Aug. 21, 1934. M. DORMAN 1,970,997

SNOWBALL MAKING MACHINE

Filed Oct. 7, 1932 2 Sheets-Sheet 1

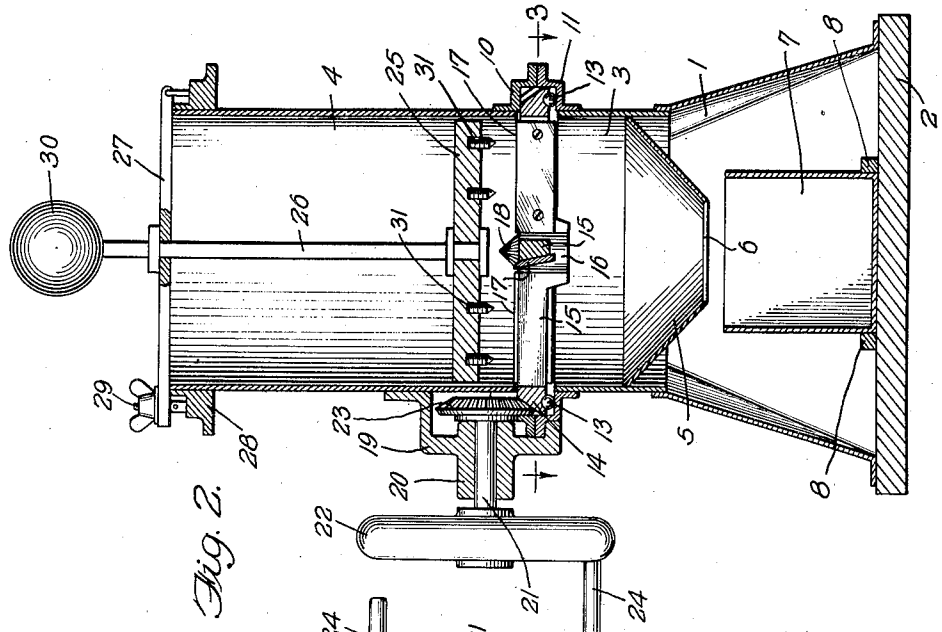


Fig. 2.

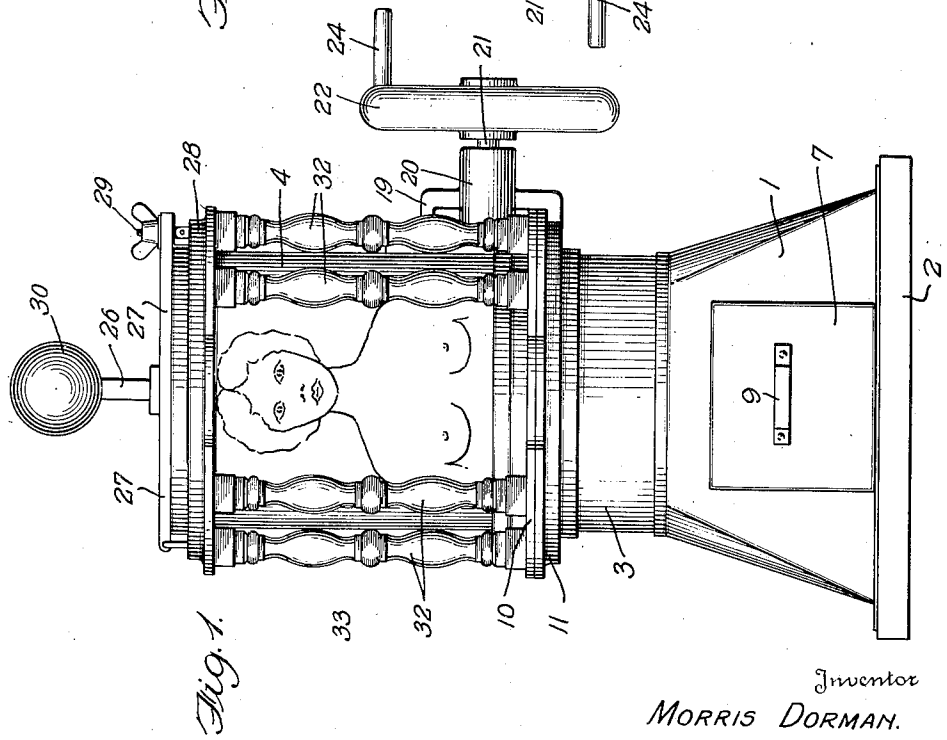


Fig. 1.

