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(54) **Refrigerator**

Kühlschrank

Réfrigérateur

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EP 2 725 314 B1

Description**BACKGROUND****Field of the Disclosure**

[0001] The present disclosure relates to a refrigerator, and, more particularly, to a refrigerator provided with a shelf disposed over a drawer, to be pulled out.

Discussion of the Related Art

[0002] Generally, a refrigerator is an appliance for storing food, and etc., within a storage chamber in a frozen or refrigerated state by discharging, into the storage chamber, cold air generated through a refrigeration cycle constituted by a compressor, a condenser, an expansion valve, an evaporator, and etc.

[0003] Such a refrigerator generally includes a freezing compartment for storing food or beverages in a frozen state, and a refrigerating compartment for storing food or beverages at low temperature. A Kimchi refrigerator, which stores food such as Kimchi or vegetables in a fresh state, is another form of refrigerator.

[0004] At least one of plural doors installed at a refrigerator is connected to one side of a body, to open or close a front side of the body through pivotal movement thereof. In addition to such a door, which pivots about a hinge, a drawer type door may also be employed. The drawer type door includes a drawer, and a door mounted to a front side of the drawer, to be pulled out or retracted in a forward or rearward direction, together with the drawer.

[0005] Generally, storage compartments of a refrigerator, namely, freezing and refrigerating compartments, are provided with a plurality of shelves that vertically divide the freezing and refrigerating compartments into sections.

[0006] The refrigerating compartment is generally provided with a vegetable compartment to store vegetables, fruits, or the like in a space of the refrigerating compartment separate from the remaining space of the refrigerating compartment.

[0007] The vegetable compartment mainly takes the form of a drawer. The drawer is sealed by a shelf.

[0008] Such a closable separate compartment having the form of a drawer may be provided at the freezing compartment. In this case, a shelf is disposed over the drawer, to close the drawer.

[0009] In order to close the drawer, the shelf is fixed to side walls of the refrigerating or freezing compartment. For this reason, there may be a problem in that it may be difficult to retrieve articles placed on a rear side of the shelf.

[0010] In particular, refrigerators are tending to increase in size in recent times. Accordingly, when a large number of articles are placed on the shelf, retrieval of articles disposed at a rear side of the shelf may become more difficult.

[0011] KR 2011 0080523 A describes a refrigerator comprising a main body provided with a storage space, a drawer partition formed in the main body, and a cover assembly provided with plural cover members to open and close the upper left and right sides of the drawer partition independently.

[0012] US 6565169 B1 discloses a refrigerator according to the preamble of claim 1.

10 **SUMMARY**

[0013] Accordingly, the present invention is directed to a refrigerator that substantially obviates one or more problems due to limitations and disadvantages of the related art.

[0014] One object of the present disclosure is to provide a refrigerator in which a shelf disposed over a drawer may be pulled out while keeping the drawer in a sealed state. The object is solved by the features of the independent claim.

[0015] Additional advantages, objects, and features will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objectives and other advantages may be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[0016] The objects of the current application are achieved with a refrigerator according to claim 1.

[0017] The refrigerator includes a cover mounted to cover the open top side of the drawer, the cover covering the drawer even when the shelf slides out, thereby keeping the drawer in a sealed state.

[0018] The shelf may be provided, at a front side thereof, with a handle to allow the user to grasp the handle upon selectively sliding out of the shelf.

[0019] The handle may be protruded from an upper surface of the front side of the shelf, to have an inverted-U shape.

[0020] The handle may be a groove formed at an upper surface of the front side of the shelf.

[0021] The shelf may be supported by rail assemblies respectively mounted to opposite side walls of the storage chamber, to allow the shelf to be pulled out.

[0022] The shelf may be supported by rail assemblies respectively mounted to opposite side edges of the cover, to allow the shelf to be pulled out.

[0023] The shelf may be supported by at least one pair of rollers to roll in guide grooves provided at opposite side walls of the storage chamber.

[0024] The shelf may be provided, at an upper surface of a rear side thereof, with a tumbling prevention member to prevent an article placed on the shelf from tumbling down to the cover when the shelf slides out.

[0025] The tumbling prevention member may be provided at the upper surface of the rear edge of the shelf

in the form of a bar.

[0026] The tumbling prevention member may be provided at the upper surface of the rear edge of the shelf in the form of an upwardly extending plate.

[0027] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] The accompanying drawings, which are included to provide a further understanding of the disclosure and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention. In the drawings:

FIG. 1 is a perspective view illustrating a refrigerator according to an embodiment of the present invention;

FIG. 2 is a perspective view illustrating an interior of a refrigerating compartment illustrated in FIG. 1;

FIG. 3 is a perspective view illustrating the multi-duct, drawers, and shelf assemblies mounted in the refrigerating compartment according to an embodiment of the present invention;

FIG. 4 is a perspective view illustrating a pulled-out state of the shelf disposed over the drawer illustrated in FIG. 3;

FIG. 5 is a perspective view illustrating a handle according to another embodiment of the present invention;

FIG. 6 is a front view of an embodiment of the present invention in which a shelf is supported by rollers;

FIG. 7 is a sectional view of an embodiment of the present invention in which a shelf is supported by rail assemblies mounted to an upper surface of a cover; and

FIG. 8 is a perspective view illustrating an embodiment of the present invention in which a tumbling prevention member is provided.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0029] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

[0030] FIG. 1 is a perspective view illustrating a refrigerator according to an embodiment of the present invention. FIG. 2 is a perspective view illustrating an interior of a refrigerating compartment illustrated in FIG. 1.

[0031] The illustrated refrigerator is a bottom freezer type refrigerator in which a refrigerating compartment is provided at a top side of the refrigerator, and a freezing compartment is provided at a bottom side of the refrigerator. However, the present invention is not limited to

such a type.

[0032] That is, the present invention may be applied to a side-by-side type refrigerator in which a freezing compartment and a refrigerating compartment are laterally arranged or a top mounting type refrigerator in which a freezing compartment is arranged over a refrigerating compartment.

[0033] As illustrated in FIG. 1, the refrigerator includes a refrigerator body 1 in which a refrigerating compartment 10 and a freezing compartment are defined as storage compartments. A refrigerating compartment door 20 and a freezing compartment door 30 are provided at front openings of the refrigerating compartment 10 and freezing compartment, to open or close the refrigerating compartment 10 and freezing compartment, respectively.

[0034] The refrigerating compartment door 20 may include a pair of doors pivotably mounted to opposite lateral ends of an opened front side of the refrigerating compartment 10, respectively. The freezing compartment door 30 may take the form of a drawer type door.

[0035] Generally, a plurality of shelves 25 is provided at an inside of the refrigerating compartment door 20, to receive articles.

[0036] A drawer 100 is provided at a lower portion of the refrigerating compartment 10, to define, in the refrigerating compartment 10, a space separate from the remaining space of the refrigerating compartment 10 in order to store food.

[0037] Generally, the drawer 100 has an upwardly opened rectangular parallelepiped box shape.

[0038] The drawer 100 is covered, at an open top side thereof, by a shelf 120 disposed just over the drawer 100 and, as such, a sealed space is formed in the drawer 100.

[0039] Vegetables or fruits are mainly stored in the drawer 100.

[0040] One drawer 100 may be provided. Alternatively, a plurality of drawers may be mounted, as illustrated in FIG. 1.

[0041] For example, a drawer having a width corresponding to the width of the refrigerating compartment may be installed. Two drawers each having a width corresponding to half the width of the refrigerating compartment may be installed in parallel. Alternatively, three or more drawers may be installed.

[0042] Each drawer may be covered, at the open top side thereof, by another drawer or a shelf, to partition the space defined therein from other spaces.

