(No Model.) 2 Sheets—Sheet 1.

# W. S. POST.

## REFRIGERATOR.

No. 267,586. Patented Nov. 14, 1882.

*Fig. 2.*

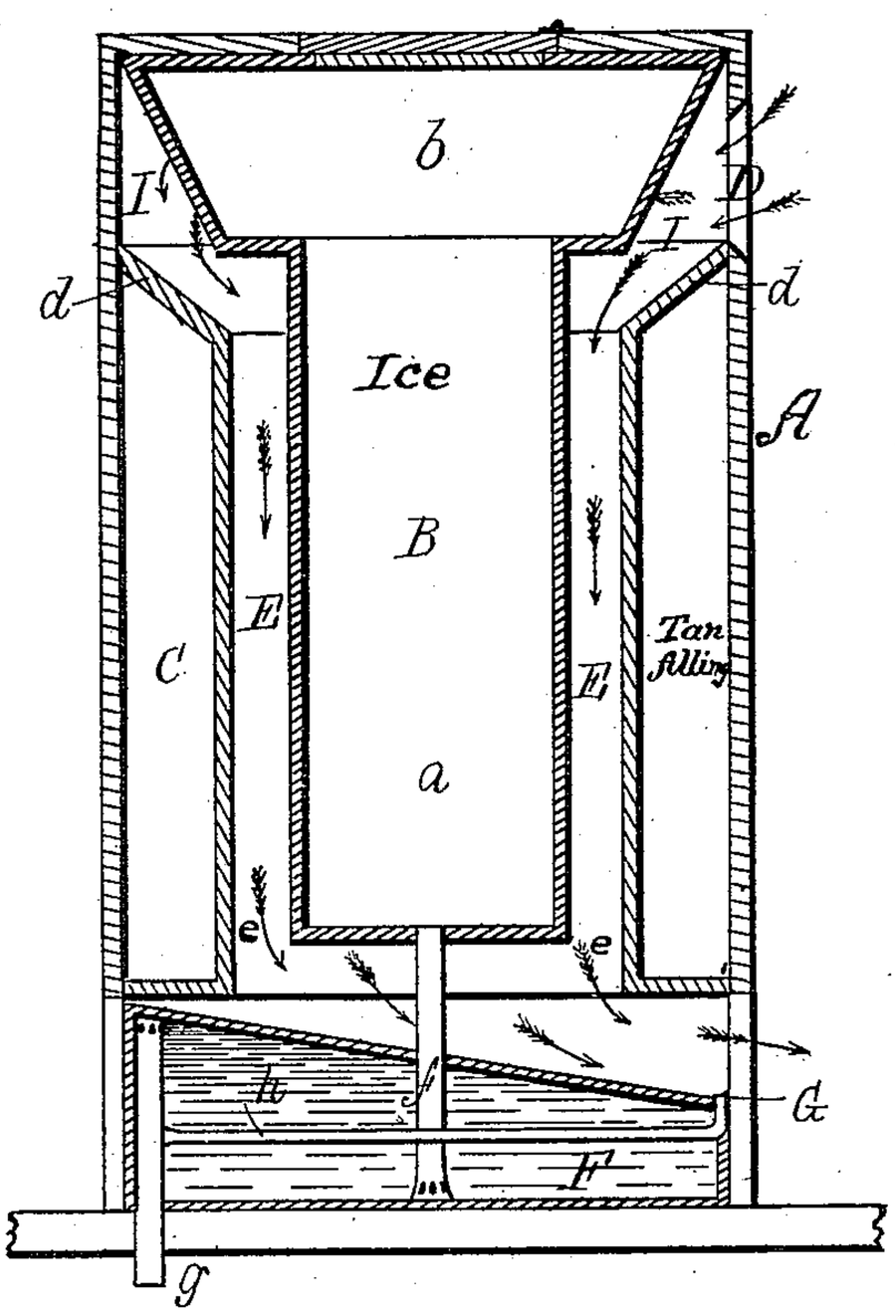



*Fig. 4.*

