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ICE MILLING MACHINE

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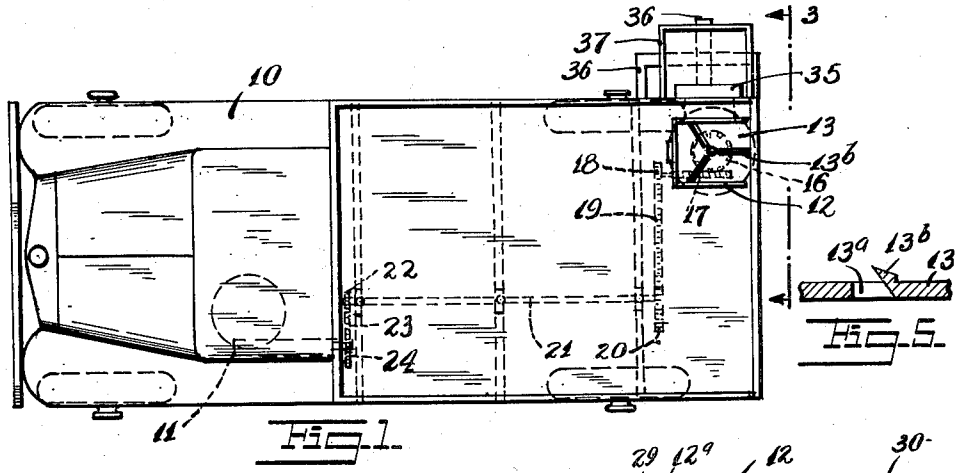


Fig. 1.

Fig. 5.

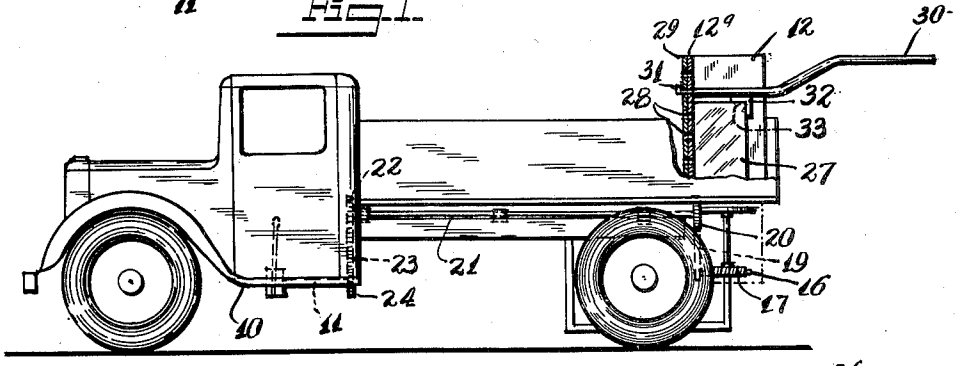


Fig. 2.

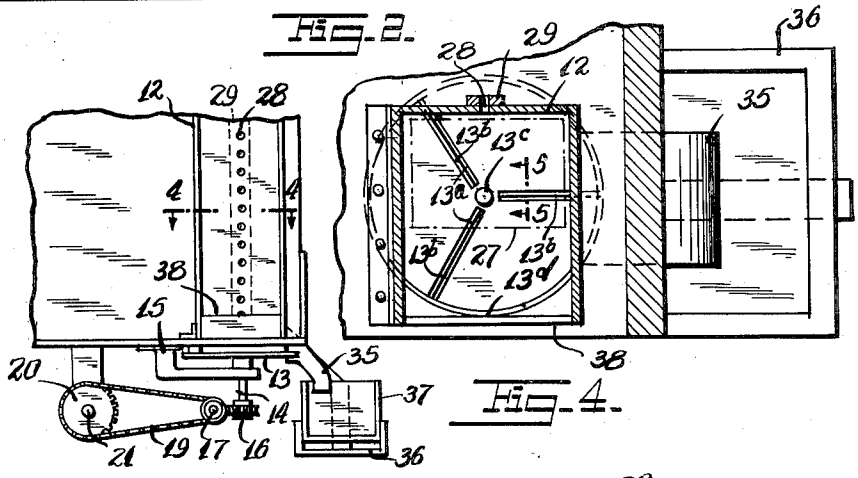


Fig. 4.

Fig. 3.

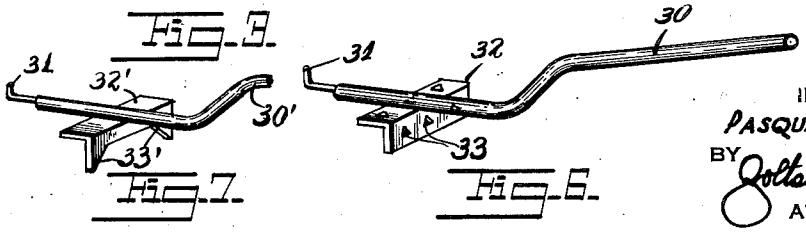


Fig. 7.

Fig. 6.

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ICE MILLING MACHINE

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3 Claims. (Cl. 83—62)

This invention relates to new and useful improvements in an ice milling machine.

The invention is particularly adapted for association with an ice truck. Very often buyers of ice wish the ice chopped or milled. Usually this is accomplished with a hand operated chopping spade.

This invention proposes the provision of a milling machine which is operable by the mechanism which operates the auto truck and which is adapted to mill the ice for the customer. The milled ice is very fine and resembles snow, and is especially desirable for the refrigerating of certain foods.