[0043] Plural shelves 70 and 80 are mounted at an upper portion of the refrigerating compartment 10. These shelves 70 and 80 define an upper space of the refrigerating compartment 10, together with the shelf 120 covering the drawer 100, and support food stored in the upper space.

[0044] As illustrated in FIG. 1, the shelves 70 and 80 may include pairs of cantilevers 75 and 85 respectively coupled to opposite lateral ends of the shelves 70 and 80 while being mounted to two cantilever mounting rails 50, to be supported by the cantilever mounting rails 50.

[0045] The first shelf 70, which is disposed at an upper position in the refrigerating compartment 10, may have a width approximating the width of the refrigerating compartment 10. On the other hand, the second shelf 80, which is disposed at a lower position in the refrigerating compartment 10, may have a width approximating half the width of the refrigerating compartment 10. In this case, two second shelves 80 may be installed, as illustrated in FIG. 1.

[0046] In this case, the first shelf 70 may be supported by the two cantilever mounting rails 50, as described above. In the case of each second shelf 80, however, one lateral end of the second shelf 80 is supported by the cantilever mounting rail 50, whereas the other lateral end of the second shelf 80 is supported by the cantilever 85, which is mounted to a separate cantilever mounting rail 45 installed at a middle portion of a rear wall of the refrigerating compartment 10.

[0047] The first shelf 70 and the two second shelves 80 may be interchanged in terms of position and level. In addition, the two second shelves 80 may be mounted at different levels.

[0048] The central cantilever mounting rail 45 may be simply mounted to the rear wall of the refrigerating compartment 10 as a separate member. However, it is more preferable to form grooves at a middle portion of a multi-duct 40 formed with a plurality of cold air outlet holes 42, and to mount the central cantilever mounting rail 45 to the multi-duct 40 via the grooves.

[0049] When the central cantilever mounting rail 45 is mounted to the multi-duct 40, it may be possible not only to efficiently install the cantilever mounting rails, but also to uniformly supply cold air to spaces defined by the shelves.

[0050] As illustrated in FIG. 2, the refrigerator according to the illustrated embodiment of the present invention includes a shelf 120 mounted over the drawer 100 and slidably mounted in the refrigerating compartment 10, to be independently pulled out irrespective of pull-out of the drawer 100.

[0051] The shelf 120 completely covers the open top side of the drawer 100 in a retracted state, to close the drawer 100. In a pulled-out state, the shelf 120 exposes a rear portion of the open top side of the drawer 100.

[0052] The drawer 100 may be a single drawer having a width approximating the width of the refrigerating compartment 10. Alternatively, two or more drawers, which are laterally arranged, may be mounted, to be independently pulled out.

[0053] In the case of FIGs. 1 and 2, three drawers 100 are mounted beneath the shelf 120.

[0054] When a plurality of drawers is mounted, guide members to guide pull-out of the drawers should be formed among the drawers.

[0055] When a plurality of drawers is slidably mounted, drawer mounting members 110, to which the drawers may be mounted, are provided, as illustrated in FIG. 3. The drawer mounting members 110 may be mounted at

opposite side walls of the refrigerating compartment 10.

[0056] Food articles or containers containing food articles are placed on the shelf 120. To support the food articles or containers, the shelf 120 generally includes a rectangular rim, and a plate coupled to the rim at an inside of the rim.

[0057] The plate may be made of a transparent or semi-transparent material, to allow articles disposed beneath the shelf 120 to be viewed therethrough.

[0058] The refrigerator according to the illustrated embodiment of the present invention includes a cover 140 to cover the open top side of the drawer 100, in order to keep the inner space of the drawer 100 in a sealed state even when the shelf 120 is pulled out.

[0059] The cover 140 is disposed between the shelf 120 and the drawer 100. The cover 140 may be supported by the drawer mounting members 110 at the top side of the drawer 100.

[0060] The cover 140 is coupled to upper ends of the drawer mounting members 110 to be maintained at a fixed position, irrespective of whether the shelf 120 is pulled out.

[0061] Even when the drawer 100 is pulled out, the cover 140 is maintained in a fixed state because it is supported by the drawer mounting members 110.

[0062] Accordingly, even when the shelf 120 is pulled out, the inner space of the drawer 100 is maintained in a sealed state by the cover 140, so long as the drawer 100 is not pulled out.

[0063] Similarly to the shelf 120, the cover 140 may include a rim, and a plate mounted to the rim at an inside of the rim.

[0064] Similarly to the shelf 120, the plate may be made of a transparent or semitransparent material, to allow the inner space of the drawer 100 to be viewed therethrough.

[0065] Meanwhile, a handle 122 may be provided at a front side of the shelf 120, to allow the user to grasp the handle 122 in order to pull out the shelf 120.

[0066] As illustrated in FIG. 2, the handle 122 may include an inverted-U-shaped wire member.

[0067] The handle 122 may be centrally disposed on an upper surface of a front side of the rim of the shelf 120.

[0068] Since the shelf 120 is slidably mounted, the user may easily pull out the shelf 120 by pulling on the handle 122, and may easily retract the shelf 120 to an original position thereof by pushing on the handle 122.

[0069] Opposite lateral ends of the shelf 120 are supported by the opposite side walls of the refrigerating compartment 10 via rail assemblies 130, respectively, in order to allow the shelf 120 to be pulled out.

[0070] Each rail assembly 130 includes a fixed rail mounted to one side wall of the refrigerating compartment 10, and a movable rail slidably coupled to the fixed rail while being coupled to one lateral end of the shelf 120.

[0071] In the embodiment of FIG. 2, the fixed rail is not directly coupled to the lateral wall of the refrigerating compartment 10, but is coupled to a rail mounting member 131 fixed to the lateral wall of the refrigerating compart-

ment 10.

[0072] Upwardly protruded rail coupling portions 123 are formed at opposite lateral ends of the rim of the shelf 120, respectively, and, as such, the movable rails (not shown) of the rail assemblies 130 may be coupled to outer surfaces of the corresponding rail coupling portions 123, respectively.

[0073] The shelf 120 may be pulled out by a length corresponding to half the length of the shelf 120 in forward and rearward directions.

[0074] In order to increase a pulled-out length, each rail assembly 130 may further include an intermediate fixed rail disposed between the fixed rail and the movable rail. Practically, however, the pulled-out length of the shelf 120 is not so long and, as such, no intermediate rail may be required in the rail assembly 130.

[0075] Referring to FIG. 2, it may be seen that, since the pulled-out length of the shelf 120 is not so long, each rail mounting portion 131, to which the corresponding fixed rail is mounted, is formed not to extend to a front end of the corresponding side wall of the refrigerating compartment 10, but to extend to a middle portion of the side wall.

[0076] Although not shown, the drawer 100 may be mounted to be pulled out through a configuration in which protrusions (not shown) formed at opposite lateral sides of the drawer 100 are inserted into guides (not shown) provided at opposite side walls of the refrigerating compartment 10, and are guided by the guides.

[0077] Meanwhile, moisture adjusting levers 128 are provided at opposite portions of the front side of the rim of the shelf 120. Each moisture adjusting lever 128 adjusts an opening degree of an air hole formed through the drawer 100, thereby adjusting moisture in the inner space of the drawer 100.

[0078] That is, the moisture adjusting levers 128 are symmetrically mounted to respective air holes formed at opposite sides of the handle 122. Similarly, air holes corresponding to respective air holes associated with the moisture adjusting levers 128 are formed through the cover 140.

[0079] Thus, the moisture adjusting levers 128 adjust opening degrees of the air holes of the shelf 120 communicating with the air holes of the cover 140, thereby adjusting moisture of the inner space of the drawer 100.

