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(54) **Refrigeration appliance having door hinge assembly**

(57) Disclosed is a refrigeration appliance. A refrigeration appliance (100) includes a main body (101), a door (102), and a hinge assembly (1) connecting the door (102) to the main body (101); the hinge assembly (1) includes a hinge bracket (2) with an end fixed to the main body (101), a hinge shaft (8) connected to the hinge bracket (2) and defining a rotation axis (X) of the door (102), and an adjusting part (3) for adjusting the height

of the door (102) relative to the main body (101). According to the suggestion of the present invention, the refrigeration appliance further includes a lift member (4) sleeved on the hinge shaft (8) and connected to the adjusting part (3) in a threaded connection manner, and the adjusting part (3) is rotatable along a first direction to drive the lift member (4) to move upwards along the hinge shaft (8) and support the door (102) to move upwards.

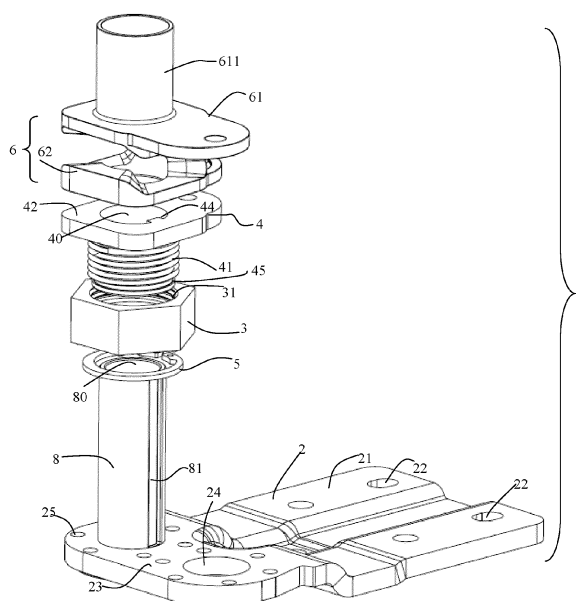


FIG. 3

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a refrigeration appliance, and in particular, to a refrigeration appliance having a door hinge assembly, such as a refrigerator, a wine cooler or a freezer.

Related Art

[0002] The height of a door hinged to a main body of a refrigeration appliance relative to the main body may change, and it is known that the height of the door relative to the main body is adjusted using a door hinge assembly of a height adjusting mechanism. For example, CN102365515A discloses an adjustable hinge assembly for a pivot door, including a pivot shaft fixed to a hinge plate, an adjusting part sleeved on the pivot shaft and a locking member for maintaining the position of the adjusting part along the pivot shaft, where the pivot shaft has a thread portion and defines a rotation axis of the door, and the adjusting part has an inner thread which is rotatable along the thread portion of the pivot shaft to adjust the height of the door. During rotation, the adjusting part moves up and down, to move the door upwards or downwards. The locking member extends through one of multiple recesses arranged at an outer periphery of the adjusting part, and it is necessary to remove the locking member when the adjusting part is rotated.

[0003] As the adjusting part is always next to the bottom of the door, if an operator uses a tool to grip the adjusting part to rotate the adjusting part, the tool always interferes with a member above the adjusting part, which may increase the difficulty of adjusting the height of the door, and such inconvenience is particularly evident when the adjusting part is located at the bottom of the refrigerator.

SUMMARY OF THE INVENTION

[0004] An objective of the present invention is to provide a refrigeration appliance capable of helping to reduce the difficulty of adjusting the height of the door.

[0005] Thus, one aspect of the present invention relates to a refrigeration appliance. The refrigeration appliance includes a main body, a door, and a hinge assembly connecting the door to the main body, where the hinge assembly includes a hinge bracket with an end fixed to the main body, a hinge shaft connected to the hinge bracket and defining a rotation axis of the door, and an adjusting part for adjusting the height of the door relative to the main body; characterized by further including a lift member sleeved on the hinge shaft and connected to the adjusting part in a threaded connection manner, and the adjusting part is rotatable along a first direction to drive

the lift member to move upwards along the hinge shaft and support the door to move upwards.

[0006] When it is necessary to increase the height of the door relative to the main body, the adjusting part rotates to drive the lift member which is connected to the adjusting part in a threaded connection manner so as to move the door upwards, and the adjusting part can be maintained (at least substantially held) at an original position, which helps to reduce probability of interference between the adjusting part and the bottom of the door, thereby helping to reduce the difficulty of adjusting the height of the door.

[0007] The above objective can be achieved through the features in the independent claim. Exemplary embodiments of the present invention are subject matters of the accompanying drawings, the specification and the dependent claims.

[0008] Although it is possible that the adjusting part sits on a support surface parallel to the hinge bracket when adjusting the height of the door, according to a particularly exemplary embodiment of the present invention, when adjusting the height of the door, the adjusting part sits on the hinge bracket. This not only helps to simplify the structure of the hinge assembly, but also helps to increase a height adjustment range between the bottom of the door and the hinge bracket.

[0009] According to an exemplary embodiment of the present invention, when the adjusting part rotates along a second direction opposite to the first direction, the lift member is movable downwards until the lift member directly sits on the hinge bracket.

[0010] According to an exemplary embodiment of the present invention, when the lift member sits on the hinge bracket, the adjusting part is capable of being rotated and moving upwards to be suspended. As the lift member supporting the door can be directly supported by the hinge bracket, the thread between the lift member and the adjusting part no longer needs to bear the weight of the door. This provides a possibility, i.e., when it is unnecessary to adjust the height of the door, for example, during transport of the refrigeration appliance, the adjusting part may be in a suspended/resting state, to avoid damage to the connection thread between the adjusting part and the lift member caused by possible up and down vibration of the door.

