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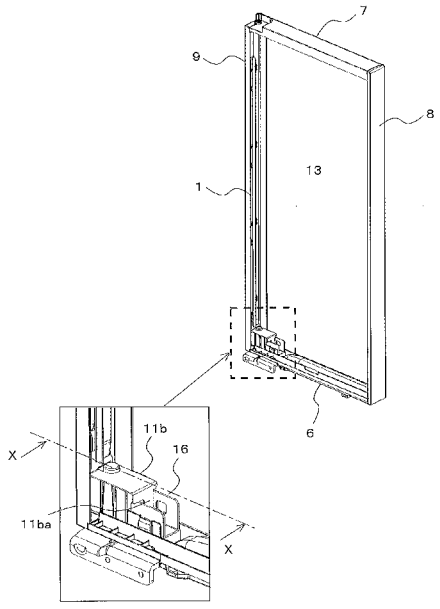
(54) **Title**: REFRIGERATOR

(54) 発明の名称 : 冷蔵庫



(57) **Abstract**: A refrigerator is provided with: a body (1) having a front face opening, a hinge provided on the side face side of the body (1); and a rotating door rotatably supported by the hinge and closing the front face opening in an openable manner. The rotating door is provided with an outer surface material (13) which forms the front surface of the rotating door and which is flat plate-shaped reinforced glass or resin; an inner surface material (14) which forms the rear surface of the rotating door; a heat insulating material poured between the outer surface material (14) and the inner surface material (13); a resinous, frame-shaped cap mounted to the four sides of the outer surface material (13) and the inner surface material (14); a metallic reinforcing material for reinforcing a side face of the frame-shaped cap; a hinge bearing part (12) rotatably supported by the hinge; and a metallic plate mounted to the upper surface of the lower side of the frame-shaped cap and affixing the hinge bearing part (12) to the frame-shaped cap. The reinforcing material is L-shaped. A first engagement section is formed at a longitudinal end of a short side of the reinforcing material. In a front view, the first engagement section is provided at a position at which the first engagement section overlaps the metallic plate. In a side view of the portion where the first engagement section and the metallic sheet overlap, either of the first engagement section and the metallic plate is gripped by the other.

(57) 要約:

[続葉有]

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冷蔵庫は、前面開口部を有する本体１と、本体１の側面側に設けられるヒンジと、ヒンジに軸支され前面開口部を開閉自在に閉塞する回転扉と、を備え、回転扉は、表面を構成する平板状の強化処理ガラスまたは樹脂である外面材１３と、裏面を構成する内面材１４と、外面材１４と内面材１３との間に充填される断熱材と、外面材１３および内面材１４の四辺に取り付けられる樹脂製の枠状キャップと、枠状キャップの側面を補強する金属製の補強材と、ヒンジに軸支されるヒンジ軸受部品１２と、枠状キャップの下辺の上側に取り付けられ、ヒンジ軸受部品１２を枠状キャップに固定する板金と、を備え、補強材はＬ形状を有し、その短辺の長手方向端部に第一引掛部が形成され、正面視して第一引掛部は板金とラップする位置に設けられ、ラップする位置を側面視した状態において、第一引掛部および板金のうち一方は他方に挟み込まれているものである。

DESCRIPTION

Title of Invention

REFRIGERATOR

Technical Field

[0001]

The present invention relates to a refrigerator, and particularly to a structure for inhibiting falling-off of a pivoting door that is disposed at a front opening and pivots on hinges.

Background Art

[0002]

A pivoting door provided at a front opening of a refrigerator uses a thin steel plate such as a printed steel plate or a laminated steel plate for an outer face member constituting door design. The pivoting door using the steel plate face member has a structure in which a flat steel plate has a substantially C-shape and is vertically sandwiched between steel reinforcing plates in side view (see, for example, Patent Literature 1).

The reinforcing plates have hinge engagement portions that rotatably support the pivoting door on hinges provided in the body of a refrigerator.

[0003]

In recent years, many outer face members constituting door design use reinforced glass, placing importance on the design. In a pivoting door using such a glass face member, the reinforced glass cannot be formed in a C-shape in side view unlike a steel plate. Thus, four sides of the flat-plate reinforced glass are surrounded in a frame shape with resin caps and the caps are bonded to the four sides of the reinforced glass by using an adhesive.

Then, hinge bearing members are fixed to the resin caps in such a manner that the hinge bearing members rotatably support the pivoting door on the hinges provided in the body of a refrigerator.

Citation List

Patent Literature

[0004]

Patent Literature 1: Japanese Unexamined Patent Application Publication No. 2002-213865

[0004A]

Reference to any prior art in the specification is not, and should not be taken as, an acknowledgment or any form of suggestion that this prior art forms part of the common general knowledge in any jurisdiction or that this prior art could reasonably be expected to be understood, regarded as relevant and/or combined with other pieces of prior art by a person skilled in the art.

Summary of Invention

[0004B]

As used herein, except where the context requires otherwise, the term "comprise" and variations of the term, such as "comprising", "comprises" and "comprised", are not intended to exclude further additives, components, integers or steps.

[0005]

In the pivoting door using a conventional glass plane material, although the glass is reinforced, the glass plane material is minutely cracked to be broken and damaged in some cases upon application of a strong impact to a certain degree or more. In addition, since a load is locally applied to a portion around the hinge bearing members, resin caps around this portion can be damaged because of, for example, aged deterioration, environmental resistance, problems in terms of strength, crazing, and heat cycle in some cases. If the pivoting door is opened or closed with a member of the pivoting door (e.g., the glass face material or the resin cap) being damaged, there has been a problem that the pivoting door might fall off from the body.

[0006]

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The present invention has been made in view of the foregoing problem. Disclosed within the following is a refrigerator that can inhibit a pivoting door from falling off even when the pivoting door is opened or closed with the member of the pivoting door being damaged.