[0080] Hereinafter, the structures and operations of the shelf and drawers of the refrigerator according to the illustrated embodiment of the present invention will be described in more detail with reference to FIGs. 3 and 4.

[0081] FIG. 3 is a perspective view illustrating the multi-duct, drawers, and shelf assemblies mounted in the refrigerating compartment according to an embodiment of the present invention. FIG. 4 is a perspective view illustrating a pulled-out state of the shelf disposed over the drawer illustrated in FIG. 3.

[0082] As described above, each rail assembly 130 is mounted between the corresponding rail mounting member 131 and the corresponding rail coupling portion 123.

Although the rail mounting member 131 is fixed to the corresponding side wall of the refrigerating compartment 10, FIGs. 3 and 4 illustrate a state of being separated from the side wall of the refrigerating compartment 10.

[0083] The multi-duct 40 is centrally mounted to the rear wall of the refrigerating compartment 10. The multi-duct 40 extends downward from a top side of the refrigerating compartment 10 to a position behind the drawer 100.

[0084] For this reason, the shelf 120 is centrally formed, at a rear side thereof, with a concave portion 124 conforming to a profile of the multi-duct 40 in order to prevent the shelf 120 from interfering with the multi-duct 40.

Similarly, as illustrated in FIG. 4, the cover 140 is centrally formed, at a rear side thereof, with a concave portion 144 conforming to the profile of the multi-duct 40.

[0086] As illustrated in FIG. 3, each of the plural drawers 100 is formed, at a front side thereof, with a handle 102.

[0087] The handle 102 of each drawer 100 may have a structure bent downward after extending forwardly from an upper end of the front side of the drawer 100.

[0088] Since the handles 102 of the plural drawers 100 are forwardly exposed, it may be preferable to form the handles 102 such that the handles 102 have a connected shape with respect to the other handles 102 to take aesthetics into consideration.

[0089] When the user pulls on the handle 122, to pull out the shelf 120, a rear portion of the cover 140 is exposed, as illustrated in FIG. 4.

[0090] In this case, the inner space of the drawer 100 is kept in a sealed state because the cover 140 is fixed to the upper ends of the drawer mounting members 110.

[0091] Hereinafter, an embodiment, in which the handle 122 of the shelf 120 has a shape different from the above-described shape, will be described with reference to FIG. 5.

[0092] Referring to FIG. 5, a drawer assembly formed through assembly of a drawer 100, drawer mounting members 110, a cover 140, and a shelf 120 is illustrated. The shelf 120 is illustrated in a pulled-out state in FIG. 5.

[0093] This embodiment is identical to the above-described embodiment, except for the shape of a handle 122 of the shelf 120. Accordingly, only the handle 122 will be described.

[0094] Similarly to the previous case, the handle 122 is formed at a central portion of the front side of the rim of the shelf 120.

[0095] The handle 122 does not have a protrusion shape, but has a laterally elongated groove shape.

[0096] In order to form the groove-shaped handle 122, the central portion of the front rim side of the shelf 120 is thicker than the remaining portions of the front rim side.

A groove is formed to extend downward from an upper surface of the thicker portion.

[0097] The groove-shaped handle 122 has a size to allow the user to pull the handle 122 while inserting the

fingers into the groove.

[0098] Hereinafter, an embodiment, in which the shelf 120 is not supported by the rail assemblies, but is supported by rollers supported by roller guides, will be described with reference to FIG. 6.

[0099] FIG. 6 is a front view of a drawer assembly according to an embodiment of the present invention. FIG. 6 illustrates cross-sections of roller mounting areas.

[0100] The rail coupling portions 123 and rail mounting members 131 in the previous embodiment are replaced by roller mounting portions 125 and roller guides 133 in the present embodiment. At least one roller 126 is rotatably mounted to each roller mounting portion 125 at an outside of the roller mounting portion 125.

[0101] In other words, rollers 126 are symmetrically mounted at opposite lateral sides of the shelf 120. In the present embodiment, the rollers 126 are arranged in pairs.

[0102] Two or more rollers 126 may be arranged along each roller guide 133 while being spaced apart from one another by a predetermined distance and, as such, the shelf 120 may be guided to be smoothly pulled out or retracted throughout the length thereof in forward and rearward directions.

[0103] Hereinafter, an embodiment, in which the rail assemblies are not supported by opposite side walls of the refrigerating compartment, but are supported by the upper surface of the cover, will be described with reference to FIG. 7.

[0104] FIG. 7 is a front view of a drawer assembly according to an embodiment of the present invention. FIG. 7 illustrates rail assembly mounting areas through a cross-sectional view.

[0105] In FIG. 7, the structure of each rail assembly is illustrated in more detail.

[0106] Rail mounting portions 143 are formed to have a concave structure at opposite lateral sides of the upper surface of the cover 140, respectively.

[0107] A fixed rail 134 is fitted in each rail mounting portion 143, and is coupled to the cover 140 by screws or the like.

[0108] Movable rails 138, which constitute respective rail assemblies, are coupled to opposite lateral sides of a lower surface of the rim of the shelf 120 by screws or the like, respectively.

[0109] A plurality of ball bearings 135 is interposed between each fixed rail 134 and the corresponding movable rail 138, to reduce friction generated between the fixed rail 134 and the movable rail 138. Accordingly, the movable rail 138 may smoothly slide along the fixed rail 134.

[0110] The plural ball bearings 135 are held in position by a retainer 136 without being separated from a region between the fixed rail 134 and the movable rail 138 during rolling.

[0111] In the present embodiment, it is unnecessary to form roller mounting portions extending upwardly from the upper surface of the shelf 120 at opposite lateral sides of the shelf 120, for mounting of rails or rollers.

[0112] In place, the rim of the shelf 120 and the rim of the cover 140 have greater widths than those of the previous embodiments because the rail assemblies are mounted between the rim of the shelf 120 and the rim of the cover 140. In this case, accordingly, the plates of the shelf 120 and cover 140 may have reduced areas.

[0113] Finally, an embodiment, in which a tumbling prevention member 150 is provided at a rear end of the shelf 120, will be described with reference to FIG. 8.

[0114] Since the shelf 120 is pulled out or retracted in a forward or rearward direction by the user, articles placed on the shelf 120 may fall down due to inertia during pulling out or retraction of the shelf 120. Articles having a shape with a great height, as compared to a bottom area, may fall down more easily.

[0115] In particular, when articles placed on the shelf 120 fall down when pulling out the shelf 120, and then tumble onto the cover 140, the user can retract the shelf 120, only after taking the articles out of the cover 140.

[0116] In the present embodiment, accordingly, the tumbling prevention member 150, which extends or protrudes upwardly, is provided in order to prevent articles placed on a rear portion of the shelf 120 from tumbling onto the cover 140.

[0117] In the embodiment of FIG. 8, the tumbling prevention member 150 is mounted in the form of a bar on an upper surface of a rear side of the rim in the shelf 120.

[0118] Since the multi-duct 40, which is forwardly protruded, is disposed behind the tumbling prevention member 150, the tumbling prevention member 150 has a curved structure at a central portion thereof, to prevent the tumbling prevention member 150 from interfering with the multi-duct 40.

[0119] Although not shown, the tumbling preventing member 150 may have a plate structure extending upwardly from the upper surface of the rear side of the rim in the shelf 120.

[0120] In this case, similarly to the above-described case, the central portion of the tumbling prevention member 150 may have a curved structure, to prevent the tumbling prevention member 150 from interfering with the multi-duct 40.

