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(54) REFRIGERATION APPARATUS

(57) A refrigeration apparatus, comprising: a case body (1), a hinge assembly (2), a door body (3) and a front cover assembly (4), two hinge fixing pieces (5) being arranged on the front side of the case body (1). The refrigeration apparatus has a first state in which the front cover assembly (4) covers at least part of an accommodation compartment (104) and the left hinge fixing piece (5), and a second state in which the front cover assembly (4) covers at least part of the accommodation compartment (104) and the right hinge fixing piece (5). Door opening directions of the refrigeration apparatus in the first state and the second state are different, thereby achieving a function of changing the door opening directions between left and right directions.

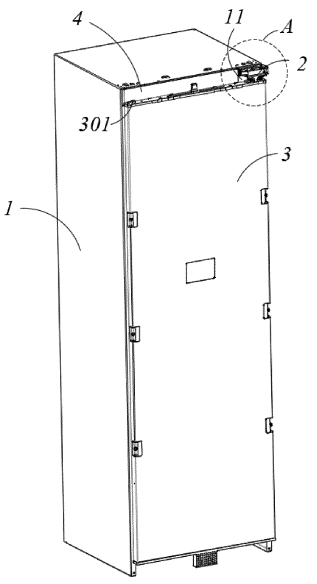

FIG. 1

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Description

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the priority of Chinese Patent Application filed on June 24, 2022, with application number 202210730182.2, entitled "Refrigeration Apparatus", the entire content of which is incorporated herein by reference.

TECHNICAL FIELD

[0002] The present application relates to the field of refrigeration apparatuses, particularly to a refrigeration apparatus.

BACKGROUND

[0003] Certain models of refrigerators, freezers, and other refrigeration apparatuses require hinge fixing portions on both the left and right sides of the case body to accommodate different installation conditions and user habits. The hinge connects to one of the two hinge fixing portions, allowing the refrigeration apparatus to switch between left-opening and right-opening states by changing the hinge position. When the hinge is connected to one of the hinge fixing portions, the other hinge fixing portion is exposed, affecting the aesthetic appearance of the refrigeration apparatus and making it prone to damage due to lack of protection.

SUMMARY

[0004] The object of the present application is to provide a refrigeration apparatus with a reversible door opening direction.

[0005] In particular, the present application is directed to a refrigeration apparatus comprising:

a case body having a compartment and an accommodation compartment with a front opening, and two hinge fixing pieces distributed along a left-right direction on a front side of the case body;
a hinge assembly selectively connected to one of the two hinge fixing pieces;
a door body positioned in front of the case body and connected to the hinge assembly;
a front cover assembly positioned in front of the accommodation compartment to cover at least part of the accommodation compartment;
the refrigeration apparatus having a first state where the hinge assembly is connected to a right hinge fixing piece, and the front cover assembly covers at least part of the accommodation compartment and a left hinge fixing piece, and a second state where the hinge assembly is connected to the left hinge fixing piece, and the front cover assembly covers at least part of the accommodation compartment and the right hinge fixing piece.

[0006] Further, the front cover assembly rotates 180° relative to the second state when the refrigeration apparatus is in the first state.

[0007] Further, the front cover assembly comprises a front cover for covering at least part of the accommodation compartment and one of the two hinge fixing pieces, and a first electronic device installed on a rear side of the front cover;

the refrigeration apparatus further comprises a control module defined inside the accommodation compartment, the control module has a connecting portion for connecting to the first electronic device;
the connecting portion is connected to the first electronic device when the refrigeration apparatus is in the first state and the second state, and the front cover assembly rotates 180° around an axis passing through the center of the first electronic device and extending along the front-back direction when the refrigeration apparatus is in the first state relative to the second state.

[0008] Further, the first electronic device is a magnetic sensitive switch.

[0009] Further, the first electronic device is staggered with a center of the front cover in the left-right direction, when the refrigeration apparatus is in the first state, the first electronic device is located in the right half region of the front cover, and when the refrigeration apparatus is in the second state, the first electronic device is located in the left half region of the front cover.

[0010] Further, the first electronic device corresponds to a center of the front cover in height.

[0011] Further, the refrigeration apparatus further comprises an embedded box defined in the accommodation compartment, the control module is arranged inside the embedded box;
the rear side of the front cover is provided with two sets of snap structures symmetrically distributed up and down, the embedded box has two sets of upper matching structures and lower matching structures distributed up and down, the upper matching structures and lower matching structures are used to cooperate with one of the snap structures respectively to fix the front cover assembly when the refrigeration apparatus is in the first state and the second state.

[0012] Further, the hinge fixing piece comprises a first connecting plate for connecting to the hinge assembly and a second connecting plate for connecting to the case body, the embedded box is located behind the first connecting plate;
the length of the embedded box in the left-right direction is greater than the length of the front cover in the left-right direction, the upper matching structure includes two first upper matching parts respectively corresponding to the two first connecting plates, and a second upper matching

part located between the two first upper matching parts, the snap structure has a first snap part for cooperating with the first upper matching part, and a second snap part for cooperating with the second upper matching part, the first snap part and the second snap part extend backward from the rear side of the front cover, and the first connecting plate is provided with a matching hole for the first snap part to pass through.

[0013] Further, the extending length of the first snap part is greater than the extending length of the second snap part.

[0014] Further, the first connecting plate is installed on the front side of the embedded box, and the second connecting plate is fixed inside the accommodation compartment and located between the embedded box and the top wall of the accommodation compartment.

[0015] Further, the front part of the embedded box is provided with a first groove for cooperating with the first connecting plate, and the top of the embedded box is provided with a second groove for cooperating with the second connecting plate.

[0016] Further, the embedded box has a first storage cavity and two second storage cavities respectively set on the left and right sides of the first storage cavity, both the first storage cavity and the second storage cavities have front openings, the control module is set inside the first storage cavity, and the second storage cavities correspond longitudinally to the hinge fixing pieces;
when the refrigeration apparatus is in the first state, the front cover assembly covers the first storage cavity and a left second storage cavity; when the refrigeration apparatus is in the second state, the front cover assembly covers the first storage cavity and a right second storage cavity.

[0017] Further, the refrigeration apparatus further comprises a first decorative cover, when the refrigeration apparatus is in the first state, the first decorative cover covers the right second storage cavity; when the refrigeration apparatus is in the second state, the first decorative cover covers the left second storage cavity.

[0018] Further, the inner walls of the two second storage cavities away from the first storage cavity in the left-right direction are provided with first slots, and the top and bottom walls of the two second storage cavities are provided with second slots longitudinally symmetrical;
the rear side of the first decorative cover has a first fastening part for cooperating with the first slot, and two second fastening parts longitudinally symmetrical for cooperating with the second slots.

[0019] Further, the first decorative cover has a first opening for exposing the second storage cavity and a blocking block installed on the first opening, the longitudinal length of the first opening is greater than the longitudinal length of the blocking block, the first decorative cover further has a first block fixing portion and a second block fixing portion distributed longitudinally;
when the refrigeration apparatus is in the first state, the blocking block is connected to the first block fixing portion, and when the refrigeration apparatus is in the second state, the blocking block is connected to the second block fixing portion.

[0020] Further, the refrigeration apparatus further comprises a second decorative cover and a third decorative cover symmetrically distributed in the left-right direction, when the refrigeration apparatus is in the first state, the second decorative cover covers the right second storage cavity, and when the refrigeration apparatus is in the second state, the third decorative cover covers the left second storage cavity.

[0021] Further, the second decorative cover and the third decorative cover are respectively provided with second openings and third openings for exposing the second storage cavity.

[0022] Further, the top and/or bottom walls of the second storage cavities are provided with third slots and guide slots, the guide slots extend horizontally with an extending direction at a preset angle to the left-right direction, and the guide slots form openings on the front side of the embedded box;
the rear side of the second decorative cover has a third fastening part for cooperating with the third slot on the right and a first guide block for cooperating with the guide slot on the right, the rear side of the third decorative cover has a fourth fastening part for cooperating with the third slot on the left and a second guide block for cooperating with the guide slot on the left.

[0023] Further, the front cover on one end in the left-right direction is provided with a positioning portion extending backward, and the positioning portion is set on the end of the front cover assembly close to the first electronic device; the front side of the embedded box is provided with a positioning slot between the first storage cavity and the second storage cavities; when the refrigeration apparatus is in the first state, the positioning portion cooperates with the positioning slot on the right; when the refrigeration apparatus is in the second state, the positioning portion cooperates with the positioning slot on the left.

[0024] Compared to the prior art, the advantageous effects of the present application include: the refrigeration apparatus has different door opening directions in the first state and the second state, achieving the function of reversible door opening direction. By adjusting the position of the front cover assembly in the first state and the second state, the front cover assembly can cover at least part of the accommodation compartment and the hinge fixing piece not connected to the hinge assembly in both the first state and the second state of the refrigeration apparatus, enhancing the aesthetic appearance of the refrigeration apparatus while maintaining a simple structure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025]

FIG. 1 is a structural schematic diagram of the refrigeration apparatus in the first state according to an embodiment of the present application;
FIG. 2 is an enlarged view of area A in FIG. 1;
FIG. 3 is a structural schematic diagram of the case body according to an embodiment of the present application;
FIG. 4 is a structural schematic diagram of the refrigeration apparatus in the second state with the inner liner, door body, and hinge assembly hidden according to an embodiment of the present application;
FIG. 5 is a structural schematic diagram of the refrigeration apparatus with the front cover assembly, inner liner, door body, and hinge assembly hidden according to an embodiment of the present application;
FIG. 6 is an enlarged view of area B in FIG. 5;
FIG. 7 is a structural schematic diagram of the front cover assembly according to an embodiment of the present application;
FIG. 8 is a structural schematic diagram of the hinge fixing piece according to an embodiment of the present application;
FIG. 9 is a structural schematic diagram of an embedded box according to the first embodiment of the present application;
FIG. 10 is an enlarged view of area C in FIG. 9;
FIG. 11 is a structural schematic diagram of the embedded box from another perspective according to the first embodiment of the present application;
FIG. 12 is a structural schematic diagram of the first decorative cover according to the first embodiment of the present application;
FIG. 13 is a structural schematic diagram of an embedded box according to the second embodiment of the present application;
FIG. 14 is a structural schematic diagram of the second decorative cover and the third decorative cover according to the second embodiment of the present application;
FIG. 15 is a structural schematic diagram of the second decorative cover according to the second embodiment of the present application;
FIG. 16 is a structural schematic diagram of part of the embedded box, hinge assembly, wire structure, and drag chain according to an embodiment of the present application;
FIG. 17 is a structural schematic diagram of the door body, hinge assembly, wire structure, and drag chain according to an embodiment of the present application; and
FIG. 18 is an enlarged view of area D in FIG. 17.

