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(54) **REFRIGERATOR**

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Description**BACKGROUND**5 **Technical Field**

[0001] The present invention relates to a refrigerator.

10 **Related Art**

[0002] With the popularization of refrigeration apparatuses in people's daily life, an increasing number of people start to store perishable food such as vegetables and fish and meat in refrigeration apparatuses such as a refrigerator.

15 [0003] A refrigerator is used as an example. Generally, one or more drawers are disposed in a storage compartment (such as a refrigerating compartment) of the refrigerator to help take food. When a stored product needs to be taken out, a user may pull out the drawer to take the required stored product. Afterwards the user may push the drawer back into the storage compartment so that the entire taking process is completed.

[0004] In the prior art, while the drawer is being pulled out, a lid covering the drawer is detached from the drawer, and when the drawer is pulled out, the lid remains in the storage compartment. This is more likely to lead storage products in the storage compartment to be tainted by each other, affecting food hygiene.

20 [0005] CN 106225407 A discloses a refrigerator and a storage device thereof. The storage device comprises a shelf arranged in a storage chamber of the refrigerator, a drawer with an upper-side opening and installed on the shelf in a manner of moving forwards and backwards below the shelf, and an upper cover used for sealing the upper-side opening, arranged above the upper-side opening in a manner of moving forwards and backwards, and configured to be capable of synchronously moving forwards with the drawer, and sliding backwards relative to the drawer to open the upper-side opening after moving forwards with the drawer by a predetermined distance. Independent storage for foods is facilitated due to the arrangement of the drawer.

25 [0006] KR 10 2011 0080523 discloses a refrigerator including a drawer partition having a cover assembly comprising a main body provided with a storage space; a drawer partition formed in the main body to be drawably; and a cover assembly provided with plural cover members to open and close the upper left and right sides of the drawer partition independently.

30 [0007] US 2007/0262686 A1 discloses a refrigerator comprising a drawer that is selectively drawn in a storage space; a storage container for storing foodstuffs, the storage container being received in the drawer; a container cover for closing the storage container; and an opening device that restricts the container cover when the drawer is drawn out by a predetermined distance, thereby slide-opening the storage container.

35 [0008] WO 2017/113635 A1 discloses an airtight box comprising a box body and a cover covering the box body to close the box body tightly, wherein the box body is provided with a receiving chamber with an opening which opens upwards and two side walls respectively located on both sides of the receiving chamber, and a sliding groove extending longitudinally is provided on an outer side of each side wall; the airtight box being characterized in that: the airtight box is further provided with an opening and locking mechanism slidably connecting the cover and the box body, wherein the opening and locking mechanism is provided with a pushing member slidably fixed in the sliding groove and a connecting rod rotatably fixed on the pushing member and mounted inside the cover, and the connecting rod, under an action of the pushing member, presses upwards and drives the cover backwards to expose the receiving chamber to the outside.

45 **SUMMARY**

[0009] Embodiments of the present invention are intended to provide an improved refrigerator. The object is solved by the features of independent claim 1. Preferred embodiments are subject of the dependent claims.

50 [0010] Therefore, the embodiments of the present invention provide a refrigerator, including: a storage compartment; a drawer located within the storage compartment and including a bottom wall, a front wall, a rear wall, a pair of side walls, and an accommodation space enclosed by the bottom wall, the front wall, the rear wall, and the pair of side walls, where the drawer has an opening facing upward, the opening exposing the accommodation space; a lid for uncovering or covering the opening, the lid being slidably supported on an upper portion of the drawer, when the drawer is pulled out of the storage compartment, the lid being pulled out with the drawer and keeping the opening covered, and the lid may slide relative to the drawer to be pushed back into the storage compartment to uncover the opening, and cover the opening when the drawer is pushed into the storage compartment; a block, configured to prevent the lid from continuing moving rearward to keep the lid supported on the drawer that is pulled out.

55 [0011] Compared with a lidless drawer used for an existing refrigerator, the solutions of the embodiments of the present invention provide a refrigerator with a drawer. When the drawer is located within the storage compartment of the refrig-

erator and while the drawer is being pulled out of the storage compartment, a lid supported on the drawer covers an opening of the drawer, so that sealing performance of the drawer can be effectively improved, and stored products within the drawer are prevented from being tainted by other stored products in the storage compartment because of being directly exposed in the storage compartment, thereby helping improve food hygiene. Further, when the drawer is pulled out of the storage compartment, the lid may be pushed by a user to slide forward/rearward relative to the drawer, so as to uncover or cover the opening of the drawer, thereby helping the user conveniently take the stored products within the drawer. Further, with the designed block, the lid can be prevented from moving excessively rearward to detach from the drawer, thereby ensuring that the lid is always supported on the drawer during frontward/rearward sliding, and helping quickly pull the lid forward to cover the opening of the drawer when necessary. Further, the drawer provided with the lid in the embodiments of the invention has a simple overall structure, and is easy to manufacture.

[0012] Optionally, the refrigerator includes a guide rail configured to movably fix the drawer within the storage compartment, the drawer being adapted to be pulled out of or pushed back into the storage compartment along the guide rail. Accordingly, the user can conveniently pull out or push back the drawer as needed, and the drawer and/or the storage compartment are/is prevented from being damaged due to dry friction with an inner wall of the storage compartment during frontward/rearward movement of the drawer relative to the storage compartment, thereby helping effectively improve user experience.

[0013] Optionally, the block is located on at least one side wall. The lid has a stop, the lid moving rearward relative to the drawer until the stop abuts against the block to prevent the lid from continuing moving rearward. Accordingly, through the cooperation of the block with stop, when the lid is pushed toward the storage compartment to uncover the opening of the drawer, the lid can be prevented from moving excessively rearward and from detaching from the drawer, thereby ensuring that the lid is always supported on the drawer, and helping quickly pull the lid forward to cover the opening of the drawer when necessary.

[0014] Optionally, the stop is connected to a handle of the lid, improving an overall aesthetic appearance of the drawer.

[0015] The refrigerator further includes: an anti-tilting portion, configured to prevent a rear end of the lid from rotating downward while the lid is being pushed back. Accordingly, when the lid is pushed toward the storage compartment to uncover more than half of the opening of the drawer, the lid can be prevented from tilting relative to the drawer due to an offset of a center of gravity of the lid (that is, the rear end of the lid rotates downward, and a front end of the lid rotates upward) when the lid continues moving rearward, to ensure that the lid is always supported on the drawer, thereby preventing the lid from rotating randomly on the drawer, and helping quickly pull the lid forward to cover the opening of the drawer when necessary.

[0016] The anti-tilting portion is located on at least one side wall of the drawer, the anti-tilting portion bending toward the accommodation space to form a limiting groove; the lid has an anti-tilting rib, and when the lid is pushed back, the anti-tilting rib entering the limiting groove to abut against an inner wall of the limiting groove. Accordingly, through the cooperation of the anti-tilting portion with the anti-tilting rib, the lid can be kept supported on the drawer when being pushed back, to prevent the lid from overturning unexpectedly, and ensure that the lid always slides frontward/rearward along an upper edge of the drawer.

[0017] Optionally, the anti-tilting portion is integrally formed with the stop, to reduce a number of parts, facilitate assembling, and simplify an overall structure of the drawer.

[0018] Optionally, the lid has a protrusion, the protrusion of the lid abutting against the back plate of the storage compartment when the drawer is pushed into the storage compartment. Accordingly, accuracy of contact with the back plate is improved through point contact. Further, a location of the protrusion on the lid can avoid designed components such as an air duct and a cooling tube on the back plate, to prevent the lid from damaging the refrigerator because of touching the components of the back plate when moving rearward.

[0019] Optionally, the lid has a buffer portion, when the lid covers the opening, the buffer portion abutting against the front wall of the drawer, to buffer impact on the drawer when the lid moves forward to cover the opening of the drawer.

[0020] Optionally, the buffer portion is a rubber block to play an effective buffer function between the lid and the drawer.

[0021] The front end of the lid is provided with a first rolling wheel, the front end of the lid being one end close to the front wall; an upper edge of the pair of side walls of the drawer has a first limiting groove, when the lid covers the opening, the first rolling wheel falling into the first limiting groove, and when the lid is pushed back into the storage compartment, the first rolling wheel sliding out of the first limiting groove and rolling on the upper edge of the pair of side walls. Accordingly, a sliding effect of the lid can be significantly improved, and user experience can be optimized. Further, when the lid covers the opening of the drawer, the first rolling wheel falls into the first limiting groove, so that the lid wholly sinks to fit closely with the upper edge of the drawer, thereby helping improve sealing performance of the drawer, and preventing the sealing performance from being affected due to unexpected displacement while lid is covering the opening.

[0022] Optionally, the lid moves rearward relative to the drawer until the first rolling wheel abuts against the block to prevent the lid from continuing moving rearward. Accordingly, through the cooperation of the block with the first rolling wheel, when the lid is pushed toward the storage compartment to uncover the opening of the drawer, the lid can be

prevented from moving excessively rearward and from detaching from the drawer, thereby ensuring that the lid is always supported on the drawer, and helping quickly pull the lid forward to cover the opening of the drawer when necessary.

5 [0023] Optionally, the refrigerator further includes an anti-tilting portion configured to keep the lid being on the drawer while the lid is being pushed back. Accordingly, when the lid is pushed toward the storage compartment to uncover more than half of the opening of the drawer, the lid can be prevented from tilting relative to the drawer due to the offset of the center of gravity of the lid (that is, the rear end of the lid rotates downward, and the front end of the lid rotates upward) when the lid continues moving rearward, to ensure that the lid is always supported on the drawer, thereby preventing the lid from rotating randomly on the drawer, and helping quickly pull the lid forward to cover the opening of the drawer when necessary.

10 [0024] The anti-tilting portion is located on at least one side wall of the drawer, the anti-tilting portion bending toward the accommodation space to form a limiting groove; when the lid is pushed back, the anti-tilting rib entering the limiting groove to abutting against an inner wall of the limiting groove. Accordingly, through the cooperation of the anti-tilting portion with the first rolling wheel, the lid can be kept supported on the drawer when being pushed back, to prevent the lid from over turning unexpectedly, and ensure that the lid always slides frontward/rearward along the upper edge of the drawer.

15 [0025] Optionally, a rear end of the upper edge located on the pair of side walls of the drawer is provided with a second rolling wheel, the rear end being one end close to the rear wall; the lid has a second limiting groove, when the lid covers the opening, the second rolling wheel being located within the second limiting groove, and when the lid is pushed back into the storage compartment, the second rolling wheel sliding out of the second limiting groove. Accordingly, a sliding effect of the lid can be significantly improved, and user experience can be optimized. With a properly designed spacing of the lid in a height direction relative to the drawer during frontward/rearward movement, it is possible to provide a sealing strip between the lid and the drawer. Therefore, friction between the sealing strip and the lid/drawer during movement of the raised lid may be avoided. Further, when the lid covers the opening of the drawer, the second rolling wheel is located within the second limiting groove, so that the lid wholly sinks to fit closely with the upper edge of the drawer, thereby helping improve sealing performance of the drawer, and preventing the sealing performance from being affected due to unexpected displacement while the lid is covering the opening.

20 [0026] Optionally, the lid has a sliding rib, two ends of the sliding rib being respectively connected to the first rolling wheel and the second limiting groove, and when the lid is pushed back into the storage compartment, the second rolling wheel rolling on the sliding rib. Accordingly, during forward/rearward movement of the lid relative to the drawer, the second rolling wheel rolls on the sliding rib of the lid, facilitating better improvement of the sliding effect of the lid. Further, when the lid covers the opening of the drawer, the sliding rib fits with the upper edge of the drawer, facilitating better improvement of the sealing performance of the drawer.

25 [0027] Optionally, the lid includes a frame, the frame enclosing a viewing port, and a transparent member disposed within the viewing port and connected to the frame. Accordingly, when the drawer is pulled out of the storage compartment, an interior of the drawer is directly visible without a need to push away the lid, and a user can accurately and quickly determine whether a stored product being sought is stored in the drawer, thereby helping reduce a number of times of unnecessary uncovering and covering of the drawer. In other words, the user can push away the lid of the drawer to take the stored product after determining that the required stored product is indeed stored in the drawer, instead of uncovering the lid first to determine whether the stored product is in the drawer. This further reduces a possibility of odor tainting.

30 [0028] Optionally, the lid includes a sealing strip, when the lid covers the opening, the sealing strip contacting closely with the front wall, the rear wall, and the upper edge of the pair of side walls of the drawer, to form a sealed space in the drawer, so that the drawer has better sealing performance.

35 [0029] Optionally, the drawer further includes at least one separator located within the accommodation space, the at least one separator separating the accommodation space into at least two side-by-side accommodation subspaces, and the at least two accommodation subspaces including a first accommodation subspace and a second accommodation subspace, the first accommodation subspace having a first opening facing upward, and the second accommodation subspace having a second opening facing upward; the lid includes a first lid and a second lid, the first lid being configured to uncover or cover the first opening, and the second lid being configured to uncover or cover the second opening. Accordingly, through the cooperation of the separator with the lid (such as the first lid and/or the second lid), the drawer may be separated into a plurality of mutually independent accommodation subspaces, and each accommodation subspace may be uncovered or covered respectively, and the drawer may be wholly pulled out of or pushed into the storage compartment, not only facilitating separate storage of different foods to avoid odor tainting, but also helping a user take the food.

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55 **BRIEF DESCRIPTION OF THE DRAWINGS**

[0030]

FIG. 1 is a partial schematic structural diagram of a refrigerator according to a first example, which is not part of the present invention;

FIG. 2 is an exploded view of a drawer and a lid in FIG. 1;

FIG. 3 is a three-dimensional schematic structural diagram of a drawer in FIG. 1;

5 FIG. 4 is a three-dimensional schematic structural diagram of a lid in FIG. 1;

FIG. 5 is a schematic diagram of a combination of a drawer and a lid in FIG. 1;

FIG. 6 and FIG. 7 are diagrams showing an effect of a drawer in FIG. 1 that is pulled out of a storage compartment;

FIG. 8 is a partial enlarged drawing of a lid shown in FIG. 4;

10 FIG. 9 is a schematic diagram of a combination of a drawer and a lid when an opening is in an uncovered state according to a first example;

FIG. 10 is a cross-sectional view of FIG. 9 along a direction A-A;

FIG. 11 is a schematic diagram of a combination of a drawer and a lid when an opening is in a covered state according to a first example;

FIG. 12 is a cross-sectional view of FIG. 11 along a direction B-B;

15 FIG. 13 is a schematic diagram of a principle of a manner of combining an anti-tilting rib and an anti-tilting portion in FIG. 9;

FIG. 14 is a schematic diagram of a principle of another manner of combining an anti-tilting rib and an anti-tilting portion in FIG. 9;

FIG. 15 is a schematic diagram of a process of separating a lid from a drawer in FIG. 1;

20 FIG. 16 is a partial schematic structural diagram of a refrigerator according to the present invention;

FIG. 17 is an exploded view of a drawer and a lid in FIG. 16;

FIG. 18 is a schematic diagram of a combination of a drawer and a lid in FIG. 16;

FIG. 19 to FIG. 21 are diagrams showing an effect of a drawer in FIG. 16 that is pulled out of and pulled back into a storage compartment;

25 FIG. 22 is a schematic diagram of a combination of a drawer and a lid when an opening is in an uncovered state according to an embodiment;

FIG. 23 is a cross-sectional view of FIG. 22 along a direction C-C;

FIG. 24 is a schematic diagram of a combination of a drawer and a lid when an opening is in a covered state according to an embodiment;

30 FIG. 25 is a cross-sectional view of FIG. 24 along a direction D-D;

FIG. 26 is a partial schematic structural diagram of a refrigerator according to an embodiment of the present invention;

FIG. 27 is a schematic structural diagram of a drawer in FIG. 26.