[0121] In accordance with the embodiments of the present invention, it may be possible to provide a refrigerator in which a shelf disposed over a drawer defined with a sealed storage space may be pulled out while keeping the storage space in a sealed state, irrespective of pulling out of the shelf.

[0122] Thus, in accordance with the refrigerator according to the embodiments of the present invention, there is an effect in that the shelf disposed over a drawer may be pulled out while keeping the drawer in a sealed state.

[0123] Since the shelf disposed over the drawer may be pulled out, there is an effect in that articles placed on the shelf may be easily retrieved.

[0124] Since a handle is provided at a front side of the drawer, and opposite lateral sides of the shelf are sup-

ported by rails or rollers, the user may easily and smoothly pull out and retract the drawer.

[0125] Since a tumbling prevention member is provided at a rear side of the drawer, it may be possible to prevent articles placed on the drawer from tumbling down.

[0126] It will be apparent to those skilled in the art that various modifications and variations can be made provided they come within the scope of the appended claims.

Claims

1. A refrigerator comprising:

a body (1) having a storage chamber;
 a drawer (100) slidably mounted in the storage chamber, the drawer (100) having an opened top side; and
 a shelf (120) slidably mounted in the storage chamber,
 wherein the shelf (120) is slidably mounted in the storage chamber to be independently pulled out irrespective of pull-out of the drawer (100), to expose a rear portion of the open top side of the drawer (100) when the shelf (120) is in a pulled-out state, and to cover the opened top side of the drawer (100) when the shelf (120) is in a retracted state; **characterized in that** the refrigerator further includes a cover (140) disposed between the shelf (120) and the drawer (100) at a fixed position to cover the opened top side of the drawer (100) when the shelf (120) is in the pulled-out state.

2. The refrigerator according to claim 1, wherein the shelf (120) is provided, at a front side thereof, with a handle (122) to allow the user to grasp the handle (122) when sliding at least a portion of the shelf (120) out of the storage chamber.

3. The refrigerator according to claim 2, wherein the handle (122) is protruded from an upper surface of the front side of the shelf (120), to have an inverted-U shape.

4. The refrigerator according to claim 2, wherein the handle (122) is a groove formed at an upper surface of the front side of the shelf (120).

5. The refrigerator according to claim 1, wherein the shelf (120) is supported by rail assemblies (130) respectively mounted to opposite side walls of the storage chamber, to allow the shelf (120) to be pulled out.

6. The refrigerator according to claim 1, wherein the shelf (120) is supported by rail assemblies (130) respectively mounted to opposite side edges of the

cover (140), to allow the shelf (120) to be pulled out.

7. The refrigerator according to claim 1, wherein the shelf (120) is supported by at least one pair of rollers (126) to roll in guide grooves provided at opposite side walls of the storage chamber.

8. The refrigerator according to claim 1, wherein the shelf (120) is provided, at an upper surface of a rear side thereof, with a tumbling prevention member (150) to prevent an article placed on the shelf (120) from tumbling down to the cover (140) when the shelf (120) slides out.

9. The refrigerator according to claim 8, wherein the tumbling prevention member (150) is provided at the upper surface of the rear edge of the shelf (120) in the form of a bar.

10. The refrigerator according to claim 8, wherein the tumbling prevention member (150) is provided at the upper surface of the rear edge of the shelf (120) in the form of an upwardly extending plate.

11. The refrigerator according to claim 1, wherein:

the shelf (120) comprises a rectangular rim, and a plate coupled to the rim at an inside of the rim; and
 the plate is made of a transparent or semitransparent material.

12. The refrigerator according to claim 11, wherein:

the cover (140) comprises a rectangular rim, and a plate coupled to the rim at an inside of the rim; and
 the plate of the cover (140) is made of a transparent or semitransparent material.

13. The refrigerator according to claim 11, wherein moisture adjusting levers (128) are provided at opposite portions of the front side of the rim of the shelf (120) to adjust an opening degree of an air hole of the shelf (120).

Patentansprüche

1. Kühlschrank, der Folgendes umfasst:

einen Körper (1), der eine Vorratskammer aufweist;
 eine Schublade (100), die in der Vorratskammer gleitfähig montiert ist, wobei die Schublade (100) eine offene obere Seite aufweist; und
 eine Ablage (120), die in der Vorratskammer gleitfähig montiert ist,

- wobei die Ablage (120) in der Vorratskammer gleitfähig montiert ist, so dass sie unabhängig von einem Herausziehen der Schublade (100) unabhängig herausgezogen werden kann, um einen hinteren Abschnitt der offenen oberen Seite der Schublade (100) freizulegen, wenn sich die Ablage (120) in einem herausgezogenen Zustand befindet, und um die offene obere Seite der Schublade (100) zu bedecken, wenn sich die Ablage (120) in einem zurückgezogenen Zustand befindet; **dadurch gekennzeichnet, dass** der Kühlschrank ferner eine Abdeckung (140) umfasst, die zwischen der Ablage (120) und der Schublade (100) an einer festen Position angeordnet ist, um die offene obere Seite der Schublade (100) zu bedecken, wenn sich die Ablage (120) in dem herausgezogenen Zustand befindet.
2. Kühlschrank nach Anspruch 1, wobei die Ablage (120) an einer Vorderseite mit einem Griff (122) versehen ist, damit der Benutzer den Griff (122) ergreifen kann, wenn wenigstens ein Abschnitt der Ablage (120) aus der Vorratskammer herausgleitet.
 3. Kühlschrank nach Anspruch 2, wobei der Griff (122) von einer oberen Oberfläche der Vorderseite der Ablage (120) so vorsteht, dass er eine umgekehrte U-Form aufweist.
 4. Kühlschrank nach Anspruch 2, wobei der Griff (122) eine Rille ist, die an einer oberen Oberfläche der Vorderseite der Ablage (120) ausgebildet ist.
 5. Kühlschrank nach Anspruch 1, wobei die Ablage (120) durch Schienenanordnungen (130) gehalten wird, die jeweils an gegenüberliegenden Seitenwänden der Vorratskammer montiert sind, damit die Ablage (120) herausgezogen werden kann.
 6. Kühlschrank nach Anspruch 1, wobei die Ablage (120) durch Schienenanordnungen (130) gehalten wird, die jeweils an gegenüberliegenden Seitenkanten der Abdeckung (140) montiert sind, damit die Ablage (120) herausgezogen werden kann.
 7. Kühlschrank nach Anspruch 1, wobei die Ablage (120) durch wenigstens ein Paar Rollen (126) zum Rollen in Führungsrillen gehalten wird, die an gegenüberliegenden Seitenwänden der Vorratskammer vorgesehen sind.
 8. Kühlschrank nach Anspruch 1, wobei die Ablage (120) an einer oberen Oberfläche einer hinteren Seite mit einem Element (150), das ein Herabfallen verhindert, versehen ist, um zu verhindern, dass ein Artikel, der auf der Ablage (120) angeordnet wird, auf die Abdeckung (140) herabfällt, wenn die Ablage (120) herausgleitet.
 9. Kühlschrank nach Anspruch 8, wobei das Element (150), das ein Herabfallen verhindert, an der oberen Oberfläche der hinteren Kante der Ablage (120) in der Form einer Stange vorgesehen ist.
 10. Kühlschrank nach Anspruch 8, wobei das Element (150), das ein Herabfallen verhindert, an der oberen Oberfläche der hinteren Kante der Ablage (120) in Form einer sich nach oben erstreckenden Platte vorgesehen ist.
 11. Kühlschrank nach Anspruch 1, wobei:
 - die Ablage (120) einen rechteckigen Rand und eine Platte, die mit dem Rand an einer Innenseite des Rands gekoppelt ist, umfasst; und
 - die Platte aus einem lichtdurchlässigen oder durchscheinenden Material hergestellt ist.
 12. Kühlschrank nach Anspruch 11, wobei:
 - die Abdeckung (140) einen rechteckigen Rand und eine Platte, die mit dem Rand an einer Innenseite des Rands gekoppelt ist, umfasst; und
 - die Platte der Abdeckung (140) aus einem lichtdurchlässigen oder durchscheinenden Material hergestellt ist.
 13. Kühlschrank nach Anspruch 11, wobei Feuchtigkeitseinstellhebel (128) an gegenüberliegenden Abschnitten der Vorderseite des Rands der Ablage (120) vorgesehen sind, um einen Öffnungsgrad eines Luftlochs der Ablage (120) einzustellen.