Wherein:

[0026]

1. Case body; 101. Outer shell; 102. Inner liner; 103. Compartment; 104. Accommodation compartment;
2. Hinge assembly; 201. First fixing part; 202. Second fixing part; 203. Connecting rod; 204. Third fixing part;
3. Door body; 301. Wiring channel;
4. Front cover assembly; 401. Front cover; 4011. First snap part; 4012. Second snap part; 4013. Positioning portion; 402. First electronic device;
5. Hinge fixing piece; 501. First connecting plate; 5011. Matching hole; 502. Second connecting plate;
6. Control module;
7. Embedded box; 701. First storage cavity; 702. Second storage cavity; 703. First groove; 704. Second groove; 705. First upper matching part; 706. Second upper matching part; 707. First lower matching part; 708. Second lower matching part; 709. Positioning slot; 710. Upper shell; 711. Lower shell; 712. Partition wall; 713. First outlet; 714. Second outlet; 715. First slot; 716. Second slot; 717. Third slot; 718. Guide slot;
8. Wire structure; 801. Wire channel; 802. Shaft part;
9. Sealing piece; 901. Wiring hole;
10. Drag chain;
11. First decorative cover; 1101. First fastening part; 1102. Second fastening part; 1103. First opening; 1104. Blocking block; 11041. Limit protrusion; 11042. Teeth; 1105. First block fixing portion; 1106. Second block fixing portion;
12. Second decorative cover; 1201. Second opening; 1202. Third fastening part; 1203. First guide block; 1204. First support block;
13. Third decorative cover; 1301. Third opening; 1302. Fourth fastening part; 1303. Second guide block; 1304. Second support block.

DETAILED DESCRIPTION

[0027] The following detailed description will be provided with reference to the accompanying drawings, which illustrate specific embodiments of the present application. However, these embodiments are not intended to limit the invention, and any structural, methodological, or functional modifications made by those of ordinary skill in the art based on these embodiments are within the scope of the present application. In the various drawings, certain dimensions of structures or parts may be enlarged relative to others for illustrative purposes, and thus only serve to illustrate the basic structure of the subject matter of the present application.

[0028] As shown in FIGS. 1 to 18, the present application provides a refrigeration apparatus comprising a case body 1, a hinge assembly 2, a door body 3, and a front cover assembly 4.

[0029] The case body 1 has a front-opening compartment 103 and an accommodation compartment 104. The compartment 103 is used to store items to be refrigerated or frozen, while the accommodation compartment 104 is

used to house the control module of the refrigeration apparatus. The front side of the case body 1 is provided with two hinge fixing pieces 5 distributed along the left-right direction.

[0030] The hinge assembly 2 is selectively connected to one of the two hinge fixing pieces 5.

[0031] The door body 3 is positioned in front of the case body 1 and connected to the hinge assembly 2.

[0032] The front cover assembly 4 is positioned in front of the accommodation compartment 104 to cover at least part of the accommodation compartment 104.

[0033] The refrigeration apparatus has a first state where the hinge assembly 2 is connected to a right hinge fixing piece 5, and the front cover assembly 4 covers at least part of the accommodation compartment 104 and a left hinge fixing piece 5, and a second state where the hinge assembly 2 is connected to the left hinge fixing piece 5, and the front cover assembly 4 covers at least part of the accommodation compartment 104 and the right hinge fixing piece 5.

[0034] The refrigeration apparatus has different door opening directions in the first state and the second state, achieving the function of reversible door opening direction. By adjusting the position of the front cover assembly 4 in the first state and the second state, the front cover assembly 4 can cover at least part of the accommodation compartment 104 and the hinge fixing piece 5 not connected to the hinge assembly 2 in both the first state and the second state of the refrigeration apparatus, enhancing the aesthetic appearance of the refrigeration apparatus while maintaining a simple structure and protecting the unused hinge fixing piece 5.

[0035] In one embodiment of the present application, the front cover assembly 4 rotates 180° relative to the second state when the refrigeration apparatus is in the first state. This means that during the process of switching the refrigeration apparatus between the first state and the second state, the front cover assembly 4 needs to be flipped 180°.

[0036] The front cover assembly 4 comprises a front cover 401 for covering at least part of the accommodation compartment 104 and one of the two hinge fixing pieces 5, and a first electronic device 402 installed on the rear side of the front cover 401.

[0037] Specifically, the first electronic device 402 is a magnetic sensitive switch, which is used to detect external temperature. The first electronic device 402 being set on the front cover 401 ensures the accuracy of external temperature detection.

[0038] The case body 1 includes an outer shell 101 and an inner liner 102 located inside the outer shell 101. The space between the bottom wall of the outer shell 101 and the top wall of the inner liner 102 constitutes the accommodation compartment 104.

[0039] The refrigeration apparatus further comprises a control module 6, an embedded box 7, and a wire structure 8.

[0040] Both the embedded box 7 and the control module 6 are set inside the accommodation compartment 104. Preferably, the control module 6 is set inside the embedded box 7.

[0041] The control module 6 has a connecting portion (not shown) for connecting to the first electronic device 402. The connecting portion connects to the electronic device, allowing the control module 6 to be electrically connected to the first electronic device 402, which enables the control module 6 to control the first electronic device 402.

[0042] Specifically, the connecting portion is detachably connected to the first electronic device 402. For example, the connecting portion and the first electronic device 402 can be plugged together, in which case the connecting portion is a connector. The connecting portion and the first electronic device 402 can also be connected by direct contact, in which case the connecting portion is a metal contact piece.

[0043] The connecting portion is connected to the first electronic device 402 when the refrigeration apparatus is in the first state and the second state, and the front cover assembly 4 rotates 180° around an axis passing through the center of the first electronic device 402 and extending along the front-back direction when the refrigeration apparatus is in the first state relative to the second state.

[0044] The first electronic device 402 is staggered with a center of the front cover 401 in the left-right direction. When the refrigeration apparatus is in the first state, the first electronic device 402 is located in the right half region of the front cover 401, meaning the area of the front cover 401 on the left side of the first electronic device 402 is larger, facilitating the front cover 401 to cover the left hinge fixing piece 5.

[0045] When the refrigeration apparatus is in the second state, the first electronic device 402 is located in the left half region of the front cover 401, meaning the area of the front cover 401 on the right side of the first electronic device 402 is larger, facilitating the front cover 401 to cover the right hinge fixing piece 5.

[0046] The first electronic device 402 corresponds to the center of the front cover 401 in height. This way, after the front cover assembly 4 rotates 180°, the height of the center of the first electronic device 402 does not change, preventing the first electronic device 402 from separating from the connecting portion.

[0047] The embedded box 7 has a first storage cavity 701 and two second storage cavities 702 respectively set on the left and right sides of the first storage cavity 701. Both the first storage cavity 701 and the second storage cavities 702 have front openings, and the control module 6 is set inside the first storage cavity 701. The function of the second storage cavities 702 is to house part of the wiring harnesses used to connect to the display screen on the door body 3.

[0048] When the refrigeration apparatus is in the first state, the front cover assembly 4 covers the first storage cavity 701 and the left second storage cavity 702, while the right second storage cavity 702 is exposed, allowing

the wiring harnesses connecting to the display screen on the door body 3 to pass through. When the refrigeration apparatus is in the second state, the front cover assembly 4 covers the first storage cavity 701 and the right second storage cavity 702, while the left second storage cavity 702 is exposed, allowing the wiring harnesses connecting to the display screen on the door body 3 to pass through. Therefore, the front cover assembly 4 of the present application can also cover the second storage cavities 702 that do not need to allow wiring harnesses to pass through when the refrigeration apparatus is in the first state and the second state, enhancing the aesthetic appearance.

[0049] The second storage cavities 702 correspond longitudinally to the hinge fixing pieces 5, facilitating the front cover assembly 4 to cover both the hinge fixing pieces 5 and the second storage cavities 702 simultaneously.

[0050] Preferably, the second storage cavities 702 are located below the hinge fixing pieces 5. When the hinge assembly 2 is installed on the hinge fixing pieces 5, the hinge assembly 2 can block at least part of the second storage cavities 702 and part of the wiring harnesses, further enhancing the aesthetic appearance.

[0051] The hinge fixing pieces 5 can be integrated with the case body 1 or can be a separate part installed on the case body 1.

[0052] Preferably, the hinge fixing piece 5 includes a first connecting plate 501 for connecting to the hinge assembly 2 and a second connecting plate 502 for connecting to the case body 1, with the embedded box 7 located behind the first connecting plate 501.

[0053] The first connecting plate 501 is installed on the front side of the embedded box 7, and the second connecting plate 502 is fixed inside the accommodation compartment 104 and located between the embedded box 7 and the top wall of the accommodation compartment 104. The first connecting plate 501 extends longitudinally, and the second connecting plate 502 extends horizontally backward from the top of the first connecting plate 501.

[0054] The hinge fixing piece 5 connects to both the case body 1 and the embedded box 7, enhancing the stability of the hinge fixing piece 5, and simultaneously using the hinge fixing piece 5 to fix the embedded box 7 to the case body 1, simplifying the structure.

[0055] Specifically, the front side of the embedded box 7 in the area above the second storage cavities 702 and the first connecting plate 501 is provided with a horizontally extending first through-hole, which is used for fastening elements to pass through and connect the first connecting plate 501 to the embedded box 7. The case body 1, the second connecting plate 502, and the embedded box 7 are provided with longitudinally extending second through-holes, which are used for fastening elements to pass through. The second connecting plate 502 and the embedded box 7 are provided with longitudinally extending third through-holes, which are used for fastening elements to pass through and connect the second connecting plate 502 and the embedded box 7 together.

[0056] The front part of the embedded box 7 is provided with a first groove 703 for cooperating with the first connecting plate 501, and the top of the embedded box 7 is provided with a second groove 704 for cooperating with the second connecting plate 502. The first groove 703 and the second groove 704 prevent the hinge fixing piece 5 from protruding out of the embedded box 7, preventing the embedded box 7 from not fitting tightly against the top wall of the case body 1 and the front cover 401.

[0057] The rear side of the front cover 401 is provided with two sets of snap structures symmetrically distributed up and down. The embedded box 7 has two sets of upper matching structures and lower matching structures distributed up and down, which are used to cooperate with one of the snap structures respectively to fix the front cover assembly 4 when the refrigeration apparatus is in the first state and the second state, ensuring that the front cover 401 can be fixed in both the first state and the second state of the refrigeration apparatus.

[0058] When the refrigeration apparatus is in the first state, the upper snap structure cooperates with the upper matching structure, and the lower snap structure cooperates with the lower matching structure. When the refrigeration apparatus is switched to the second state, the front cover 401 is flipped 180°. Since the two sets of snap structures are symmetrically distributed up and down, the positions of the two sets of snap structures are swapped, with the original upper snap structure moving to the lower position and cooperating with the lower matching structure, and the original lower snap structure moving to the upper position and cooperating with the upper matching structure. This way, even if the front cover 401 is flipped, the two sets of snap structures and the two sets of matching structures can still correspond one-to-one, ensuring the reliability of the connection of the front cover 401 while simplifying the structure.

[0059] The length of the embedded box 7 in the left-right direction is greater than the length of the front cover 401 in the left-right direction. The upper matching structure includes two first upper matching parts 705 respectively corresponding to the two first connecting plates 501, and a second upper matching part 706 located between the two first upper matching parts 705. The snap structure has a first snap part 4011 for cooperating with the first upper matching part 705, and a second snap part 4012 for cooperating with the second upper matching part 706. The first snap part 4011 and the second snap part 4012 extend backward from the rear side of the front cover 401, and the first connecting plate 501 is provided with a matching hole 5011 for the first snap part 4011 to pass through.

[0060] The first snap part 4011 and the second snap part 4012 effectively install the front cover 401 on the embedded box 7, ensuring that even the area of the front cover 401 corresponding to the hinge fixing piece 5 is securely connected to the embedded box 7, preventing

the area of the front cover 401 away from the hinge assembly 2 from lifting.

[0061] Preferably, the extending length of the first snap part 4011 is greater than the extending length of the second snap part 4012. Since the first snap part 4011 needs to pass through the first connecting plate 501, setting the length of the first snap part 4011 longer enhances the stability of the connection between the first snap part 4011 and the first upper matching part 705.