[0011] According to an exemplary embodiment of the present invention, the adjusting part has an inner thread, and the lift member is inserted into the adjusting part and has an outer thread connected to the inner thread in a threaded connection manner.

[0012] According to an exemplary embodiment of the present invention, the lift member includes a cylinder portion inserted into the adjusting part, and a platform portion having a cross-sectional area greater than that of the cylinder portion, and the platform portion forms an upper end surface of the lift member. This helps to increase the support area of the lift member for bearing the weight of the door.

[0013] According to an exemplary embodiment of the present invention, an anti-rotation structure for preventing the lift member from rotating with respect to the hinge shaft is included. Preferably, the anti-rotation structure may include a groove formed by one of the lift member and the hinge shaft and extending in a direction of the rotation axis, and a protruding portion formed by the other one of the lift member and the hinge shaft and protruding from an inner peripheral surface or outer peripheral surface of the same and extending into the groove. Thus, the lift member is connected to the hinge shaft in a non-rotatable manner without adding any extra member, helping to guide the lift member to move along the hinge shaft in a vertical direction.

[0014] According to an exemplary embodiment of the present invention, the refrigeration appliance may include a door closing unit between the bottom of the door and the lift member.

[0015] According to an exemplary embodiment of the present invention, the door closing unit includes an upper door closing part fixed to the bottom of the door and a lower door closing part connected to the lift member in a manner of being not rotatable to the top member, wherein the upper door closing part and the lower door closing part each have a cam surface and the pair of cam surfaces contact with each other face to face.

[0016] According to an exemplary embodiment of the present invention, the refrigeration appliance includes a stopper structure for preventing the lift member from continuing to move upwards after moving upwards to a highest position. This particularly helps to avoid the situation where a user/worker excessively rotates the adjusting part such that the lift member and the adjusting part exit the threaded connection or even fall off.

[0017] According to an exemplary embodiment of the present invention, when the lift member moves upwards to the highest position, all threads of the adjusting part and the thread of the lift member maintain the threaded connection. This helps to avoid the situation where the adjusting part and the lift member are damaged as the weight of the door is borne by only part of the threads between the adjusting part and the lift member.

[0018] According to an exemplary embodiment of the present invention, the stopper structure includes a first stopper portion connected to the lift member and a second stopper portion formed in the adjusting part, where the first stopper portion and the second stopper portion butt against each other at the highest position to prevent the lift member from continuing to move upwards, so as to avoid in a simple and reliable manner that the adjusting part is separated from the lift member.

[0019] According to an exemplary embodiment of the present invention, the first stopper portion is connected to a lower end of the lift member.

[0020] According to an exemplary embodiment of the present invention, the first stopper portion is formed by a stopper ring sleeved on the lift member or is integrally formed on the lift member.

[0021] According to an exemplary embodiment of the present invention, the adjusting part is hollow and includes an adjusting portion having an inner thread and a base portion connected to the adjusting portion, where an inner diameter of the base portion is greater than that of the adjusting portion to form a connection surface for connecting the base portion and an inner peripheral surface of the adjusting portion, and the second stop portion is formed by the connection surface. Integrally forming the second stop portion directly on an inner wall surface of the adjusting part helps to reduce parts of the hinge assembly, thereby helping to simplify the assembling of the hinge assembly.

[0022] According to an exemplary embodiment of the present invention, the adjusting part step adjusts the height of the door. This helps the user/worker operating the adjusting part to feel the adjusted height more clearly.

[0023] According to an exemplary embodiment of the present invention, one of the adjusting part and the hinge bracket is provided with a plurality of concave portions surrounding the hinge shaft and disposed at intervals, and the other one of the adjusting part and the hinge bracket is provided with at least one convex portion, where the convex portion is adapted to be at least partially received in any one of the concave portions. Such a scheme not only prevents the adjusting part from accidentally rotating relative to the hinge bracket, but also can be easily used to form means for determining adjustment steps of the adjusting part by appropriately laying out concave and convex portions.

[0024] The structure and other invention objectives as well as beneficial effects of the present invention will be more comprehensible with reference to the accompanying drawings and the description about the exemplary embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] As a part of the specification and for facilitating further comprehension of the present invention, the following accompanying drawings illustrate specific implementation manners of the present invention, and describe the principle of the present invention together with the specification, where

FIG. 1 is a schematic perspective view of a refrigeration appliance according to an exemplary embodiment of the present invention;

FIG. 2 is a schematic partial perspective view of a door and a hinge assembly of a refrigeration appliance assembled together according to an exemplary embodiment of the present invention;

FIG. 3 is a schematic exploded view of a hinge assembly according to an exemplary embodiment of the present invention;

FIG. 4 is a schematic sectional view of a hinge assembly according to an exemplary embodiment of the present invention;

FIG. 5 is a schematic sectional view of a hinge assembly at another height according to an exemplary embodiment of the present invention; and

FIG. 6 is a schematic perspective view of an adjusting part according to an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0026] FIG. 1 is a partial perspective view of a refrigeration appliance 100 according to an exemplary embodiment of the present invention. As shown in FIG. 1, the refrigeration appliance 100 includes a main body 101 having a storage chamber and a pair of doors 102 and 102' connected to the main body 101 to close or open the storage chamber. The doors 102 and 102' are respectively hinged to the left side and the right side of the main body 101 to open or close the corresponding storage chamber.

