

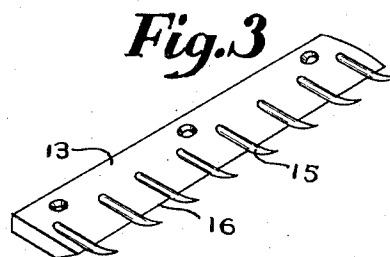
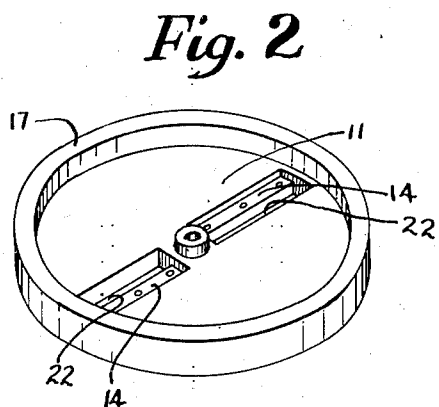
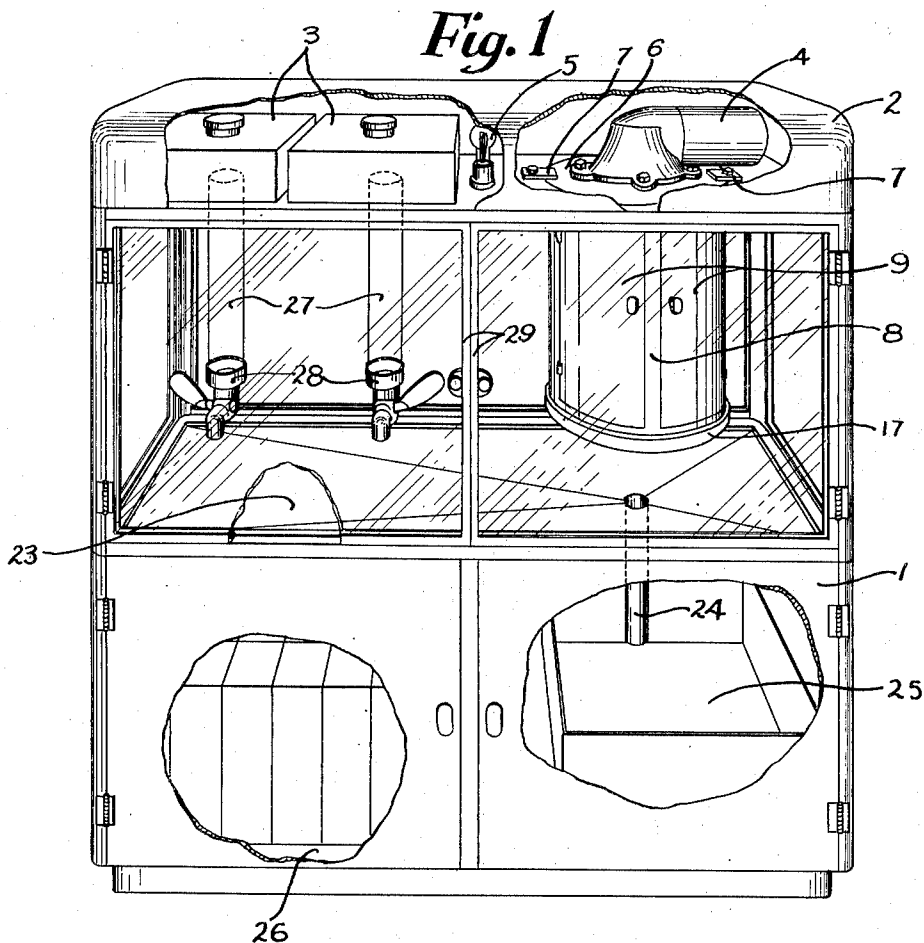
May 15, 1951

