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(54) **An ice making unit for cooling devices**

(57) Ice making unit (1) of the invention is developed for cooling devices. Accordingly the unit (1) comprises at least one ice tray (2) in which at least one chamber (3) is disposed in which water, desired to be frozen, gathers; at least one water case (5) which is located at the upper

part of the ice tray (2) and fills in the ice tray (2) with the water leaking drop by drop from the dripper (6); at least one protrusion (4) on which drops taking out of the dripper (6) reaches to the chamber (3) by sliding and around which the cold air flow (7) passes.

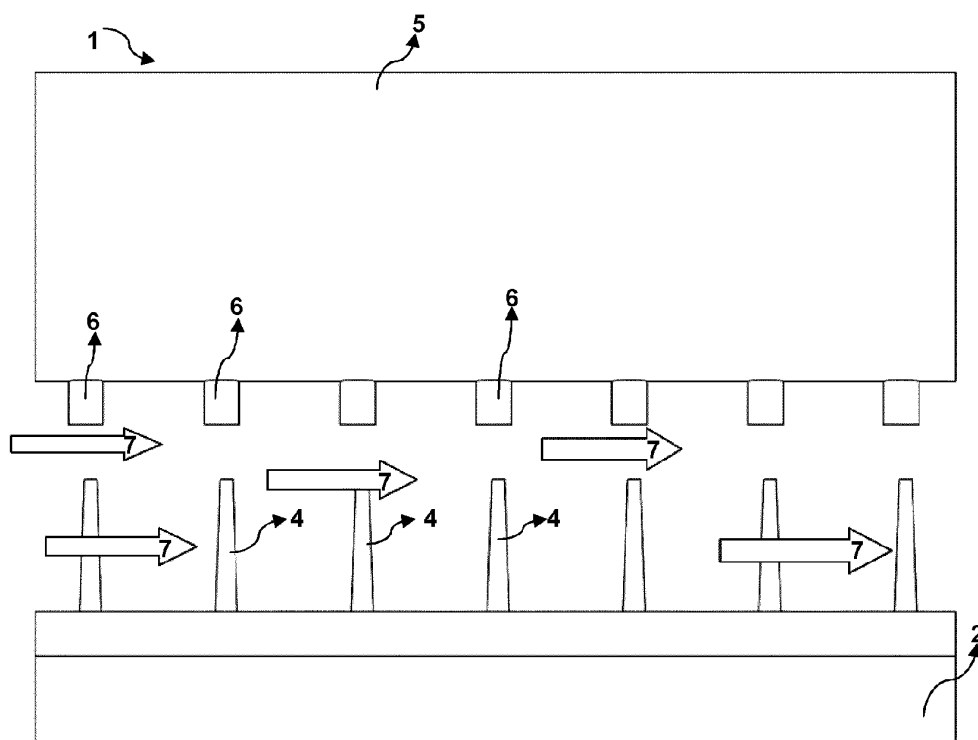


Figure – 1

Description

Technical Field

[0001] This invention relates to ice making units in cooling devices used for storing food products.

Prior Art

[0002] Household type cooling devices such as deep freezer, refrigerator, etc. have a feature of producing ice pieces according to user need besides storing foods. Thanks to this widely used feature, ice pieces in different types and dimensions are produced according to device type and capacity. The shortest ice making time of said devices in order to meet the needs, which increase especially in summer months, is a preferable situation for users. Thus, various units having rapid ice making feature are developed for cooling devices and published patent application no US6438988 can be shown as an example. This application aims to make ice in a short time by using a cooling fan, which is in a place close to a part in which ice pieces are made. For this, it is ensured that the fan blowing cold air is disposed directly over an ice production tray and water in the ice producing tray is frozen by air blown upward and production of ice pieces is provided. However, in this application, using additional fan unit causes that the cooler device consumes more energy and production cost of ice making unit of the cooler device is increased.

Brief Description of the Invention

[0003] Ice making unit of the invention comprises at least one ice tray in which at least one chamber is disposed in which water, desired to be frozen, gathers; at least one water case which is located at the upper part of the ice tray and fills in the ice tray with the water leaking drop by drop from the dripper; at least one protrusion on which drops taking out of the dripper reaches to the chamber by sliding and around which the cold air flow passes.

[0004] Leaking of the water, which is desired to be frozen, from the water case in small drops, then forwarding this water more slowly by being flowed over the protrusion instead of being fallen directly in the ice tray provides rapid decrease of the temperature of water drops. For that, with cold air flow, which flows between the tray and the case and around the protrusions (by contacting to the protrusions), ice making process is able to be realized rapidly.

