CLAIMS

[Claim 1]

A refrigerator, comprising:

a refrigerator compartment having a set temperature within a refrigerating temperature zone and configured to house a cooling target object;

a supercooling insulation compartment provided in the refrigerator compartment and configured to store a cooling target object at a temperature equal to or lower than a freezing temperature of the cooling target object;

a vegetable compartment provided below the refrigerator compartment and close to the supercooling insulation compartment and having a set temperature higher than the set temperature of the refrigerator compartment;

a boundary wall provided between the vegetable compartment and the supercooling insulation compartment; and

a heater installed at the boundary wall below the supercooling insulation compartment.

[Claim 2]

The refrigerator of claim 1, wherein

the refrigerator compartment includes

a top plate provided above the supercooling insulation compartment, and

a cold insulation compartment provided between the top plate and the supercooling insulation compartment and having a set temperature lower than the set temperature of the refrigerator compartment and higher than a set temperature of the supercooling insulation compartment,

a partition plate is provided between the supercooling insulation compartment and the cold insulation compartment, and

a chilling-compartment air inlet through which cool air in the cold insulation compartment flows toward the supercooling insulation compartment is formed in the partition plate.

[Claim 3]

The refrigerator of claim 2, wherein

a refrigerator-compartment air inlet through which cool air in the refrigerator compartment is sucked is formed in the boundary wall, and

at least a part of the chilling-compartment air inlet and at least a part of the refrigerator-compartment air inlet overlap with each other in plan view.

[Claim 4]

The refrigerator of claim 3, wherein

the cold insulation compartment comprises a first housing container having a box shape including a front wall, sidewalls, a back wall, and a top opening,

the supercooling insulation compartment comprises a second housing container having a box shape including a front wall, sidewalls, a back wall, and a top opening,

the chilling-compartment air inlet is formed between the back wall of the first housing container and an inner wall panel of the refrigerator compartment, the inner wall panel being disposed opposite to a door of the refrigerator compartment, and

the refrigerator-compartment air inlet is formed between the back wall of the second housing container and the inner wall panel.

[Claim 5]

The refrigerator of claim 4, wherein

in a portion facing the inner wall panel disposed opposite to the door of the refrigerator compartment, an air path for cool air is vertically provided,

an air outlet for cool air allowing the air path and the supercooling insulation compartment to communicate with each other is formed in the inner wall panel, and

a lower surface of the partition plate is in contact with an upper edge of the air outlet.

[Claim 6]

The refrigerator of any one of claims 1 to 5, wherein the boundary wall further houses a water supply tank for making ice.

[Claim 7]

The refrigerator of any one of claims 1 to 6, wherein the boundary wall is provided with a sidewall surrounding the heater and having a height higher than a

height of the heater.

[Claim 8]

The refrigerator of claim 5, further comprising a thermistor configured to measure the temperature of the supercooling insulation compartment, wherein the thermistor is installed between the back wall of the second housing container and the inner wall panel and installed at a level lower than a lower edge of the air outlet and equal to or higher than the back wall of the second housing container.

[Claim 9]

The refrigerator of claim 8, wherein the air outlet is formed between an installation position of the thermistor and the refrigerator-compartment air inlet.

[Claim 10]

The refrigerator of any one of claims 1 to 9, wherein the heater is configured to heat the cooling target object in the supercooling insulation compartment to prevent the cooling target object from being frozen.