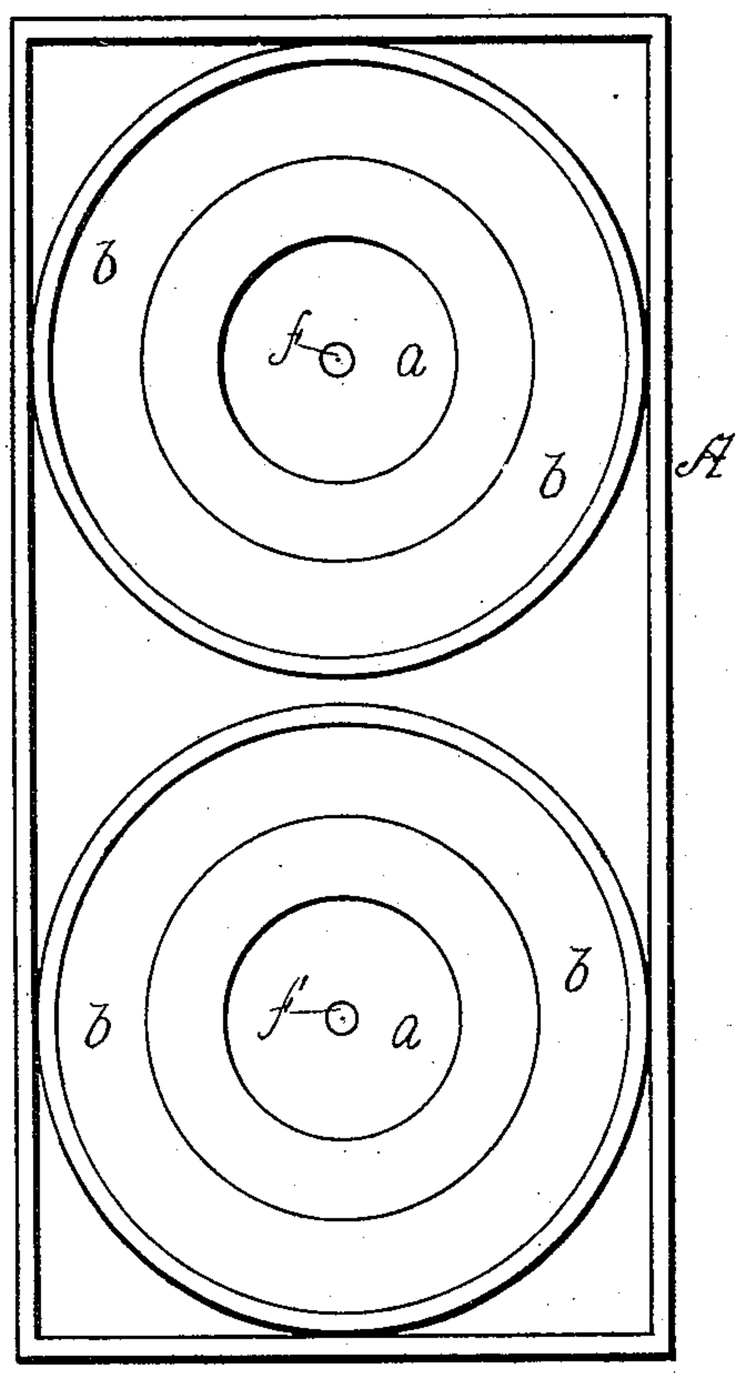
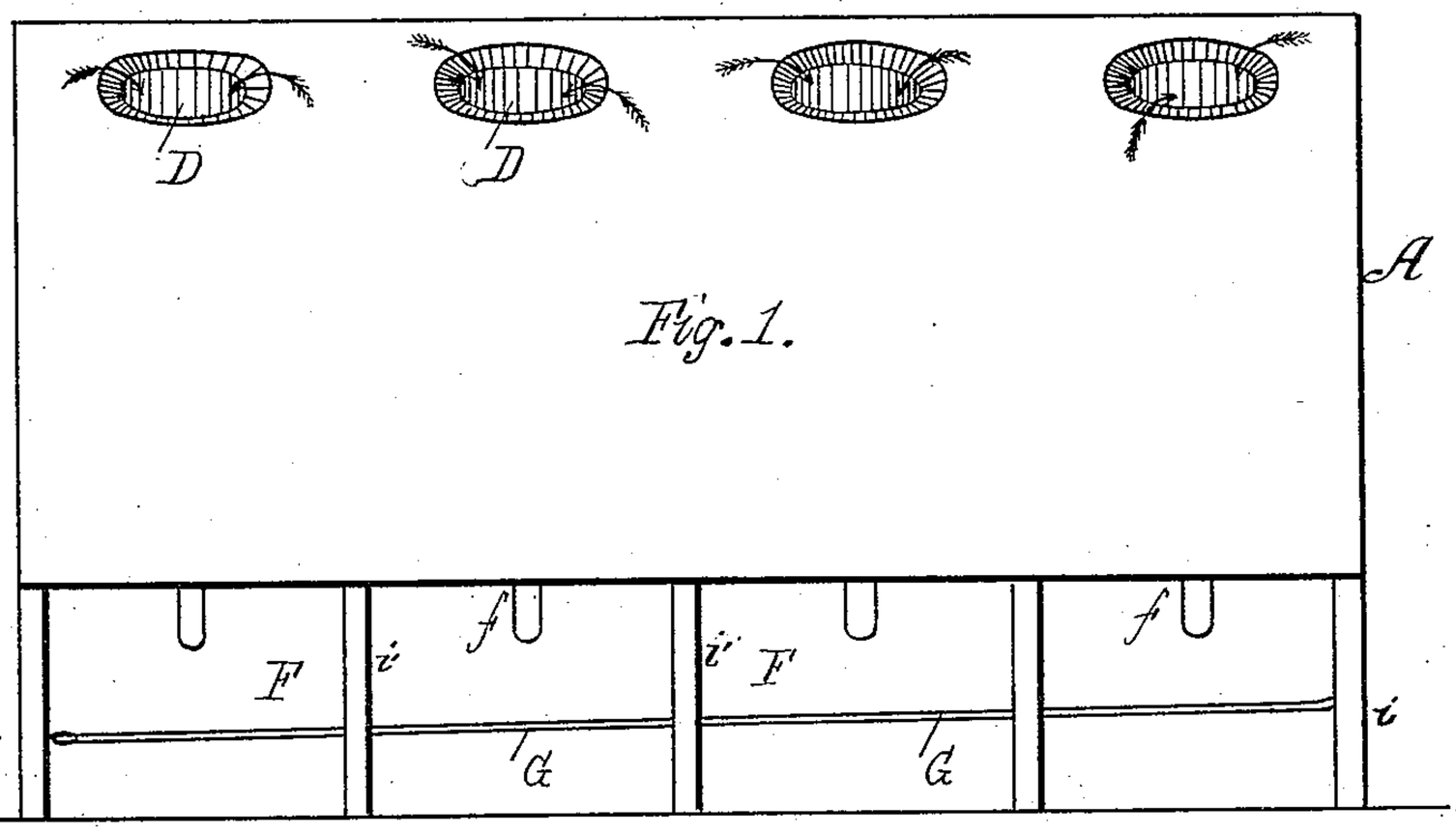