Objective of the Invention

[0005] An aim of the invention is to define an ice making unit for cooling devices.

[0006] The other aim of the invention is to develop a unit which is able to make ice rapidly.

[0007] The other aim of the invention is to ensure the

device to do rapid ice making process without consuming additional power during this process.

[0008] Another aim of the invention is to define reliable ice making unit, production of which is simple and cost-effective.

Description of Drawings

[0009] An exemplary ice making unit of the invention is shown in attached drawings wherein;

Figure 1 is side view of the ice making unit.

Figure 2 is front sectional view of a position of the ice making unit.

Figure 3 is front sectional view of another position of the ice making unit.

[0010] The parts in the figures are individually enumerated and the corresponding terms of reference numbers are as follows:

Ice making unit	(1)
Ice tray	(2)
Chamber	(3)
Protrusion	(4)
Water case	(5)
Dripper	(6)
Cold air flow	(7)

Description of Invention

[0011] Ice making unit (1) of the invention, side view of which is shown in figure 1, comprises as main elements at least one ice tray (2) and at least one water case (5) which fills water into the tray (2) upwards. The water case (5) is located at the upper part of the ice tray (2) and fills the tray (2) by dripping water in the ice tray (2). So, in the water case (5) at least one dripper (6), which leaks water in the case (5) by dripping outward, is located.

[0012] Said water case (5) is in a movable structure and the first and second positions of the case (5) are shown in figure 2 and 3 respectively. Accordingly, the first position shows the state that water case (5) is filled with water and the case (5) in this state stays such that the drippers (6) remain above (figure 2). After the case (5) is filled with water, it is ensured that the drippers (6) are come to the underside of the case (5) (figure 1 and 3) by the rotation of the case (5). In this position water, which takes out of the dripper (6) in drop forms, falls into the ice tray (2).

[0013] The ice tray (2) comprises at least one chamber (3) in which water gathers and freezes, and where ice pieces are produced as desired. At the upper part of the ice tray (2), at least one protrusion (4), which extends upwards, is located preferably in the shape of rod. The protrusion (4) is shown as a part of the ice tray (2) in

figures, however, it is able to be made as part of the water case (5) so as to extending downwards from under the dripper (6). Alternatively, the protrusion (4) is able to be made as a separate part standing vertically between the dripper (6) and the ice tray (2). Each protrusion (4) is used as the first surface on which water, dripping from the dripper (6), falls. Water, falling over the protrusion (4), fills in at least one chamber (3) which remains underside of the protrusion (4).

[0014] Leaking of the water, which is desired to be frozen, from the water case (5) in small drops, then forwarding this water more slowly by being flowed on the protrusion (4) instead of being fallen directly in the ice tray (2) provides rapid decrease of the temperature of water drops. For that, with cold air flow (7), which flows between the tray (2) and the case (5) and around the protrusions (4) (by contacting to the protrusions (4)), ice making process is able to be realized rapidly. The ice making unit (1) of the invention is able to be disposed in a freezing compartment of any cooling device and by taking advantage of the cold air flow (7), which is present in this compartment both ice is able to be produced rapidly and extra energy consumption for rapid ice making process of the cooling device is able to be impeded.

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Claims

1. An ice making unit (1) for cooling devices **characterized by** comprising;
 - at least one ice tray (2) in which at least one chamber (3) is disposed in which water, desired to be frozen, gathers;
 - at least one water case (5) which is located at the upper part of the ice tray (2) and fills in the ice tray (2) with the water leaking drop by drop from the dripper (6);
 - at least one protrusion (4) on which drops taking out of the dripper (6) reaches to the chamber (3) by sliding and around which the cold air flow (7) passes.
2. An ice making unit (1) according to claim 1 **characterized in that** the water case (5) is rotatable such that the dripper (6) is at the upper or lower position.
3. An ice making unit (1) according to claim 1 **characterized in that** the protrusion (4) is in the shape of rod.
4. An ice making unit (1) according to claim 1 **characterized in that** the protrusion (4) is a part of the ice tray (2).
5. An ice making unit (1) according to claim 1 **characterized in that** the protrusion (4) is a part of the water case (5) so as to extending downwards from under the dripper (6).

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6. An ice making unit (1) according to claim 1 **characterized in that** the protrusion (4) is a separate part standing vertically between the dripper (6) and the ice tray (2).

