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(54) **CONNECTOR AND NETWORK DEVICE**

(57) Embodiments of this application provide a connector and a network device. The connector includes a housing, a plurality of wiring terminals, and a plurality of connecting members. The housing is provided with a plurality of positioning holes, and the wiring terminals are mounted in the positioning holes. The housing is further provided with a plurality of mounting holes in communication with the plurality of positioning holes, and the mounting holes are used for mounting cables. Each mounting hole includes a first sub-mounting hole and a second sub-mounting hole that are in communication with each other. Accordingly, when connectors are mounted at different positions of a network device, a connector having a corresponding cable outlet direction (the opening direction of the mounting hole) may be selected. A connector having a plurality of sub-mounting holes may be used at different positions. Compared with a connector in the related technology in which mounting holes are provided in only one direction, the connector of this application does not need to be rotated when being mounted at different positions, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs.

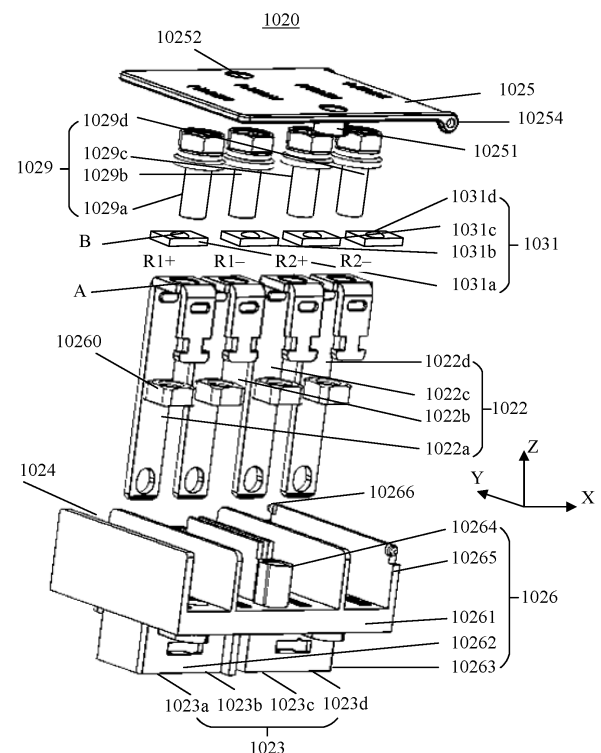


FIG. 6

Description

[0001] This application claims priority to Chinese Patent Application No. 202311866371.3, filed with the China National Intellectual Property Administration on December 29, 2023 and entitled "CONNECTOR AND NETWORK DEVICE", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] This application relates to the technical field of power supply apparatuses, and in particular, to a connector and a network device.

BACKGROUND

[0003] Currently, the high-power modular power supply system of a network device adopts a single-power supply mode, in which a single power input is used to support power supply requirements of the entire device. A cable drawing power from a customer equipment room is connected to the network device from one side.

[0004] As devices involve, higher power distribution is required, and a single power supply can no longer meet the power supply requirements of the device. Therefore, dual power supplies need to be deployed for power supply. Considering cabling space and layout costs, the dual power supplies may be implemented by placing two single power supplies on two sides of the network device.

[0005] A single power supply includes a power interface module and a connector that are connected to each other. The power interface module is connected to the network device, and the connector is configured to connect a cable to the power interface module.

[0006] However, the cable outlet direction of the connector in a single power supply is fixed. When separate single power supply devices are respectively arranged on two sides of the network device, the positive and negative polarities of the two power supplies on the two sides become opposite, causing a risk of incorrect connections and posing potential safety hazards. In addition, the network device requires internal adapters for interconnection, resulting in increased costs. Moreover, multiple transfer connections further reduce power supply reliability and increase costs.

SUMMARY

[0007] Embodiments of this application provide a connector and a network device, to resolve the problem of confusion that may arise when two single power supplies are used on two opposite sides of a network device.

[0008] To achieve the foregoing objectives, the following technical solutions are used in embodiments of

this application.

[0009] According to a first aspect of embodiments of this application, a connector is provided. The connector includes a housing, a plurality of wiring terminals, and a plurality of connecting members. The housing is provided with a plurality of positioning holes, and the wiring terminals are mounted in the positioning holes. The housing is further provided with a plurality of mounting holes in communication with the plurality of positioning holes, and mounting holes are used for mounting cables. The wiring terminal is provided with a first connecting hole corresponding to the positioning hole. The cable includes a cable terminal, and the cable terminal is provided with a second connecting hole corresponding to the positioning hole. The connecting member passes through the first connecting hole, the second connecting hole, and the positioning hole, to electrically connect the cable terminal to the wiring terminal. Each mounting hole includes at least two sub-mounting holes that are in communication with each other. Therefore, the plurality of sub-mounting holes may each be used for mounting of the cable. When a plurality of connectors are arranged on one network device, a connector having a corresponding cable outlet direction (an opening direction of the mounting hole) may be selected based on a mounting position, so that a connector having a plurality of sub-mounting holes may be used at different positions. Compared with a connector in the related technology in which mounting holes are provided in only one direction, the connector of this application does not need to be rotated when being mounted at different positions, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0010] In an optional implementation, each mounting hole includes two sub-mounting holes, and an included angle between the two sub-mounting holes is 180°. Therefore, the two connectors of the structure may be arranged on two opposite sides of the network device. After being mounted, positive and negative polarities of power supplies of the two connectors correspond to each other, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0011] In an optional implementation, the mounting hole is perpendicular to the positioning hole. Therefore, the mounting hole and the positioning hole may be arranged in a T shape, to avoid interference caused by the cable arranged in the mounting hole and the wiring terminal arranged in the positioning hole at a non-connected position, thereby making full use of space of the connector.

[0012] In an optional implementation, the housing includes a cover plate and a base that are connected to

each other, the base is provided with the plurality of positioning holes, a surface of the base close to the cover plate is provided with a plurality of retaining walls, and the base, the plurality of retaining walls, and the cover plate enclose to form the plurality of mounting holes. In this way, the direction of the mounting hole can be adjusted by adjusting an angle of the retaining wall. The process is simple and facilitates production.

[0013] In an optional implementation, the connector further includes a first rotating shaft and a second rotating shaft that are arranged coaxially, the first rotating shaft is connected to the base, the second rotating shaft is connected to the cover plate, the first rotating shaft is sleeved on the second rotating shaft, and the first rotating shaft and the second rotating shaft are rotatably connected to each other. Therefore, when the first rotating shaft and the second rotating shaft are rotated relative to each other, the cover plate can be opened and closed relative to the base, so as to facilitate mounting of the cable and the wiring terminal.

[0014] In an optional implementation, the first rotating shaft is provided with a plurality of protrusions, and the second rotating shaft is provided with recesses matching the protrusions. Therefore, when the first rotating shaft and the second rotating shaft are rotated relative to each other until the protrusion matches the recess, a contact area between the first rotating shaft and the second rotating shaft is the largest. In this case, friction between the first rotating shaft and the second rotating shaft is the largest, and the cover plate and the base are in a hovering state. When the first rotating shaft and the second rotating shaft are rotated relative to each other until the protrusion does not match the recess (in an intermediate state), a contact area between the first rotating shaft and the second rotating shaft is small. In this case, friction between the first rotating shaft and the second rotating shaft is small. Because friction between the protrusion and the recess is increased, a hovering effect of the housing at any angle can be improved.

[0015] In an optional implementation, the connector further includes a fastening member, the cover plate includes a first assembly portion, the base includes a second assembly portion, the fastening portion includes a first portion, a second portion, and a third portion, the third portion is provided between the first portion and the second portion, the second portion is provided with threads, in an unlocked state, the third portion is movable relative to the first assembly portion in an axial direction of the first assembly portion, and in a locked state, the second portion is capable of extending out of the first assembly portion for threaded connection with the second assembly portion. Therefore, the fastening member can detachably connect the upper cover and the base together.

[0016] In an optional implementation, a surface of an upper cover is provided with a groove, and the first portion is provided in the groove. Therefore, the fasten-

ing portion can be prevented from protruding from the surface of the upper cover, thereby improving flatness of the upper cover.

[0017] In an optional implementation, a bottom of the groove is provided with a through hole, the third portion passes through the through hole, a diameter of the through hole is less than an outer diameter of the second portion, and the diameter of the through hole is less than an outer diameter of the first portion. Therefore, the fastening portion uses a captive screw. In the unlocked state, the fastening member can move in the first assembly portion, but cannot be disengaged from the through hole, thereby improving connection reliability of the fastening member.

[0018] In an optional implementation, the groove is an elongated shape, and a length direction of the groove is parallel to an axis of the mounting hole. Therefore, the groove is designed to be in the elongated shape. For example, a waist-shaped groove (also referred to as a runway-shaped groove) may be used, which means that the middle is designed to be in the elongated shape, and two ends are arc-shaped. The groove of the structure can save space in a direction perpendicular to the mounting hole, thereby implementing a high-density design of an overall structure.

[0019] In an optional implementation, every two adjacent grooves are connected through a reinforcing rib. Therefore, strength of the upper cover can be improved by arranging the reinforcing rib between the adjacent grooves.

[0020] In an optional implementation, the connector further includes a nut, the nut is embedded in the positioning hole, and the connecting member is threadedly connected to the nut. Therefore, the connecting member may be a bolt, outer threads are provided on the connecting member, and the connecting member may be threadedly connected to the nut. In this way, the nut is arranged in the positioning hole, the nut is caused to be engaged in the positioning hole, and no threads need to be provided in the positioning hole, thereby reducing process difficulty.

[0021] In an optional implementation, an outer shape of the nut matches a shape of the positioning hole, and a cross-sectional of the positioning hole is in a shape of a polygon or an irregular shape. Therefore, the nut can be prevented from rotating relative to the positioning hole, to ensure stable contact between the cable terminal and a connecting member, and avoid shaking between the cable terminal and the connecting portion, thereby implementing stable current conduction between the cable terminal and the wiring terminal. In other words, a stable electrical connection is implemented between the cable terminal and the wiring terminal.

[0022] In an optional implementation, the wiring terminal includes a fastening portion and a connecting portion that are connected to each other, the connecting portion is provided with the first connecting hole, and the fastening portion passes through a gap between

the positioning hole and the nut. Therefore, the connecting portion is connected to the cable, and the fastening portion is configured to insert into the mounting hole of the base, so that the wiring terminal is mounted on the base, thereby implementing the connection between the cable and the wiring terminal.

[0023] In an optional implementation, the fastening portion includes a first fastening portion and a second fastening portion, and the first fastening portion and the second fastening portion are provided on two opposite sides of the connecting portion. Therefore, a cross section of the wiring terminal is substantially C-shaped. This makes a connection to the base more stable.

[0024] In an optional implementation, the fastening portion is provided with a snap, and the snap is configured to snap-connect to an outer side wall of the nut. In this way, the fastening portion is more stably connected to the nut, so as to prevent relative shaking between the nut and the fastening portion, thereby improving electrical connection stability.

[0025] In an optional implementation, the fastening portion is provided with a slot, and the slots of every two adjacent wiring terminals are snap-connected by a snap pin. In this way, the two adjacent wiring terminals can be relatively fastened, so as to prevent relative movement of the adjacent positive and negative wiring terminals, thereby improving electrical connection stability. In addition, the two adjacent wiring terminals are connected through the engagement pin, so that the two adjacent wiring terminals cannot be disengaged from the positioning holes of the base.

[0026] In an optional implementation, an end surface of the fastening portion away from the connecting portion is an arc-shaped surface. Therefore, compared with a square end portion, an end portion of the arc-shaped surface has better guiding performance, so that the wiring terminal can be more conveniently inserted into the positioning hole of the base.

[0027] In an optional implementation, the plurality of mounting holes include a first mounting hole and a second mounting hole, and a height of the first mounting hole in the housing is different from a height of the second mounting hole in the housing. In this way, cables in the first mounting hole and the second mounting hole can be prevented from interfering with each other.

[0028] According to a second aspect of embodiments of this application, a network device is provided. The network device includes a cable, a device body, and the foregoing connector. The cable is connected to the device body through the connector. Therefore, the network device uses the foregoing connector. When a plurality of connectors are arranged on one network device, a corresponding connector may be selected based on a mounting position. When the connectors are mounted at different positions, a connector having a corresponding cable outlet direction (an opening direction of the mounting hole) may be selected. A con-

necter having a plurality of sub-mounting holes may be used at different positions. Compared with a connector in the related technology in which mounting holes are provided in only one direction, the connector of this application does not need to be rotated when being mounted at different positions, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0029] In an optional implementation, the device body further includes a power interface module, the power interface module is connected to the device body, and the wiring terminal of the connector is connected to the power interface module. Therefore, the power interface module may be a rectifier, which may convert an input alternating current into a direct current for output.

[0030] In an optional implementation, two connectors are arranged on the device body, one connector is connected to the cable through a first sub-mounting hole, and the other connector is connected to the cable through a second sub-mounting hole. Therefore, at least two groups of mounting holes are provided on a surface of the connector in this application. When a plurality of connectors are symmetrically mounted on the device body, double-sided cabling can be implemented without a need to adjust an orientation of the connector.

BRIEF DESCRIPTION OF DRAWINGS

[0031]

FIG. 1 is a diagram of a structure of a network device;

FIG. 2 is a diagram of a structure of another network device;

FIG. 3 is a diagram of a structure of a connector;

FIG. 4 is a diagram of relative positions of a mounting hole and a positioning hole;

FIG. 5 is a diagram of a structure of a connector according to an embodiment of this application;

FIG. 6 is a diagram of a disassembled structure of a connector according to an embodiment of this application;

FIG. 7 is a diagram of relative positions of a mounting hole and a positioning hole according to an embodiment of this application;

FIG. 8 is a diagram of a structure of a first network device according to an embodiment of this application;

FIG. 9 is a diagram of a structure of a second network device according to an embodiment of this application;

FIG. 10 is a diagram of a structure of a third network device according to an embodiment of this application;

FIG. 11 is a diagram of a structure of a fourth network device according to an embodiment of this application;

FIG. 12 is a top view of a cover plate according to an embodiment of this application;

FIG. 13 is a diagram of a structure of a fastening member according to an embodiment of this application;

FIG. 14 is a cross-sectional view taken along A-A in FIG. 12;

FIG. 15 is a partial enlarged view of a cover plate according to an embodiment of this application;

FIG. 16 is a diagram of a structure of a rotating shaft in a hovering state according to an embodiment of this application;

FIG. 17 is a diagram of a structure of a rotating shaft in an intermediate state according to an embodiment of this application;

FIG. 18 is a diagram of a structure of a wiring terminal according to an embodiment of this application;

FIG. 19 is a diagram of a structure of engagement between a wiring terminal and an engagement pin according to an embodiment of this application;

FIG. 20 is a diagram of a structure of a positioning hole according to an embodiment of this application;

FIG. 21 is a diagram of a structure of engagement between a wiring terminal and a nut according to an embodiment of this application;

FIG. 22 is a diagram of a structure of another connector according to an embodiment of this application;

FIG. 23 is a diagram of a disassembled structure of still another connector according to an embodiment of this application; and

FIG. 24 is a diagram of a structure of the connector in FIG. 23.

DESCRIPTION OF EMBODIMENTS

[0032] Technical solutions in embodiments of this application are described below with reference to the accompanying drawings in embodiments of this application. Apparently, the described embodiments are merely some rather than all of embodiments of this application.

[0033] The terms "first" and "second" mentioned below are merely intended for a purpose of description, and shall not be understood as an indication or implication of relative importance or implicit indication of a quantity of indicated technical features. Therefore, a feature defined by "first" or "second" may explicitly or implicitly include one or more features. In the description of the present invention, unless otherwise stated, "a plurality of" means two or more.