[0007]

According to a first aspect of the invention there is provided a refrigerator comprising: a body having a front opening; a hinge provided on a side face of the body; and a pivoting door pivoted on the hinge and configured to cover the front opening in such a manner that the pivoting door freely opens or closes, wherein the pivoting door includes an outer face member that is a reinforced glass or a resin constituting a front face of the pivoting door and having a flat plate shape, an inner face member constituting a back face of the pivoting door, a heat insulator filling a gap between the outer face member and the inner face member, a frame-shaped cap made of a resin and attached to four sides of each of the outer face member and the inner face member, a reinforcing member made of a metal and reinforcing a side face of the frame-shaped cap, a hinge bearing member pivoted on the hinge, the hinge bearing member being housed in a hollow portion formed in an end of the lower side of the frame-shaped cap, and a sheet metal attached to an upper portion of a lower side of the frame-shaped cap, and fixing the hinge bearing member to the frame-shaped cap, the reinforcing member has an L shape and includes a first hook in a longitudinal end of a short side of the reinforcing member, the first hook is disposed at a location at which the first hook overlaps the sheet metal in front view, and one of the first hook and the sheet metal is held by the other of the first hook and the sheet metal in side view of the location at which the first hook overlaps the sheet metal, the short side and the first hook of the reinforcing member are disposed so as to cover the hollow portion.

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[0007A]

According to a second aspect of the invention there is provided a refrigerator comprising: a body having a front opening; a hinge provided on a side face of the body; and a pivoting door pivoted on the hinge and configured to cover the front opening in such a manner that the pivoting door freely opens or closes, the pivoting door including an outer face member that is a reinforced glass or a resin having a flat plate shape and constituting a front face of the pivoting door, an inner face member constituting a back face of the pivoting door, a heat insulator filling a gap between the outer face member and the inner face member, a frame-shaped cap made of a resin and attached to four sides of each of the outer face member and the inner face member, a reinforcing member made of a metal and reinforcing a side face of the frame-shaped cap, a hinge bearing member pivoted on the hinge, and a sheet metal attached to an upper portion of a lower side of the frame-shaped cap, and fixing the hinge bearing member to the frame-shaped cap, the reinforcing member having an L shape formed by a long side and a short side and including a first hook in a longitudinal end of the short side, the first hook being disposed at a location at which the first hook overlaps the sheet metal in front view, one of the first hook and the sheet metal being held by the other of the first hook and the sheet metal in side view of the location at which the first hook overlaps the sheet metal, the reinforcing member including a second hook in a lateral end of the short side.

[0008]

In a refrigerator disclosed within the following, even if a pivoting door is opened or closed with a member of the pivoting door being damaged, a hook of a reinforcing member comes into contact with a sheet metal and is hooked on the sheet metal when the pivoting door is falling off forward. Accordingly, falling off of the pivoting door can be inhibited.

Brief Description of Drawings

[0009]

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[Fig. 1] Fig. 1 is a perspective view for illustrating an entire refrigerator according to Embodiment 1 of the present invention.

[Fig. 2] Fig. 2 is a front view of the entire refrigerator according to Embodiment 1 of the present invention.

[Fig. 3] Fig. 3 is an enlarged view of a portion around an upper hinge illustrated in Fig. 2.

[Fig. 4] Fig. 4 is an enlarged view of a portion around a lower hinge illustrated in Fig. 2.

[Fig. 5] Fig. 5 is an exploded view of a pivoting door for use in the refrigerator according to Embodiment 1 of the present invention.

[Fig. 6] Fig. 6 is a perspective view of a second reinforcing member for use in the refrigerator according to Embodiment 1 of the present invention.

[Fig. 7] Fig. 7 is a vertical cross-sectional view of a portion around the pivoting door of the refrigerator according to Embodiment 1 of the present invention when viewed from a side surface.

[Fig. 8] Fig. 8 is a perspective view of the pivoting door of the refrigerator according to Embodiment 1 of the present invention.

[Fig. 9] Fig. 9 is a cross-sectional view taken along line X-X in Fig. 8.

[Fig. 10] Fig. 10 is a cross-sectional view taken along line Y-Y in Fig. 9.

[Fig. 11] Fig. 11 is a perspective view of a second reinforcing member for use in a refrigerator according to Embodiment 2 of the present invention.

Description of Embodiments

[0010]

Embodiments of the present invention will be described hereinafter with reference to the drawings. The present invention is not limited to Embodiments described below. In the drawings, size relationships among components may differ from those among actual components. The terms "top," "bottom," "left," and "right" below are directions when a refrigerator is viewed from the front thereof.

[0011]

Embodiment 1

Fig. 1 is a perspective view for illustrating an entire refrigerator according to Embodiment 1 of the present invention. Fig. 2 is a front view of the entire refrigerator according to Embodiment 1 of the present invention. Fig. 3 is an

enlarged view of a portion around an upper hinge 2 illustrated in Fig. 2. Fig. 4 is an enlarged view of a portion around a lower hinge 3 illustrated in Fig. 2.

Portions around the upper hinge 2 and the lower hinge 3 in Fig. 2, a portion around the upper hinge 2 in Fig. 3, and a portion around the lower hinge 3 in Fig. 4 are illustrated as being transparent.

[0012]

A body 1 constituting the refrigerator according to Embodiment 1 has an opening at the front thereof as illustrated in Figs. 1 and 2. Pivoting doors (a right pivoting door 4 and a left pivoting door 5) configured to cover the front opening are provided in such a manner that the pivoting doors freely open and close. As illustrated in Fig. 2, the body 1 includes the upper hinges 2 and the lower hinges 3 at upper and lower portions of left and right side faces. As illustrated in Fig. 3, the upper hinges 2 project downward. As illustrated in Fig. 4, the lower hinges 3 project upward. As illustrated in Figs. 1 and 2, the right pivoting door 4 is rotatably supported on the upper hinge 2 and the lower hinge 3 at the right, and the left pivoting door 5 is rotatably supported on the upper hinge 2 and the lower hinge 3 at the left.

