A. F. CRAMER.

CAN GUIDE AND SUPPORT FOR ICE TANKS.

APPLICATION FILED AUG. 29, 1910.

1,037,731. Patented Sept. 3, 1912.

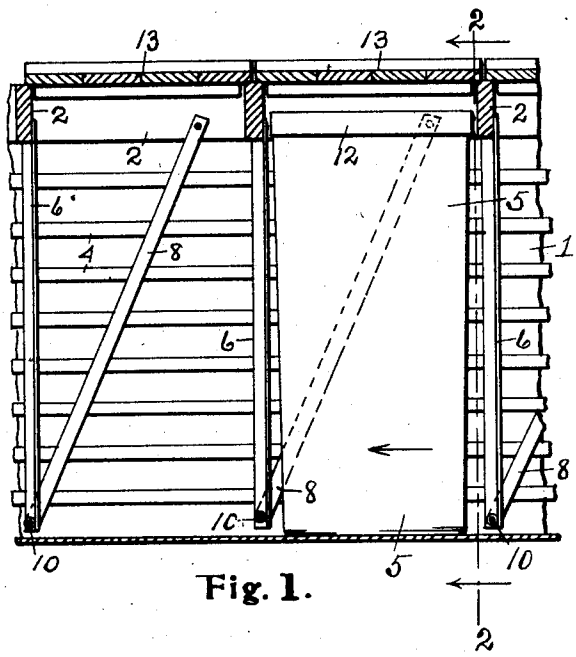

Fig. 1.

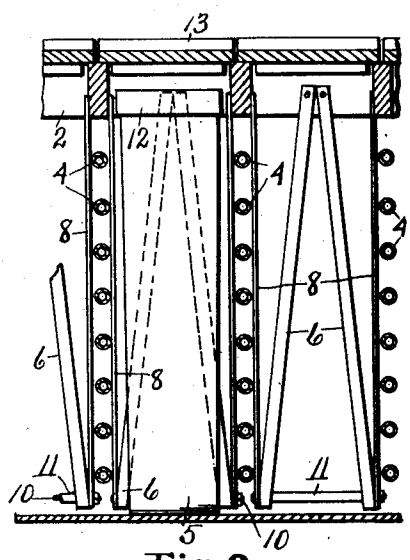

Fig. 2.

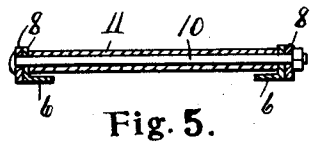

Fig. 5.

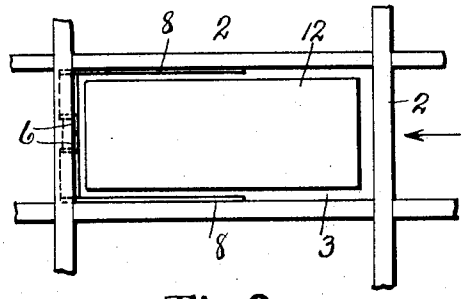

Fig. 3.

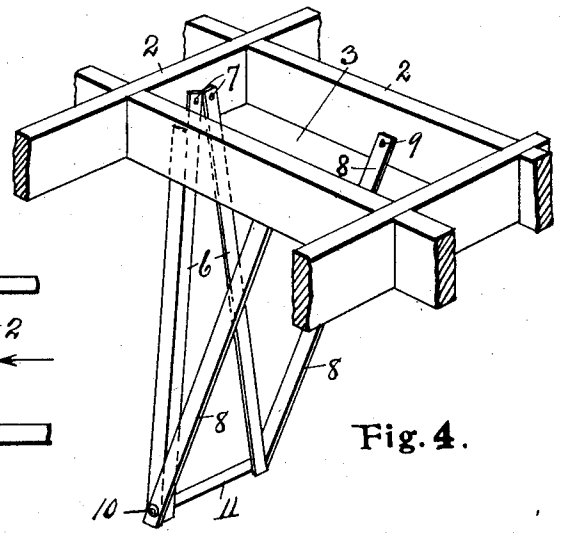

Fig. 4.

Witnesses

O. B. Baenziger.

I. G. Howlett.

Inventor

Anthony F. Cramer.

By E. A. Wheeler Attorney.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ANTHONY F. CRAMER, OF DETROIT, MICHIGAN.

CAN GUIDE AND SUPPORT FOR ICE-TANKS.

1,037,731. Specification of Letters Patent. Patented Sept. 3, 1912.

Application filed August 29, 1910. Serial No. 579,529.

