Claims

What is claimed is:

1. A box lunch vending machine, comprising a storage shelf comprising a central shaft and a plurality of supporting mechanisms, wherein the plurality of supporting mechanisms are axially spaced arranged along the central shaft; and each supporting mechanism comprises a supporting structure and a plurality of storage units that are arranged on the supporting structure, the supporting structure comprises a mounting seat, a plurality of connecting rods and a load bearing frame, the mounting seat is detachably sleeved on the central shaft, one end of each connecting rod is connected with the mounting seat while the other end is connected with the load bearing frame, the plurality of connecting rods are radially distributed by taking the central shaft as the center, and the storage units are detachably connected with the load bearing frame;

wherein the box lunch vending machine further comprises:

a box body provided with a plurality of exits, wherein the storage shelf is arranged in the box body;

a plurality of liquid guiding grooves arranged in the box body, wherein the liquid guiding grooves and the supporting mechanisms are arranged in one-to-one correspondence, and each of the liquid guiding grooves contains heat conducting medium used for heating the box lunches; a lifting device, which is used for driving the storage shelf to lift up and down, wherein each supporting mechanism carries box lunches to move down so that the box lunches are immersed into the liquid guiding grooves when the lifting device drives the storage shelf to lift down, and when the lifting device drives the storage shelf to lift up, each supporting mechanism carries the box lunches to move up so that the box lunches leave the liquid guiding grooves and face to the exits.

2. The box lunch vending machine of claim 1, wherein each storage unit comprises a plurality of mounting strips and a plurality of bearing strips, each bearing strip and each mounting strip are arranged to form an included angle, and the bearing strips and the mounting strips jointly form an accommodating part used for arranging to-be-sold goods.

3. The box lunch vending machine of claim 2, wherein each bearing strip comprises a main body, a first blocking part and a second blocking part, and the first blocking part and the second blocking part are bent and arranged at both ends of the main body.

4. The box lunch vending machine of claim 3, wherein each storage unit further comprises a

limiting strip and a cross rod, both ends of the cross rod are respectively connected with one of the mounting strips, the limiting strip comprises a connecting end and a free end which form an included angle, the connecting end is arranged on the cross rod, the free end is suspended above the main body, and when the goods is put on the accommodating part, the free end is propped against the upper surface of the goods.

5. The box lunch vending machine of claim 2, wherein each storage unit further comprises a reinforcing rod, each mounting strip comprises a hooked part and a supporting part that are in bent connection, and one end of the reinforcing rod is connected with the hooked part while the other end is connected with the supporting part.

6. The box lunch vending machine of claim 5, wherein the load bearing frame comprises a first supporting body, a second supporting body and a plurality of vertical rods, the vertical rods are arranged between the first supporting body and the second supporting body, a through hole is formed in each vertical rod, and the hooked part is inserted in the through hole.

7. The box lunch vending machine of any one of claims 1 to 6, wherein the lifting device comprises a first fixed plate, a movable plate, a second fixed plate, a plurality of supporting poles, a screw rod and a driving assembly, the first fixed plate is arranged at the box body, the plurality of supporting poles are arranged on the first fixed plate, the movable plate is sleeved on each supporting pole, the second fixed plate is connected with one end of each supporting pole away from the first fixed plate , the screw rod is rotationally connected with both the first fixed plate and the second fixed plate and is in threaded matching with the movable plate, the driving assembly is used for driving the screw rod to rotate so as to drive the movable plate to lift up and down along the supporting poles, the movable plate is connected with a lifting rod, and the lifting rod is connected with the storage shelf.

8. The box lunch vending machine of claim 7, wherein the lifting device further comprises a detecting assembly, the detecting assembly comprises two sensing elements and a detecting strip, the detecting strip is arranged on the movable plate, the two sensing elements are respectively arranged on the first fixed plate and the second fixed plate, and the detecting strip is capable of moving along with the movable plate and entering the detection regions of the sensing elements.