O. H. BROWNE
ICE-SHAVING MACHINE

2,552,933

Filed Jan. 28, 1947

2 Sheets-Sheet 1



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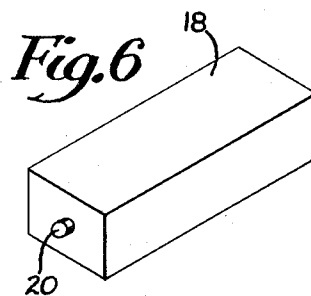
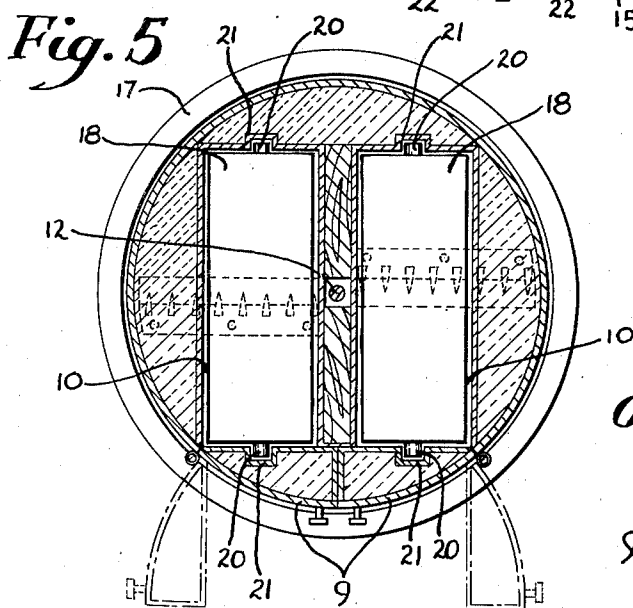
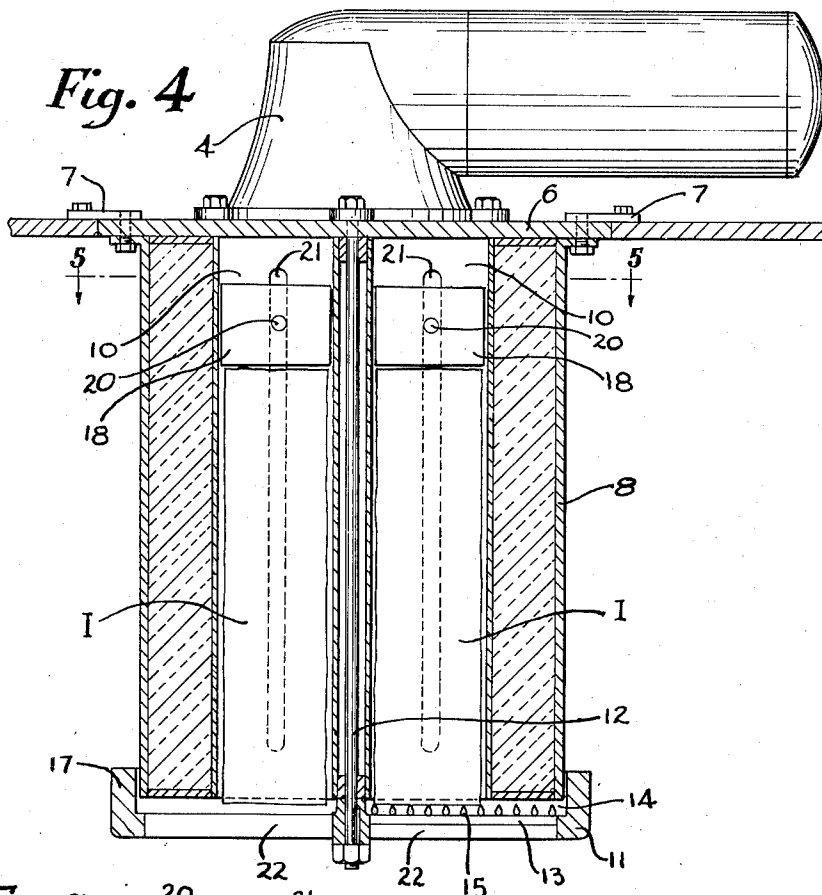
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UNITED STATES PATENT OFFICE

2,552,933

ICE SHAVING MACHINE

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Application January 28, 1947, Serial No. 724,815

3 Claims. (Cl. 241—92)

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This invention relates to improvements in apparatus for making artificial snow and for dispensing the ingredients for a confection that is made therefrom, and more particularly to apparatus for making artificial snow from cakes of ice.

The primary object of this invention is to provide for shaving ice into wafer thin flakes for the manufacture of a confection therefrom.

Another object of this invention is to provide for making artificial snow that gives a double cutting action which produces a product of snow-like consistency from which a confection is made in the same unitary apparatus.

Still another object of this invention is to provide in a compact and combined unit a machine for making artificial snow and for dispensing the other ingredients for making a completed confection.

