

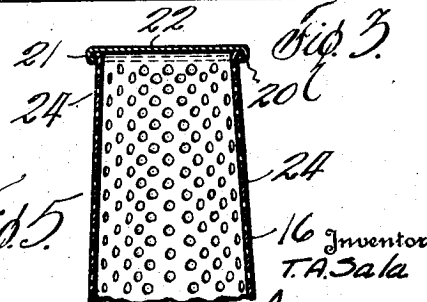
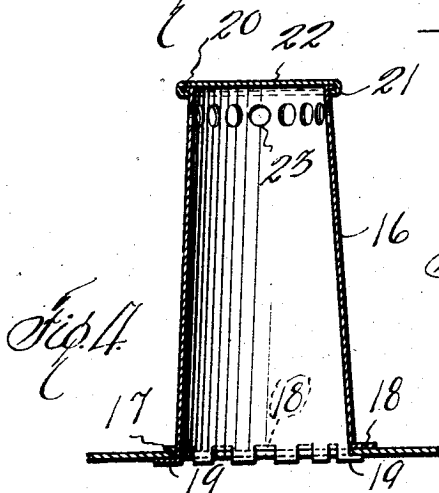
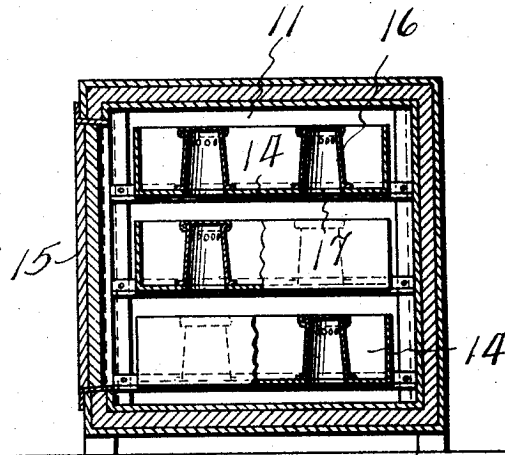
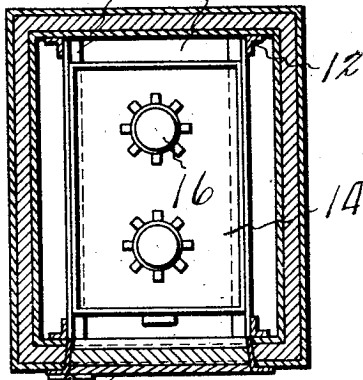
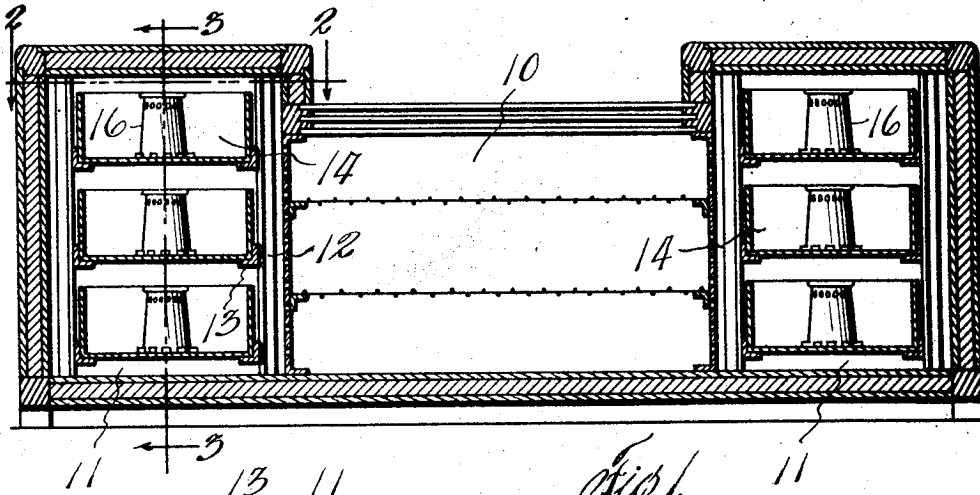
Sept. 1, 1925.

1,552,238

T. A. SALA

AIR FLUE FOR REFRIGERATOR ICE CONTAINERS

Filed Sept. 2, 1924



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# UNITED STATES PATENT OFFICE.

THEODORE A. SALA, OF DALLAS, TEXAS.

AIR FLUE FOR REFRIGERATOR ICE CONTAINERS.

Application filed September 2, 1924. Serial No. 735,323.

*To all whom it may concern:*

Be it known that I, THEODORE A. SALA, citizen of the United States of America, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Air Flues for Refrigerator Ice Containers, of which the following is a specification.

This invention relates to new and useful improvements in air flues for refrigerator ice containers.

