A. MOSCA.

ICE-SHAVING MACHINE.

APPLICATION FILED NOV. 23, 1917.

1,305,484. Patented June 3, 1919.

Fig. 1.

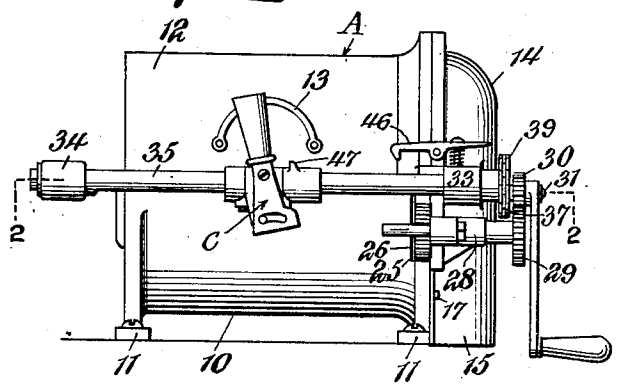



Fig. 3.

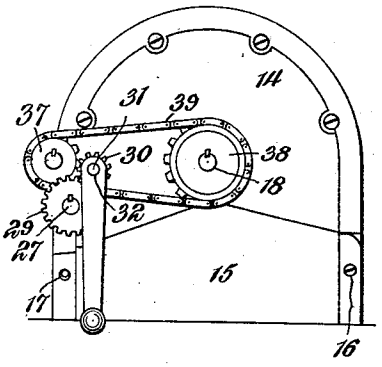



Fig. 2.

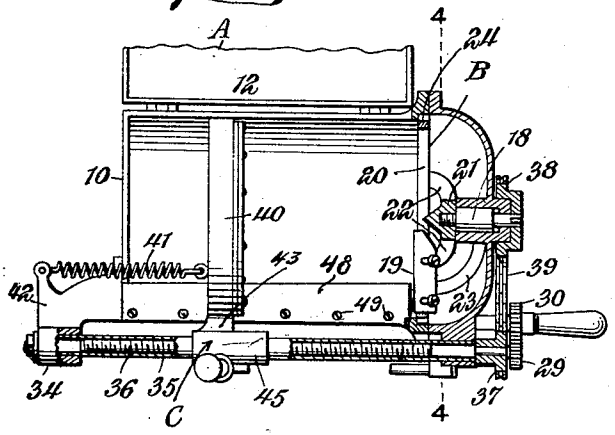



Fig. 4.

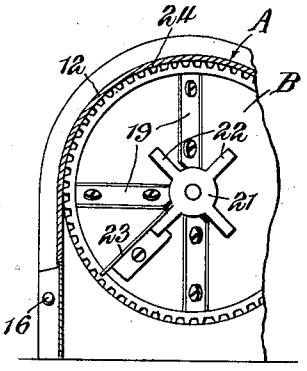



Fig. 5.

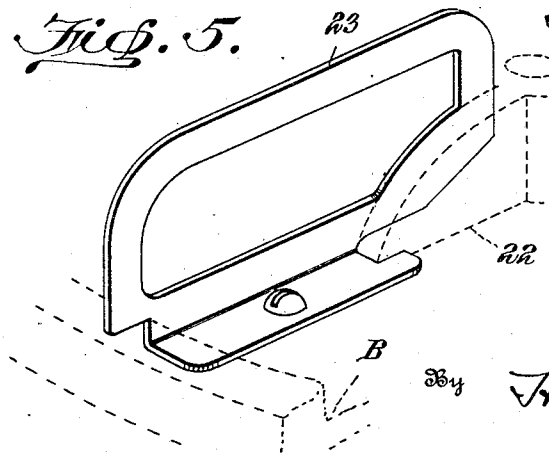
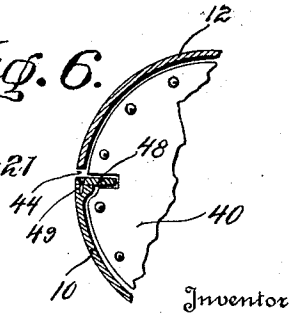



Fig. 6.




Inventor

A. Mosca

By Henry T. Bright

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

ALFONS MOSCA, OF NORFOLK, VIRGINIA.