DETAILED DESCRIPTION

35 **[0031]** Those skilled in the art will understand that, as described in the background, drawers in an existing refrigerator are all without lids, and consequently products cannot be stored in the drawer in a sealed manner.

[0032] In order to resolve the foregoing technical problem, embodiments of the present invention provide a refrigerator, including: a storage compartment; a drawer located within the storage compartment and including a bottom wall, a front wall, a rear wall, a pair of side walls, and an accommodation space enclosed by the bottom wall, the front wall, the rear wall, and the pair of side walls, the drawer having an opening facing upward, the opening exposing the accommodation space; a lid for uncovering or covering the opening, the lid being slidably supported on an upper portion of the drawer, when the drawer is pulled out of the storage compartment, the lid being pulled out with the drawer and keeping the opening covered, and the lid may slide relative to the drawer to be pushed back into the storage compartment to uncover the opening, and cover the opening when the drawer is pushed into the storage compartment; a block, configured to prevent the lid from continuing moving rearward to keep the lid supported on the drawer that is pulled out.

[0033] Those skilled in the art understand that, the solutions of the embodiments of the present invention provide a refrigerator with a drawer. When the drawer is located within the storage compartment of the refrigerator and while the drawer is being pulled out of the drawer from the storage compartment, a lid supported on the drawer covers an opening of the drawer, so that sealing performance of the drawer can be effectively improved, and stored products in the drawer are prevented from being tainted by other stored products in the storage compartment because of being directly exposed in the storage compartment, thereby helping improve food hygiene.

[0034] Further, when the drawer is pulled out of the storage compartment, the lid may be pushed by a user to slide forward/rearward relative to the drawer, so as to uncover or cover the opening of the drawer, thereby helping the user conveniently take the stored products within the drawer.

[0035] Further, with the designed block, the lid can be prevented from moving excessively rearward to detach from the drawer, thereby ensuring that the lid is always supported on the drawer during frontward/rearward sliding, and helping quickly pull the lid forward to cover the opening of the drawer when necessary.

[0036] Further, the drawer provided with the lid in the embodiments of the invention has a simple overall structure, and is easy to manufacture.

[0037] To make the foregoing objectives, features, and advantages of the present invention clearer and easier to understand, specific embodiments of the present invention are described in detail below with reference to accompanying drawings.

[0038] FIG. 1 is a partial schematic structural diagram of a refrigerator according to a first embodiment, which is not part of the present invention. In order to more clearly illustrate technical features of this embodiment, a storage compartment of the refrigerator and a drawer disposed therein are mainly used as an example in FIG. 1, and a specific structure of the drawer is further illustrated.

[0039] It should be noted that a design of this embodiment may be further applied to refrigeration apparatuses that need to store articles in a separated and sealed manner such as a refrigerated cabinet or a freezer.

[0040] In particular, in this embodiment, a refrigerator 100 may include a storage compartment 110 and a drawer 120 located within the storage compartment 110.

[0041] For example, the storage compartment 110 may include a back plate 111 and a pair of side walls 112, and an accommodation space enclosed by the back plate 111 and the pair of side walls 112 for accommodating the drawer 120.

[0042] A size of the accommodation space of the storage compartment 110 may be adapted to a size of the drawer 120, and the accommodation space may be adapted to accommodate one or more drawers 120.

[0043] More particularly, referring to FIG. 1 to FIG. 3, the drawer 120 may include a bottom wall 120a, a front wall 120b, a rear wall 120c, and a pair of side walls 120d, and may further include an accommodation space 121 enclosed by the bottom wall 120a, the front wall 120b, the pair of side walls 120d, and the rear wall 120c, and the drawer 120 has an opening 122 facing upward, the opening 122 exposing the accommodation space 121.

[0044] For example, the accommodation space 121 may be adapted to accommodate stored products, and a user may take the stored products placed within the accommodation space 121 from the opening 122, or the user may place the stored products from the opening 122 within the accommodation space 121.

[0045] For convenience of description, in this embodiment, a width direction of the refrigerator 100 is set to a direction x, a depth direction of the refrigerator 100 is set to a direction y, and a height direction of the refrigerator 100 is set to a direction z. A direction from the back plate 111 of the storage compartment 110 to outside of the storage compartment 110 is a positive direction of the direction y (that is, a direction +y shown in the figure). In other words, a direction in which the drawer 120 is pulled out of the storage compartment 110 is the positive direction of the direction y.

[0046] For example, the plurality of the drawers 120 may be arranged in parallel along the direction x, the direction y, and/or the direction z within the storage compartment 110.

[0047] Next, one drawer 120 placed within the storage compartment 110 is used as an example for specific description.

[0048] In one or more embodiments, referring to FIG. 1, FIG. 4, and FIG. 5, the refrigerator 100 may further include a lid 130 for uncovering or covering the opening 122, the lid 130 being slidably supported on an upper portion of the drawer 120. The upper portion of the drawer 120 may refer to an upper edge 124 of at least one of the front wall 120b, the pair of side walls 120d, and the rear wall 120c of the drawer 120.

[0049] Further, referring to FIG. 6, when the drawer 120 is pulled out of the storage compartment 110, the lid 130 is pulled out with the drawer 120 and keeps the opening 122 covered. A pull-out direction is the direction +y shown in the figure.

[0050] Further, referring to FIG. 7, the lid 130 may slide relative to the drawer 120 to be pushed back into the storage compartment 110 to uncover the opening 122 and cover the opening 122 when the drawer 120 is pushed into the storage compartment 110. A relative position relationship between the drawer 120, the lid 130, and the storage compartment 110 after the opening is covered is shown in FIG. 1. A push-back direction is a direction -y shown in the figure.

[0051] In one or more embodiments, the refrigerator 100 may further include a block 123 configured to prevent the lid 130 from continuing moving rearward to keep the lid 130 supported on the drawer 120 that is pulled out.

[0052] In particular, the block 123 may be located on at least one side wall 120d.

[0053] For example, referring to FIG. 1 to FIG. 3 and FIG. 5 to FIG. 7, the block 123 may be located on the pair of the side walls 120d of the drawer 120 and extend to the upper portion of the drawer 120.

[0054] In one or more embodiments, the refrigerator 100 may further include a guide rail 140 configured to movably fix the drawer 120 within the storage compartment 110, the drawer 120 being adapted to be pulled out of or pushed back into the storage compartment 110 along the guide rail 140. Accordingly, the user can conveniently pull out or push back the drawer 120 as needed, and the drawer 120 and/or the storage compartment 110 are/is prevented from being damaged due to dry friction with an inner wall of the storage compartment 110 during frontward/rearward movement of the drawer 120 relative to the storage compartment 110, thereby helping effectively improve user experience.

[0055] In particular, the guide rail 140 may include a fixed rail 141 (shown in FIG. 19) fixed to the inner wall of the storage compartment 110 and a movable rail 142 fixed to an outer wall of the drawer 120 and coupled to the fixed rail 141, the movable rail 142 sliding frontward/rearward relative to the fixed rail 141. The frontward/rearward movement refers to frontward/rearward movement along the direction $\pm y$.

[0056] For example, the fixed rail 141 may be fixed to a pair of inner side walls 112 of the storage compartment 110, and the movable rail 142 is fixed to outside of the pair of side walls 120d of the drawer 120.

[0057] For another example, the fixed rail 141 may be fixed to the pair of inner side walls 112 of the storage compartment 110, and the movable rail 142 is fixed to outside of the bottom wall 120a of the drawer 120.

[0058] For example, the guide rail (also referred to as a sliding rail) 140 may be selected from a roller-type guide rail, a steel-ball-type guide rail, a gear-type guide rail, or a damping-type sliding rail. Those skilled in the art may also select other types of guide rails as needed, and details are not described herein.

[0059] In one or more embodiments, the fixed rail 141 may be fixed to the inner wall of the storage compartment 110 through bolting. Similarly, the movable rail 142 may also be fixed to the outer wall of the drawer 120 through bolting and coupled to the fixed rail 141.

[0060] In one or more alternative examples, the fixed rail 141 and/or the movable rail 142 may also be fixed to the inner wall of the storage compartment 110 and/or the outer wall of the drawer 120 respectively through interference fit, bonding, or the like.

[0061] In one or more embodiments, referring to FIG. 4 and FIG. 8, the lid 130 may have a stop 131, and the lid 130 may move rearward relative to the drawer 120 until the stop 131 abuts against the block 123 to prevent the lid 130 from continuing moving rearward.

[0062] Accordingly, through the cooperation of the block 123 with stop 131, when the lid 130 is pushed toward the storage compartment 110 to uncover the opening 122 of the drawer 120, the lid 130 can be prevented from detaching from the drawer 120 as a result of an excessive rearward movement of the lid, thereby ensuring that the lid 130 is always supported on the drawer 120, and helping quickly pull the lid 130 forward to cover the opening 122 of the drawer 120 when necessary.

[0063] For example, referring to FIG. 9 and FIG. 10, a height of the stop 131 along the direction z may be greater than a height of the block 123 to ensure that the stop 131 can abut against the block 123 when the stop 131 moves with the lid 130 relative to the drawer 120 and along the direction -y to the block 123, thereby preventing the lid 130 from continuing moving rearward.

[0064] For another example, in the direction z shown in the figure, an uppermost end of the stop 131 is higher than a lowermost end of the block 123, to ensure that the stop 131 can abut against the block 123 when the stop 131 moves with the lid 130 relative to the drawer 120 and along the direction -y to the block 123.

[0065] In one or more embodiments, the stop 131 and the lid 130 may be integrally formed. Alternatively, the stop 131 may be fixed on an upper surface of the lid 130 through bonding, interference fit, or bolting.

[0066] In one or more embodiments, a distance for the lid 130 to slide rearward relative to the drawer 120 can be adjusted by adjusting a specific position of the stop 131 on the lid 130 and/or a specific position of the block 123 on the drawer 120, thereby adjusting an uncovered area of the opening 122.

[0067] For example, in order to uncover the opening 122 as large as possible, the stop 131 may be located at a front end of the upper surface of the lid 130, the front end being one end close to the front wall 120b of the drawer 120; the block 123 may be located at an end on the pair of the side walls 120d of the drawer 120 that is close to the rear wall 120c, so that the lid 130 is prevented by the block 123 from continuing moving rearward only when moving rearward relative to the drawer 120 to a place close to the rear wall 120c of the drawer 120.

[0068] In one or more embodiments, still referring to FIG. 8, the stop 131 may be connected to a handle 132 of the lid 130, improving an overall aesthetic appearance of the drawer 120.

[0069] In one or more embodiments, the uncovered area of the opening 122 can also be adjusted by adjusting a length of the stop 131 extending from the handle 132 of the lid 130 along the direction -y.

[0070] Further, a height of the handle 132 of the lid 130 in the direction z may also be higher than the height of the block 123 to assist the stop 131 in preventing the lid 130 from continuing moving rearward relative to the drawer 120.

[0071] In one or more non-limiting embodiments, referring to FIG. 1 to FIG. 12, the refrigerator 100 may further include an anti-tilting portion 125 configured to prevent a rear end 133 of the lid 130 from rotating downward (that is, in a direction opposite to the direction z shown in the figure) while the lid 130 is being pushed back.

[0072] Accordingly, when the lid 130 is pushed toward the storage compartment 110 to uncover more than half of the opening 122 of the drawer 120, the lid 130 can be prevented from tilting relative to the drawer 120 due to an offset of a center of gravity of the lid 130 (that is, the rear end 133 of the lid 130 rotates downward, and a front end 134 of the lid 130 rotates upward) when the lid 130 continues moving rearward, to ensure that the lid 130 is always supported on the drawer 120, thereby preventing the lid 130 from rotating randomly along the direction z on the drawer 120, and helping quickly pull the lid 130 forward to cover the opening 122 of the drawer 120 when necessary. Rotating upward is to rotate along the direction z shown in the figure, and rotating downward is to rotate along a direction opposite to the direction z shown in the figure.

[0073] In one or more embodiments, still referring to FIG. 1 to FIG. 12, the anti-tilting portion 125 may be located on at least one side wall 120d of the drawer 120, the anti-tilting portion 125 bending toward the accommodation space 121 to form a limiting groove 126; the lid 130 may have an anti-tilting rib 135, and when the lid 130 is pushed back, the anti-

tilting rib 135 entering the limiting groove 126 to abut against an inner wall of the limiting groove 126.

[0074] Accordingly, through the cooperation of the anti-tilting portion 125 with the anti-tilting rib 135, the lid 130 can be kept supported on the drawer 120 when being pushed back, to prevent the lid 130 from over turning unexpectedly, and ensure that the lid 130 always slides frontward/rearward along the upper edge 124 of the drawer 120.

[0075] For example, the anti-tilting portion 125 may be located at a top (such as the upper edge 124 of the pair of side walls 120d) of drawer 120, and at least one face of the anti-tilting portion 125 bends downward toward the accommodation space 121, to form a Γ -shaped structure shown in FIG. 13 or an inverted L-shaped structure shown in FIG. 14. A space between the structure and the lid 130 encloses the limiting groove 126. A difference between the structures shown in FIG. 13 and FIG. 14 lies in that the limiting groove 126 shown in FIG. 13 has three inner walls but the limiting groove 126 shown in FIG. 14 has two inner walls.

[0076] Further, still referring to FIG. 13 and FIG. 14, a cross-sectional shape of the anti-tilting rib 135 on a plane formed in the direction y and the direction z matches a shape of the limiting groove 126, so that the anti-tilting rib 135 can extend into the limiting groove 126 to abut against the inner wall of the limiting groove 126 when the lid 130 slides rearward relative to the drawer 120, thereby preventing the front end 134 and the rear end 133 of the lid 130 from rotating along the direction z.