Revendications

1. Réfrigérateur comportant :

un corps (1) ayant une chambre de stockage ;
 un tiroir (100) de manière coulissante monté dans la chambre de stockage, le tiroir (100) ayant un côté supérieur ouvert ; et
 une tablette (120) montée de manière coulissante dans la chambre de stockage, dans lequel la tablette (120) est montée de manière coulissante dans la chambre de stockage pour être extraite séparément et indépendamment de l'extraction du tiroir (100), pour exposer une partie arrière du côté supérieur ouvert du tiroir (100) lorsque la tablette (120) est dans un état extrait, et pour recouvrir le côté supérieur ouvert du tiroir (100) lorsque la tablette (120) est dans un état rétracté ;
caractérisé en ce que le réfrigérateur inclut en

- outre un couvercle (140) disposé entre la tablette (120) et le tiroir (100) à une position fixe pour recouvrir le côté supérieur ouvert du tiroir (100) lorsque la tablette (120) est dans l'état extrait.
2. Réfrigérateur selon la revendication 1, dans lequel la tablette (120) est pourvue, sur un côté avant de celle-ci, d'une poignée (122) pour permettre à l'utilisateur de saisir la poignée (122) lors du coulissement d'au moins une partie de la tablette (120) à l'extérieur de la chambre de stockage. 5
 3. Réfrigérateur selon la revendication 2, dans lequel la poignée (122) fait saillie à partir d'une surface supérieure du côté avant de la tablette (120), pour avoir une forme de U inversé. 10
 4. Réfrigérateur selon la revendication 2, dans lequel la poignée (122) est une rainure formée sur une surface supérieure du côté avant de la tablette (120). 15
 5. Réfrigérateur selon la revendication 1, dans lequel la tablette (120) est supportée par des ensembles de rails (130) respectivement montés sur des parois latérales opposées de la chambre de stockage, pour permettre d'extraire la tablette (120). 20
 6. Réfrigérateur selon la revendication 1, dans lequel la tablette (120) est supportée par des ensembles de rails (130) respectivement montés sur des bords latéraux opposés du couvercle (140), pour permettre d'extraire la tablette (120). 25
 7. Réfrigérateur selon la revendication 1, dans lequel la tablette (120) est supportée par au moins une paire de roulettes (126) pour rouler dans des rainures de guidage agencées sur des parois latérales opposées de la chambre de stockage. 30
 8. Réfrigérateur selon la revendication 1, dans lequel la tablette (120) est pourvue, sur une surface supérieure d'un côté arrière de celle-ci, d'un élément de prévention de chute (150) pour empêcher un article placé sur la tablette (120) de tomber du couvercle (140) lorsque la tablette (120) est extraite par coulissement. 35
 9. Réfrigérateur selon la revendication 8, dans lequel l'élément de prévention de chute (150) est agencé sur la surface supérieure du bord arrière de la tablette (120) sous la forme d'une barre. 40
 10. Réfrigérateur selon la revendication 8, dans lequel l'élément de prévention de chute (150) est agencé sur la surface supérieure du bord arrière de la tablette (120) sous la forme d'une plaque s'étendant vers le haut. 45
11. Réfrigérateur selon la revendication 1, dans lequel :
la tablette (120) comporte un rebord rectangulaire, et une plaque couplée au rebord sur un intérieur du rebord ; et
la plaque est constituée d'un matériau transparent ou semi transparent. 50
 12. Réfrigérateur selon la revendication 11, dans lequel :
le couvercle (140) comporte un rebord rectangulaire, et une plaque couplée au rebord sur un intérieur du rebord ; et
la plaque du couvercle (140) est constituée d'un matériau transparent ou semi transparent. 55
 13. Réfrigérateur selon la revendication 11, dans lequel des leviers de réglage d'humidité (128) sont agencés sur des parties opposées du côté avant du rebord de la tablette (120) pour régler un degré d'ouverture d'un trou d'air de la tablette (120).