To all whom it may concern:

Be it known that I, ANTHONY F. CRAMER, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Can Guides and Supports for Ice-Tanks; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a can guide and support in the congealing or freezing tank in apparatus employed for the production of artificial ice, and consists in the construction and arrangement of parts hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for guiding the cans into place and retaining them properly in position when inserted into the flowing brine of the ice or freezing tank, provision being made for protecting the cans from contact with the pipes carrying the refrigerating liquid when being inserted into and withdrawn from the ice tank.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is a fragmentary view in section through a portion of a freezing tank, showing one embodiment of my invention. Fig. 2 is a transverse section as on line 2—2 of Fig. 1. Fig. 3 is a plan view of one of the compartments formed by the framing of the freezing tank, showing a can in position therein. Fig. 4 is a perspective view of the structure shown in Fig. 3 with the can removed. Fig. 5 is an enlarged detail in longitudinal section through the lower ends of the vertical stays and diagonal braces, showing the manner of connecting the lower ends thereof by means of a tie-bolt, and at the same time holding them separated or spaced the proper distance apart.

Referring to the characters of reference, 1 designates the wall of the freezing tank through which is circulated brine or other liquid which will not freeze at the temperature at which water congeals. Crossing the top of said tank is a frame-work 2 which divides the tank into a number of rectangular compartments or divisions 3 (see Figs. 3 and 4). Extending longitudinally of the freezing tank below and in vertical alinement with the bars of the frame forming the sides of said compartments, are the pipes 4 which carry the circulating anhydrous ammonia or other refrigerating liquid, the evaporation of which in said pipes reduces the temperature of the brine in the freezing tank below the temperature at which water freezes, as will be well understood in the art.

The cans or ice molds 5 are placed in the brine in the freezing tank by introducing them vertically into the brine through the divisions or compartments 3 formed by the frame-work 2. Ordinarily, there is nothing to keep the cans in place excepting said frame-work which embraces the upper ends of said cans only, so that the current through the freezing tank caused by the flow of brine therethrough in the direction indicated by the arrows in Figs. 1 and 3, will often move the partially filled cans so as to cause them to stand irregularly in their compartments, the force of the flowing brine being sometimes sufficient to tilt the cans to such an extent as to cause the brine to enter the tops thereof. Furthermore, in introducing the cans into said compartments in the freezing tank and withdrawing them therefrom, the sides of the cans are carried into contact with the circulatory pipes 4, often resulting in injury to the cans, and by continuous striking and wear, injury to the pipes also. To form proper guides for the cans to direct them into place in their respective compartments in the freezing tank and to support them when in place against displacement by the flowing brine, I have devised the guide and support illustrated in the accompanying drawings which comprises the vertical supporting bars 6 formed preferably of angle iron secured at their upper ends, as at 7, to one of the members of the frame-work, and of the inclined guide bars 8 secured at their upper ends to the side members of the frame-work, as at 9. The lower ends of the guide bars are coupled to the lower ends of the supporting bars 6 by means of the transverse bolt 10 which passes through the lower ends of both pairs of said bars and through a spacing tube 11 mounted thereon to lie between and separate the lower ends of the bars 6, as

clearly shown in Fig. 5. The bars 8 are flat and engage the flat sides of the can and form guides therefor to direct the can in its vertical movement when being introduced into or withdrawn from the freezing tank, while the bars 6 hold the can against displacement by the flowing brine and support it properly in place when in position in the freezing tank. It will be noted that the bars 6 diverge at their lower ends and that the bars 8 are inclined. The purpose of this arrangement is to prevent a continuous rubbing contact between said bars and one portion only of the surface of the can, thereby obviating the forming of channels in the can by repeated use to such depth as to cause leakage. The presence of the inclined bars 8 protects the sides of the can from contact with the pipes 4 so that by the arrangement shown the can is not only properly directed into place and securely held in position against displacement, but is also protected from injury by frequent and inadvertent contact with said circulatory pipes. It will, of course, be understood that the water to be frozen is placed in the cans 5 which are closed by suitable covers 12. During the operation of freezing, the compartments in which the cans are placed, are closed by removable covers 13.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In apparatus for making artificial ice, a congealing tank adapted to contain a circulating liquid, a frame-work at the top of said tank forming a compartment for a can, bars connected at their upper ends to said frame-work and depending into said tank, said bars being connected at their lower ends to form a guide and support for said can.

2. Apparatus for making artificial ice, comprising a congealing tank adapted to contain a circulating liquid, refrigerating pipes passing through said liquid arranged in horizontally extending superimposed coils, said tank being provided with a compartment to receive a can disposed between said rows of pipes, a can adapted to be introduced into said compartment, inclined guides interposed between the sides of the can and said pipes, said guides having smooth bearing faces throughout their entire length and means for supporting the can against displacement by the flow of said circulating liquid through the tank.

In testimony whereof, I sign this specification in the presence of two witnesses.

ANTHONY F. CRAMER.

Witnesses:

E. S. WHEELER,

I. G. HOWLETT.

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