[0013]

Fig. 5 is an exploded view of a pivoting door for use in the refrigerator according to Embodiment 1 of the present invention. Fig. 6 is a perspective view of a second reinforcing member 11 for use in the refrigerator according to Embodiment 1 of the present invention. Fig. 7 is a vertical cross-sectional view of a portion around the pivoting door of the refrigerator according to Embodiment 1 of the present invention when viewed from a side thereof.

Figs. 5 to 7 illustrate a structure of the right pivoting door 4. The left pivoting door 5 has a similar structure except that the left pivoting door 5 is left-right symmetric with the right pivoting door 4.

[0014]

As illustrated in Fig. 5, the pivoting door according to Embodiment 1 includes a lower cap 6, an upper cap 7, a left cap 8, a right cap 9, a first reinforcing member 10, a second reinforcing member 11, a hinge bearing member 12, an outer face member 13, an inner face member 14, an U-shaped sheet metal 16, and a hinge stopper 18.

[0015]

The lower cap 6, the upper cap 7, the left cap 8, and the right cap 9 are made of resin. Each of the lower cap 6 and the upper cap 7 has claw parts (not shown) at both lateral ends thereof. The left cap 8 and the right cap 9 have grooves (not shown) in the back surfaces in the longitudinal direction at locations opposed to the claw parts of the lower cap 6 and the upper cap 7 when connected. The claw parts of the lower cap 6 and the upper cap 7 are engaged with the grooves of the left cap 8 and the right cap 9 so that the upper cap 7, the lower cap 6, the right cap 9, and the left cap 8 are connected together to form a frame shape.

[0016]

The lower cap 6 includes, at an end thereof, a hollow portion 6a that projects upward, is open at the bottom, and is shaped to house the hinge bearing member 12. After the hinge bearing member 12 has been housed in the hollow portion 6a, the lower cap 6 and the hinge bearing member 12 are vertically sandwiched between the upper U-shaped sheet metal 16 and the lower hinge stopper 18. The U-shaped sheet metal 16 has both ends thereof bent in the same direction to have a substantially U-shape in side view. These members are fixed with a screw 15.

[0017]

The first reinforcing member 10 is a metal reinforcing member having a substantially C-shape in plan view. As illustrated in Fig. 6, the second reinforcing member 11 is a metal reinforcing member having a substantially L-shape in side view, and is constituted by connecting an end of a C-shaped

member 11a having a substantially C-shape in plan view and an end of an S-shaped member 11b having both ends thereof bent in opposite directions to have a substantially S-shape in side view. The S-shaped member 11b has a hook 11ba in a longitudinal end thereof. The first reinforcing member 10 is attached to the back surface of the left cap 8 to reinforce the left cap 8. The second reinforcing member 11 is attached to the back surface of the right cap 9 to reinforce the right cap 9.

[0018]

In Embodiment 1, the C-shaped member 11a and the S-shaped member 11b are connected to form the second reinforcing member 11. However, the present invention is not limited to this structure, and the second reinforcing member 11 may be an integrally formed member.

The second reinforcing member 11 corresponds to a "reinforcing member" of the present invention, the hook 11ba corresponds to a "first hook" of the present invention, and the S-shaped member 11b corresponds to the "short side and the first hook of the reinforcing member" of the present invention.

[0019]

Here, the frame shape having four sides is obtained by engaging the claw parts of the lower cap 6 and the upper cap 7 with the grooves of the left cap 8 and the right cap 9. At this time, the second reinforcing member 11 is disposed in such a manner that the S-shaped member 11b covers (the upper surface and the left side surface of) the hollow portion 6a of the lower cap 6. In Embodiment 1, the lower cap 6, the upper cap 7, the left cap 8, and the right cap 9 are connected together to form the frame-shaped cap. However, the present invention is not limited to this example, and the frame-shaped cap may be an integrally formed member.

[0020]

The caps connected in the frame shape are bonded to four sides of the outer face member 13 made of flat-shaped reinforced glass constituting a front

face of the pivoting door and four sides of the inner face member 14 made of flat-shaped resin constituting an inner face of the pivoting door with an adhesive (e.g., a double-sided tape or bond). In this bonding, space enclosed with the outer face member 13 and the inner face member 14 is filled with urethane foam 17 that is a heat insulator.

[0021]

In Embodiment 1, the outer face member 13 of the pivoting door is reinforced glass having a flat plate shape. However, the present invention is not limited thereto, and the outer face member 13 may be a resin having a flat plate shape.

The U-shaped sheet metal 16 corresponds to a "sheet metal" of the present invention, and the caps connected in a frame shape correspond to a "frame-shaped cap" of the present invention.

[0022]

The pivoting door assembled in the foregoing manner is rotatably supported on the lower hinges 3 provided in the body 1 by using the hinge bearing members 12, as illustrated in Fig. 7. The upper cap 7 has a hollow cylindrical support (not shown) that rotatably supports the pivoting door on the upper hinge 2.

Although the pivoting door freely opens and closes, when the pivoting door is being open to a certain angle or more, the hinge stopper 18 comes into contact with the lower hinge 3 to inhibit further opening.

[0023]

Fig. 8 is a perspective view of the pivoting door of the refrigerator according to Embodiment 1 of the present invention. Fig. 9 is a cross-sectional view taken along line X-X in Fig. 8. Fig. 10 is a cross-sectional view taken along line Y-Y in Fig. 9.

As illustrated in Figs. 8 to 10, the hook 11ba of the S-shaped member 11b of the second reinforcing member 11 attached to the back surface of the right cap

9 is provided at a position where the hook 11ba overlaps (laps over) the U-shaped sheet metal 16 when viewed from the front. In consideration of variations in assembly, an overlap width in a height (vertical) direction (A dimension) and an overlap width in a transverse (horizontal) direction (B dimension) in Fig. 9 are preferably as large as possible, and are such dimensions that ensure overlapping (lap) of the hook 11ba of the S-shaped member 11b with the U-shaped sheet metal 16. Note that the overlap width in the transverse (horizontal) direction (B dimension) does not need to be larger than a C dimension that is a length from one end of the U-shaped sheet metal 16 to the center thereof.