[0027] The refrigeration appliance 100 includes a hinge assembly 1 respectively connected between a lower end of each door 102 or 102' and the main body 101. The hinge assembly 1 is configured such that heights of the corresponding doors 102 and 102' relative to the main body 101 can be adjusted respectively. The hinge assembly 1 is described below in detail by taking the hinge assembly 1 connected to the door 102 as an example.

[0028] FIG. 2 is a schematic partial perspective view of a door and a hinge assembly of a refrigeration appliance assembled together according to an exemplary embodiment of the present invention; and FIG. 3 is a schematic exploded view of a hinge assembly according to an exemplary embodiment of the present invention. Referring to FIG. 2 and FIG. 3 in combination with FIG. 1, the hinge assembly 1 includes a hinge bracket 2 with an end fixed to the main body 101, a hinge shaft 8 fixed to the hinge bracket 2 and defining a rotation axis X of the door 102, and an adjusting part 3 for adjusting the height of the door 102 relative to the main body 101.

[0029] The hinge bracket 2 includes a mounting portion 21 fixed to the main body 101. The mounting portion 21 may be provided with a plurality of fixing holes 22 to allow a suitable fixing part (not shown) to pass through the mounting portion so as to fix the hinge bracket to the main body 101. The fixing part may be a screw. In this embodiment, the mounting portion 21 is connected to the bottom face of the main body 101. In an alternative embodiment, by suitably changing the shape of the hinge bracket, the hinge bracket also may be fixed to a front surface of the main body, which is especially applied to the situation where the hinge assembly is a middle hinge.

[0030] The hinge bracket 2 includes a supporting portion 23 extending forward from the mounting portion 21.

The supporting portion 23 is perpendicular to the front surface of the main body 101. In this embodiment, the supporting portion 23 and the mounting portion are integrally formed, and are substantially plate-shaped.

[0031] The hinge assembly 1 includes a hinge shaft 8 fixed to the hinge bracket 2, and the hinge shaft 8 defines a rotation axis of the door 102. In this embodiment, the hinge shaft 8 is unmovable relative to the main body 101.

[0032] The hinge shaft 8 is fixed to the supporting portion 23 and extends upright from the supporting portion 23. During rotation of the door 102, the hinge shaft 8 is unmovable relative to the supporting portion 23. In this embodiment, the hinge shaft 8 and the supporting portion 23 are assembled together after being manufactured respectively. Specifically, the hinge shaft 8 passes through a shaft fixing hole 24 on the supporting portion 23 and is welded to the supporting portion 23.

[0033] The hinge shaft 8 may include a pair of shaft fixing holes 24 symmetric about a central axis in the longitudinal direction thereof to allow the hinge shaft 8 to simultaneously adapt to connection with the doors 102 and 102'.

[0034] In an alternative embodiment, the hinge shaft 8 and the supporting portion 23 also may form an integral member.

[0035] In this embodiment, the hinge shaft 8 is a hollow cylinder, and has a central hole 80. In an alternative embodiment, the hinge shaft also may be a solid cylinder.

[0036] An upper end of the hinge shaft 8 extends into the door 102, so that the door 102 can rotate around the rotation axis defined by the hinge shaft 8.

[0037] The adjusting part 3 is sleeved outside the hinge shaft 8, and is rotatable around the hinge shaft 8 to adjust the height of the door 102 relative to the main body 101.

The adjusting part 3 has a first thread portion 31 which is an inner thread. An outer peripheral surface of the adjusting part 3 can be constructed like a screw nut to adapt to operations of standard tools such as wrenches.

[0038] The adjusting part 3 is hollow, including an adjusting portion 32 with a first thread portion 31 formed on an inner peripheral surface. In an exemplary embodiment, the adjusting part 3 may further include a lower end connected to the adjusting portion 32 and a base portion 33 whose inner diameter is greater than that of the adjusting portion 32, so that a connection surface for connecting inner peripheral surfaces of the base portion 33 and the adjusting portion 32 is formed therebetween, and a second stopper portion 34 is formed on the connection surface to coordinate with the following first stopper portion 5.

[0039] In this embodiment, the second stopper portion 34 is substantially an annular wall, which may be substantially perpendicular to the rotation axis X. The inner surface of the base portion 33 may be smooth.

[0040] The hinge assembly 1 includes a lift member 4 in connected to the adjusting part 3 in a threaded connection manner. The lift member 4 has a through hole 40 running through the lift member 4 in a direction of the

rotation axis X to sleeve the hinge shaft 8, and has a second thread portion 41 which is an outer thread coordinating with the first thread portion 31. The second thread portion 41 is formed by a hollow cylinder portion 42 of the lift member 4. In a radial direction, the cylinder portion 42 is inserted into the adjusting part 3 and is thus located between the hinge shaft 8 and the adjusting part 3.

[0041] The door 102 is supported by an upper end surface of the lift member 4. The lift member 4 also may have a platform portion 43 for increasing the area of the upper end surface of the lift member 4.

[0042] The lift member 4 is connected to the hinge shaft 8 in a manner of being not rotatable relative to the hinge shaft 8. In this embodiment, an anti-rotation structure for preventing the lift member 4 from rotating with respect to the hinge shaft 8 includes a groove 81 formed by the hinge shaft 8 and extending in a direction of the rotation axis X, and a protruding portion 44 formed by the lift member and protruding from an inner peripheral surface of the through hole 40 and extending into the groove 81. The protruding portion 44 may extend along the entire axial length of the lift member 4.