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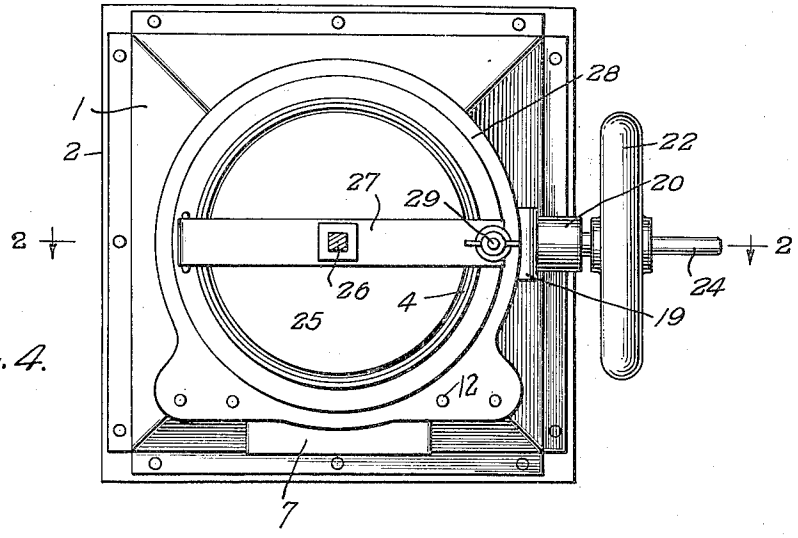


Fig. 4.

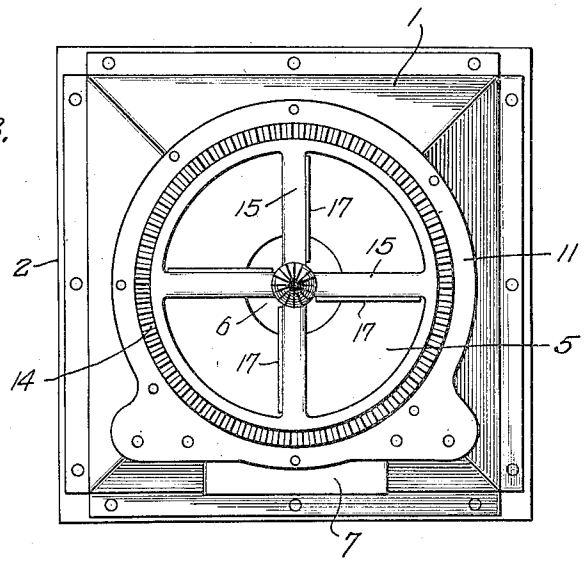


Fig. 3.

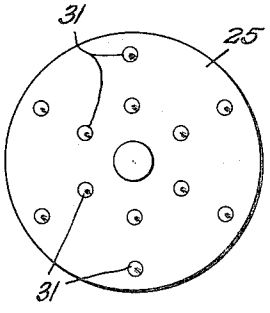


Fig. 5.

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UNITED STATES PATENT OFFICE

1,970,997

SNOW BALL MAKING MACHINE

Morris Dorman, Baltimore, Md.

Application October 7, 1932, Serial No. 636,741

3 Claims. (Cl. 83—62)

This invention relates to snow-ball making machines and one object of the invention is to provide a machine by means of which a cake of ice may be easily and quickly shaved to form snow-ice from which snow-balls are to be made.

Another object of the invention is to so construct the machine that it may receive a large cake of ice and this cake of ice is pressed into engagement with knives which serve to shave the ice when the machine is in operation.