[0034] In addition, in this application, position terms such as "upper", and "lower" are defined relative to an

illustrative position of a component in the accompanying drawings. It should be understood that these direction terms are relative concepts and are used for relative description and clarification, and may vary accordingly depending on a position change in which components are placed in the accompanying drawings.

[0035] This application provides a network device. The network device may be a core network, an industrial router, a transport network, an access network, a data equipment room, or the like.

[0036] FIG. 1 is a diagram of a structure of a network device according to this application. As shown in FIG. 1, the network device 10 includes a device body 101 and a power interface module (Power Interface Unit, PIU) 102 arranged on the device body 101. The power interface module 102 is configured to provide a power interface, to connect an external power supply to the network device 10.

[0037] In some embodiments, the power interface module 102 may be a rectifier, which may convert an input alternating current into a direct current for output. For example, the power interface module 102 may convert a 220 V alternating current output by the external power supply into a 48 V direct current, and output the 48 V direct current to the device body 101 for operation of the device body 101. The external power supply and the device body 101 are not limited in this application. The external power supply may be any device or element that can output an alternating current, and the device body 101 may be any device or element that uses a direct current.

[0038] The external power supply supplies power to the network device 10 through cables 103. However, the cable 103 is difficult to be directly connected to the network device 10. In some embodiments, the network device 10 may further include a connector 1020. The connector 1020 is configured to connect the cable 103 to an internal circuit.

[0039] FIG. 3 is a diagram of a structure of a connector. As shown in FIG. 3, the connector 1020 includes a housing 1021 and a plurality of wiring terminals 1022. The housing 1021 is configured to fasten the plurality of wiring terminals 1022.

[0040] The wiring terminal 1022 is configured to connect the cable 103 and the power interface module 102. The plurality of wiring terminals 1022 are arranged along an X direction.

[0041] A material of the housing 1021 is not limited in embodiments of this application. In some embodiments, the housing 1021 may be made of an insulating material such as plastic or ceramic.

[0042] A material of the wiring terminal 1022 is not limited in embodiments of this application. In some embodiments, the wiring terminal 1022 may be made of a conductive material such as metal.

[0043] A quantity of wiring terminals 1022 in the connector is not limited in embodiments of this application. In some embodiments, as shown in FIG. 3, there are

four wiring terminals 1022, and there are four mounting holes 1024 and four positioning holes 1023. The wiring terminals 1022 include a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along the X direction. When the cables 103 are connected to the wiring terminals 1022, the cables 103 may be in one-to-one correspondence with the wiring terminals 1022.

[0044] In some embodiments, the housing 1021 is provided with a plurality of positioning holes 1023 (through holes for mounting of the wiring terminals). The plurality of wiring terminals 1022 are arranged in the plurality of positioning holes 1023. An axial direction of the positioning holes 1023 is parallel to a Z direction.

[0045] A plurality of mounting holes 1024 that are in communication with the plurality of positioning holes 1023 are further provided on the housing 1021. The plurality of mounting holes 1024 are used for mounting of the cables 103. An axial direction of the mounting holes 1024 is parallel to a Y direction.

[0046] In embodiments of this application, the Z direction may be a thickness direction of the connector 1020, the X direction may be a length direction of the connector 1020, and the Y direction may be a width direction of the connector 1020. The Z direction, the X direction, and the Y direction are all different, for example, may be perpendicular to each other. A length, a width, and a thickness in embodiments of this application are merely for ease of description, and do not constitute any limitation on a size. For example, the length may be greater than, equal to, or less than the width. The X direction, the Y direction, and the Z direction of the connector 1020 may alternatively be the width direction, the length direction, and the thickness direction of the connector 1020.

[0047] In some embodiments, as shown in FIG. 4, the mounting hole 1024 and the positioning hole 1023 form an inverted "L"-shaped hole. The positioning hole 1023 is a "vertical" slot in the inverted "L"-shaped hole, and the mounting hole 1024 is a "horizontal" slot in the inverted "L"-shaped hole. The mounting hole 1024 and the positioning hole 1023 each form one opening on a surface of the housing 1021. The opening of the positioning hole 1023 is, for example, formed on a bottom surface of the housing 1021, and the opening of the mounting hole 1024 is formed on a side surface of the housing 1021.

[0048] A quantity of connectors 1020 is not limited in embodiments of this application. In some embodiments, refer to FIG. 1. There is one external power supply, and there are four cables 103. The external power supply feeds an alternating current to the power interface module 102 through the four cables 103. There is one connector 1020, and the connector 1020 feeds an output direct current to the device body 101 through four wiring terminals 1022. It should be noted that, because the direct current has a direction, the four

cables 103 need to be respectively connected to a positive electrode and a negative electrode of the power interface module 102. Therefore, only one connector 1020 needs to be arranged, and the cable 103 and the power interface module 102 may be connected to supply power to the network device 10.

[0049] In some other embodiments, as shown in FIG. 2, there are eight cables 103, and two or more power interface modules 102 are arranged on the network device 10 to supply power to the network device 10. There are two connectors 1020, and each connector 1020 feeds the output direct current to the device body 101 through four wiring terminals 1022, so that higher power distribution can be provided. For example, two power interface modules 102 are arranged on the network device 10. In consideration of cabling space and layout costs, the power interface modules 102 may be placed on two sides of the device body. Correspondingly, the connectors 1020 are arranged on two sides of the device body, for example, arranged on left and right sides or upper and lower sides of the device.

[0050] When two connectors 1020 are arranged on the device body, the cables need to be led out from two sides. In this way, when the same two connectors 1020 are used on the device body, the two connectors 1020 are arranged in a centrosymmetric manner.

[0051] Refer to FIG. 2. Two connectors 1020 are arranged on the device body: a first connector 1020a and a second connector 1020b. The first connector 1020a includes a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along a +x direction. The second connector 1020b includes a second ground terminal (R2-), a second power terminal (R2+), a first ground terminal (R1-), and a first power terminal (R1+) that are sequentially provided along the +x direction. Positive and negative polarities of power supplies of the first connector 1020a and the second connector 1020b are opposite to each other, causing a risk of incorrect connections and posing potential safety hazards. In addition, the network device 10 requires internal adapters for interconnection, resulting in increased costs. Moreover, multiple transfer connections further reduce power supply reliability and increase costs.

[0052] Therefore, this application provides an improved connector 1020. At least two groups of symmetrically arranged mounting holes 1024 are provided on a surface of the connector 1020. When a plurality of connectors 1020 are symmetrically mounted on the device body, double-sided cabling can be implemented without a need to adjust an orientation of the connector 1020.

[0053] FIG. 5 is a diagram of a structure of a connector according to an embodiment of this application. FIG. 6 is a diagram of a disassembled structure of a connector according to an embodiment of this application. As shown in FIG. 5 and FIG. 6, the connector 1020 in-

cludes a housing 1021 and a plurality of wiring terminals 1022.

[0054] The housing 1021 is provided with a plurality of positioning holes 1023 for fastening the plurality of wiring terminals 1022, and axes of the plurality of positioning holes 1023 are parallel to a Z direction.

[0055] The mounting holes 1024 that are in communication with a plurality of positioning holes 1023 are further provided on the housing 1021. The plurality of mounting holes 1024 are used for mounting of the cables 103.

[0056] In some embodiments, each mounting hole 1024 includes at least two sub-mounting holes that are in communication with each other. Therefore, the plurality of sub-mounting holes may each be used for mounting of the cable. When a plurality of connectors are arranged on one network device, a connector having a corresponding cable outlet direction (an opening direction of the mounting hole) may be selected based on a mounting position, so that a connector having a plurality of sub-mounting holes may be used at different positions. Compared with a connector in the related technology in which mounting holes are provided in only one direction, the connector of this application does not need to be rotated when being mounted at different positions, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0057] A quantity of sub-mounting holes is not limited in this application. Each mounting hole 1024 includes two sub-mounting holes. For example, as shown in FIG. 7, each mounting hole 1024 includes a first sub-mounting hole 10241 and a second sub-mounting hole 10242 that are in communication with each other, and both the first sub-mounting hole 10241 and the second sub-mounting hole 10242 are in communication with the positioning hole 1023. An included angle between the first sub-mounting hole 10241 and the second sub-mounting hole 10242 is greater than 0°. For example, an included angle between an axis of the first sub-mounting hole 10241 and an axis of the second sub-mounting hole 10242 may be 30°, 60°, 90°, or 120°. In other words, the first sub-mounting hole 10241 and the second sub-mounting hole 10242 have different extension directions, and more cabling direction options are provided.

[0058] In some embodiments, as shown in FIG. 7, an included angle between the first sub-mounting hole 10241 and the second sub-mounting hole 10242 is 180°. Axes M of the first sub-mounting hole 10241 and the second sub-mounting hole 10242 are parallel to an X direction, and an axis N of the positioning hole 1023 is parallel to a Z direction. The first sub-mounting hole 10241, the second sub-mounting hole 10242, and the positioning hole 1023 form a through hole with a "T"-shaped structure. The positioning hole 1023 is a "verti-

cal" slot in the "T"-shaped through hole, and the first sub-mounting hole 10241 and the second sub-mounting hole 10242 are "horizontal" slots in the "T"-shaped through hole. Therefore, interference caused by the cable arranged in the mounting hole and the wiring terminal arranged in the positioning hole at a non-connected position can be avoided, thereby making full use of space of the connector.

[0059] As shown in FIG. 5, the mounting holes 1024 form two openings on a surface of the housing 1021, and the positioning hole 1023 forms one opening on the surface of the housing 1021. The opening of the positioning hole 1023 is, for example, formed on a bottom surface of the housing 1021, and openings of the first sub-mounting hole 10241 and the second sub-mounting hole 10242 are formed on two opposite side surfaces of the housing 1021. The opening of the first sub-mounting hole 10241 is formed on a side surface of the housing 1021 along a positive direction of a Y axis, and the opening of the second sub-mounting hole 10242 is formed on a side surface of the housing 1021 along a negative direction of the Y axis.

[0060] Therefore, two connectors that use the foregoing structure may be arranged on two opposite sides of the network device. After being mounted, the two connectors are arranged in an axisymmetrical manner. One of the connectors may be connected to the cable through the first sub-mounting hole, and the other connector may be connected to the cable through the second sub-mounting hole. Cabling on the opposite sides of the network device can be implemented without a need to rotate the connectors, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0061] In another embodiment, for a structure of the positioning hole 1023, refer to the foregoing descriptions. The mounting hole 1024 may include a first sub-mounting hole 10241, a second sub-mounting hole 10242, and a third sub-mounting hole (not shown in the figure). The first sub-mounting hole 10241, the second sub-mounting hole 10242, and the third sub-mounting hole are all in communication with each other. An included angle between an axis of the first sub-mounting hole 10241, an axis of the second sub-mounting hole 10242, and an axis of the third sub-mounting hole is greater than 0°. For example, the included angle between the axis of the first sub-mounting hole 10241 and the axis of the second sub-mounting hole 10242 may be 30°, 60°, 90°, or 120°, and the included angle between the axis of the third sub-mounting hole and the axis of the second sub-mounting hole 10242 may be 30°, 60°, 90°, or 120°. In other words, the first sub-mounting hole 10241, the second sub-mounting hole 10242, and the third sub-mounting hole have different extension directions, and more cabling direction options are provided.

[0062] A quantity and angles of mounting holes 1024 are not limited in this application. The quantity of mounting holes 1024 and an included angle between adjacent mounting holes 1024 may be selected based on a shape of the housing 1021. All these fall within the protection scope of this application.

[0063] For example, refer to FIG. 8. The connector 1020 may be used for a network device 10 to which power is supplied on a left side and a right side. Two connectors 1020 are arranged on the device body 101: a first connector 1020a and a second connector 1020b. The first connector 1020a includes a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along a positive direction of an X axis, which are respectively connected to the cables 103 through second sub-mounting holes with openings formed on a side surface of the housing along a negative direction of a Y axis. The second connector 1020b includes a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along the positive direction of the X axis, which are respectively connected to the cables 103 through first sub-mounting holes with openings formed on the side surface of the housing along the negative direction of the Y axis. Positive and negative electrodes of the second connector 1020b and the first connector 1020a are arranged in a same order, and the positive and negative electrodes of the second connector 1020b and the first connector 1020a are arranged in an axisymmetrical manner. During mounting, positive and negative polarities of power supplies of the connectors 1020 on the left and right may be opposite to each other, and there is no risk of incorrect connections, thereby reducing potential safety hazards. In addition, no internal adapter needs to be designed in the network device 10 for interconnection, thereby reducing costs and improving power supply reliability.

[0064] In some other embodiments, as shown in FIG. 9, the connector 1020 may be further used for a network device 10 to which power is supplied on an upper side and a lower side. Two connectors 1020 are arranged on the device body 101: a first connector 1020a and a second connector 1020b. The first connector 1020a includes a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along a positive direction of a Y axis. The second connector 1020b includes a first power terminal (R1+), a first ground terminal (R1-), a second power terminal (R2+), and a second ground terminal (R2-) that are sequentially arranged along the positive direction of the Y axis. Positive and negative electrodes of the second connector 1020b and the first connector 1020a are arranged in a same order. During mounting, positive and negative polarities of power supplies of the upper and lower connectors 1020 may

be opposite to each other, and there is no risk of incorrect connections, thereby reducing potential safety hazards. In addition, no internal adapter needs to be designed in the network device 10 for interconnection, thereby reducing costs and improving power supply reliability.

[0065] In this embodiment, the mounting hole 1024 of the first connector 1020a includes a first sub-mounting hole 10241 and a second sub-mounting hole 10242, and an included angle between an axis of the first sub-mounting hole 10241 and an axis of the second sub-mounting hole 10242 is 180°. The first connector and the second connector may be mounted on two opposite sides of the network device 10. After being mounted, the positive and negative polarities of the power supplies of the second connector 1020b correspond to the positive and negative polarities of the power supplies of the first connector 1020a, and there is no risk of incorrect connection, thereby reducing potential safety hazards. In addition, no internal adapter needs to be designed in the network device 10 for interconnection, thereby reducing costs and improving power supply reliability.

[0066] Certainly, in another embodiment, as shown in FIG. 10 and FIG. 11, the connector 1020 may be further used for a network device 10 to which power is supplied on a single side. This is not limited in this application.

[0067] A structure of the housing 1021 of the connector 1020 is not limited in embodiments of this application. In some embodiments, as shown in FIG. 6, the housing 1021 includes two parts: a cover plate 1025 and a base 1026 that are connected to each other. The structure of the housing 1021 is described below by using FIG. 6 as an example.

[0068] Refer to FIG. 6. The base 1026 includes a main body portion 10261, a first positioning portion 10262, a second positioning portion 10263, a first assembly portion 10264, and a retaining wall 10265. The first positioning portion 10262 and the second positioning portion 10263 are fixedly connected to one side of the main body portion 10261, and the retaining wall 10265 and the first assembly portion 10264 are fixedly connected to the other side of the main body portion 10261.

[0069] The cover plate 1025 includes a first surface facing away from the base 1026 and a second surface close to the base 1026. When the cover plate 1025 is closed onto the base 1026, the first surface of the base 1026, the first surface of the cover plate 1025, and the retaining wall 10265 enclose to form a plurality of mounting holes 1024.

[0070] In this embodiment, the cover plate 1025 includes a second assembly portion 10251, and the second assembly portion 10251 corresponds to the first assembly portion 10264.