[0043] In an alternative embodiment, the anti-rotation structure also may include a groove formed by the lift member and extending in a direction of the rotation axis X, and a protruding portion protruding from an outer peripheral surface of the hinge shaft and extending into the groove.

[0044] The hinge assembly 1 also may include a first stopper portion 5 connected to a lower end of the lift member 4. The first stopper portion 5 protrudes outwards from an outer peripheral surface of the lift member 4 and is overlapped with the second stopper portion 34 in the direction of the rotation axis X. Thus, the lift member 4 having the first stopper portion 5 cannot enter into the hole of the adjusting portion 32 of the adjusting part 3 but is movable vertically in the hole of the base portion 3 of the adjusting part 3.

[0045] In an exemplary embodiment, the first stopper portion 5 is formed by a stopper ring sleeved on the lift member 4. The lower end of the cylinder portion 41 may form a circle of retaining groove 45 recessed in the radial direction, and the stopper ring is sandwiched in the retaining groove 45 so as to prevent the stopper ring from moving in the direction of the rotation axis X.

[0046] In assembling, the adjusting part 3 is first screwed onto the lift member 4, and it would be best if the end of the lift member 4 extends out of the adjusting part 3, so as to connect the first stopper portion 5 to the lower end of the lift member 4. Then, the assembled adjusting part 3, the lift member 4 and the first stopper portion 4 are sleeved on the hinge shaft 8. At this time, the lift member 4 can be directly supported on the hinge bracket 2, and spacing may be even formed between the adjusting part 3 and the hinge bracket 2.

[0047] The hinge assembly 1 may further include a door closing unit 6 between the lift member 4 and the

bottom of the door 102. The door closing unit 6 may include an upper door closing part 61 fixed to the bottom of the door 102 in an unmovable manner and a lower door closing part 62 connected to the upper end of the lift member 4, where the upper door closing part 61 and the lower door closing part 62 each have a cam surface and the cam surfaces contact with each other face to face.

[0048] The lower door closing part 62 is fixed to the lift member 4 in a manner of being not rotatable relative to the lift member 4. In an exemplary embodiment, holes may be respectively formed on the lower door closing part 62 and the platform portion 42 of the lift member 4, and a fixing part (not shown, for example, a screw) passes through the two holes to fix the lower door closing part 62 and the lift member 4 together. In an alternative embodiment, one or more protruding portions spaced apart and protruding toward opposite sides also may be formed on one of the lift member 4 and the lower door closing part 62, and a corresponding pit/hole is formed on the other one of the lift member 4 and the lower door closing part 62 so as to form a plug-in connection, thereby preventing the lift member 4 from rotating with respect to the lower door closing part 62.

[0049] In an alternative embodiment, it is likely that the lower door closing part 62 is integrally formed on the lift member 4.

[0050] The upper door closing part 61 may further include a sleeve portion 611 sleeved on the hinge shaft 8.

[0051] When the hinge assembly 1 is connected to the door 102 and the main body 101, the lift member 4 can sit on the hinge bracket 2 to be directly supported by the hinge bracket 2, and spacing may be formed between the adjusting part 3 and the hinge bracket 2 so that the adjusting part 3 is in a resting state. As the weight of the door 102 is directly supported by the hinge bracket 2 at this time, rather than being supported by the first thread portion 31 and the second thread portion 42 connected in a threaded connection manner, such a situation is particularly conducive to reducing probability of damage to the first thread portion 31 and the second thread portion 42 caused by possible up and down vibration of the door 102 during transport of the refrigeration appliance 100.

[0052] When it is necessary to adjust the height of the door 102 relative to the main body 101, the adjusting part 3 may be rotated along a first direction (e.g., clockwise), and the adjusting part 3 moves downwards along the lift member 4 until the adjusting part 3 contacts with the hinge bracket 2, as shown in FIG. 4. In the process, the lift member 4 stands still, the height of the door 102 supported by the lift member 4 relative to the main body 101 is also unchanged, and at this time, the lift member 4 and the door 102 are both at the lowest position in a door adjustment range decided by the adjusting part 3.

[0053] After the adjusting part 3 sits on the hinge bracket 2, the adjusting part 3 is in an adjustment state capable of adjusting the height of the door 102. If the adjusting part 3 continues to be rotated along the first direction,

the adjusting part 3 remains sitting on the hinge bracket 2 (i.e., keeps contact with the hinge bracket) and drives, through coordination between the first thread portion 31 and the second thread portion 41, the lift member 4 to move upwards along the hinge shaft 8 to push the door 102 to move upwards. In the process, a distance between the lift member 4 and the hinge bracket 2 gradually increases, and the door 102 is gradually lifted.

[0054] When the lift member 4 moves upwards to the first stopper portion 5 which moves up with the lift member 4 to contact with the second stopper portion 34 of the adjusting part 3, the lift member 4 cannot continue to move up, and the adjusting part 3 that sits on the hinge bracket 2 cannot continue to rotate in the first direction. As shown in FIG. 5, the lift member 4 moves upwards to the maximum height. The lift member 4 and the door 102 are adjusted to a highest position in the door adjustment range decided by the adjusting part 3.

[0055] Preferably, when the lift member 4 moves upwards to the maximum height limit, all threads of the first thread portion 31 and the thread of the second thread portion 41 still maintain the threaded connection.

[0056] When it is necessary to lower the height of the door 102, the adjusting part 3 that sits on the hinge bracket 2 may be rotated along a second direction (e.g., counterclockwise) opposite to the first direction, and the lift member 4 is driven to move down along the hinge shaft 8, so that the door 102 supported by the lift member 4 moves downwards together. When the lower end of the lift member 4 directly contacts with the hinge bracket 2, the lift member 4 and the door 102 supported by the lift member 4 reach the lowest position.