Another object of the invention is to provide improved means for mounting a weight serving to press the cake of ice firmly against the shaving knives and permit the weight to be moved entirely out of the ice chamber when a new cake of ice is to be set in place.

Another object of the invention is to prevent the weight from turning in the chamber and also cause the cake of ice to be firmly held against turning movement relative to the weight and thereby permit the scraping knives to act very efficiently upon the under surface of the ice and quickly scrape snow-ice from the cake.

Another object of the invention is to provide an improved blade carrier and improved means for imparting rotary motion to the blade carrier, the blade carrier and its operating means being carried by separable portions of the body portion of the machine where the upper portion of the body may be detached without disturbing the operating means carried thereby and the blade carrier then readily lifted out of place and the blades detached for sharpening or replacement by new blades if necessary.

Another object of the invention is to provide the machine with improved means for catching the ice as it is shaved from a cake and guiding the ice into a receptacle in the form of a drawer slidable into and out of place in the lower portion of the machine.

Another object of the invention is to provide a device of this character which is attractive in appearance, strong and durable, and not liable to get out of order.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of the improved machine.

Figure 2 is a sectional view taken vertically through the machine.

Figure 3 is a sectional view taken along the line 3—3 of Figure 2.

Figure 4 is a view looking down upon the top of the machine.

Figure 5 is a view looking at the under face of the plunger.

The improved snow-ball making machine constituting the subject-matter of this invention has a base 1 formed of strong metal and resting upon a foundation 2 where it may be secured in any manner desired. The base tapers upwardly at its upper end and is secured tightly about the lower portion 3 of the body or ice container 4. The container and its lower portion which serves as a hopper to receive shaved ice are preferably formed of strong sheet metal and in the hopper 3 is secured a bottom 5 also of sheet metal which tapers downwardly and terminates in an outlet 6 disposed over a drawer or receptacle 7 slidable into and out of place through an opening formed in one wall of the base and guided in its movement by strips 8 carried by the foundation 2. By this arrangement shaved ice which drops into the hopper 3 will be guided through the opening 6 into the drawer 7 after which the drawer can be withdrawn by grasping its handle 9 and the snow-ice dumped into a cup and flavored to make a snow-ball.

Adjacent ends of the ice container 4 and hopper 3 carry strong rings or collars 10 and 11 of cast metal having outstanding flanges through which a suitable number of screws or bolts 12 are passed to releasably hold the collars in engagement with each other. By this arrangement the container 4 may be released from the hopper when a thorough cleaning or repairs are necessary and lifted upwardly out of place. The collar 11 also serves as a race to receive bearing balls 13 upon which rests a gear ring 14 having spokes 15 leading from a hub 16. Scraping blades 17 are removably secured against side faces of the spokes with their sharpened upper edges projecting upwardly above the spokes and at its upper end the hub carries a reamer 18 serving to scrape ice between inner ends of the blades 17. When the container is removed the gear ring which together with its spokes and hub may be referred to as a blade carrier can be lifted from the collar or race 11 and the blades sharpened while attached to the spokes or removed and after being sharpened replaced. A bracket 19 carrying a bearing 20 is secured in a vertical position to the container 4 with its lower end free for engagement beneath the collar 11 when the container is set in place. By this arrangement the bracket will be braced and prevented from being broken by strain exerted when the machine is in use. A drive shaft 21 carrying a fly wheel 22 at its

outer end and a gear 23 at its inner end is journaled through the bearing 20. When the handle 24 is grasped and rotary motion imparted to the wheel and shaft the gear or pinion 23 by meshing with the gear ring 14 will transmit rotary motion to the blade carrier and cause the blades and reamer to act against a cake of ice in the container and scrape snow-ice from its under face.