[0077] In one or more non-limiting embodiments, the anti-tilting portion 125 may be integrally formed with the block 123, to reduce a number of parts, facilitate assembling, and simplify an overall structure of the drawer 120.

[0078] In one or more non-limiting embodiments, still referring to FIG. 1 to FIG. 12, the lid 130 may have a protrusion 136, when the drawer 120 is pushed into the storage compartment 110, the protrusion 136 of the lid 130 abutting against a back plate 111 of the storage compartment 110.

[0079] Accordingly, accuracy of contact with the back plate 111 may be improved through point contact.

[0080] Further, a location of the protrusion 136 on the lid 130 can avoid designed components such as an air duct and a cooling tube on the back plate 111, to prevent the lid 130 from damaging the refrigerator 100 because of touching the components of the back plate 111 when moving rearward.

[0081] Optionally, there may be two protrusions 136. Those skilled in the art may also adjust a number of the protrusions 136 and a length of the protrusion 136 extending along the direction -y as needed.

[0082] In one or more embodiments, referring to FIG. 2, the lid 130 may have a buffer portion 137, when the lid 130 covers the opening 122, the buffer portion 137 abutting against the front wall 120b of the drawer 120, to buffer impact on the drawer 120 when the lid 130 moves forward to cover the opening 122 of the drawer 120.

[0083] For example, the buffer portion 137 may be a rubber block to play an effective buffer function between the lid 130 and the drawer 120.

[0084] For example, there may be two buffer portions 137, which are respectively located on both sides of the handle 132 along the direction x. In actual application, those skilled in the art may also adjust a number of the buffer portions 137 and specific positions for the buffer portions to be disposed on the front end 134 of the lid 130.

[0085] In one or more embodiments, the lid 130 may be disassembled from the drawer 120 to clean the lid 130 and/or the drawer 120.

[0086] For example, referring to FIG. 15, the handle 132 of the lid 130 may be grasped to lift the front end 134 of the lid 130 and pulled along the directions +y and z, to remove the lid 130 from the drawer 120.

[0087] For another example, when the lid 130 needs to be installed on the drawer 120, inverted implementation may be made according to the process shown in FIG. 15. In other words, the rear end 133 of the lid 130 is placed on the upper edge 124 of the pair of side walls 120d of the drawer 120 and is pushed along a direction opposite to the direction -y and the direction z, to place the lid 130 on the upper portion of the drawer 120.

[0088] In one or more embodiments, the drawer 120 may also have a handle portion 128 for pulling or pushing the drawer 120.

[0089] Accordingly, the solutions of this embodiment provide the refrigerator 100 with the drawer 120 having sealing performance, the drawer 120 having the lid 130 that can be covered or uncovered. When the drawer 120 is located within the storage compartment 110 of the refrigerator 100, the opening 122 of the drawer 120 is covered with the lid 130 supported on the drawer 120, so that the sealing performance of the drawer 120 can be effectively improved, and the stored products within the drawer 120 can be prevented from being tainted by other stored products within the storage compartment 110 because of being directly exposed in the storage compartment 110, thereby helping improve food hygiene.

[0090] Further, when the drawer 120 is pulled out of the storage compartment 110, the lid 130 may be pushed to slide frontward/rearward relative to the drawer 120, so as to uncover or cover the opening 122 of the drawer 120, thereby helping a user conveniently take the stored products within the drawer 120.

[0091] Further, with the designed block 123, the lid 130 can be prevented from detaching from the drawer 120 as a result of an excessive rearward movement of the lid, thereby ensuring that the lid 130 is always supported on the drawer 120 during frontward/rearward sliding, and helping quickly pull the lid 130 forward to cover the opening 122 of the drawer 120 when necessary.

[0092] Further, the drawer 120 provided with the lid 130 in this embodiment has a simple overall structure, and is easy to manufacture.

[0093] FIG. 16 is a partial schematic structural diagram of a refrigerator according to the present invention. A difference from the foregoing refrigerator 100 shown in FIG. 1 to FIG. 15 lies in that a lid 130 and/or a drawer 120 of a refrigerator 100 shown in this embodiment further have/has a sliding structure, to significantly improve a sliding effect of the lid 130 relative to the drawer 120, thereby optimizing user experience.

[0094] The roller structure includes a rolling wheel and a limiting groove.

[0095] Referring to FIG. 16 to FIG. 18, the front end 134 of the lid 130 is provided with a first rolling wheel 150, the front end 134 of the lid 130 being one end close to the front wall 120b; an upper edge 124 of the pair of side walls 120d of the drawer 120 may have a first limiting groove 151, when the lid 130 covers the opening 122, the first rolling wheel 150 falling into the first limiting groove 151, and when the lid 130 is pushed back into the storage compartment 110, the first rolling wheel 150 sliding out of the first limiting groove 151 and rolling on the upper edge 124 of the pair of side walls 120d.

[0096] Accordingly, a sliding effect of the lid 130 can be significantly improved, and user experience can be optimized. With a properly designed spacing of the lid 130 in a height direction (that is, the direction z) relative to the drawer 120 during frontward/rearward movement (that is, along the direction $\pm y$), it is possible to provide a sealing strip 162 between the lid 130 and the drawer 120. Therefore, friction between the sealing strip 162 and the lid 130/drawer 120 during movement of the raised lid 130 may be avoided.

[0097] In this example, the upper edge 124 of the side wall 120d may be understood as a support portion for cooperating with the first rolling wheel 150 when the lid 130 uncovers or covers the drawer 120, to support the lid 130.

[0098] Further, the first limiting groove 151 may be located at an end of the upper edge 124 of the side wall 120d close to the front wall 120b. Accordingly, when the lid 130 covers the drawer 120, the first limiting groove 151 is used to give way to the first rolling wheel 150 on the lid 130, so that the lid 130 can seal the drawer 120 after freely falling.

[0099] Further, when the lid 130 covers the opening 122 of the drawer 120, the first rolling wheel 150 falls into the first limiting groove 151, so that the lid 130 wholly sinks along a direction opposite to the direction z to fit closely with the upper edge 124 of the drawer 120, thereby helping improve sealing performance of the drawer 120, and preventing the sealing performance from being affected due to unexpected displacement while the lid 130 is covering the opening 122.

[0100] Referring to FIG. 19 to FIG. 22, the lid 130 moves rearward relative to the drawer 120 until the first rolling wheel 150 abuts against the block 123 to prevent the lid 130 from continuing moving rearward.

[0101] Accordingly, the first rolling wheel 150 can function as the stop 131 described in the foregoing first embodiment. In this embodiment, through the cooperation of the block 123 with the first rolling wheel 150, when the lid 130 is pushed into the storage compartment 110 along the direction -y to uncover the opening 122 of the drawer 120, the lid 130 can be prevented from detaching from the drawer 120 as a result of an excessive rearward movement of the lid, thereby ensuring that the lid 130 is always supported on the drawer 120, and helping quickly pull the lid 130 forward to cover the opening 122 of the drawer 120 when necessary.

[0102] For example, referring to FIG. 23, a diameter of the first rolling wheel 150 may be greater than a height of the block 123 along the direction z (or at least higher than a lowermost end of the block 123 along the direction z), to ensure that the first rolling wheel 150 can abut against the block 123.

[0103] In the invention, referring to FIG. 16 to FIG. 25, the anti-tilting portion 125 is located on at least one side wall 120d of the drawer 120, and bends toward the accommodation space 121 to form a limiting groove 126; when the lid 130 is pushed back, the first rolling wheel 150 enters the limiting groove 126 to abut against an inner wall of the limiting groove 126.

[0104] Accordingly, the first rolling wheel 150 can further function as the anti-tilting rib 135 described in the foregoing first embodiment. Through the cooperation of the anti-tilting portion 125 with the first rolling wheel 150, the lid 130 can be kept supported on the drawer 120 when being pushed back, to prevent the lid 130 from over turning unexpectedly, and ensure that the lid 130 always slides frontward/rearward along the upper edge 124 of the drawer 120.

[0105] In one or more embodiments, the first limiting groove 151 may be recessed from the upper edge 124 of the side wall 120d along a direction opposite to the direction z shown in the figure, to ensure that the lid 130 can wholly sink along the direction opposite to direction z when the first rolling wheel 150 falls into the first limiting groove 151, thereby having a better sealing effect.

[0106] In one or more embodiments, still referring to FIG. 16 to FIG. 25, a rear end 129 (which may be referred to as a rear end 129 of the drawer 120 for short) located on the upper edge 124 of the pair of side walls 120d of the drawer 120 may be further provided with a second rolling wheel 152, the rear end 129 being one end of the drawer 120 close to the rear wall 120c; the lid 130 may have a second limiting groove 153, when the lid 130 covers the opening 122, the second rolling wheel 152 being located within the second limiting groove 153, and when the lid 130 is pushed back into the storage compartment 110, the second rolling wheel 152 sliding out of the second limiting groove 153.

[0107] Accordingly, a sliding effect of the lid 130 can be significantly improved, and user experience can be optimized. Further, when the lid 130 covers the opening 122 of the drawer 120, the second rolling wheel 152 falls into the second

limiting groove 153, so that the lid 130 wholly sinks to fit closely with the upper edge 124 of the drawer 120, thereby helping improve sealing performance of the drawer 120, and preventing the sealing performance from being affected due to unexpected displacement while the lid 130 is covering the opening 122.

5 [0108] In one or more embodiments, depths of the first limiting groove 151 and the second limiting groove 153 may be the same, and radiuses of the first rolling wheel 150 and the second rolling wheel 152 may also be the same, so that the lid 130 always slides forward/rearward parallel to the upper edge 124 of the drawer 120 relative to the drawer 120.

[0109] In one or more embodiments, the lid 130 may have a sliding rib 138, and two ends of the sliding rib 138 are respectively connected to the first rolling wheel 150 and the second limiting groove 153. When the lid 130 is pushed rearward into the storage compartment 110, the second rolling wheel 152 rolls on the sliding rib 138.

10 [0110] Accordingly, when the lid 130 slides forward/rearward relative to the drawer 120, the second rolling wheel 152 rolls on the sliding rib 138 of the lid 130, facilitating better improvement of the sliding effect of the lid 130 on the drawer 120.

[0111] Further, when the lid 130 covers the opening 122 of the drawer 120, the sliding rib 138 fits with the upper edge 124 of the drawer 120, facilitating better improvement of the sealing performance of the drawer 120.

15 [0112] For example, the sliding rib 138 may extend parallel to the upper edge 124 of the side wall 120d of the drawer 120, so that the second rolling wheel 152 can roll synchronously on the sliding rib 138 when the first rolling wheel 150 rolls on the upper edge 124 of the side wall 120d of the drawer 120, to ensure that the lid 130 keeps sliding forward/rearward parallel to the drawer 120.

[0113] In one or more embodiments, a frame 139 of the lid 130 may have one sliding rib 138 on each of two sides along the direction x. When the lid 130 is pushed back into the storage compartment 110, the sliding rib 138 cooperates with the second rolling wheel 152 on the drawer 120, so that the lid 130 is supported on the drawer 120 to slide forward/rearward.

20 [0114] Further, the second limiting groove 153 may be located at an end of the sliding rib 138 close to the rear end 133 of the lid 130. Accordingly, when the lid 130 covers the drawer 120, the sliding rib 138 gives way to the second rolling wheel 152 on the drawer 120 using the second limiting groove 152, so that the lid 130 can seal the drawer 120 wholly after freely falling.

25 [0115] Further, a transparent member 161 of the lid 130 may be made of glass, not only helping a user observe stored products in the drawer, but also enabling the lid 130 to closely press against the drawer 120 due to a relatively large weight of glass, thereby optimizing the sealing effect.

[0116] In a typical application scenario, referring to FIG. 16, the drawer 120 may initially be located within the storage compartment 110, and the lid 130 covers the opening 122 of the drawer 120.

30 [0117] Further, referring to FIG. 19, when the drawer 120 is pulled out of the storage compartment 110, the lid 130 is pulled out of the storage compartment 110 with the drawer 120 and keeps the opening 122 of the drawer 120 covered. For example, the handle portion 128 of the drawer 120 may be grasped and pulled toward the direction +y to pull the drawer 120 out of the storage compartment 110.

35 [0118] Further, the lid 130 is pushed along the direction -y, and the lid 130 is pushed back into the storage compartment 110 along the direction -y relative to the drawer 120 to reach the state shown in FIG. 20. For example, the handle 132 of the lid 130 may be grasped and pulled toward the direction -y to push the lid 130 back into the storage compartment 110.

[0119] As the lid 130 is pushed back into the storage compartment 110, the opening 122 of the drawer 120 is gradually uncovered, and a user may adjust a distance for which the lid 130 is pushed along the direction -y as needed to cover the opening 122 to a required size.

40 [0120] A maximum distance for the lid 130 to slide rearward relative to the drawer 120 may be less than a maximum distance for the drawer 120 to be pulled out of the storage compartment 110. In other words, a length of the lid 130 along the direction y may be less than a depth of the storage compartment 110. Accordingly, when the lid 130 is completely pushed back into the storage compartment 110, a gap may still exist between the rear end 133 (including the protrusion 136) of the lid 130 and the back plate 111 of the storage compartment 110, to better prevent a damage between the lid 130 and the back plate 111 of the storage compartment 110 due to frequent collisions.

45 [0121] In an application scenario, when the opening 122 needs to be covered, the lid 130 may be pulled to slide along the direction +y in the state shown in FIG. 20, to cover the opening 122. In this case, a relative position relationship between the lid 130, the drawer 120, and the storage compartment 110 is shown in FIG. 19. Subsequently, the drawer 120 is pushed toward the direction -y again to integrally push the drawer 120 together with the lid 130 covering the upper portion thereof into the storage compartment 110 to reach the state shown in FIG. 16.

50 [0122] In another application scenario, when the opening 122 needs to be covered, the drawer 120 may also be directly pushed along the direction -y in the state shown in FIG. 20, to push the drawer 120 together with the lid 130 supported thereon into the storage compartment 110. In this case, because the lid 130 is still in a state for keeping the opening 122 of the drawer 120 uncovered, as the drawer 120 is pushed into the storage compartment 110, the protrusion 136 of the lid 130 abuts against the back plate 111 of the storage compartment 110.

55 [0123] As the drawer 120 continues being pushed into the storage compartment 110, the lid 130 remains in the storage compartment 110 and no longer moves toward the direction -y (shown in FIG. 21), and the drawer 120 continues moving

along the direction -y until the drawer 120 is completely pushed into the storage compartment 110 (shown in FIG. 16). In this case, the first rolling wheel 150 of the lid 130 falls into the first limiting groove 151 of the drawer 120, and the second rolling wheel 152 of the drawer 120 is located within the second limiting groove 153 of the lid 130, not only preventing relative displacement from occurring between the lid 130 and the drawer 120, but also sealing the accommodation 121 in that the lid 130 sinks to cover the upper portion of the drawer 120 due to weight of the lid 130.

