casing is carried away when the casing is filled with the heat insulator and the heat insulator is foamed. The connection line may be fixed to an inner wall of the casing to reduce the occurrence of the case where the connection line is carried away. However, a fixing tool and a fixing operation are needed.

[0005]

The present disclosure has an object to provide a refrigerator having an advantageous effect to prevent a connection line from being carried away due to filling with and foaming of a heat insulator.

Solution to Problem

[0006]

A first refrigerator according to one aspect of the present disclosure includes a casing having a storage space inside to store a cooling target and having a top part above the storage space, an outer box that is a part of the casing and exposed to a space outside the casing, a cooling device configured to supply cooled air to the storage space, a controller configured to control the cooling device and fixed to the casing, a wireless communication device positioned at the top part of the casing and configured to communicate with an external device wirelessly, a fastener that fixes the wireless communication device to the outer box, and a connection line laid outside the casing and communicably connecting the wireless communication device and the controller, wherein the casing includes a heat insulator positioned closer to the storage space than to the outer box, wherein the top part of the casing has a top space between the outer box and the heat insulator, and wherein at least a part of the fastener is positioned at the top space.

[0007]

A second refrigerator according to one aspect of the present disclosure includes a casing having a storage space inside to store a cooling target, a cooling device configured to supply cooled air to the storage space, a controller configured to control the cooling device and fixed to the casing, a controller cover that covers the controller, a wireless communication device configured to communicate with an external device wirelessly, a fastener that fixes the wireless communication device to the controller cover, and a connection line laid outside the casing and communicably connecting the wireless communication device and the controller.

Advantageous Effects of Invention

[0008]

CLAIMS

[Claim 1]

A refrigerator comprising:

a casing having a storage space inside to store a cooling target and having a top part above the storage space;

an outer box that is a part of the casing and exposed to a space outside the casing;

a cooling device configured to supply cooled air to the storage space;

a controller configured to control the cooling device and fixed to the casing;

a wireless communication device positioned at the top part of the casing and configured to communicate with an external device wirelessly;

a fastener that fixes the wireless communication device to the outer box; and

a connection line laid outside the casing and communicably connecting the wireless communication device and the controller,

wherein the casing includes a heat insulator positioned closer to the storage space than to the outer box,

wherein the top part of the casing has a top space between the outer box and the heat insulator, and

wherein at least a part of the fastener is positioned at the top space.

[Claim 2]

The refrigerator of claim 1,

wherein the casing has an opening in front of the storage space, and

wherein the wireless communication device is fixed frontward of the controller on the casing.

[Claim 3]

The refrigerator of claim 1 or 2,

wherein the heat insulator includes a foamed heat insulator and a vacuum heat insulator,

wherein the vacuum heat insulator is positioned closer to the outer box than to the foamed heat insulator, and

wherein the top space is defined between the outer box and the vacuum heat insulator.

[Claim 4]

The refrigerator of any one of claims 1 to 3,

wherein the fastener is a screw, and

wherein a part of the screw is positioned at the top space.

[Claim 5]

The refrigerator of any one of claims 1 to 4,

wherein the outer box has a hole that allows the top space to communicate with a space outside of the casing,

wherein the fastener has a base positioned in the top space, and a fitting portion provided on the base and protruding toward the space outside the casing through the hole of the outer box, and

wherein the wireless communication device is fitted with the fitting portion.

[Claim 6]

The refrigerator of claim 5, wherein the base closes the hole of the outer box from a place near the storage space.

[Claim 7]

The refrigerator of any one of claims 1 to 6,

wherein the wireless communication device includes a wireless communication module configured to transmit and receive radio waves, and a wireless communication device cover that covers the wireless communication module,

wherein the refrigerator includes a controller cover that covers the controller, and

wherein the connection line is covered with the wireless communication device cover and the controller cover.

[Claim 8]

The refrigerator of claim 7,

wherein the controller cover defines a space that houses the controller,

wherein the wireless communication device cover has a cover portion defining a space that houses the wireless communication module, and an extended portion provided rearward of the cover portion and defining a space that communicates with a space defined by the cover portion,

wherein the controller cover and the wireless communication device cover have communication portions respectively that allow the space defined by the controller cover to communicate with the space defined by the extended portion, and

wherein the connection line is laid through the space defined by the communication portions and extended portion.

[Claim 9]

The refrigerator of any one of claims 1 to 8, wherein a vertical dimension of the top space is larger than a vertical dimension of a part of the fastener, the part being in the top space.