No. 878,501. PATENTED FEB. 11, 1908.

P. C. BURHANS.

ICE CAN.

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Fig. 1.

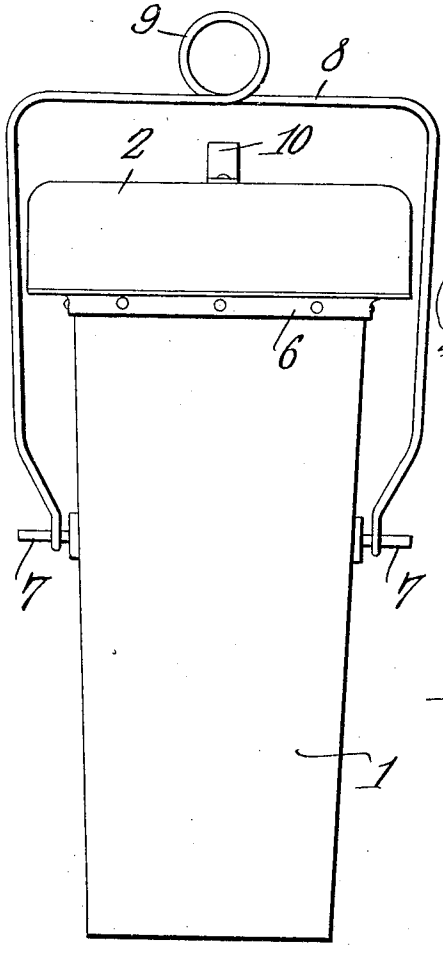
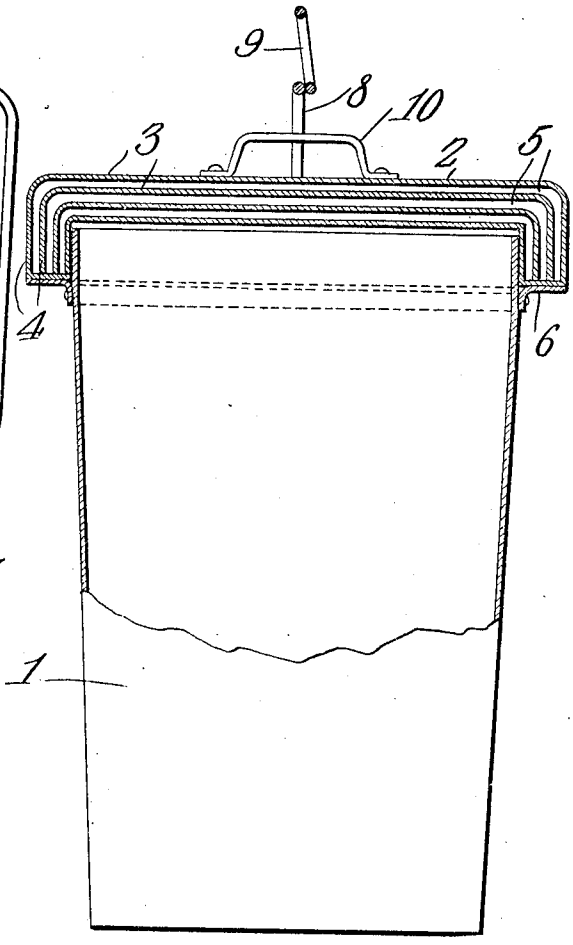


Fig. 2.



WITNESSES:

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ICE-CAN.

No. 878,501. Specification of Letters Patent. Patented Feb. 11, 1908.

Application filed March 1, 1907. Serial No. 360,005.

To all whom it may concern:

Be it known that I, PAUL C. BURHANS, a citizen of the United States, residing at Phœnix, in the county of Burleigh and State of North Dakota, have invented a new and useful Ice-Can, of which the following is a specification.

This invention relates to ice cans or tanks for manufacturing ice by placing the cans filled with water in a freezing atmosphere, as, for instance, the outside air during cold weather, such cans being especially useful in places more or less remote from rivers or lakes, where ice cannot be conveniently and cheaply harvested in the usual manner.

The invention has for one of its objects to provide an ice can which is of simple, substantial and inexpensive construction, and so designed that the freezing of the water can be quickly and safely accomplished without danger of the can bursting.