5 **[0124]** In one or more embodiments, referring to FIG. 1 to FIG. 25, the lid 130 may include a frame 139, the frame 139 enclosing a viewing port 160, and a transparent member 161 disposed within the viewing port 160 and connected to the frame 139.

10 **[0125]** Accordingly, when the drawer 120 is pulled out of the storage compartment 110, an interior of the drawer 120 is directly visible without a need to push away the lid 130, and a user can accurately and quickly determine whether a stored product being sought is stored in the drawer 120, thereby helping reduce a number of times of unnecessary uncovering and covering of the drawer 120. In other words, with the designed transparent member 161, the user can push away the lid 130 of the drawer 120 to take the stored product after determining that the required stored product is indeed stored in the drawer 120, instead of uncovering the lid 130 first to determine whether the stored product is in the drawer. This further reduces a possibility of odor tainting.

15 **[0126]** Preferably, the transparent member 161 may be made of glass to enable the lid 130 to press against the upper edge 124 of the drawer 120 due to a weight of the lid 130 while satisfying a transparency of the viewing port, thereby improving the sealing performance of the drawer 120.

20 **[0127]** In one or more embodiments, still referring to FIG. 1 to FIG. 25, the lid 130 may further include a sealing strip 162, when the lid 130 covers the opening 122, the sealing strip contacting closely with the front wall 120b, the rear wall 120c, and the upper edge 124 of the pair of side walls 120d of the drawer 120, to form a sealed space within the drawer 120, so that the drawer 120 has better sealing performance.

[0128] Preferably, the sealing strip 162 may be disposed on the frame 139.

[0129] Preferably, the sealing strip 162 may be a sealing rubber strip.

25 **[0130]** FIG. 26 is a partial schematic structural diagram of a refrigerator according to an embodiment of the present invention. A difference from the refrigerator 100 shown in FIG. 16 to FIG. 25 lies in that a drawer 120 of a refrigerator 100 shown in this embodiment is separated into a plurality of mutually independent sealable accommodation subspaces 180.

30 **[0131]** In particular, with reference to FIG. 26 and FIG. 27, the drawer 120 may further include at least one separator 170 located within the accommodation space 121, where the at least one separator 170 may separate the accommodation space 121 into at least two side-by-side accommodation subspaces 180, the at least two accommodation subspaces 180 may include a first accommodation subspace 181 and a second accommodation subspace 182, the first accommodation subspace 181 may have a first opening 183 facing upward, and the second accommodation subspace 182 may have a second opening 184 facing upward; the lid 130 may include a first lid 185 and a second lid 186, where the first lid 185 may be configured to uncover or cover the first opening 183, and the second lid 186 may be configured to uncover or cover the second opening 186.

35 **[0132]** A structure shown in FIG. 26 is used as an example. It may be understood that one separator 170 is disposed in the drawer shown in FIG. 1 to FIG. 25, so that the foregoing accommodation space 121 shown in FIG. 1 to FIG. 25 is separated into two accommodation subspaces 180: a first accommodation subspace 181 and a second accommodation subspace 182.

40 **[0133]** In other words, with the disposed separator 170, the foregoing opening 122 shown in FIG. 1 to FIG. 25 can be separated into a first opening 183 and a second opening 184 arranged side by side along the direction x.

45 **[0134]** Further, the first lid 185 may uncover or cover the first opening 183 using the foregoing structure shown in FIG. 1 to FIG. 15 or the foregoing structure shown in FIG. 16 to FIG. 25; and/or the second lid 186 can uncover or cover the second opening 184 using the foregoing structure shown in FIG. 1 to FIG. 15 or the foregoing structure shown in FIG. 16 to FIG. 25.

50 **[0135]** In one or more embodiments, when the drawer 120 is pulled out of the storage compartment 110, the first lid 185 is pulled out with the drawer 120 and keeps the first accommodation subspace 181 covered (that is, covering the first opening 183). Likewise, when the drawer 120 is pulled out of the storage compartment 110, the second lid 186 is pulled out with the drawer 120 and keeps the second accommodation subspace 182 covered (that is, covering the second opening 184).

[0136] Further, the first lid 185 may slide relative to the drawer 120 to be pushed back into the storage compartment 110 to uncover the first opening 183.

55 **[0137]** Further, the second lid 186 may slide relative to the drawer 120 to be pushed back into the storage compartment 110 to uncover the second opening 184.

[0138] Accordingly, through the cooperation of the separator 170 with the lid 130 (such as the first lid 185 and/or the second lid 186), the drawer 120 may be separated into a plurality of mutually independent accommodation subspaces 180, and each accommodation subspace 180 may be uncovered or covered respectively, and the drawer 120 may be

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wholly pulled out of or pushed into the storage compartment 110, not only facilitating separate storage of different foods to avoid odor tainting, but also helping a user take the food.

[0139] In one or more embodiments, the first accommodation subspace 181 and the second accommodation subspace 182 may be arranged side by side in the direction x.

5 **[0140]** For example, one end of the separator 170 may be connected to the front wall 120b of the drawer 120, and another opposite end of the separator 170 may be connected to the rear wall 120c of the drawer 120, to separate the accommodation space 121 into two side-by-side accommodation subspaces 180 along the direction x.

[0141] Preferably, the separator 170 is integrally formed with the front wall 120b and the rear wall 120c.

10 **[0142]** In one or more embodiments, referring to the foregoing structures shown in FIG. 1 to FIG. 25, at least one of the first lid 185 and the second lid 186 may include a sealing strip 162, when the lid covers the corresponding accommodation subspace 180, the sealing strip contacting with an upper edge of the accommodation subspace 180.

[0143] In one or more embodiments, referring to the foregoing structures shown in FIG. 1 to FIG. 25, at least one of the first lid 185 and the second lid 186 may include the frame 139, a viewing port 160 enclosed by the frame 139, and a transparent member 161 disposed within the viewing port 160 and connected to the frame 139.

15 **[0144]** In one or more embodiments, referring to the foregoing structures shown in FIG. 1 to FIG. 25, at least one of the first lid 185 and the second lid 186 may have one or more buffer portions 137, when the lid covers the corresponding opening (that is, the corresponding accommodation subspace 180), the buffer portion 137 abutting against the front wall 120b of the drawer 120.

20 **[0145]** In one or more embodiments, in addition to the foregoing structures shown in FIG. 1 to FIG. 25, the block 123 may be further located on the separator 170.

Reference Numerals:

25	100 Refrigerator	140 Guide rail
	110 Storage compartment	141 Fixed rail
	111 Back plate	142 Movable rail
	112 Inner side wall	150 First rolling wheel
30	120 Drawer	151 First limiting groove
	120a Bottom wall	152 Second rolling wheel
	120b Front wall	153 Second limiting groove
	120c Rear wall	160 Viewing port
35	120d Side wall	161 Transparent member
	121 Accommodation space	162 Sealing strip
	122 Opening	170 Separator
40	123 Block	180 Accommodation subspace
	124 Upper edge	181 First accommodation subspace
	125 Anti-tilting portion	182 Second accommodation subspace
	126 Limiting groove	183 First opening
45	128 Handle portion	184 Second opening
	129 Rear end of a drawer	185 First lid
	130 Lid	186 Second lid
50	131 Stop	x Width direction of a refrigerator
	132 Handle	-y Depth direction of a refrigerator
	133 Rear end of a lid	+y Pulling direction of a drawer
	134 Front end of a lid	y Pushing direction of a drawer
55	135 anti-tilting rib	z Height direction of a refrigerator.
	136 Protrusion	

(continued)

137	Buffer portion	
138	Sliding rib	
139	Frame	

Claims

1. A refrigerator (100) comprising:

a storage compartment (110);

a drawer (120) located within the storage compartment (110) and comprising a bottom wall (120a), a front wall (120b), a rear wall (120c), a pair of side walls (120d),

and an accommodation space (121) enclosed by the bottom wall (120a), the front wall (120b), the rear wall (120c), and the pair of side walls (120d), wherein the drawer (120) has an opening (122) facing upward, the opening (122) exposing the accommodation space (121);

a lid (130) for covering the opening (122), the lid (130) being slidably supported on an upper portion of the drawer (120), when the drawer (120) is pulled out of the storage compartment (110), the lid (130) being pulled out with the drawer (120) and keeping the opening (122) covered, and the lid is configured to slide relative to the drawer (120) to be pushed back into the storage compartment (110) to uncover the opening (122), and cover the opening (122) when the drawer (120) is pushed into the storage compartment (110);

a block (123), configured to prevent the lid (130) from continuing sliding rearward to keep the lid (130) supported on the drawer (120) that is pulled out, **characterized in that** a front end (134) of the lid (130) is provided with a first rolling wheel (150), the front end (134) of the lid (130) being one end close to the front wall (120b); an upper edge (124) of the pair of side walls (120d) of the drawer (120) has a first limiting groove (151); when the lid (130) covers the opening (122), the first rolling wheel (150) falling into the first limiting groove (151), and when the lid (130) is pushed back into the storage compartment (110), the first rolling wheel (150) sliding out of the first limiting groove (151) and rolling on the upper edge (124) of the pair of side walls (120d), wherein the lid (130) moves rearward relative to the drawer (120) until the first rolling wheel (150) abuts against the block (123) to prevent the lid (130) from continuing moving rearward, wherein an anti-tilting portion (125), configured to keep the lid (130) to be on the drawer (120) while the lid (130) is being pushed back,

and wherein the anti-tilting portion (125) is located on at least one side wall (120d) of the drawer (120), the anti-tilting portion (125) bending toward the accommodation space (121) to form a limiting groove (126), and when the lid (130) is pushed back, the first rolling wheel (150) entering the limiting groove (126) to abut against an inner wall of the limiting groove (126).

2. The refrigerator (100) according to claim 1, **characterized in that** the block (123) is located on at least one side wall (120d);

the lid (130) has a stop (131), the lid (130) moving rearward relative to the drawer (120) until the stop (131) abuts against the block (123) to prevent the lid (130) from continuing moving rearward.

3. The refrigerator (100) according to claim 2, **characterized in that** the stop (131) is connected to a handle (132) of the lid (130).

4. The refrigerator (100) according to anyone of claims 1 to 3, **characterized by** the anti-tilting portion (125), configured to prevent a rear end (133) of the lid (130) from rotating downward while the lid (130) is being pushed back.

5. The refrigerator (100) according to claim 4, **characterized in that** the lid (130) has an anti-tilting rib (135), when the lid (130) is pushed back, the anti-tilting rib (135) entering the limiting groove (126) to abut against an inner wall of the limiting groove (126); and/or the anti-tilting portion (125) is integrally formed with the block (123).

6. The refrigerator (100) according to anyone of claims 1 to 5, **characterized in that** the lid (130) has a protrusion (136), when the drawer (120) is pushed into the storage compartment (110), the protrusion (136) of the lid (130) abutting against a back plate (111) of the storage compartment (110).

7. The refrigerator (100) according to anyone of claims 1 to 6, **characterized in that** the lid (130) has a buffer portion

(137), when the lid (130) covers the opening (122), the buffer portion (137) abutting against the front wall (120b) of the drawer (120).

- 5 8. The refrigerator (100) according to anyone of claims 1 to 7 **characterized in that** a rear end (129) of the upper edge (124) of the pair of side walls (120d) of the drawer (120) is provided with a second rolling wheel (152), the rear end (129) being one end close to the rear wall (120c);

the lid (130) has a second limiting groove (153);

10 when the lid (130) covers the opening (122), the second rolling wheel (152) being located within the second limiting groove (153), and when the lid (130) is pushed back into the storage compartment (110), the second rolling wheel (152) sliding out of the second limiting groove (153).

- 15 9. The refrigerator (100) according to claim 8, **characterized in that** the lid (130) has a sliding rib (138), two ends of the sliding rib (138) being respectively connected to the first rolling wheel (150) and the second limiting groove (153), and when the lid (130) is pushed back into the storage compartment (110), the second rolling wheel (152) rolling on the sliding rib (138).

- 20 10. The refrigerator (100) according to any of claims 1 to 9, **characterized in that** the lid (130) comprises:

a frame (139), the frame (139) enclosing a viewing port (160); and

a transparent member (161) disposed within the viewing port (160) and connected to the frame (139); and/or a sealing strip (162), when the lid (130) covers the opening (122), the sealing strip contacting closely with the front wall (120b), the rear wall (120c), and the upper edge (124) of the pair of side walls (120d) of the drawer (120).

- 25 11. The refrigerator (100) according to any of claims 1 to 9, **characterized in that** the drawer (120) further comprises at least one separator (170) located within the accommodation space (121), the at least one separator (170) separating the accommodation space (121) into at least two side-by-side accommodation subspaces (180), and the at least two accommodation subspaces (180) comprising a first accommodation subspace (181) and a second accommodation subspace (182), the first accommodation subspace (181) having a first opening (183) facing upward, and the second accommodation subspace (182) having a second opening (184) facing upward; the lid (130) comprises a first lid (185) and a second lid (186), the first lid (185) being configured to uncover or cover the first opening (183), and the second lid (186) being configured to uncover or cover the second opening (184).

35 **Patentansprüche**

1. Kühlschrank (100), der Folgendes umfasst:

ein Aufbewahrungsfach (110),

40 einen Einschub (120), der sich in dem Aufbewahrungsfach (110) befindet und eine Bodenwand (120a), eine Vorderwand (120b), eine Rückwand (120c), zwei Seitenwände (120d) und einen von der Bodenwand (120a), der Vorderwand (120b),

der Rückwand (120c) und den beiden Seitenwänden (120d) umgebenen Aufnahmeraum (121) umfasst, wobei der Einschub (120) eine nach oben weisende Öffnung (122) aufweist, die den Aufnahmeraum (121) freilegt,

45 einen Deckel (130) zum Abdecken der Öffnung (122), wobei der Deckel (130) an einem oberen Abschnitt des Einschubs (120) verschiebbar gelagert ist und, wenn der Einschub (120) aus dem Aufbewahrungsfach (110) herausgezogen wird, zusammen mit dem Einschub (120) herausgezogen wird und dabei die Öffnung (122) geschlossen hält, und so konfiguriert ist, dass er in Bezug auf den Einschub (120) so verschiebbar ist, dass er sich in das Aufbewahrungsfach (110) zurückschieben lässt und so die Öffnung (122) freigibt, und die Öffnung (122) abdeckt, wenn der Einschub (120) in das Aufbewahrungsfach (110) hineingeschoben wird,

50 eine Sperre (123), die so konfiguriert ist, dass sie ein weiteres Gleiten des Deckels (130) nach hinten verhindert und dieser so weiterhin von dem Einschub (120) gehalten wird, der herausgezogen wird, **dadurch gekennzeichnet, dass** ein vorderes Ende (134) des Deckels (130) mit einer ersten Rolle (150) versehen ist, wobei es sich bei dem vorderen Ende (134) des Deckels (130) um ein Ende in der Nähe der Vorderwand (120b) handelt, eine obere Kante (124) der zwei Seitenwände (120d) des Einschubs (120) eine erste Begrenzungsnut (151) aufweist, wobei die erste Rolle (150), wenn der Deckel (130) die Öffnung (122) abdeckt, in die erste Begrenzungsnut (151) fällt und,

55 wenn der Deckel (130) wieder in das Aufbewahrungsfach (110) hineingeschoben wird, aus der ersten Begren-

zungsnut (151) gleitet und an der oberen Kante (124) der beiden Seitenwände (120d) entlangrollt, wobei sich der Deckel (130) in Bezug auf den Einschub (120) nach hinten bewegt, bis die erste Rolle (150) an der Sperre (123) anliegt und so verhindert, dass sich der Deckel (130) weiter nach hinten bewegt, wobei sich ein Kippschutzabschnitt (125), der so konfiguriert ist, dass er den Deckel (130) auf dem Einschub (120) hält, wenn der Deckel (130) nach hinten geschoben wird, und sich an mindestens einer Seitenwand (120d) des Einschubs (120) befindet, zum Aufnahmeraum (121) hin neigt und so eine Begrenzungsnut (126) bildet, und die erste Rolle (150), wenn der Deckel (130) nach hinten geschoben wird, in die Begrenzungsnut (126) rollt und so an einer Innenwand der Begrenzungsnut (126) zum Anliegen kommt.