[0024]

When the inside of the pivoting door is filled with the urethane foam 17, the S-shaped member 11b of the second reinforcing member 11 is buried in the urethane foam 17. The S-shaped member 11b of the second reinforcing member 11 provides an anchor effect so that even when the right cap 9 is damaged because of, for example, aged deterioration, environmental resistance, problems in terms of strength, crazing, and heat cycle, the right cap 9 does not easily separate from the urethane foam 17, and thus, the strength in a direction indicated by arrow Z in Fig. 9 increases. The anchor effect can also be obtained in a similar manner by providing an S-shaped member near the upper hinge 2 of the right cap 9.

[0025]

As illustrated in Fig. 10, the hook 11ba of the S-shaped member 11b is sandwiched between both ends of the U-shaped sheet metal 16 directly or with a predetermined spacing. Specifically, the hook 11ba of the S-shaped member 11b of the second reinforcing member 11 is located inside the U-shaped sheet metal 16, and the hook 11ba overlaps (laps over) the U-shaped sheet metal 16. Accordingly, in a case in which reinforced glass constituting the outer face member 13 is broken, the hook 11ba of the S-shaped member 11b of the second

reinforcing member 11 comes into contact with the U-shaped sheet metal 16 and is hooked thereon when the pivoting door is falling off. Thus, the falling off of the pivoting door can be inhibited.

[0026]

In Embodiment 1, the U-shaped sheet metal 16 has a substantially U-shape in side view. However, the U-shaped sheet metal 16 is not limited to this shape. The U-shaped sheet metal 16 only needs to have such a shape that enables the hook 11ba of the S-shaped member 11b of the second reinforcing member 11 to come into contact with the U-shaped sheet metal 16 and to be hooked thereon at least when the pivoting door is falling off forward so that the falling off of the pivoting door can be inhibited.

[0027]

In Embodiment 1, the hook 11ba of the S-shaped member 11b is sandwiched between both ends of the U-shaped sheet metal 16 directly or with a predetermined spacing. However, it is sufficient that the hook 11ba and the U-shaped sheet metal 16 are engaged when the pivoting door is falling off so that the falling off of the pivoting door can be inhibited. A sheet metal may be sandwiched between hooks of the S-shaped member 11b.

[0028]

As described above, in the refrigerator according to Embodiment 1, the S-shaped member 11b of the second reinforcing member 11 is buried in the urethane foam 17, and the S-shaped member 11b of the second reinforcing member 11 provides an anchor effect. Thus, the right cap 9 does not easily separate from the urethane foam 17. In addition, the hook 11ba of the S-shaped member 11b of the second reinforcing member 11 is located inside the U-shaped sheet metal 16. Accordingly, even in a case in which the pivoting door is opened or closed with a member thereof being damaged, the hook 11ba of the S-shaped member 11b of the second reinforcing member 11 comes into contact

with the U-shaped sheet metal 16 and is hooked thereon when the pivoting door is falling off. In this manner, falling off of the pivoting door can be inhibited.

[0029]

Embodiment 2

Fig. 11 is a perspective view of a second reinforcing member 19 for use in a refrigerator according to Embodiment 2 of the present invention.

Embodiment 2 will now be described. Components already described in Embodiment 1 will not be described again, and same reference numerals refer to the same or equivalent components to those of Embodiment 1.

A second reinforcing member 19 according to Embodiment 2 is configured by connecting a C-shaped member 19a and an S-shaped member 19b to each other in a manner similar to Embodiment 1, but in addition to a hook 19ba formed at a longitudinal end of the S-shaped member 19b, a hook 19bb is provided at a lateral end of the S-shaped member 19b and has a hole 19bc formed at a center thereof. This hook 19bb increases adhesion between a right cap 9 and urethane foam 17 so that a structure having high resistance to separation can be obtained.

The hook 19bb corresponds to a "second hook" of the present invention.

[0030]

Note that an inner corner of a pivoting door, especially a hollow portion 6a of a lower cap 6, has a complicated shape so that a channel for the urethane foam 17 is narrow. Accordingly, in filling with the urethane foam 17, the hook 19bb of the S-shaped member 19b might inhibit a flow of the urethane foam 17. However, the hole 19bc formed in the hook 19bb can improve flowability.

The hook 19bb may be formed only at one lateral end of the S-shaped member 19b or each lateral end of the S-shaped member 19b. However, the configuration in which the hook 19bb is formed at each lateral end obtains a higher adhesion between the right cap 9 and the urethane foam 17, and thus, has higher resistance to separation.

[0031]

Embodiment 3

Embodiment 3 will now be described. Components already described in Embodiment 1 will not be described again, and same reference numerals refer to the same or equivalent components to those of Embodiment 1.

In Embodiment 3, a hard material such as a metal plate or a film having a strength substantially equal to or higher than that of a metal plate is bonded to a back surface of reinforced glass constituting an outer face member 13 of a pivoting door. This structure enables the metal plate or the film to come into contact with a U-shaped sheet metal 16 and be hooked thereon even when the reinforced glass is damaged. Thus, falling off of the pivoting door can be inhibited.

[0032]

Embodiment 4

Embodiment 4 will now be described. Components already described in Embodiment 1 will not be described again, and same reference numerals refer to the same or equivalent components to those of Embodiment 1.

In Embodiment 4, a material such as pressure sensitive paper that changes its color upon application of a pressure is bonded to a back surface of reinforced glass constituting an outer face member 13 of a pivoting door. In this structure, when the reinforced glass receives such a strong impact that causes cracks in the reinforced glass, the color of the impacted portion changes. Thus, countermeasures such as maintenance or exchange of pivoting doors can be taken promptly.

