G. E. MITTINGER.

ICE CAN.

APPLICATION FILED JUNE 11, 1919.

1,365,527.

Patented Jan. 11, 1921.

2 SHEETS—SHEET 1.

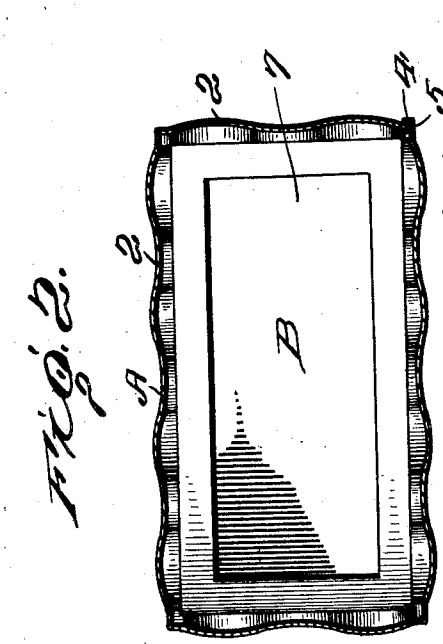


Fig. 2.

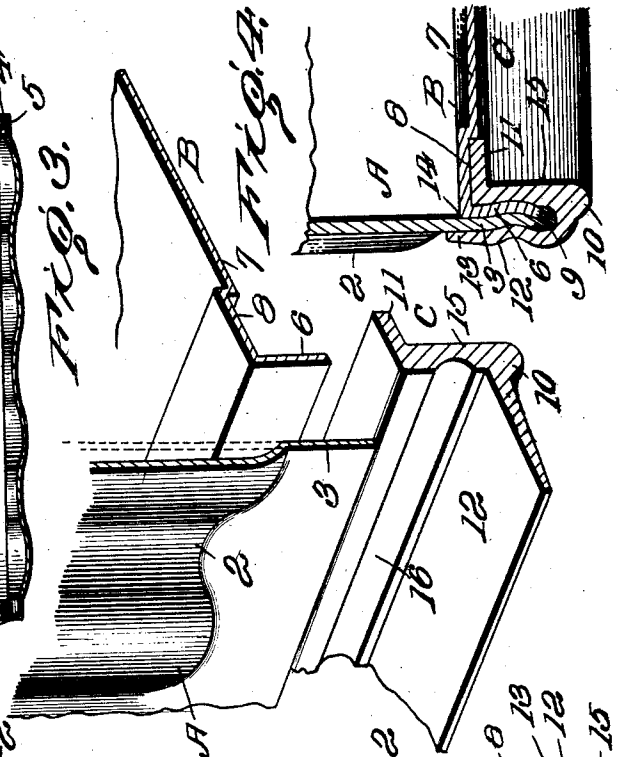


Fig. 3.

Fig. 4.