2. Kühlschrank (100) nach Anspruch 1, **dadurch gekennzeichnet, dass** sich die Sperre (123) an mindestens einer Seitenwand (120d) befindet, der Deckel (130) einen Anschlag (131) aufweist, wobei sich der Deckel (130) in Bezug auf den Einschub (120) nach hinten bewegt, bis der Anschlag (131) an der Sperre (123) anliegt und so verhindert, dass sich der Deckel (130) weiter nach hinten bewegt.

3. Kühlschrank (100) nach Anspruch 2, **dadurch gekennzeichnet, dass** der Anschlag (131) mit einem Griff (132) des Deckels (130) verbunden ist.

4. Kühlschrank (100) nach einem der Ansprüche 1 bis 3, **gekennzeichnet durch** den Kippschutzabschnitt (125), der so konfiguriert ist, dass er ein Rotieren eines hinteren Endes (133) des Deckels (130) nach unten verhindert, wenn dieser nach hinten verschoben wird.

5. Kühlschrank (100) nach Anspruch 4, **dadurch gekennzeichnet, dass** der Deckel (130) eine Kippschutzrippe (135) aufweist, die in die Begrenzungsnut (126) rutscht, wenn der Deckel (130) nach hinten geschoben wird, und so an einer Innenwand der Begrenzungsnut (126) zum Anliegen kommt, und/oder der Kippschutzabschnitt (125) einstückig mit der Sperre (123) ausgebildet ist.

6. Kühlschrank (100) nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** der Deckel (130) einen Vorsprung (136) aufweist, der an einer hinteren Platte (111) des Aufbewahrungsfachs (110) anliegt, wenn der Einschub (120) in das Aufbewahrungsfach (110) hineingeschoben ist.

7. Kühlschrank (100) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** der Deckel (130) einen Pufferabschnitt (137) aufweist, der an der Vorderwand (120b) des Einschubs (120) anliegt, wenn der Deckel (130) die Öffnung (122) abdeckt.

8. Kühlschrank (100) nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** ein hinteres Ende (129) der oberen Kante (124) der beiden Seitenwände (120d) des Einschubs (120) mit einer zweiten Rolle (152) versehen ist, wobei es sich bei dem hinteren Ende (129) um ein Ende in der Nähe der Rückwand (120c) handelt,

der Deckel (130) eine zweite Begrenzungsnut (153) aufweist, wobei sich die zweite Rolle (152) in der zweiten Begrenzungsnut (153) befindet, wenn der Deckel (130) die Öffnung (122) abdeckt, und aus der zweiten Begrenzungsnut (153) gleitet, wenn der Deckel (130) wieder in das Aufbewahrungsfach (110) hineingeschoben wird.

9. Kühlschrank (100) nach Anspruch 8, **dadurch gekennzeichnet, dass** der Deckel (130) eine Gleitrippe (138) aufweist, wobei zwei Enden der Gleitrippe (138) mit der ersten Rolle (150) beziehungsweise der zweiten Begrenzungs- nut (153) verbunden sind und die zweite Rolle (152) an der Gleitrippe (138) entlangrollt, wenn der Deckel (130) wieder in das Aufbewahrungsfach (110) hineingeschoben wird.

10. Kühlschrank (100) nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** der Deckel (130) Folgendes umfasst:

einen Rahmen (139), der ein Sichtfenster (160) umgibt, und ein lichtdurchlässiges Element (161), das in dem Sichtfenster (160) angeordnet und mit dem Rahmen (139) verbunden ist, und/oder einen Dichtstreifen (162), der sich in engem Kontakt mit der Vorderwand (120b), der Rückwand (120c) und der oberen Kante (124) der beiden Seitenwände (120d) des Einschubs (120) befindet, wenn der Deckel (130) die

Öffnung (122) abdeckt.

- 5 11. Kühlschrank (100) nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** der Einschub (120) ferner mindestens eine Trennwand (170) umfasst, die sich in dem Aufbewahrungsraum (121) befindet, wobei die mindestens eine Trennwand (170) den Aufbewahrungsraum (121) in mindestens zwei nebeneinanderliegende Aufbewahrungsteilräume (180) unterteilt und die mindestens zwei Aufbewahrungsteilräume (180) einen ersten Aufbewahrungsteilraum (181) und einen zweiten Aufbewahrungsteilraum (182) umfassen, wobei der erste Aufbewahrungsteilraum (181) eine erste nach oben weisende Öffnung (183) und der zweite Aufbewahrungsteilraum (182) eine zweite nach oben weisende Öffnung (184) aufweist, der Deckel (130) einen ersten Deckel (185) und einen zweiten Deckel (186) umfasst, wobei der erste Deckel (185) so konfiguriert ist, dass er die erste Öffnung (183) freigibt oder abdeckt, und der zweite Deckel (186) so konfiguriert ist, dass er die zweite Öffnung (184) freigibt oder abdeckt.

Revendications

- 15 1. Réfrigérateur (100) comprenant :

un compartiment de stockage (110) ;

20 un tiroir (120) situé à l'intérieur du compartiment de stockage (110) et comprenant une paroi inférieure (120a), une paroi avant (120b), une paroi arrière (120c), une paire de parois latérales (120d) et un espace de logement (121) délimité par la paroi inférieure (120a), la paroi avant (120b), la paroi arrière (120c) et la paire de parois latérales (120d), dans lequel le tiroir (120) a une ouverture (122) orientée vers le haut, l'ouverture (122) exposant l'espace de logement (121) ;

25 un couvercle (130) pour couvrir l'ouverture (122), le couvercle (130) étant supporté en coulissement sur une partie supérieure du tiroir (120), lorsque le tiroir (120) est retiré du compartiment de stockage (110), le couvercle (130) étant tiré avec le tiroir (120) et maintenant l'ouverture (122) couverte, et le couvercle est configuré pour coulisser par rapport au tiroir (120) pour être repoussé dans le compartiment de stockage (110) pour découvrir l'ouverture (122), et couvrir l'ouverture (122) lorsque le tiroir (120) est poussé dans le compartiment de stockage (110) ;

30 un bloc (123), configuré pour empêcher le couvercle (130) de continuer à coulisser vers l'arrière pour maintenir le couvercle (130) en appui sur le tiroir (120) qui est tiré, **caractérisé en ce qu'**une extrémité avant (134) du couvercle (130) est munie d'une première roue de roulement (150), l'extrémité avant (134) du couvercle (130) étant une extrémité proche de la paroi avant (120b) ; un bord supérieur (124) de la paire de parois latérales (120d) du tiroir (120) a une première rainure de limitation (151) ; lorsque le couvercle (130) couvre l'ouverture (122), la première roue de roulement (150) tombe dans la première rainure de limitation (151), et, lorsque le couvercle (130) est repoussé dans le compartiment de stockage (110), la première roue de roulement (150) coulisse hors de la première rainure de limitation (151) et roule sur le bord supérieur (124) de la paire de parois latérales (120d), dans lequel le couvercle (130) se déplace vers l'arrière par rapport au tiroir (120) jusqu'à ce que la première roue de roulement (150) vienne en butée contre le bloc (123) pour empêcher le couvercle (130) de continuer à se déplacer vers l'arrière, dans lequel une partie anti-basculement (125), configurée pour maintenir le couvercle (130) sur le tiroir (120) pendant que le couvercle (130) est repoussé, et dans lequel la partie anti-basculement (125) est située sur au moins une paroi latérale (120d) du tiroir (120), la partie anti-basculement (125) se pliant vers l'espace de logement (121) pour former une rainure de limitation (126), et, lorsque le couvercle (130) est repoussé, la première roue de roulement (150) entrant dans la rainure de limitation (126) pour venir en butée contre une paroi intérieure de la rainure de limitation (126).

- 35 2. Réfrigérateur (100) selon la revendication 1, **caractérisé en ce que** le bloc (123) est situé sur au moins une paroi latérale (120d) ;

40 le couvercle (130) a un élément d'arrêt (131), le couvercle (130) se déplaçant vers l'arrière par rapport au tiroir (120) jusqu'à ce que l'élément d'arrêt (131) vienne en butée contre le bloc (123) pour empêcher le couvercle (130) de continuer à se déplacer vers l'arrière.

- 45 3. Réfrigérateur (100) selon la revendication 2, **caractérisé en ce que** l'élément d'arrêt (131) est relié à une poignée (132) du couvercle (130).

- 55 4. Réfrigérateur (100) selon l'une quelconque des revendications 1 à 3, **caractérisé par** la partie anti-basculement (125), configurée pour empêcher une extrémité arrière (133) du couvercle (130) de tourner vers le bas tandis que le couvercle (130) est en train d'être repoussé.

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5. Réfrigérateur (100) selon la revendication 4, **caractérisé en ce que** le couvercle (130) a une nervure anti-basculement (135), lorsque le couvercle (130) est repoussé, la nervure anti-basculement (135) entre dans la rainure de limitation (126) pour venir en butée contre une paroi intérieure de la rainure de limitation (126) ; et/ou la partie anti-basculement (125) est formée d'un seul tenant avec le bloc (123).
 6. Réfrigérateur (100) selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** le couvercle (130) a une saillie (136), lorsque le tiroir (120) est poussé dans le compartiment de stockage (110), la saillie (136) du couvercle (130) vient en butée contre une plaque arrière (111) du compartiment de stockage (110).
 7. Réfrigérateur (100) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** le couvercle (130) a une partie tampon (137), lorsque le couvercle (130) couvre l'ouverture (122), la partie tampon (137) vient en butée contre la paroi avant (120b) du tiroir (120).
 8. Réfrigérateur (100) selon l'une quelconque des revendications 1 à 7, **caractérisé en ce qu'**une extrémité arrière (129) du bord supérieur (124) de la paire de parois latérales (120d) du tiroir (120) est munie d'une deuxième roue de roulement (152), l'extrémité arrière (129) étant une extrémité proche de la paroi arrière (120c) ;
le couvercle (130) a une deuxième rainure de limitation (153) ;
lorsque le couvercle (130) couvre l'ouverture (122), la deuxième roue de roulement (152) est située à l'intérieur de la deuxième rainure de limitation (153), et, lorsque le couvercle (130) est repoussé dans le compartiment de stockage (110), la deuxième roue de roulement (152) coulisse hors de la deuxième rainure de limitation (153).
 9. Réfrigérateur (100) selon la revendication 8, **caractérisé en ce que** le couvercle (130) a une nervure de coulissement (138), deux extrémités de la nervure de coulissement (138) étant respectivement reliées à la première roue de roulement (150) et à la deuxième rainure de limitation (153), et, lorsque le couvercle (130) est repoussé dans le compartiment de stockage (110), la deuxième roue de roulement (152) roule sur la nervure de coulissement (138).
 10. Réfrigérateur (100) selon l'une des revendications 1 à 9, **caractérisé en ce que** le couvercle (130) comprend :
un cadre (139), le cadre (139) renfermant un orifice de visualisation (160) ; et
un élément transparent (161) disposé à l'intérieur de l'orifice de visualisation (160) et relié au cadre (139) ; et/ou une bande d'étanchéité (162), lorsque le couvercle (130) couvre l'ouverture (122), la bande d'étanchéité étant en contact étroit avec la paroi avant (120b), la paroi arrière (120c) et le bord supérieur (124) de la paire des parois latérales (120d) du tiroir (120).
 11. Réfrigérateur (100) selon l'une des revendications 1 à 9, **caractérisé en ce que** le tiroir (120) comprend en outre au moins un séparateur (170) situé à l'intérieur de l'espace de logement (121), l'au moins un séparateur (170) séparant l'espace de logement (121) en au moins deux sous-espaces de logement côte à côte (180), et les au moins deux sous-espaces de logement (180) comprenant un premier sous-espace de logement (181) et un deuxième sous-espace de logement (182), le premier sous-espace de logement (181) ayant une première ouverture (183) orientée vers le haut, et le deuxième sous-espace de logement (182) ayant une deuxième ouverture (184) orientée vers le haut ; le couvercle (130) comprend un premier couvercle (185) et un deuxième couvercle (186), le premier couvercle (185) étant configuré pour découvrir ou couvrir la première ouverture (183), et le deuxième couvercle (186) étant configuré pour découvrir ou couvrir la deuxième ouverture (184).

