

SPECIFICATION

TITLE OF THE INVENTION

Food Processing Table Apparatus

BACKGROUND OF THE INVENTION

The present invention relates to a food processing table apparatus suitable for processing perishable foods such as row meats and fresh fishes in a food processing factory.

Hitherto, in a backyard of a supermarket or a food processing factory, a work of slicing (processing) perishable food (food) such as row meat or fresh fish, arranging it on a tray 28, and packing it is performed on a working bench T as shown in Fig. 6.

In Fig. 6, cutting boards 101, 101 are arranged on both sides of the working bench T. A two-step shelf 102 is provided on the center portion of the working bench T between the cutting boards. The trays 28 on which processed food is set are put on the upper step of the shelf 102. Roll paper 104 for wiping dirt such as drip is attached in a center space between the upper and lower steps of the shelf 102. On the lower step of the shelf 102, holding ports 106 in which kitchen knives 24 for slicing food are inserted and held are formed and a scale 16 for weighing the processed food is also put.

For example, after completion of day's work, the kitchen knives 24 are sterilized by a germicidal lamp box 105 which is separately placed and are then kept or are sterilized by alcohol or the like and, after that, they are

received in a storing case which is separately provided.

In the conventional working bench T, however, the food is exposed during the process at a room temperature of +15°C to +20°C (at a wind velocity of about 0.5 m/sec) for about one hour. Therefore, a deterioration of food intends to occur due to rise of temperature or dry.

In order to solve the problem, there is conventionally used a method of air-cooling the backyard or whole of the inside of the food processing factory in a low temperature state in which the food hardly deteriorates. According to the method, a labor environment for workers in the factory remarkably deteriorates and such a problem that an adverse effect is exerted onto working properties also occurs. Accordingly, the improvement is fervently desired.

Further, since the kitchen knives to be used for the work are kept in a lump in the separately placed germicidal lamp box after completion of the work and are sterilized, hitherto, a preparing operation becomes complicated when the work is started or finished.

SUMMARY OF THE INVENTION

According to the invention, in consideration of the conventional situations, it is an object to provide a food processing table apparatus whereby food that is being processed can be prevented from deteriorating when the food is processed, the working environment can be improved, and kitchen knives to be used for the work can be easily sterilized.

According to the invention, the food processing

table apparatus comprises: a main body constructed by adiabatic walls; a cooling device received in the main body; cutting boards and an upper surface board which are detachably attached onto the upper surface of the main body; cold air supplying means for supplying cold air out of the cooling device from the upper side of the cutting boards onto the surfaces of the cutting boards; cold air sucking means for sucking the cold air from the periphery of the cutting boards into the main body; kitchen knife holding ports which are formed on the upper surface board, which communicate with the inside of the main body, and to which the kitchen knives are inserted; and germicidal lamps which are installed in the main body and which irradiate light to the kitchen knives inserted through the kitchen knife holding ports.

In addition to the invention, in the food processing table apparatus of the invention, the germicidal lamps also irradiate light to the internal surface of the main body.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective front view of a food processing table apparatus to which the invention is applied;

Fig. 2 is an enlarged vertically sectional front view of a kitchen knife holding port portion of the food processing table apparatus to which the invention is applied;

Fig. 3 is a perspective view of an upper surface board and a germicidal lamp box of the food processing table apparatus to which the invention is applied;

Fig. 4 is a vertically sectional front view of the germicidal lamp box of the food processing table apparatus to

which the invention is applied;

Fig. 5 is a vertically sectional side view of the germicidal lamp box of the food processing table apparatus to which the invention is applied; and

Fig. 6 is a perspective view of a conventional food processing table apparatus.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the invention will now be described in detail with reference to the drawings.

A food processing table apparatus 1 of the invention is installed in a food factory or a backyard of a supermarket in which perishable foods such as meats and fresh fishes or household dishes to be sold in a shop such as supermarket or convenience store are processed or cooked. As shown in Fig. 1, the food processing table apparatus 1 has a dimension of about the height of the worker's waist (for example, a distance from a floor surface up to a working bench is equal to, for example, 800 mm). A main body 3 is constructed by adiabatic walls 2 whose upper surface is opened.