[0057] When the lift member 4 directly sits on the hinge bracket 2, if the adjusting part 3 continues to be rotated in the second direction, the adjusting part can move upwards along the second thread portion 41 of the lift member 4 to form spacing with the hinge bracket 2 and hence be suspended, and the lift member 4 remains sitting on the hinge bracket 2. At this time, the adjusting part 3 is in a resting state, and the lift member 4 remains in the lowest position. As stated above, by rotating the adjusting part 3 in the first direction, the suspended adjusting part 3 can be moved downwards along the lift member 4 until the adjusting part contacts with the hinge bracket 2.

[0058] According to an embodiment of the present invention, when the height of the door 102 is adjusted, the adjusting part 3 is always in contact with the hinge bracket 2, to drive the lift member 4 to move up or down in the direction of the rotation axis X; moreover, after the lift member 4 reaches the lowest position, the lift member 4 may sit on the hinge bracket 2, and if the adjusting part 3 is rotated along a predetermined direction, the adjusting part 3 may move upwards along the lift member 4 which stands still to the suspended state without bearing the weight of the door 102, thereby avoiding, for example, damage to threads of the adjusting part 3 and the lift member 4 during transport; furthermore, when the lift member 4 moves upwards to the first stopper portion 5

and butts against the second stopper portion 34, the lift member 4 cannot continue to move upwards, thereby avoiding the situation where the adjusting part 3 is rotated excessively to cause the adjusting part 3 and the lift member 4 to fall off.

[0059] The hinge assembly 1 also may be constructed such that the adjusting part 3 adjusts the height of the door 102 from stage to stage according to a predetermined step. In an exemplary embodiment, referring to FIG. 3 to FIG. 6, the upper surface of the hinge bracket 2 has a plurality of concave portions 25 surrounding the shaft fixing hole 24 and disposed at intervals. The concave portions 25 can be distributed in a common concentric ring. The lower end surface of the adjusting part 3 is provided with a plurality of convex portions 35, and each of the convex portions 35 can be at least partially received in any one of the concave portions 25. In an alternative embodiment, the adjusting part 3 also may be provided with one concave portion 25 or two convex portions 35 distributed symmetrically about the central axis of the adjusting part 3.

[0060] When the adjusting part 3 is adjusted, each of the convex portions 35 moves out of an original concave portion 25 and rotates along the upper surface of the hinge bracket 2, until the convex portion falls into a concave portion 25 adjacent to the original concave portion 25, and this will give an obvious feeling of indication to a user/worker operating the adjusting part.

[0061] The concave portions 25 are distributed at an equal interval. In the embodiment shown in FIG. 3, each of the shaft fixing holes 24 corresponds to six concave portions 25 distributed at an equal interval.

[0062] As shown in FIG. 6, it would be best if each of the convex portions 35 is of an inverted cone shape, and the cone top is chamfered for transition. The concave portion 25 may also be constructed as an inverted cone that adapts to matching with the convex portion 35.

[0063] In addition, with the plug-in connection between the convex portions 35 and the concave portions 25, the adjusting part 3 can adjust the height of the door 102 from stage to stage according to a predetermined amplitude; in the event that no large rotation force is applied to the adjusting part 3, the adjusting part 3 does not rotate, that is to say, accidental rotation of the adjusting part 3 can be avoided.

[0064] In an alternative embodiment, the concave portions also may be formed on the lower end surface of the adjusting part, and the convex portions are formed on the hinge bracket.

[0065] In the above embodiments, the first stopper portion 5 is assembled on the lift member 4 as a separate component. However, in an alternative embodiment, it is likely that the first stopper portion is integrally formed on the lift member 4.

[0066] Various embodiments of individual parts described in combination with FIG. 1 to FIG. 6 can be combined in any given manner, so as to achieve the advantages of the present invention. In addition, the present

invention is not limited to the illustrated embodiments, and generally, other means except the illustrated means may also be used as long as the means can achieve the same effect.