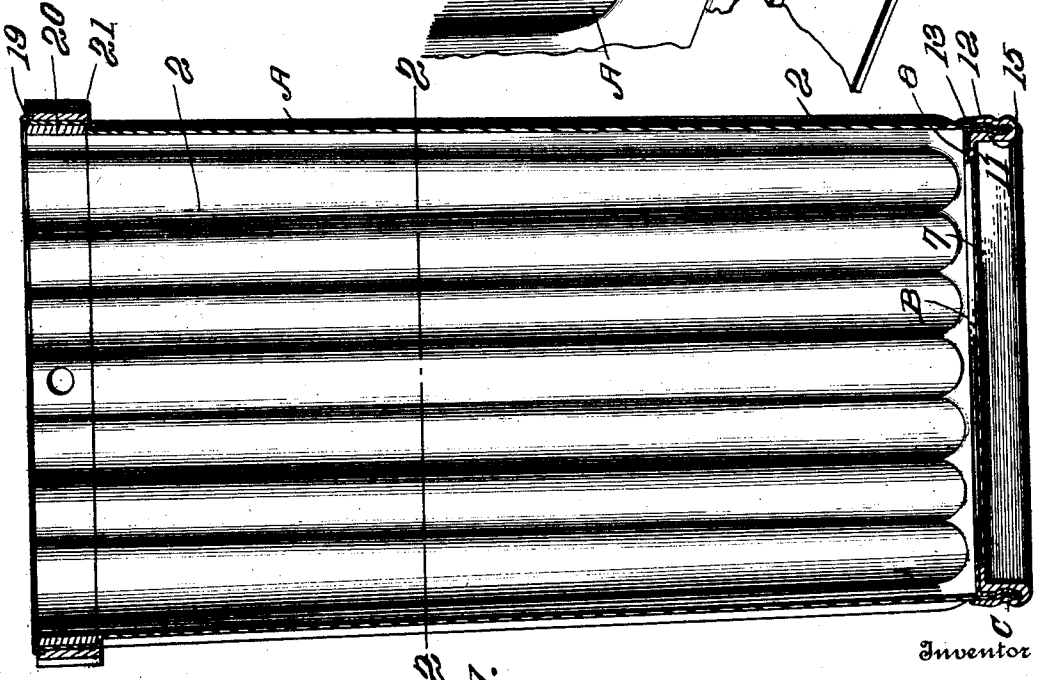


Fig. 1.

Inventor

George E. Mittinger

By A. S. Pattison, Attorney

Witness

Floyd P. Cornwell

L. L. Bucket

G. E. MITTINGER.

ICE CAN.

APPLICATION FILED JUNE 11, 1919.

1,365,527.

Patented Jan. 11, 1921.

2 SHEETS—SHEET 2.

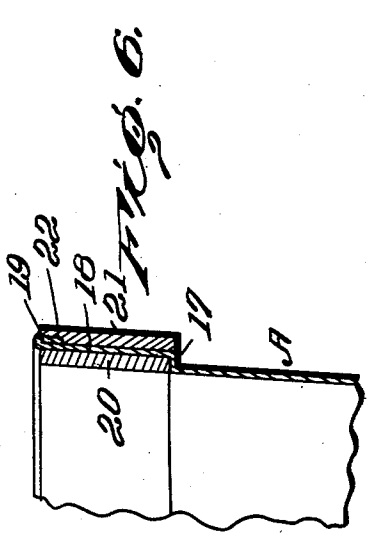


Fig. 6.

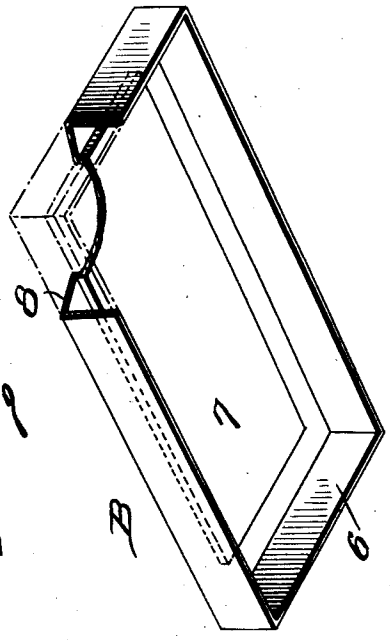


Fig. 7.

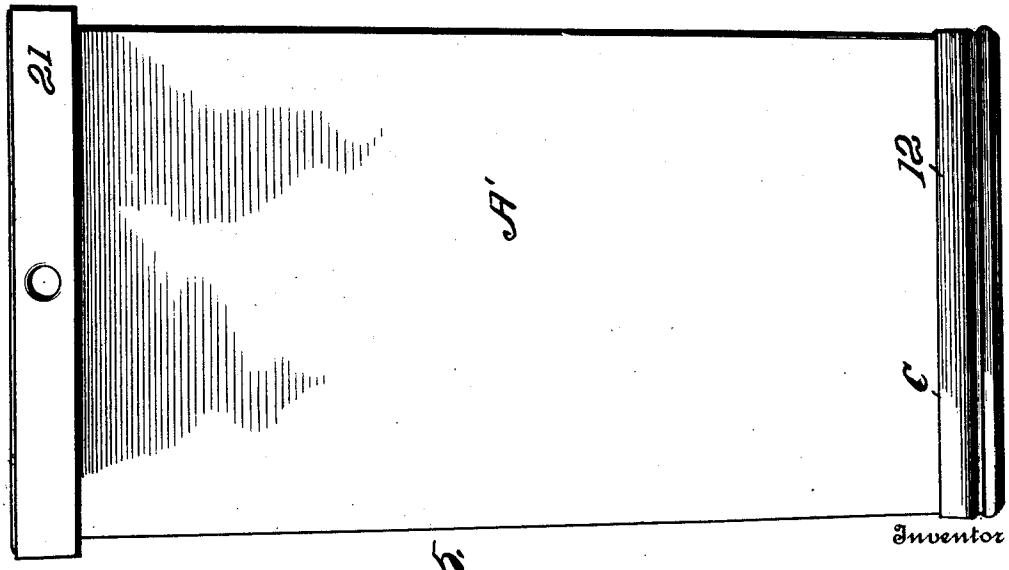


Fig. 5.