Reference Signs List

[0033]

1 body, 2 upper hinge, 3 lower hinge, 4 left pivoting door, 5 right pivoting door, 6 lower cap, 6a hollow portion, 7 upper cap, 8 left cap, 9 right cap, 10 first reinforcing member, 11 second reinforcing member, 11a C-shaped member, 11b

S-shaped member, 11ba hook, 12 hinge bearing members, 13 outer face member, 14 inner face member, 15 screw, 16 U-shaped sheet metal, 17 urethane foam, 18 hinge stopper, 19 second reinforcing member, 19a C-shaped member, 19b S-shaped member, 19ba hook, 19bb hook, 19bc hole

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CLAIMS

[Claim 1]

A refrigerator comprising:

a body having a front opening;

a hinge provided on a side face of the body; and

a pivoting door pivoted on the hinge and configured to cover the front opening in such a manner that the pivoting door freely opens or closes,

the pivoting door including

an outer face member that is a reinforced glass or a resin having a flat plate shape and constituting a front face of the pivoting door,

an inner face member constituting a back face of the pivoting door,

a heat insulator filling a gap between the outer face member and the inner face member,

a frame-shaped cap made of a resin and attached to four sides of each of the outer face member and the inner face member,

a reinforcing member made of a metal and reinforcing a side face of the frame-shaped cap,

a hinge bearing member pivoted on the hinge, the hinge bearing member being housed in a hollow portion formed in an end of the lower side of the frame-shaped cap, and

a sheet metal attached to an upper portion of a lower side of the frame-shaped cap, and fixing the hinge bearing member to the frame-shaped cap,

the reinforcing member having an L shape formed by a long side and a short side and including a first hook in a longitudinal end of the short side,

the first hook being disposed at a location at which the first hook overlaps the sheet metal in front view,

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one of the first hook and the sheet metal being held by the other of the first hook and the sheet metal in side view of the location at which the first hook overlaps the sheet metal,

the short side and the first hook of the reinforcing member are disposed so as to cover the hollow portion.

[Claim 2]

A refrigerator comprising:

a body having a front opening;

a hinge provided on a side face of the body; and

a pivoting door pivoted on the hinge and configured to cover the front opening in such a manner that the pivoting door freely opens or closes,

the pivoting door including

an outer face member that is a reinforced glass or a resin having a flat plate shape and constituting a front face of the pivoting door,

an inner face member constituting a back face of the pivoting door,

a heat insulator filling a gap between the outer face member and the inner face member,

a frame-shaped cap made of a resin and attached to four sides of each of the outer face member and the inner face member,

a reinforcing member made of a metal and reinforcing a side face of the frame-shaped cap,

a hinge bearing member pivoted on the hinge, and

a sheet metal attached to an upper portion of a lower side of the frame-shaped cap, and fixing the hinge bearing member to the frame-shaped cap,

the reinforcing member having an L shape formed by a long side and a short side and including a first hook in a longitudinal end of the short side,

the first hook being disposed at a location at which the first hook overlaps the sheet metal in front view,

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one of the first hook and the sheet metal being held by the other of the first hook and the sheet metal in side view of the location at which the first hook overlaps the sheet metal,

the reinforcing member including a second hook in a lateral end of the short side.

[Claim 3]

The refrigerator of claim 1 or 2, wherein

the sheet metal has a U-shape in the side view, and

the first hook is located between both ends of the sheet metal.

[Claim 4]

The refrigerator of claim 2, wherein the second hook has a hole.

[Claim 5]

The refrigerator of any one of claims 1 to 4, wherein a hard material is bonded to a back surface of the outer face member.

[Claim 6]

The refrigerator of any one of claims 1 to 5, wherein a material whose color changes upon application of a pressure is bonded to a back surface of the outer face member.