The main body 3 is constructed by a cooling portion 6 which receives a cooling device 4 and a sink portion 7 which is detachably coupled to the cooling portion 6 and the inner side surfaces are made of stainless steel. An upper surface board 15 made of, for example, stainless steel is detachably placed on the center of the upper surface of the main body 3 (refer to Fig. 2). The cutting boards 5, 5 as working benches to perform the food processing work are detachably arranged on the front and rear sides of the upper

surface board 15 so as to sandwich the board. On the upper surface board 15, the scale 16 for weighing the processed food can be put and a plurality of kitchen knife holding ports 25 ... for holding kitchen knives 24 ... to perform a slicing process are formed. The kitchen knife holding ports 25 ... will be explained in detail later.

Since the cutting boards 5, 5 are detachably attached on the front and rear sides as mentioned above, the workers can perform the food processing work so as to face each other with the main body 3 between, so that improvement of working efficiency and effective use of a set-up space can be realized. Each of the cutting boards 5 can be detached after the processing work and be easily washed, so that it can be always maintained clean.

One side portion of the upper surface of the main body 3 has neither cutting board 5 nor upper surface board 15 and it is closed from front to rear. A duct 8 for raising the cold air cooled by the cooling portion 6 is stood on a portion corresponding to one side of the upper surface board 15 in the closed portion so as to be perpendicular to the main body 3.

A supporting pole 10 is attached to the top edge portion of the duct 8 so as to horizontally extend above the upper surface board 15 of the main body 3. A sock duct 9 made of cloth is detachably hung from the supporting pole 10. One end of the sock duct 9 detachably communicates with the duct 8 and another end is closed. The cold air which is raised through the duct 8 is allowed to flow into the sock duct 9, blown out of fine holes formed around the sock duct 9,

and then allowed to fall onto the surfaces of the lower cutting boards 5, 5 and upper surface board 15.

Sucking inlets 11 ... to suck the cold air which falls from the sock duct 9 are formed around the cutting boards 5 (the front and other side surfaces of the front cutting board 5 and the rear and other side surfaces of the rear cutting board 5). The sucking inlets 11 ... communicate with the inside of the main body 3.

Shelves 26 ... on which foods and equipment such as a tray on which food is set can be put are hung on the front and rear surfaces (upper portions on one side of the cutting boards 5, 5) of the duct 8. A cart receiving portion 14 for drawably receiving a cart 13 into which garbage generated during the work can be put and which can be moved by wheels 12 attached to the bottom surface is formed on the lower side of the sink portion 7 of the main body 3.

The cooling device 4 which is received in the cooling portion 6 of the main body 3 will now be explained. In the cooling device 4 of the food processing table apparatus 1 in the embodiment, a cooler 17 is received on the front side of the cooling portion 6, the lower portion of the duct 8 communicates with the cooler 17, and a blower 23 for sending cold air cooled by the cooler 17 to the sock duct 9 through the duct 8 is provided in the communicating portion. In the cooling portion 6 on the rear side of the cooler 17, a condensing unit comprising a compressor 19 for constructing a well-known refrigeration cycle of the cooling device 4 together with the cooler 17 and a water cooling condenser 20 is installed.

The condensing unit on the cooler 17 side (front surface) is partitioned by an adiabatic wall (not shown) and the side surface of the condensing unit on the sink portion 7 side is partitioned by the adiabatic wall (not shown) and a partitioning plate 31 made of metal such as stainless steel.

A partition plate 30 made of metal such as stainless steel is positioned on the upper side of the condensing unit. The partition plate 30 is constructed by: a horizontal portion 30A which covers the whole of the upper surface of the cooler 17 and upper surface of the condensing unit; a sloping portion 30B which is lowly inclined from the edge of the horizontal portion 30A to the sink portion 7; and a vertical portion 30C which is hung down from the lowest portion of the sloping portion 30B. Consequently, the periphery of the condensing unit is enclosed by the adiabatic wall and partition plate 30 and a partition plate 32 which inclinatively stands on the bottom of the main body 3 and which is made of metal such as stainless steel extends continuously to the lower end of the cooler 17 on the sink portion 7 side.