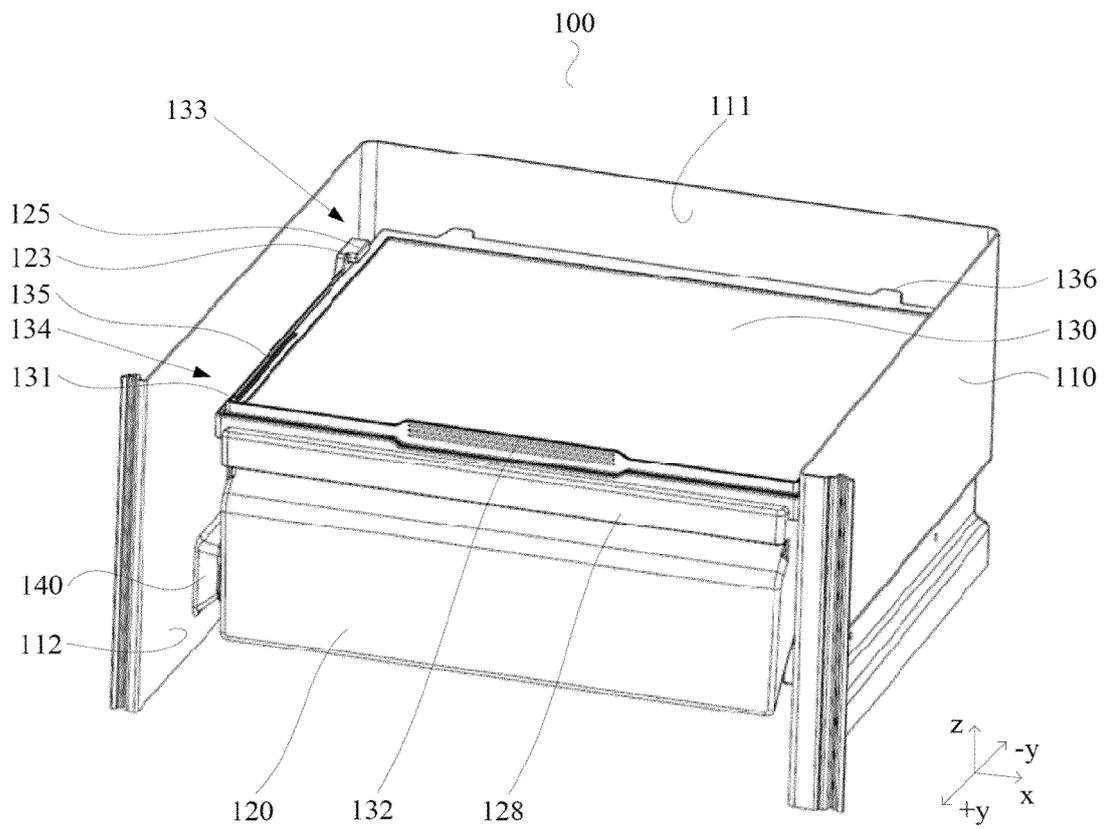


FIG. 1

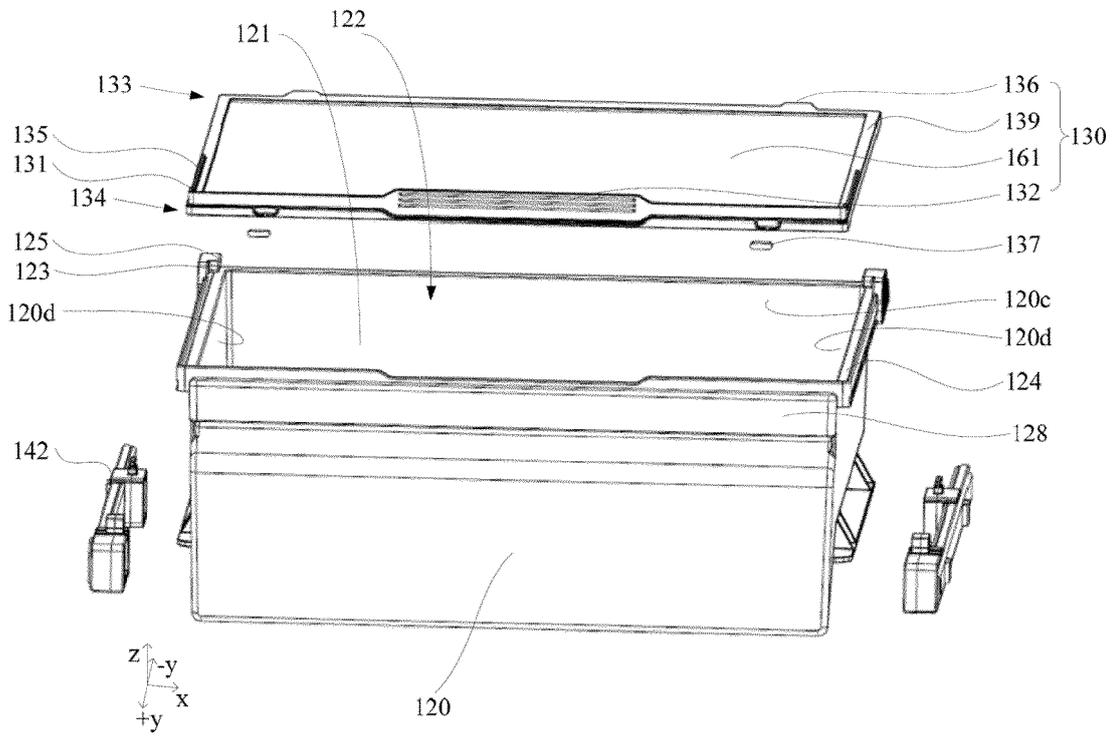


FIG. 2

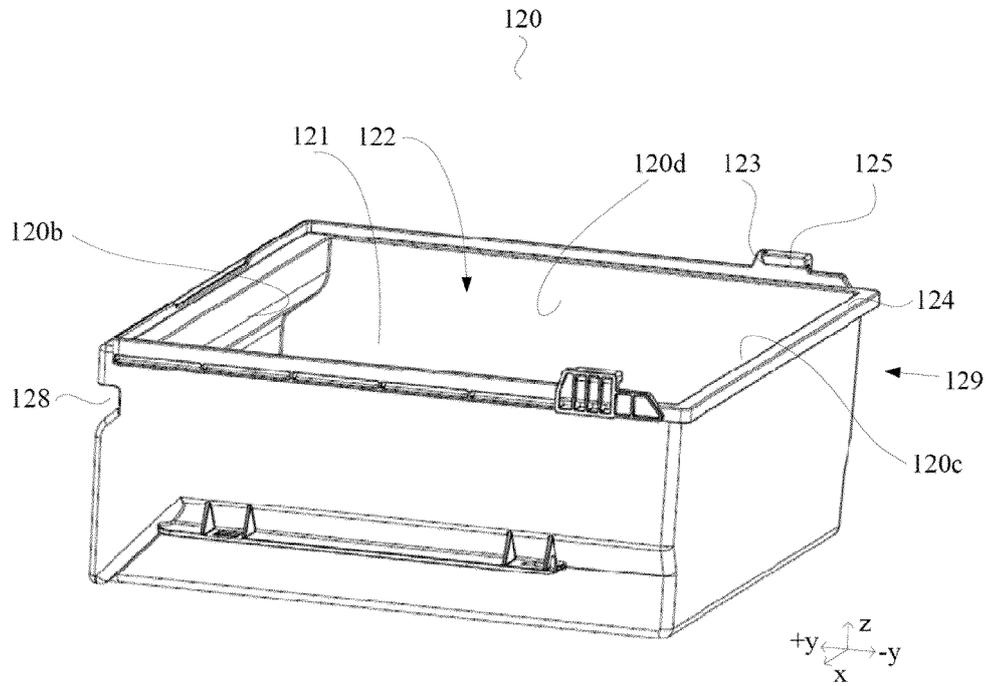


FIG. 3

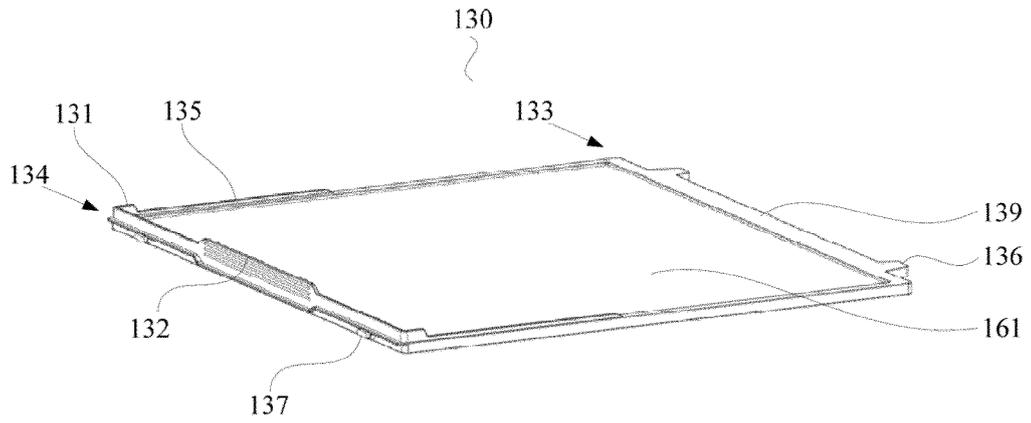


FIG. 4

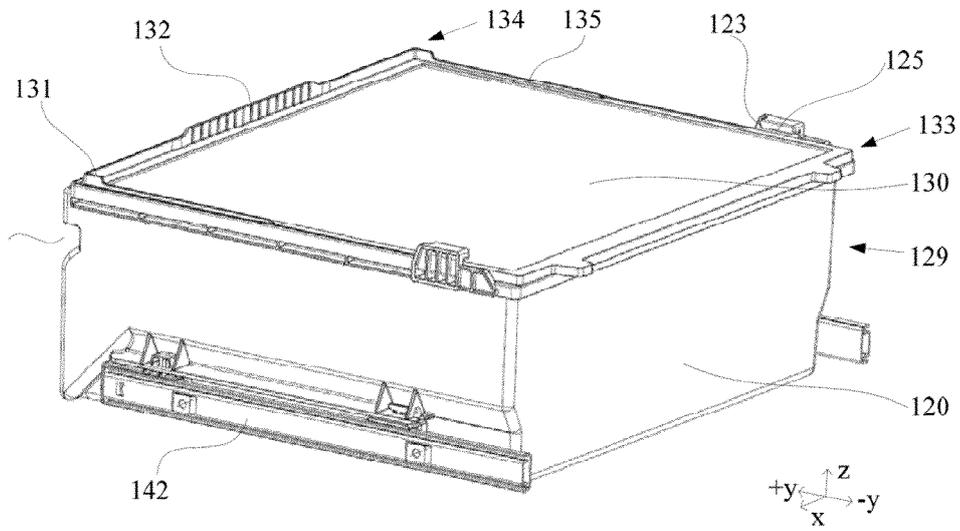


FIG. 5

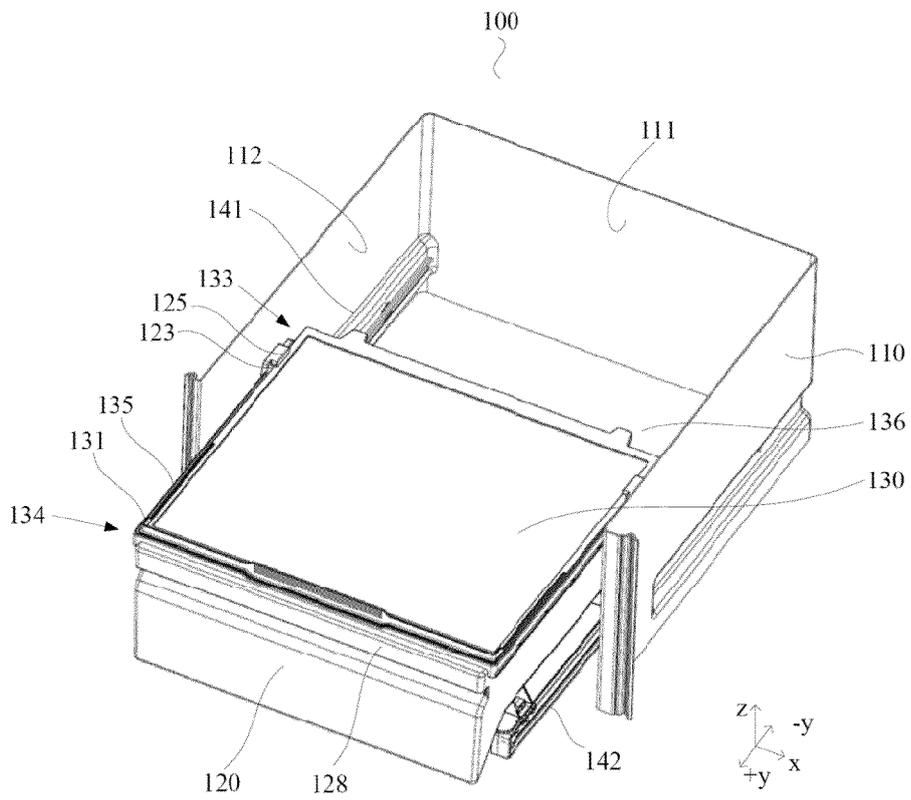


FIG. 6

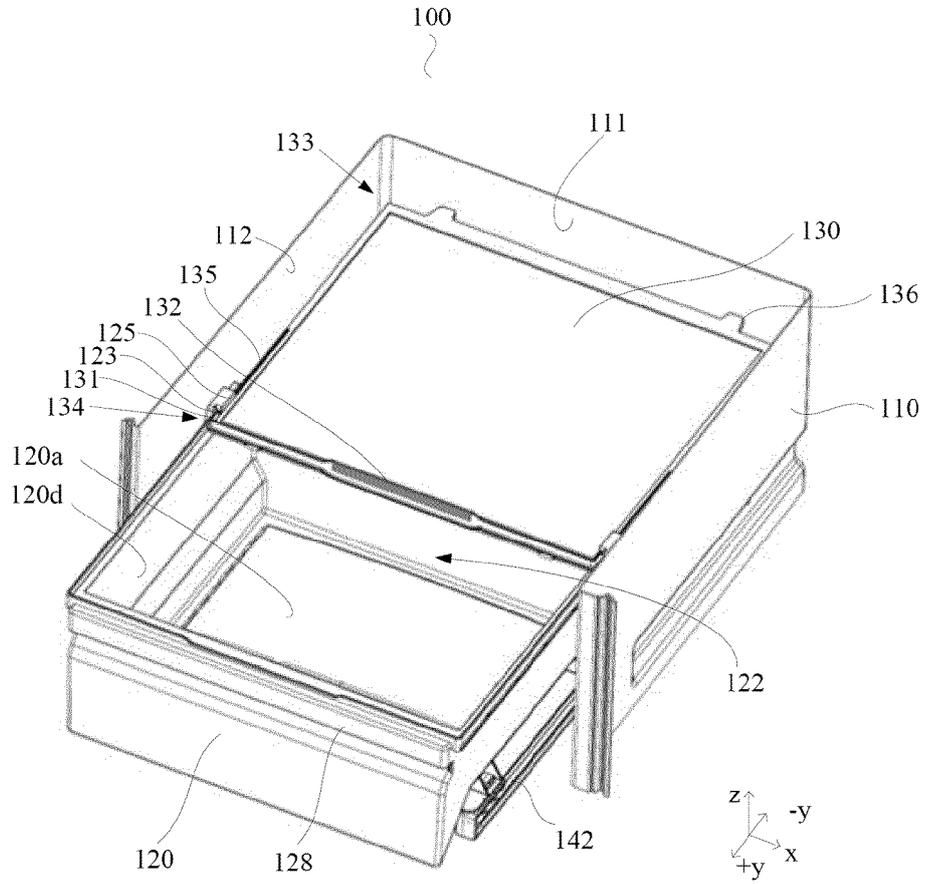


FIG. 7

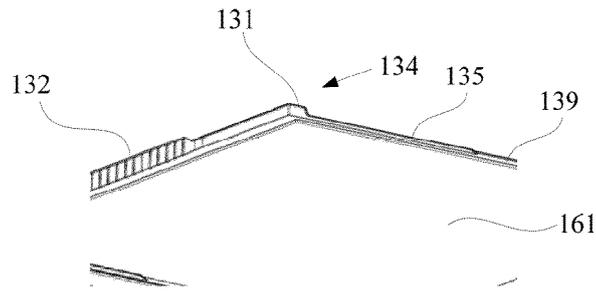


FIG. 8