Witness
Floyd P. Cornwall.
L. L. Bucket

Inventor
George E. Mittinger
By A. Pattison
Attorney

UNITED STATES PATENT OFFICE.

GEORGE E. MITTINGER, OF YOUNGSTOWN, OHIO.

ICE-CAN.

1,365,527. Specification of Letters Patent. **Patented Jan. 11, 1921.**

Application filed June 11, 1919. Serial No. 303,450.

To all whom it may concern:

Be it known that I, GEORGE E. MITTINGER, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Ice-Cans, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in ice cans, for use in ice making plants, and in which the water is placed to be frozen into blocks of ice.

Ice cans are subjected to rough usage, causing leakage or battering to such an extent as to make them unfit for use, by reason of which they are relatively short lived, requiring replacement which adds to the cost of production of the plant.

Ice cans which are now in general use in ice plants are made up of sections which are riveted at their joints, and by reason of this construction, the joints become leaky from rough usage, and the heads of the rivets extend within the interior of the can requiring that the can be placed in hot water to melt the outside of the ice block before it can be removed from the can.

The primary object of my present invention is to produce a rivetless ice can which is of a much stronger and sturdier construction, not liable to leakage by reason of rough handling and will stand more battering without serious injury than the riveted structures now in use, and the inner sides of which are devoid of projections, whereby the block of ice can be removed therefrom much more readily than can be done with the riveted structures.

Further objects of the invention will appear from the following description of my improved construction of ice can.

In the accompanying drawings—

Figure 1 is a vertical longitudinal sectional view of my improved ice can of the corrugated type.

Fig. 2 is a cross-sectional view on the line 2—2, of Fig. 1.

Fig. 3 is a detail perspective view of the bottom, the combined clamping and strengthening rib, and the lower end of the side wall of the can, the parts shown in separated relation.

Fig. 4 is an enlarged sectional view taken through a portion of the bottom of the can with the parts in their assembled and clamped positions.

Fig. 5 is a side elevation showing a modification of the can, in that the wall of the can is straight instead of corrugated, as in Figs. 1 to 3 inclusive.

Fig. 6 is a transverse sectional view through the top of the can, showing a construction used with both forms.

Fig. 7 is an inverted perspective view (partly in section) of the inverted centrally depressed bottom that is used with both forms of can.

Referring now particularly to the corrugated form, A is the body or wall portion of the can, which is provided with longitudinally extending corrugations 2. The can is slightly tapered toward its bottom, as shown, so that its cross-sectional area is continuously slightly reduced from its top to its bottom. The corrugations 2 extend preferably to the top of the can, as shown, but stop short of the lower end of the body A, as shown, for the purpose of forming a straight lower edge 3. The body of the can is preferably formed from a single sheet of metal bent into the shape shown in Fig. 2, with one edge of the sheet provided with an L bend 4, lapping the outside of the adjacent edge 5, as shown in Fig. 2, and the edges are welded together by any well-known and suitable process.

The bottom B of my improved ice can has its flange 6 turned downward a distance approximately equal to the straight lower edge 3 of the body A, and a central panel portion 7, preferably depressed forming an upwardly extending surrounding groove 8, between the downwardly extending flange 6 and the panel 7, the object of which will be presently pointed out. In assembling the parts the bottom flange 6 and the straight edge 3 of the body A have their lower edges suitably welded together, as at 9, when they are in their straight positions.

For the purpose of providing a strong construction at the bottom of the can, which receives the major portion of the rough usage when the can is loaded with either water or ice, I provide a combined clamping and strengthening rib C. This strengthening rib, before it is applied to the parts, is of approximately a Z-shape and has a depend-

ing bulb or rib 10 to support the can and to receive the knocks while in use. The rib C, before it is applied may be aptly described as a Z-bulb reinforcing and clamping member. This reinforcing and clamping member or rib has its short leg 11 of a size to fit within the surrounding groove 8 of the bottom B, and its long leg 12 of a length to extend upward beyond the bottom B, when the parts are assembled, as shown at 13, the object of which is to produce an inwardly clamping pressure against the lower edge 3 of the body A above the bottom B to prevent the body from opening away from the depending flange 6 of the bottom B. If a construction permits any opening or separation of the body A and bottom B, at the point 14, water enters that point and in the freezing operation it causes expansion, thus increasing the separation and this occurs each time the can is used, thus greatly enlarging the separation until there may be a breaking away or a leakage occurs.

