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(54) CONNECTOR AND CONNECTOR ASSEMBLY

(57) The present invention discloses a connector and a connector assembly. The connector comprises: a housing (1) comprising a peripheral wall (11) enclosing an inner cavity (101), a holding body (10) located within the inner cavity (101), and a flange part (12) connected to the bottom of the peripheral wall (11) and the holding body (10); and a terminal (2) which is held in the holding body (10) and has a flat mating end (21). The holding body (10) has an upper part extending from the inner cavity (101), and an insertion slot (13) is formed in the upper part of the holding body (10) to allow the insertion of a mating terminal (6), the mating end (21) of the terminal (2) is located in the insertion slot (13) for mating with the mating terminal (6) inserted into the insertion slot (13); the mating end (21) is perpendicular to the transverse direction (X) of the housing (1) and extends along the longitudinal direction (Y) and height direction (Z) of the housing (1), the top side of the insertion slot (13) and its front and rear sides opposite in the longitudinal direction (Y) are all open to allow the mating terminal (6) to be inserted into the insertion slot (13) at different angles relative to the height direction (Z). In the present invention, the connector can be mated with the mating connector at different angles, expanding the applicability of the connector and reducing costs.

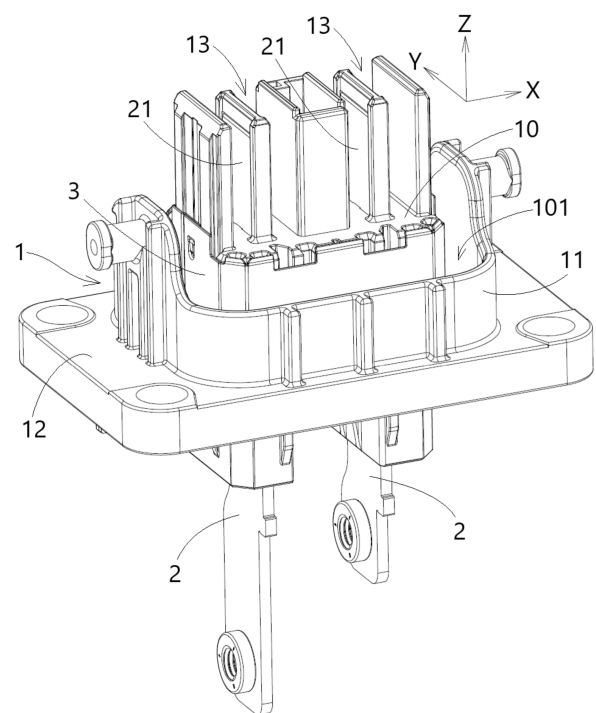


Fig. 1

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Description

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of Chinese Patent Application No. CN202510340463.0 filed on March 21, 2025 in the State Intellectual Property Office of China, the whole disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates to a connector and a connector assembly comprising the connector.

Description of the Related Art

[0003] In the prior art, male and female connectors that can be quickly mated are usually used to achieve electrical connection. Usually, the male connector can only be mated with the female connector at a predetermined angle. However, in practical applications, it is often necessary to change the cable lead direction of the female connector, which requires the male connector to be able to mate with the female connector at different angles. Therefore, in the prior art, when the mating angle between the male connector and the female connector needs to be changed, the male connector must be redesigned, which will lead to higher costs.

SUMMARY OF THE INVENTION

[0004] The present invention has been made to overcome or alleviate at least one aspect of the above mentioned disadvantages.

[0005] According to an aspect of the present invention, there is provided a connector. The connector comprises: a housing comprising a peripheral wall enclosing an inner cavity, a holding body located within the inner cavity, and a flange part connected to the bottom of the peripheral wall and the holding body; and a terminal which is held in the holding body and has a flat mating end. The holding body has an upper part extending from the inner cavity, and an insertion slot is formed in the upper part of the holding body to allow the insertion of a mating terminal, the mating end of the terminal is located in the insertion slot for mating with the mating terminal inserted into the insertion slot; the mating end is perpendicular to the transverse direction of the housing and extends along the longitudinal direction and height direction of the housing, the top side of the insertion slot and its front and rear sides opposite in the longitudinal direction are all open to allow the mating terminal to be inserted into the insertion slot at different angles relative to the height direction.

[0006] According to an exemplary embodiment of the present invention, two insertion slots are formed in the

upper part of the holding body, and the two insertion slots are arranged side by side in the transverse direction; the connector comprises two terminals, and the mating ends of the two terminals are located in the two insertion slots respectively, for mating with two mating terminals inserted into the two insertion slots respectively.

[0007] According to another exemplary embodiment of the present invention, the holding body further comprises a door frame body located in the insertion slot, and the mating end of the terminal is retained in the door frame body.

[0008] According to another exemplary embodiment of the present invention, the door frame body comprises: a pair of vertical beams that are opposite in the longitudinal direction and extend along the height direction; and a horizontal beam connected between the tops of the pair of vertical beams and extending along the longitudinal direction, the mating end of the terminal is held between the pair of vertical beams and the horizontal beam of the door frame body.

[0009] According to another exemplary embodiment of the present invention, a vertical positioning groove extending along the height direction is formed on the inner side of the vertical beam, and the front and rear sides of the mating end of the terminal are respectively positioned in the vertical positioning grooves of the pair of vertical beams.

[0010] According to another exemplary embodiment of the present invention, a horizontal positioning groove extending along the longitudinal direction is formed on the inner side of the horizontal beam, and a positioning rib extending along the longitudinal direction is formed on the top of the mating end of the terminal, which is positioned in the horizontal positioning groove.

[0011] According to another exemplary embodiment of the present invention, the insertion slot has two vertical side walls opposite each other in the transverse direction, and the door frame body is located in the middle position between the two vertical side walls; the mating end of the terminal and the door frame body are adapted to be inserted together between a pair of terminal boards of the mating terminal.

[0012] According to another exemplary embodiment of the present invention, the terminal is a high-voltage power terminal, and the connector further comprises a low-voltage signal terminal arranged in the holding body for detecting whether the terminal has been mated with the mating terminal; a top open socket is formed in the upper part of the holding body, and one end of the low-voltage signal terminal extends into the socket for mating with an inserted mating low-voltage signal terminal.

[0013] According to another exemplary embodiment of the present invention, the flange part is used for fixing to an installation panel, and a sealing ring installation groove is formed on the bottom surface of the flange part; the connector further comprises a sealing ring installed in the sealing ring installation groove, wherein the sealing ring is adapted to be compressed between the

flange part and the installation panel to achieve sealing between the two.

[0014] According to another exemplary embodiment of the present invention, the lower part of the holding body extends downwards along the height direction beyond the flange part, and the lower part of the holding body is used to insert into an installation port on the installation panel; the terminal also has a connection end extending from the lower part of the holding body, which is used for electrical connection to a busbar of a client.

[0015] According to another exemplary embodiment of the present invention, the connector further comprises a shielding shell which is fitted onto the holding body and located within the inner cavity, multiple connecting legs are formed at the bottom of the shielding shell, which are distributed at intervals in the circumferential direction of the shielding shell and located in the area surrounded by the sealing ring, the multiple connecting legs pass through the flange part and are exposed from the bottom surface of the flange part for electrical contact with the installation panel.

[0016] According to another exemplary embodiment of the present invention, the connecting leg comprises: a vertical leg passing through the flange part along the height direction; and a horizontal foot connected to the end of the vertical leg and located on the bottom surface of the flange part. A contact protrusion is formed on the horizontal foot for electrical contact with the installation panel.

[0017] According to another exemplary embodiment of the present invention, the contact protrusion is conical in shape and has a cross shaped slot formed on it, the cross shaped slot divides the contact protrusion into four elastic cantilevers, which are used for electrical contact with the installation panel.

[0018] According to another exemplary embodiment of the present invention, the shielding shell is an integral stamped part.

[0019] According to another exemplary embodiment of the present invention, the housing is an integral injection molded part.

[0020] According to another exemplary embodiment of the present invention, the housing is symmetrical in the left and right in the transverse direction and symmetrical in the front and back in the longitudinal direction.

[0021] According to another aspect of the present invention, there is provided a connector assembly. The connector assembly comprises: the above connector; and a mating connector which is mated with the connector. The mating connector comprises: a mating housing; a mating terminal which is set in the mating housing; and a cable electrically connected to the mating terminal and led out from the mating housing. The mating terminal is inserted into the insertion slot of the connector and mated with the mating end of the terminal.

[0022] According to an exemplary embodiment of the present invention, the mating terminal comprises a pair of terminal boards and an elastic contact installed on the

inner side of at least one terminal board, the mating end of the terminal is inserted between the pair of terminal boards of the mating terminal and electrically contacts the elastic contact.

[0023] In the aforementioned exemplary embodiments according to the present invention, the connector can be mated with the mating connector at different angles, expanding the applicability of the connector and reducing costs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The above and other features of the present invention will become more apparent by describing in detail exemplary embodiments thereof with reference to the accompanying drawings, in which:

Figure 1 shows an illustrative perspective view of a connector according to an exemplary embodiment of the present invention;

Figure 2 shows a transverse sectional view of a connector according to an exemplary embodiment of the present invention;

Figure 3 shows an illustrative exploded view of a connector according to an exemplary embodiment of the present invention;

Figure 4 shows an illustrative exploded view of the housing and terminals of a connector according to an exemplary embodiment of the present invention;

Figure 5 shows an illustrative perspective view of a connector according to an exemplary embodiment of the present invention when viewed from the bottom;

Figure 6 shows an illustrative partial enlarged view of the shielding shell of a connector according to an exemplary embodiment of the present invention;

Figure 7 shows a plan sectional view of a connector according to an exemplary embodiment of the present invention;

Figure 8 shows an illustrative perspective view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the present invention;

Figure 9 shows an illustrative view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the present invention;

Figure 10 shows an illustrative plan view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 90 degrees;

Figure 11 shows an illustrative plan view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 135 degrees;

Figure 12 shows an illustrative plan view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the in-

vention, wherein the mating angle between the connector and the mating connector is 180 degrees; Figure 13 shows an illustrative plan view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 225 degrees; and Figure 14 shows an illustrative plan view of a connector and a mating terminal of a mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 270 degrees.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0025] Exemplary embodiments of the present disclosure will be described hereinafter in detail with reference to the attached drawings, wherein the like reference numerals refer to the like elements. The present disclosure may, however, be embodied in many different forms and should not be construed as being limited to the embodiment set forth herein; rather, these embodiments are provided so that the present disclosure will be thorough and complete, and will fully convey the concept of the disclosure to those skilled in the art.