[0062] Specifically, the two first upper matching parts 705 correspond one-to-one with the two first connecting plates 501, each located behind a first connecting plate 501 and corresponding to the matching hole 5011. The first upper matching part 705 includes a groove extending backward from the front side of the embedded box 7 and a protrusion extending downward from the top wall of the groove. The first snap part 4011 engages the rear wall of the protrusion to cooperate with the first upper matching part 705.

[0063] The second upper matching part 706 is a groove recessed upward from the top wall of the first storage cavity 701 of the embedded box 7. The second snap part 4012 engages the front wall of the second upper matching part 706 to cooperate with the second upper matching part 706.

[0064] The lower matching structure includes a first lower matching part 707 set directly below the first upper matching part 705 and a second lower matching part 708 set directly below the second lower matching part 706. Among them, the first lower matching part 707 is a groove recessed downward from the bottom wall of the second storage cavity 702, and the second lower matching part 708 is a groove recessed downward from the bottom wall of the first storage cavity 701. The first lower matching part 707 is used to engage with the first snap part 4011, and the second lower matching part 708 is used to engage with the second snap part 4012.

[0065] To accommodate the longer first snap part 4011, the first lower matching part 707 is located behind the second lower matching part 708.

[0066] Further, the second upper matching part 706 and the second lower matching part 708 can be a single groove extending in the left-right direction or multiple grooves distributed in the left-right direction.

[0067] Further, one end of the front cover 401 in the left-right direction is provided with a positioning portion 4013 extending backward, and the positioning portion 4013 is set on the end of the front cover assembly 4 close to the first electronic device 402. The front side of the embedded box 7 is provided with a positioning slot 709 between the first storage cavity 701 and the second storage cavities 702. One positioning slot 709 is between the first storage cavity 701 and the left second storage cavity 702, and the other positioning slot 709 is between the first storage cavity 701 and the right second storage cavity 702.

[0068] When the refrigeration apparatus is in the first state, the positioning portion 4013 cooperates with the positioning slot 709 on the right. When the refrigeration apparatus is in the second state, the positioning portion 4013 cooperates with the positioning slot 709 on the left, thus serving as a positioning function during the assembly of the front cover 401, facilitating the assembly of the front cover 401 by the staff, and enhancing the stability of the front cover 401 through the cooperation of the positioning portion 4013 and the positioning slot 709.

[0069] The embedded box 7 includes an upper shell 710 and a lower shell 711 connected up and down. The left and right sides of the upper shell 710 are provided with a first beveled surface, and the lower shell 711 has a second beveled surface matching the first beveled surface. The front end of the first beveled surface is lower than the rear end of the first beveled surface, or the front end of the first beveled surface is higher than the rear end of the first beveled surface. The first beveled surface and the second beveled surface serve as a positioning function when the upper shell 710 and the lower shell 711 are connected, facilitating the assembly of the upper shell 710 and the lower shell 711.

[0070] The wire structure 8 is installed on the door body 3 and extends from the door body 3 to the inside of the second storage cavity 702. The door body 3 is provided with a wiring channel 301. The wire structure 8 internally has a wire channel 801 communicating with the wiring channel 301, and the wire structure 8 is movable relative to the second storage cavity 702.

[0071] Among them, the wire channel 801 in the wire structure 8 is used to allow the wiring harnesses connected to the electronic components of the door body 3 to pass through. Since the wire structure 8 extends into the embedded box 7, it enhances the utilization of space. This embodiment effectively avoids the phenomenon of the door body wiring harnesses being pulled during the opening and closing of the door body 3 through the wire structure 8, and can adapt to door bodies 3 with various motion trajectories. When the door body 3 rotates, the wiring harnesses connected to the electronic components of the door body 3 and the wire structure 8 move with the door body 3, and the wire structure 8 protects the wiring harnesses during the movement of the wiring harnesses. The second storage cavity 702 inside the embedded box 7 can protect the wiring harnesses, preventing them from being exposed and worn, and also separates the moving part of the wiring harnesses from the control module 6 inside the first storage cavity 701, enhancing electrical safety.

[0072] Specifically, the door body 3 is provided with two wiring channels 301 distributed left and right, and both wiring channels 301 extend to the top of the door body 3 to form openings.

[0073] When the refrigeration apparatus is in the first state, the wire structure 8 extends into the right second storage cavity 702 and connects to the right wiring channel 301. When the refrigeration apparatus is in the second state, the wire structure 8 extends into the left second storage cavity 702 and connects to the left wiring channel

301.

[0074] Specifically, the wire channel 801 extends to the end of the wire structure 8 that extends into the second storage cavity 702 and forms an inlet.

[0075] The front side of the control module 6 is installed with a connector (not shown), and the refrigeration apparatus further includes a door body wiring harness (not shown), which is connected to the connector and passes through the opening of the second storage cavity 702, then sequentially through the inlet, wire channel 801, and wiring channel 301.

[0076] Further, the embedded box 7 has a partition wall 712 separating the first storage cavity 701 from the second storage cavity 702, and the front side of the partition wall 712 has a recess. The refrigeration apparatus further includes a sealing piece 9 installed in the recess, which has a wiring hole 901 for the door body wiring harness to pass through. The sealing piece 9 is used to allow the door body wiring harness to pass through and also enhances the sealing of the first storage cavity 701, thereby improving electrical safety.

[0077] Further, the wire structure 8 has a shaft part 802 extending into the wiring channel 301 from the top opening of the wiring channel 301, and the shaft part 802 can rotate relative to the wiring channel 301, thereby rotating the wire structure 8 installed on the door body 3.

[0078] The hinge assembly 2 includes a first fixing part 201 for connecting to the hinge fixing piece 5, a second fixing part 202 for connecting to the door body 3, and at least one connecting rod 203, with the first fixing part 201 and the second fixing part 202 respectively pivotally connected to a connecting rod 203.

[0079] The first fixing part 201 is located above the wire structure 8 and the second storage cavity 702, the second fixing part 202 protrudes downward relative to the first fixing part 201 and is located in front of the wire structure 8. The second fixing part 202 can cover the opening of the wire structure 8 and the second storage cavity 702, thereby enhancing the aesthetic appearance of the refrigeration apparatus.

[0080] Further, the hinge assembly 2 further includes a third fixing part 204, with the second fixing part 202 installed on the door body 3 through the third fixing part 204. The second fixing part 202 and the third fixing part 204 are connected by fasteners, and the third fixing part 204 and the top of the door body 3 are connected by fasteners. The top of the door body 3 is provided with a positioning ring surrounding the top opening of the wiring channel 301, and the third fixing part 204 has a hole for fitting over the positioning ring.

[0081] When the refrigeration apparatus needs to switch between the first state and the second state, requiring the hinge assembly 2 to be installed on different sides of the hinge fixing piece 5, the second fixing part 202, the third fixing part 204, and the connecting rod 203 are separated, then the first fixing part 201 and the connecting rod 203 are flipped 180°, so that the first fixing part 201 and the connecting rod 203 are symmetrical in the left-right direction when installed on different sides, and finally the second fixing part 202 and the third fixing part 204 are moved parallel and then the second fixing part 202 is installed on the connecting rod 203 and the third fixing part 204 is installed on the door body 3.

[0082] The second storage cavity 702 is smaller than the first storage cavity 701, and the embedded box 7 has a first outlet 713 and a second outlet 714 distributed in the left-right direction and communicating with the first storage cavity 701, with the first outlet 713 and the second outlet 714 located behind the second storage cavity 702. Since there are more components inside the first storage cavity 701, the first storage cavity 701 is made larger, and the area behind the smaller second storage cavity 702 of the embedded box 7 is used to allow the wiring harnesses connected to the control module 6 to pass through.

[0083] The first outlet 713 and the second outlet 714 can be used to allow low-voltage and high-voltage wiring harnesses to pass out of the embedded box 7 respectively, avoiding the crossover of high-voltage and low-voltage wiring harnesses inside the control module 6, reducing electromagnetic interference from high voltage to low voltage, and ensuring the performance of the refrigeration apparatus.

[0084] In a preferred embodiment of the present application, the refrigeration apparatus further includes a drag chain 10 set inside the second storage cavity 702, with the fixed end of the drag chain 10 fixed to the inner wall of the second storage cavity 702, and the movable end of the drag chain 10 installed at the end of the wire structure 8 away from the door body 3, and the movable end of the drag chain 10 follows the wire structure 8 while moving. The door body wiring harness entering the second storage cavity 702 first passes through the drag chain 10, then enters the wire channel 801. The drag chain 10 further protects the door body wiring harness, preventing it from being worn during the movement of the door body 3 and the wire structure 8.

[0085] During the use of the refrigeration apparatus, the front cover 401 only covers one side of the second storage cavity 702, and the larger opening of the other side of the second storage cavity 702 is exposed, affecting the aesthetic appearance. Therefore, the following two embodiments provide two different solutions for covering the second storage cavity 702.

[0086] In the first embodiment of the present application, the refrigeration apparatus further includes a first decorative cover 11. When the refrigeration apparatus is in the first state, the first decorative cover 11 covers the right second storage cavity 702; when the refrigeration apparatus is in the second state, the first decorative cover 11 covers the left second storage cavity 702.

[0087] In this embodiment, there is only one first decorative cover 11, and by adjusting the position of the first decorative cover 11 during the switching process between the first state and the second state of the refrigeration apparatus, the second storage cavity 702 on both sides can be covered, simplifying the structure.

[0088] The first decorative cover 11 has a first opening 1103 for exposing the second storage cavity 702. The first opening 1103 is used to allow the wire structure 8 and the door body wiring harness inside the wire structure 8 to pass through.

[0089] The inner walls of the two second storage cavities 702 away from the first storage cavity 701 in the left-right direction are provided with first slots 715, and the top and bottom walls of the two second storage cavities 702 are provided with second slots 716 longitudinally symmetrical; the rear side of the first decorative cover 11 has a first fastening part 1101 for cooperating with the first slot 715, and two second fastening parts 1102 longitudinally symmetrical for cooperating with the second slots 716. When the refrigeration apparatus needs to change the position of the first decorative cover 11 between the first state and the second state, the first decorative cover 11 needs to be rotated 180° to adapt to the first slots 715 and second slots 716 on the inner walls of the second storage cavities 702 on both sides.

[0090] When the refrigeration apparatus is in the first state, the first fastening part 1101 is located in the right part of the first decorative cover 11, the first fastening part 1101 cooperates with the first slot 715 on the right, the upper second fastening part 1102 cooperates with the upper second slot 716, and the lower second fastening part 1102 cooperates with the lower second slot 716. When the refrigeration apparatus is in the second state, the first decorative cover 11 is rotated 180° relative to the previous state, the first fastening part 1101 is located in the left part of the first decorative cover 11, and the first fastening part 1101 cooperates with the first slot 715 on the left. The original upper second fastening part 1102 moves to the lower position and cooperates with the lower second slot 716, and the original lower second fastening part 1102 moves to the upper position and cooperates with the upper second slot 716.

[0091] In this embodiment, the first decorative cover 11 is rotated instead of simply moving parallel during the switching between the first state and the second state of the refrigeration apparatus, so that the first fastening part 1101 of the first decorative cover 11 is symmetrical in the left-right direction when the refrigeration apparatus is in the first state and the second state, facilitating the cooperation of the first fastening part 1101 with the symmetrical first slots 715 on both sides.