[0071] In some embodiments, the main body portion 10261, the first positioning portion 10262, the second

positioning portion 10263, the first assembly portion 10264, and the retaining wall 10265 may be integrally formed, to simplify a preparation process of the base 1026 and ensure overall strength of the base 1026.

[0072] The main body portion 10261 includes a first surface facing the cover plate 1025 and a second surface provided opposite to the first surface. The retaining wall 10265 and the first assembly portion 10264 are fixedly connected to the first surface of the main body portion 10261. In this embodiment, a plurality of retaining walls 10265 are provided, and the plurality of retaining walls 10265 are provided at intervals along the X direction, and protrude from the first surface of the main body portion 10261 along the Z direction.

[0073] The Z direction is different from the X direction. In this embodiment, the Z direction is perpendicular to the X direction.

[0074] The first positioning portion 10262 is fixedly connected to the second surface of the main body portion 10261. The first positioning portion 10262 protrudes from the second surface of the main body portion 10261 along a negative direction of a Z axis.

[0075] The second positioning portion 10263 is fixedly connected to the second surface of the main body portion 10261. In this embodiment, the second positioning portion 10263 is located on a side of the first positioning portion 10262 that faces the positive direction of the X axis, and is provided at an interval from the first positioning portion 10262. The second positioning portion 10263 protrudes from the second surface of the main body portion 10261 along the negative direction of the Z axis.

[0076] The first assembly portion 10264 is fixedly connected to the first surface of the main body portion 10261. In this embodiment, two first assembly portions 10264 are provided, and the two first assembly portions are spaced apart from each other. The foregoing retaining wall 10265 is provided between the two first assembly portions 10264 along a Y-axis direction. The assembly portion protrudes from the first surface of the main body portion 10261 along a Z-axis direction. The first assembly portion 10264 is provided with a first fastening hole, and an opening of the first fastening hole is on an end surface of the assembly portion that faces away from the main body portion 10261. The first fastening hole extends along the Z-axis direction. A hole wall of the first fastening hole is provided with threads.

[0077] The second assembly portion 10251 is fixedly connected to the second surface of the cover plate 1025. In this embodiment, two second assembly portions 10251 are provided, and the two second assembly portions 10251 are spaced apart from each other. The second assembly portion 10251 protrudes from the second surface of the cover plate 1025 along the Z-axis direction. The second assembly portion 10251 is provided with a second fastening hole, and an opening of the second fastening hole is on an end surface of the assembly portion that faces away from the cover plate

1025. The second fastening hole extends along the Z-axis direction.

[0078] To improve stability of a connection between the cover plate 1025 and the base 1026, in some embodiments, the connector 1020 further includes a fastening member 1027. FIG. 12 is a top view of the cover plate 1025. As shown in FIG. 12, the fastening member 1027 is arranged on the cover plate 1025, and the fastening member 1027 may be configured to connect the cover plate 1025 and the base 1026.

[0079] In this embodiment, refer to FIG. 12. Two fastening members 1027 are provided, and the two fastening members 1027 are arranged along the Y-axis direction.

[0080] To avoid interference between the plurality of fastening members 1027 and the cable 103, a projection that is of the mounting hole 1024 that is used for mounting of the cable 103 and that is on the cover plate 1025 may be staggered from a projection that is of the first assembly portion 10264 configured to mount the fastening member 1027 and that is on the cover plate 1025.

[0081] For example, the cable 103 passes through the mounting hole 1024 along the Y direction, and the fastening members 1027 are sequentially arranged along the Y direction. In other words, the plurality of fastening members 1027 may be arranged between two adjacent mounting holes 1024. Therefore, the interference between the cable 103 and the fastening member 1027 can be avoided, thereby making full use of space of the connecting member 1029.

[0082] A material of the fastening member 1027 may be plastic. In another embodiment, the material of the fastening member 1027 may alternatively be another insulating dielectric. This is not specifically limited in this application.

[0083] During assembly, the fastening member 1027 passes through the second assembly portion 10251 and the first assembly portion 10264, to connect the cover plate 1025 and the base 1026. Next, a structure of the fastening member 1027 is described by using an example in which the fastening member 1027 is mounted on the first assembly portion 10264 and the second assembly portion 10251.

[0084] FIG. 13 is a diagram of a structure of a fastening member according to an embodiment of this application. As shown in FIG. 13, the fastening member 1027 includes a first portion 1027a and a second portion 1027b. The second portion 1027b is located on a side of the first portion 1027a that faces the negative direction of the Z axis, and is fixedly connected to the first portion 1027a. A width size of the first portion 1027a is greater than a width size of the second portion 1027b along the Y-axis direction.

[0085] FIG. 14 is a cross-sectional view taken along A-A in FIG. 12. As shown in FIG. 14, the second portion 1027b is configured to connect to the base 1026. Specifically, an outer surface of the second portion 1027b is

provided with threads. A threaded connection between the second portion 1027b and the first assembly portion 10264 is implemented through a fitting connection between the threads of the second portion 1027b and the threads of the first assembly portion 10264. The first portion 1027a is rotated along a direction of the threads the second portion 1027b, and the first portion 1027a may abut against the first assembly portion 10264 as the second portion 1027b moves along the Z-axis direction toward the base 1026, so that the fastening member 1027 is stably mounted on the first assembly portion 10264. In other words, the fastening member 1027 is stably mounted on the base 1026.

[0086] Because the width size of the first portion 1027a is greater than the width size of the second portion 1027b along the Y-axis direction, the first portion 1027a may achieve a limiting function, so as to facilitate assembly between the fastening member 1027 and the housing 1021, thereby improving an assembly effect. In another embodiment, the width size of the first portion 1027a may alternatively be equal to or less than the width size of the second portion 1027b along the Y-axis direction. This is not limited in this application.

[0087] In some embodiments, the fastening member 1027 may be a captive screw.

[0088] In this embodiment, the fastening member 1027 further includes a third portion 1027c. The third portion 1027c is provided between the first portion 1027a and the second portion 1027b. The third portion 1027c is a non-threaded portion, and the non-threaded portion refers to a portion on which no outer threads are formed. An outer diameter of the third portion 1027c is less than an outer diameter of the second portion 1027b, and the outer diameter of the third portion 1027c is less than an outer diameter of the first assembly portion 10264. In this way, in an unlocked state, the third portion 1027c is movable relative to the first assembly portion 10264 in an axial direction of the first assembly portion 10264, and in a locked state, the second portion 1027b of a screw rod is capable of extending out of the first assembly portion 10264 for threaded connection with the second assembly portion 10251.

[0089] For example, the fastening member 1027 is a screw, and the fastening member 1027 includes a first portion 1027a (a nut), a second portion 1027b, and a third portion 1027c (the screw rod). The third portion 1027c is provided between the first portion 1027a and the second portion 1027b. The second portion 1027b is a threaded portion, the third portion 1027c is a non-threaded portion, and the second assembly portion 10251 is sleeved on the third portion 1027c. An outer diameter of the non-threaded portion is less than an outer diameter of the threaded portion, and the outer diameter of the threaded portion is less than the outer diameter of the first assembly portion 10264. In this way, the non-threaded portion in the unlocked state is movable relative to the first assembly portion 10264 in the axial direction of the first assembly portion 10264,

and the threaded portion of the screw rod in the locked state can extend out of the second assembly portion 10251 to be engaged with the first assembly portion 10264, so that the cover plate 1025 and the base 1026 are connected together.

[0090] In some embodiments, to mount the fastening member 1027, as shown in FIG. 6, a plurality of grooves 10252 may be provided on the cover plate 1025, and the first portion 1027a (the nut) in FIG. 13 may be provided in the grooves 10252.

[0091] In this way, the nut can be prevented from protruding from a surface of the cover plate 1025, thereby improving flatness of the surface of the cover plate 1025.

[0092] In some embodiments, as shown in FIG. 15, the bottom of the groove 10252 is provided with a through hole, the third portion 1027c (the non-threaded portion) passes through the through hole, a diameter of the through hole is less than the outer diameter of the second portion 1027b (the threaded portion), and the diameter of the through hole is less than the outer diameter of the first portion 1027a (the nut). In this way, the non-threaded portion cannot pass through the through hole, and the fastening member 1027 cannot be disengaged from the through hole when the fastening member 1027 moves along the axial direction relative to the first assembly portion 10264 in the unlocked state.

[0093] To reduce occupation of space in the X direction by the groove 10252, the groove 10252 may be designed to be in the elongated shape. For example, a waist-shaped groove (also referred to as a runway-shaped groove) shown in FIG. 15 may be used, which means that the middle is designed to be in the elongated shape, and two ends are arc-shaped.

[0094] For example, the length direction of the groove 10252 may be caused to be parallel to the Y direction. The groove 10252 of the structure can save space, thereby implementing a high-density design of an overall structure.

[0095] In some embodiments, to increase strength of the cover plate 1025, a reinforcing rib 10253 may be further arranged between two adjacent grooves 10252, so that every two adjacent grooves 10252 are connected through the reinforcing rib 10253.

[0096] The reinforcing rib 10253 is fixedly connected to the first surface of the cover plate 1025. In this embodiment, there may be one reinforcing rib 10253, and the reinforcing rib 10253 extends along the X direction and protrudes from the first surface of the cover plate 1025 along the Z direction. In this way, the strength of the cover plate 1025 can be increased. The reinforcing rib 10253 and the cover plate 1025 may be integrally formed, so as to simplify a preparation process of the cover plate 1025 and ensure overall strength of the cover plate 1025.

[0097] A manner of connecting the cover plate 1025 to the base 1026 is not limited in embodiments of this

application. In the foregoing embodiment, the cover plate 1025 may be connected to the base 1026 through the fastening member 1027. To improve connection stability of the cover plate 1025 and the base 1026, a rotating shaft may be further arranged at one end of the cover plate 1025 and the base 1026, so that the cover plate 1025 and the base 1026 can be rotatably connected.

[0098] FIG. 16 is a diagram of a structure of the rotating shaft in FIG. 6 in a hovering state. FIG. 17 is a diagram of a structure of the rotating shaft in FIG. 6 in an intermediate state. As shown in FIG. 6 and FIG. 16, the connector 1020 further includes a first rotating shaft 10266 and a second rotating shaft 10254 that are arranged coaxially. The housing 1021 may include a cover plate 1025, a base 1026, and a first rotating shaft 10266 and a second rotating shaft 10254 that connect the cover plate 1025 and the base 1026. The base 1026 is connected to the first rotating shaft 10266, and the cover plate 1025 is connected to the second rotating shaft 10254. The first rotating shaft 10266 is sleeved on the second rotating shaft 10254, and the first rotating shaft 10266 and the second rotating shaft 10254 are rotatably connected. In this way, the cover plate 1025 and the base 1026 are rotatably engaged through the first rotating shaft 10266 and the second rotating shaft 10254, the cover plate 1025 and the base 1026 can be caused to rotate relative to each other, and the cover plate 1025 and the base 1026 can be stacked or expanded with each other. The first rotating shaft 10266 and the second rotating shaft 10254 are arranged, so that the cover plate 1025 and the base 1026 can be rotatably connected to each other, so as to facilitate opening and closing.

[0099] The housing 1021 may include an open state, a closed state, and an intermediate state between the open state and the closed state. When being assembled or repaired, the connector 1020 needs to be hovered stably in the open state, the closed state, or the intermediate state, to facilitate using the connector 1020 by a user.

[0100] In some embodiments, as shown in FIG. 16 and FIG. 17, a protrusion 10266a is provided on the first rotating shaft 10266, and a recess 10254a matching the protrusion 10266a is provided on the second rotating shaft 10254. When the first rotating shaft 10266 and the second rotating shaft 10254 are rotated relative to each other until the protrusion 10266a matches the recess 10254a, a contact area between the first rotating shaft 10266 and the second rotating shaft 10254 is the largest. In this case, friction between the first rotating shaft 10266 and the second rotating shaft 10254 is the largest, and the cover plate 1025 and the base 1026 are in the hovering state.

[0101] In this application, a quantity of protrusions 10266a on the first rotating shaft 10266 and a quantity of recesses 10254a on the second rotating shaft 10254 are not limited, so that the protrusions 10266a on the

first rotating shaft 10266 and the recesses 10254a on the second rotating shaft 10254 may be evenly arranged, and each protrusion 10266a may match any recess 10254a. In this way, the cover plate 1025 and the base 1026 may be hovered at a plurality of positions.

[0102] In some embodiments, a plurality of protrusions 10266a are provided on the first rotating shaft 10266. In this embodiment, as shown in FIG. 16, six protrusions 10266a are provided on the first rotating shaft 10266, and the six protrusions 10266a are provided at intervals. A through hole matching the first rotating shaft 10266 is provided on the second rotating shaft 10254. The through hole of the second rotating shaft 10254 includes six recesses 10254a, and each protrusion 10266a matches the recess 10254a. In another embodiment, one protrusion 10266a may be provided on the first rotating shaft 10266, and a plurality of recesses 10254a matching the protrusion 10266a may be provided on the second rotating shaft 10254. A quantity of protrusions 10266a and a quantity of recesses 10254a are not limited in this application. All these fall within the protection scope of this application.

[0103] As shown in FIG. 16, when the first rotating shaft 10266 and the second rotating shaft 10254 are rotated relative to each other until the six protrusions 10266a match the six recesses 10254a, a contact area between the first rotating shaft 10266 and the second rotating shaft 10254 is the largest. In this case, friction between the first rotating shaft 10266 and the second rotating shaft 10254 is the largest, and the cover plate 1025 and the base 1026 are in the hovering state. As shown in FIG. 17, when the first rotating shaft 10266 and the second rotating shaft 10254 are rotated relative to each other until the six protrusions 10266a do not match the six recesses 10254a (in the intermediate state), a contact area between the first rotating shaft 10266 and the second rotating shaft 10254 is small. In this case, friction between the first rotating shaft 10266 and the second rotating shaft 10254 is small. Because the friction between the protrusion 10266a and the recess 10254a is increased, a hovering effect of the housing 1021 at any angle can be improved.

[0104] Still refer to FIG. 6. The connector 1020 further includes wiring terminals 1022. The wiring terminals 1022 are mounted on the first positioning portion 10262 and the second positioning portion 10263 of the base 1026 through the positioning holes 1023. The wiring terminal 1022 is configured to electrically connect to a cable terminal 1031 of the cable 103. A plurality of wiring terminals 1022 are provided.

[0105] Structures of the wiring terminal 1022, the first positioning portion 10262, and the second positioning portion 10263 are described below by using an example in which the wiring terminals 1022 are mounted on the first positioning portion 10262 and the second positioning portion 10263.

[0106] Refer to FIG. 6. The first positioning portion

10262 includes a first positioning hole 1023a and a second positioning hole 1023b. The second positioning portion 10263 includes a third positioning hole 1023c and a fourth positioning hole 1023d. The first positioning hole 1023a, the second positioning hole 1023b, the third positioning hole 1023c, and the fourth positioning hole 1023d may all be used for mounting of the wiring terminals 1022.

[0107] A quantity of wiring terminals in the connector is not limited in this application. The quantity may be 2, 4, 6, or the like. Descriptions are provided below by using an example in which the connector includes four wiring terminals. For example, the four wiring terminals 1022 are respectively a first wiring terminal 1022a (a first power terminal (R1+)), a second wiring terminal 1022b (a first ground terminal (R1-)), a third wiring terminal 1022c (a second power terminal (R2+)), and a fourth wiring terminal 1022d (a second ground terminal (R2-)). The first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d are sequentially mounted in the base 1026 along the X direction.