FIG. 1

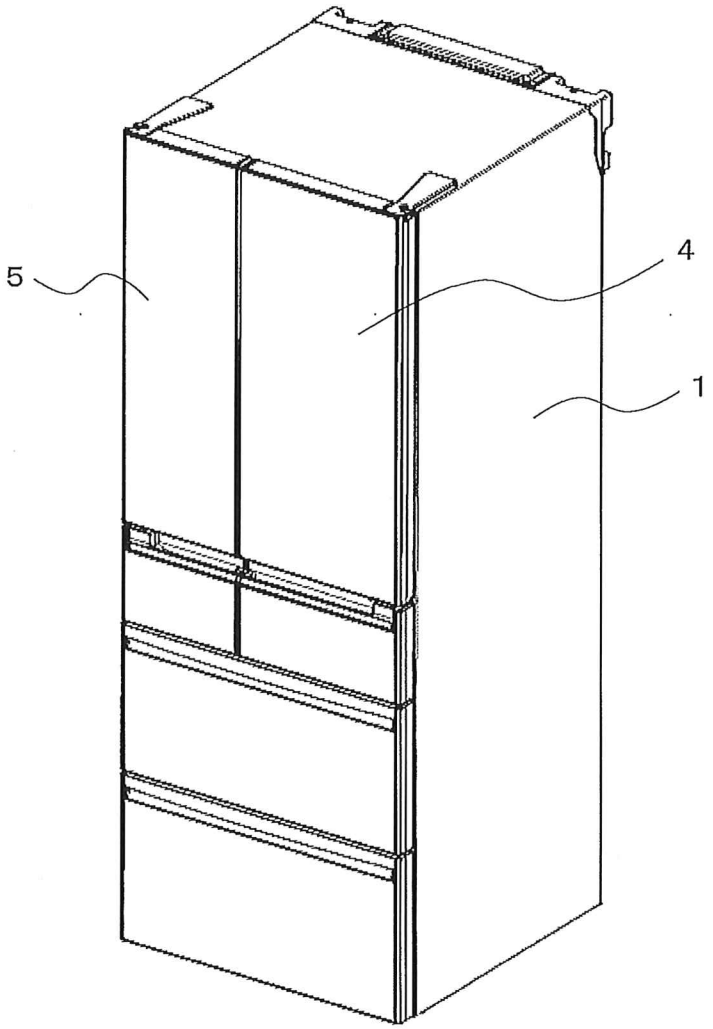

FIG. 2

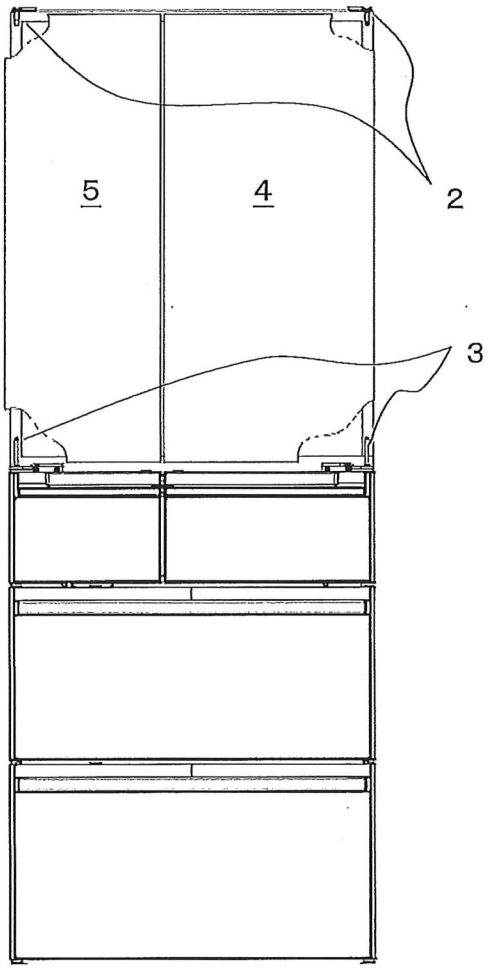

FIG. 3

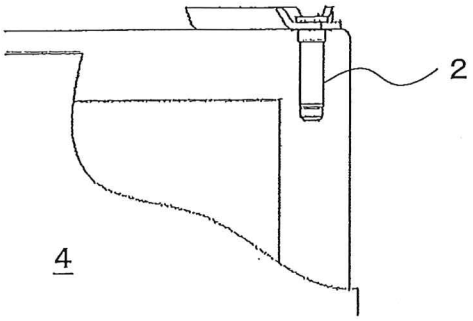

FIG. 4

