

CLAIMS

I/we claim:

1. A food vending machine, comprising:
 - a storage device configured to store at least one food item;
 - a movement device provided corresponding to the storage device and configured to fetch the at least one food item from the storage device and move the at least one food item;
 - a delivery device provided corresponding to the movement device and comprising at least one delivery portion comprising a placement board, wherein the movement device is configured to move and place the at least one food item on the placement board; and
 - a heating device comprising a steam portion, a hot water portion and at least one injection member, wherein the steam portion and the hot water portion are in communication with the at least one injection member being movably provided corresponding to the at least one delivery portion, and the steam portion and the hot water portion are configured to inject steam and hot water into the at least one food item on the placement board corresponding thereto through the at least one injection member so as to heat the at least one food item.
2. The food vending machine according to claim 1, wherein the steam portion and the hot water portion are configured to sequentially inject steam and hot water into the at least one food item on the placement board corresponding thereto so as to heat the at least one food item such that, when the at least one food item is located on the placement board, the at least one injection member moves and inserts into the at least one food item, the steam portion injects steam into the food item through the at least one injection member, and the hot water portion injects hot water into the at least one food item through the at least one injection member.
3. The food vending machine according to claim 2, further comprising:
 - a turn control module signally connected to the movement device, the delivery device and heating device, wherein the turn control module is configured to control the movement device such that the movement device sequentially moves a plurality of food items and in turns places the plurality of food items on the placement board, and the turn

control module is further configured to control the heating device such that the at least one injection member of the heating device in turns is moved to be corresponded to the plurality of food items so as to in turns heat the plurality of food items.

4. The food vending machine according to claim 1, wherein the movement device comprises a first movement portion provided corresponding to the storage device and a second movement portion provided corresponding to the first movement portion and the at least one delivery portion of the delivery device.

5. The food vending machine according to claim 4, wherein the first movement portion comprises a first fetching member and a first track such that the first fetching member is provided corresponding to the storage device and is movably provided on the first track, and the second movement device comprises a second fetching member and a second track such that the second fetching member is provided corresponding to the first fetching member and the at least one delivery portion of the delivery device and is movably provided on the second track.

6. The food vending machine according to claim 5, wherein the first fetching member is configured to fetch the at least one food item from the storage device and move the at least one food item from a position on the first track to another position, the second fetching member is configured to fetch the at least one food item from the first fetching member and move the at least one food item along the second track to a position corresponding to the at least one delivery portion, and the second fetching member places the at least one food item on the placement board of the at least one delivery portion.

7. The food vending machine according to claim 4, further comprising:

a first cabinet and a second cabinet provided adjacent to each other such that the storage device and the first movement portion are provided in the first cabinet, and the delivery device, the heating device and the second movement portion are provided in the second cabinet,

wherein the first track of the first movement portion extends to the second cabinet.

8. The food vending machine according to claim 1, wherein the at least one delivery portion comprises a door panel movably provided such that the door panel renders the at least one delivery portion to be closed relative to an exterior when the heating device performs

heating and the door panel moves to render the at least one delivery portion to be opened relative to the exterior when the heating device completes heating.

9. The food vending machine according to claim 8, wherein the placement board is movably provided at the at least one delivery portion such that the placement board moves out the at least one food item when the heating device completes heating.

10. The food vending machine according to claim 1, wherein the storage device comprises a plurality of carrier trays coaxially and rotatably provided on a rotating shaft, wherein each of the carrier trays is configured to hold a plurality of food items such that the plurality of food items is arranged around the rotating shaft as a center thereof.

11. The food vending machine according to claim 1, further comprising:

a vehicle platform configured to carry the storage device, the movement device, the delivery device, and the heating device and comprising a wheel portion configured to drive and move the vehicle platform; and

a vehicle housing provided on the vehicle platform to cover the storage device, the movement device and the delivery device with the at least one delivery portion being uncovered from the vehicle housing.

12. The food vending machine according to claim 11, further comprising:

a first display screen, wherein the first display screen and the at least one delivery portion are located on a side surface of the vehicle housing.

13. The food vending machine according to claim 12, further comprising:

a second display screen located on an obverse surface of the vehicle housing, wherein the side surface and the food vending machine surface of the vehicle housing are substantially perpendicular to each other.

14. The food vending machine according to claim 13, wherein the vehicle platform further comprises a vehicle light portion, and the vehicle light portion and the second display screen are located on the same surface.

15. The food vending machine according to claim 12, wherein the vehicle housing further comprises a sunshade provided in a collapsible manner on the side surface of the vehicle

housing, and the sunshade selectively shields the first display screen or has an included angle relative to the first display screen.

16. The food vending machine according to claim 12, further comprising:

an electronic money sensing device, located on the side surface of the vehicle housing.