This present means for making artificial snow results in a product approaching real snow in consistency, without the icy brittleness of cracked ice, which results in a confection that is more delectable and therefore more saleable.

A preferred embodiment of this invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective front view of the confection apparatus;

Fig. 2 is a perspective view of the rotor detached from the machine;

Fig. 3 is an enlarged perspective top view of the ice shaving blade removed from the rotor;

Fig. 4 is a fragmentary view, partly in section and partly in elevation, through the ice cabinet;

Fig. 5 is a cross-section therethrough, taken on the line 5—5 of Fig. 4; and

Fig. 6 is a perspective view of a device for feeding the ice onto the shaving blades.

Referring to Fig. 1, the numeral 1 designates a cabinet, which preferably has a translucent cover 2 which cover is adapted to cover and enclose syrup or confection containers 3 and a motor and right-angle gear drive unit 4. The portion of the cabinet 1 under the cover 2 preferably has transparent side walls.

It is preferable to provide, beneath this translucent cover 2, one or more electric lamps 5, which may be colored if desired to enhance the brilliance of the display.

A member 6, which is secured by lugs 7 thereon, is adapted to seat in a hole in the top of cabinet 1. Depending from the member 6 and carried thereby is an insulated ice receptacle 8, which receptacle has doors 9 on the front thereof for

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access to compartments 10 therein. The compartments 10 are adapted to receive cakes of ice 1, as shown in Figs. 4 and 5.

A rotor 11 is mounted on the lower end of a shaft 12, which shaft 12 is connected with motor unit 4 and is rotated thereby. The rotor 11 carries a pair of blades 13 in recesses 14, as shown in Fig. 2. Each blade 13 has upturned needles 15 elevated slightly above the cutting edge 16 thereof. These needles are welded or otherwise secured to the blade 13 in any suitable and conventional manner.

The rotor 11 carries an upstanding rim 17 which extends up and over the lower edge of the insulated ice receptacle 8, so as to prevent the shaved ice from working out from the sides thereof.

A weight 18, as shown in Fig. 6, is adapted to be placed on top of the ice cakes 1 to cause the feeding of said ice onto the blades 13. The weight 18 has trunnions 20 at the opposite ends thereof, which trunnions are slidably received in vertical grooves 21 which are formed in the rear portion of the ice receptacle 8 and in the inner faces of the doors 9, respectively. As the weight feeds the ice toward the blades, the trunnions 20 reach the ends of the grooves 21 just before the face of the weight 18 contacts the blades 13.

This makes possible the feeding of the ice into the blades until practically all the ice is processed, but suspends the weight thereabove, so that the blades will not be damaged by direct contact therewith. The pressure of the weight 18 gives sufficient pressure on the ice during the entire cutting process to insure of its being fed evenly onto the blades. When one block of ice has been made into snow, the feeding weight 18 is raised and another cake of ice placed in proper position for feeding onto the blades.

As the snow is formed from the ice, it is ejected through slots 22 in the rotor 11, onto a pan 23, which pan 23 is mounted beneath the ice receptacle 8. The pan 23 has a drain pipe 24 in the bottom thereof, whereby any water that forms in the pan is drained into a residue tank 25 conveniently located in the lower portion of the cabinet 1.

It is preferable to have a storage compartment 26 in the lower portion of the cabinet 1 in which to store the ice that is to be used in the machine.

It is preferable to have the upper portion of the cabinet 1 enclosed with transparent material or glass and to have depending transparent dispensers 27 depending from the tanks 3 into the display portion of the cabinet 1. It is also prefer-

able to have the tanks 3 and dispenser tubes 27 removable from the upper portion of the cabinet as independent units. Dispensing faucets 28 are provided for the lower ends of the tubes 27, for dispensing syrup, flavoring or other ingredients that may be used to make the confection.

Access doors 29 are provided in the front of the cabinet 1 for gaining access to the ice and flavoring therein.

In the use of the unit, ice cakes 1 are placed within the compartments 10, as shown in Figs. 4 and 5 and the weights 18 are properly positioned upon the ice to be cut, with the trunnions 20 received in vertical grooves 21 in the back of the compartment and inner face of the door, respectively.

With the doors 9 in closed position, the ice will rest upon the upper face of the rotor 11. The motor unit 4 is connected to the rotor 11 through the gearing and the shaft 12, which shaft supports rotor 11 on the lower end thereof. The shaft and the rotor are keyed together to insure the rotation of the rotor by the motor 4.