[0108] In this embodiment, the first wiring terminal 1022a is electrically connected to one positive electrode of the network device 10, the second wiring terminal 1022b is electrically connected to one negative electrode of the network device 10, the third wiring terminal 1022c is electrically connected to another positive electrode of the network device 10, and the fourth wiring terminal 1022d is electrically connected to another negative electrode of the network device 10.

[0109] The first wiring terminal 1022a is adjacent to the second wiring terminal 1022b, and the third wiring terminal 1022c is adjacent to the fourth wiring terminal 1022d. The first wiring terminal 1022a and the second wiring terminal 1022b may serve as one group of positive and negative circuits, and the third wiring terminal 1022c and the fourth wiring terminal 1022d may serve as another group of positive and negative circuits.

[0110] The first positioning portion 10262 is provided with a first positioning hole 1023a for mounting of the first wiring terminal 1022a (the first power terminal (R1+)) and a second positioning hole 1023b for mounting of the second wiring terminal 1022b (the first ground terminal (R1-)). Openings of the first positioning hole 1023a and the second positioning hole 1023b are on an end surface of the first positioning portion 10262 that faces away from the main body portion 10261. The first positioning hole 1023a and the second positioning hole 1023b extend along the Z-axis direction.

[0111] The second positioning portion 10263 is provided with a third positioning hole 1023c for mounting of the third wiring terminal 1022c (the second power terminal (R2+)) and a fourth positioning hole 1023d for mounting of the fourth wiring terminal 1022d (the second ground terminal (R2-)). Openings of the third positioning hole 1023c and the fourth positioning hole 1023d are on an end surface of the second positioning

portion 10263 that faces away from the main body portion 10261. The third positioning hole 1023c and the fourth positioning hole 1023d extend along the Z-axis direction.

[0112] Therefore, the first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d may be sequentially mounted in the base 1026 along the X direction, to form two groups of positive and negative circuits.

[0113] The structure of the wiring terminal 1022 is not limited in embodiments of this application. In some embodiments, as shown in FIG. 18, the wiring terminal 1022 includes fastening portions (a first fastening portion 10222 and a second fastening portion 10223) and a connecting portion 10221 that are connected to each other. The connecting portion 10221 is connected to the cable 103, and the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) are configured to insert into the mounting hole 1024 of the base 1026, so that the wiring terminal 1022 is mounted on the base 1026.

[0114] In this embodiment, each wiring terminal 1022 includes the connecting portion 10221 and the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) connected to the connecting portion 10221. The connecting portion 10221 of the wiring terminal 1022 is configured to contact a cable terminal 1031 of one cable 103, and the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) of the wiring terminal 1022 are configured to be mounted on the base 1026. A material of each wiring terminal 1022 is a conductive material. For example, the material of each wiring terminal 1022 is copper. In another embodiment, the material of each wiring terminal 1022 may alternatively be another conductive material such as aluminum. This is not limited in this application.

[0115] Descriptions are provided by using a structure of the first wiring terminal 1022a as an example. A structure that is the same as or similar to the structure of the first wiring terminal 1022a may be used for another wiring terminal 1022. Refer to the descriptions of the first wiring terminal 1022a. FIG. 18 is a three-dimensional diagram of the structure of the first wiring terminal 1022a in the connector shown in FIG. 6.

[0116] The first wiring terminal 1022a includes a connecting portion 10221 and a fastening portion. Specifically, there are two fastening portions, which respectively are a first fastening portion 10222 and a second fastening portion 10223. The first fastening portion 10222 and the second fastening portion 10223 are respectively connected to two opposite sides of the connecting portion 10221. The connecting portion 10221 is in a shape of a square block. The connecting portion 10221 is provided with a first connecting hole A. The first connecting hole A passes through the connecting portion 10221 along the Z-axis direction. The first fas-

tening portion 10222 is provided on a side of the connecting portion 10221 that faces the positive direction of the Y axis, and the second fastening portion 10223 is provided on a side of the connecting portion 10221 that faces the negative direction of the Y axis. The first fastening portion 10222 and the second fastening portion 10223 are provided at an interval. One end of each fastening portion (the first fastening portion 10222 and the second fastening portion 10223) is connected to the connecting portion 10221, and the other end extends along the Z-axis direction.

[0117] In this embodiment, the connecting portion 10221 is a square block. The two fastening portions (the first fastening portion 10222 and the second fastening portion 10223) are respectively connected to two opposite sides of the connecting portion 10221, and a cross section of the first wiring terminal 1022a along a Y-Z plane is substantially C-shaped.

[0118] In another embodiment, the quantity of fastening portions (the first fastening portion 10222 and the second fastening portion 10223) may alternatively be 1, 3, 4, or the like. For example, the connecting portion 10221 may be connected to one or more fastening portions (the first fastening portion 10222 and the second fastening portion 10223).

[0119] Sizes of the first fastening portion 10222 and the second fastening portion 10223 are not limited in embodiments of this application. In some embodiments, a length of the first fastening portion 10222 may be less than a length of the second fastening portion 10223.

[0120] In addition, to cause the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) to more easily extend into the positioning holes, in some embodiments, an end surface of one end of the first fastening portion 10222 and/or the second fastening portion 10223 that is away from the connecting portion 10221 is an arc-shaped surface. In this way, compared with a square end portion, an end portion of the arc-shaped surface has better guiding performance, and the wiring terminal 1022 can be more conveniently inserted into the positioning hole of the base 1026.

[0121] In some embodiments, a slot is further provided on the fastening portion, so that slots of every two adjacent wiring terminals 1022 may be engaged through one engagement pin. In this way, the two adjacent wiring terminals can be relatively fastened, so as to prevent relative movement of the adjacent positive and negative wiring terminals, thereby improving electrical connection stability. In addition, the two adjacent wiring terminals are connected through the engagement pin, so that the two adjacent wiring terminals cannot be disengaged from the positioning holes of the base.

[0122] For example, as shown in FIG. 19, a first fastening portion 10222 of the first wiring terminal 1022a is adjacent to a first fastening portion 10222 of the second

wiring terminal 1022b. To improve connection stability of the first wiring terminal 1022a and the second wiring terminal 1022b and the base 1026, the connector 1020 further includes a first engagement pin 1028. A first slot 10224a may be provided on the first fastening portion 10222 of the first wiring terminal 1022a, and a second slot 10224b may be provided on the first fastening portion 10222 of the second wiring terminal 1022b, so that the first engagement pin 1028 can be engaged in the first slot 10224a and the second slot 10224b.

[0123] In this way, the first fastening portion 10222 of the first wiring terminal 1022a and the first fastening portion 10222 of the second wiring terminal 1022b can be relatively fastened, so as to prevent relative movement of adjacent positive and negative wiring terminals 1022, thereby improving electrical connection stability. In addition, the two adjacent wiring terminals 1022 are connected through the engagement pin, so that the first wiring terminal 1022a and the second wiring terminal 1022b cannot be disengaged from the positioning hole of the base 1026.

[0124] Correspondingly, a first fastening portion 10222 of the third wiring terminal 1022c is adjacent to a first fastening portion 10222 of the fourth wiring terminal 1022d. To improve connection stability of the third wiring terminal 1022c and the fourth wiring terminal 1022d and the base 1026, the connector 1020 further includes a second engagement pin (which has a structure the same as or similar to a structure of the first engagement pin and is not shown in the figure). A third slot may be provided on the first fastening portion 10222 of the third wiring terminal 1022c, and a fourth slot may be provided on the first fastening portion 10222 of the fourth wiring terminal 1022d, so that the second engagement pin can be engaged in the third slot and the fourth slot.

[0125] In this way, the first fastening portion 10222 of the third wiring terminal 1022c and the first fastening portion 10222 of the fourth wiring terminal 1022d can be relatively fastened, so as to prevent relative movement of adjacent positive and negative wiring terminals 1022, thereby improving the electrical connection stability. In addition, the two adjacent wiring terminals 1022 are connected through the second engagement pin, so that the third wiring terminal 1022c and the fourth wiring terminal 1022d cannot be disengaged from the mounting hole 1024 of the base 1026.

[0126] A quantity of slots on the fastening portion is not limited in embodiments of this application. In some embodiments, for a wiring terminal arranged at an edge position, the slot may be provided only on a side of the fastening portion that is close to the adjacent wiring terminal. For a wiring terminal arranged at a middle position, slots may be provided on two sides of the fastening portion, so that the fastening portion is hammer-shaped. All these fall within the protection scope of this application.

[0127] A manner of connecting the wiring terminal

1022 to the cable terminal 1031 is described below with reference to FIG. 6 and FIG. 8. Refer to FIG. 8. The cable 103 is electrically connected to the power interface module 102 by connecting the cable terminal 1031 to the wiring terminal 1022.

[0128] In this embodiment, as shown in FIG. 8, the cables 103 include a first cable 103a, a second cable 103b, a third cable 103c, and a fourth cable 103d. The first cable 103a is connected to a first cable terminal 1031a shown in FIG. 6, the second cable 103b is connected to a second cable terminal 1031b shown in FIG. 6, the third cable 103c is connected to a third cable terminal 1031c shown in FIG. 6, and the fourth cable 103d is connected to a fourth cable terminal 1031d shown in FIG. 6.

[0129] In other words, the first cable terminal 1031a is configured to electrically connect to the first wiring terminal 1022a (the first power terminal (R1+)). The second cable terminal 1031b is configured to electrically connect to the second wiring terminal 1022b. The third cable terminal 1031c is configured to electrically connect to the third wiring terminal 1022c (the second power terminal (R2+)). The fourth cable terminal 1031d is configured to electrically connect to the fourth wiring terminal 1022d (the second ground terminal (R2-)).

[0130] A material of the cable terminal 1031 of each cable 103 is a conductive material. For example, the material of the cable terminal 1031 of each cable 103 is copper. When the cable terminal 1031 of the cable 103 is in contact with the wiring terminal 1022, the cable terminal 1031 and the wiring terminal 1022 may conduct a current, that is, current transmission may be performed between the cable terminal 1031 and the wiring terminal 1022. In another embodiment, the material of the cable terminal 1031 of each cable 103 may alternatively be another conductive material such as aluminum. This is not limited in this application.

[0131] During operation, the alternating current output by the external power supply may be fed to the power interface module 102 through the first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d along the first cable 103a, the second cable 103b, the third cable 103c, and the fourth cable 103d respectively. After being rectified by the power interface module 102, the alternating current is converted into a direct current and is fed to the device body 101, so as to implement a rectification function of the connector 1020.

[0132] To connect the cable terminal 1031 and the wiring terminal 1022, in some embodiments, the connector 1020 further includes a connecting member 1029. The connecting member 1029 is configured to implement a connection between the wiring terminal 1022 and the cable terminal 1031, to ensure stable contact between the wiring terminal 1022 and the cable terminal 1031. A plurality of connecting members 1029 are provided, and each wiring terminal 1022 is con-

nected to a cable terminal 1031 of one cable 103 through one connecting member 1029. In this embodiment, a material of each connecting member 1029 may be a conductive material or an insulating material. This is not limited in this application.

[0133] In this embodiment, there are four connecting members 1029. The four connecting members 1029 are respectively a first connecting member 1029a, a second connecting member 1029b, a third connecting member 1029c, and a fourth connecting member 1029d. The first connecting member 1029a is configured to connect the first cable terminal 1031a and the first wiring terminal 1022a of the first cable 103a. The second connecting member 1029b is configured to connect the second cable terminal 1031b and the second wiring terminal 1022b of the second cable 103b. The third connecting member 1029c is configured to connect the third cable terminal 1031c and the third wiring terminal 1022c of the third cable 103c. The fourth connecting member 1029d is configured to connect the fourth cable terminal 1031d of the fourth cable 103d and the fourth wiring terminal 1022d.

[0134] It should be noted that, in this embodiment, the first connecting member 1029a, the second connecting member 1029b, the third connecting member 1029c, and the fourth connecting member 1029d have similar structures. The third cable 103c, the fourth cable 103d, the first cable 103a, and the second cable 103b have similar structures. The first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d have similar structures. To avoid repetition, only the connection between the first wiring terminal 1022a and the first cable terminal 1031a of the first cable 103a through the first connecting member 1029a is described in detail herein.

[0135] Descriptions are provided below by using an example in which the first wiring terminal 1022a is connected to the first cable terminal 1031a of the first cable 103a through the first connecting member 1029a, so as to implement the connection between the first wiring terminal 1022a and the first cable 103a.

[0136] In this embodiment, the connecting portion 10221 of the first wiring terminal 1022a is provided with a first connecting hole A, and the first connecting hole A passes through the connecting portion 10221 of the first wiring terminal 1022a along the Z-axis direction. In this embodiment, the connecting portion 10221 of the first wiring terminal 1022a is located between the base 1026 and the cover plate 1025. The first connecting hole A corresponds to the positioning hole 1023.

[0137] The first cable terminal 1031a is provided with a second connecting hole B, and the second connecting hole B passes through the first cable terminal 1031a along the Z-axis direction. In this embodiment, the first cable terminal 1031a is located between the base 1026 and the first wiring terminal 1022a. The second connecting hole B corresponds to the first connect-

ing hole A and the positioning hole 1023. The first connecting member 1029a passes through the first connecting hole A of the connecting portion 10221 and the second connecting hole B of the first cable terminal 1031a, so that the first cable terminal 1031a is electrically connected to the connecting portion 10221 of the wiring terminal 1022.

[0138] For example, the first connecting member 1029a sequentially passes through the first connecting hole A of the connecting portion 10221 of the wiring terminal 1022 and the second connecting hole B of the first cable terminal 1031a along the Z-axis direction, extends into the positioning hole 1023 of the first positioning portion 10262, and is threadedly connected to the positioning hole 1023, so that the first cable terminal 1031a is sandwiched between the connecting portion 10221 and the connecting member 1029 mounted on the first positioning portion 10262.

[0139] Therefore, the first cable terminal 1031a is connected to the connecting portion 10221 of the wiring terminal 1022 through the first connecting member 1029a, to ensure stable contact between the first cable terminal 1031a and the connecting portion 10221 of the wiring terminal 1022, thereby implementing stable current conduction. In other words, the first cable terminal 1031a implements a stable electrical connection with the connecting portion 10221 through the first connecting member 1029a.

[0140] A manner of connecting the connecting member 1029 to the base 1026 is not limited in embodiments of this application. In some embodiments, the connecting member 1029 may be detachably connected to the base 1026 in a threaded connection manner.

[0141] For example, the connecting member 1029 includes a first limiting portion and a first threaded portion. The first threaded portion is located on a side of the first limiting portion that faces a negative direction of the Z-axis, and is fixedly connected to the first limiting portion. A width size of the first limiting portion is greater than a width size of the first threaded portion along the Y-axis direction. An outer circumferential surface of the first threaded portion is provided with threads.

[0142] In some embodiments, as shown in FIG. 20, the connector 1020 further includes a nut 10260. The nut 10260 is embedded in the positioning hole 1023. The connecting member 1029 may be a bolt. Outer threads are provided on the connecting member 1029. The connecting member 1029 may be connected to the nut 10260 through the threads.

[0143] In this way, the nut 10260 is arranged in the positioning hole 1023, the nut 10260 is caused to be engaged in the positioning hole 1023, and no threads need to be provided in the positioning hole 1023, thereby reducing process difficulty.

[0144] A manner of connecting of the nut 10260 to the positioning hole 1023 is not limited in embodiments

of this application. In some embodiments, as shown in FIG. 20, the nut 10260 is engaged in the positioning hole 1023. For example, a shape of the nut 10260 matches a shape of the positioning hole 1023, and a cross-sectional shape of the positioning hole 1023 is a polygon or an irregular shape. For example, the cross-sectional shape of the positioning hole 1023 may be in a shape of a cross, a quadrilateral, a pentagon, or a hexagon. In this way, the nut 10260 can be prevented from rotating relative to the positioning hole 1023, to ensure stable contact between the first cable terminal 1031a and the connecting portion 10221, and avoid shaking between the first cable terminal 1031a and the connecting portion 10221, thereby implementing stable current conduction between the first cable terminal 1031a and the first wiring terminal 1022a. In other words, a stable electrical connection is implemented between the first cable terminal 1031a and the first wiring terminal 1022a.