[0026] In the following detailed description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the disclosed embodiments. It will be apparent, however, that one or more embodiments may be practiced without these specific details. In other instances, well-known structures and devices are schematically shown in order to simplify the drawing.

[0027] According to a general concept of the present invention, there is provided a connector. The connector comprises: a housing comprising a peripheral wall enclosing an inner cavity, a holding body located within the inner cavity, and a flange part connected to the bottom of the peripheral wall and the holding body; and a terminal which is held in the holding body and has a flat mating end. The holding body has an upper part extending from the inner cavity, and an insertion slot is formed in the upper part of the holding body to allow the insertion of a mating terminal, the mating end of the terminal is located in the insertion slot for mating with the mating terminal inserted into the insertion slot; the mating end is perpendicular to the transverse direction of the housing and extends along the longitudinal direction and height direction of the housing, the top side of the insertion slot and its front and rear sides opposite in the longitudinal direction are all open to allow the mating terminal to be inserted into the insertion slot at different angles relative to the height direction.

[0028] According to another general concept of the present invention, there is provided a connector assembly. The connector assembly comprises: the above connector; and a mating connector which is mated with the

connector. The mating connector comprises: a mating housing; a mating terminal which is set in the mating housing; and a cable electrically connected to the mating terminal and led out from the mating housing. The mating terminal is inserted into the insertion slot of the connector and mated with the mating end of the terminal.

[0029] Figure 1 shows an illustrative perspective view of a connector according to an exemplary embodiment of the present invention; Figure 2 shows a transverse sectional view of a connector according to an exemplary embodiment of the present invention; Figure 3 shows an illustrative exploded view of a connector according to an exemplary embodiment of the present invention; Figure 4 shows an illustrative exploded view of the housing and terminals of a connector according to an exemplary embodiment of the present invention; Figure 5 shows an illustrative perspective view of a connector according to an exemplary embodiment of the present invention when viewed from the bottom; Figure 6 shows an illustrative partial enlarged view of the shielding shell 3 of a connector according to an exemplary embodiment of the present invention; Figure 7 shows a plan sectional view of a connector according to an exemplary embodiment of the present invention; Figure 8 shows an illustrative perspective view of the mating terminal 6 of a connector and a mating connector according to an exemplary embodiment of the present invention; Figure 9 shows an illustrative view of the mating terminal 6 of a connector and a mating connector according to an exemplary embodiment of the present invention.

[0030] As shown in Figures 1 to 9, in an exemplary embodiment of the present invention, a connector is disclosed. The connector includes: a housing 1 and a terminal 2. The housing 1 includes a peripheral wall 11 surrounding an inner cavity 101, a holding body 10 located in the inner cavity 101, and a flange part 12 connected to the bottom of the peripheral wall 11 and the holding body 10. The terminal 2 is held in the holding body 10 and has a flat mating end 21. The holding body 10 has an upper part extending from the inner cavity 101, and an insertion slot 13 is formed in the upper part of the holding body 10 to allow a mating terminal 6 to be inserted. The mating end 21 of the terminal 2 is located in the insertion slot 13 for mating with the mating terminal 6 inserted into the insertion slot 13.

[0031] As shown in Figures 1 to 9, in the illustrated embodiment, the mating end 21 is perpendicular to the transverse direction X of the housing 1 and extends along the longitudinal direction Y and height direction Z of the housing 1. The top side of the insertion slot 13 and its front and rear sides opposite in the longitudinal Y are all open to allow the mating terminal 6 to be inserted into the insertion slot 13 at different angles relative to the height direction Z. Therefore, the mating angle between the connector and the mating connector of the invention can vary from 0 to 270 degrees. Therefore, the outgoing direction of the cable 7 of the mating connector can vary as required.

[0032] Figure 10 shows an illustrative plan view of the mating terminal 6 of the connector and mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 90 degrees, and the outgoing direction of the cable 7 of the mating connector is 90 degrees.

[0033] Figure 11 shows an illustrative plan view of the mating terminal 6 of the connector and mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 135 degrees, and the outgoing direction of the cable 7 of the mating connector is 135 degrees.

[0034] Figure 12 shows an illustrative plan view of the mating terminal 6 of the connector and mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 180 degrees, and the outgoing direction of the cable 7 of the mating connector is 180 degrees.

[0035] Figure 13 shows an illustrative plan view of the mating terminal 6 of the connector and mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 225 degrees, and the outgoing direction of the cable 7 of the mating connector is 225 degrees.

[0036] Figure 14 shows an illustrative plan view of the mating terminal 6 of the connector and mating connector according to an exemplary embodiment of the invention, wherein the mating angle between the connector and the mating connector is 270 degrees, and the outgoing direction of the cable 7 of the mating connector is 270 degrees.

[0037] As shown in Figures 1 to 14, in the illustrated embodiment, two insertion slots 13 are formed in the upper part of the holding body 10, and the two insertion slots 13 are arranged side by side in the transverse direction X. The connector includes two terminals 2, and the mating ends 21 of the two terminals 2 are located in two insertion slots 13, respectively, for mating with two mating terminals 6 inserted into the two insertion slots 13.

[0038] As shown in Figures 1 to 14, in the illustrated embodiment, the holding body 10 further comprises a door frame body 14 located in the insertion slot 13, and the mating end 21 of the terminal 2 is retained in the door frame body 14.

[0039] As shown in Figures 1 to 14, in the illustrated embodiment, the door frame body 14 includes a pair of vertical beams 141 and a horizontal beam 142. The pair of vertical beams 141 are opposite in the longitudinal direction Y and extend along the height direction Z. The horizontal beam 142 is connected between the tops of the pair of vertical beams 141 and extends along the longitudinal direction Y. The mating end 21 of terminal 2 is held between the pair of vertical beams 141 and horizontal beam 142 of the door frame body 14.

[0040] As shown in Figure 1 to Figure 14, in the illustrated embodiment, a vertical positioning groove 14a extending along the height direction Z is formed on the inner side of the vertical beam 141, and the front and rear sides 21a of the mating end 21 of terminal 2 are respectively

positioned in the vertical positioning grooves 14a of the pair of vertical beams 141.

[0041] As shown in Figures 1 to 14, in the illustrated embodiment, a horizontal positioning groove 14b extending along the longitudinal direction Y is formed on the inner side of the horizontal beam 142, and a positioning rib 21b extending along the longitudinal direction Y is formed at the top of the mating end 21 of terminal 2, which is positioned in the horizontal positioning groove 14b.

[0042] As shown in Figures 1 to 14, in the illustrated embodiment, the insertion slot 13 has two vertical side walls 16 that are opposite in the transverse direction X, and the door frame body 14 is located in the middle position between the two vertical side walls 16. The mating end 21 of terminal 2 and the door frame body 14 are suitable for being inserted together between a pair of terminal boards 61 of mating terminal 6.

[0043] As shown in Figures 1 to 14, in the illustrated embodiment, the terminal 2 is a high-voltage power terminal, and the connector further includes a low-voltage signal terminal 4 provided in the holding body 10 for detecting whether the terminal 2 has been mated with the mating terminal 6. There is also a top open socket 15 formed in the upper part of the holding body 10, and one end of the low-voltage signal terminal 4 extends into the socket 15 for mating with an inserted mating low-voltage signal terminal (not shown).

[0044] As shown in Figures 1 to 14, in the illustrated embodiment, the flange part 12 of the housing 1 is used to be fixed to an installation panel (not shown), and a sealing ring mounting groove 125 is formed on the bottom surface of the flange part 12. The connector also includes a sealing ring 5 installed in the sealing ring installation groove 125, which is suitable for being compressed between the flange part 12 and the installation panel to achieve sealing between the two.

[0045] As shown in Figures 1 to 14, in the illustrated embodiment, the lower part of the holding body 10 extends downward along the height direction Z beyond the flange part 12, and the lower part of the holding body 10 is used to insert into an installation port on the installation panel. The terminal 2 also has a connection end 22 extending from the lower part of the holding body 10, which is used for electrical connection to a bus bar (not shown) of a client.

[0046] As shown in Figures 1 to 14, in the illustrated embodiment, the connector further comprises a shielding shell 3. The shielding shell 3 is mounted on the holding body 10 and located in the inner cavity 101. Multiple connecting legs 30 are formed at the bottom of the shielding shell 3, which are distributed at intervals in the circumferential direction of the shielding shell 3 and located in the area surrounded by the sealing ring 5. Multiple connecting legs 30 pass through the flange part 12 and protrude from the bottom surface of the flange part 12 for electrical contact with the installation panel.

[0047] As shown in Figures 1 to 14, in the illustrated embodiment, the connecting leg 30 includes a vertical leg

31 and a horizontal foot 32. The vertical leg 31 passes through the flange part 12 along the height direction Z. The horizontal foot 32 is connected to the end of the vertical leg 31 and located on the bottom surface of the flange part 12. A contact protrusion 33 is formed on the horizontal foot 32 for electrical contact with the installation panel.

[0048] As shown in Figures 1 to 14, in the illustrated embodiment, the contact protrusion 33 is conical in shape and a cross shaped slot 33a is formed on the contact protrusion 33. The cross shaped slot 33a divides the contact protrusion 33 into four elastic cantilevers 33b, which are used for electrical contact with the installation panel.

[0049] As shown in Figures 1 to 14, in the illustrated embodiment, the shielding shell 3 can be an integral stamped part.

[0050] As shown in Figures 1 to 14, in the illustrated embodiment, the housing 1 can be an integral injection molded part.

[0051] As shown in Figures 1 to 14, in the illustrated embodiment, the housing 1 is symmetrical in the left and right in the transverse direction X and symmetrical in the front and back in the longitudinal direction Y.