FIG. 1

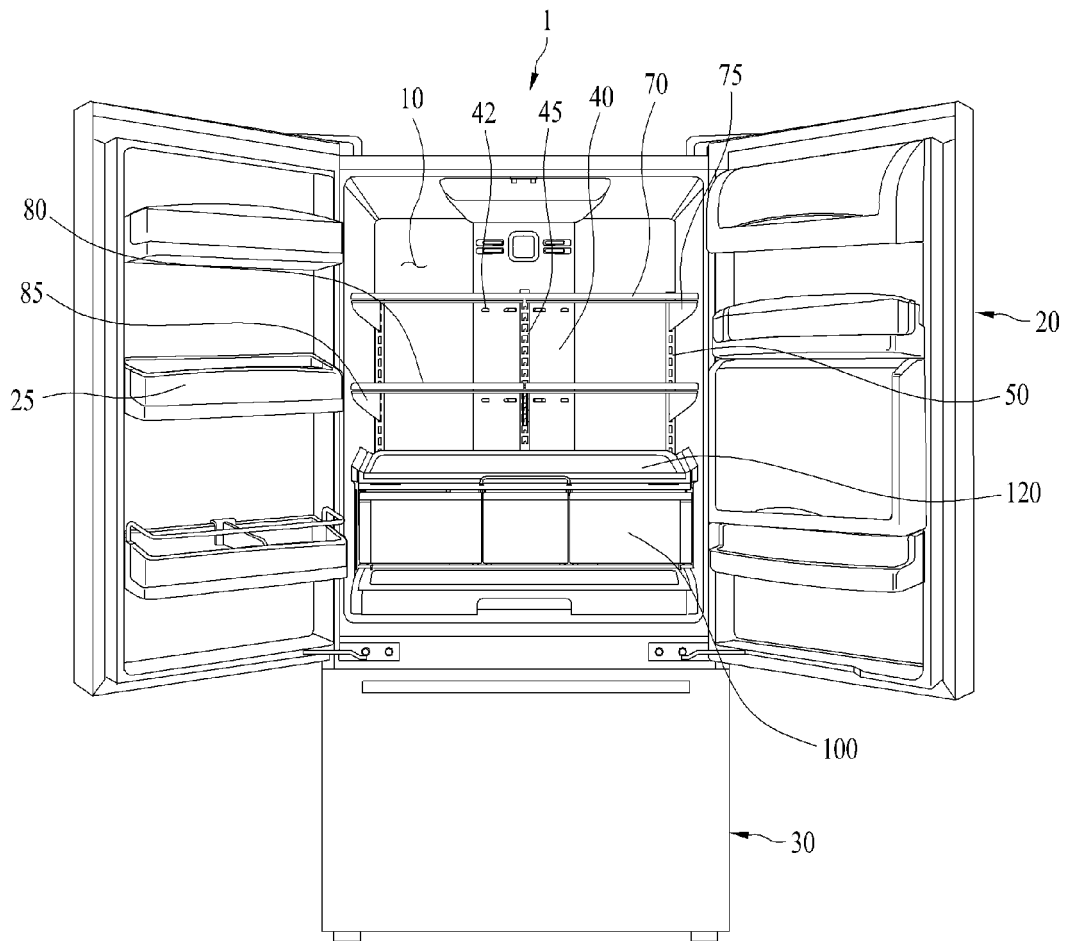


FIG. 2

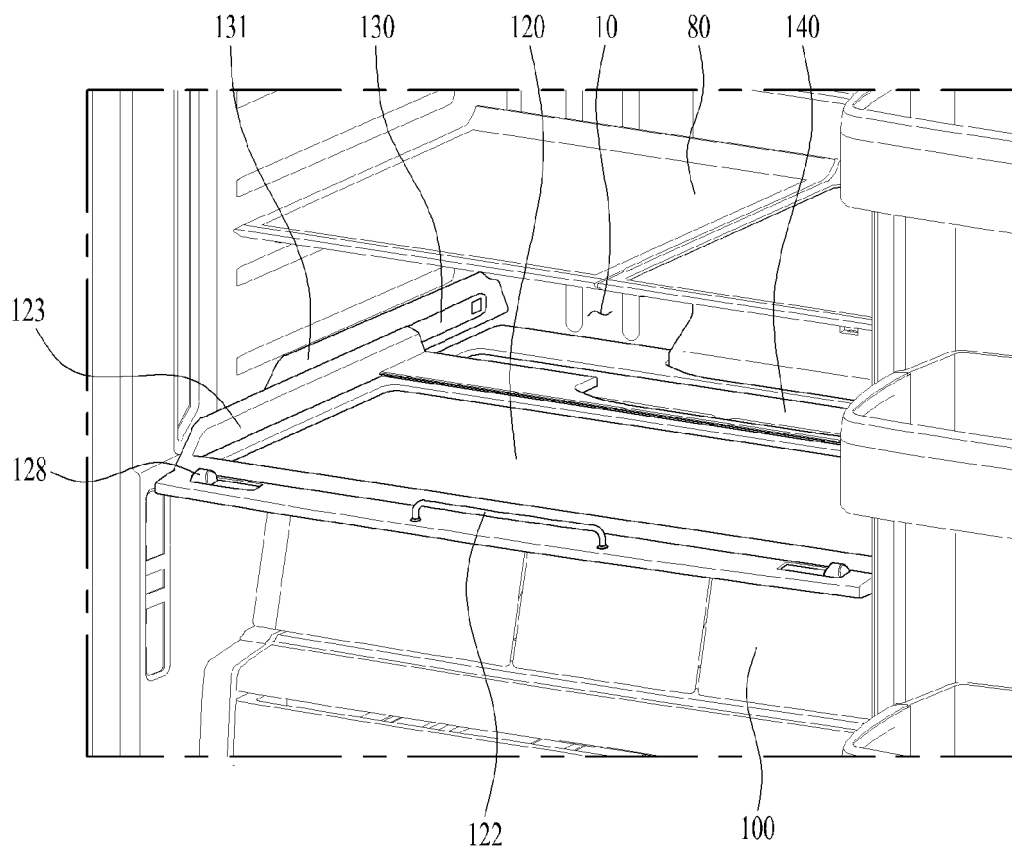


FIG. 3

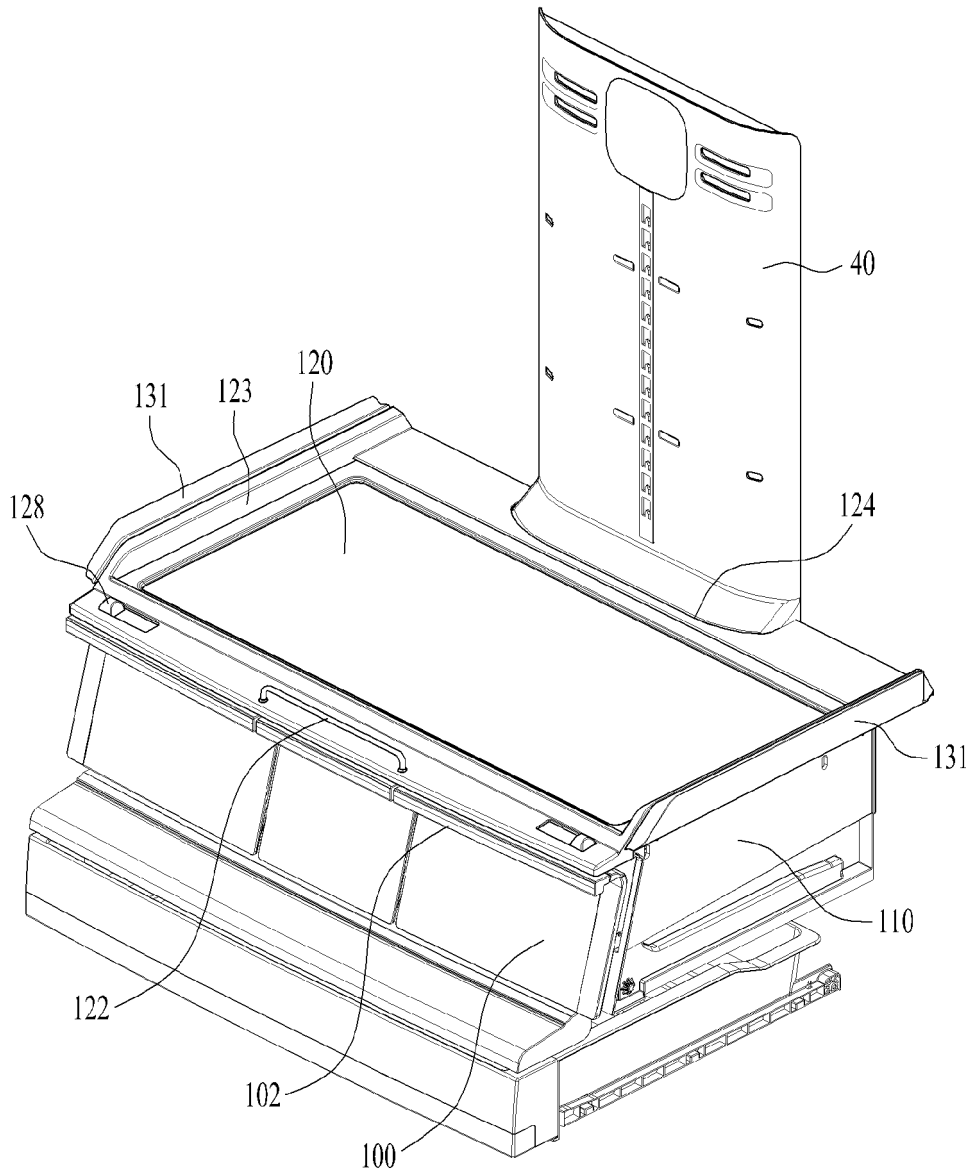


FIG. 4

