Feb. 26, 1935. R. R. SMITH 1,992,783

ICE SHAVING MACHINE

Filed Feb. 3, 1931 2 Sheets-Sheet 1

Fig. 1.

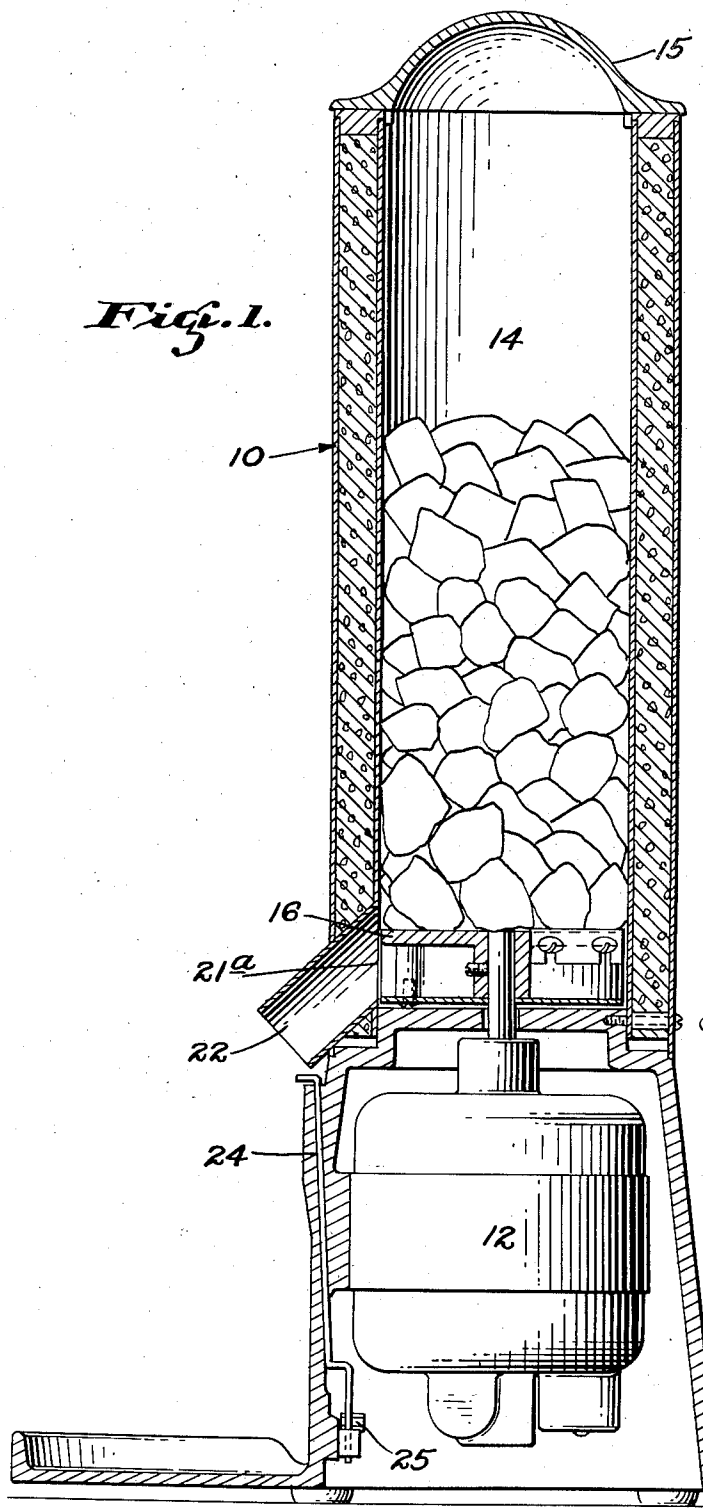



Fig. 3

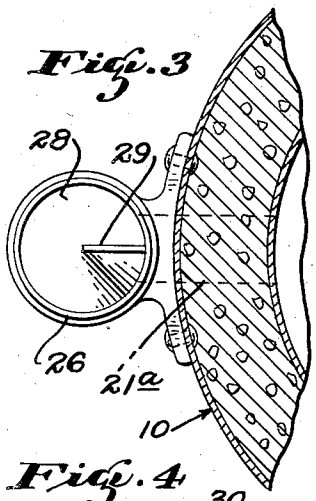
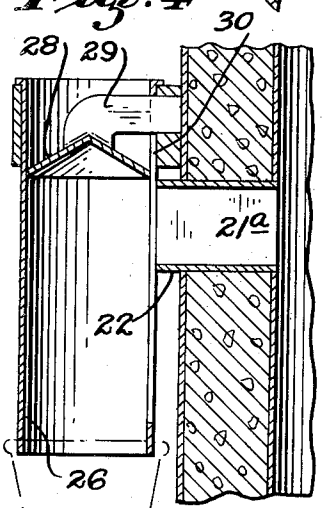
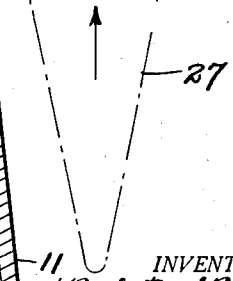



Fig. 4




INVENTOR.