*Fig. 1.*




*Witnesses.*

H. C. Lodge.

Thos J. Bailey

*Inventor.*

William S. Post.

F. Curtis. Atty.

(No Model.) 2 Sheets—Sheet 2.

# W. S. POST.

## REFRIGERATOR.

No. 267,586. Patented Nov. 14, 1882.

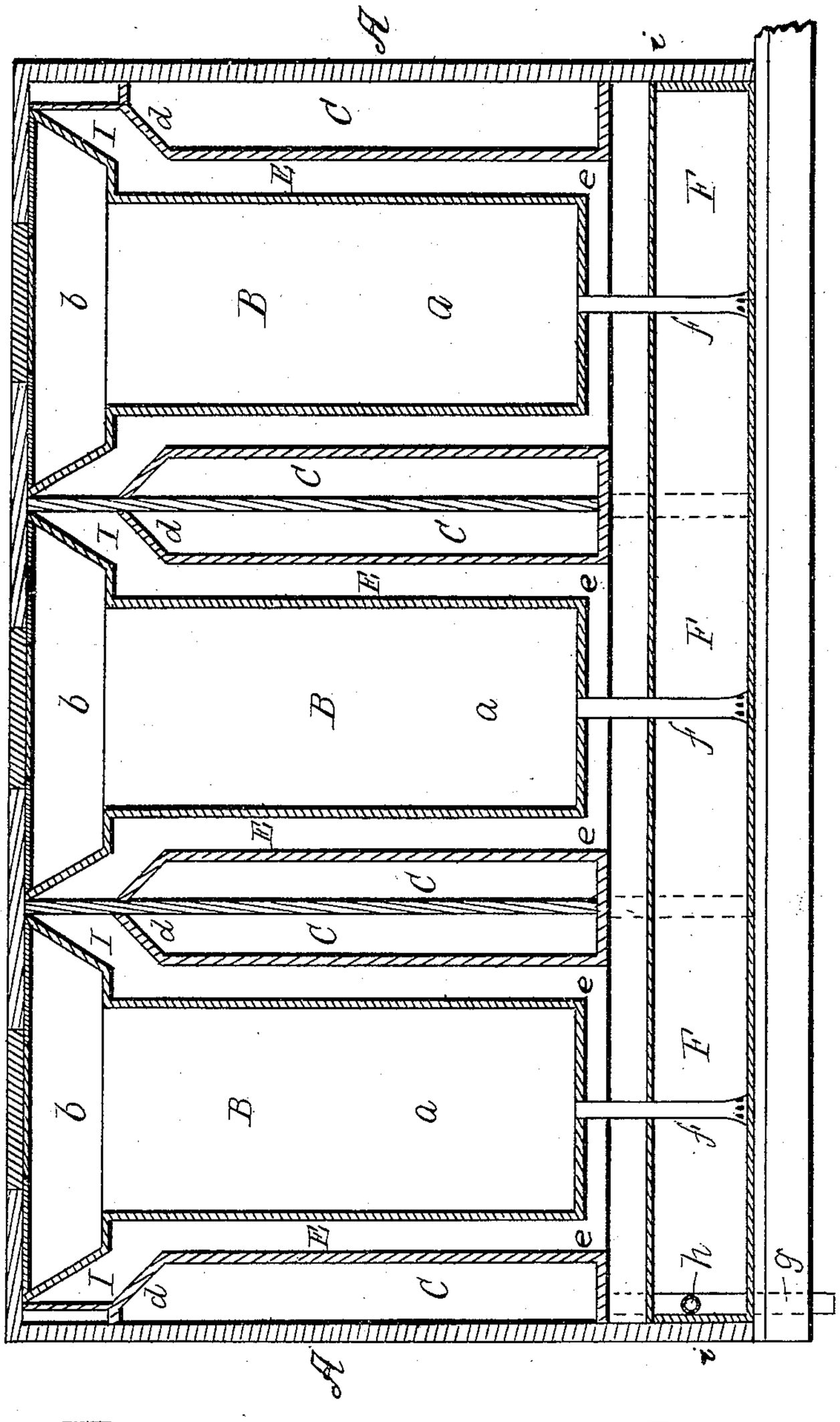



Fig. 3.