[0052] As shown in Figures 1 to 14, in another exemplary embodiment of the present invention, a connector assembly is also disclosed. The connector assembly includes the aforementioned connector and a mating connector. The mating connector is mated with the connector. The mating connector includes a mating housing (not shown), a mating terminal 6, and a cable 7. The mating terminal 6 is set in the mating housing. The cable 7 is electrically connected to the mating terminal 6 and led out from the mating housing. The mating terminal 6 is inserted into the insertion slot 13 of the connector and mated with the mating end 21 of the terminal 2.

[0053] As shown in Figures 1 to 14, in the illustrated embodiment, the mating terminal 6 includes a pair of terminal boards 61 and an elastic contact (not shown) installed on the inner side of at least one terminal board 61. The mating end 21 of terminal 2 is inserted between the pair of terminal boards 61 of the mating terminal 6 and is in electrical contact with the elastic contact.

[0054] It should be appreciated for those skilled in this art that the above embodiments are intended to be illustrated, and not restrictive. For example, many modifications may be made to the above embodiments by those skilled in this art, and various features described in different embodiments may be freely combined with each other without conflicting in configuration or principle.

[0055] Although several exemplary embodiments have been shown and described, it would be appreciated by those skilled in the art that various changes or modifications may be made in these embodiments without departing from the principles and spirit of the disclosure, the scope of which is defined in the claims and their equivalents.

[0056] As used herein, an element recited in the sin-

gular and proceeded with the word "a" or "an" should be understood as not excluding plural of said elements or steps, unless such exclusion is explicitly stated. Furthermore, references to "one embodiment" of the present invention are not intended to be interpreted as excluding the existence of additional embodiments that also incorporate the recited features. Moreover, unless explicitly stated to the contrary, embodiments "comprising" or "having" an element or a plurality of elements having a particular property may include additional such elements not having that property.

Claims

1. A connector, comprising:

a housing (1) comprising a peripheral wall (11) enclosing an inner cavity (101), a holding body (10) located within the inner cavity (101), and a flange part (12) connected to the bottom of the peripheral wall (11) and the holding body (10); and
a terminal (2) which is held in the holding body (10) and has a flat mating end (21),
wherein the holding body (10) has an upper part extending from the inner cavity (101), and an insertion slot (13) is formed in the upper part of the holding body (10) to allow the insertion of a mating terminal (6), the mating end (21) of the terminal (2) is located in the insertion slot (13) for mating with the mating terminal (6) inserted into the insertion slot (13);
wherein the mating end (21) is perpendicular to the transverse direction (X) of the housing (1) and extends along the longitudinal direction (Y) and height direction (Z) of the housing (1), the top side of the insertion slot (13) and its front and rear sides opposite in the longitudinal direction (Y) are all open to allow the mating terminal (6) to be inserted into the insertion slot (13) at different angles relative to the height direction (Z).

2. The connector according to claim 1,

wherein two insertion slots (13) are formed in the upper part of the holding body (10), and the two insertion slots (13) are arranged side by side in the transverse direction (X);
wherein the connector comprises two terminals (2), and the mating ends (21) of the two terminals (2) are located in the two insertion slots (13) respectively, for mating with two mating terminals (6) inserted into the two insertion slots (13) respectively,
wherein optionally: the terminal (2) is a high-voltage power terminal, and the connector further comprises a low-voltage signal terminal

- (4) arranged in the holding body (10) for detecting whether the terminal (2) has been mated with the mating terminal (6);
 wherein optionally: a top open socket (15) is formed in the upper part of the holding body (10), and one end of the low-voltage signal terminal (4) extends into the socket (15) for mating with an inserted mating low-voltage signal terminal.
3. The connector according to claim 1,
 wherein the holding body (10) further comprises a door frame body (14) located in the insertion slot (13), and the mating end (21) of the terminal (2) is retained in the door frame body (14).
4. The connector according to claim 3,
 wherein the door frame body (14) comprises:
 a pair of vertical beams (141) that are opposite in the longitudinal direction (Y) and extend along the height direction (Z); and
 a horizontal beam (142) connected between the tops of the pair of vertical beams (141) and extending along the longitudinal direction (Y),
 wherein the mating end (21) of the terminal (2) is held between the pair of vertical beams (141) and the horizontal beam (142) of the door frame body (14).
5. The connector according to claim 4,
 wherein a vertical positioning groove (14a) extending along the height direction (Z) is formed on the inner side of the vertical beam (141), and the front and rear sides (21a) of the mating end (21) of the terminal (2) are respectively positioned in the vertical positioning grooves (14a) of the pair of vertical beams (141),
 and/or,
 wherein a horizontal positioning groove (14b) extending along the longitudinal direction (Y) is formed on the inner side of the horizontal beam (142), and a positioning rib (21b) extending along the longitudinal direction (Y) is formed on the top of the mating end (21) of the terminal (2), which is positioned in the horizontal positioning groove (14b).
6. The connector according to claim 3,
 wherein the insertion slot (13) has two vertical side walls (16) opposite each other in the transverse direction (X), and the door frame body (14) is located in the middle position between the two vertical side walls (16);
 wherein the mating end (21) of the terminal (2) and the door frame body (14) are adapted to be inserted together between a pair of terminal boards (61) of the mating terminal (6).
7. The connector according to claim 1,
 wherein the flange part (12) is used for fixing to an installation panel, and a sealing ring installation groove (125) is formed on the bottom surface of the flange part (12);
 wherein the connector further comprises a sealing ring (5) installed in the sealing ring installation groove (125), wherein the sealing ring (5) is adapted to be compressed between the flange part (12) and the installation panel to achieve sealing between the two.
8. The connector according to claim 7,
 wherein the lower part of the holding body (10) extends downwards along the height direction (Z) beyond the flange part (12), and the lower part of the holding body (10) is used to insert into an installation port on the installation panel;
 wherein the terminal (2) also has a connection end (22) extending from the lower part of the holding body (10), which is used for electrical connection to a busbar of a client.
9. The connector according to claim 7, further comprising:
 a shielding shell (3) which is fitted onto the holding body (10) and located within the inner cavity (101),
 wherein multiple connecting legs (30) are formed at the bottom of the shielding shell (3), which are distributed at intervals in the circumferential direction of the shielding shell (3) and located in the area surrounded by the sealing ring (5),
 wherein the multiple connecting legs (30) pass through the flange part (12) and are exposed from the bottom surface of the flange part (12) for electrical contact with the installation panel.
10. The connector according to claim 9,
 wherein the connecting leg (30) comprises:
 a vertical leg (31) passing through the flange part (12) along the height direction (Z); and
 a horizontal foot (32) connected to the end of the vertical leg (31) and located on the bottom surface of the flange part (12),

wherein a contact protrusion (33) is formed on the horizontal foot (32) for electrical contact with the installation panel,

wherein optionally the contact protrusion (33) is conical in shape and has a cross shaped slot (33a) formed on it, the cross shaped slot (33a) divides the contact protrusion (33) into four elastic cantilevers (33b), which are used for electrical contact with the installation panel.

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11. The connector according to claim 9, wherein the shielding shell (3) is an integral stamped part.

12. The connector according to claim 1, wherein the housing (1) is an integral injection molded part.

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13. The connector according to any one of claims 1-12, wherein the housing (1) is symmetrical in the left and right in the transverse direction (X) and symmetrical in the front and back in the longitudinal direction (Y).

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14. A connector assembly, comprising:

the connector according to any one of claims 1-13; and
a mating connector which is mated with the connector,
wherein the mating connector comprises:

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a mating housing;
a mating terminal (6) which is set in the mating housing; and
a cable (7) electrically connected to the mating terminal (6) and led out from the mating housing,

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wherein the mating terminal (6) is inserted into the insertion slot (13) of the connector and mated with the mating end (21) of the terminal (2).

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15. The connector assembly according to claim 14, wherein the mating terminal (6) comprises a pair of terminal boards (61) and an elastic contact installed on the inner side of at least one terminal board (61), the mating end (21) of the terminal (2) is inserted between the pair of terminal boards (61) of the mating terminal (6) and electrically contacts the elastic contact.

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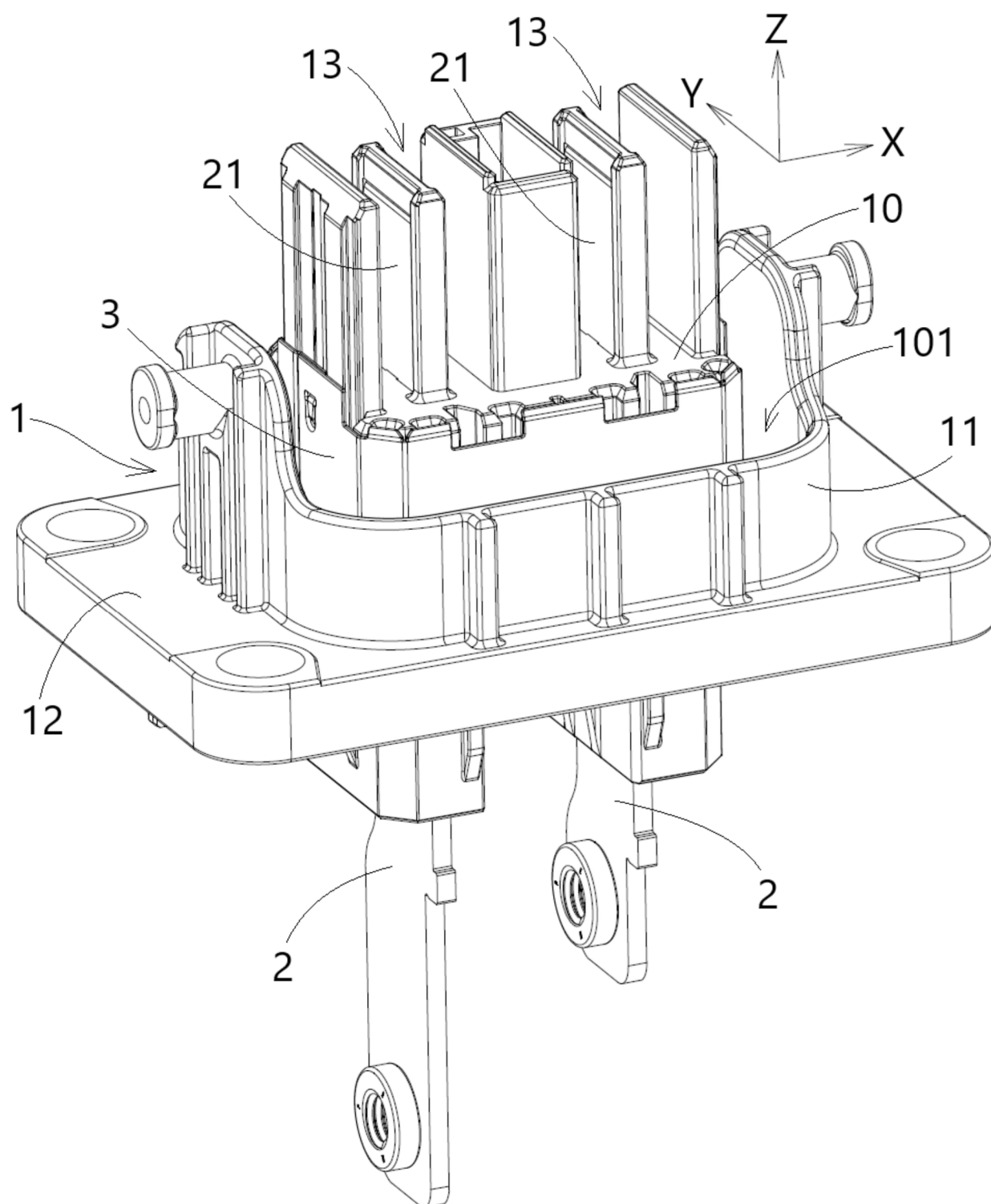