Claims

1. A refrigeration appliance (100), comprising a main body (101), a door (102, 102'), and a hinge assembly (1) connecting the door (102, 102') to the main body (101), wherein the hinge assembly (1) comprises a hinge bracket (2) with an end fixed to the main body (101), a hinge shaft (8) connected to the hinge bracket (2) and defining a rotation axis (X) of the door (102, 102'), and an adjusting part (3) for adjusting the height of the door (102, 102') relative to the main body (101); **characterized by** further comprising a lift member (4) sleeved on the hinge shaft (8) and connected to the adjusting part (3) in a threaded connection manner, and the adjusting part (3) is rotatable along a first direction to drive the lift member (4) to move upwards along the hinge shaft (8) and support the door (102, 102') to move upwards.
2. The refrigeration appliance (100) according to claim 1, **characterized in that**, when adjusting the height of the door (102, 102'), the adjusting part (3) sits on the hinge bracket (2).
3. The refrigeration appliance (100) according to claim 1 or 2, **characterized in that**, when the adjusting part (3) rotates along a second direction opposite to the first direction, the lift member (4) is movable downwards until the lift member (4) directly sits on the hinge bracket (2).
4. The refrigeration appliance (100) according to claim 3, **characterized in that**, when the lift member (4) sits on the hinge bracket, the adjusting part (3) is capable of being rotated and moving upwards to be suspended.
5. The refrigeration appliance (100) according to any one of claims 1 to 4, **characterized in that**, the adjusting part (3) has an inner thread (31), and the lift member (4) is inserted into the adjusting part (3) and has an outer thread (41) connected to the inner thread (31) in a threaded connection manner.
6. The refrigeration appliance (100) according to claim 5, **characterized in that**, the lift member (4) comprises a cylinder portion (42) inserted into the adjusting part (3), and a platform portion (43) having a cross-sectional area greater than that of the cylinder portion (42), and the platform portion (43) forms an upper end surface of the lift member (4).
7. The refrigeration appliance (100) according to any one of claims 1 to 6, **characterized by** further comprising an anti-rotation structure for preventing the lift member (4) from rotating with respect to the hinge shaft (8).
8. The refrigeration appliance (100) according to claim 7, **characterized in that**, the anti-rotation structure comprises a groove (81) formed by one of the lift member (4) and the hinge shaft (8) and extending in a direction of the rotation axis (X), and a protruding portion (44) formed by the other one of the lift member (4) and the hinge shaft (8) and protruding from an inner peripheral surface or outer peripheral surface of the same and extending into the groove (81).
9. The refrigeration appliance (100) according to any one of claims 1 to 8, **characterized by** further comprising a stopper structure for preventing the lift member (4) from continuing to move upwards after moving upwards to a highest position.
10. The refrigeration appliance (100) according to claim 9, **characterized in that**, the stopper structure comprises a first stopper portion (5) connected to the lift member (4) and a second stopper portion (34) formed in the adjusting part (3), wherein the first stopper portion (5) and the second stopper portion (34) butt against each other at the highest position to prevent the lift member (4) from continuing to move upwards.
11. The refrigeration appliance (100) according to claim 10, **characterized in that**, the first stopper portion (5) is connected to a lower end of the lift member (4).
12. The refrigeration appliance (100) according to claim 10 or 11, **characterized in that**, the first stopper portion (5) is formed by a stopper ring sleeved on the lift member (4) or is integrally formed on the lift member (4).
13. The refrigeration appliance according to claim 10, 11 or 12, **characterized in that**, the adjusting part (3) is hollow and comprises an adjusting portion (32) having an inner thread and a base portion (33) connected to the adjusting portion (32), wherein an inner diameter of the base portion (33) is greater than that of the adjusting portion (32) to form a connection surface for connecting the base portion (33) and an inner peripheral surface of the adjusting portion (32), and the second stop portion (34) is formed by the connection surface.
14. The refrigeration appliance (100) according to any one of claims 1 to 13, **characterized in that**, the adjusting part (3) step adjusts the height of the door (102, 102').

15. The refrigeration appliance (100) according to any one of claims 1 to 14, **characterized in that**, one of the adjusting part (3) and the hinge bracket (2) is provided with a plurality of concave portions (25) surrounding the hinge shaft (8) and disposed at intervals, the other one of the adjusting part (3) and the hinge bracket (2) is provided with at least one convex portion (35), and the convex portion (35) is adapted to be at least partially received in any one of the concave portions (25).