In the above construction, a cold air cycle of the food processing table apparatus 1 of the embodiment will now be described. First, cold air cooled by the cooler 17 received in the cooling portion 6 of the main body 3 is sent to the sock duct 9 on the duct 8 by the blower 23 provided on the lower portion of the duct 8.

The cold air with a slight wind velocity passes through gaps of the cloth of the sock duct 9 and falls on the cutting boards 5, 5. Further, the cold air which falls on

the cutting boards 5, 5 and upper surface board 15 is sucked through the sucking inlets 11 ... formed around the cutting boards 5, 5, fed back into the main body 3, and then allowed to flow into the cooler 17 of the cooling device 4, whereby the heat exchange can be done.

Consequently, the food to be processed on the cutting boards 5, 5 is kept cold by the cold air supplied from the upper sock duct 9 and the food that is being processed can be prevented from deteriorating.

The structure of the portion including the kitchen knife holding ports 25 ... will now be explained with reference to Fig. 2. The kitchen knife holding ports 25 are formed on the upper surface board 15 so as to communicate with the inside of the sink portion 7 and a germicidal lamp box 40 is attached to the rear surface of the upper surface board 15, namely, in the main body 3.

The germicidal lamp box 40 is made by stainless plates and is constructed by a frame-shaped main body 40A, sloping portions 40B, 40B, and flanges 40C, 40C as shown in Fig. 3. In the main body 4A, a rectangular opening 40D which corresponds to the portion around the kitchen knife holding ports 25 when the main body 40A is attached to the upper surface board 15 is formed.

On the front and rear sides of the main body 40A, the sloping portions 40B, 40B are bent and formed so as to be incorporated with the main body 40A. Each sloping portion 40B is formed so as to be outwardly and lowly inclined from the main body 40A.

On both right and left ends on which the sloping

portions 40B, 40B are not formed, the flanges 40C, 40C to attach the germicidal lamp box 40 to the upper surface board 15 are formed so as to be incorporated with the main body 40. The flanges 40C are shaped into a step-form so as to engage with fixing fittings 44, 44 which are previously attached to the upper surface board 15 and which will be described later. A hole to attach toilet vires 42, 42 for fixing the germicidal lamp box 40 to the upper surface board 15 is formed on the center of each flange 40C.

Clips 45, 45 for holding germicidal lamps 43 are attached to portions on the sides of the flanges 40C in the main body 3. In the embodiment, two clips are attached on each side so that the one germicidal lamps 43 may be attached to the right and left, respectively. The clips 45, 45 are arranged at predetermined intervals so that the kitchen knives 24 inserted to the center portion of the upper surface board 15 are not come into contact with the germicidal lamps 43.

The germicidal lamps 43, 43 are inserted to the clips 45, 45 attached to the periphery of the opening 40D and then held. Each ballast (not shown) for the germicidal lamp 43 is attached the external surface of the main body 3.

As shown in Fig. 4, on the rear surfaces of the both sides of the kitchen knife holding ports 25 formed on the upper surface board 15, the fixing fittings 44, 44 having a crank shape in a sectional view are attached to the positions corresponding to both the flanges 40C, 40C of the germicidal lamp box 40. The fixing fittings 44, 44 are attached to the upper surface board 15 so that one end plane of the surface

having a crank-shaped form in the section is come into contact with the rear surface of the upper surface board 15, the other end plane is separated as much as a predetermined space from the upper surface board 15, and both the other planes of both the fixing fittings 44 face each other. In each fixing fitting 44 as well, a hole to attach the toilet vis 42, which is similarly formed in each flange 40C of the germicidal lamp box 40, is formed.

By the above construction, as for the method of attaching the germicidal lamp box 40 in which the germicidal lamps 43 are installed to the upper surface board 15, the upper surface board 15 is detached from the main body 3, one flange 40C of the germicidal lamp box 40 is set on one fixing fitting 44 attached to the rear surface of the upper surface board 15 (Fig. 3). Subsequently, the hole formed on the flange 40C and the hole formed on the fixing fitting 44 are superposed and the toilet vis 42 is screwed from the inside of the main body 3, thereby fixing the flange and fitting. The other flange 40C is pressed onto the lower surface of the other fixing fitting 44 and is similarly fixed by the toilet vis 42. The upper surface board 15 to which the germicidal lamp box 40 is attached is mounted onto the main body 3.

