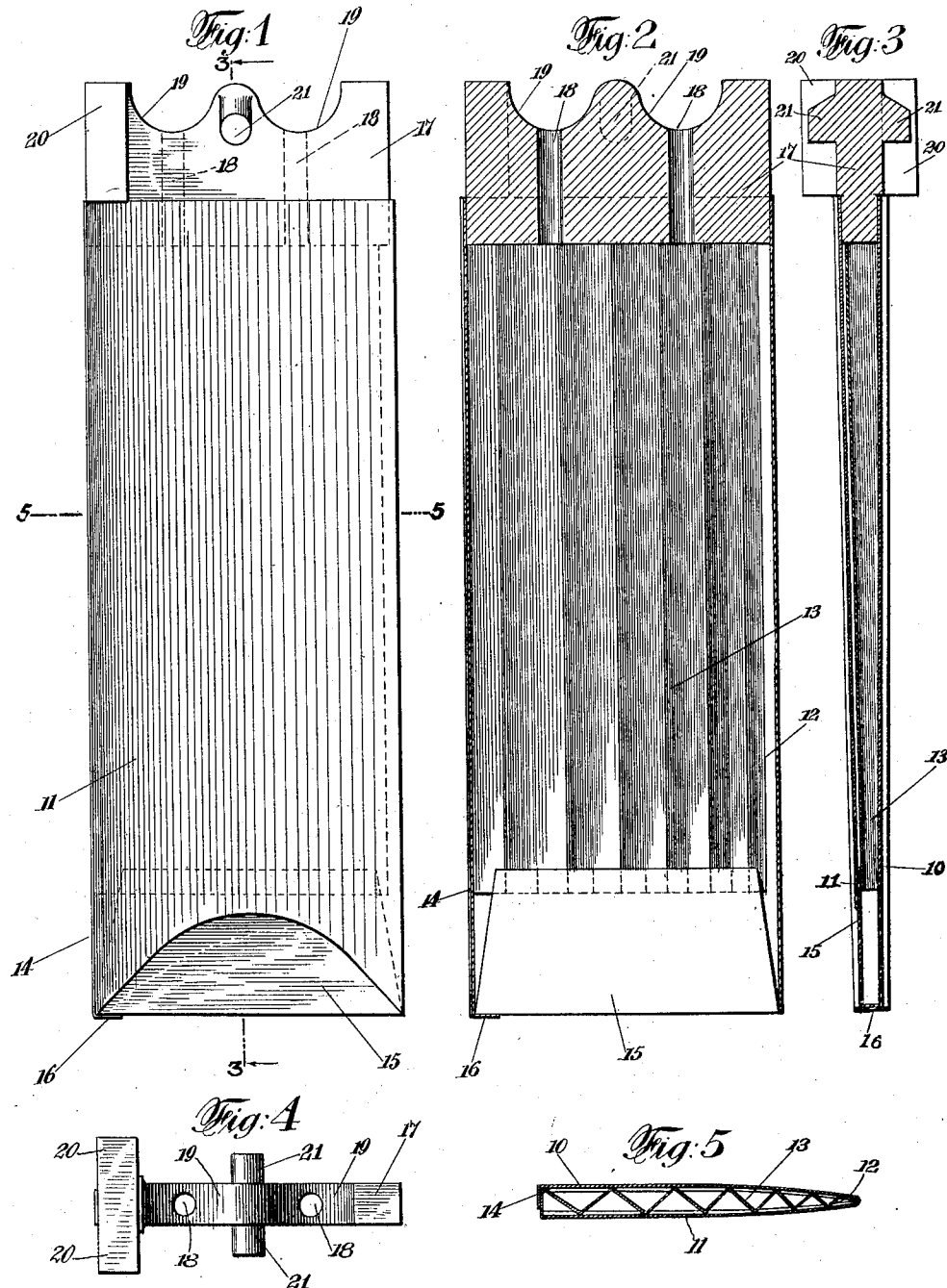


G. L. GRAY.
ICE CUTTING DEVICE.
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1,058,363.

Patented Apr. 8, 1913.



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ICE-CUTTING DEVICE.

1,058,363.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, GRANT L. GRAY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ice-Cutting Devices, of which the following is a specification.

The invention relates to devices employed in the harvesting of artificial ice for the purpose of separating a large mass of frozen water into a series of blocks of the desired size; and more particularly to a hollow, cross-cut separating member into which a warm medium may be introduced. A somewhat similar device has been disclosed in U. S. Letters Patent No. 876,015; and it is the object of the present invention to improve the device therein disclosed by constructing the same entirely of sheet metal, preferably in one piece, and thereby greatly reducing the liability to leakage; and, furthermore, to afford a flexible cutter by providing between the walls of the same a resilient member, and which member will at the same time reinforce the cutter as a whole.

The construction of the improved cutter is such that all rivets and solder on the side wall portions are dispensed with so the cutter may be freely drawn from between the blocks after having become detached therefrom. Provision is also made for the more ready drainage of the cutter after its removal from the freezing tank.