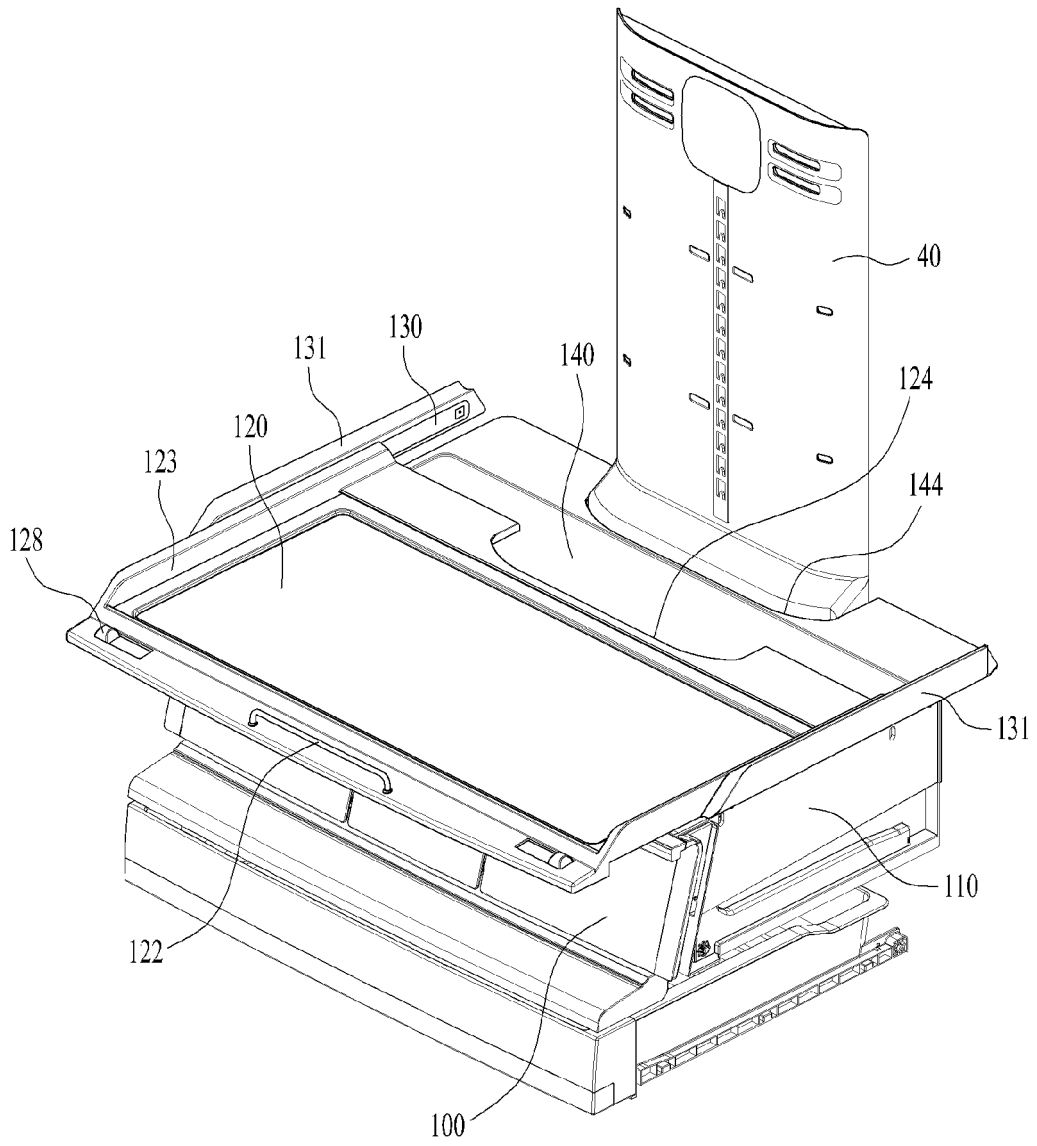


FIG. 5

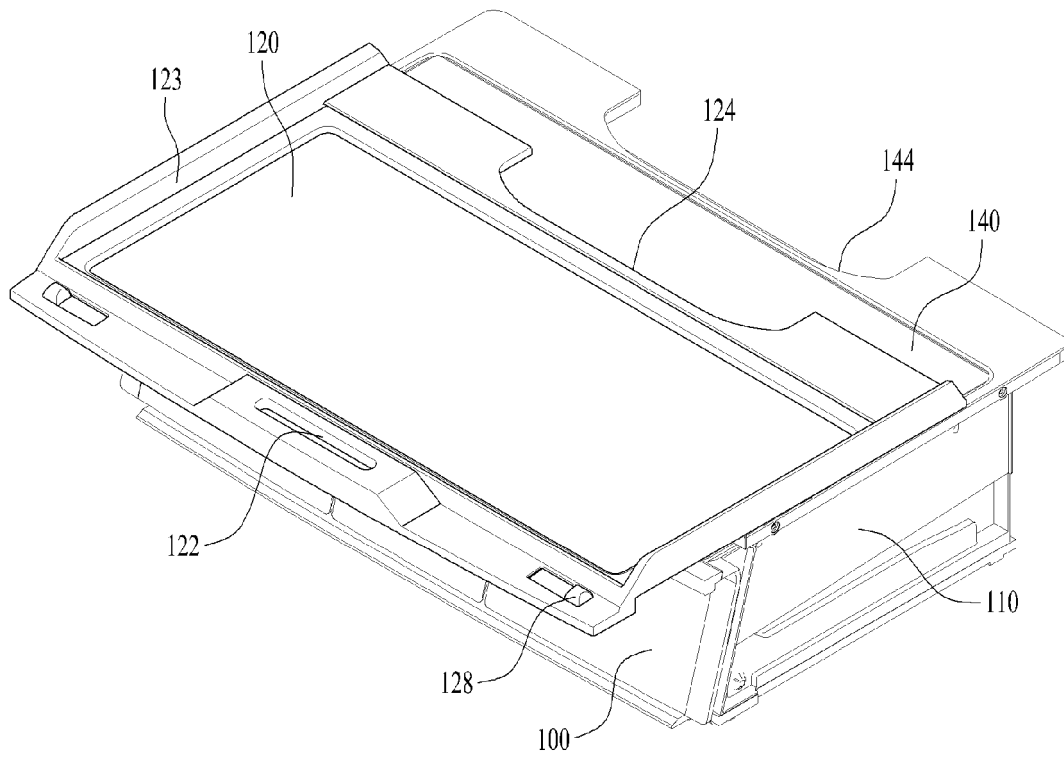


FIG. 6

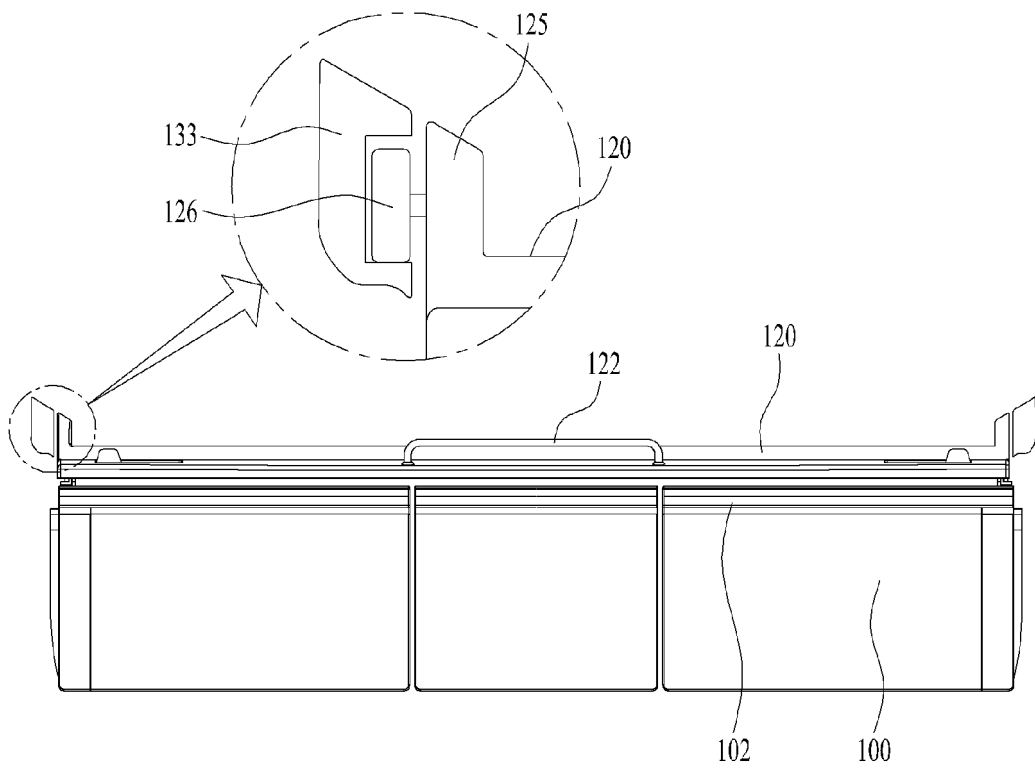


FIG. 7