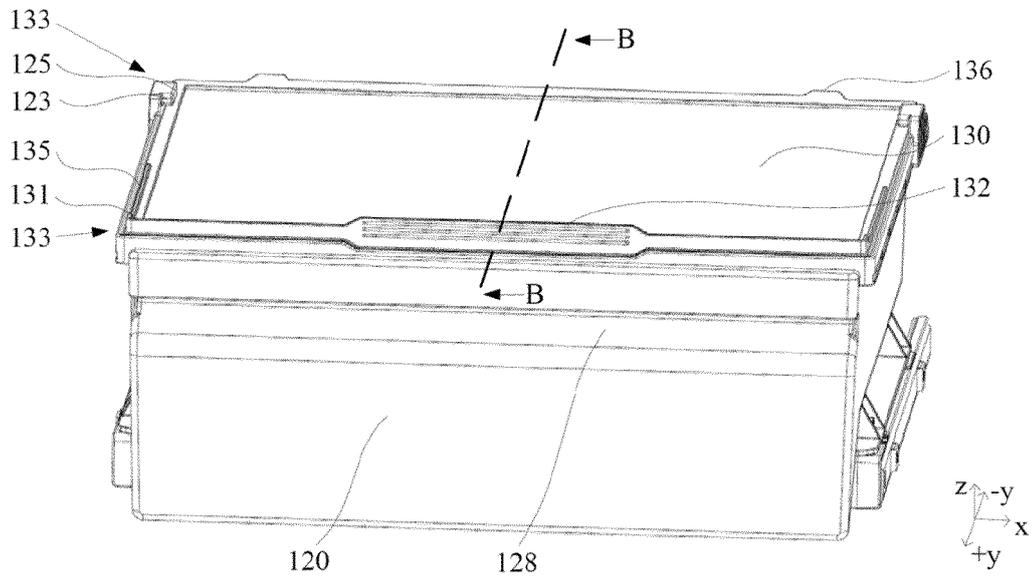


FIG. 11

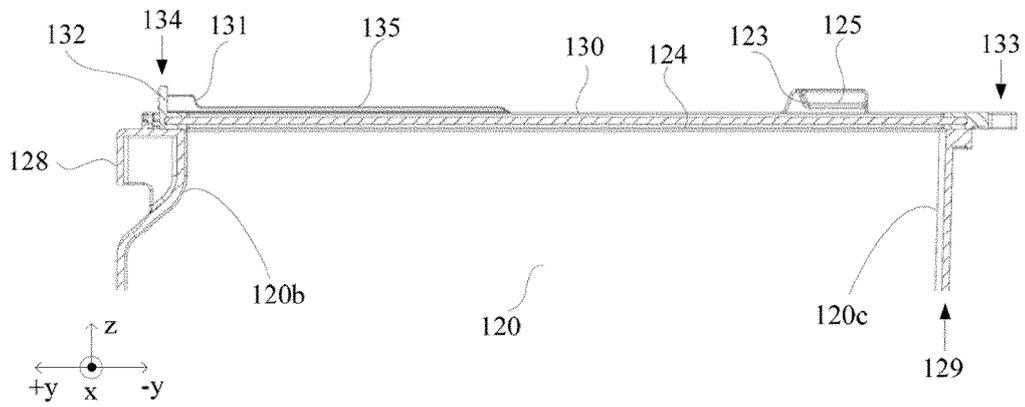


FIG. 12

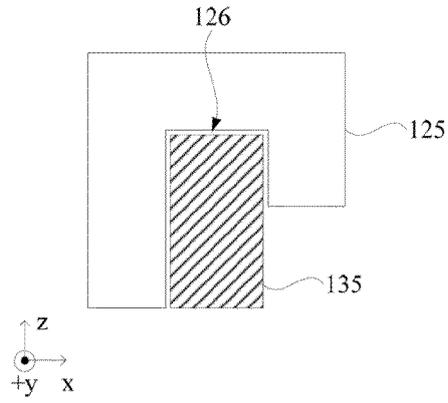


FIG. 13

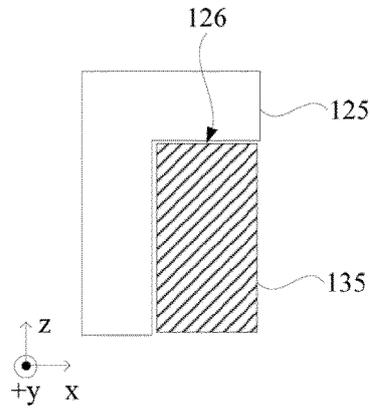


FIG. 14

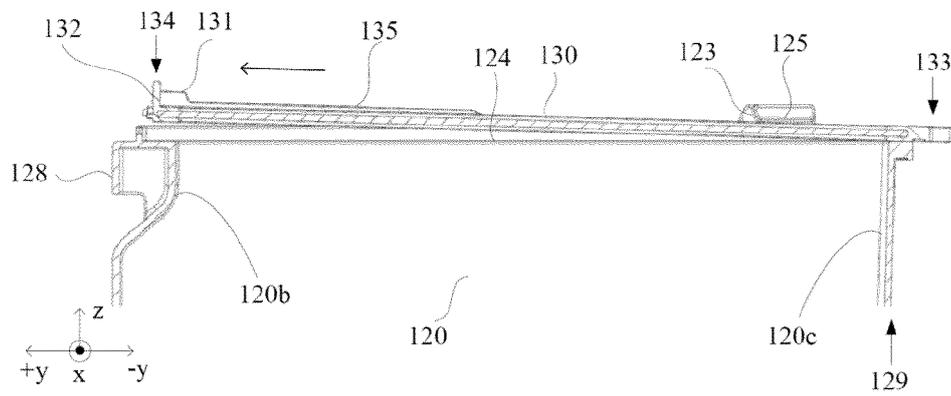


FIG. 15

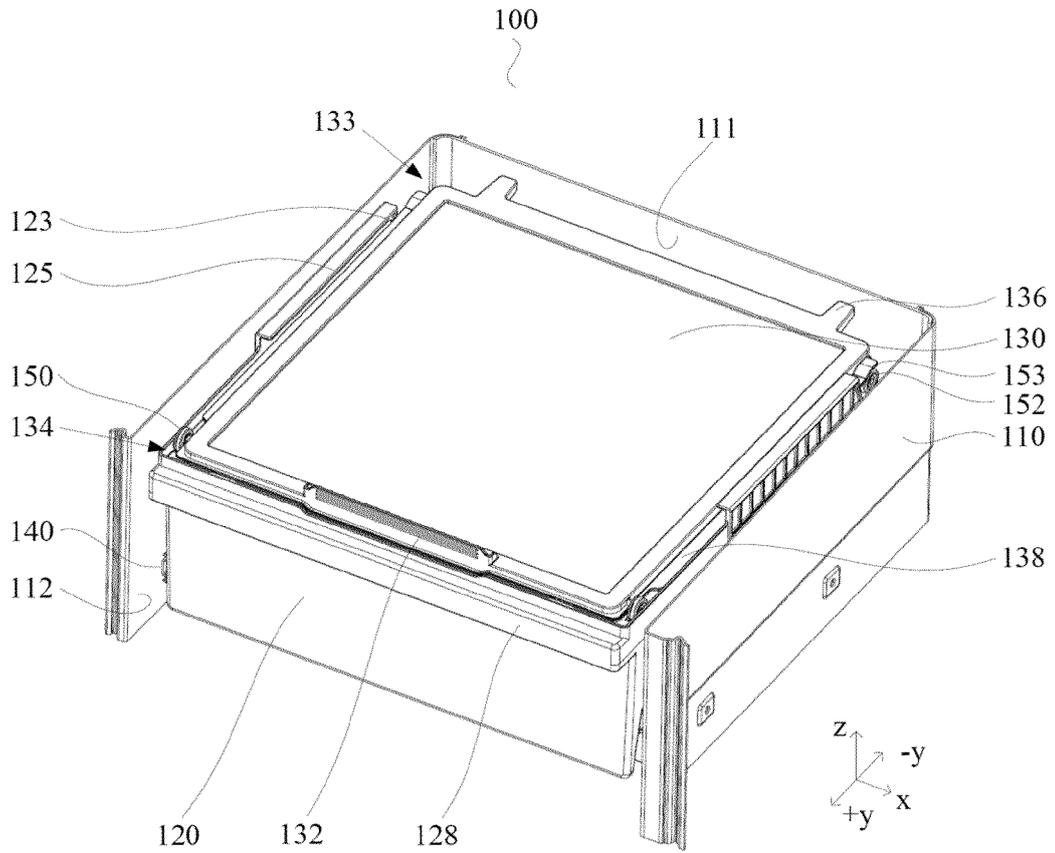


FIG. 16

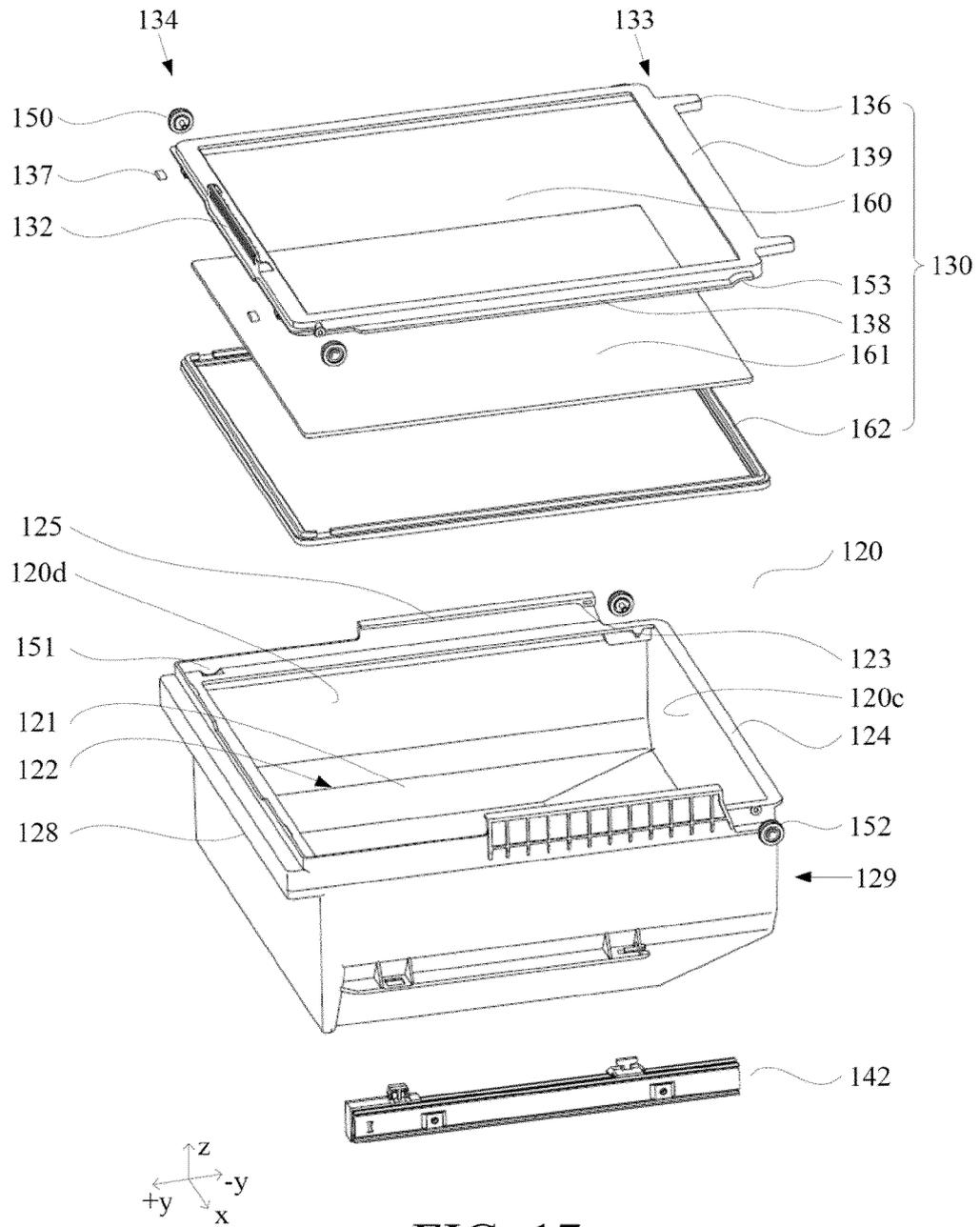


FIG. 17

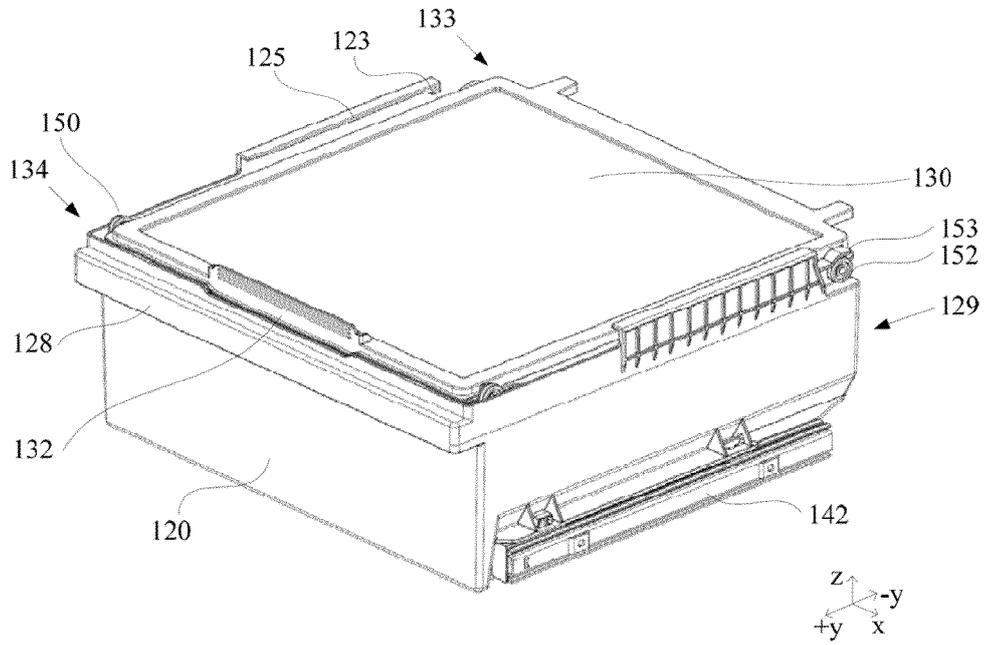