The strengthening member C has its vertical leg 15, provided with an external annular groove 16. In assembling these parts, the long leg 12 of the member C is bent upwardly and inwardly and the forming tool is so shaped that the leg 12 is pressed inward opposite the groove 16, so that the flanges 6, 3 and leg 12 are pressed inward intermediate their ends, thus interlocking the parts tightly together.

The paneling of the bottom B stiffens the bottom and provides a groove 8 for the short leg 11 of the member C, and the parts when assembled provide a strong rivetless construction adapted to withstand the rough usage to which ice cans are subjected in ice plants. Furthermore, the longitudinally corrugated body A gives strength and rigidity to the body portion adapting it to better withstand the hammering and rough usage to which the bodies of such cans are subjected.

In ice cans it is desirable to provide their upper ends with a strengthening member and this I provide in an improved manner. This construction is better illustrated in the large section, Fig. 6. In carrying out this part of my present improvement, the upper end of the body A is provided with an offset L-shaped bend 17, forming an offset upwardly extending flange 18, and the upper end of this flange 18 is doubled outward and downward upon itself, as shown at 19, to provide a selvage edge to the can. An annular band 20 is placed within the offset portion 17 and of a thickness and width to fill this offset portion, and a second annular band 21 of substantially the same thickness as the band 20 is placed outside of the flange 18, and the inner top edge of the band 21 is provided with a cut-away or L-shaped groove 22 to receive the doubled back portion 19. The flange 18 and bands 20 and 21 are connected together by the well-known electric spot welding.

In Fig. 5 I have shown a modification of the body of the can, wherein a straight body A′ is provided instead of the longitudinally corrugated body shown in Fig. 1. The top and bottom construction of the said body A is the same as the top and bottom constructions of the corrugated body which has already been described.

An ice can of the foregoing construction is relatively cheap to produce; is rivetless in construction; has a strong and rigid body portion; is provided with a straight inner wall without projections to interfere with the withdrawing of the block of ice, and is provided with strong bottom and top edges to withstand the rough usage to which such cans are subject. By reason of this improved construction my can will be much longer lived than the riveted construction now generally used and not subject to leakage by reason of the rough usage.

There will be four clamping and strengthening members C and their abutting edges will be mitered at the corners of the can and will be welded at their mitered ends, thus making a clamping member continuous around the bottom of the can.

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

1. An improved ice can comprising a body having an open top and a bottom, said bottom being of an inverted cup-shaped form with its depending flange abutting against the inner side of the lower end of the body, a clamping member embracing and tightly clamping the depending flanges of the body, said bottom having a centrally depressed panel portion forming a surrounding upwardly extending groove, the upper end of the inner portion of the clamping member having an inwardly extending arm located within the said bottom groove.

2. An improved ice can comprising a body having an open top and a bottom, the bottom being of a cup-shape with its peripheral flange extending parallel with and fitting against the lower portion of the body, a clamping member having upwardly extending parallel portions which embrace said body and bottom flange, said parallel portions of the clamping member having an interlocking annular groove and projection which clamp and crimp the depending body and bottom flange, and holding the clamping member against being dislodged from the crimped bottom flange and body.

3. An improved ice can comprising a body having an open top and a bottom, means for securing the bottom within the body portion, and a strengthening construction for the open top of the can comprising an outwardly and upwardly extending L-shaped flange, a

flat ring of a width and thickness corresponding to and just filling the L-shaped space formed at the inner side of the L-shaped flange, whereby the inner side of the top of the can is strengthened and without projections or cavities for the purpose described.

4. An improved ice can comprising a body having an open top and a bottom, means for securing the bottom in position, the top of the body having an offset upwardly extending flange with the top of the flange doubled backward and downward to form a selvage edge, a strengthening ring secured to the outer side of the offset flange and having its upper inner edge provided with a peripheral groove to receive the doubled backward and downward edge of the body portion.

5. An improved ice can comprising a body having an open top and bottom, means for securing the bottom in position, the top having an offset upwardly extending flange, an annular strengthening band fitting at the inner side of the flange and not extending in beyond the inner surface of the body, and an outer annular strengthening band located outside of and embracing said top body flange, whereby the receptacle is specially adapted for the purpose described.

In testimony whereof I hereunto affix my signature.

GEORGE E. MITTINGER.