CLAIMS

[Claim 1]

A refrigerator door comprising:

a door unit accommodating a vacuum thermal insulation between a door outer plate and an inner plate, the door unit being filled with a foam thermal insulation;

a frame attached to the inner plate of the door unit, the frame supporting the door unit such that the door unit is movable with respect to a refrigerator body;

a back panel provided inside the door unit, the back panel being secured to the inner plate;

a securing unit configured to secure the frame to the back panel through the inner plate; and

a protective member provided inside the door unit, the protective member being attached to the back panel and provided between the vacuum thermal insulation and the back panel,

the foam thermal insulation being filled into a gap defined between the protective member and the back panel.

[Claim 2]

The refrigerator door of claim 1,

wherein the protective member includes

a planar part provided at a predetermined spacing from the back panel, the planar part defining the gap between the back panel and itself,

a flange part provided to the planar part, and

a claw part provided to the flange part, the claw part being fitted to the back panel, and

wherein the planar part has

a one side being opposed to the back panel and a distal end side of the securing unit projecting toward inside the door unit, and

an other side being opposed to the vacuum thermal insulation.

[Claim 3]

The refrigerator door of claim 2, wherein the protective member includes

a cutout provided at a side edge of the planar part, and

an opening provided to at least one of an upper end side and a lower end side of the planar part.

[Claim 4]

The refrigerator door of claim 2 or 3, wherein the back panel includes at least one back panel flange part located opposite to the flange part of the protective member, the back panel being fitted with the claw part.

[Claim 5]

The refrigerator door of claim 4,

wherein the at least one back panel flange part includes a first back panel flange part and a second back panel flange part,

wherein the back panel includes

the first back panel flange part each provided at an upper end side and a lower end side of the back panel, and

the second back panel flange part each provided at a right end side and a left end side of the back panel, and

wherein the claw part of the protective member is fitted to the first back panel flange part or the second back panel flange part.

[Claim 6]

The refrigerator door of any one of claims 1 to 5,

wherein the back panel is secured by a back panel securing member, the back panel securing member being inserted into the inner plate of the door unit and fastened at a distal end side to the protective member,

wherein the inner plate of the door unit and the back panel each include a hole inserted by the back panel securing member, and

wherein the protective member includes a boss part to fasten the back panel securing member.

[Claim 7]

The refrigerator door of any one of claims 1 to 6, wherein the vacuum thermal insulation is accommodated in the door unit so as to be located at a front side of the protective member.

[Claim 8]

The refrigerator door of any one of claims 1 to 7,

wherein the door outer plate constitutes an outer shell on a front side of the door unit, and

wherein the inner plate constitutes an outer shell on an inside surface of the door unit.

[Claim 9]

The refrigerator door of any one of claims 1 to 8,

wherein the securing unit comprises a screw which secures the frame to the back panel through the inner plate.

[Claim 10]

A refrigerator comprising the refrigerator door of any one of claims 1 to 9.