Fig.1

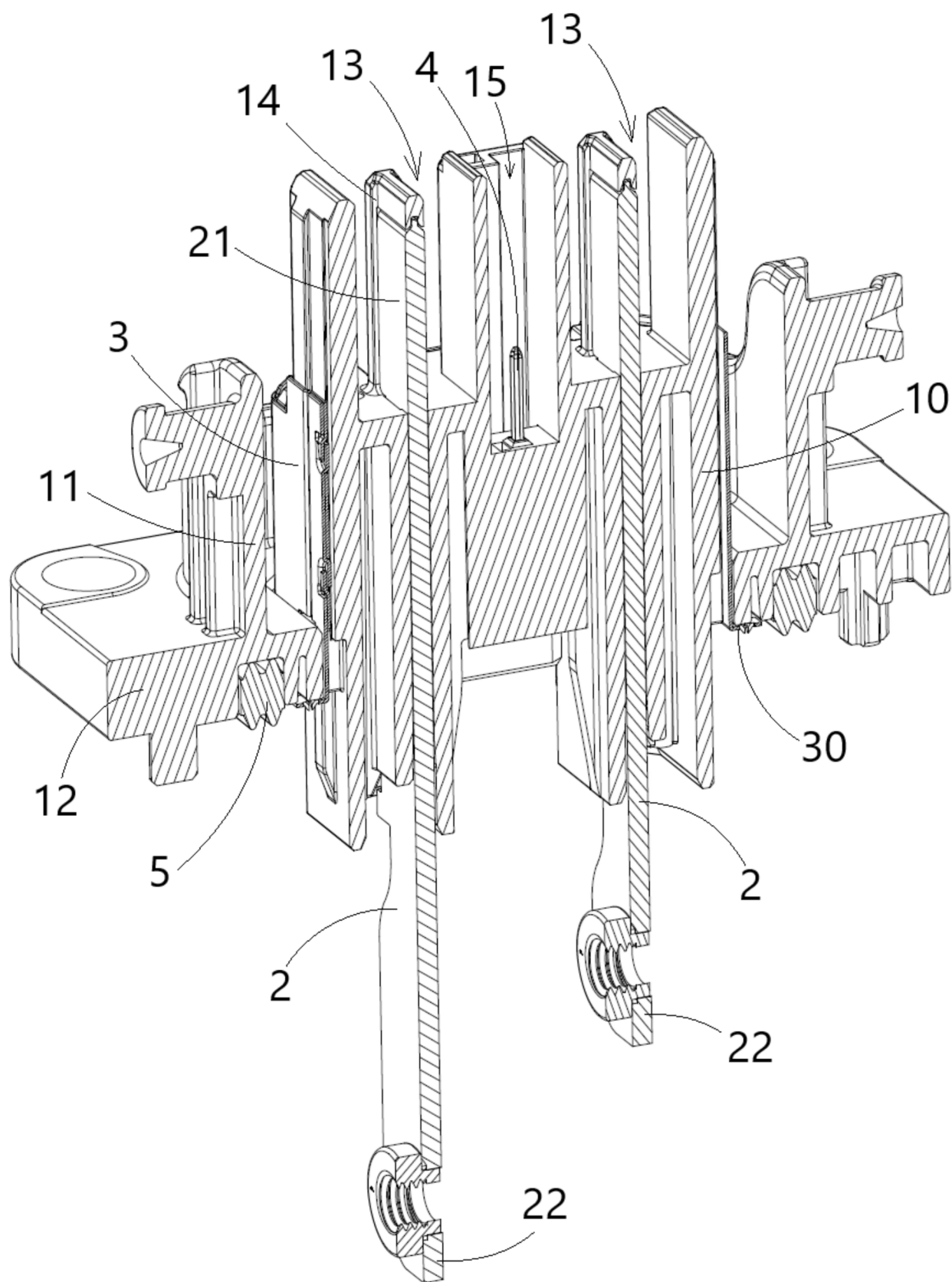


Fig.2

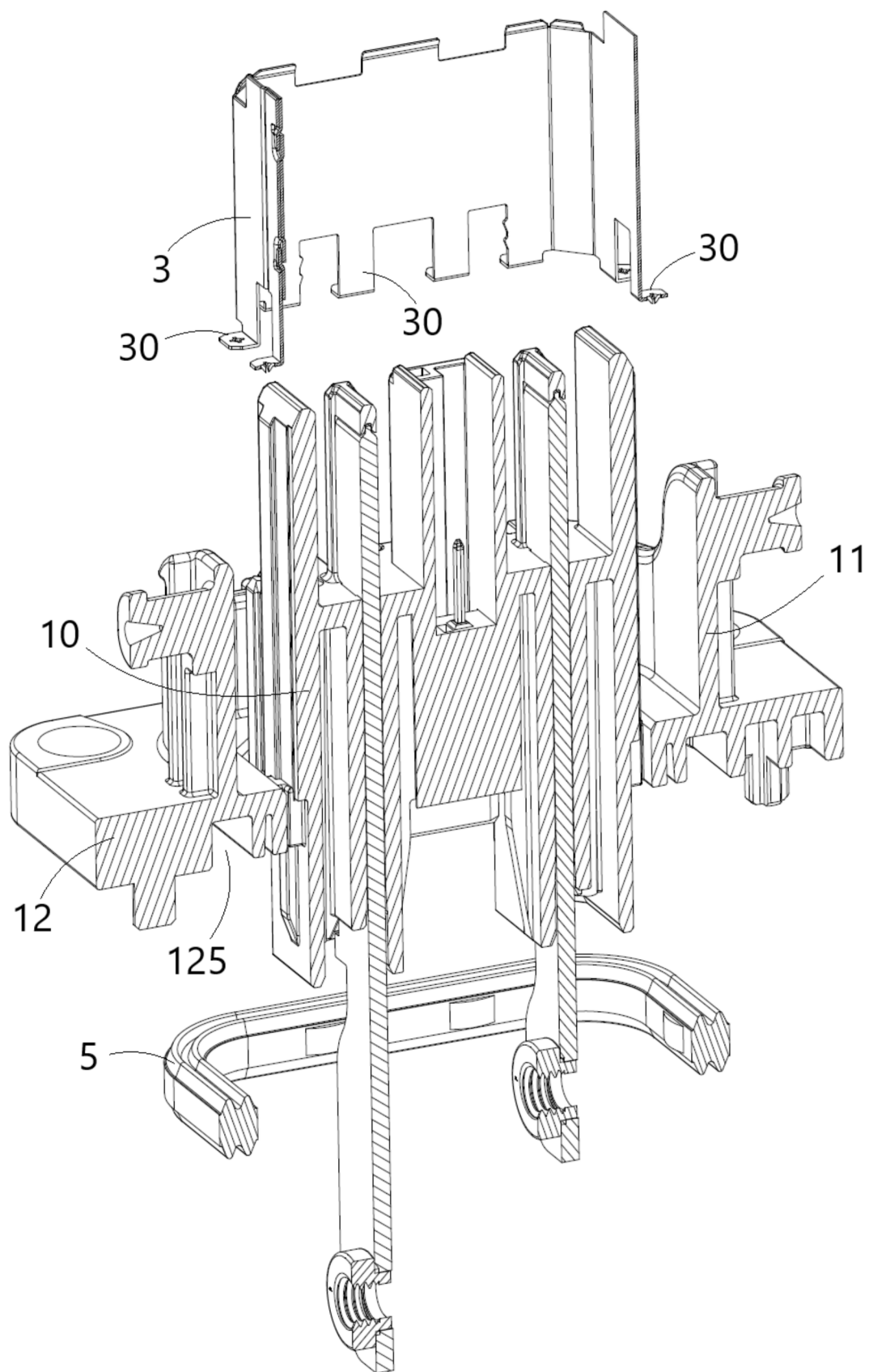


Fig.3

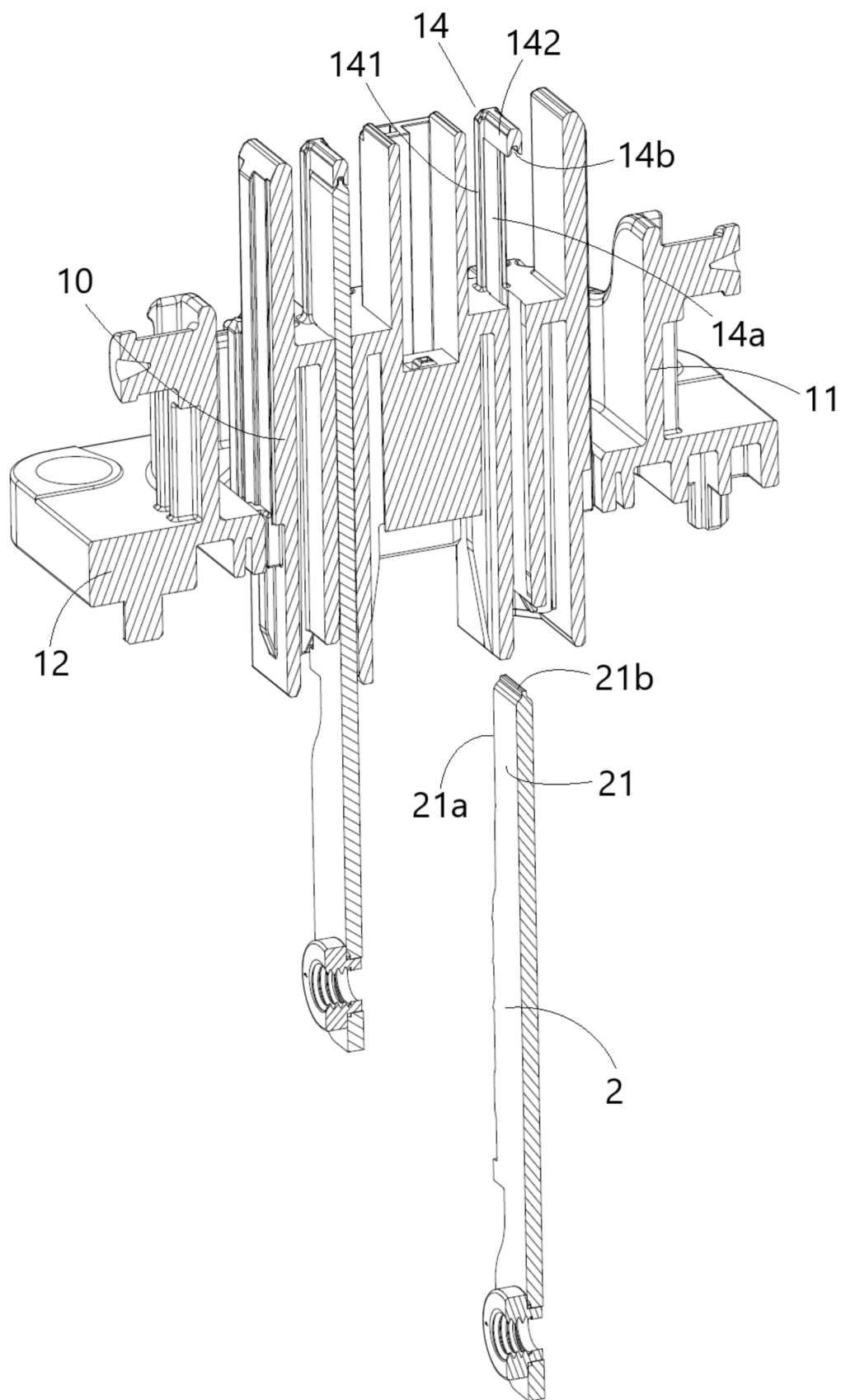


Fig.4

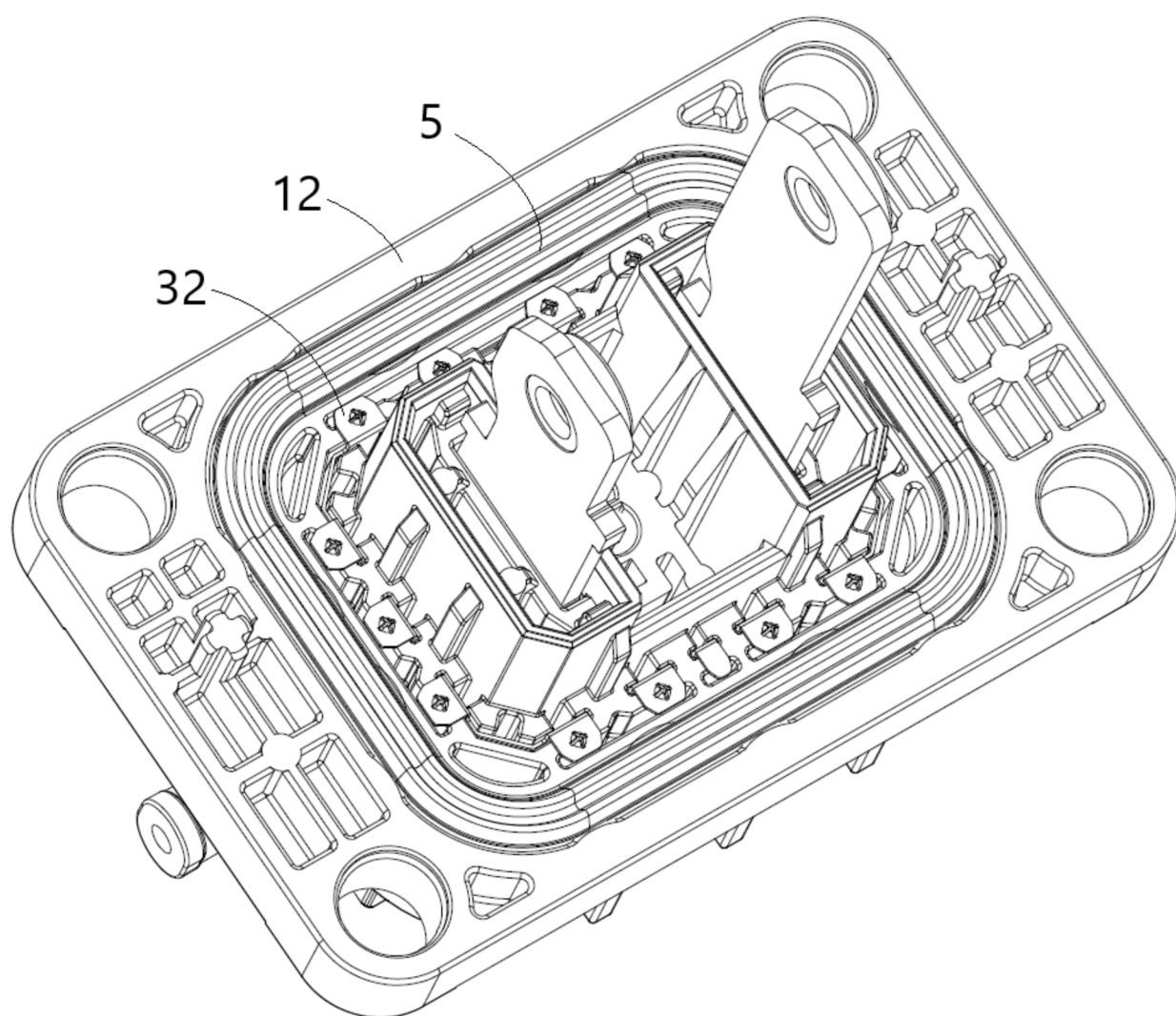


Fig.5