[0092] Limited by the installation position of the wire structure 8, the first opening 1103 cannot be set in the center of the first decorative cover 11. If the first decorative cover 11 is only moved parallel when installed on different sides, the position of the first opening 1103 is asymmetrical in the first state and the second state, and the wire structure 8 cannot pass through the first opening 1103 into the second storage cavity 702. By rotating the first decorative cover 11, the symmetry of the first opening 1103 in the first state and the second state can be ensured, ensuring that the wire structure 8 and the wiring harness inside the wire structure 8 can pass through the first opening 1103 in both the first state and the second state.

[0093] Further, the area of the first decorative cover 11 is larger than the area of the opening of the second storage cavity 702. In this way, the first decorative cover 11 can also cover the walls of the embedded box 7, further enhancing the aesthetic appearance.

[0094] Since the wire structure 8 is located above the door body 3, and limited by the volume of the refrigeration apparatus, the case body 1 cannot be much higher than the door body 3, thus the accommodation compartment 104 has a smaller longitudinal length and cannot ensure enough space for the center of the wire structure 8 to be at the same height as the center of the opening of the first storage cavity 701. Therefore, the center of the first decorative cover 11 cannot be ensured to be at the same height as the center of the wire structure 8. After the first decorative cover 11 is rotated, the wire structure 8 may not be able to pass through the first through-hole.

[0095] To solve the above problem, the first decorative cover 11 further has a blocking block 1104 installed on the first opening 1103. The longitudinal length of the first opening 1103 is greater than the longitudinal length of the blocking block 1104, and the first decorative cover 11 also has a first block fixing portion 1105 and a second block fixing portion 1106 distributed longitudinally.

[0096] When the refrigeration apparatus is in the first state, the blocking block 1104 is connected to the first block fixing portion 1105, and the area of the first opening 1103 not covered by the blocking block 1104 is used for the wire structure 8 and the wiring harness inside the wire structure 8 to pass through. When the refrigeration apparatus is in the second state, the blocking block 1104 is connected to the second block fixing portion 1106, and the area of the first opening 1103 not covered by the blocking block 1104 is used for the wire structure 8 and the wiring harness inside the wire structure 8 to pass through.

[0097] After the first decorative cover 11 is rotated, by moving the blocking block 1104 up and down, the exposed position of the first opening 1103 can be made symmetrical in the left-right direction, ensuring that the first decorative cover 11 can effectively cover the opening of the second storage cavity 702 while preventing the wire structure 8 from not being able to pass through the first decorative cover 11.

[0098] Specifically, the first block fixing portion 1105 and the second block fixing portion 1106 are set on the rear side of the first decorative cover 11. Two first block fixing portions 1105 are symmetrically set on both sides of the first opening 1103, and two second block fixing portions 1106 are symmetrically set on both sides of the first opening 1103. The first block fixing portion 1105 and the second block fixing portion 1106 are both provided with horizontally extending holes. The two sides of the blocking block 1104 have limit protrusions 11041 for abutting against the rear side of the first decorative cover 11, and the limit protrusions 11041 are provided with teeth 11042

for cooperating with the first block fixing portion 1105 and the second block fixing portion 1106.

[0099] The sealing piece 9 is set behind the front cover 401 and the first decorative cover 11. In this way, the wiring harness passing through the sealing piece 9 is blocked by the first decorative cover 11 and will not be exposed, which not only enhances the aesthetic appearance but also prevents the wiring harness from being worn due to exposure.

[0100] In the third embodiment of the present application, the refrigeration apparatus further includes a second decorative cover 12 and a third decorative cover 13 symmetrically distributed in a left-right direction. When the refrigeration apparatus is in the first state, the second decorative cover 12 covers the right second storage cavity 702, and when the refrigeration apparatus is in the second state, the third decorative cover 13 covers the left second storage cavity 702.

[0101] The second decorative cover 12 and the third decorative cover 13 are respectively provided with second openings 1201 and third openings 1301 for exposing the second storage cavity 702.

[0102] The top and/or bottom walls of the second storage cavities 702 are provided with third slots 717 and guide slots 718. The guide slots 718 extend horizontally with an extending direction at a preset angle to the left-right direction, and the guide slots 718 form openings on the front side of the embedded box 7.

[0103] The rear side of the second decorative cover 12 has a third fastening part 1202 for cooperating with the third slot 717 on the right and a first guide block 1203 for cooperating with the guide slot 718 on the right, the rear side of the third decorative cover 13 has a fourth fastening part 1302 for cooperating with the third slot 717 on the left and a second guide block 1303 for cooperating with the guide slot 718 on the left.

[0104] When assembling the second decorative cover 12, the first guide block 1203 is inserted from front to back into the guide slot 718, then the second decorative cover 12 is pushed to make the first guide block 1203 move along the guide slot 718 until the third fastening part 1202 cooperates with the third slot 717. When assembling the third decorative cover 13, the second guide block 1303 is inserted from front to back into the guide slot 718, then the third decorative cover 13 is pushed to make the second guide block 1303 move along the guide slot 718 until the fourth fastening part 1302 cooperates with the third slot 717. The rear side of the second decorative cover 12 also has a first support block 1204 for placing on the bottom wall of the second storage cavity 702.

[0105] The rear side of the third decorative cover 13 also has a second support block 1304 for placing on the bottom wall of the second storage cavity 702. The first support block 1204 and the second support block 1304 are respectively used to enhance the stability of the second decorative cover 12 and the third decorative cover 13.

[0106] The detailed descriptions listed above are merely specific explanations for the feasible implementation of the present application and are not intended to limit the protection scope of the present application. Any equivalent implementation or modification made without departing from the spirit of the present application should be included within the protection scope of the present application.

Claims

1. A refrigeration apparatus, comprising:

   a case body having a compartment and an accommodation compartment with a front opening, and two hinge fixing pieces distributed along a left-right direction on a front side of the case body;
   a hinge assembly selectively connected to one of the two hinge fixing pieces;
   a door body positioned in front of the case body and connected to the hinge assembly;
   a front cover assembly positioned in front of the accommodation compartment to cover at least part of the accommodation compartment;
   characterized in that: the refrigeration apparatus has a first state where the hinge assembly is connected to a right hinge fixing piece, and the front cover assembly covers at least part of the accommodation compartment and a left hinge fixing piece, and a second state where the hinge assembly is connected to the left hinge fixing piece, and the front cover assembly covers at least part of the accommodation compartment and the right hinge fixing piece.

2. The refrigeration apparatus according to claim 1, wherein the front cover assembly rotates 180° relative to the second state when the refrigeration apparatus is in the first state.

3. The refrigeration apparatus according to claim 2, wherein the front cover assembly comprises:

   a front cover for covering at least part of the accommodation compartment and one of the two hinge fixing pieces, and a first electronic device installed on a rear side of the front cover;
   the refrigeration apparatus further comprises a control module defined inside the accommodation compartment, the control module has a connecting portion for connecting to the first electronic device;
   the connecting portion is connected to the first electronic device when the refrigeration apparatus is in the first state and the second state, and the front cover assembly rotates 180° around an axis passing through the center of

the first electronic device and extending along the front-back direction when the refrigeration apparatus is in the first state relative to the second state.

4. The refrigeration apparatus according to claim 3, wherein the first electronic device is a magnetic sensitive switch.

5. The refrigeration apparatus according to claim 3, wherein the first electronic device is staggered with a center of the front cover in the left-right direction, when the refrigeration apparatus is in the first state, the first electronic device is located in the right half region of the front cover, and when the refrigeration apparatus is in the second state, the first electronic device is located in the left half region of the front cover.

6. The refrigeration apparatus according to claim 3, wherein the first electronic device corresponds to a center of the front cover in height.

7. The refrigeration apparatus according to claim 3, wherein the refrigeration apparatus further comprises an embedded box defined in the accommodation compartment, the control module is arranged inside the embedded box;
the rear side of the front cover is provided with two sets of snap structures symmetrically distributed up and down, the embedded box has two sets of upper matching structures and lower matching structures distributed up and down, the upper matching structures and lower matching structures are used to cooperate with one of the snap structures respectively to fix the front cover assembly when the refrigeration apparatus is in the first state and the second state.

8. The refrigeration apparatus according to claim 7, wherein the hinge fixing piece comprises a first connecting plate for connecting to the hinge assembly and a second connecting plate for connecting to the case body, the embedded box is located behind the first connecting plate;
the length of the embedded box in the left-right direction is greater than the length of the front cover in the left-right direction, the upper matching structure includes two first upper matching parts respectively corresponding to the two first connecting plates, and a second upper matching part located between the two first upper matching parts, the snap structure has a first snap part for cooperating with the first upper matching part, and a second snap part for cooperating with the second upper matching part, the first snap part and the second snap part extend backward from the rear side of the front cover, and the first connecting plate is provided with a matching hole for the first snap part to pass through.

9. The refrigeration apparatus according to claim 8, wherein the extending length of the first snap part is greater than the extending length of the second snap part.

10. The refrigeration apparatus according to claim 8, wherein the first connecting plate is installed on the front side of the embedded box, and the second connecting plate is fixed inside the accommodation compartment and located between the embedded box and the top wall of the accommodation compartment.

11. The refrigeration apparatus according to claim 10, wherein the front part of the embedded box is provided with a first groove for cooperating with the first connecting plate, and the top of the embedded box is provided with a second groove for cooperating with the second connecting plate.

12. The refrigeration apparatus according to claim 7, wherein the embedded box has a first storage cavity and two second storage cavities respectively set on the left and right sides of the first storage cavity, both the first storage cavity and the second storage cavities have front openings, the control module is set inside the first storage cavity, and the second storage cavities correspond longitudinally to the hinge fixing pieces;
when the refrigeration apparatus is in the first state, the front cover assembly covers the first storage cavity and a left second storage cavity; when the refrigeration apparatus is in the second state, the front cover assembly covers the first storage cavity and a right second storage cavity.

13. The refrigeration apparatus according to claim 12, wherein the refrigeration apparatus further comprises a first decorative cover, when the refrigeration apparatus is in the first state, the first decorative cover covers the right second storage cavity; when the refrigeration apparatus is in the second state, the first decorative cover covers the left second storage cavity.

14. The refrigeration apparatus according to claim 13, wherein the inner walls of the two second storage cavities away from the first storage cavity in the left-right direction are provided with first slots, and the top and bottom walls of the two second storage cavities are provided with second slots longitudinally symmetrical; the rear side of the first decorative cover has a first fastening part for cooperating with the first slot, and two second fastening parts longitudinally symmetrical for cooperating with the second slots.

15. The refrigeration apparatus according to claim 14, wherein the first decorative cover has a first opening for exposing the second storage cavity and a blocking block installed on the first opening, the longitudinal length of the first opening is greater than the longitudinal length of the blocking block, the first decorative cover further has a first block fixing portion and a second block fixing portion distributed longitudinally;
when the refrigeration apparatus is in the first state, the blocking block is connected to the first block fixing portion, and when the refrigeration apparatus is in the second state, the blocking block is connected to the second block fixing portion.

16. The refrigeration apparatus according to claim 12, wherein the refrigeration apparatus further comprises a second decorative cover and a third decorative cover symmetrically distributed in the left-right direction, when the refrigeration apparatus is in the first state, the second decorative cover covers the right second storage cavity, and when the refrigeration apparatus is in the second state, the third decorative cover covers the left second storage cavity.

17. The refrigeration apparatus according to claim 16, wherein the second decorative cover and the third decorative cover are respectively provided with second openings and third openings for exposing the second storage cavity.