It is very desirable to circulate the air in refrigerators of the display case type. Several inventions have been brought out involving transverse and upright flues for circulating air through the ice containers. My invention has particularly to do with the multiple container type.

The object of the invention is to provide upright flues in the ice containers open at the bottom of the container for receiving or exhausting air and closed at the top and provided with perforations for distributing or receiving the air.

A particular object is to provide closures for the upper ends of the flues so that in filling the containers, pieces of ice or other matter will not fall into or pass through the flues.

An important object is to provide in each container one or more upright flues spaced so as to be surrounded by the ice and cooling solution and at the same time to expose a large surface to both the cooling medium and the air.

Another object is to retard the passage of air up through the flues sufficiently to thoroughly cool it and also to direct the air outwardly from the flues over the cooling medium of the container.

A construction designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein;

Fig. 1 is a longitudinal vertical sectional view of a refrigerator having ice containers equipped with flues constructed in accordance with my invention,

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

Fig. 3 is a transverse vertical sectional view taken on the line 3—3 of Fig. 1,

Fig. 4 is an enlarged sectional view of one of the air flues, and

Fig. 5 is an enlarged vertical sectional view of a modified form of flue.

In the drawings the numeral 10 designates the display chamber of a refrigerator and 11 the ice chamber at each end thereof. In each ice chamber is a vertical rack 12 spaced from the sides thereof. Angle rails 13 are provided at different elevations in each rack. Each pair of rails supports a drawer 14 which may be slid outwardly from the chamber when a door 15 is opened. The drawers have a length less than the depth of the chamber, so that a vertical space surrounds the drawers in the chamber.

The drawers are made of metal and in each a plurality of frusto-conical air flues 16 are arranged vertically. In installing the flues, a perforation or circular opening 17 is made in the bottom of the drawer for each flue. While any number of flues may be used and they may be secured in the drawer in any suitable manner, I prefer to slit the lower end of each flue so as to provide alternate prongs 18 and 19 respectively. These prongs are bent outwardly parallel to the bottom of the drawer. The prongs 18 are first bent so as to rest upon the top of the drawer, the prongs 19 being inserted in the opening 17 and bent up against the underside of the bottom of the drawer. The joint is then soldered to prevent leaking and to fasten the prongs to the bottom. This makes a very strong connection and the flues cannot be easily displaced.

In the drawings I have shown each drawer equipped with two flues, but the numeral and arrangement are subject to variation. At its upper end each flue is formed with an outturned bead 20 and the edge 21 of a cap 22 is rolled over said bead, whereby the cap is secured to the upper end and the flue is closed. Just under the bead the flue is provided with circumferential perforations 23 forming passages for the air. The caps are located just below the upper edge of the drawer so as not to interfere with its movement.

The flue may be used in any style of refrigerator case. Air may pass in both directions through the flues. Warm air rises and upon entering the flues will be chilled as it moves upwardly. The caps 22 will to a certain extent retard the upward passage

of the air which must escape through the perforations 23. This will cause the air to be reduced to a much lower temperature and will also cause it to pass outwardly over the ice instead of directly upward. Cold air in passing downward will enter the perforations 23 and pass down through the flues. The drawers being spaced from the walls of the chamber permit a free circulation. Sufficient space is provided in the drawers around the flues to contain ample ice and solution to cool the air adequately.

In Fig. 5 I have shown a modified form of flue. This flue has perforations 24 in entire surface so as to either distribute air at various elevations in the drawer or admit it to the flue. Of course the area of the surface having the perforations may vary.

Various changes in the size and shape of the different parts, as well as modifications and alterations may be made within the scope of the appended claims.

What I claim, is:

1. In a refrigerator display case, a display compartment, an ice chamber, a plurality of superposed ice containers in said chamber, and a vertical air flue in each container having its upper end capped and provided with openings below its cap.

2. In a refrigerator display case, a display compartment, an ice chamber connected with the compartment, and a plurality of ice containers supported in spaced superposed order in said chamber and spaced from the walls thereof to provide air circulation entirely around each container, each container having a vertical air flue opening through its bottom and extending upward therein.

3. In a refrigerator display case, a display compartment, an ice chamber connected with the compartment, a plurality of ice containers supported in spaced superposed order in said chamber and spaced from the walls thereof to provide air circulation entirely around each container, each container having a vertical air flue opening through its bottom and extending upward therein, and means at the upper ends of the flues for retarding the flow of air up through the flues.

4. An ice container for a refrigerator including a vertical air flue, the lower end of the flue opening through the bottom of the container, and a closure at the upper end of the flue adjacent the top of the container, the flue having openings adjacent the closure.

In testimony whereof I affix my signature.

THEODORE A. SALA