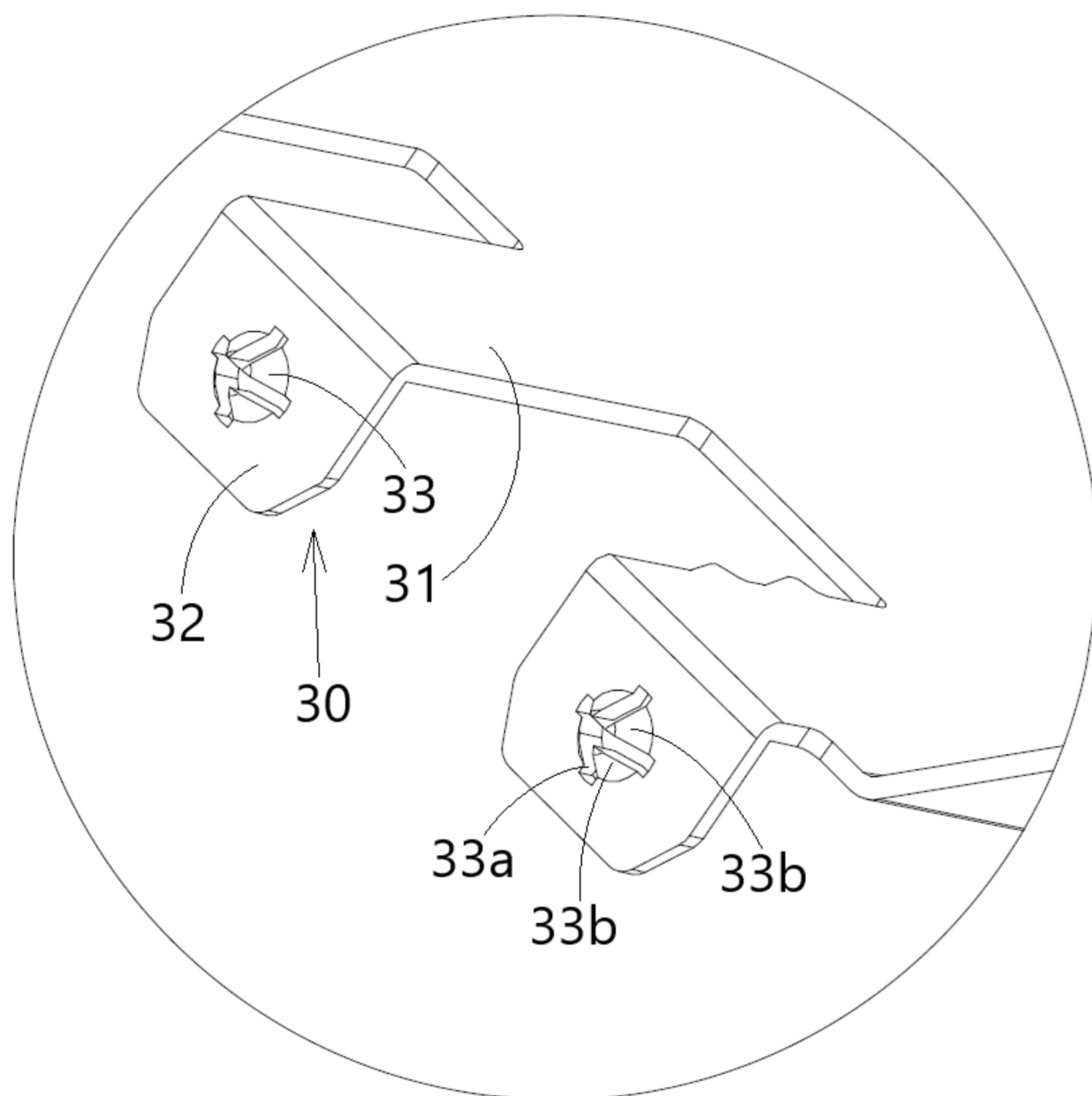


Fig.6

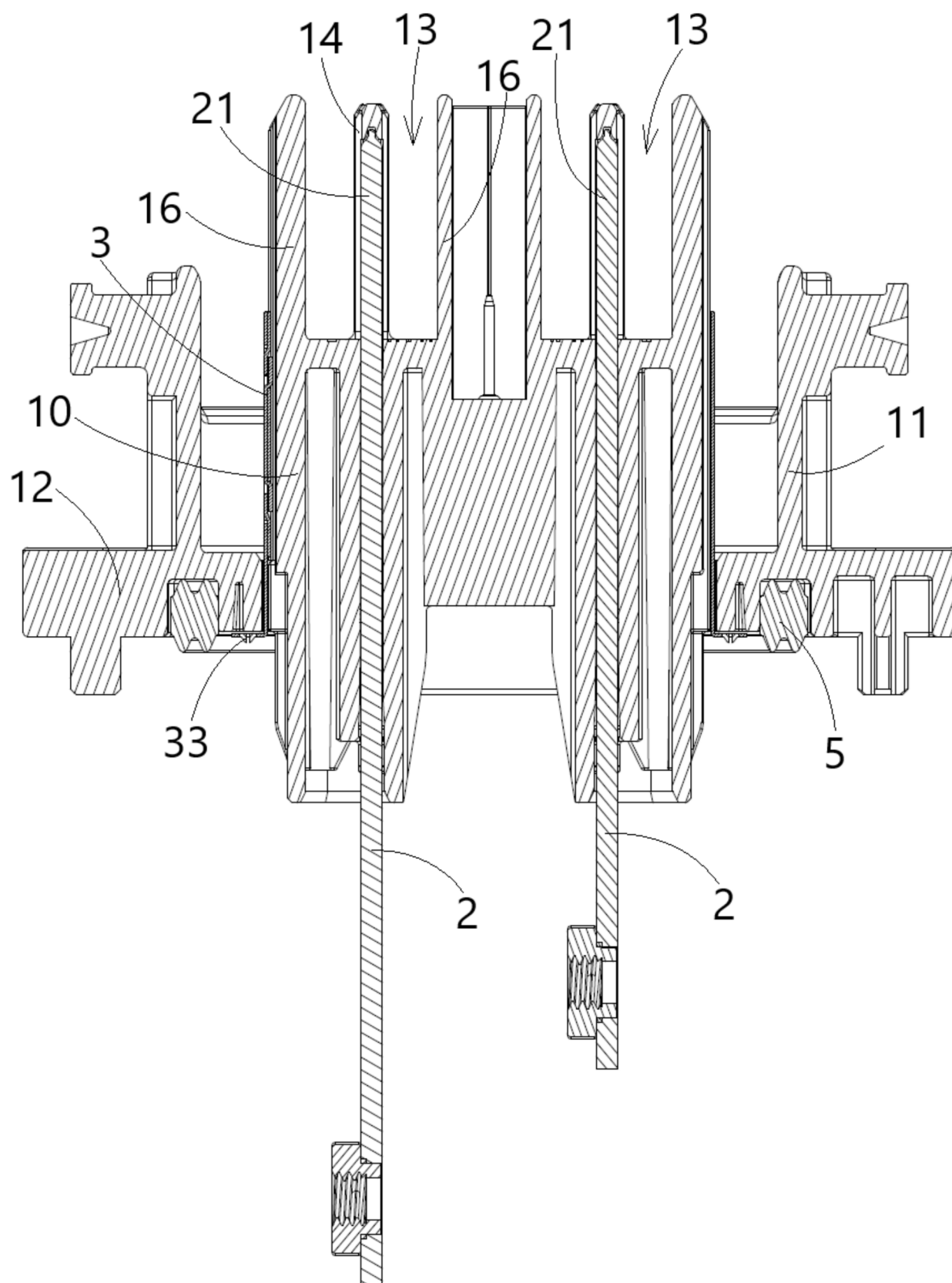


Fig.7

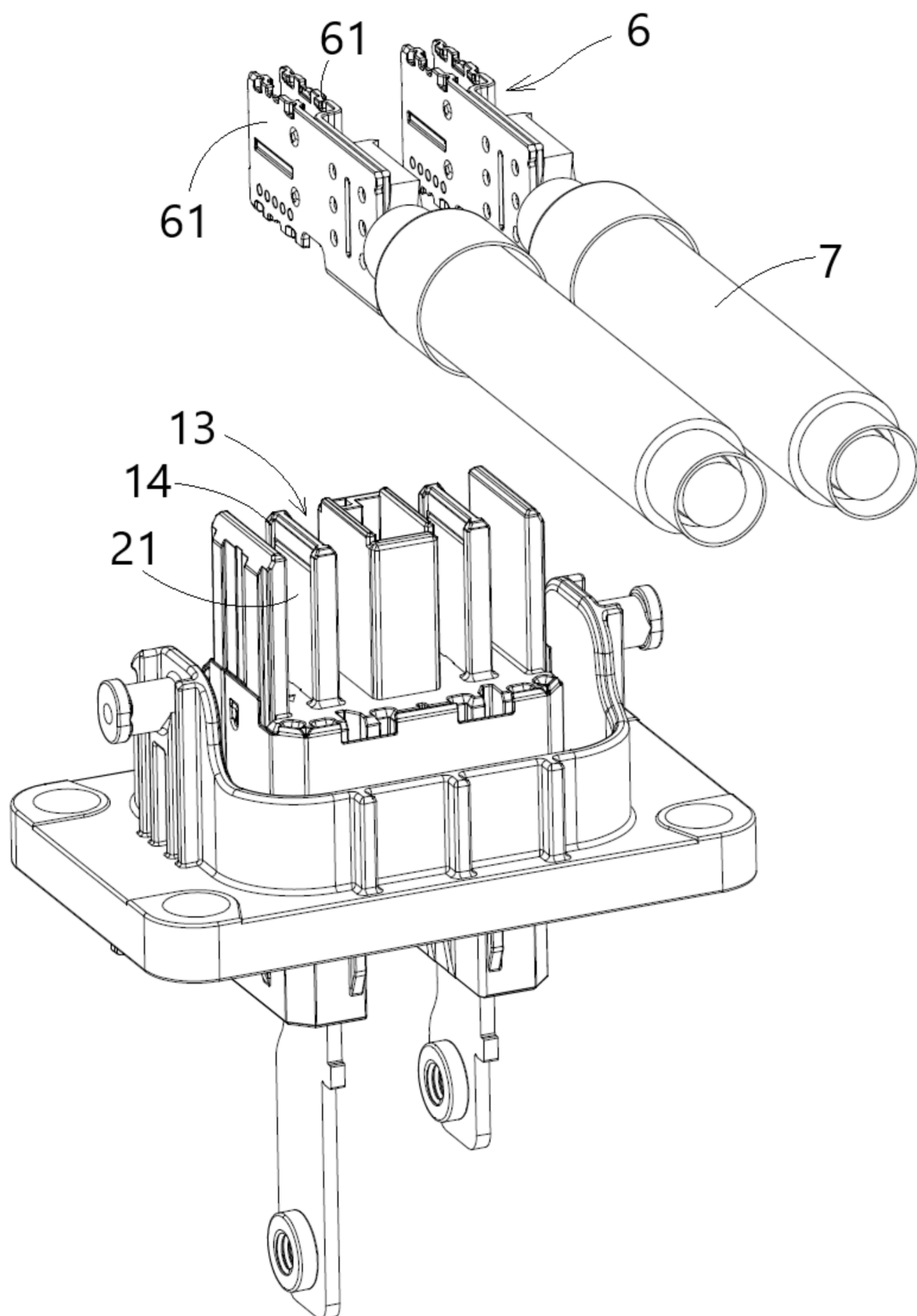


Fig.8

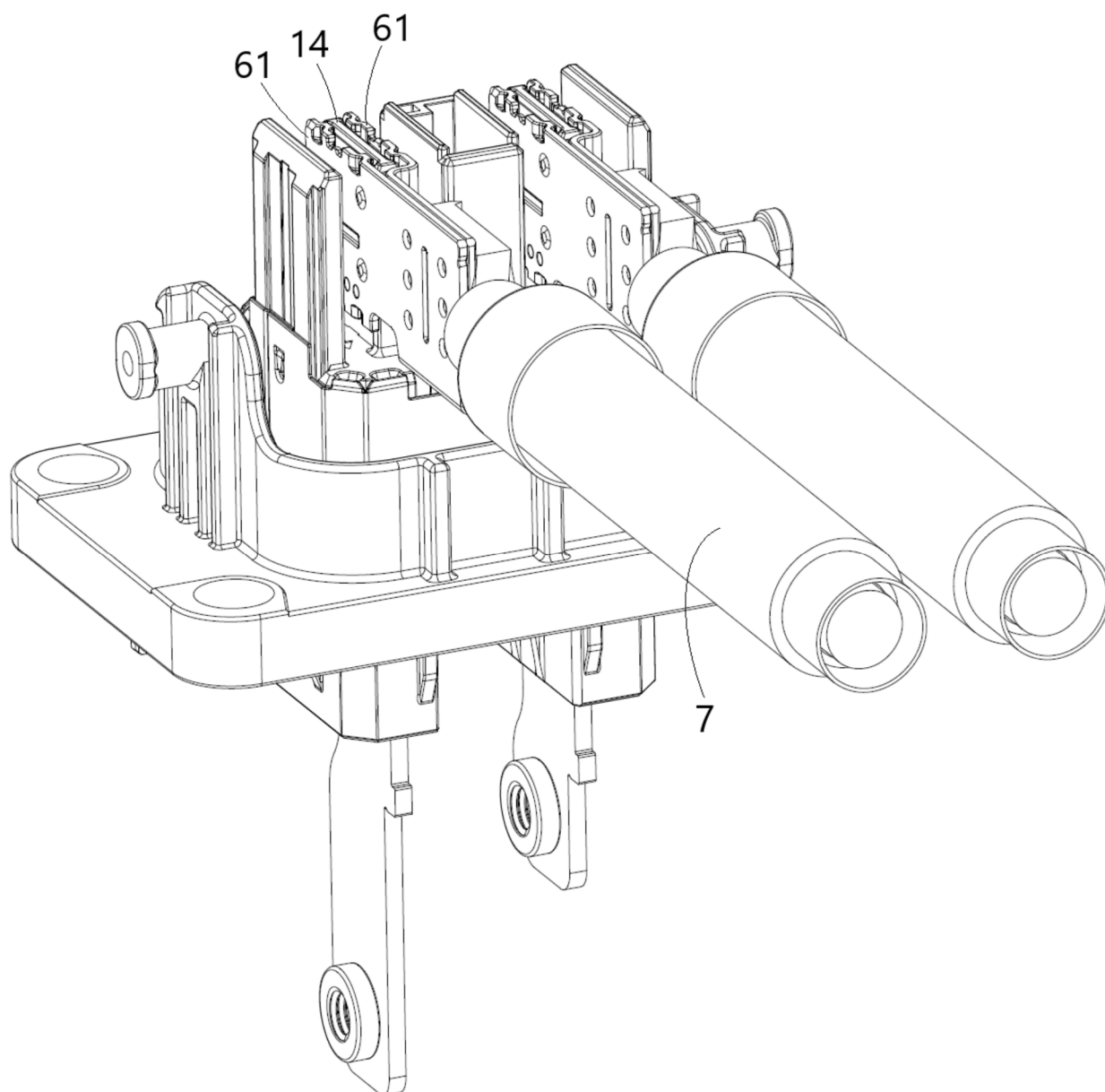


Fig.9

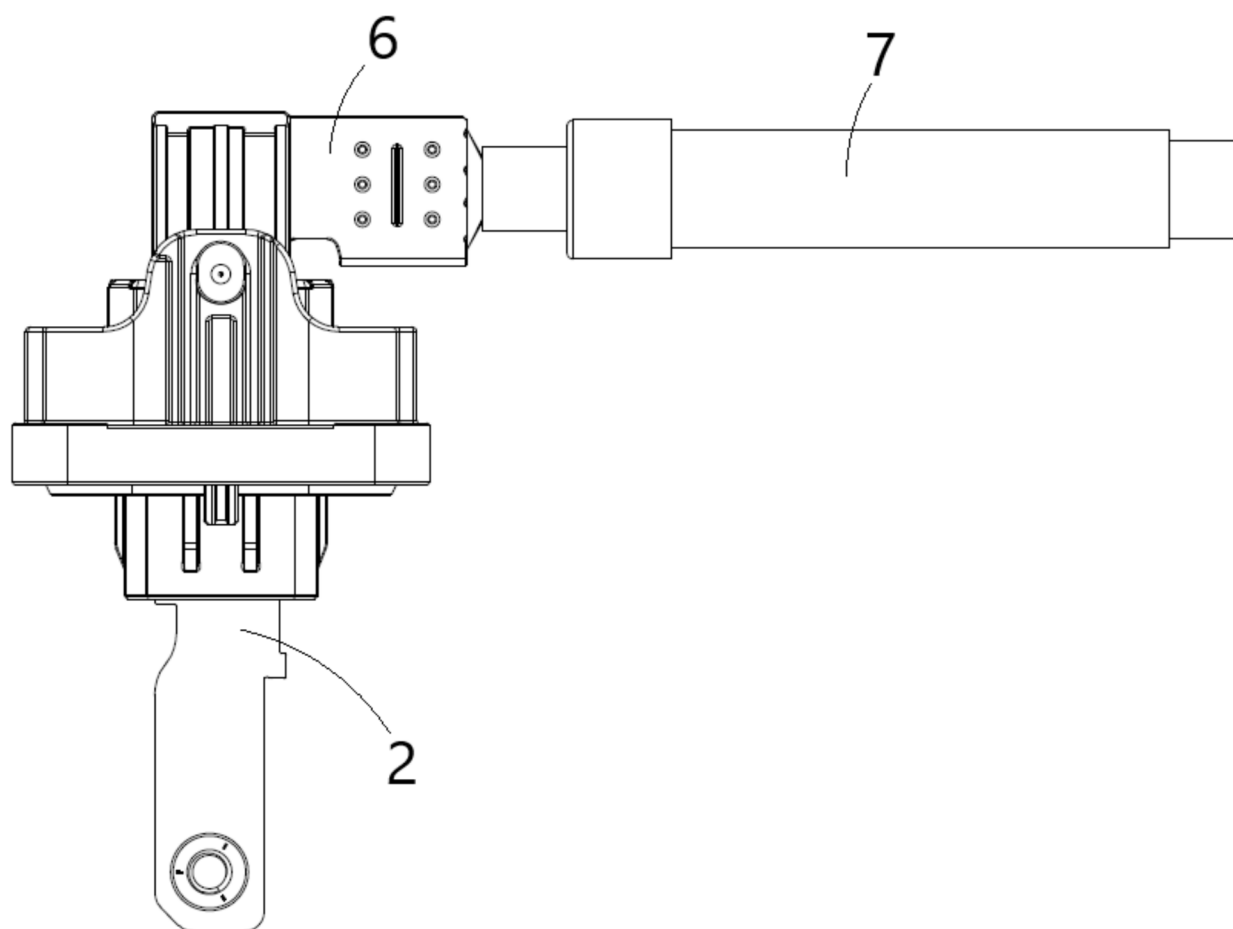