[0145] The first cable terminal 1031a is inserted into the connecting portion 10221 that is mounted between the connecting member 1029 and the wiring terminal 1022. The first threaded portion sequentially passes through the second connecting hole B and the first connecting hole A along the Z-axis direction, extends into the positioning hole 1023, and is threadedly connected to the nut 10260 through engagement between threads provided on an outer surface of the first threaded portion and threads provided on an inner wall of the nut 10260. The first limiting portion is rotated along a direction of the threads of the first threaded portion, and the first limiting portion abuts against the first cable terminal 1031a as the first threaded portion moves along the Z-axis direction toward the base 1026.

[0146] In this case, the first cable terminal 1031a is sandwiched between the connecting member 1029 and the connecting portion 10221 of the wiring terminal 1022, to ensure stable contact between the first cable terminal 1031a and the connecting portion 10221, and avoid shaking between the first cable terminal 1031a and the connecting portion 10221, thereby implementing stable current conduction between the first cable terminal 1031a and the first wiring terminal 1022a. In other words, a stable electrical connection is implemented between the first cable terminal 1031a and the first wiring terminal 1022a. In addition, along the Y-axis direction, because the width size of the first limiting portion is greater than the width size of the first threaded portion, the first limiting portion may achieve a limiting function, so as to facilitate assembly between the first connecting member 1029a and the connecting member 1029. The first limiting portion abuts against the connecting portions 10221, to facilitating ensuring stable contact between the first cable terminal 1031a and the connecting portion 10221, a processing precision requirement is low, and processing costs are low.

[0147] According to the connector provided in embodiments of this application, the first connecting member

1029a sequentially passes through the first cable terminal 1031a and the connecting portion 10221 of the wiring terminal 1022 along the Z-axis direction, and is threadably connected to the nut 10260 in the positioning hole through the threads. The first limiting portion of the first connecting member 1029a abuts against the first cable terminal 1031a, to ensure stable contact between the first cable terminal 1031a and the connecting portion 10221 of the wiring terminal 1022, thereby implementing stable current conduction. The first wiring terminal 1022a can be quickly connected to the first cable terminal 1031a through the first connecting member 1029a, thereby reducing assembly difficulty and assembly time. In addition, a structure is simple, and processing is easy, thereby reducing costs.

[0148] In the foregoing embodiments, the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) of the wiring terminal 1022 are arranged in the base 1026. Specifically, the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) of the wiring terminal 1022 may extend through a gap 10230 between the positioning hole 1023 and the nut 10260.

[0149] For example, as shown in FIG. 20, the cross section of the positioning hole 1023 is in a shape of a "cross", and the nut 10260 is square, and includes a first side surface, a second side surface, a third side surface, and a fourth side surface. The first side surface and the second side surface are arranged opposite to each other along the X direction, and the third side surface and the fourth side surface are arranged opposite to each other along the Y direction. When the nut 10260 is arranged in the positioning hole 1023, the first side surface and the second side surface is closely attached to an inner wall of the positioning hole 1023, and the gap 10230 is provided between the third side surface and the fourth side surface and the inner wall of the positioning hole 1023. The fastening portions (the first fastening portion 10222 and the second fastening portions 10223) of the wiring terminal 1022 pass through the gap 10230 between the third side surface and the fourth side surface and the inner wall of the positioning hole 1023.

[0150] To improve electrical connection stability of the wiring terminal 1022, in some embodiments, as shown in FIG. 21, a snap 10220 is arranged on the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) of the wiring terminal 1022, and the snap 10220 is configured to be engaged with an outer side wall of the nut 10260.

[0151] A structure of the snap 10220 is not limited in embodiments of this application. For example, the snap 10220 protrudes from the fastening portions (the first fastening portion 10222 and the second fastening portion 10223). The snap 10220 may use an elastic structure. A shape of the snap 10220 is not limited in embodiments, and may be a circle, a square, or the like. The snap 10220 is arranged on an inner wall of the fasten-

ing portions (the first fastening portion 10222 and the second fastening portion 10223) of the wiring terminal 1022. When the wiring terminal 1022 is mounted on the base 1026, the inner wall of the fastening portions (the first fastening portion 10222 and the second fastening portion 10223) faces the outer side wall of the nut 10260.

[0152] In some embodiments, a recess 10254a that matches the snap 10220 may be further provided on the outer side wall of the nut 10260, so that the snap 10220 is engaged with the recess 10254a, to improve electrical connection stability.

[0153] The foregoing embodiment is described by using an example in which the connector includes four wiring terminals. In some other embodiments, as shown in FIG. 22, the connector may include 2 wiring terminals. For a structure of the connector, refer to the foregoing embodiment. Details are not described herein again.

[0154] In another embodiment, as shown in FIG. 23, the connector includes six wiring terminals: a first wiring terminal 1022a, a second wiring terminal 1022b, a third wiring terminal 1022c, a fourth wiring terminal 1022d, a fifth wiring terminal 1022e, and a sixth wiring terminal 1022f. A difference from the foregoing embodiment is that the wiring terminals 1022 are divided into two rows along the Y direction. The first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d are arranged into a first row along the X direction. The fifth wiring terminal 1022e and the sixth wiring terminal 1022f are arranged into a second row along the X direction.

[0155] The first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d may use a structure the same as that in FIG. 18. Fastening portions (10222 and 10223) of the first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d may be arranged at intervals on two opposite sides of the connecting portion 10221 along the Y direction. Fastening portions (10222 and 10223) of the fifth wiring terminal 1022e and the sixth wiring terminal 1022f may be arranged at intervals on two opposite sides of the connecting portion 10221 along the X direction. All these fall within the protection scope of this application.

[0156] In some embodiments, a corner may alternatively be formed at an end (one end of the fastening portion that is away from the connecting portion) of the wiring terminal 1022. A direction of the corner is not limited in embodiments of this application, and may be adjusted based on a line in the device body. Details are not described in this application. All these fall within the protection scope of this application.

[0157] Correspondingly, the connector further includes a first positioning hole 1023a for mounting of the first wiring terminal 1022a, a second positioning

hole 1023b for mounting of the second wiring terminal 1022b, a third positioning hole 1023c for mounting of the third wiring terminal 1022c, a fourth positioning hole 1023d for mounting of the fourth wiring terminal 1022d, a fifth positioning hole 1023e for mounting of the fifth wiring terminal 1022e, and a sixth positioning hole 1023f for mounting of the sixth wiring terminal 1022f.

[0158] Correspondingly, as shown in FIG. 24, the connector further includes a first mounting hole 1024a in communication with the first positioning hole 1023a, a second mounting hole 1024b in communication with the second positioning hole 1023b, a third mounting hole 1024c in communication with the third positioning hole 1023c, a fourth mounting hole 1024d in communication with the fourth positioning hole 1023d, a fifth mounting hole 1024e in communication with the fifth positioning hole 1023e, and a sixth mounting hole 1024f in communication with the sixth positioning hole 1023f.

[0159] The first mounting hole 1024a, the second mounting hole 1024b, the third mounting hole 1024c, the fourth mounting hole 1024d, the fifth mounting hole 1024e, and the sixth mounting hole 1024f are all used for mounting of the cables. The first mounting hole 1024a, the second mounting hole 1024b, the third mounting hole 1024c, and the fourth mounting hole 1024d are located in the first row, and the fifth mounting hole 1024e and the sixth mounting hole 1024f are located in the second row.

[0160] To avoid interference between the cable connected to the first row of wiring terminals and the cable connected to the second row of wiring terminals, a height of the mounting hole can be adjusted, so that a height of the mounting hole of the first row of cables is different from a height of the mounting hole of the second row of cables. In this way, the cable terminals can be staggered in the Z direction, thereby avoiding interference.

[0161] For example, as shown in FIG. 24, the base 1026 may be divided into two portions: a first base and a second base. Bottom surfaces of the first base and the second base are flush, and a height of the first base is greater than a height of the second base. The first positioning hole 1023a, the second positioning hole 1023b, the third positioning hole 1023c, and the fourth positioning hole 1023d are formed on the first base. The fifth positioning hole 1023e and the sixth positioning hole 1023f are formed on the second base.

[0162] The first row of wiring terminals 1022, namely, the first wiring terminal 1022a, the second wiring terminal 1022b, the third wiring terminal 1022c, and the fourth wiring terminal 1022d, are mounted in the positioning holes 1023 of the first base. The second row of wiring terminals, namely, the fifth wiring terminal 1022e and the sixth wiring terminal 1022f, are mounted in the positioning holes 1023 of the second base.

[0163] In this way, the first row of mounting holes 1024, namely, the first mounting hole 1024a, the sec-

ond mounting hole 1024b, the third mounting hole 1024c, and the fourth mounting hole 1024d, are formed on the first base. The second row of mounting holes 1024, namely, the fifth mounting hole 1024e and the sixth mounting hole 1024f, are formed on the second base, so that the second row of mounting holes and the first row of mounting holes form a gap, thereby avoiding interference between the cables mounted in the first row of mounting holes and the cables mounted in the second row of mounting holes.

[0164] An embodiment of this application provides a connector. The connector includes a housing, a plurality of wiring terminals, and a plurality of connecting members. The housing is provided with a plurality of positioning holes, and the wiring terminals are mounted in the positioning holes. The housing is further provided with a plurality of mounting holes in communication with the plurality of positioning holes, and mounting holes are used for mounting cables. The wiring terminal is provided with a first connecting hole corresponding to the positioning hole. The cable includes a cable terminal, and the cable terminal is provided with a second connecting hole corresponding to the positioning hole. The connecting member passes through the first connecting hole, the second connecting hole, and the positioning hole, to electrically connect the cable terminal to the wiring terminal. Each mounting hole includes at least two sub-mounting holes that are in communication with each other. Therefore, the plurality of sub-mounting holes may each be used for mounting of the cable. When a plurality of connectors are arranged on one network device, a connector having a corresponding cable outlet direction (an opening direction of the mounting hole) may be selected based on a mounting position, so that a connector having a plurality of sub-mounting holes may be used at different positions. Compared with a connector in the related technology in which mounting holes are provided in only one direction, the connector of this application does not need to be rotated when being mounted at different positions, thereby reducing the risk of incorrect connections and potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0165] In some embodiments of this application, each mounting hole includes two sub-mounting holes, and an included angle between the two sub-mounting holes is 180°. Therefore, the two connectors of the structure may be arranged on two opposite sides of the network device. After being mounted, positive and negative polarities of power supplies of the two connectors correspond to each other, and there is no risk of incorrect connections, thereby reducing potential safety hazards. In addition, no internal adapter needs to be designed in the network device for interconnection, thereby reducing costs and improving power supply reliability.

[0166] The foregoing descriptions are merely specific

implementations of this application, but are not intended to limit the protection scope of this application. Any variation or replacement within the technical scope disclosed in this application shall fall within the protection scope of this application. Therefore, the protection scope of this application shall be subject to the protection scope of the claims.

Claims

1. A connector, comprising a housing, a plurality of wiring terminals, and a plurality of connecting members, wherein the housing is provided with a plurality of positioning holes, and the wiring terminals are mounted in the positioning holes;

the housing is further provided with a plurality of mounting holes in communication with the plurality of positioning holes, and the plurality of mounting holes are used for mounting cables;

the wiring terminal is provided with a first connecting hole corresponding to the positioning hole, the cable comprises a cable terminal, the cable terminal is provided with a second connecting hole corresponding to the positioning hole, and the connecting member passes through the first connecting hole, the second connecting hole, and the positioning hole to electrically connect the cable terminal to the wiring terminal; and

each mounting hole comprises at least two sub-mounting holes that are in communication with each other, and the sub-mounting holes are in communication with the positioning holes.

2. The connector according to claim 1, wherein each mounting hole comprises two sub-mounting holes, and an included angle between the two sub-mounting holes is 180°.
3. The connector according to claim 1 or 2, wherein the mounting hole is perpendicular to the positioning hole.
4. The connector according to any one of claims 1 to 3, wherein the housing comprises a cover plate and a base that are connected to each other, the base is provided with the plurality of positioning holes, a surface of the base close to the cover plate is provided with a plurality of retaining walls, and the base, the plurality of retaining walls, and the cover plate enclose to form the plurality of mounting holes.
5. The connector according to claim 4, wherein the

connector further comprises a first rotating shaft and a second rotating shaft that are arranged coaxially, the first rotating shaft is connected to the base, the second rotating shaft is connected to the cover plate, the first rotating shaft is sleeved on the second rotating shaft, and the first rotating shaft and the second rotating shaft are rotatably connected to each other.

6. The connector according to claim 5, wherein the first rotating shaft is provided with a plurality of protrusions, and the second rotating shaft is provided with recesses matching the protrusions.
7. The connector according to any one of claims 4 to 6, wherein the connector further comprises a fastening member, the cover plate comprises a first assembly portion, the base comprises a second assembly portion, the fastening member comprises a first portion, a second portion, and a third portion that are connected to each other, the third portion is arranged between the first portion and the second portion, an outer diameter of the first portion is greater than an outer diameter of the third portion, the third portion passes through the assembly portion, the second portion is provided with threads, in an unlocked state, the third portion is movable relative to the first assembly portion in an axial direction of the first assembly portion, and in a locked state, the second portion is capable of extending out of the first assembly portion for threaded connection with the second assembly portion.
8. The connector according to claim 7, wherein a surface of the cover plate is provided with a groove, and the first portion is arranged in the groove.
9. The connector according to claim 8, wherein a bottom of the groove is provided with a through hole, the third portion passes through the through hole, a diameter of the through hole is less than an outer diameter of the second portion, and the diameter of the through hole is less than the outer diameter of the first portion.
10. The connector according to claim 8 or 9, wherein a cross section of the groove is an elongated shape, and a length direction of the groove is parallel to an axis of the mounting hole.
11. The connector according to claim 10, wherein every two adjacent grooves are connected through a reinforcing rib.
12. The connector according to any one of claims 1 to 11, wherein the connector further comprises a nut, the nut is embedded in the positioning hole, and the connecting member is threadedly connected to

the nut.

13. The connector according to claim 12, wherein an outer shape of the nut matches a shape of the positioning hole, and a cross-sectional shape of the positioning hole is a polygon or an irregular shape. 5
14. The connector according to claim 12 or 13, wherein the wiring terminal comprises a fastening portion and a connecting portion that are connected to each other, the connecting portion is provided with the first connecting hole, and the fastening portion passes through a gap between the positioning hole and the nut. 10 15
15. The connector according to claim 14, wherein two fastening portions are provided, and the two fastening portions are arranged on two opposite sides of the connecting portion. 20
16. The connector according to claim 14 or 15, wherein the fastening portion is provided with a snap, and the snap is configured to snap-connect to an outer side wall of the nut. 25
17. The connector according to any one of claims 14 to 16, wherein the fastening portion is provided with a slot, and the slots of every two adjacent wiring terminals are snap-connected by a snap pin. 30
18. The connector according to any one of claims 14 to 17, wherein an end surface of the fastening portion away from the connecting portion is an arc-shaped surface. 35
19. The connector according to any one of claims 1 to 18, wherein the plurality of mounting holes comprise a first mounting hole and a second mounting hole, and a height of the first mounting hole in the housing is different from a height of the second mounting hole in the housing. 40
20. A network device, comprising a cable, a device body, and the connector according to any one of claims 1 to 19, wherein the cable is connected to the device body through the connector. 45
21. The network device according to claim 20, wherein the device body further comprises a power interface module, the power interface module is connected to the device body, and the wiring terminal of the connector is connected to the power interface module; and 50
the power interface module is provided on the device body, and the connector is connected to the device body through the power interface module. 55

22. The network device according to claim 20 or 21, wherein two connectors are arranged on the device body, one connector is connected to the cable through a first sub-mounting hole, and the other connector is connected to the cable through a second sub-mounting hole.