Witnesses.
H. E. Lodge
Thos. J. Bailey

Inventor.
William S. Post.
F. Curtis. Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM SPRAGUE POST, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE POST REFRIGERATOR CAR COMPANY, OF PORTLAND, MAINE.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 267,586, dated November 14, 1882.

Application filed July 29, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SPRAGUE POST, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Refrigerators; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to a class of refrigerators in which the object is to preserve fruit, vegetables, meats, &c., in a dry cool air. The principal features consist in a main preserving-chamber, a tank or reservoir for refrigerating material, and a chamber in which said tank or tanks are set, called the "condensing-chamber," for the reason that air entering therein and containing moisture, upon being cooled or chilled, deposits said moisture upon the cold refrigerating-tank surface and passes out dry and pure.

The essential object in this my present invention is to obtain a maximum current of air throughout the refrigerator proper. This is obtained, first, by placing together a series of tanks containing refrigerating material, these tanks, however, being separated one from the other by non-conducting material, and each acting as a separate and individual refrigerator, receiving air and delivering it chilled, irrespective of the action of any one of the others; secondly, in the arrangement and shape of the mouths or receivers to the several condensing-chambers, and, thirdly, in the shape of the melted-ice reservoir, its position as to the condensing-chamber; and, further, its relation to the refrigerating-tanks, whereby the moisture condensed from the air and deposited on the tanks can be easily and readily removed upon any diminution in the temperature of the refrigerator proper.

Having described my improvements in a general manner, I will now proceed to describe in detail the various parts and their relation to each other, as shown by the accompanying drawings.

In these drawings, Figure 1 represents a front view, Fig. 2 a vertical cross-section through a refrigerating-tank, and Fig. 3 a longitudinal section of a refrigerating-tank containing my improvements, while Fig. 4 is a plan of the same.

The box A, as shown in Fig. 1, and containing a series of refrigerating-tanks, B B, &c., can be readily constructed in the end of a railway-car adapted to such purposes; or it may constitute a portable refrigerator for house purposes, and provided with one, two, or more of the tanks B, to suit the capacity of the main preserving-chamber. In the present instance I have shown it adapted to the end of a refrigerating-car. The box A is subdivided into a series of compartments, C C, &c., which are air-tight, and filled with any good non-conducting material, as tan and like substances. The intermediate compartments are each adapted to receive a tank B, and may be of any shape in cross-section. In the present instance I have shown them cylindrical to more closely fit the periphery of the tanks themselves, which are cylinders, though they may be square, hexagonal, or of any other cross-section. The tanks B have an enlarged top, and in general form may be called "T shape." The lower portion, for convenience of description, I shall call *a*. The upper, *b*, is of frusto-conical shape, as shown in Fig. 2, and its sides are parallel with the upper portion, *d*, of the chamber C, forming together a circular inlet, I. This, it will be readily seen, is for the purpose of receiving air through the flaring mouth D and directing and aiding the same in its descent down around the lower portion, *a*, of the refrigerating-tank. As the tank B is always made of less diameter than its surrounding non-conducting chamber C, there is consequently an air-condensing space or chamber, E, formed, through which air passes and is chilled. This chamber has a free opening, *e*, equal to the diameter of the chamber E, and permits the free passage of air, after being thoroughly chilled and relieved of moisture, down and upon the sloping top of the superchilling reservoir-tank F, the angle or slope being such as to direct this cooled air-current outward into the center of the car or preserving-chamber. This reser-

voir-tank F, used for containing melted ice or a mixture of salt and water at a low temperature, which comes from the tank B above, rests upon the floor, and extends the entire length of the box A. Each of the tanks B B, &c., is connected at the bottom therewith by pipes *f f*, &c. Said reservoir is further provided with an outlet, *g*, so situated as to keep the entire reservoir full before commencing to run to waste. The gutter or channel G is adapted to receive all the condensed moisture from the air or the articles contained therein, and conducts it by a pipe, *h*, through the reservoir F into the outlet-pipe *g*. This pipe *h* is tightly soldered and connected to the pipe *g*, and no communication exists between the pipe and the reservoir F. The side of the box A below the chamber C, opening into the preserving-chamber, is entirely open, with the exception of the supporting-posts *i i'*, &c., to permit of free ingress of chilled air thereto. The refrigerating-tanks B B may be filled through an opening of any suitable construction and form in the top.