Fig.10

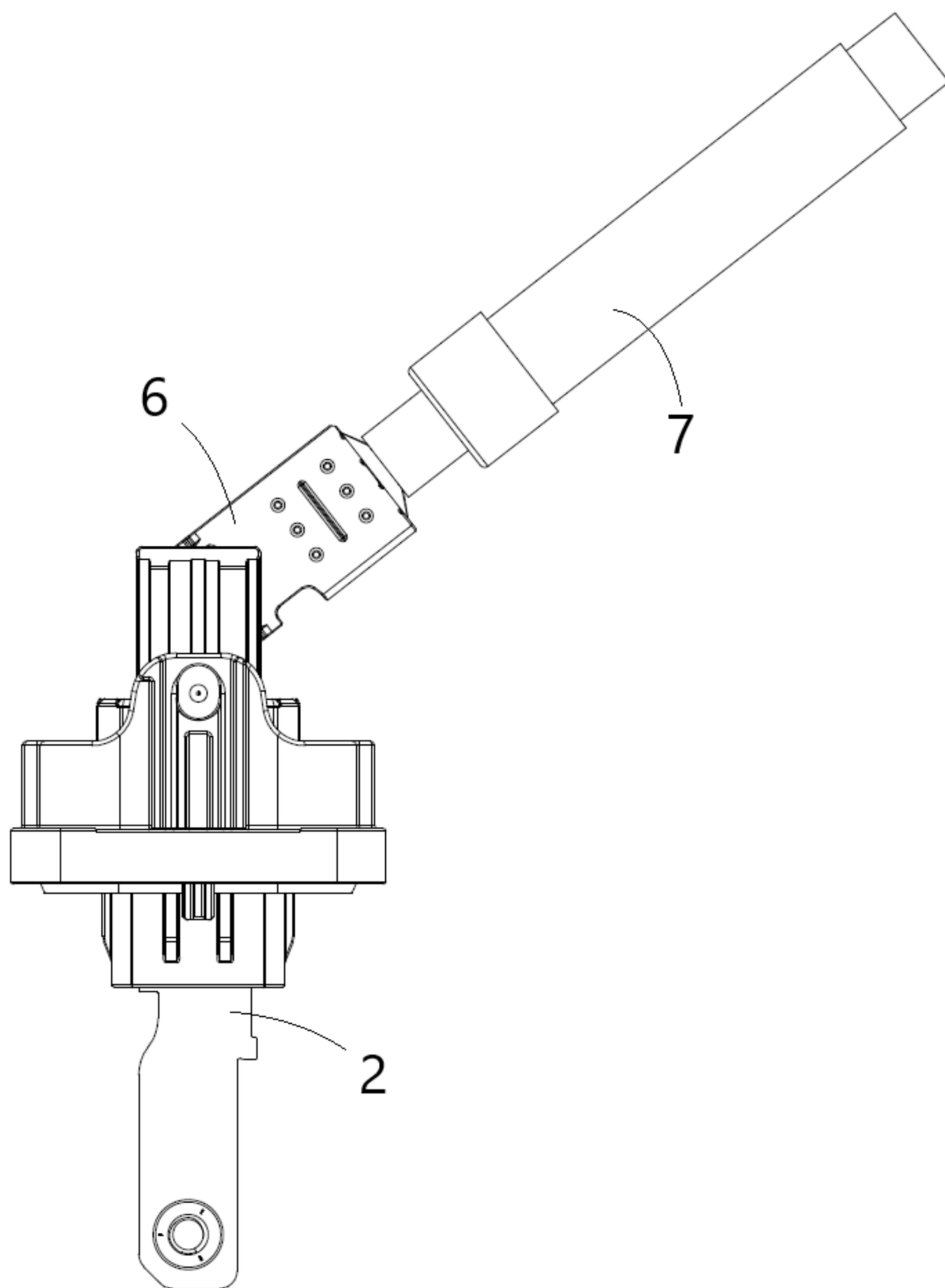


Fig.11

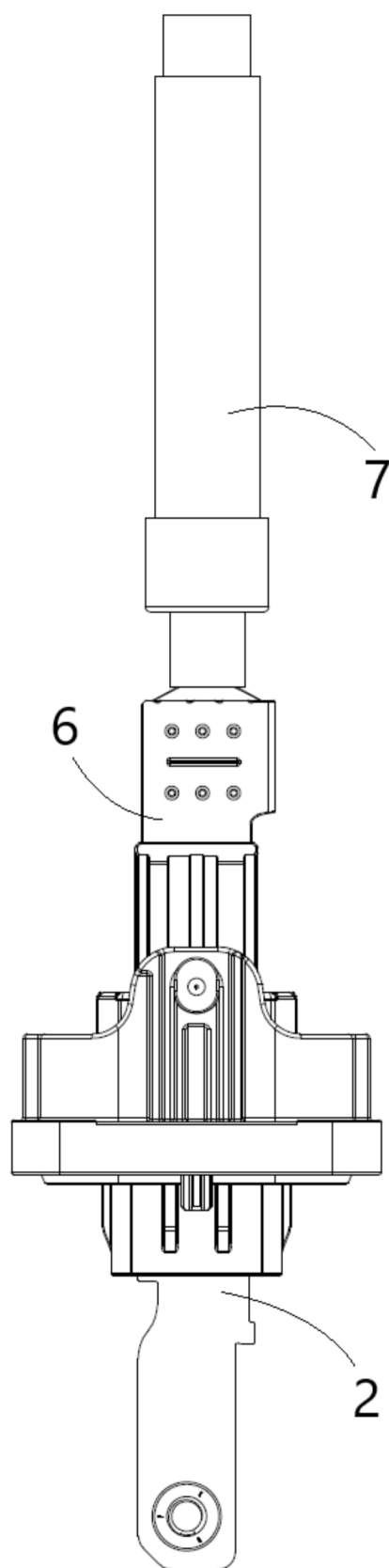


Fig.12

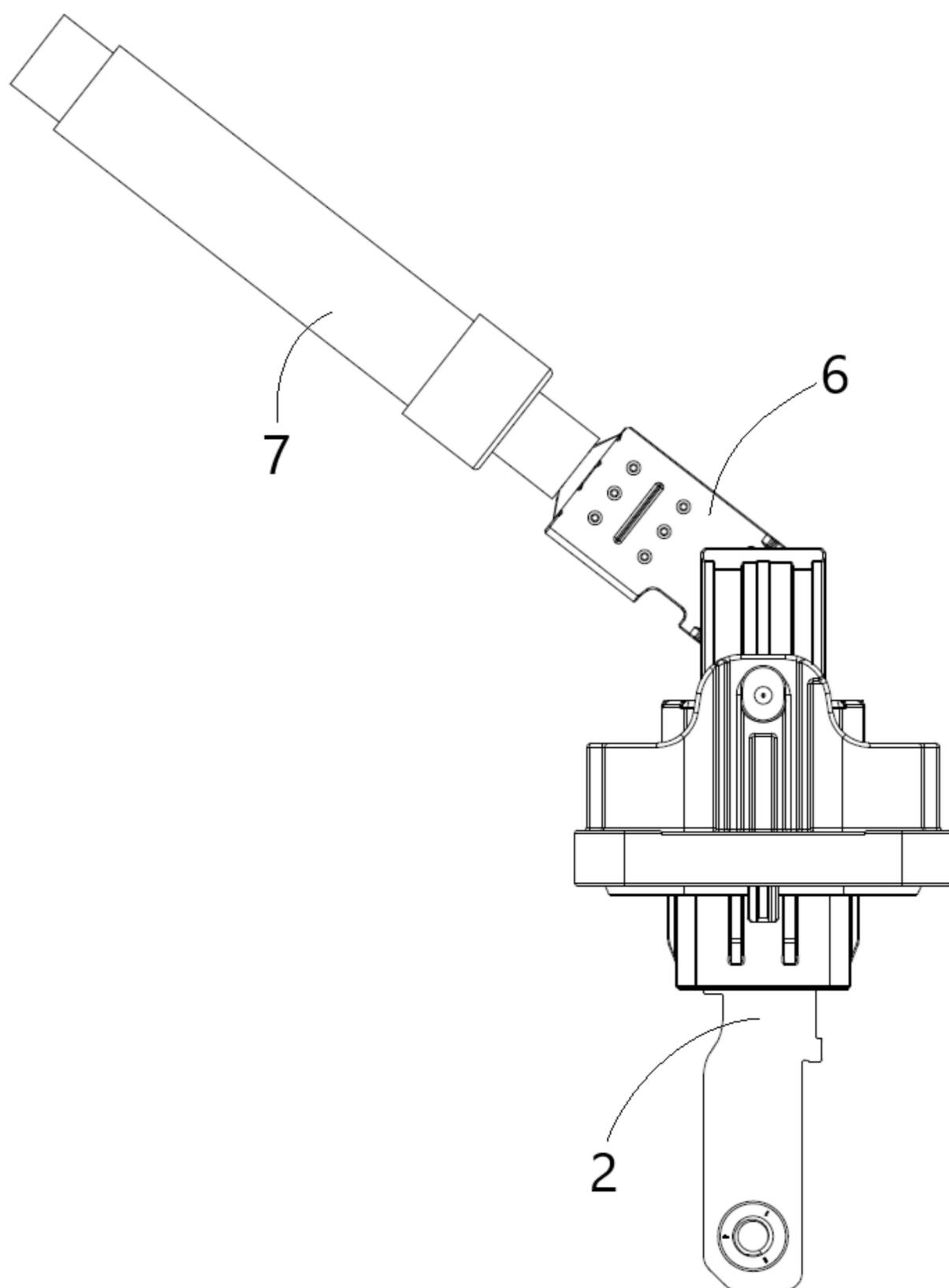


Fig.13

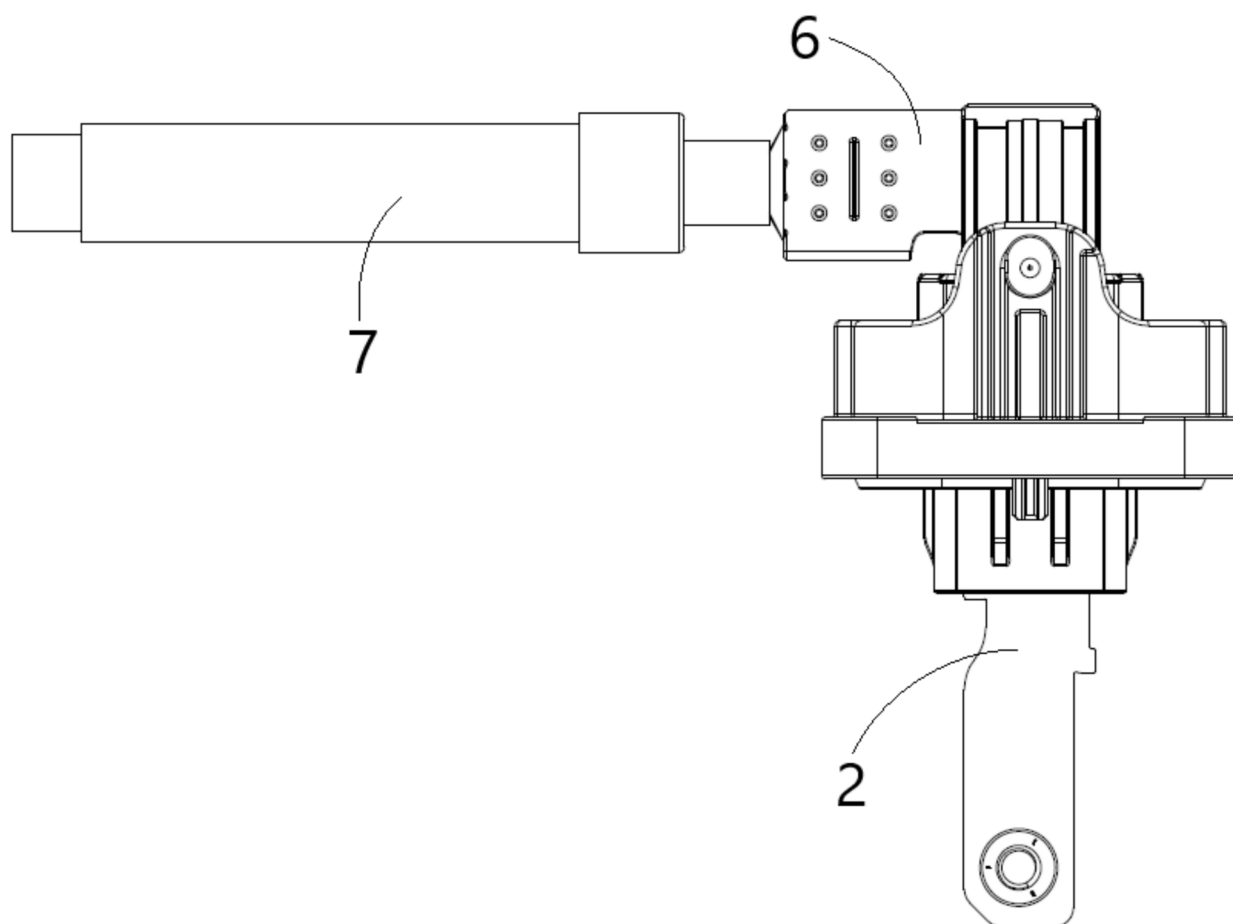


Fig.14



EUROPEAN SEARCH REPORT

Application Number

EP 26 16 5761

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	CN 215 645 289 U (TARNG YU ENTERPRISE CO LTD) 25 January 2022 (2022-01-25) * the whole document *	1-15	

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			H01R
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		17 August 2026	Gomes Sirenkov E M.
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