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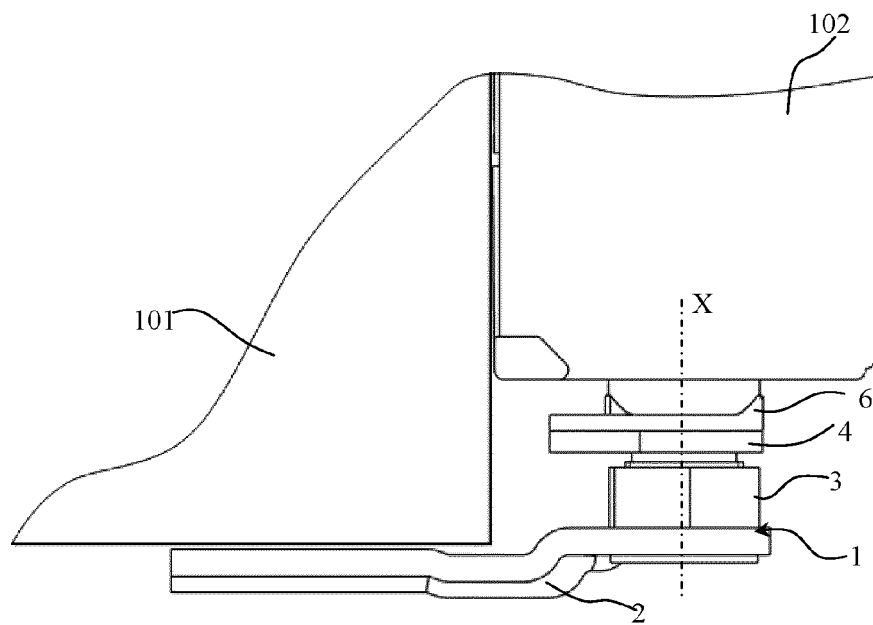
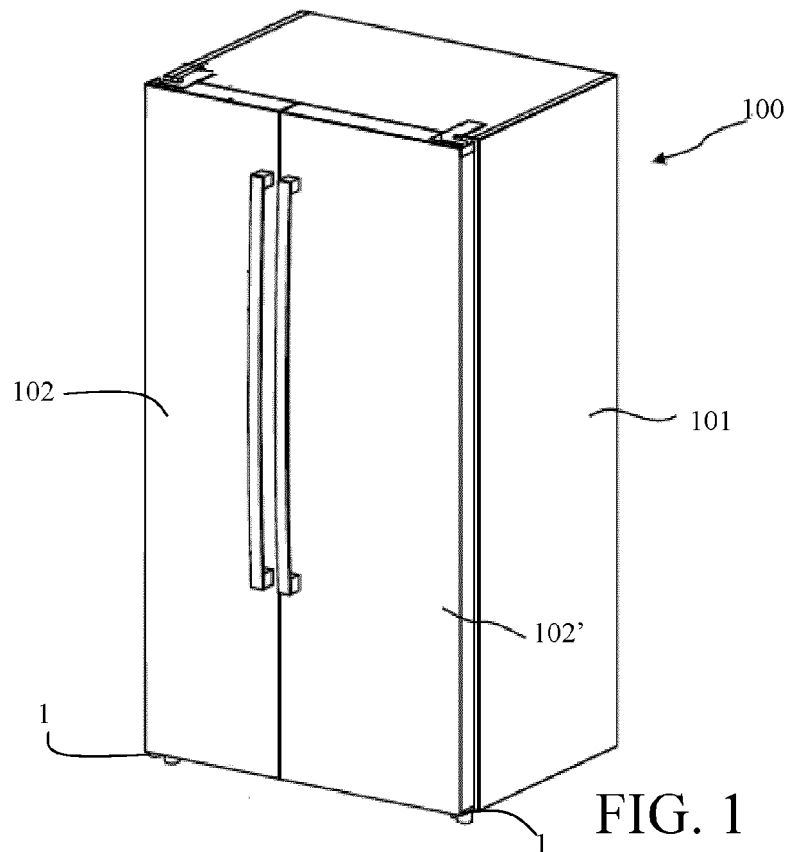
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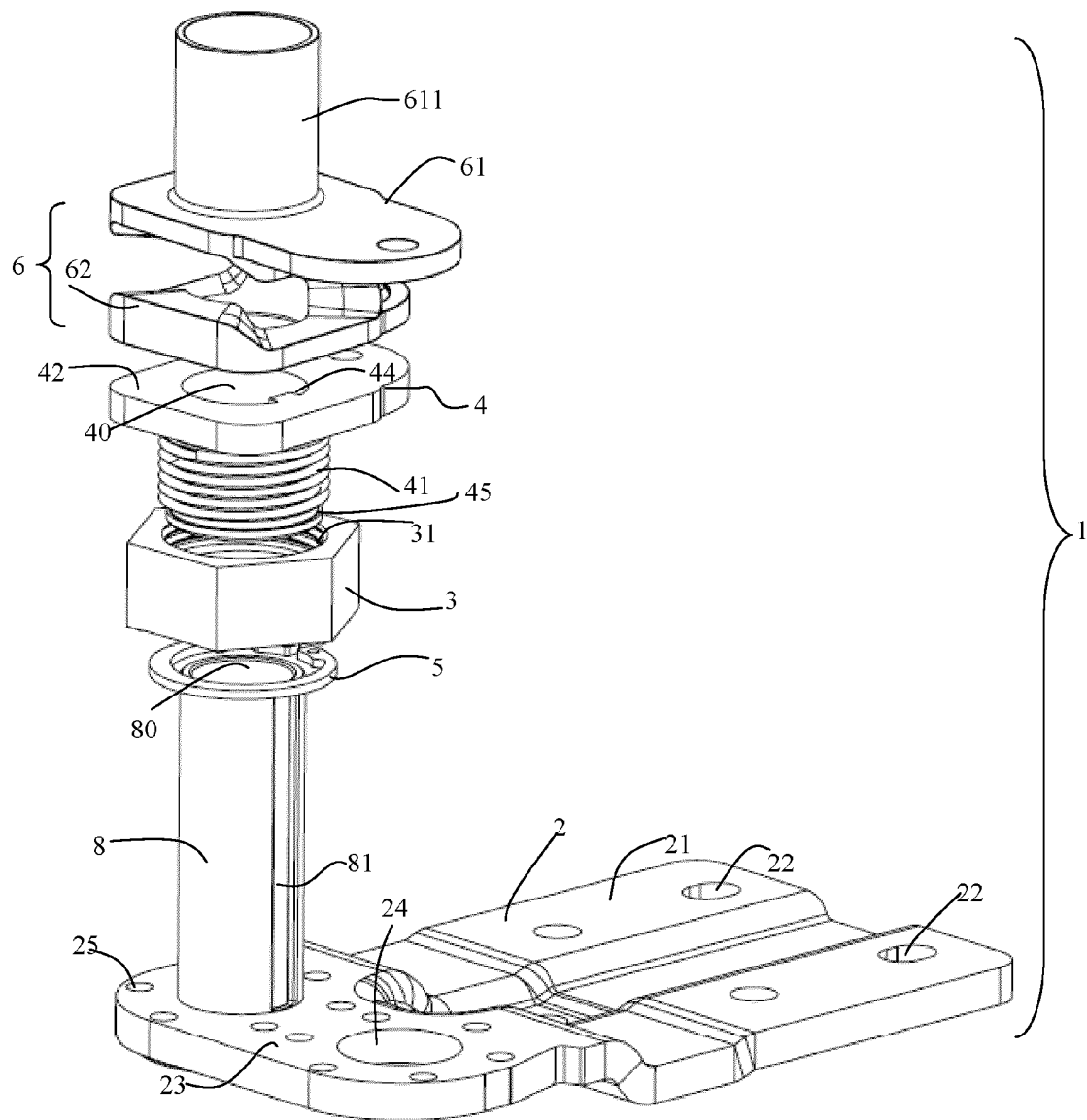