The nature of the invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 is an elevation of the improved cutter. Fig. 2 is a similar view but with one wall removed. Fig. 3 is a transverse vertical section taken on the line 3—3, Fig. 1, and looking in the direction of the arrows. Fig. 4 is a plan of the cutter. Fig. 5 is a horizontal section taken on the line 5—5, Fig. 1.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, 10 and 11 designate respectively the outer walls of the cutter and are composed of a single piece of sheet metal suitably bent to form a hollow cutter. This may be accomplished, for example, by starting at the free end 12 of a

corrugated portion 13 of the material, the purpose of which will hereinafter be set forth, then turning the metal back over and around the corrugated portion 13 to form the said wall 10 which extends some distance beyond the free end 12 of the said corrugated member. The metal is then turned back again to form the wall 11, which at its farther end is abruptly turned inwardly toward the wall 10 providing a lip 14, which is soldered to the end of the corrugated member 13, or otherwise suitably secured thereto. The walls 10 and 11 are made preferably to taper toward the free end of the member 13, which, of course, is likewise tapered to correspond by making the successive corrugations of less depth. The cutter is tapered also downwardly to enable the same to be more readily withdrawn from the blocks of ice. Of course, the corrugated member 13 might be made separately and inserted between the walls 10 and 11; but I prefer to make the cutter entirely of a single piece of the sheet metal, as hereinbefore set forth.

In order to decrease the liability of leakage, the wall 10 is folded inwardly at the bottom to form an upwardly extending lap 15, the corrugated member 13 terminating at a sufficient distance from the bottom to prevent interference with this lap. The wall 11 is brought down over this lap and is cut away partly, as shown in Fig. 1, the seam being suitably soldered. A small lap 16, also, is turned from the side of the cutter over the bottom of the same.

At the top, the hollow cutter hereinbefore described carries a suitable head 17 which is riveted and soldered thereto to provide a water-tight joint; and this head is provided with suitable openings 18 for the heated water and to permit the escape of the air. These openings are provided in corresponding transverse cuts 19 of the head so that in setting the head on end to empty the cutter of the water, the same drains freely therefrom. The cutters, as a whole, are supported by suitable lugs 20 extending from the head 17; and are further provided with outwardly extending arms 21 whereby the cutter as a whole may be drawn upwardly out of the tank.

In providing a corrugated member with one end or both ends free between the two walls 10 and 11 of the cutter, the said walls remain free and sufficiently resilient to con-

form to the pressure thereon, making the cutter as a whole flexible and providing a spring action on both walls throughout their entire height. When the cutter is frozen in, the walls of the same are pressed tightly against the corrugations; and when the hot water is introduced within the cutters, these walls will again spring into place and the cutter consequently readily loosens and can be easily withdrawn. The construction herein disclosed whereby the cutter is made without any rivets or solder projecting upon its active external surface, provides a cutter which can be freely withdrawn as there is no interference in the direction of pull. The seam between the lap 15 and the wall 11 does not interfere in the least, as the said lap is folded in the inside of the wall 11 and in drawing out the cutter the same is consequently not drawn against the ice. The cutter, furthermore, is strongly reinforced throughout its length by the corrugated member 13 and affords a sufficiently strong and, at the same time, flexible cutter.

I claim:

1. A cutting device for use in the manufacture of artificial ice, comprising: a hollow sheet metal member, having flexible walls, and a reinforcing member held therein between said walls but unattached thereto and extending substantially throughout their entire width.

2. A cutting device for use in the manufacture of artificial ice, comprising: a hollow sheet metal member, and a corrugated, reinforcing member held between the walls of the same.

3. A cutting device for use in the manufacture of artificial ice, comprising: a single sheet of metal bent back upon itself, and a reinforcing member formed of one end thereof turned in between the walls of said cutting device.

4. A cutting device for use in the manufacture of artificial ice, comprising: a single sheet of metal bent back upon itself, and a reinforcing member formed of one end thereof turned in between the walls of said cutting device, the said turned in portion being corrugated.

5. A cutting device for use in the manufacture of artificial ice, comprising: a single sheet of metal bent back upon itself, and a reinforcing member formed of one end thereof turned in between the walls of said cutting device, the said turned in portion being corrugated and its end remaining free and unattached to the cutting device.

6. A cutting device for use in the manufacture of artificial ice, comprising: a single sheet of metal bent back upon itself, and a reinforcing member formed of one end thereof turned in between the walls of said cutting device, the said turned in portion being corrugated and its end remaining free and unattached to the cutting device, and the said corrugations being of decreasing depth toward the free end.

7. A cutting device for use in the manufacture of artificial ice, comprising: a single sheet of metal bent back upon itself, a reinforcing member formed of one end thereof turned in between the walls of said cutting device, the said turned in portion being corrugated and its end remaining free and unattached to the cutting device, and a lap member extending upwardly from the bottom of one of the walls and within the other wall.

Signed at New York, in the county of New York, and State of New York, this 27th day of May A. D. 1912.

GRANT L. GRAY.

Witnesses:

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