FIG. 18

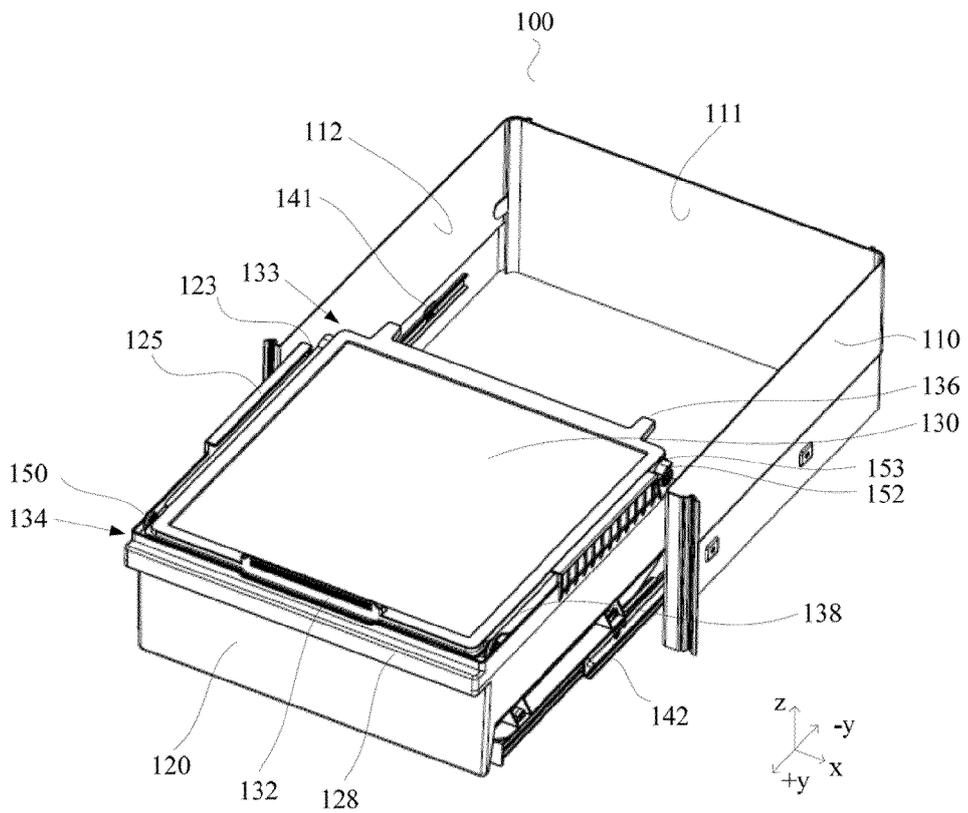


FIG. 19

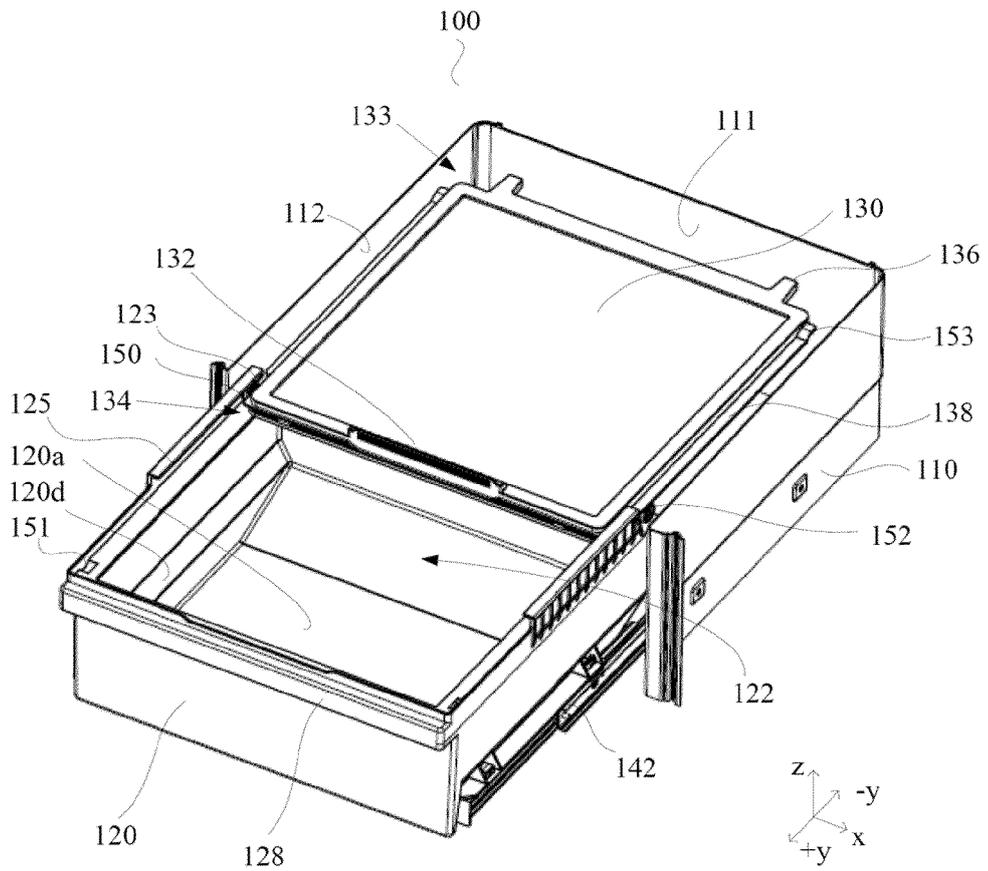


FIG. 20

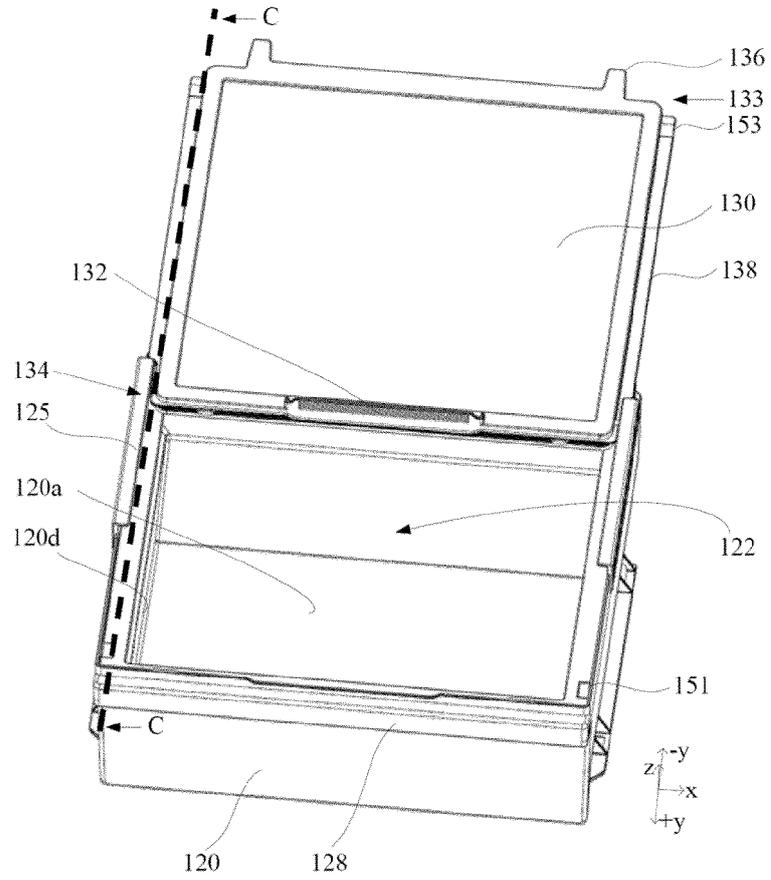


FIG. 22

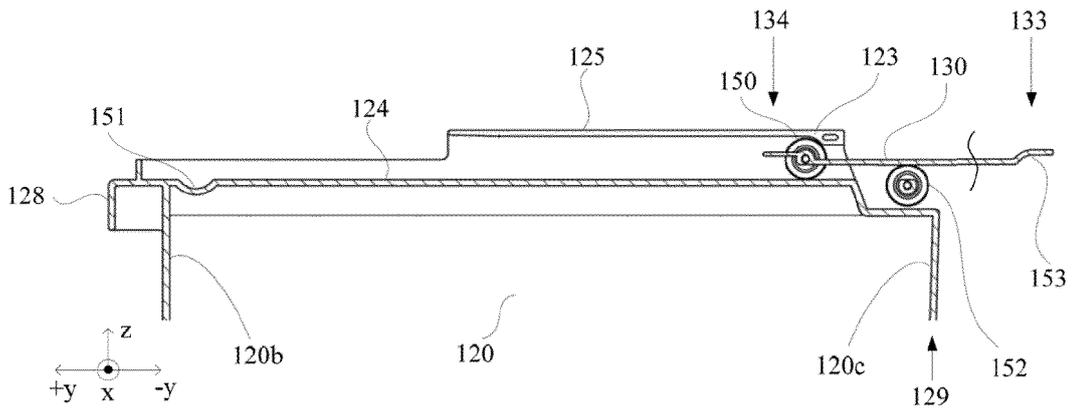


FIG. 23

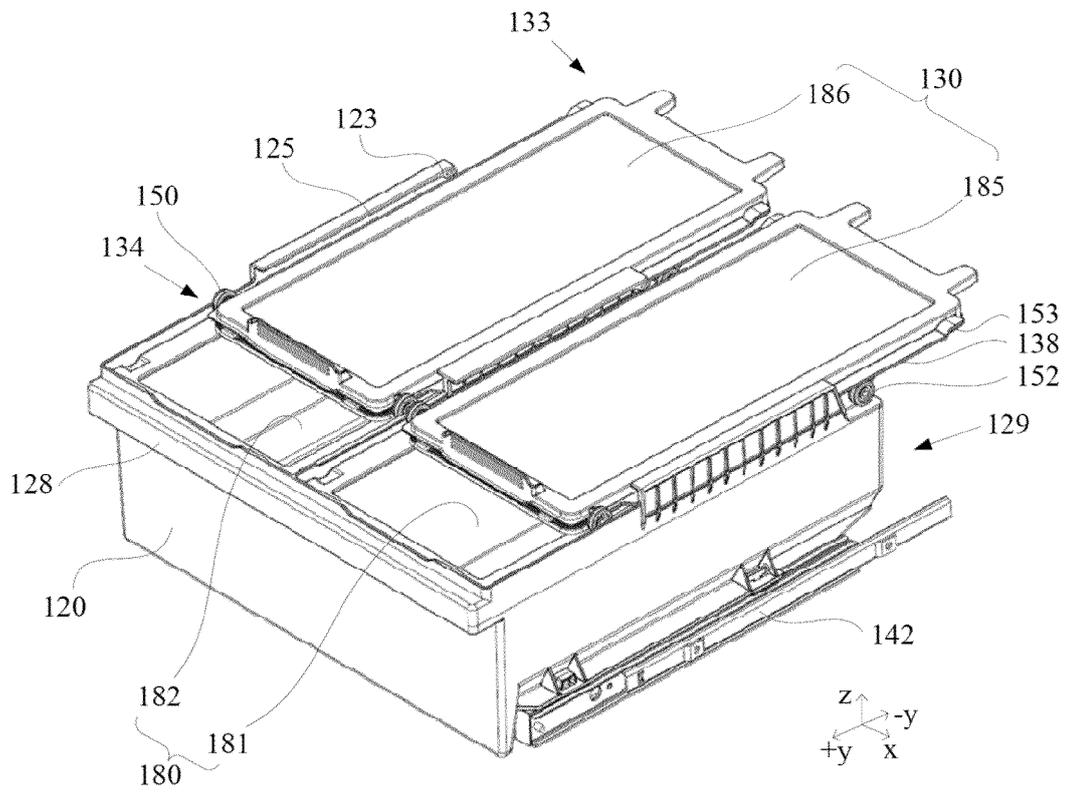


FIG. 26

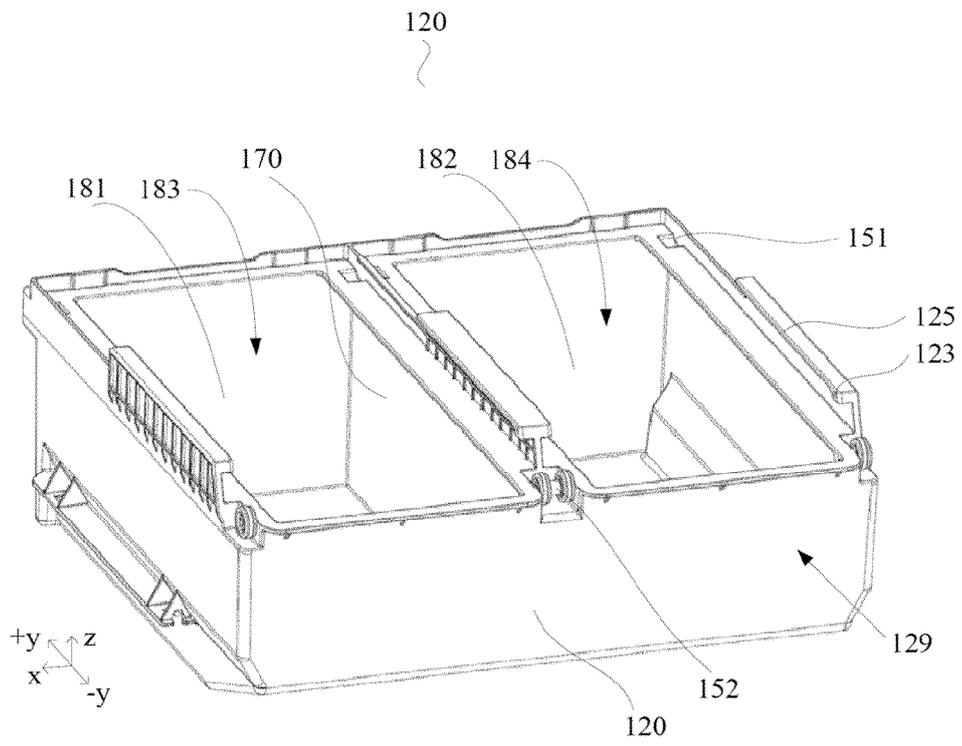


FIG. 27

REFERENCES CITED IN THE DESCRIPTION

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