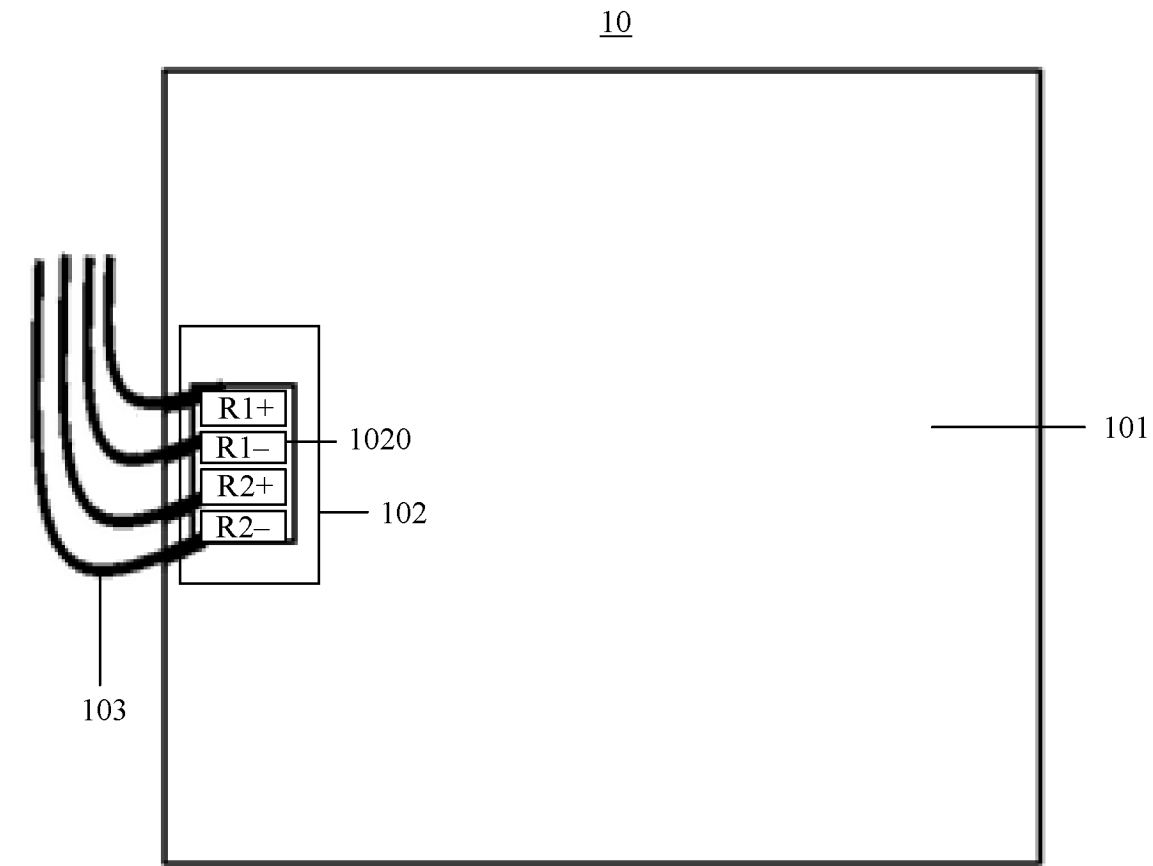


FIG. 1

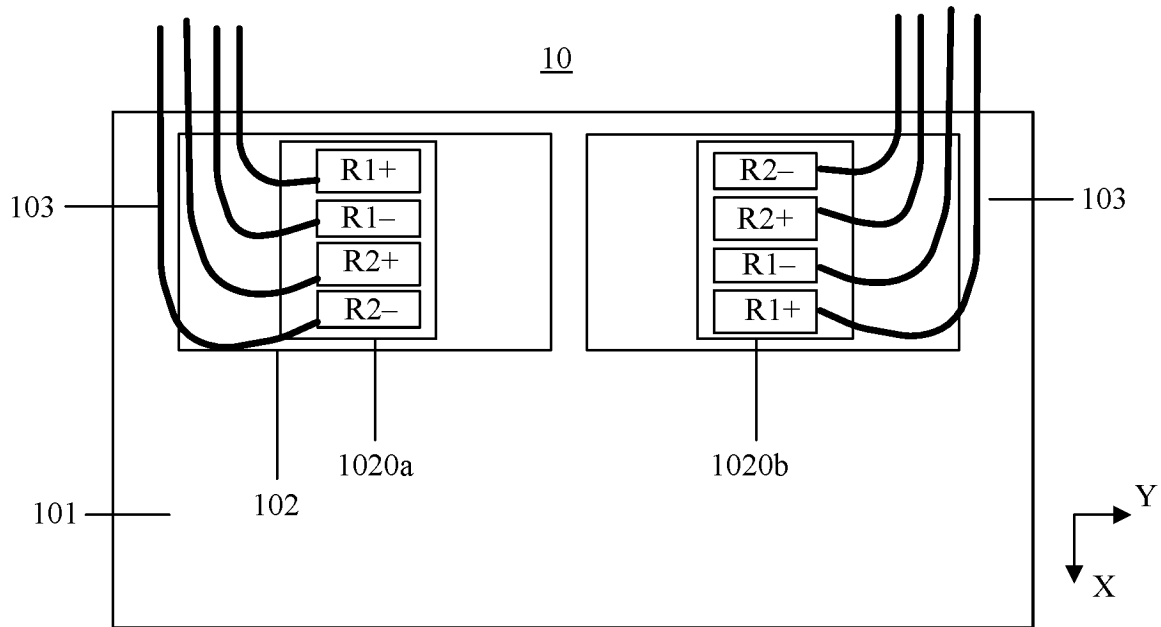


FIG. 2

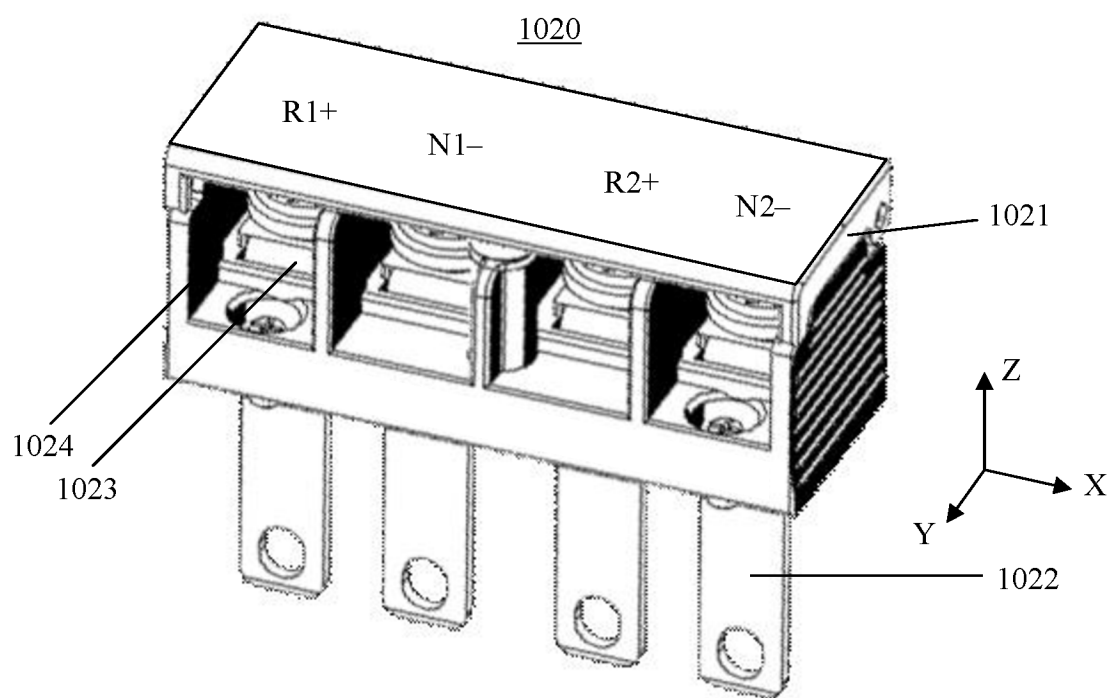


FIG. 3

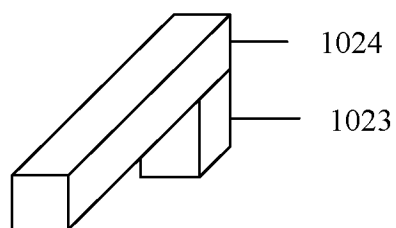


FIG. 4

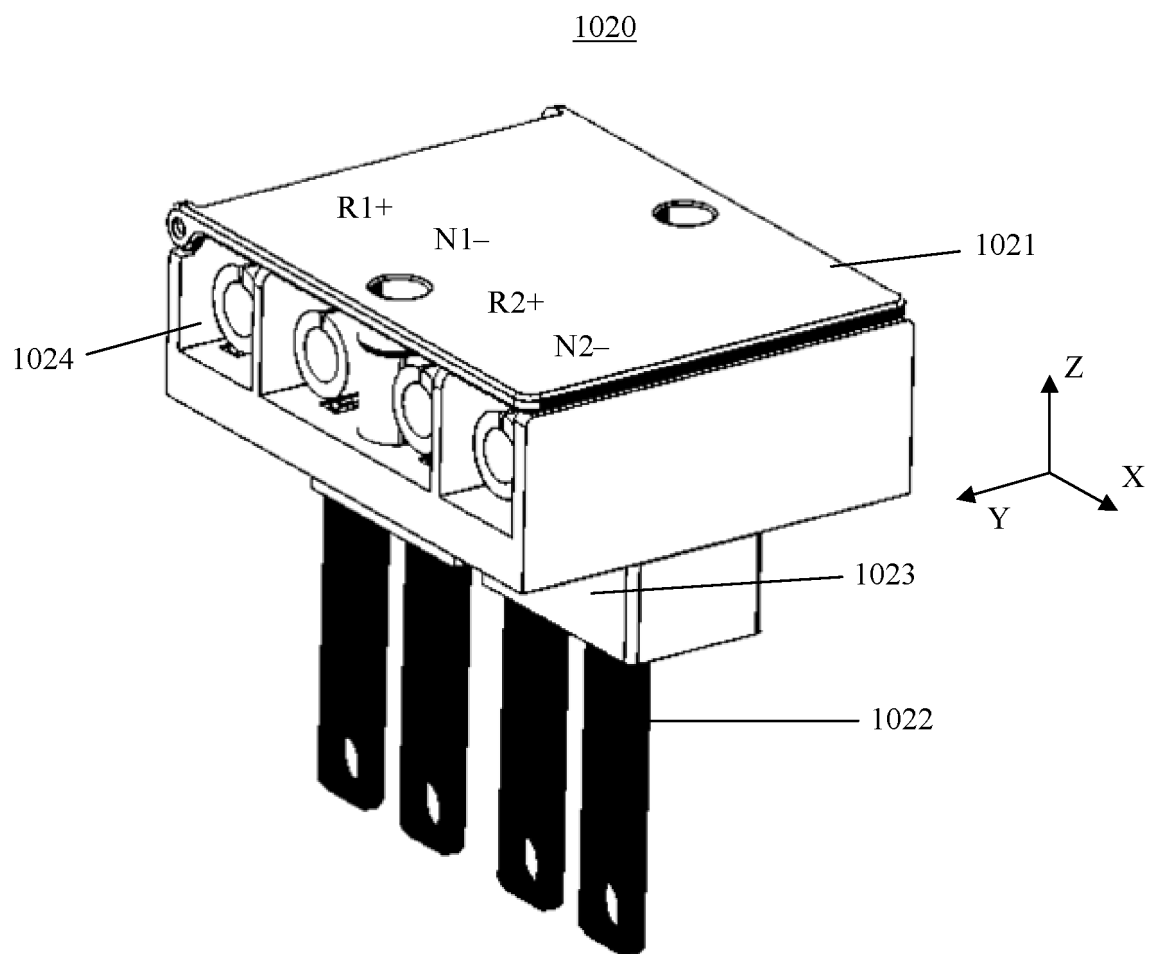


FIG. 5

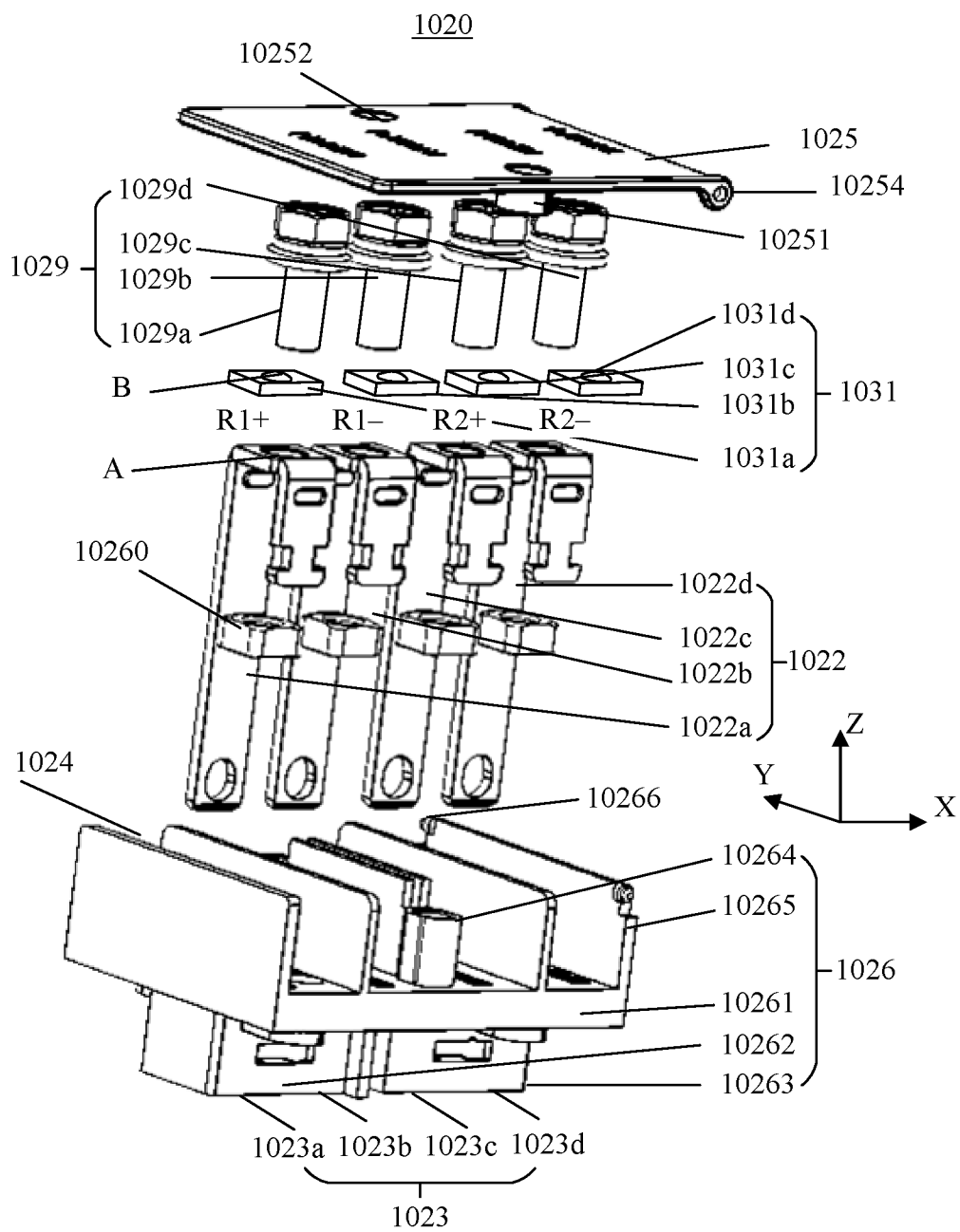


FIG. 6

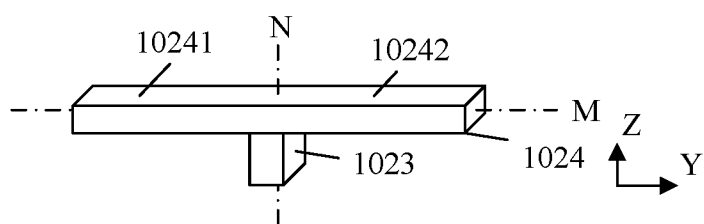


FIG. 7

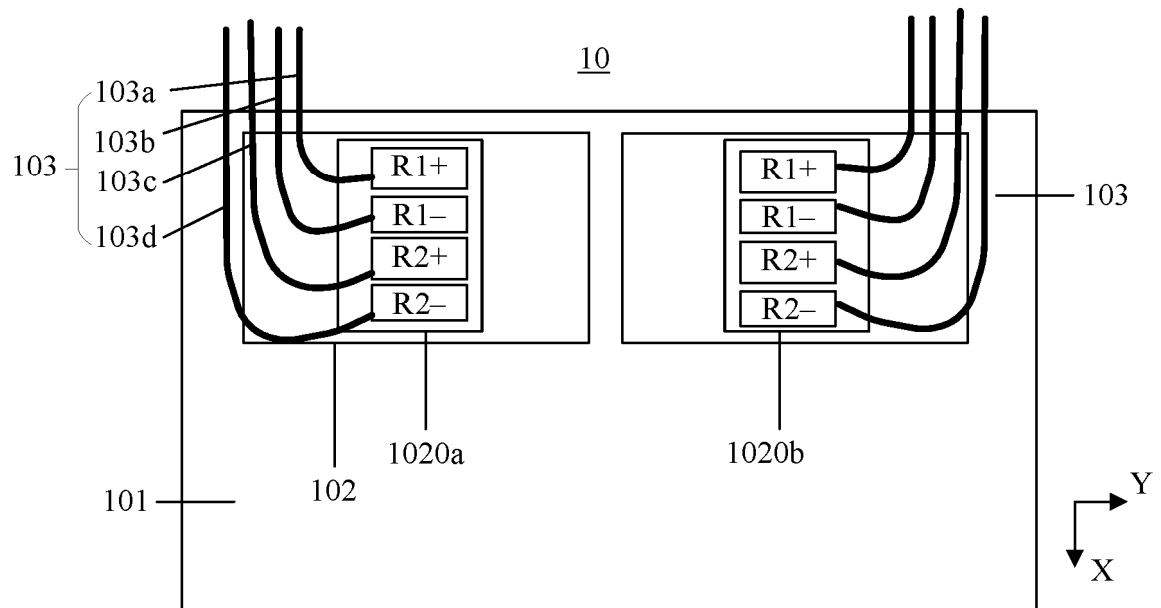


FIG. 8

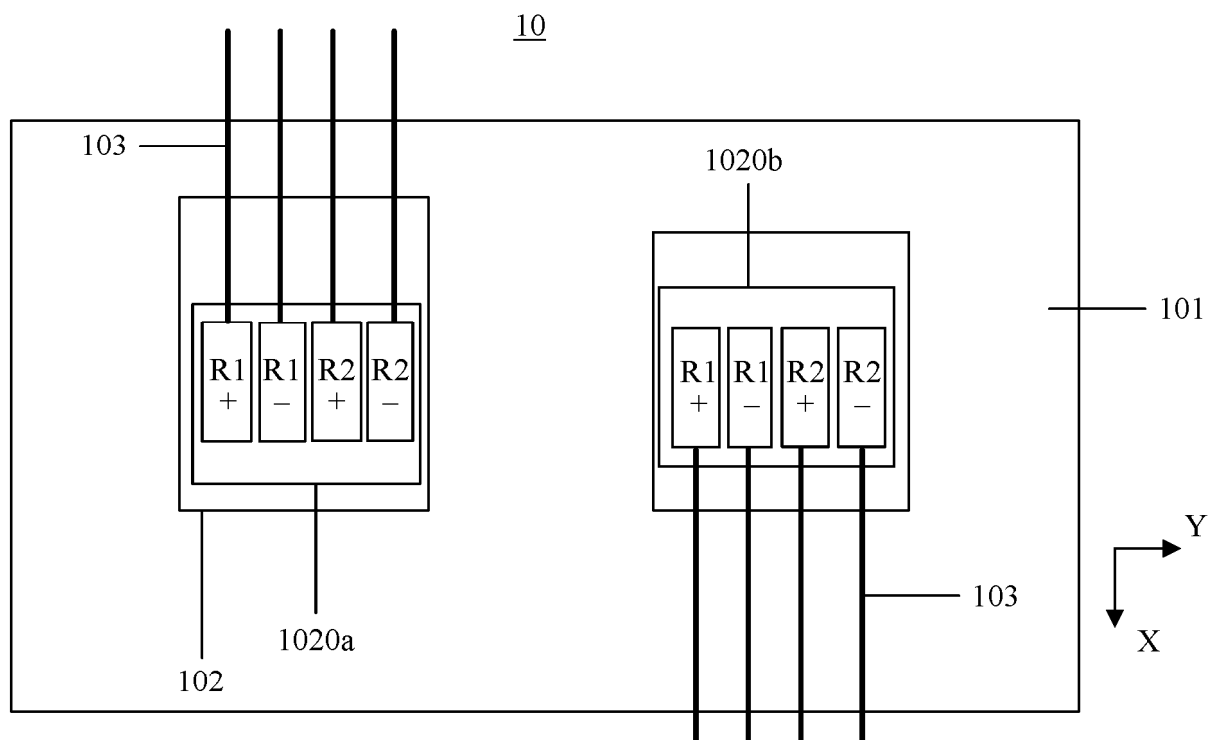


FIG. 9

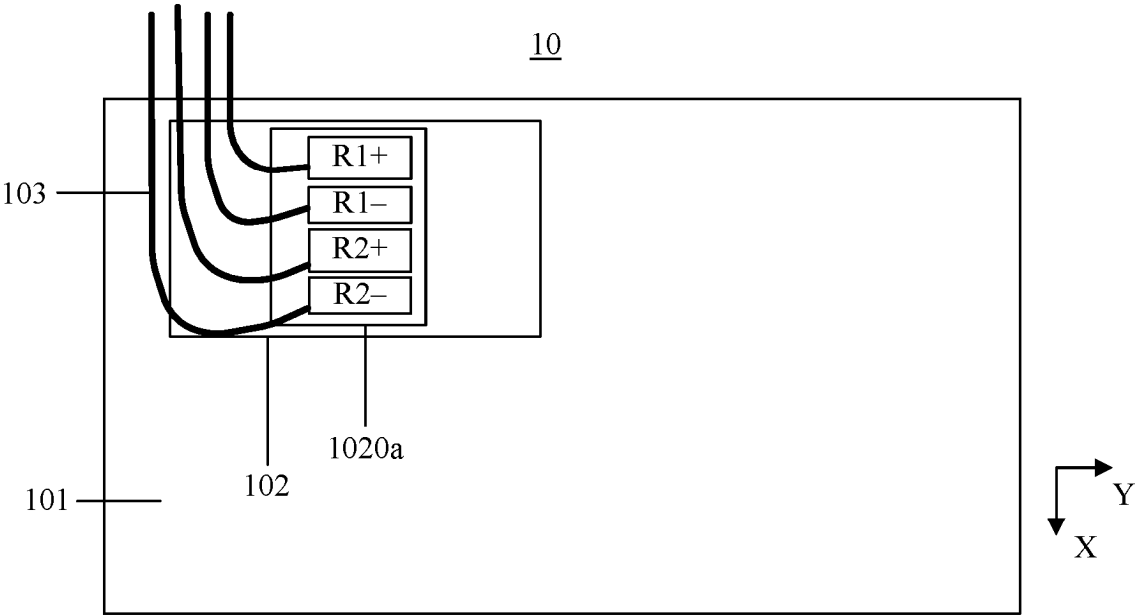


FIG. 10

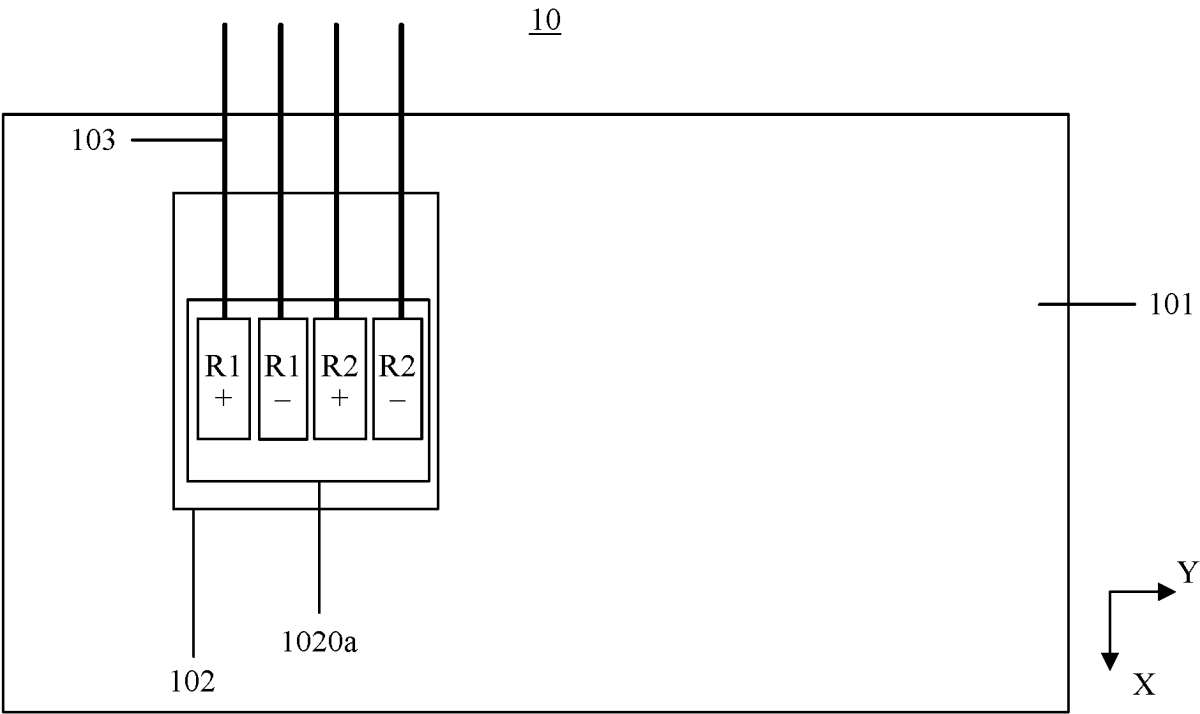


FIG. 11

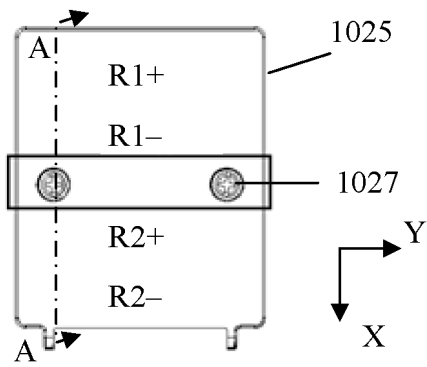


FIG. 12

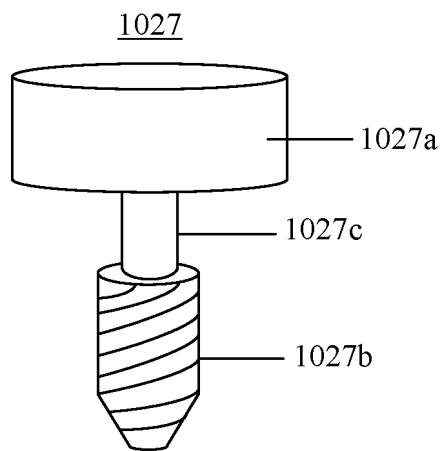


FIG. 13

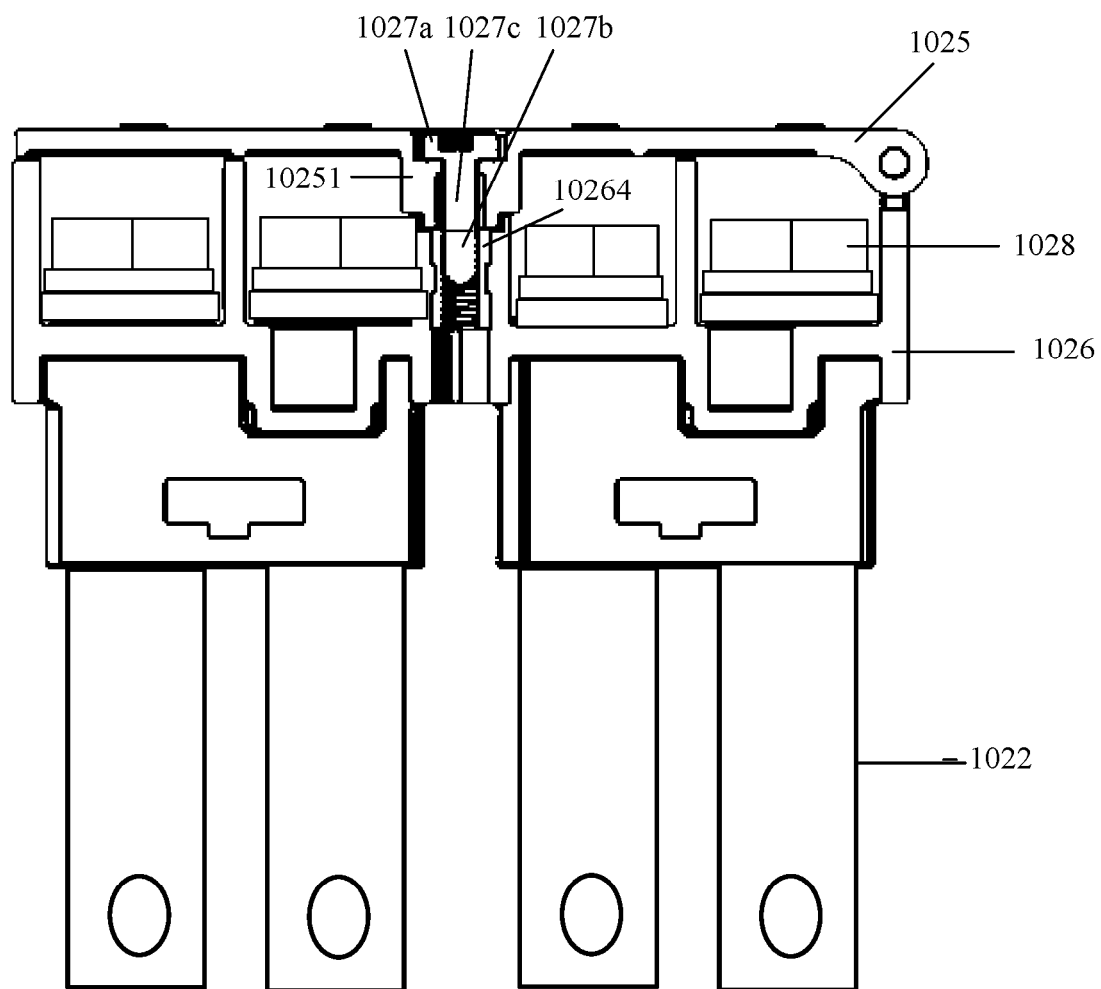


FIG. 14

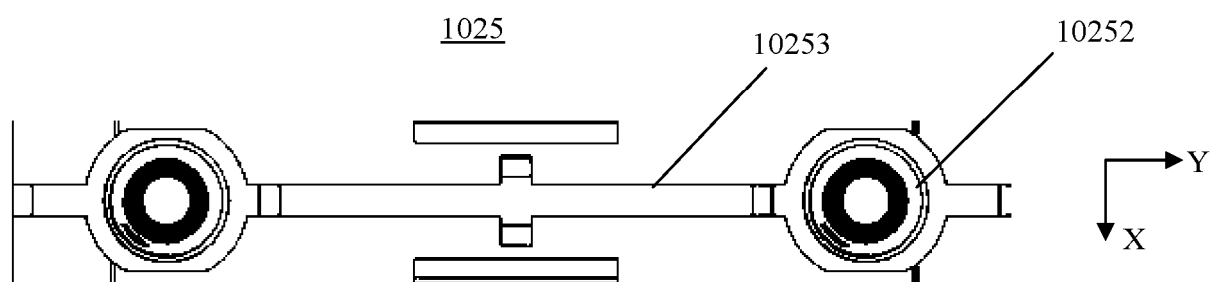


FIG. 15

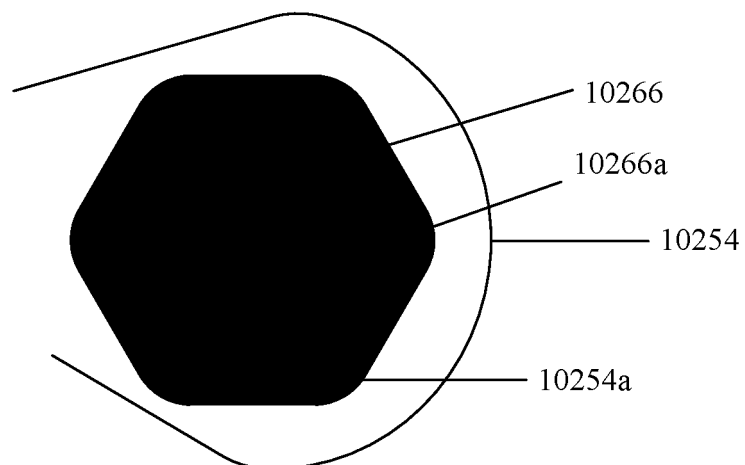


FIG. 16

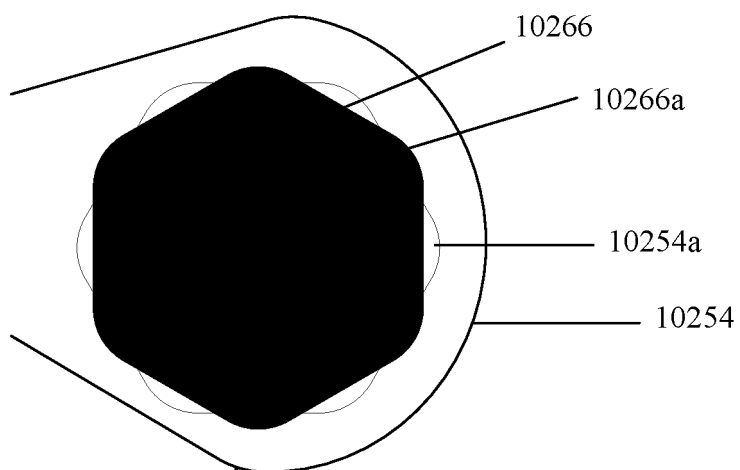


FIG. 17