18. The refrigeration apparatus according to claim 16, wherein the top and/or bottom walls of the second storage cavities are provided with third slots and guide slots, the guide slots extend horizontally with an extending direction at a preset angle to the left-right direction, and the guide slots form openings on the front side of the embedded box;
the rear side of the second decorative cover has a third fastening part for cooperating with the third slot on the right and a first guide block for cooperating with the guide slot on the right, the rear side of the third decorative cover has a fourth fastening part for cooperating with the third slot on the left and a second guide block for cooperating with the guide slot on the left.

19. The refrigeration apparatus according to claim 12, wherein the front cover on one end in the left-right direction is provided with a positioning portion extending backward, and the positioning portion is set on the end of the front cover assembly close to the first electronic device; the front side of the embedded box is provided with a positioning slot between the first storage cavity and the second storage cavities; when the refrigeration apparatus is in the first state, the positioning portion cooperates with the positioning slot on the right; when the refrigeration apparatus is in the second state, the positioning portion cooperates with the positioning slot on the left.

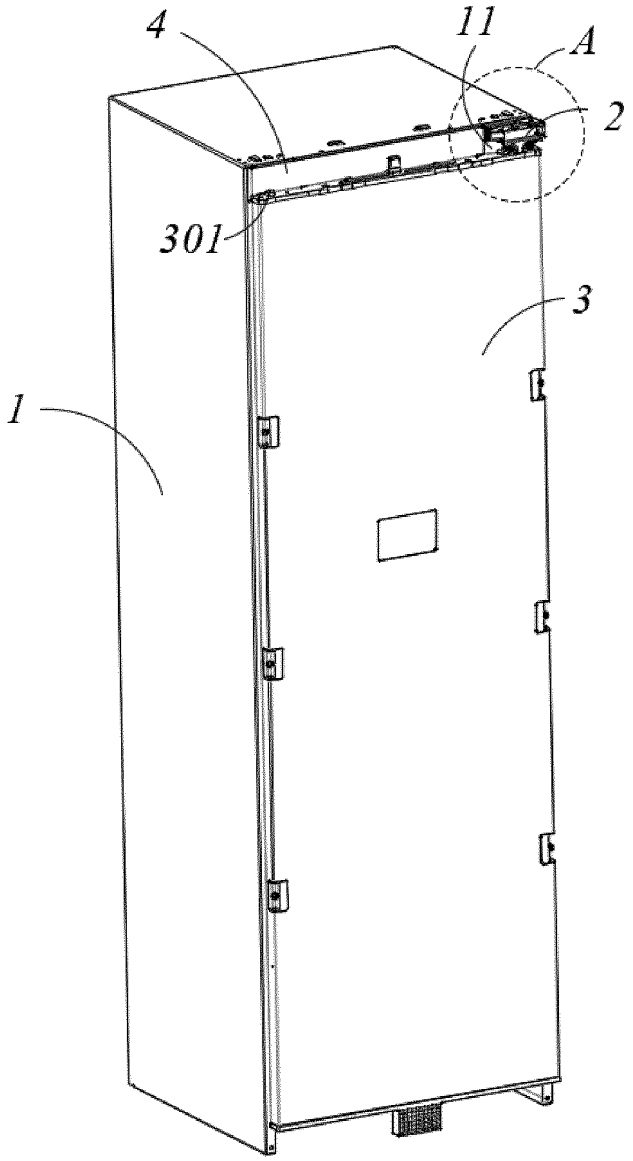


FIG. 1

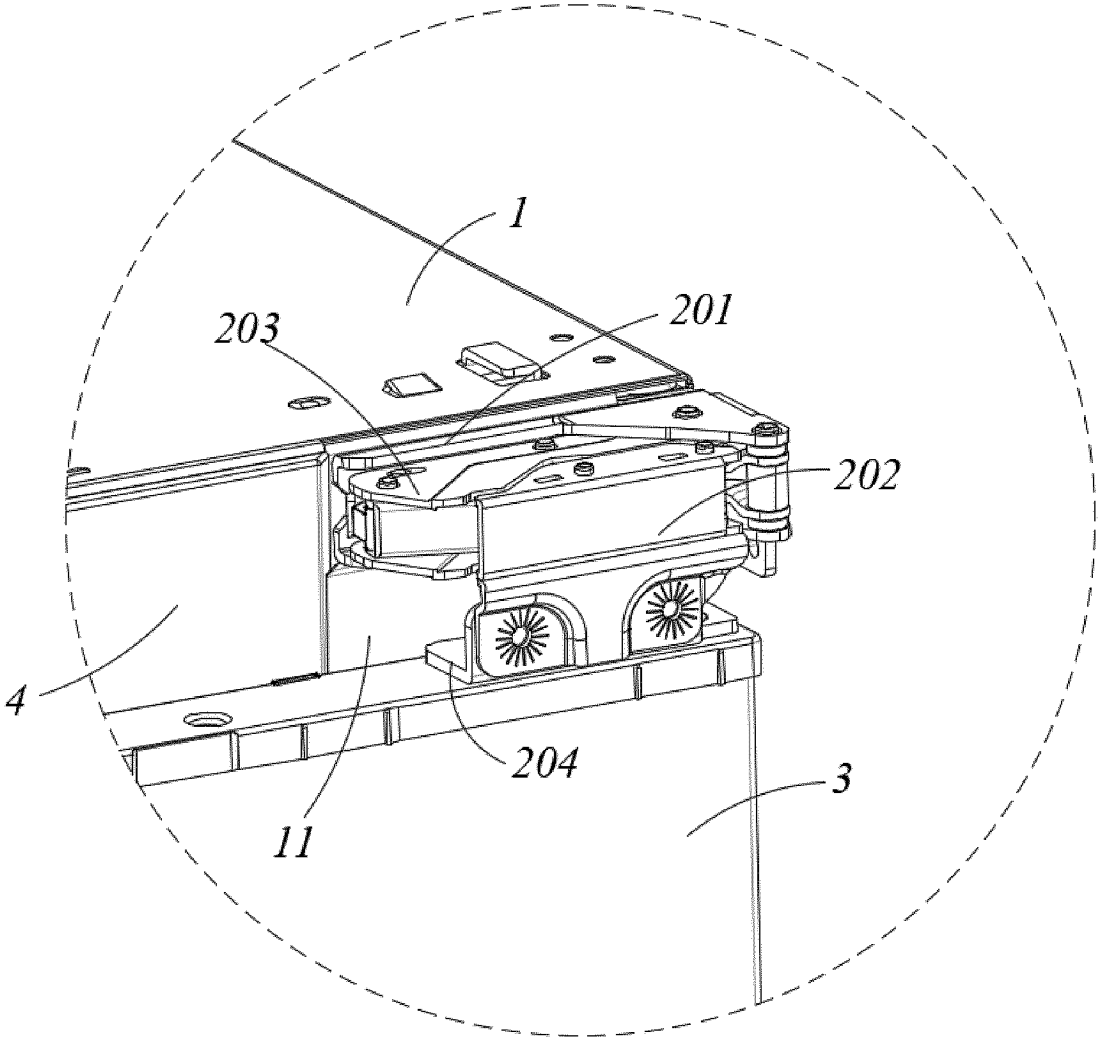


FIG. 2

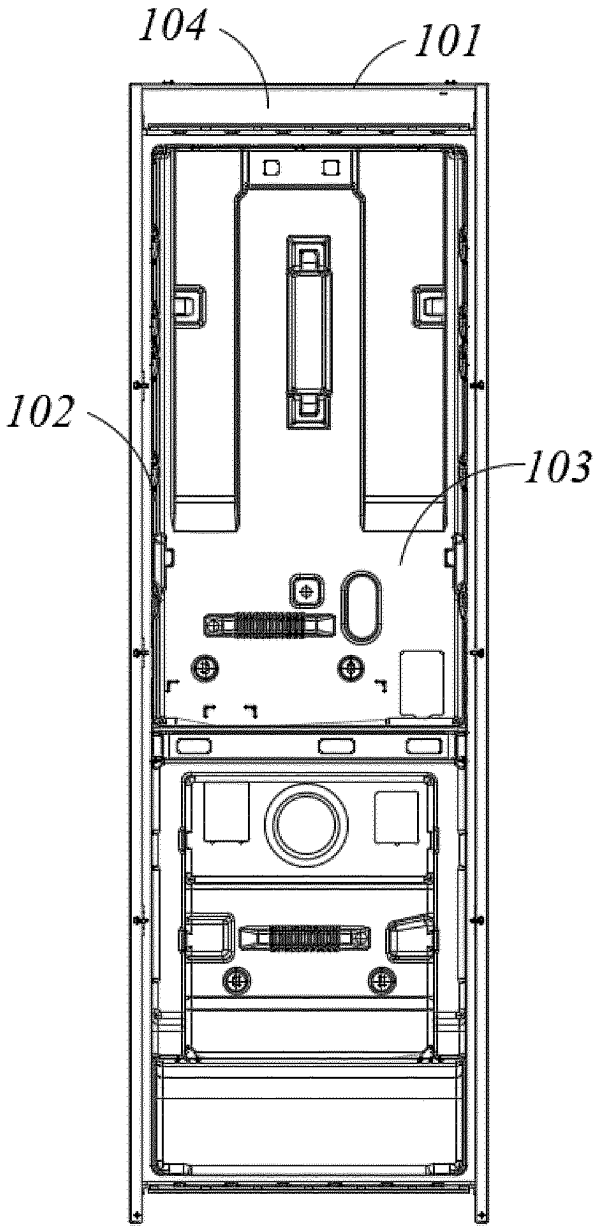


FIG. 3

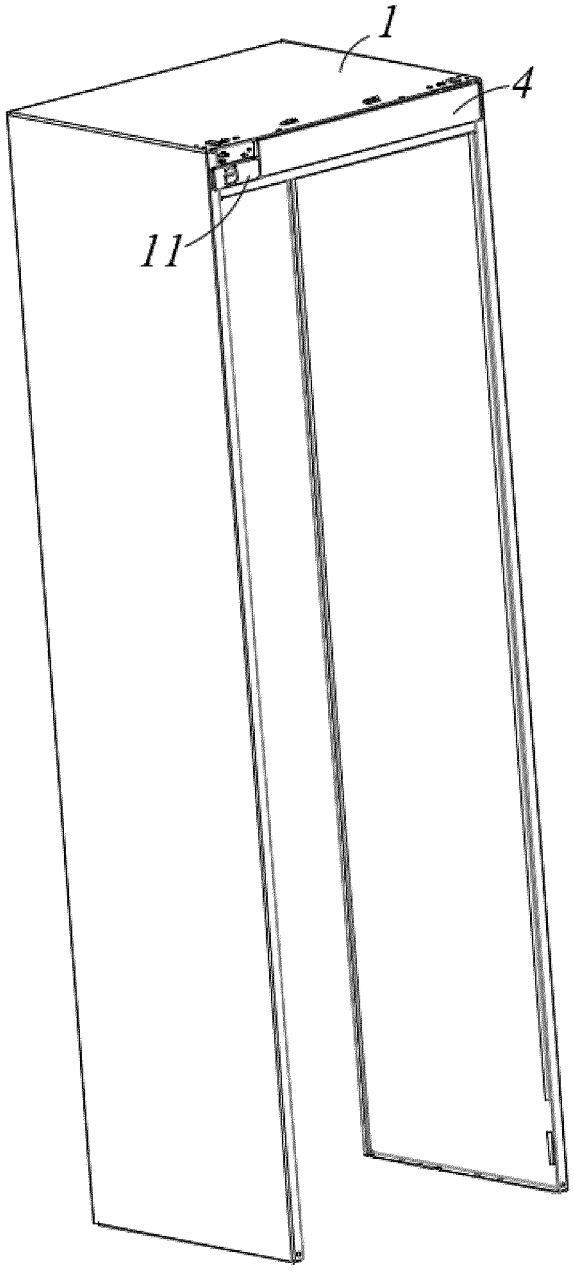


FIG. 4

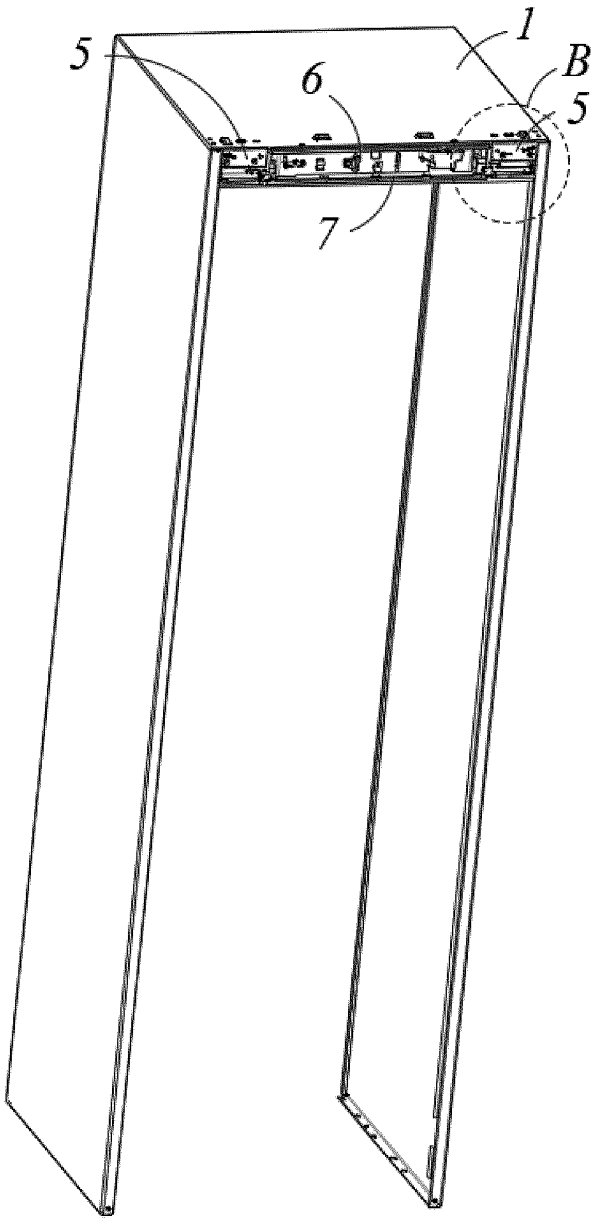
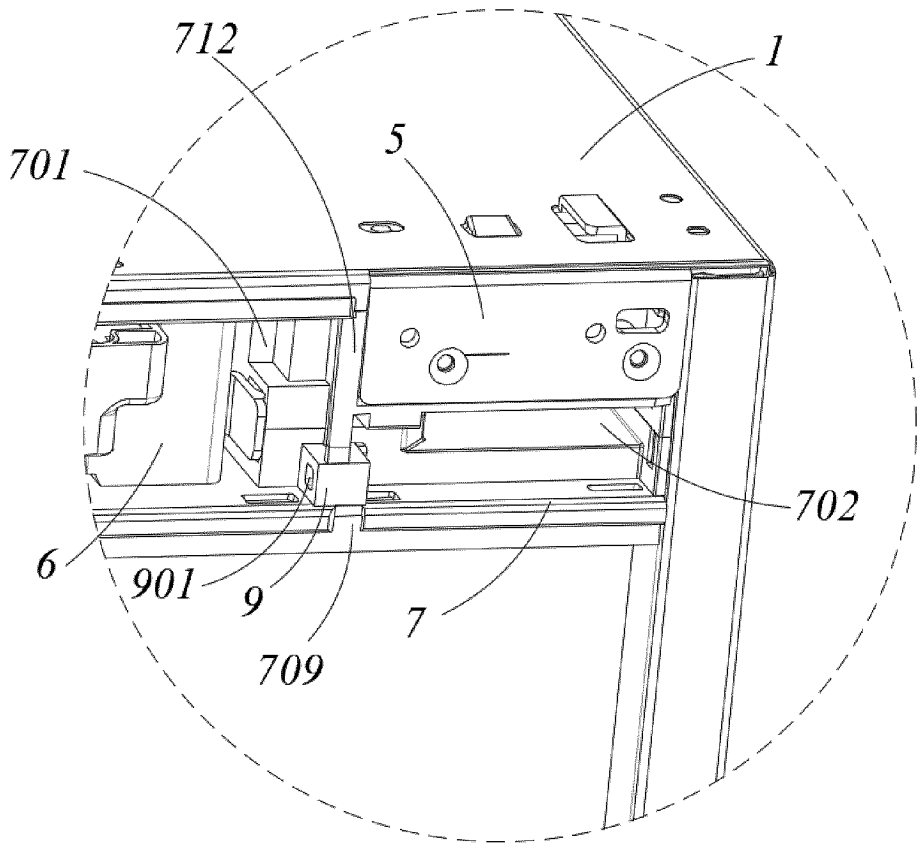


FIG. 5


712
1
701
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702
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901
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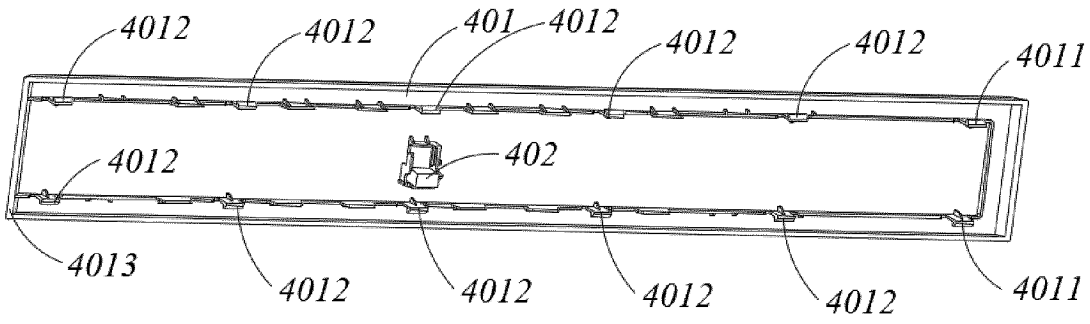
709

FIG. 6


4012
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401
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402
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4011