In this case, when the germicidal lamp 43 is lit on as shown in Fig. 2, the irradiated light is reflected by the inside of the main body 3 made of metal such as stainless steel, sloping portion 30B and vertical portion 30C of the partition plate 30 made of metal such as stainless steel, and partition plates 31 and 32, thereby sterilizing the kitchen knife holding ports 25, inside of the main body 3, and the

rear surfaces of the cutting boards 5.

By inserting the kitchen knives 24 ... from the upper portion of the main body 3 into the kitchen knife holding ports 25, the kitchen knives 24 are sterilized by the light of the germicidal lamps 43 on both the sides of the knives 24. The whole of the kitchen knives 24 are sterilized by the above light together with the light reflected in the main body 3. Further, since the kitchen knife holding ports 25 communicate with the inside of the sink portion 7, the kitchen knives 24 inserted to the kitchen knife holding ports 25 are exposed by the cold air which falls from the sock duct 9 and the cold air which passes through the inside of the sink portion 7, so that the knives are cooled simultaneously with the sterilizing.

As mentioned above, the kitchen knives 24 inserted to the kitchen knife holding ports 25 can be kept cold by the cold air sucked in the main body 3. The kitchen knives 24 inserted from the kitchen knife holding ports 25 can be sterilized by irradiating the light of the germicidal lamps 43 provided in the main body 3, so that they can be always kept clean.

Further, in addition to the above description, since the germicidal lamps 43 irradiate the light onto the internal surface of the main body 3, the inside of the main body 3 and the rear surfaces of the cutting boards 5 can be sterilized by the germicidal lamps 43, so that they can be always sanitarilly maintained. The surfaces of the cutting boards 5 can be sterilized by attaching the cutting boards 5 so as to be reversed.

As described above in detail, according to the invention, since the cooling device is received in the main body constructed by the adiabatic walls, the cutting boards and upper surface board are detachably attached onto the upper surface of the main body, the cold air from the cooling device is supplied from the upper side of the cutting boards onto the surfaces of the cutting boards, and the cold air is sucked from the periphery of the cutting boards, the food to be processed on the cutting boards is kept cool by the cold air supplied from the upper side. Consequently, the food which is being processed can be prevented from deteriorating.

Since the cold air on the cutting boards is sucked from the periphery into the main body, no deterioration of the working environment also occurs. Further, since the cutting boards are detachably set to the main body, they are detached after the processing work and can be easily washed. Since the upper surface board is also detachably set, the inside of the main body can be also easily washed.

Particularly, since the kitchen knife holding ports which communicate with the inside of the main body and to which the kitchen knives are inserted are formed on the upper surface board, the inserted kitchen knives can be kept cool by the cold air sucked in the main body. Since the germicidal lamps for irradiating light to the kitchen knives inserted from the kitchen knife holding ports are provided in the main body, the kitchen knives inserted to the kitchen knife holding ports are sterilized by the germicidal lamps and can be always sanitarily held.

According to the invention, in addition to the above,

since the germicidal lamps also irradiate the light to the internal surface of the main body, the main body and the rear surfaces of the cutting boards can be also sterilized, so that they can be always maintained clean.

WHAT IS CLAIMED IS:

1. A food processing table apparatus comprising:
 - a main body constructed by adiabatic walls;
 - a cooling device received in said main body;
 - cutting boards and an upper surface board which are detachably attached onto the upper surface of said main body;
 - cold air supplying means for supplying cold air out of said cooling device from the upper side of said cutting boards onto the surfaces of said cutting boards;
 - cold air sucking means for sucking the cold air from the periphery of said cutting boards into said main body;
 - kitchen knife holding ports which are formed on said upper surface board, which communicate with the inside of said main body, and into which kitchen knives are inserted;
 - and
 - germicidal lamps which are provided in said main body and which irradiate light onto the kitchen knives inserted from said kitchen knife holding ports.
2. The apparatus according to claim 1, wherein said germicidal lamps also irradiate light onto the internal surface of said main body.