More specifically, the invention contemplates the association of a chute with the truck, which is adapted to slidably hold the cake of ice, and to arrange a disc cutter in the bottom of the chute and a means connected with the drive of the truck for operating with the disc cutter, to mill the ice.

Still further the invention proposes a particular arrangement of parts whereby the milling of the ice may be efficiently accomplished. Specifically, it is contemplated to provide a bar with a front hook adapted to engage selectively in openings formed in the chute, said bar to support a member with teeth adapted to grip the cake of ice so that the ice may be forced downwards against the cutter and laterally thereof. The purpose of forcing the ice against the cutter is important in that then the cutter is more efficient in milling the ice. The purpose of the member with the teeth for gripping the cake of ice is important in that then the cake may be moved laterally and portions which do not come into contact with the teeth of the cutter, engage the teeth of the cuter in the moved position and thus are milled.

Another object of the invention is the construction of a device as described which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a plan view of an ice truck equipped with an ice milling machine according to this invention.

Fig. 2 is a side elevational view of Fig. 1, a portion thereof being broken away to disclose details of the ice milling machine.

Fig. 3 is a fragmentary elevational view looking in the direction of the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary horizontal sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the bar and member for manipulating the ice so that it is efficiently milled.

Fig. 7 is a similar view to Fig. 6, but illustrating another form of bar.

The ice machine, according to this invention, is used in combination with an automobile ice truck 10 which has a conventional power shaft 11. Upon the body of the truck there is mounted a vertical chute 12 adapted to receive a cake of ice. This chute is open along one side, namely, the back side. It is located immediately adjacent one of the sides of the body of the truck at the rear thereof.

A disc cutter 13 is located at the bottom of the chute and is operated by means which are connected with the drive of said truck.

More particularly, the disc cutter 13 is supported on a vertical shaft 14 which is rotatively supported upon a bracket 15 attached upon the body of the truck. A worm wheel 16 is mounted on the shaft 15 which meshes with a worm pinion 17 upon a shaft equipped with a gear 18 connected by a chain 19 with a gear 20 on a shaft 21 rotatively supported on the body of the truck and extended to the front. The front of the shaft 21 is equipped with a gear 22 engaged by a chain 23 which engages a gear 24 upon the power shaft 11. The power shaft is equipped with a hand operated clutch by which the milling machine may be engaged and disengaged from its operative connection.

The disc cutter 13 is a flat disc formed with several radial cuts 13^a, one of the edges 13^b of which is bent upwards and sharpened. These radial slots 13^a extend from a hub portion 13^c to a rim portion 13^d on the disc cutter. The hub portion 13^c is substantially coaxial with the chute 12. Since the hub portion is blunt and is not equipped with cutting edges it is necessary that the cake of ice, indicated in Fig. 4 by the dot and dash lines 27, be moved laterally during the operation of the machine. The cutter disc 12 is of a sufficiently large size so that the cutting edges 13^b extend substantially across the entire compass of the bottom of the chute 12.

One wall of the chute 12, the wall diametrically

opposite the open side thereof and indicated by reference numeral 12a, is formed with a vertical line of openings 28. A strip of material 29 is attached upon the chute over the openings and is also formed with openings aligning with said openings for the purpose of reinforcing the chute at the area formed with the openings.

A bar 30 has a front hook portion 31 adapted to be selectively engaged through the openings 28 and supports a transverse member 32 in the form of an angle iron. This angle iron has teeth 33 stamped from the sides thereof, which teeth are adapted to be pierced into the cake of ice so that the cake is gripped and may be moved laterally as well as downward by the proper operation of the bar 30.

In Fig. 7, bar 30' is illustrated with a transverse member 32' which is formed with downwardly projecting teeth 33' to be pierced into the cake of ice.

At the bottom of the chute 12, at one side thereof, there is a discharge spout 35 through which the milled ice will be forced out. A strip 38 closes the open back of the chute at the bottom thereof. The rotation of the disc will force the ice peripherally and it will discharge through the spout. A frame 36 is attached upon the body of the truck and is adapted to support a basket 37 beneath the spout 35 to receive the milled ice.

It is to be understood that instead of a single disc cutter, two or more disc cutters or other type of cutters may be used.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. In an ice milling machine, a chute with an open side for receiving a cake of ice and one of its sides having a vertical line of openings, a disc cutter coaxial with said chute and transversely across the bottom thereof and having radial cutter elements starting slightly from the center thereof, means for rotating said disc cutter and a bar with a front hook adapted to engage said openings and supporting a member with teeth to grip said cake of ice so that the ice may be forced against the cutter and laterally thereof.

2. In an ice milling machine, an element, a chute with an open side for receiving a cake of ice and one of its sides having a vertical line of openings, a disc cutter co-axial with said chute and transversely across the bottom thereof and having radial cutter elements starting slightly from the center thereof, means for rotating said disc cutter, and a bar with a front hook adapted to engage said openings and supporting a member with teeth to grip said cake of ice so that the ice may be forced against the cutter and laterally thereof, and a spout at the bottom of said chute at one side thereof through which the ice will be discharged, and a frame for a basket mounted on the side of said element so that the basket may be supported beneath said spout.

3. An ice milling machine, comprising a chute with an open side for receiving a cake of ice and one of its sides having a vertical line of openings, a disc cutter co-axial with said chute and transversely across the bottom thereof and having radial cutter elements starting slightly from the center thereof, means for rotating said disc cutter, and a bar with a front hook adapted to engage said openings and supporting a member with teeth to grip said cake of ice so that the ice may be forced against the cutter and laterally thereof, said member comprising an angle iron with portions stamped therefrom forming said teeth.

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