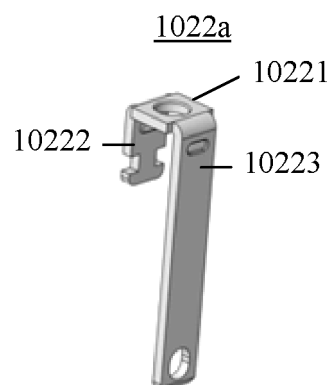


FIG. 18

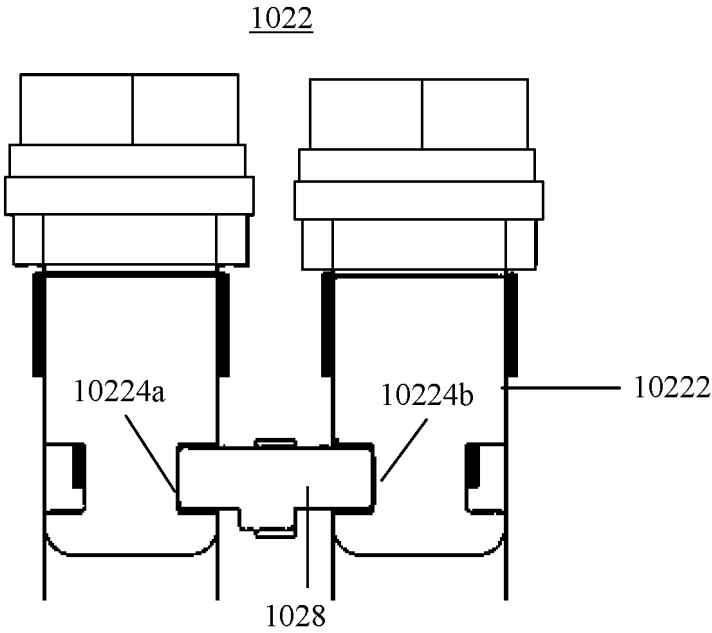


FIG. 19

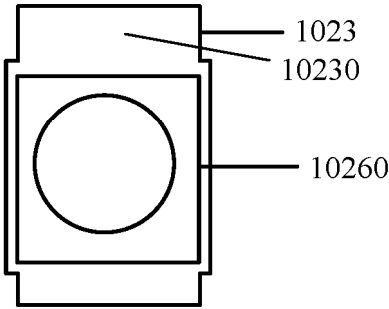


FIG. 20

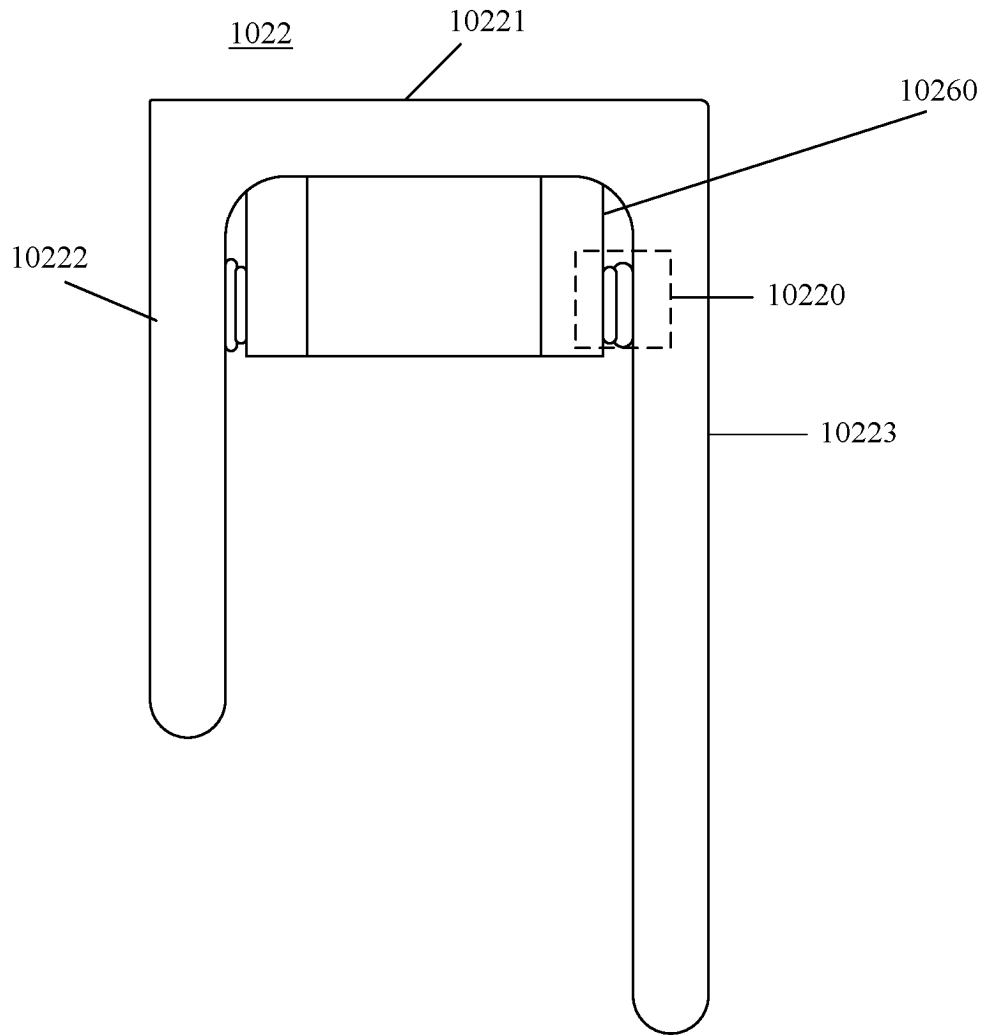


FIG. 21

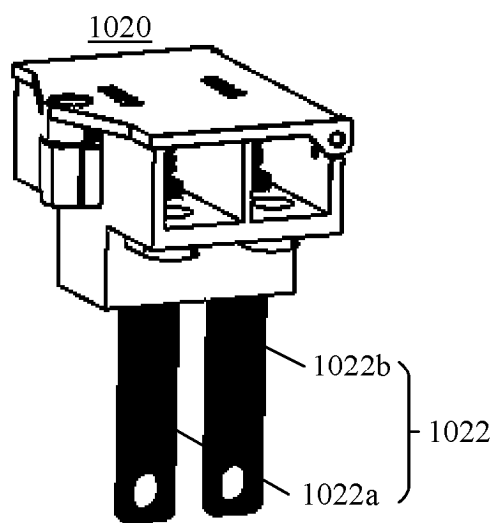


FIG. 22

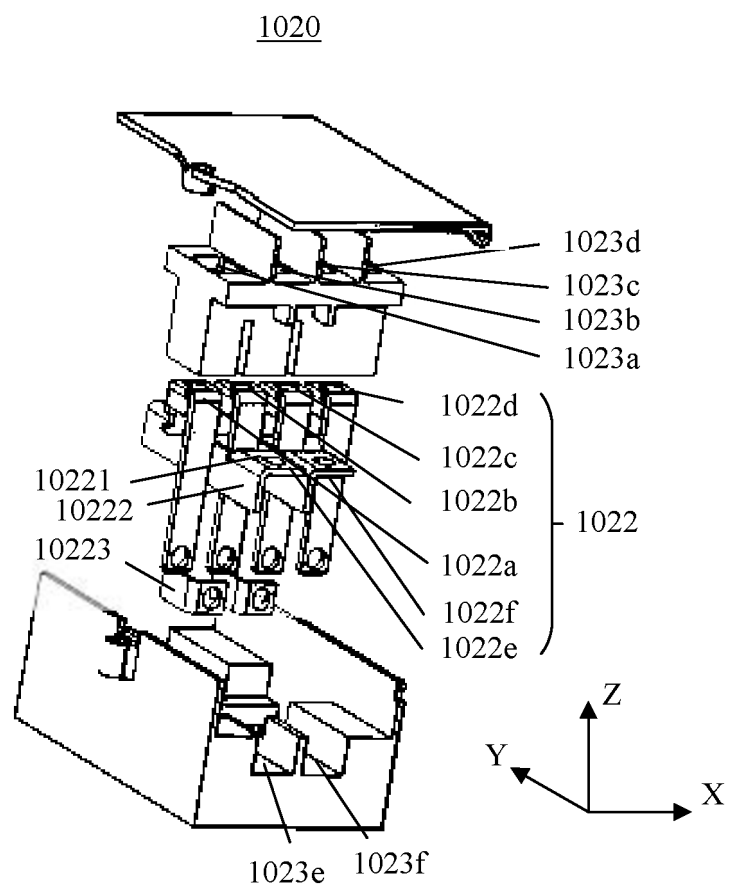


FIG. 23

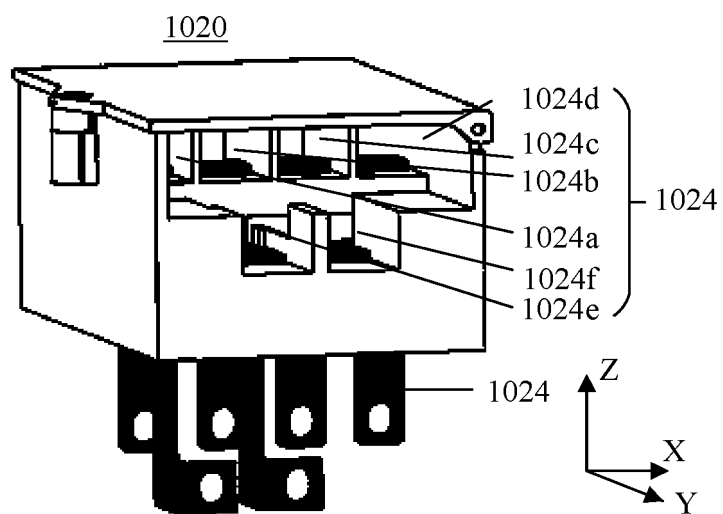


FIG. 24

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2024/129922

A. CLASSIFICATION OF SUBJECT MATTER

H01R13/40(2006.01)i; H01R4/30(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC:H01R13/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, CNTXT, ENTXTC, ENTXT, WPABS, CNKI: 连接器, 接线端子, 电缆, 线缆, 平行, 夹角, 角度, 180度; connector, terminal+, cable+, wir+, angl+, 180°

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 217881948 U (JIANGSU HANDA ELECTRIC POWER TECHNOLOGY CO., LTD.) 22 November 2022 (2022-11-22) description, paragraphs 33-63, and figures 1-15	1-22
A	CN 215299572 U (HANGZHOU JOIN ELECTRIC TECHNOLOGY CO., LTD.) 24 December 2021 (2021-12-24) entire document	1-22
A	CN 110611201 A (CHINA AVIATION OPTICAL-ELECTRICAL TECHNOLOGY CO., LTD.) 24 December 2019 (2019-12-24) entire document	1-22
A	CN 103811934 A (SUZHOU INDUSTRIAL PARK EXCEEDCONN TECHNOLOGY CO., LTD.) 21 May 2014 (2014-05-21) entire document	1-22

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 30 December 2024	Date of mailing of the international search report 09 January 2025
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/CN2024/129922

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	217881948	U	22 November 2022	None			
CN	215299572	U	24 December 2021	None			
CN	110611201	A	24 December 2019	None			
CN	103811934	A	21 May 2014	CN	103811934	B	24 August 2016

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202311866371 [0001]