CLAIMS

[Claim 1]

A refrigerator comprising:

a storage compartment;

an airflow path which communicates with the storage compartment;

a cooler which is provided in the airflow path, and is configured to cool air flowing in the airflow path;

a heater which is configured to heat the cooler with a first capacity which is heating capacity in a first frost formation state in which frost is deposited on the cooler and with a second capacity which is heating capacity in a second frost formation state in which less frost is deposited on the cooler than in the first frost formation state; and

a first temperature sensor which is configured to detect a temperature of the cooler,

wherein the heater is configured to heat the cooler with the second capacity when a detected value of the first temperature sensor is larger than a fourth determination value, and heat the cooler with the first capacity when the detected value of the first temperature sensor is the fourth determination value or less

wherein the second capacity is smaller than the first capacity.

[Claim 2]

The refrigerator of claim 1, wherein, in the second frost formation state,

the heating capacity of the heater is larger than the second capacity in a state in which a temperature of the cooler is lower than a prescribed value, and

the heating capacity of the heater becomes the second capacity after the temperature of the cooler increases to the prescribed value or more.

[Claim 3]

The refrigerator of claim 1 or 2, further comprising:

a first wiring portion which has a resistor;

a second wiring portion which has a lower resistance than a resistance of the first wiring portion, and is connected in parallel to the first wiring portion between the heater and a power source; and

a switch which is configured to switch between a closed circuit in which the power source, the first wiring portion, and the heater are connected, and a closed circuit in which the power source, the second wiring portion, and the heater are connected.

[Claim 4]

The refrigerator of claim 1 or 2, further comprising a switch which is configured to switch between a closed circuit in which a first power source and the heater are connected and a closed circuit in which a second power source which is configured to supply a different voltage from a voltage supplied by the first power source and the heater are connected.

[Claim 5]

The refrigerator of any one of claims 1 to 4, wherein the heater is configured to, at a start of a defrosting operation, heat the cooler with the second capacity when a value obtained by subtracting a detected value of the first temperature sensor before energization of the heater from a detected value of the first temperature sensor after a lapse of a prescribed time from the energization of the heater is larger than a first determination value, and

heat the cooler with the first capacity when the value is the first determination value or less.

[Claim 6]

The refrigerator of any one of claims 1 to 5, further comprising:

a door which is configured to openably-closably cover an opening portion of the storage compartment; and

a door opening-closing sensor which is configured to detect opening-closing of the door,

wherein the heater is configured to heat the cooler with the second capacity when an amount of frost formation on the cooler estimated based on time from a previous defrosting operation to a present defrosting operation and a frequency of opening-closing of the door during the time is a second determination value or less, and

wherein the heater is configured to heat the cooler with the first capacity when the amount of frost formation on the cooler is larger than the second determination value.

[Claim 7]

The refrigerator of any one of claims 1 to 6, further comprising:

a fan which is provided in the airflow path, and is configured to send air cooled by the cooler to the storage compartment; and

a sensor which is configured to detect a current value to be input into the fan or power consumption of the fan,

wherein the heater is configured to heat the cooler with the second capacity when a detected value of the sensor is a third determination value or less, and

wherein the heater is configured to heat the cooler with the first capacity when the detected value of the sensor is larger than the third determination value.

[Claim 8]

The refrigerator of any one of claims 1 to 7, further comprising a humidity sensor which is configured to detect humidity in the storage compartment,

wherein the heater is configured to heat the cooler with the second capacity when an integrated value of detected values of the humidity sensor from a previous defrosting operation to a present defrosting operation is a fifth determination value or less, and heat the cooler with the first capacity when the integrated value is larger than the fifth determination value.

[Claim 9]

The refrigerator of any one of claims 1 to 8,

wherein the heater includes a contact type heater which is provided in contact with the cooler,

wherein the refrigerator further comprises a second temperature sensor which is configured to detect a temperature of the contact type heater, and

wherein the contact type heater is configured to, at a start of the defrosting operation, heat the cooler with the second capacity when a value obtained by subtracting a detected value of the second temperature sensor before energization of

the contact type heater from a detected value of the second temperature sensor after a lapse of a prescribed time from the energization of the contact type heater is larger than a sixth determination value, and

heat the cooler with the first capacity when the value is the sixth determination value or less.

[Claim 10]

A refrigerator comprising:

a storage compartment;

an airflow path which communicates with the storage compartment;

a cooler which is provided in the airflow path, and is configured to cool air flowing in the airflow path;

a heater which is configured to heat the cooler with a first capacity which is heating capacity in a first frost formation state in which frost is deposited on the cooler and with a second capacity which is heating capacity in a second frost formation state in which less frost is deposited on the cooler than in the first frost formation state; and

a humidity sensor which is configured to detect humidity in the storage compartment,

wherein the heater is configured to heat the cooler with the second capacity when an integrated value of detected values of the humidity sensor from a previous defrosting operation to a present defrosting operation is a fifth determination value or less, and heat the cooler with the first capacity when the integrated value is larger than the fifth determination value, and

wherein the second capacity is smaller than the first capacity.

[Claim 11]

A refrigerator comprising:

a storage compartment;

an airflow path which communicates with the storage compartment;

a cooler which is provided in the airflow path, and is configured to cool air flowing in the airflow path;

a heater which is configured to heat the cooler with a first capacity which is

heating capacity in a first frost formation state in which frost is deposited on the cooler and with a second capacity which is heating capacity in a second frost formation state in which less frost is deposited on the cooler than in the first frost formation state; and

a second temperature sensor which is configured to detect a temperature of the heater,

wherein the heater includes a contact type heater which is provided in contact with the cooler,

wherein the contact type heater is configured to, at a start of the defrosting operation, heat the cooler with the second capacity when a value obtained by subtracting a detected value of the second temperature sensor before energization of the contact type heater from a detected value of the second temperature sensor after a lapse of a prescribed time from the energization of the contact type heater is larger than a sixth determination value, and

heat the cooler with the first capacity when the value is the sixth determination value or less, and

wherein the second capacity is smaller than the first capacity.