17. The food vending machine according to claim 1, further comprises an energy conversion device, connecting to and providing energy to the food vending machine, wherein the energy conversion device comprises an energy control module, an energy storage module, an internal transmission line and an external transmission line, wherein the energy control module is electrically connected to the energy storage module, the internal transmission line connects the energy storage module to the heating device, the delivery device, the storage device and the movement device, and the external transmission line is connected to the energy storage module and is connected to an external energy source.

18. A food vending machine, comprising:

a storage device configured to store at least one food item;

a movement device provided corresponding to the storage device and configured to fetch the at least one food item from the storage device and move the at least one food item;

a delivery device provided corresponding to the movement device and comprising at least one placement device comprising a casing, wherein an interior of the casing is configured to place the at least one food item therein;

a heating device connected to the casing and configured to heat the at least one food item in the interior of the casing; and

an energy conversion device, connecting to and providing energy to the food vending machine, comprising an energy control module, an energy storage module, an internal transmission line and an external transmission line, wherein the energy control module is electrically connected to the energy storage module, the internal transmission line connects the energy storage module to the heating device, the delivery device, the storage device and the movement device, and the external transmission line is connected to the energy storage module and is connected to an external energy source.

19. The food vending machine according to claim 18, wherein the energy control module controls the energy storage module to transmit electric energy through the internal transmission line to the heating device, the delivery device, the storage device and the movement device.

20. The food vending machine according to claim 19, wherein the energy control module controls the energy storage module to receive the electric energy through the external transmission line and store the electric energy from the external energy source.

21. The food vending machine according to claim 20, wherein the energy control module controls the energy storage module to transmit the electric energy through the internal transmission line to the heating device, the delivery device, the storage device and the movement device, and to simultaneously receive the electric energy through the external transmission line and store the electric energy from the external energy source.

22. The food vending machine according to claim 20, wherein the energy control module controls the energy storage module to transmit the electric energy through the internal transmission line to the heating device, the delivery device, the storage device and the movement device, and to simultaneously receive the electric energy through the external transmission line and receive and transmit the electric energy from the external energy source to the heating device, the delivery device, the storage device and the movement device.

23. The food vending machine according to claim 18, wherein the energy conversion device further comprises a voltage conversion module electrically connected to the energy control module and the energy storage module.

24. The food vending machine according to claim 21, wherein after the voltage conversion module converts a first voltage of the electric energy of the external energy source to a second voltage, the energy control module controls the energy storage module to receive and store the electric energy having the second voltage.

25. The food vending machine according to claim 21, wherein after the voltage conversion module converts a third voltage of the electric energy of the energy storage module to a fourth voltage, the energy control module controls the energy storage module to transmit the electric energy having the fourth voltage to the heating device, the delivery device, the storage device and the movement device.

26. A food vending method, comprising the steps of:

storing at least one food item in a storage device;

fetching the at least one food item from the storage device and moving the at least one food item by a movement device provided corresponding to the storage device;

moving and placing the at least one food item on a placement board of at least one delivery portion of the delivery device provided corresponding to the movement device; and

injecting steam by a steam portion and injecting hot water by a hot water portion into the at least one food item on the placement board corresponding thereto through at least one injection member of a heating device so as to heat the at least one food item, wherein the steam portion and the hot water portion are in communication with the at least one injection member being movably provided corresponding to the at least one delivery portion.

27. The food vending method according to claim 26, wherein the step of injecting steam and hot water comprises a step of:

sequentially injecting steam and hot water into the at least one food item on the placement board corresponding thereto so as to heat the at least one food item such that, when the at least one food item is located on the placement board, the at least one injection member moves and inserts into the at least one food item, the steam portion injects steam into the food item through the at least one injection member, and the hot water portion injects hot water into the at least one food item through the at least one injection member.

28. The food vending method according to claim 27, wherein the step of sequentially injecting steam and hot water into the at least one food item comprises steps of:

controlling the movement device such that the movement device sequentially moves a plurality of food items and in turns places the plurality of food items on the placement board; and

controlling the heating device such that the at least one injection member of the heating device in turns moves and inserts into the plurality of food items so as to in turns heat the plurality of food items.

29. The food vending method according to claim 26, wherein the step of fetching the at least one food item from the storage device and moving the at least one food item comprises steps of:

using a first fetching member to fetch the at least one food item from the storage device and move the at least one food item from a position on a first track to another position;

using a second fetching member to fetch the at least one food item from the first fetching member and move the at least one food item along a second track to a position corresponding to the at least one delivery portion, and

using the second fetching member to place the at least one food item on the placement board of the at least one delivery portion,

wherein the first fetching member is provided corresponding to the storage device and is movably provided on the first track, and the second fetching member is provided corresponding to the first fetching member and the at least one delivery portion of the delivery device and is movably provided on the second track.

30. The food vending method according to claim 26, further comprising a step of:

rendering the at least one delivery portion to be closed relative to an exterior when heating is performed and rendering the at least one delivery portion to be opened relative to the exterior when heating is completed.

31. The food vending method according to claim 30, further comprising a step of:

moving out the at least one food item when heating is completed.