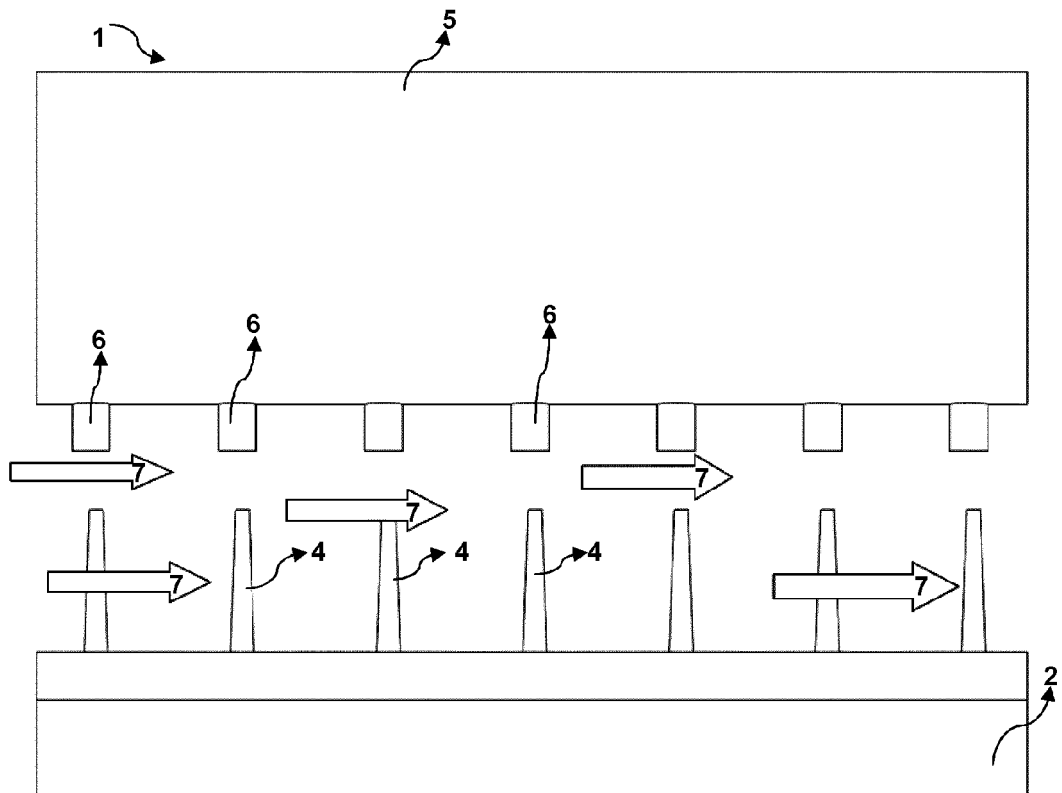


Figure – 1

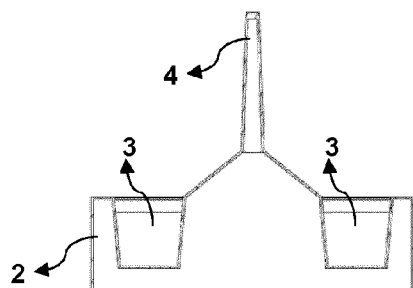
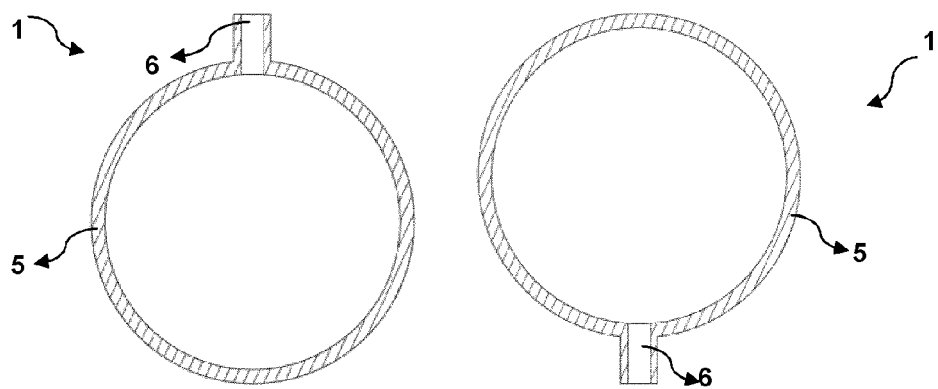


Figure – 2

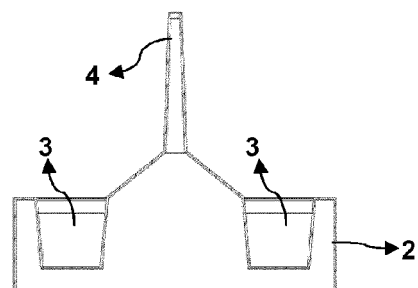


Figure – 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 6438988 B [0002]