FIG. 7

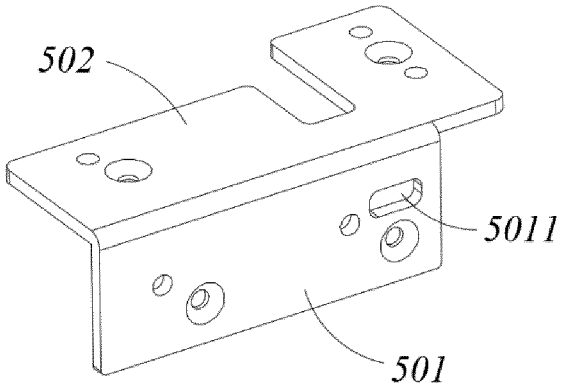

FIG. 8

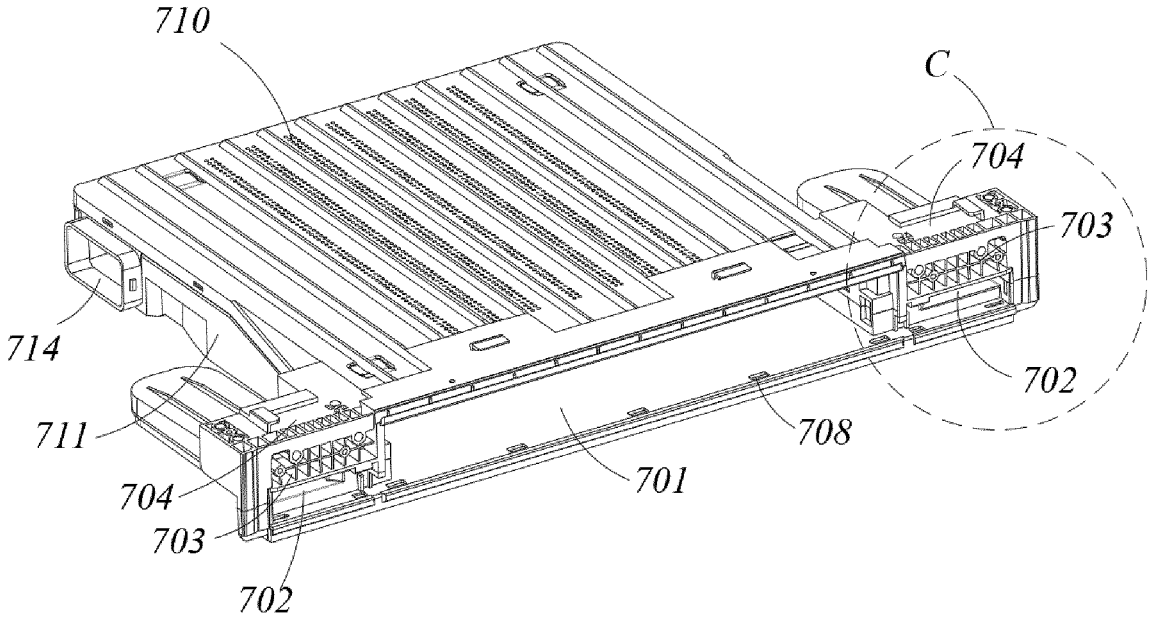

FIG. 9

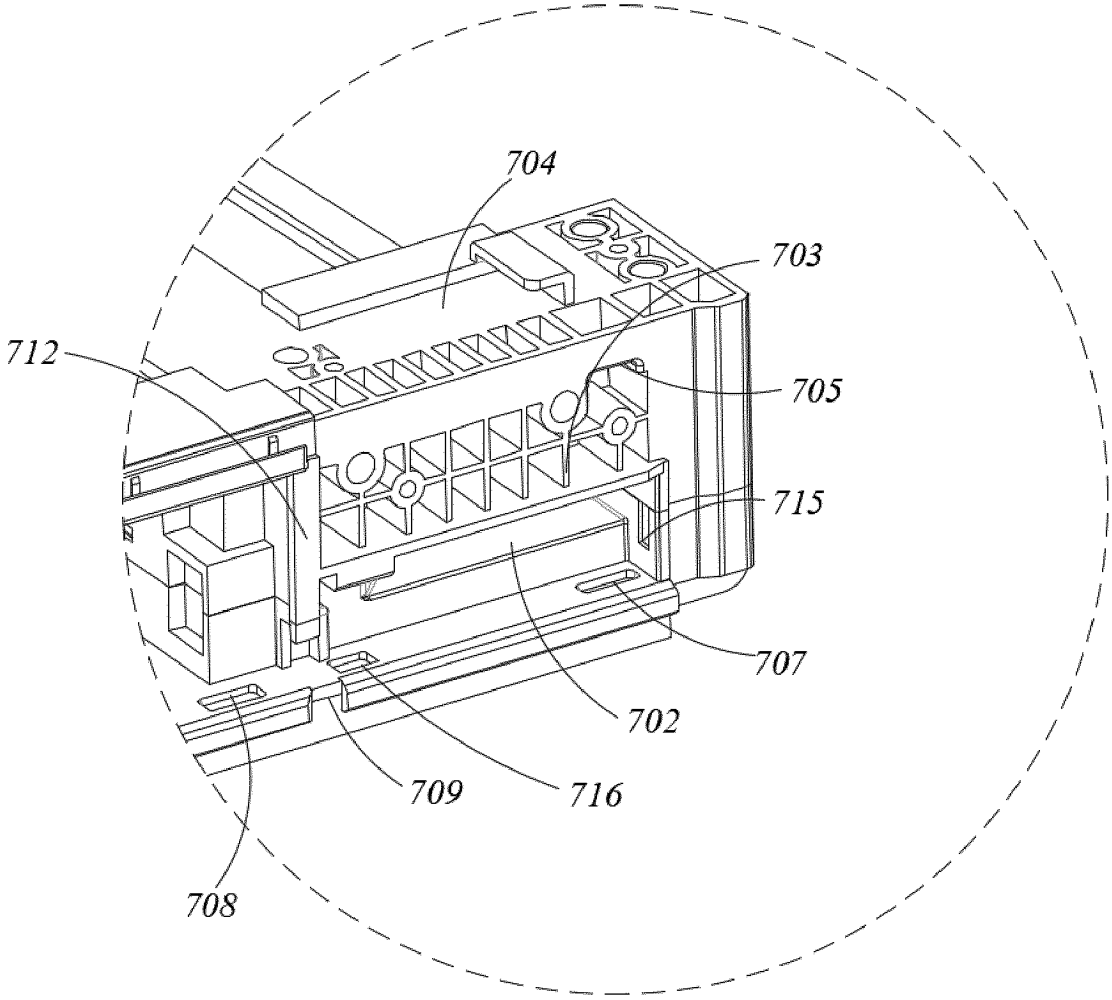

FIG. 10

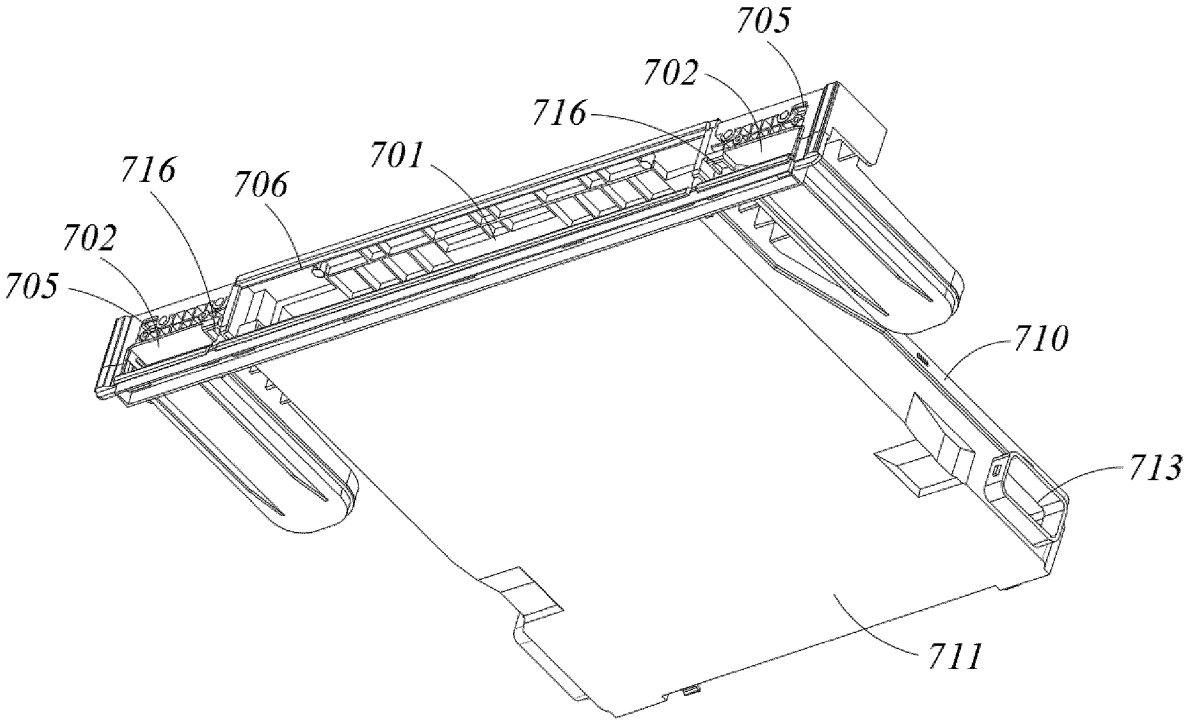
705
702
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FIG. 11

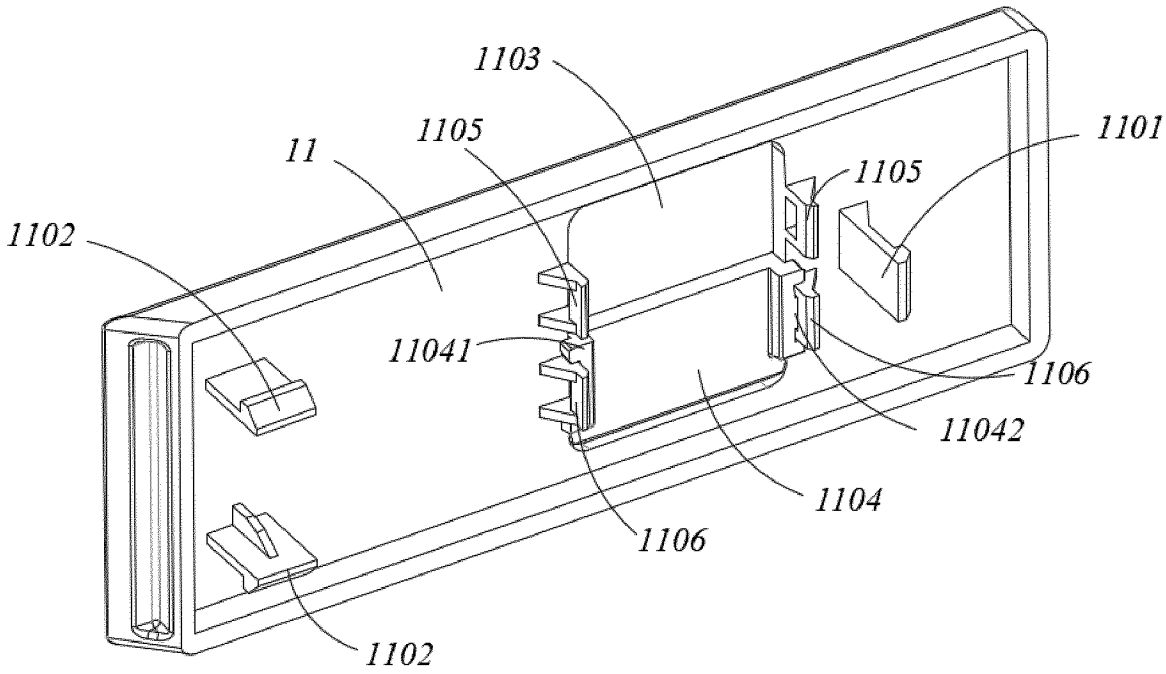
1103
1105
11
1101
1105
1102
11041
1106
11042
1104
1106
1102

FIG. 12

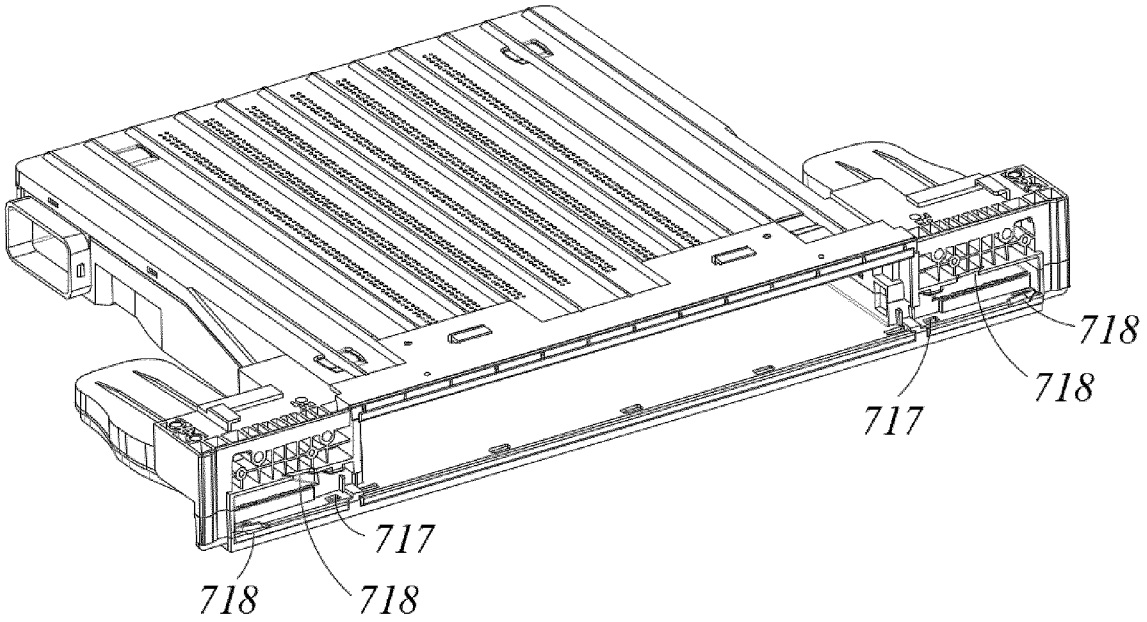
718
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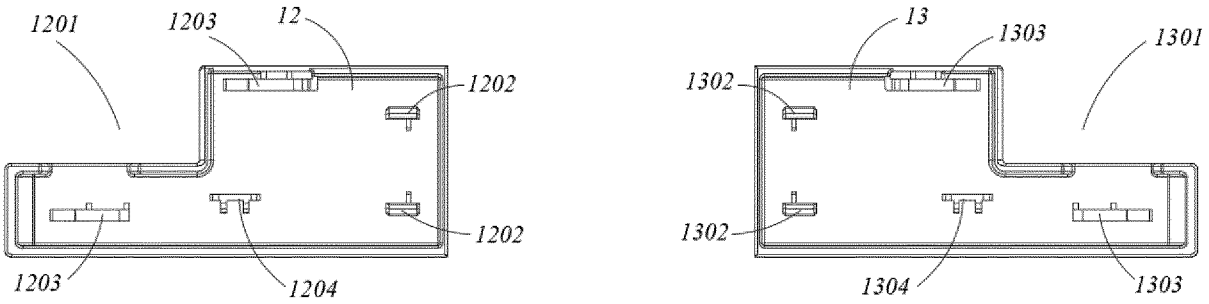
FIG. 13


1201
1203
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1301
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FIG. 14