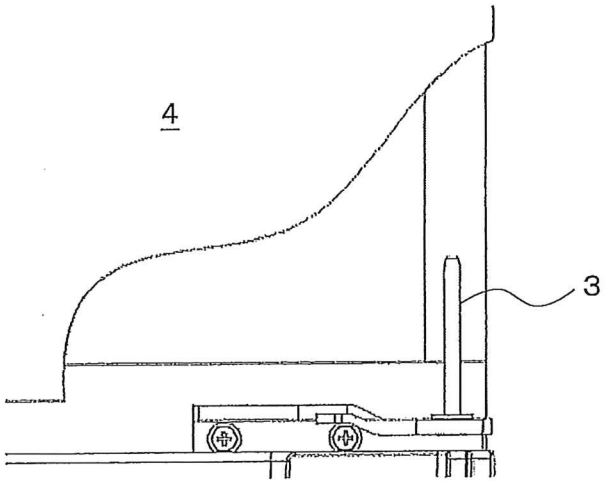

FIG. 5

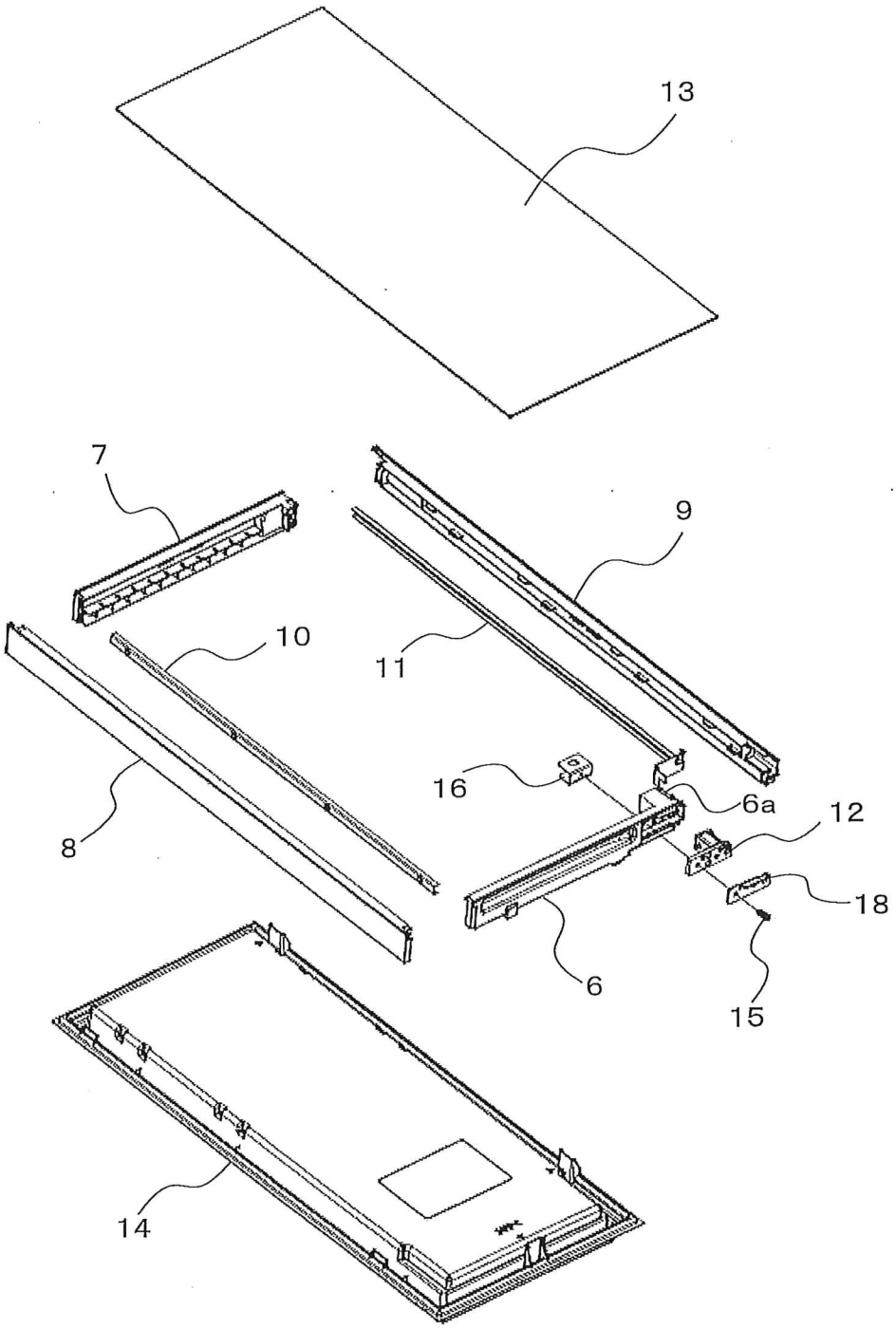

FIG. 6

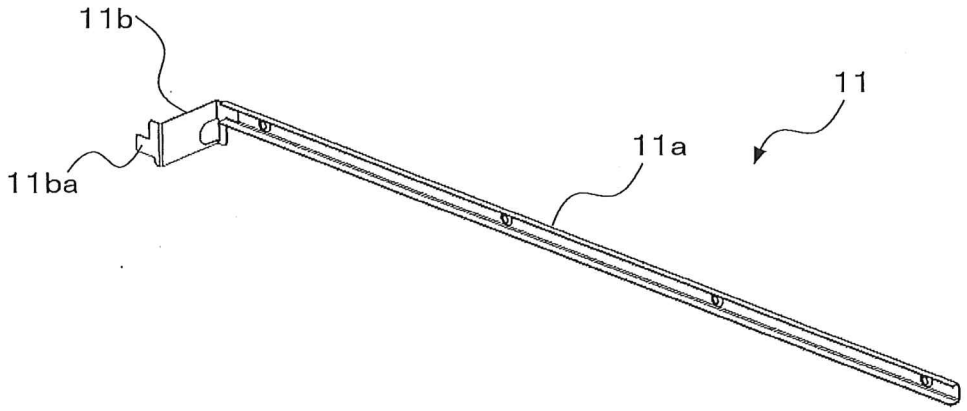

FIG. 7

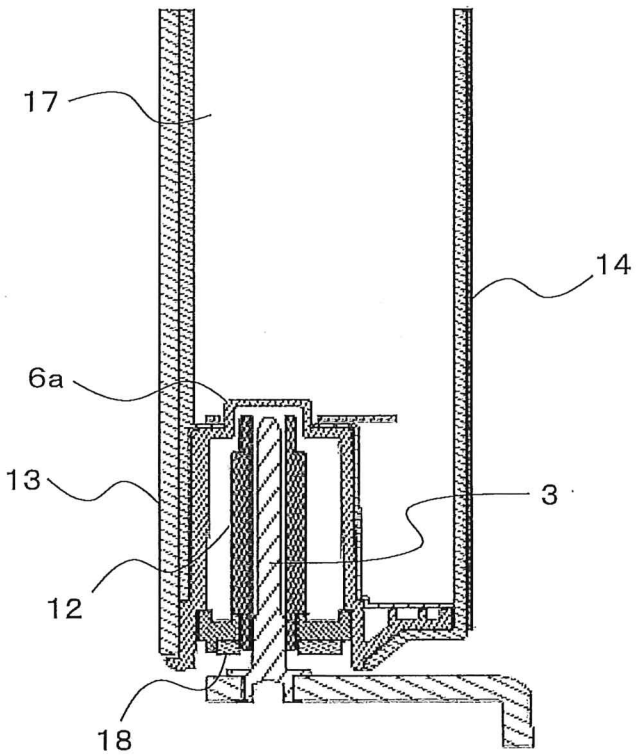

