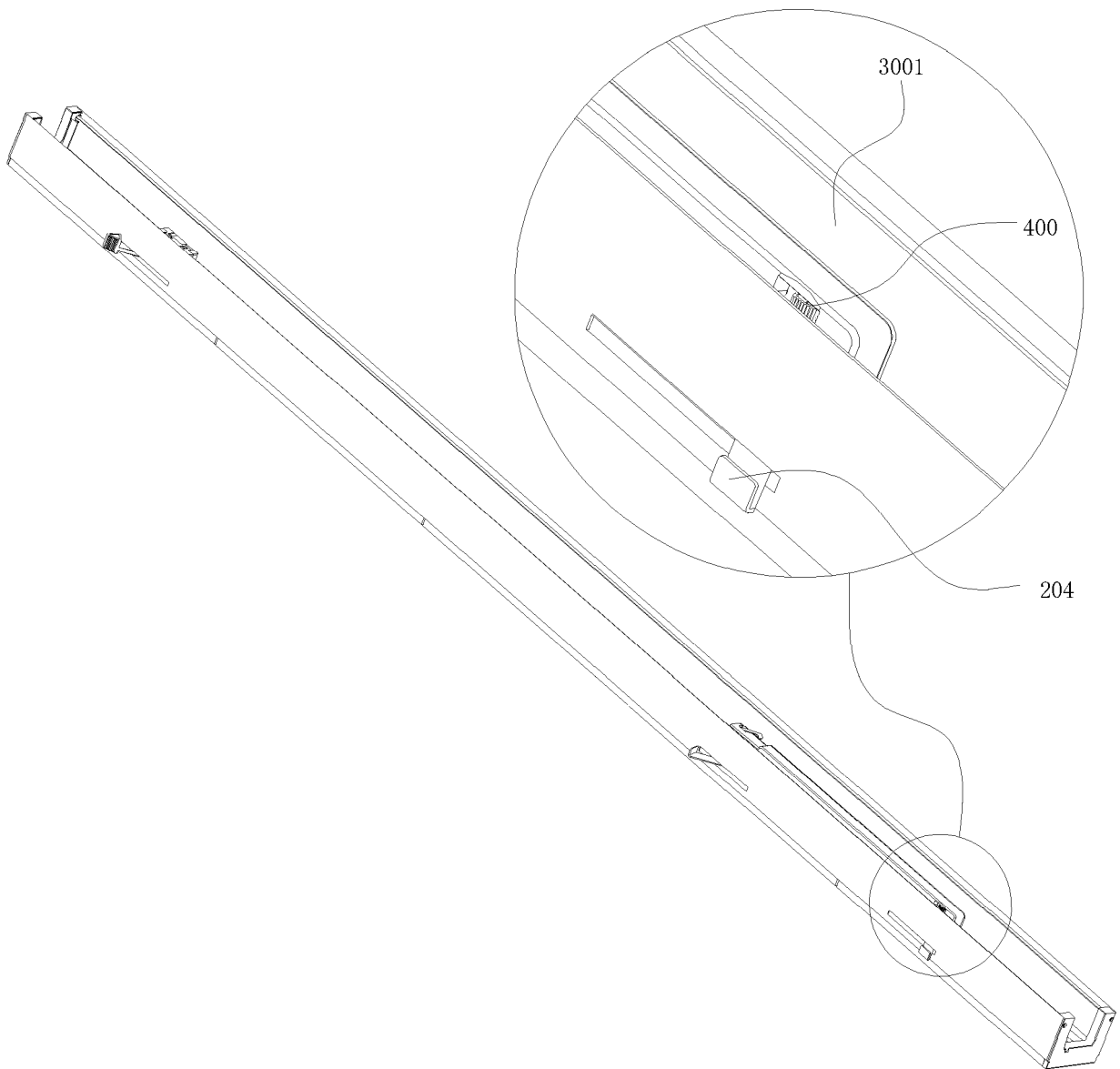


Figure 9

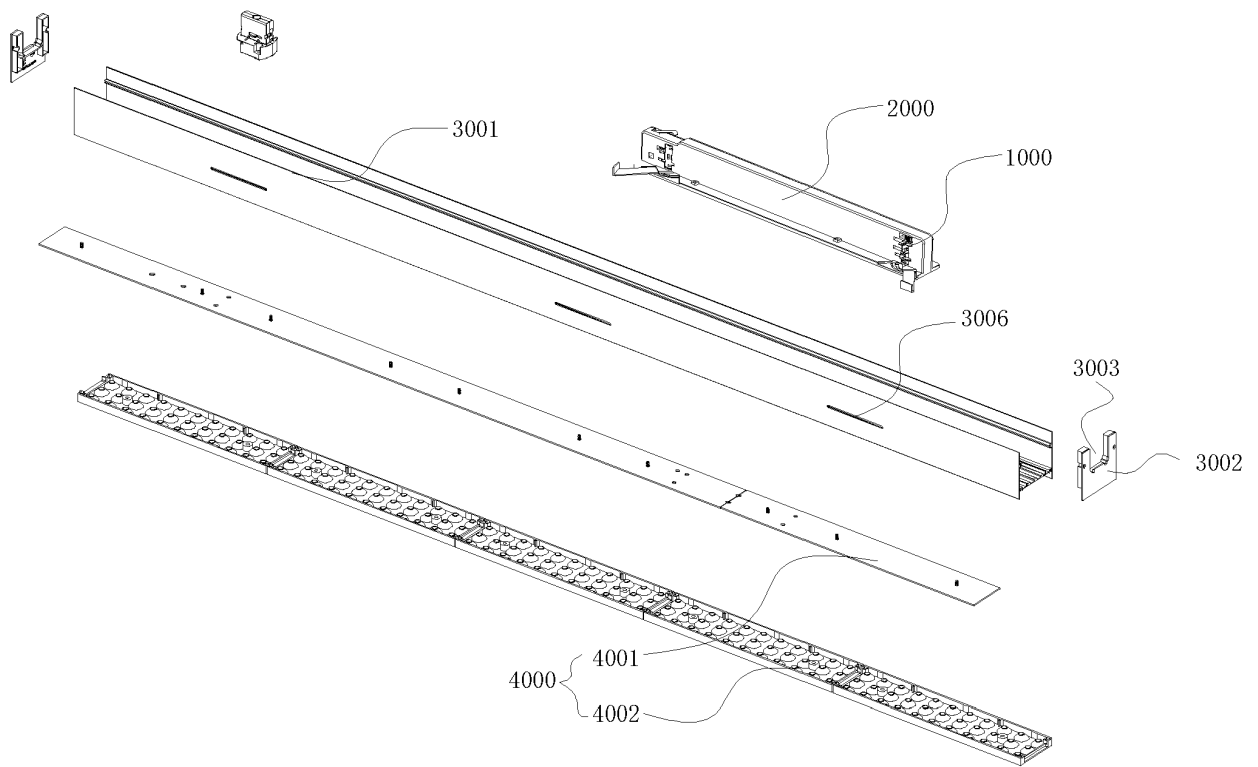


Figure 10

REFERENCES CITED IN THE DESCRIPTION

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