A further object of the invention is the provision of an ice can or tank of this character which is provided with a cold insulating cover which extends over the top open end of the can and partly down the sides thereof so as to prevent the cold air from freezing the top of the body of water in the can before the water in contact with the bottom and sides is frozen, thereby causing the water to freeze first at the bottom and then at the top.

The can or tank is so constructed that it is narrower at the bottom than at the top, and this fact, taken in connection with the process of freezing just described, insures the rapid forming of the ice without danger of the can bursting.

With these and other objects in view, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter, and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a side elevation of the ice can. Fig. 2 is a partial longitudinal section in elevation.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

Referring to the drawing, 1 designates the body of the can, which is preferably made of galvanized iron or other metal, and is of any approved shape. In the present instance, the body 1 is rectangular in horizontal cross section and is slightly larger at its upper end than at its bottom, so that the expansion of the water during the freezing process can take place in an upward direction, and so that the block of ice can be more easily removed from the can. The upper open end of the can 1 is closed by a cover, designated generally by 2, which is made of any suitable material, such as wood, papier mâché, cardboard, or the like, so that the cold will not be transmitted to the upper end of the tank so readily as at the sides and bottom of the tank. The cover 2 is composed of a plurality of plates 3 of heat insulating material that are turned down at all four edges into vertically extending flanges 4. These plates are suitably connected and arranged with dead air spaces 5 between them, so that the transmission of heat or cold through the cover will be positively prevented. The depending portion of the cover formed by the flanges 4 engages over the sides of the tank 1 to a suitable distance so as to prevent the cold from freezing the water at the surface before the water is frozen at the bottom. Since the tank is made of iron, the low temperature of the surrounding air is readily communicated to the water and freezing thereof will begin at once at the bottom and the sides of the tank that are unprotected by the side portions of the cover. The water thus freezes inwardly and upwardly and finally ends at the very top, and obviously the expansion takes place in the same direction, which fact, taken in connection with the upward enlargement of the tank, insures the freezing of the water without danger of the tank bursting.

Extending around the tank 1 at a point slightly below the top edge is an iron frame 6 preferably of L-shaped cross section which is riveted or otherwise rigidly secured to the sides of the tank or can. This frame forms a ledge or support on which the cover 2 rests. It also serves as a band for reinforcing the upper open end of the tank. It will be noted that the web of the frame 6 on which the cover rests extends horizontally, or in a direction best adapted to resist any lateral stress on the walls of the tank.

To facilitate the handling of the tank, the same is provided on two opposite sides with trunnions 7 rigidly secured thereto, and pivoted to the trunnions is an iron rod bail 8. This bail is provided with a central eye 9

whereby the tank can be conveniently lifted, as by means of a block and tackle device, when desired. The bail is so constructed that it can be readily detached from the trunnions 7 by swinging the free ends thereof outwardly off the latter. Thus one bail is sufficient for a large number of tanks, and, furthermore, the tanks can be arranged closer together. The cover 2 is provided with a handle 10 whereby it can be readily taken hold of for removing the cover from the tank or placing it thereon.

With ice making tanks of the character described, pure and solid ice can be quickly and conveniently made with comparatively little cost, and a plant operating on the principle herein set forth is far more economical than ordinary ice manufacturing concerns, and the ice produced is purer and less expensive than that harvested on rivers in the ordinary manner. The tanks are of especial value in localities where ice cannot be harvested in the ordinary way, or where the temperature rarely falls low enough to furnish ice in lakes or streams, though the temperature may be sufficiently low to freeze water in relatively small quantities, such, for instance, as would be held in tanks of the character herein described.

In operation, the tanks are filled with water and set upon suitable supports so that the bottoms of the tanks will also be exposed to the cold air. The covers are then placed on the tanks and the water allowed to freeze. After solid blocks of ice are formed by the effect of the surrounding atmosphere, the tanks are emptied for immediate reuse and the blocks of ice can be stored away in ice houses in the customary manner.

What is claimed is:—

In a device of the class specified, a sheet metal can tapering in form and larger at its upper open end than at its bottom, a reinforcing frame secured to the outer face of the can at a point below and parallel to the upper edge thereof, and a cover formed of a series of spaced plates arranged to form a plurality of dead air spaces, the edges of the plates being turned downward and resting on the frame, the air spaces being continued through the downturned portions, substantially as specified.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PAUL C. BURHANS.

Witnesses:

JOS. A. DAHL,

KRIST KJELSTRUP.