Ralston R. Smith
BY
Lourmond, Loftus & Ellett
ATTORNEYS.

Feb. 26, 1935. R. R. SMITH 1,992,783

ICE SHAVING MACHINE

Filed Feb. 3, 1931 2 Sheets-Sheet 2

Fig. 5.

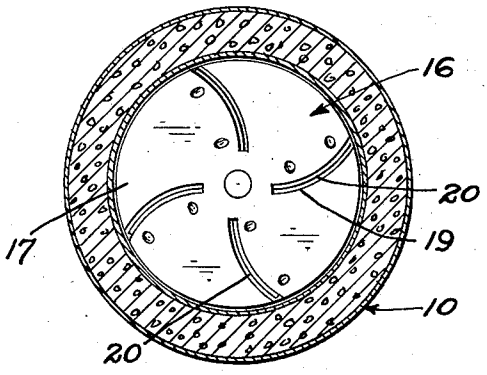



Fig. 6.

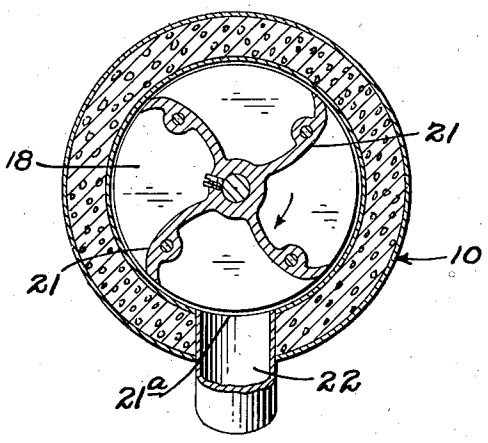



Fig. 2

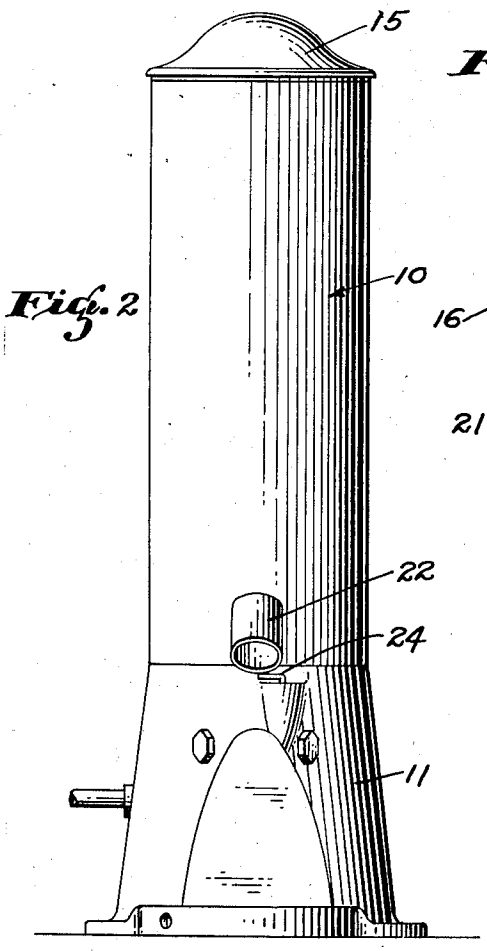



Fig. 7.