## ICE-SHAVING MACHINE.

1,305,484. Specification of Letters Patent. Patented June 3, 1919.

Original application filed October 5, 1914, Serial No 865,170. Divided and this application filed November 23, 1917. Serial No. 203,579.

*To all whom it may concern:*

Be it known that I, ALFONS MOSCA, a citizen of the United States, residing at Norfolk, in the county of Norfolk, State of Virginia, have invented certain new and useful Improvements in Ice-Shaving Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates particularly to ice shaving machines of the type adapted to finally shave ice for use at soda fountains and the like, but is in no way limited to this particular class of machines as it may be utilized in connection with various machines for disintegrating material.

It is the purpose of my invention to provide a machine of the character named embodying a movable cutter and mechanism for feeding the material to the cutter wherein the cutter is directly connected with the feeding mechanism and the driving element of the machine is connected to the cutter independently of the feeding mechanism, such a construction enabling me to have great power in driving the cutter and to vary the ratio of speed between the cutter and feeding mechanism with the removal and replacement of a minimum number of parts.

It is also my purpose to provide improved detail structure for returning the pressure disk of the feeding mechanism to its initial position and for locking said disk against return to its initial position when it becomes automatically disengaged from the means for feeding it forward toward the cutter.

Furthermore, it is my purpose to provide a depending outlet for the material that is reduced by the operation of the cutter and to provide on the cutter a sweep blade adapted to traverse the outlet during movement of the cutter to prevent packing and accumulation of material in said outlet.

Furthermore, it is my purpose to provide a machine of the type named wherein the rotary cutter is directly driven, that is to say, the element which is directly driven by the operating part of the machine directly coacts with the cutter.

With the above and other objects in view the invention consists in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail reference will be had to the accompanying drawing wherein like characters of reference denote corresponding parts in the several views, and in which—

Figure 1 is a side elevation of an ice shaving machine constructed in accordance with my invention;

Fig. 2, a section on the line 2—2 of Fig. 1;

Fig. 3, an end view of my machine;

Fig. 4, a section on the line 4—4 of Fig. 2 with certain parts omitted;

Fig. 5, a detail perspective view of the sweep blade; and

Fig. 6, a detail section showing the mounting of the fin on a longitudinal upper edge of the lower section of the casing.

Referring to the drawings my invention is shown as comprising a casing A formed of a bottom section 10 supported upon legs 11 and a top section 12 hinged at the bottom section by one side edge and provided with a handle 13 whereby said top section may be raised to afford access to the interior of the casing for the purpose of feeding the latter with ice. One end of the casing A is closed by a head 14 which constitutes a depending outlet and through which latter the shaved ice is delivered into a suitable receptacle. The lower end of the head 14 embodies a separate section 15 which is pivoted at 16 and detachably fastened at 17 and whereby access to the interior of the head or outlet may be readily had for adjustment of the knives on the cutter head to be presently referred to. Rotatably mounted in the center of the head 14 is a shaft 18 which has fixed on the inner end thereof a knife disk or head B, the latter having mounted thereon a plurality of radially disposed knives 19, the disk B being provided with openings 20 through which the knives project respectively. The disk B is further provided with an extended hub portion 21 having arms 22 and secured to the disk B in radial relation to the latter and bearing against a side of one of the arms 22 is a sweep blade 23 of skeleton formation which is adapted to sweep the interior of the head 14 during rotation of the disk B for the purpose of preventing the accumulation and packing of material in the head or outlet. The pe-

riphery of the disk B is provided with teeth 24 for a purpose that will presently appear, the casing A being provided with an opening 25 in its side wall at a given point through which a gear 26 projects, the teeth of the latter meshing with the teeth 24 on the disk B. The gear 26 is fixed upon a shaft 27 journaled in a bearing 28 formed integral with the head 14. Also fixed upon the shaft 27 at the end thereof remote from the gear 26 is a gear 29 which meshes with a gear 30 attached to a spindle 31 which latter is rotatably mounted upon a stub shaft 32 carried by the head 14. The spindle 31 is adapted to be rotated in any suitable manner, either by hand or by suitable connection with a source of power.