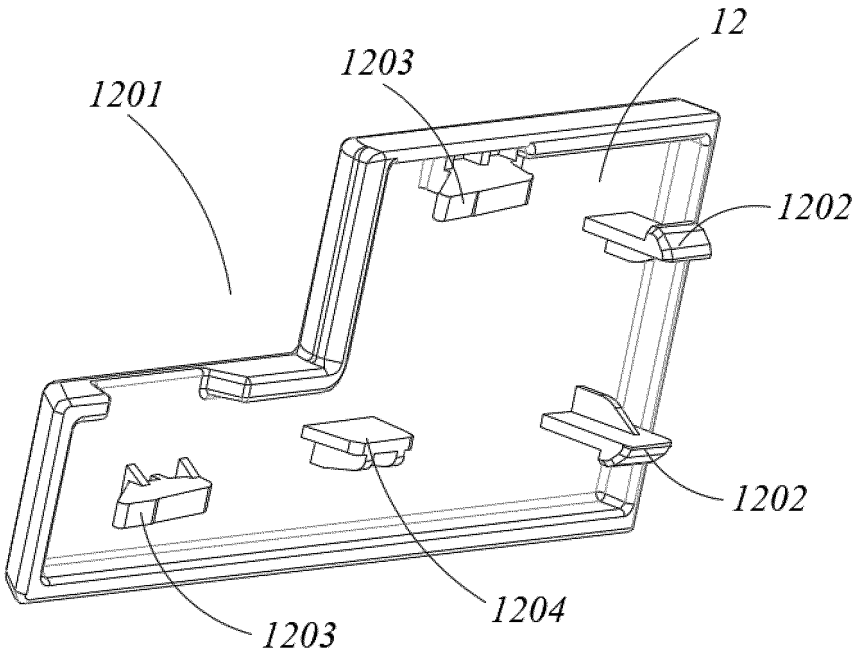

FIG. 15

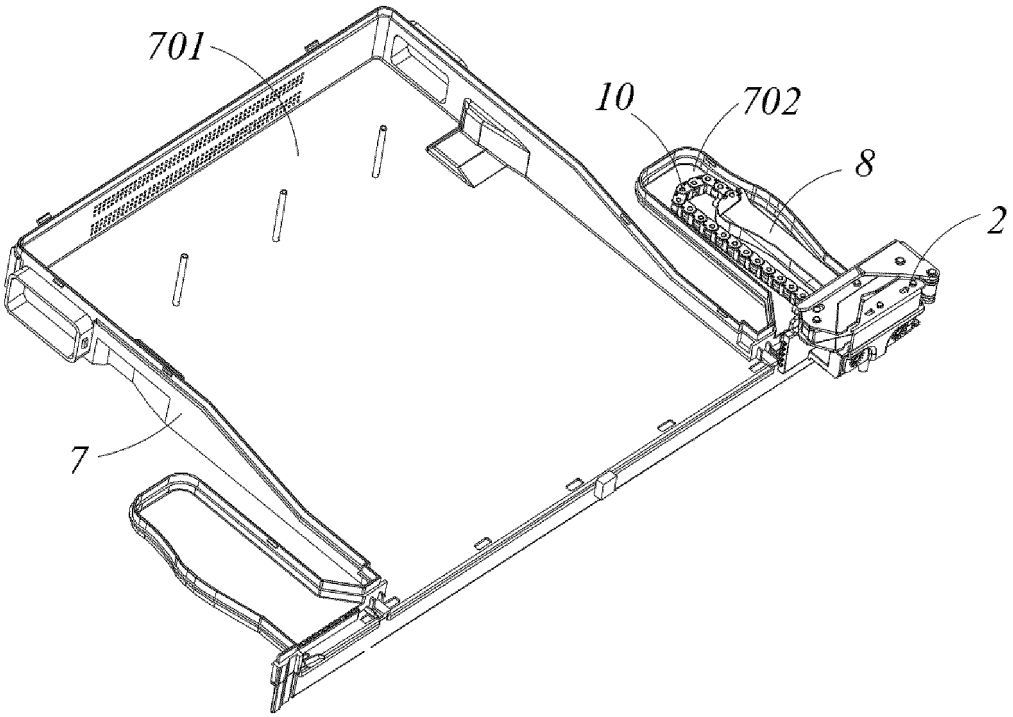

FIG. 16

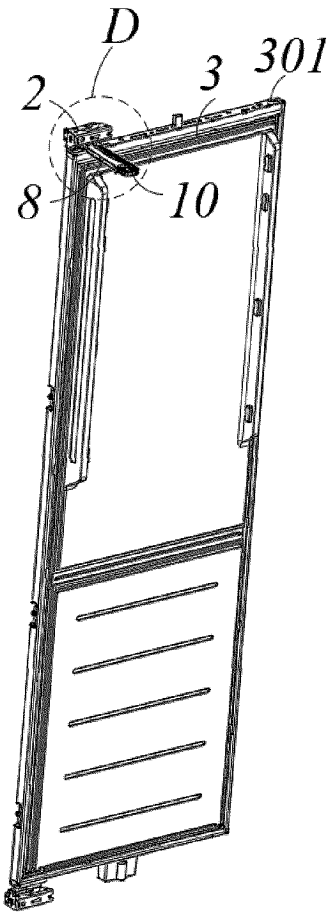

FIG. 17

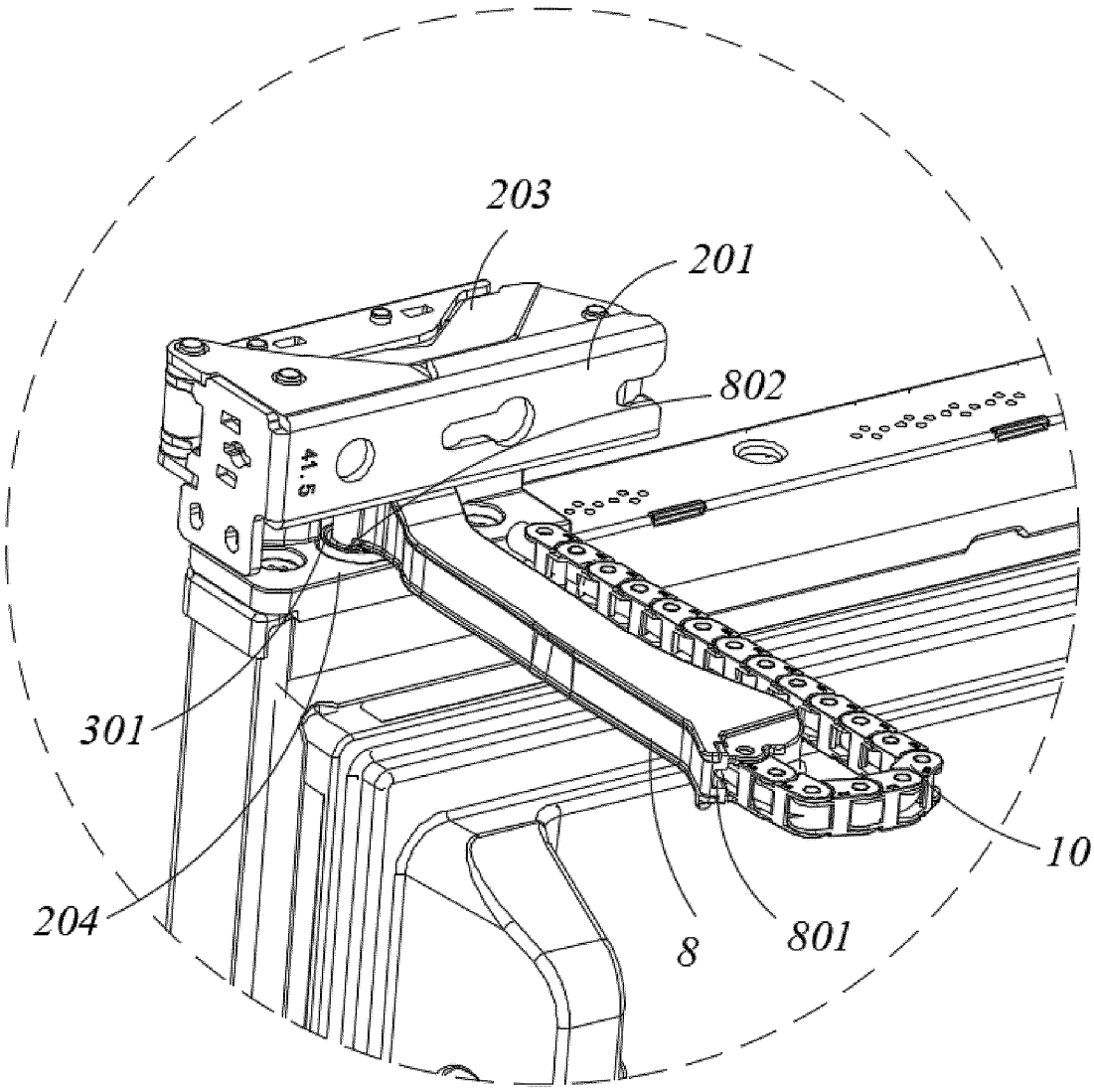

FIG. 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/086110

A. CLASSIFICATION OF SUBJECT MATTER

F25D23/02(2006.01)i; E05D7/02(2006.01)i; E05D7/081(2006.01)i; E05D11/00(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: F25D, E05D

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)

CNTXT, WPABS, EXTXT, EXTXTC, PATENTICS, CJFD, 中国期刊网全文数据库, Chinese Journal Full-text Database: 海尔, 冰箱, 保护, 遮挡, 遮盖, 暴露, 铰链, 左右开, 左右, 左侧, 右侧, 互换, 切换, 转换, 门, 预埋盒, 开口, 挡块, 装饰盖, refrigerator, door, direction, open+, chang+, hinge?, cover+, shelter+, protect+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 218495573 U (QINGDAO HAIER REFRIGERATOR CO., LTD. et al.) 17 February 2023 (2023-02-17) claims 1-19, and description, specific embodiments, and figures 1-18	1-19
PX	CN 218495572 U (QINGDAO HAIER REFRIGERATOR CO., LTD. et al.) 17 February 2023 (2023-02-17) description, specific embodiments, and figures 1-18	1-19
PX	CN 218495560 U (QINGDAO HAIER REFRIGERATOR CO., LTD. et al.) 17 February 2023 (2023-02-17) description, specific embodiments, and figures 1-18	1-19
PX	CN 218096826 U (QINGDAO HAIER REFRIGERATOR CO., LTD. et al.) 20 December 2022 (2022-12-20) description, specific embodiments, and figures 1-18	1-19
X	KR 20180013178 A (SAMSUNG ELECTRONICS CO., LTD.) 07 February 2018 (2018-02-07) description, embodiment section of specific embodiments, and figures 1-14	1-14, 16-19

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 July 2023	**01 August 2023**
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.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/086110

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 200220727 Y1 (DAEWOO ELECTRONICS CO., LTD.) 16 April 2001 (2001-04-16) description, specific embodiments, and figures 1-4	1-6
Y	KR 200220727 Y1 (DAEWOO ELECTRONICS CO., LTD.) 16 April 2001 (2001-04-16) description, specific embodiments, and figures 1-4	7-14, 16-19
X	WO 2010007079 A1 (BSH BOSCH & SIEMENS HAUSGERAETE GMBH et al.) 21 January 2010 (2010-01-21) description, specific embodiments, and figures 1-3	1
Y	CN 203964527 U (HEFEI MIDEA REFRIGERATOR CO., LTD.) 26 November 2014 (2014-11-26) description, specific embodiments, and figures 1-5	7-14, 16-19
Y	CN 205807944 U (HEFEI HUALING CO., LTD. et al.) 14 December 2016 (2016-12-14) description, specific embodiments, and figures 1-8	7-14, 16-19
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/086110

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	218495573	U	17 February 2023	None			
CN	218495572	U	17 February 2023	None			
CN	218495560	U	17 February 2023	None			
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CN	113007936	A	22 June 2021	None			

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REFERENCES CITED IN THE DESCRIPTION

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