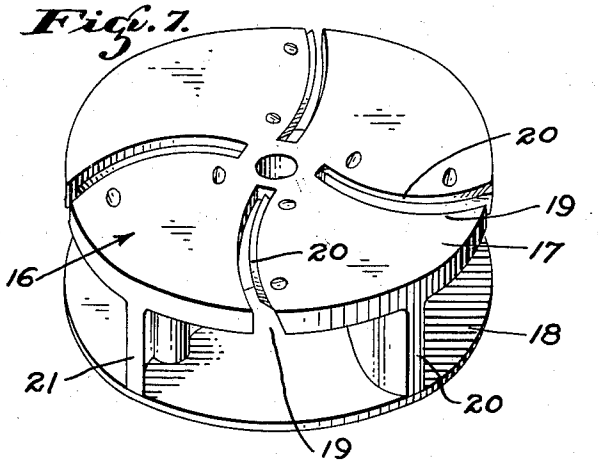
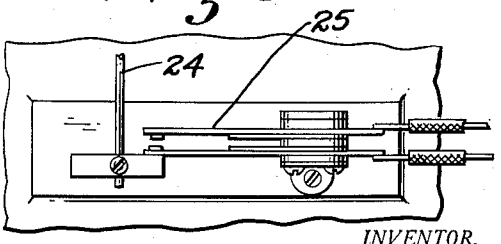



Fig. 8.




INVENTOR.
Ralston R. Smith

BY
Townsend, Loftus & Abbott
ATTORNEYS.

Patented Feb. 26, 1935 1,992,783

REISSUED

# UNITED STATES PATENT OFFICE

1,992,783

## ICE SHAVING MACHINE

Ralston R. Smith, Oakland, Calif.

Application February 3, 1931, Serial No. 513,127

1 Claim. (Cl. 83—62)

This invention relates to machines for use in shaving ice in the production of a confection commonly known as "snow cones", which confection is produced by filling a cone with shaved ice and applying a flavored syrup thereto. The present machine is, however applicable to other uses as hereinafter set forth.

It is the principal object of the present invention to provide an improved machine of the character referred to which is electrically operated and which is of simple and inexpensive construction.

In practicing the invention, I provide a rotor carrying shaving blades, which rotor is revolved by an electric motor and is capable of shaving the material as it is fed toward the rotor and of discharging the material from the machine.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a central vertical section through a machine embodying the preferred form of my invention.

Fig. 2 is a front elevation thereof.

Figs. 3 and 4 are enlarged fragmentary views in plan and vertical section reciprocably showing a cone-filling fitting which may be used in connection with the discharge spout of the machine.

Fig. 5 is a transverse sectional view through the machine taken just above the rotor.

Fig. 6 is a transverse sectional view through the machine taken intermediate the discs of the rotor.

Fig. 8 is a fragmentary view disclosing the control switch for the motor circuit.

Referring more particularly to the accompanying drawings, 10 indicates an ice shaving machine comprising a hollow base 11 by means of which the machine is to be supported. This base 11 incloses an electric motor 12 which motor is arranged with its shaft vertically disposed. The motor is, as disclosed, arranged centrally within the base with its shaft projecting centrally upwardly through the upper end of the base.

Secured to the base at its lower end and extending vertically with respect thereto, is a receiving chamber 14. When the machine is used for shaving ice this chamber is preferably formed with insulating walls as illustrated. The chamber 14 is cylindrical in cross section and is arranged concentrically with respect to the shaft of the motor 12. The upper end of the chamber is fitted with a removable closure member 15. When this member is removed the material to be shaved may be fed into the chamber 14.

