To all whom it may concern:

Be it known that I, Warren Latham, a citizen of the United States of America, residing at Spokane, Spokane County, State of Washington, have invented new and useful Improvements in Apparatus for Molding Ice Cakes, of which the following is a specification.

This invention pertains to the manufacturing of domestic ice by an apparatus coacting with natural temperature. It is understood that the manufacture is to take place during freezing weather. The general plan is to provide a vessel of suitable size and shape for molding cakes of ice of the desired size and shape, to fill it with water, allow a shell to freeze around the edges, then drop the shell with the unfrozen contents out of the vessel and to permit the freezing process to continue until a solid cake of ice is formed, while other shells are being formed in the vessel. In freezing ice by this process it has been found necessary to provide for the expansion caused by the freezing process. It is my purpose herein to provide a mechanical means for taking care of this expansion and to have such means of such a character that the results will be automatic. I provide a flexible body extending into a container and having a means for displacement of the water and have such flexible body so mounted that as the expansion takes place in the freezing process, the body is forced to collapse in the direction of an opening from the container, so that the same will be entirely out of and free from the ice shell when frozen. It is found necessary to provide a means for insulating the wall of the container around the means of exit for the flexible body and this is taken care of as will be described and illustrated. The invention will be hereinafter particularly described, pointed out in the claims and illustrated in the accompanying drawings, in which Figure 1 is a side elevation thereof, dotted lines indicating a changed position of a portion thereof, Figure 2 is a top plan view of the device, Figure 3 is a bottom plan view thereof, Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 2 and Figure 5 is a like view showing changed positions of the flexible body.

In a detailed description in which like numerals refer to like parts throughout the several views, a container 10 of a suitable size and shape is provided, the same being preferably larger at the top than at the bottom in order to facilitate the removal of the ice shell. The container 10 is elevated by suitable supports, such as 11 riveted to the sides 13 of the container, as at 12. A strengthening flange 13 is provided around the top of the container 10. Near the center of the bottom 14 of the container 10 is an opening surrounded by an upwardly extending wall 15 preferably in the form of a frustum secured to the bottom 14 and made liquid tight at 16. Placed over the opening in the bottom 14 is an insulator 20 such as cork held in place by a door 18 hinged to the outer surface of the bottom 14 as at 19 and by a latch 21 on the door 18 engaging a keeper 22 on the outer surface of the bottom 14. A handle 23 may be secured to the end of the container 10 as a matter of convenience in handling the same. A flexible body 17, preferably of rubber, is placed over the frustum 15 as shown in Figure 4.

In the practical use of the device, the container 10 is filled with water when the flexible body 17 is in the position shown in Figure 4 and when the insulator 20 and door 18 are in the positions therein shown. The vessel is allowed to set until an ice shell of substantially one inch thick is formed around the edges. As the freezing process is going on, the force of the expansion of the water in the container 10 presses down the flexible body 17 and in time will collapse the same so that the same will turn inside out in the frustum 15 as indicated by 17 Figure 5, and if the expansion is great enough the body 17 will be forced outwardly through the frustum 15 as indicated by 17. In case the expansion is still greater and to such an extent that there will be a pressure on the insulation 20, by the body 17 then the door 18 may be forced open as indicated by 18 Figure 4 and no part of the device injured. The insulation 20 over the opening in the bottom 14 of the container 10 and around the base of the frustum 15 retards the freezing process around the frustum 15 and on the portions of the bottom 18 covered by the insulation 20, which facilitates the movement of the flexible body 17 in an automatic discharge from the water contents in the freezing process. The ice shell when frozen to the proper thickness is removed by inverting the vessel, opening the insulator 20 and door 18 and discharging warm water over the outside surface of the container 10, when...
the vessel may be lifted off of the ice shell formed. The ice shell will then be bottom side up so that the opening therein formed by the frustum 15 will be on top. In order to complete the freezing process without bursting the cake of ice, a suitable insulation, such as a gunny sack is placed over the opening therein in order to still further retard the freezing process at that point and to permit of all necessary expansion.

What is claimed is:

1. An apparatus for molding ice-cakes, comprising a container, an opening in the bottom of the container, a wall surrounding such opening and extending upwardly into the container, a flexible body, loosely mounted on said wall and extending upwardly into the container and an insulation on the outside of the bottom of the container extending over the opening in the bottom of the container.

2. An apparatus for molding ice-cakes, comprising a container, an opening in the bottom of the container, a wall surrounding such opening and extending upwardly into the container, a flexible body, loosely mounted on said wall and extending upwardly into the container and an insulation on the outside of the bottom of the container, such insulation being held in place by a door held closed by a friction keeper, and adopted to open either manually or by expansion force from within the container.

In testimony whereof, I affix my signature.

WARREN LATHAM.