The cake of ice placed in the container is to be pressed against the blades and reamer and in order to do so there has been provided a weight or plunger 25 which is slidably received within the container and has a shaft 26 extending upwardly from its center and engaged through an opening formed in a bridge or bar 27 hinged at one end to a collar 28 firmly secured about the upper portion of the container. At its other end the bar is slotted to receive a securing bolt 29 pivoted to the collar 28 and therefore the bar may be secured in an operative position in which it extends diametrically across the container. When a new supply of ice is necessary the bar is released and swung upwardly to move the plunger out of the container. The shaft 26 is, of course, grasped by the ball 30 at its upper end and drawn upwardly until the plunger is close to the under face of the bar before the bar can be pivoted to a raised position and must be in this position in order to permit it to enter the container as the bar is returned to a lowered position after a new cake of ice has been set in place within the container. The plunger 26 and the opening in the bar through which it passes are both rectangular in order to prevent the shaft and plunger from turning in the container and from the under face of the plunger project prongs 31 which bight into a cake of ice and prevent the ice from turning with the blade carrier. Therefore when the blade carrier is rotated the blades and reamer will very effectively scrape ice from the cake in the container and form snow-ice which will drop downwardly into the hopper 3 and pass through the outlet opening 6 into the receptacle 7. If the weight or plunger does not exert sufficient pressure to cause the blades to quickly shave ice from the cake the ball 30 may be grasped and pressure applied to it to force the plunger downwardly and hold the cake of ice against the blades. When the blades need sharpening it is merely necessary to remove the screws 12 and the container can be lifted out of place thereby exposing the blade carrier and permitting the same to be withdrawn from the collar 11 and the blades sharpened either while attached to the carrier or after being removed. When necessary new blades can be easily applied.

There has therefore been provided a machine so constructed that a cake of ice can be easily shaved to form snow-ice and this ice caught in a receptacle where it will be held until the receptacle is withdrawn from the base of the machine. By referring to Figure 1 it will be seen that about the container may be placed posts 32 serving to ornament the container as well as to support the collar or ring 28. Between sets of these posts the container may be additionally ornamented as shown at 33 is so desired.

Having thus described the invention what is claimed is.

1. In a snow-ball making machine, a body having separable upper and lower portions, the upper portion constituting a container for a cake of ice and the lower portion constituting a hopper to receive shaved ice and having an outlet, collars carried by adjacent ends of the hopper and container releasably connected to permit removal of the container, a blade carrier between the container and hopper consisting of a gear ring rotatably supported by the lower collar and a hub having spokes extending therefrom to the gear ring, blades removably secured to said spokes and having sharpened edges projecting upwardly from the spokes, a reamer carried by said hub between inner ends of the blades, actuating means carried by the container for engaging the gear ring when the container is in place and rotating the ring, and means for forcing a cake of ice in the container into contact with the blades and reamer.

2. In a snow-ball making machine, a body having separable upper and lower portions, the upper portion constituting a container for a cake of ice and the lower portion constituting a hopper to receive shaved ice and having an outlet, collars carried by adjacent ends of the hopper and container releasably connected to permit removal of the container, a blade carrier between the container and hopper consisting of a gear ring rotatably supported by the lower collar and a hub having spokes extending therefrom to the ring, blades removably secured to said spokes and having sharpened edges projecting upwardly from the spokes, a reamer carried by said hub between inner ends of the blades, a bearing bracket secured to said container and having its lower end engaging beneath the lower collar when the container is in place, a drive shaft journaled in said bracket and having turning means at its outer end, a gear at the inner end of said shaft to mesh with said gear ring and impart rotary motion to the blade carrier when the shaft is rotated, and means for urging a cake of ice in the container towards the blade carrier.

3. In a snow-ball making machine, a body having separable upper and lower portions, the upper portion constituting a container for a cake of ice and the lower portion constituting a hopper to receive shaved ice and having a tapered bottom formed with an outlet, shaving means between the container and hopper removable when the chamber is detached from the hopper, a gear ring, a reamer and spokes extending radially from the reamer to the gear ring, scraper blades removably secured in substantialy vertical position against the side faces of the spokes, actuating means for said shaving means carried by one section of the body, and means operating within the chamber for urging a cake of ice toward the shaving means.

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