The operation of this apparatus is as follows: After refrigerating material has been introduced into the tank B a current of air is at once induced, and owing to the peculiar shape of the apertures D D, &c., said current passes readily down and around the tank B, and, furthermore, owing to the non-conducting properties of the chamber C and the narrow space through which said air passes, it becomes chilled very rapidly and effectually, whatever moisture it may contain when entering being deposited upon the sides of the tank B. The air as it becomes chilled drops lower and lower until it passes out of the chamber through the opening *e*, and striking the surface of the reservoir F, which superchills it, and likewise, owing to the angle of its top plate, throws it outward into the preserving-chamber, thereby hastening the current. It is obvious that the more rapid the current passing through the space E the more evenly is the temperature throughout the chamber H maintained.

I claim—

1. The box A, separated into two or more compartments having air-tight chambers C around the sides of said compartments, each of said air-tight chambers being filled with non-conducting material, said compartments each receiving a refrigerating-tank, B, arranged so as to leave an air-condensing space or chamber, E, between the air-tight chamber and said tank, the said air-condensing chamber having inlet and outlet openings, substantially as and for the purpose set forth.

2. The box A, separated into two or more compartments, each provided with a flaring mouth, D, in the upper side, and with air-tight chambers C around the sides of said compartments, said chambers being filled with non-conducting material, in combination with refrigerating-tanks B, inclosed within said compartments, the space between the chambers C and the tanks B forming an air-condensing chamber, E, which is provided with an inlet, I, and an outlet, *e*, substantially as and for the purpose set forth.

3. The box A, separated into two or more compartments, each provided with a mouth, D, in the upper side, said compartments having around the sides air-tight chambers C, which are filled with non-conducting material, in combination with refrigerating-tanks B, inclosed within said compartments, the space between the air-tight chambers and the tanks forming an air-condensing chamber, E, which is provided with an inlet, I, and an outlet, *e*, the said tanks communicating by pipe *f* with a reservoir, F, for containing melted ice, the reservoir being provided with a sloping top, arranged so that when the cooled current of air is discharged from the outlet *e* said current is directed outward into the center of the car or preserving-chamber, substantially as specified.

4. The box A, formed into two or more compartments, each separated by a chamber filled with non-conducting material, said compartments receiving refrigerating-tanks B, the space between the non-conducting chamber and the tanks forming an air-condensing chamber, E, which is provided with an inlet and an outlet opening, in combination with the melted-ice reservoir having a sloping top provided with an outlet, *g*, at the highest point of said top, and a channel, G, which receives the condensed moisture from the current of air and conducts it by pipe *h* to the outlet-pipe *g*, substantially as and for the purpose set forth.

5. The combination of the refrigerating-tanks B with the melted-ice reservoir F, provided with a sloping top, said tanks communicating with the reservoir by means of pipe *f*, the said reservoir having an outlet-pipe, *g*, placed at the highest point thereof, so as to keep the reservoir always full, and the channel G, connected to the pipe *h*, which is tightly soldered to the outlet-pipe *g*, substantially as set forth.

6. The combination of a refrigerating tank or tanks, B, with the melted-ice reservoir, provided with a sloping face, F, arranged as described, and provided with a channel, G, leading into and connecting with the main outlet-pipe *g*, all as and for purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM SPRAGUE POST.

Witnesses:
H. E. LODGE,
F. CURTIS.