CLAIMS

[Claim 1]

A refrigerator, comprising:

a water tank placed in a refrigeration temperature zone;

an ice tray in which ice is produced;

a water supply pump configured to supply water in the water tank to the ice tray;

a weight detection unit configured to detect a value corresponding to a weight of the water tank; and

a control unit configured to acquire a detection value detected by the weight detection unit, to thereby control drive of the water supply pump,

the control unit being configured to

obtain a water supply stop threshold using the detection value by the weight detection unit before water supply and a water supply amount to the ice tray,

drive the water supply pump, and

stop the drive of the water supply pump when the detection value by the weight detection unit reaches the water supply stop threshold.

[Claim 2]

The refrigerator of claim 1, wherein the weight detection unit is configured to convert a force externally applied thereto to an electrical signal.

[Claim 3]

The refrigerator of claim 2,

wherein the weight detection unit is configured to output, as the detection value, a current value corresponding to a voltage applied by the control unit to the control unit, and

wherein the water supply stop threshold comprises the current value.

[Claim 4]

The refrigerator of any one of claims 1 to 3, wherein the control unit is configured to use, as the water supply amount to the ice tray, a set value indicating a change amount of the detection value by the weight detection unit.

[Claim 5]

The refrigerator of claim 4, wherein the control unit is configured to subtract the set value from the detection value by the weight detection unit before water supply to obtain the water supply stop threshold.

[Claim 6]

The refrigerator of any one of claims 1 to 3, further comprising a storage unit storing therein the water supply amount to the ice tray and table information in which the detection value by the weight detection unit and a water amount in the water tank are associated with each other,

wherein the control unit is configured to check the detection value by the weight detection unit against the table information to obtain the water amount in the water tank, to thereby obtain the water supply stop threshold based on a value obtained by subtracting the water supply amount to the ice tray in the storage unit from the water amount.

[Claim 7]

The refrigerator of claim 6, further comprising a notification unit configured to output various kinds of information,

wherein the control unit is configured to control the notification unit to output information on the water amount obtained by checking the detection value by the weight detection unit against the table information.

[Claim 8]

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

a notification unit configured to output various kinds of information; and

a storage unit storing therein table information in which the detection value by the weight detection unit and a water amount in the water tank are associated with each other,

wherein the control unit is configured to

check the detection value by the weight detection unit against the table information to obtain the water amount in the water tank, and

control the notification unit to output information on the obtained water amount.

[Claim 9]

The refrigerator of claim 7 or 8, further comprising a tank detection unit configured to detect whether or not the water tank is placed,

wherein the control unit is configured to control the notification unit to output information indicating a placement error of the water tank when a door of a compartment for storing the water tank is closed before the tank detection unit detects that the water tank is placed.

[Claim 10]

The refrigerator of any one of claims 1 to 9, wherein the water tank has a protruding portion that is provided on a bottom surface of the water tank, and comes into abutment against the weight detection unit.

[Claim 11]

The refrigerator of any one of claims 1 to 10, further comprising:

a tank floor portion for supporting the water tank; and

a separate floor member formed to be fitted into the tank floor portion,

wherein the weight detection unit is provided in the separate floor member.

[Claim 12]

The refrigerator of any one of claims 1 to 11, further comprising an operation unit including a water supply amount change button for changing setting of the water supply amount to the ice tray,

wherein the control unit is configured to adjust, when the operation unit receives operation input through the water supply amount change button, the water supply amount to the ice tray depending on a content of the input operation.

[Claim 13]

The refrigerator of claim 12, wherein the control unit is configured to receive operation for selecting and setting an ice size from a plurality of ice sizes through the water supply amount change button.

[Claim 14]

The refrigerator of any one of claims 1 to 11, further comprising an operation unit configured to receive setting of an ice size,

wherein the control unit is configured to adjust the water supply amount to the ice tray depending on the ice size set in the unit.

[Claim 15]

The refrigerator of any one of claims 12 to 14,

wherein the operation unit includes a correction button for calibration of the weight detection unit, and

wherein the control unit has a function of correcting an error generated in the detection value by the weight detection unit when the operation unit receives operation input through the correction button.