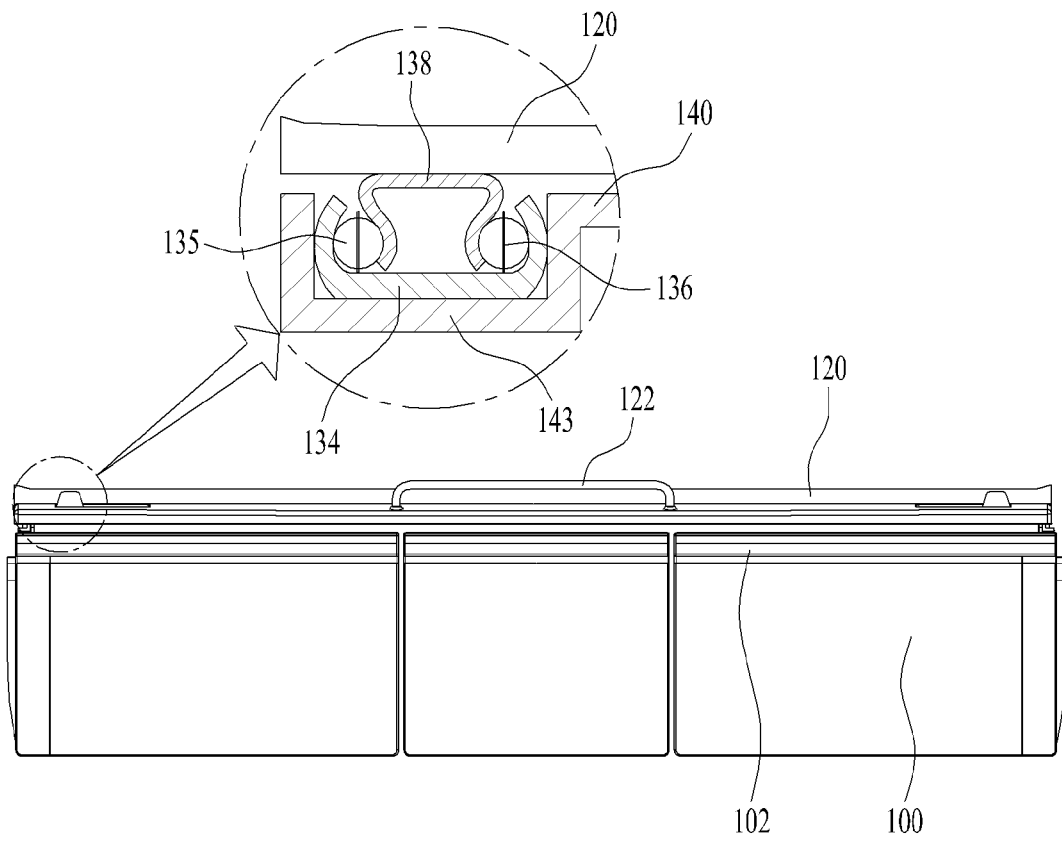
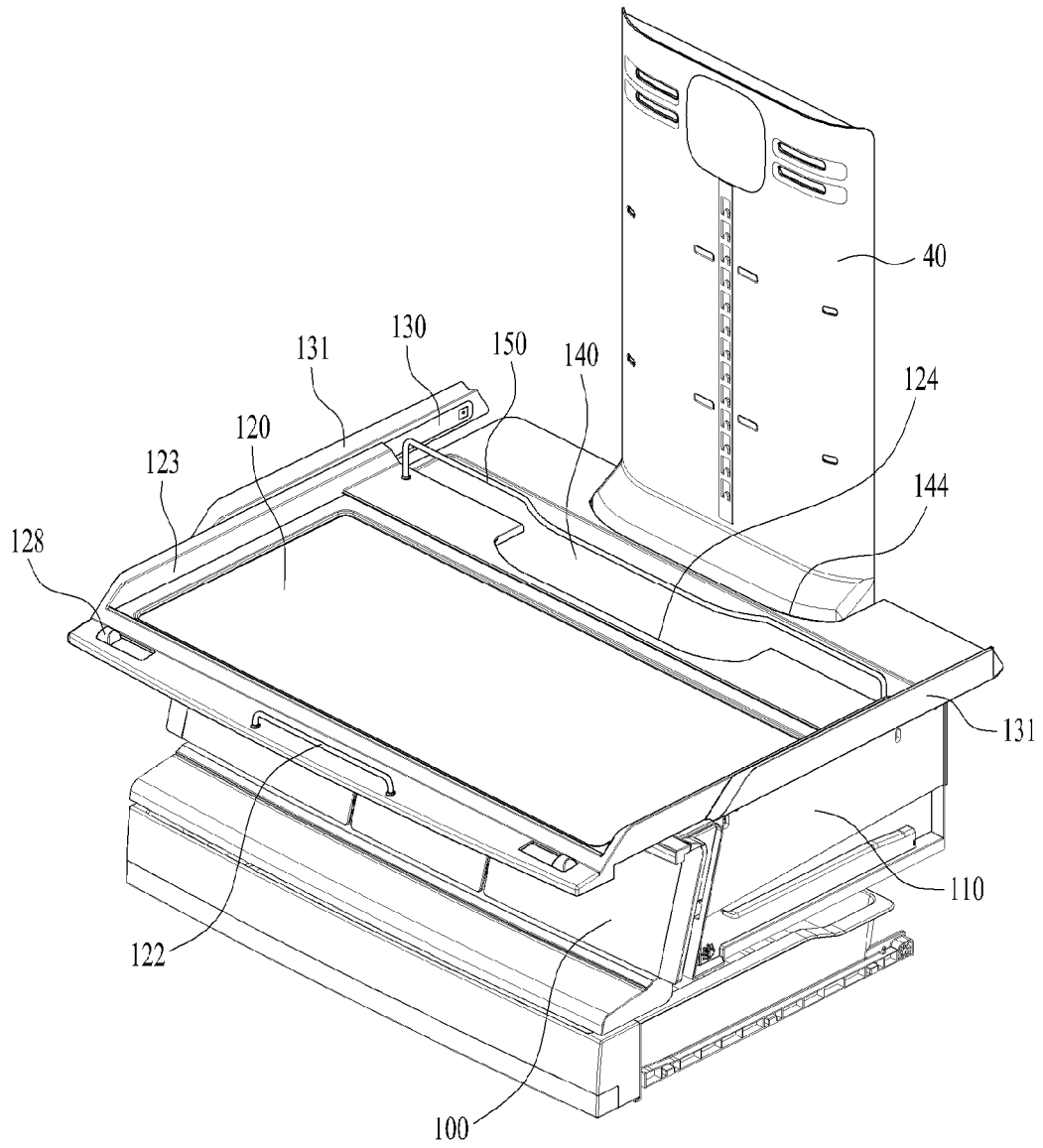


FIG. 8



REFERENCES CITED IN THE DESCRIPTION

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