Secured on the motor shaft is a rotor 16 which is formed of two discs 17 and 18 which are concentrically disposed and fixed together at a spaced distance apart. The diameter of these discs 17 and 18 is just slightly less than the interior diameter of the chamber 14. The upper disc 17 is formed with a plurality of radial slots 19 which are slightly curved as illustrated. A shaving blade 20 is arranged in each slot and adjustably secured to one edge thereof. The sharpened edges of these blades project slightly above the upper surface of the upper disc 17 so as to engage and shave the material disposed in the chamber 14.

Between the discs 17 and 18 are radially disposed and curved vanes 21. These vanes eminate from the center of the discs to the outer periphery thereof and are so relatively disposed with relation to the slots 19 that the latter will be positioned intermediate the vanes. When the rotor revolves and shaves the material, the shaved material will pass through the slots 19 and the vanes 21 will act to discharge it through a discharge opening 21*a* and through a spout 22 aligned with such opening.

In Figs. 1 and 2 the spout 22 projects from the chamber for the purpose of directing the shaved material directly into a container. In this form of the device a switch rod 24 is mounted in the base for vertical reciprocation and its lower end is operatively connected with a control switch 25 interposed in the motor circuit. This switch is of the type which normally tends to remain open. To close the switch and incidentally close the motor circuit, the container to receive the shaved material is engaged with the upper end of the switch rod 24 so as to move the switch rod vertically. This moving of the switch rod 24 closes the switch 25 and places the motor in operation. When the container is disengaged from the switch rod 24, the switch automatically opens and opens the motor circuit.

In Figs. 3 and 4 I have shown an appliance used in connection with the spout 22 for tightly packing shaved ice in a cone. This device comprises a vertical reciprocable cylinder 26 mounted on the outer periphery of the chamber 14. The diameter of this cylinder 26 is such that it will nest within the extreme upper end of a cone 27 within which it is desired to pack the shaved ice. At the inner side of the cylinder 26 it is formed with an opening registering with the open end of the spout 22 so that the shaved ice passing through the spout will discharge into the cylinder 26 to fill the cone.

Mounted within the upper end of the cylinder

is a stationary conical plunger 28 fixed to the chamber 14 by means of an arm 29 which passes through a slot 30 at the inner side of the cylinder 26. When sufficient shaved ice has been accumulated within the cylinder 26 and the cone 27, the latter is moved upwardly so as to move the cylinder 26 upwardly. This movement causes the stationary plunger 28 to tightly pack the ice in the cone 27.

In operation of the device, if it is desired to shave ice, the same is disposed in the chamber 14 and the motor is placed in operation. As the motor revolves the rotor 16 the blades thereof will act to shave the ice and the vanes 21 thereof will discharge the shavings through the spout 22. If the device is to be used in connection with small cones the spout 22 is fitted with a packing attachment such as illustrated in Figs. 3 and 4. If the machine is for use merely in depositing shaved ice in glasses for use in connection with liquid refreshments, a switch arrangement such as illustrated in Fig. 1 is employed for controlling the operation of the motor. In this connection it is desired to point out that in placing shaved ice in glasses it is only necessary to move the switch rod 24 upwardly by means of the glass and the motor will start operating, and when sufficient ice has been deposited in the glass, the glass is merely disengaged from the switch rod 23 and the motor will immediately discontinue.

I desire to point out, however, that the present machine may be utilized in grinding or shaving vegetables and other material. This makes the machine applicable for use as a culinary device.

From the foregoing it is obvious that I have provided an improved shaving and grinding machine which is simple in construction and efficient in operation.

While I have shown the preferred form of my invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention as defined in the appended claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

In a machine for shaving ice, a vertically disposed container supported on a hollow base and having a discharge opening adjacent its bottom, a motor enclosed in said base and having a drive-shaft extending upwardly to a position within the container, a rotor disposed in the bottom of the container and secured to said drive-shaft, said rotor comprising a pair of horizontally-disposed, vertically-spaced discs, the uppermost of said discs being provided with radial slots, blades secured in said slots to shave ice in the container, and radial vanes extending between said discs to insure the discharge of all of the shaved ice outwardly through said discharge opening.

RALSTON R. SMITH