FIG. 3

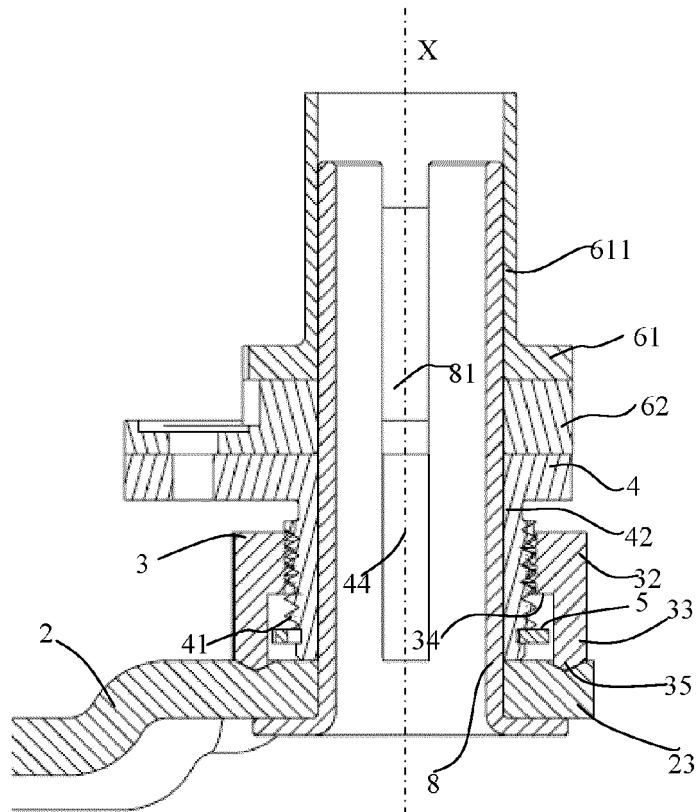


FIG. 4

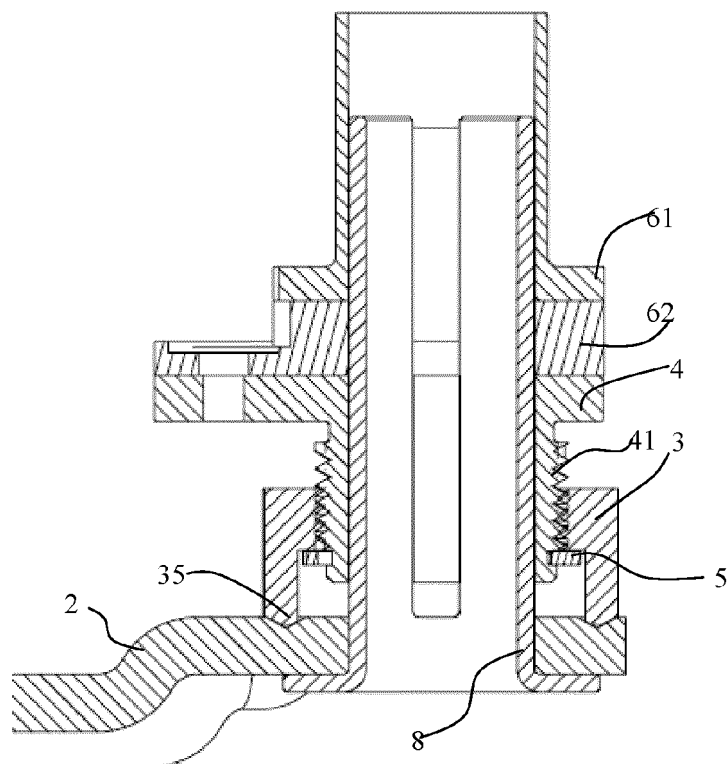


FIG. 5

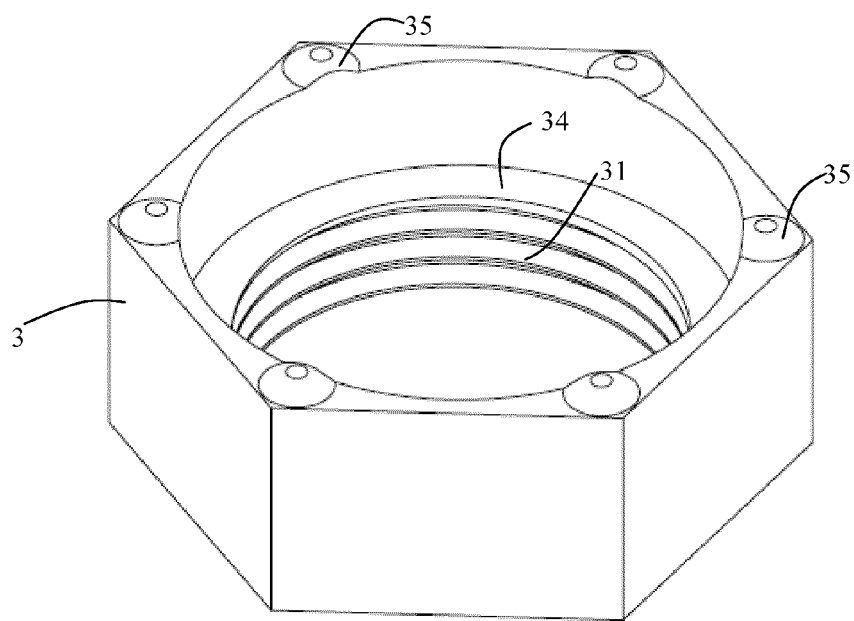


FIG. 6

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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