Projecting laterally from the head 14 is a bearing 33 while another bearing 34 projects laterally from the opposite end of the casing A and alines with the bearing 33. These bearings 33 and 34 support the terminals of a tubular member 35. Disposed within the tubular member 35 and rotatably mounted in the tubular member is a screw 36. Fixed on the end of the screw 36 adjacent the head 14 is a sprocket wheel 37 which alines with a sprocket wheel 38 fixed on the shaft 18, and traveling on the sprocket wheels 37 and 38 is a sprocket chain 39 whereby the rotation of the disk B during the operation of the machine will effect a desired rotation of the screw 36. By this construction it will be obvious that in order to vary the ratio of rotation between the screw and knife it is only necessary to replace the sprocket 37 with another having a diameter bearing the desired relation to the diameter of the sprocket 38, or by replacing the sprocket 38 with another of different diameter, or by replacing both sprockets.

Slidably mounted within the casing A is a pressure disk 40 which is spring urged to the limit of its movement away from the knife disk B by means of a spring 41, one end of which latter is secured to the disk 40 and the other end thereof to a fixed part 42. The disk 40 is provided with a lateral extension 43 which projects through a slot 44 in the casing A and in which slot the extension 43 travels during movement of the disk 40. The free end of the extension 43 terminates in a sleeve 45 slidable on the tubular member 35. This sleeve carries a screw and nut gearing indicated generally at C and cooperating with the screw 36 to feed the disk 40 forward a predetermined distance and then release said disk from the influence of the screw and to be returned to its initial position by the spring 41. The details of this screw and nut gearing C are fully described in my Patent No. 1251087 dated Dec. 25, 1917, granted on application Ser. No. 865170, filed Oct. 5, 1914, of which the present application constitutes a division and therefore no detail description of said gearing will be resorted to.

In order to hold the disk 40 at the limit of its movement toward the disk B against the influence of the spring 41 so that small pieces of ice, if any, can be cleared away there is mounted on the head 14 a spring latch 46 adapted to engage over a nib 47 on the sleeve 45 just as the screw and nut gearing C is disengaged from the screw 36. By tripping the latch 46 it will be obvious that the disk 40 can be returned to the limit of its movement away from the disk B under the influence of the spring 41.

In order to hold the ice against rotation in the casing A with the cutter and thereby assure the efficiency of the latter I provide a fin 48 which is secured to the upper edge of the bottom section 10 through the medium of screws 49 as clearly shown in Figs. 2 and 6 of the drawing. As this fin extends into the casing A and a sufficient distance it will be obvious that it will act as a stop against the ice and prevent the latter from moving in unison with the cutter.

While I have described only a particular form for carrying my invention in the practice it will be obvious that various changes in the details of construction and the arrangement of parts can be resorted to without departing from the scope of the invention as set forth in the appended claims.

What I claim is:—

1. In a machine of the class described, the combination of a casing, a rotary knife head having its periphery provided with radially disposed outwardly extending gear teeth, a shaft rotatably mounted on the casing, means for rotating said shaft, a gear on the shaft and meshing with the teeth on the knife head, and having its axis of rotation parallel to the axis of rotation of the head, a pressure disk slidable in said casing for forcing material against a knife head, a rotatable feed screw, connections between the feed screw and the pressure disk, and connections between the knife head and the feed screw whereby the rotation of the knife head will rotate the feed screw.

2. In a machine for disintegrating material, the combination of a casing having an outlet for the treated material, a rotary cutter head operating between the casing and outlet and having a hub extension provided with radial arms, a sweep blade provided with an opening and having its outer edge conforming to the shape of the outlet, said blade bearing against the side of one of the radial arms, a lateral flange on the blade having a recess receiving the radial arm against which the blade bears, and means for securing the flange to the cutter head.

3. In a machine of the class described, the combination of a casing including hinged sections, a rotary cutting mechanism at one end of the casing, a pressure disk slidable within the casing, means for moving the pressure disk toward the cutting mechanism, and a longitudinal fin detachably mounted on the edge of the lower section of the casing and projecting into said casing to hold the material therein against movement under the influence of the cutter mechanism.

In testimony whereof I affix my signature in the presence of two subscribing witnesses.

ALFONS MOSCA.

Witnesses:
W. V. EUSTIS,
T. P. MCMANUS.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**