

Ultrasonic Microwave Thawing Equipment

The fresh fruit microwave thawing equipment relates to the technical field of thawing, in particular to a method for ultrasonic thawing equipment and a mechanical device for icing and defrosting.



Frozen yellow apricot/Frozen strawberry

The shortcomings of existing thawing equipment:

1. Air thawing: This method does not require special thawing equipment, but simply thaws the frozen food in the air at room temperature. Due to the air heat transfer coefficient is low, the heat conduction is slow and the thawing time is very long. Therefore, it is easy to cause bacteria to multiply and affect the quality of food.
2. Warm water thawing: This method also does not require special thawing equipment. It is only necessary to directly freeze the frozen food into a container containing warm water for thawing. Although this can shorten the thawing time, it will cause loss of protein and vitamins in food and accelerate the production of carcinogens such as propionaldehyde.
3. Circulating water thawing: To place the frozen food under the faucet or running water, the food is thawed with circulating normal temperature water, which can accelerate the heat transfer and shorten the thawing time. However, this method is to melt the ice from the surface and into the inside, the efficiency is still not enough, the nutrient solution in the food is lost and the water is wasted seriously.
4. Microwave thawing: the use of electromagnetic waves to make the polar molecules in the frozen food rotate rapidly, mutual vibration, friction, impact generate a lot of heat so that the frozen food can be heated from the inside to the outside, and the freezing time can be shortened very quickly. This high-temperature rapid thawing method causes the ice crystal melted water to lose the soluble components in the cells, causing a large loss of food flavor

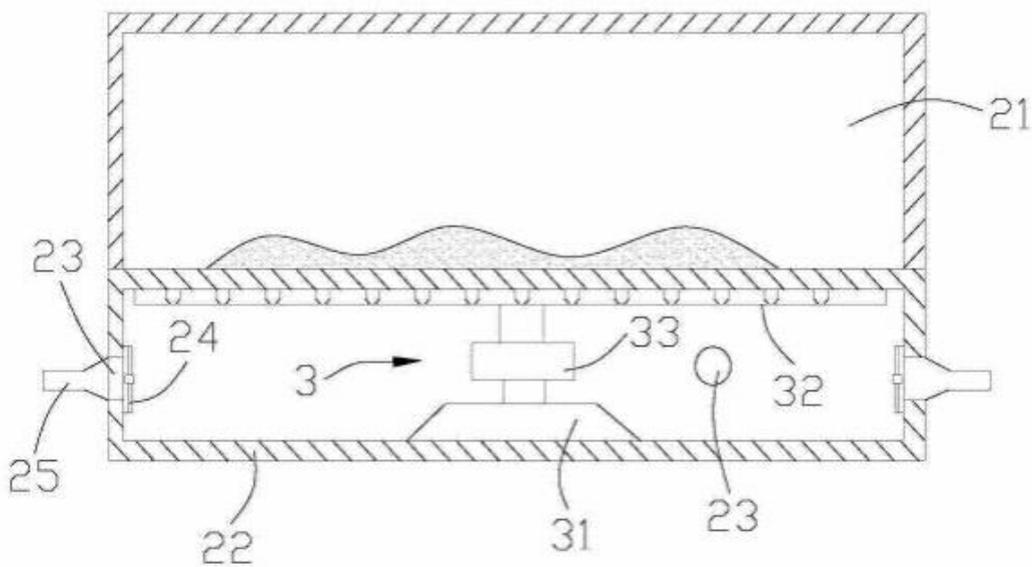
and nutrient solution and seriously degrading the food quality.

Advantages of ultrasonic microwave thawing equipment:

It can ensure that the nutrients of the food are not lost and the thawing time is short. In a freezing environment, the ice on the frozen food is shattered by the vibration of the ultrasonic wave in an environment where the temperature is lower than TC. In this process, on the one hand, due to the low temperature, the frozen ice will not melt into water, which can avoid the loss of nutrients in the food with water, thereby ensuring the original taste of the food and good taste; On the other hand, after the ice is shattered by the high-frequency vibration of the ultrasonic wave, the ice is quickly formed, even with a snowflake-like shoulder. Therefore, the force attached to the food is small and it is easy to get rid of the food, thereby achieving the purpose of rapid thawing and improving the efficiency of understanding the freezing.



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Structure Figure

The structure of the ultrasonic microwave thawing equipment:

The ultrasonic microwave thawing equipment comprises a body 1 and a freezing zone 2 disposed on the body. The temperature of the freezing zone is lower than 0 degrees Celsius, and an ozone generator can be installed in the freezing zone to sterilize the food therein to ensure that the food does not deteriorate; the freezing area 2 includes a thawing cabinet 21 and a refrigerating cabinet 22 for freezing food. The refrigerating cabinet can quickly freeze the food therein, the thawing cabinet is provided with an ultrasonic thawing device 3, and the ultrasonic thawing device will be thawed inside the cabinet. The frozen ice on the frozen food in the frozen environment is quickly shattered to achieve rapid thawing.

In the implementation process, the ultrasonic thawing device 3 is disposed on at least one outer side of the cabinet of the thawing cabinet 21. Since the food is generally placed on the bottom surface of the cabinet, the ultrasonic thawing device is disposed outside the bottom surface as an optimal method and the thawing efficiency is high; In order to further improve the thawing effect, an ultrasonic thawing device may be arranged on the other one, two, three, four sides or even the top surface of the cabinet. The ultrasonic thawing method is consistent with the principle of the microwave thawing equipment, which utilizes the vibration of the ultrasonic wave to smash the frozen ice, the frost and the like in the frozen environment. For example, the frozen ice on the frozen food is shattered so that the crushed