Upon rotation of shaft 12, the rotor 11, carrying blades 13, will act on the ice from the lower side thereof and shave it into particles of snow-like consistency. The shaved ice is ejected through the openings 22 in rotor 11 onto the pan 23.

By having the needle-like elements 15 with upturned points on the blade 13 just above the cutting edge 16 thereof, a double cutting action is obtained. In actual practice the upturned points are approximately one-thirty-second to one-sixteenth of an inch above the cutting edge 16 of the blade 13 and are spaced apart approximately one-fourth inch. Thus the ice is shaved into tiny crystals simulating those of actual snow, which would not be possible either with a straight blade without the projections, or with the needle-like projections without the straight blade. By having this particular combination, the ice can be shaved much faster than has been possible heretofore, and to a consistency more acceptable for the confection to be made therefrom.

It is preferable that the rotor 11, carrying the knives 13, be rotated at a high rate of speed, but to cut a relatively thin layer from the ice cake as it passes thereover, thus giving a much more palatable consistency to the snow from which the confection is made, than would result if a thicker cut was made by a more slowly rotating rotor.

After the ice has been shaved to form snow-like flakes, it is placed in a desirable serving container, such as a paper cone or cup, and colored and flavored as with syrup, or other desirable ingredients contained in the dispensers 27 and added thereto to make an attractive and palatable confection.

While the invention has been illustrated and described in one embodiment, it is recognized that variations and changes may be made therein without departing from the invention, except as specified in the claims.

I claim:

1. In an ice shaving machine, a pair of spaced receptacles each adapted to receive a cake of ice, a rotor rotatably mounted beneath the receptacles and carrying a blade having a continuous knife edge in position to act upon said ice upon rotation of said rotor, said blade comprising a knife edge having a plurality of needle shaped cutting points positioned on and secured to the top of said blade, which needle points are in position to engage the cake of ice before said

knife edge of said blade for cutting snow-like crystals from the bottom of said cake of ice.

2. In an ice shaving machine, a cabinet having a pair of spaced receptacles therein, each being adapted to receive a cake of ice, said receptacles having open bottoms, a rotor positioned beneath said bottoms of said receptacles, means mounting said rotor for turning movement relative thereto, a motor operatively connected to said rotor for rotating said rotor, a blade having a flat upper surface with a knife edge carried by said rotor and secured thereto in position for shaving action upon said ice, a plurality of spaced needle pointed cutting elements having elongated bodies secured to the top of said blade in spaced substantially parallel relation to each other with said needle pointed cutting elements having their needle points spaced not more than the thickness of said elongated body portions above the upper flat surface of said blade and with the points in advance of said cutting edge of the knife edge blade so as to cut ice crystals simulating snow from the underside of said cake of ice.

3. In an ice shaving machine a cabinet having a base, sides, and a top, an opening formed in said top, doors mounted on a side of said cabinet, an elongated, vertical housing removably mounted within said opening and supported by said top of said cabinet and carrying a power unit on the upper end of said housing for driving a rotor, a pair of spaced, elongated, vertical receptacles, substantially rectangular in cross section, formed in said housing and which receptacles are open at their lower ends, a pair of doors mounted on a side of said housing and in open communication with the respective receptacles, each of said receptacles being adapted to receive therein a cake of ice, a shaft extending downward from said power unit between said receptacles and having a rotor mounted on the lower end thereof, which rotor has an upstanding annular rim around the outer periphery thereof and projecting upward in overlapping relation with the lower end portion of said housing and in open communication therewith, said upstanding annular rim being in sufficiently close fitting relation to said housing to prevent radial discharge of said ice from said rotor, elongated, vertical slots formed in the housing on opposite sides of each of said receptacles, a quadrilateral prism having projections on the opposite ends thereof, positioned in each of said receptacles so each prism will rest upon its respective cake of ice with said projections extending into said vertical slots so as to guide each of said prisms in each of said receptacles in a spaced relation to the walls thereof, a blade having a flat upper surface with a continuous knife edge formed with the upper surface thereof and mounted on the upper side of said rotor in position for shaving action on said ice, and needle pointed elements with elongated bodies spaced along the upper surface of said blade and having the needle points mounted slightly above and extending slightly forward of said knife edge of said blade with said elongated body portion thereof being secured to the upper flat surface of said blade for shaving crystalline flakes from the underside of said cake of ice upon rotation of said rotor by said power unit.

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