FIG. 8

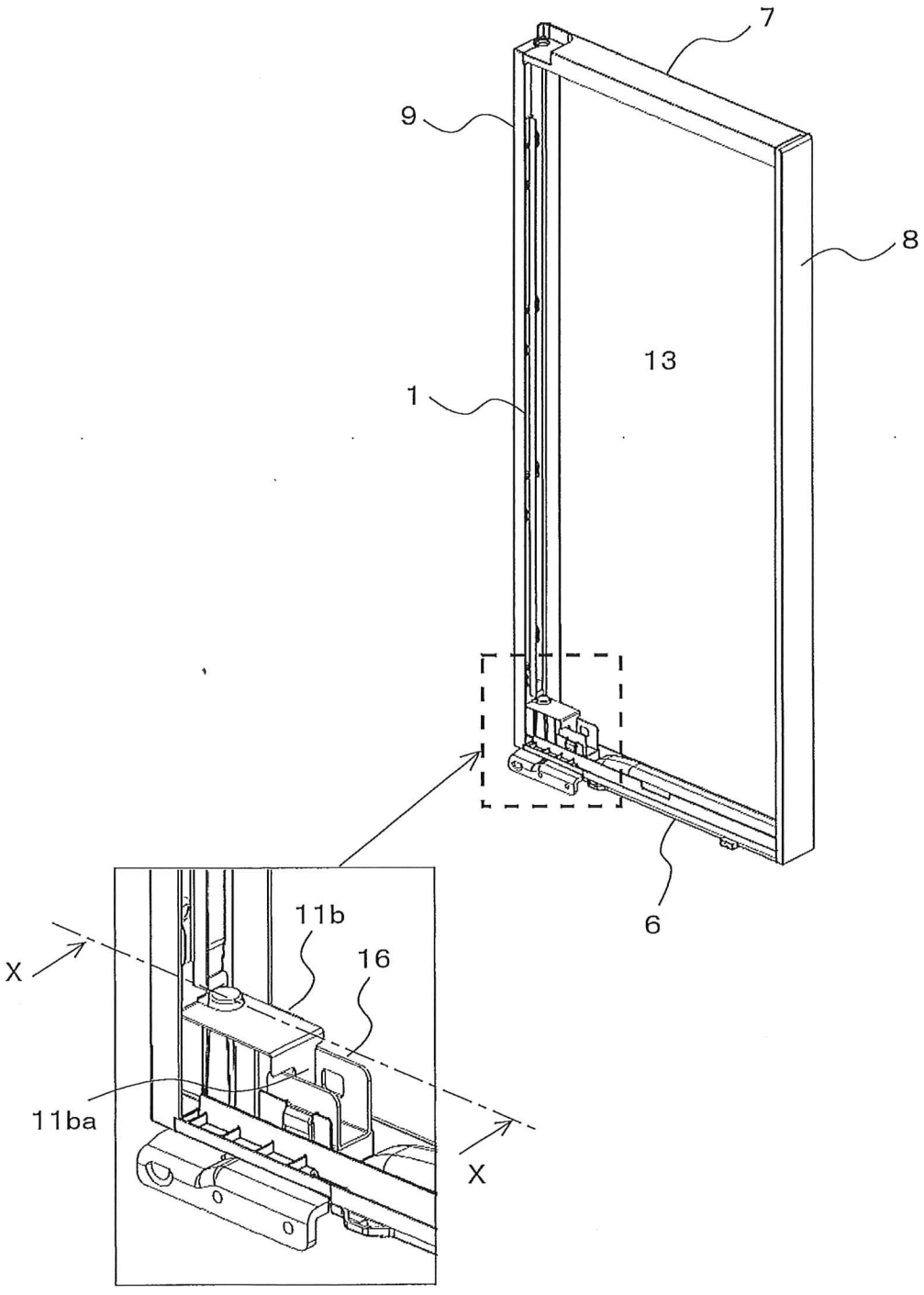

FIG. 9

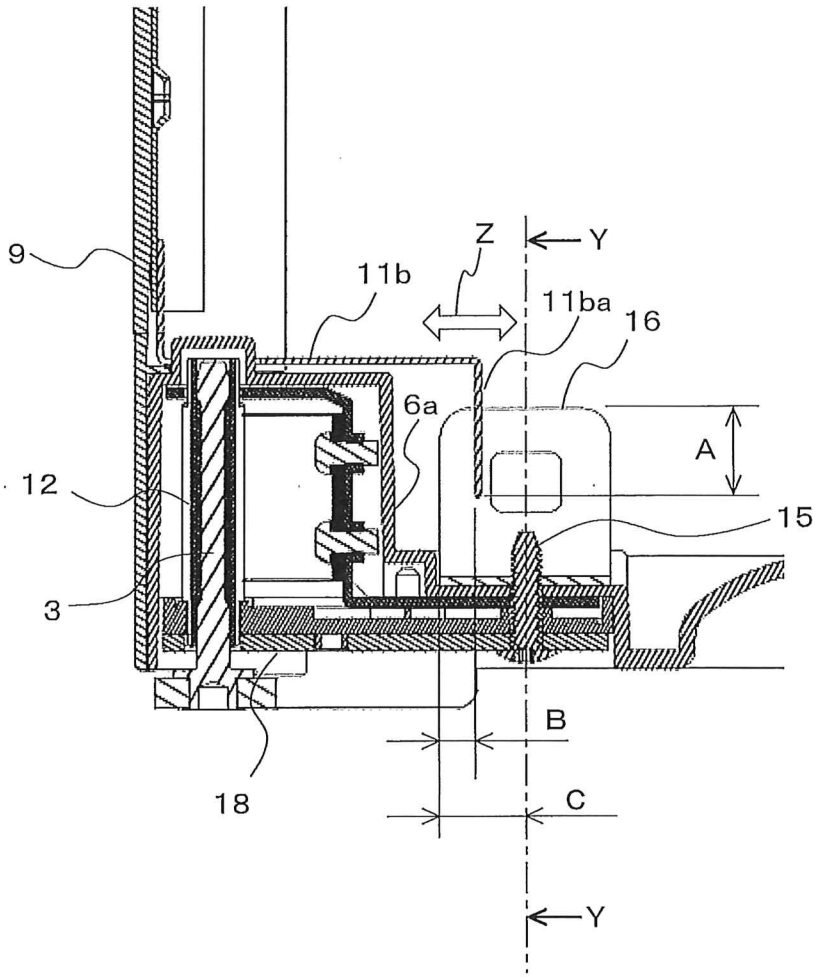

FIG. 10

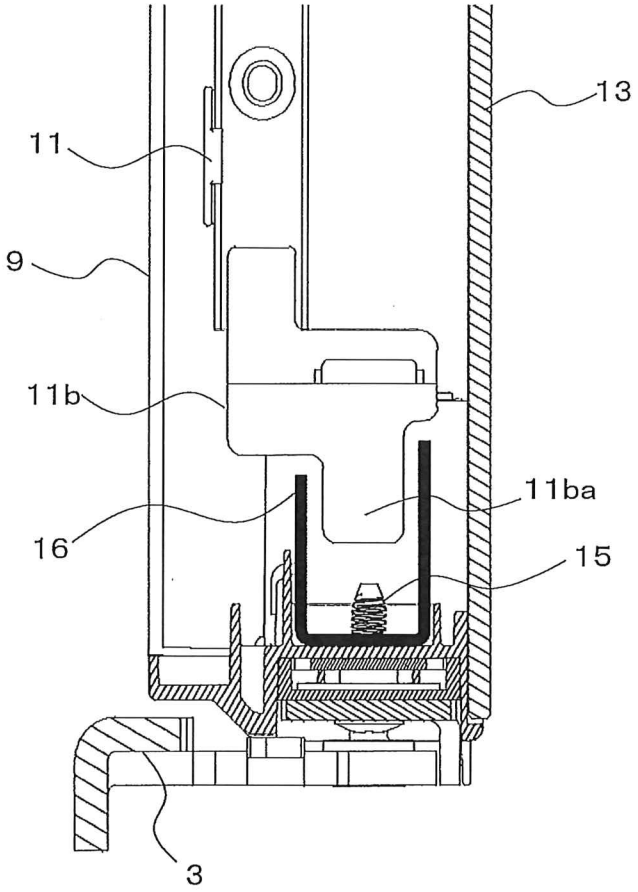

FIG. 11