A. J. Chase,

Refrigerator.

No. 110,112. Patented Dec. 13. 1870

Fig. 1.

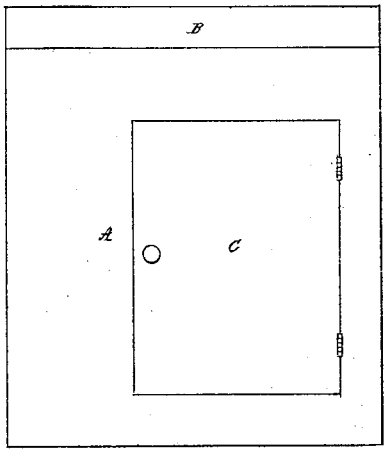
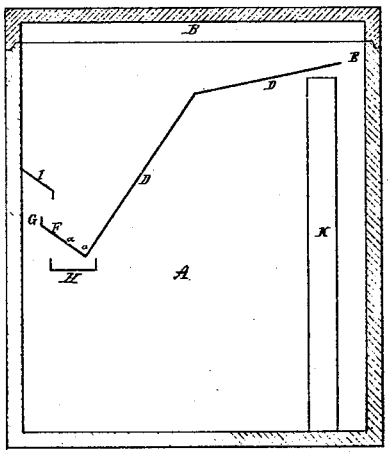


Fig. 2.



Witnesses.
S. N. Piper
L. N. Keller

Andrew J. Chase
by his attorney
R. H. Eddy

United States Patent Office.

ANDREW J. CHASE, OF BOSTON, ASSIGNOR TO HIMSELF AND PERRIN C. DRISKO, OF BOSTON, (HIGHLANDS,) MASSACHUSETTS.

Letters Patent No. 110,112, dated December 13, 1870.

IMPROVEMENT IN REFRIGERATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come:

Be it known that I, ANDREW J. CHASE, of Boston, of the county of Suffolk and State of Massachusetts, have invented an Improved Refrigerator; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a front elevation, and

Figure 2 a vertical and longitudinal section of it.

In such drawing—

A denotes a box, open at top, and there provided with a cover, B.

The said box also has an opening through its front side, such opening being furnished with a door, C.

The said box may be a single case, or it may be constructed with chambers or recesses in or about its sides and bottom and cover, to hold air or to receive a heat non-conductor of some proper kind.

In carrying out my invention I arrange within the said box, or the upper part thereof, in manner as represented in fig. 2, an inclined apron, D, which I usually make of sheet metal, and to extend entirely across the interior of the box from its front to its rear side.

The upper end of the apron D terminates at a short distance from the next adjacent vertical end of the box, so as to form an air-passage, E, between the said end of the apron and that of the box. The said end of the apron is to be arranged so that there shall be an open space or passage between it and the top or lid of the box.

At its lower end the apron terminates against another inclined apron, F, arranged to stand at, or about at, a right angle to such apron D, and with respect to the opposite end of the box, in manner as represented, there being an air-space or passage, G, between such end and the upper edge of the apron F.

The apron F goes across the box, and is foraminous or perforated with holes *a*.

Underneath the junction of the two aprons is a trough, H, which extends across the box, and may have a discharge-orifice through one side of the box.

Over the passage G and the upper edge of the apron F is an inclined plane or deflector, I, which projects from the end of the box in manner as shown, there being an air-passage between the lower edge of such deflector and the upper edge of the apron F.

The blocks of ice, for cooling the air in the box, are to be placed on the aprons D F.

Furthermore, a ventilating-tube, K, may be extended upward from the bottom of the box nearly to the top thereof, such tube being open at its top, and to open at bottom through the bottom of the box.

Within the box, and below the apron D, may be shelves or other proper devices for supporting meats or other articles to be kept cool.

As the air over the ice may become cooled it will flow down through the passage G, so, as the air which may be against the lower surfaces of the aprons D F may become cooled, it will settle down in the refrigerator-chamber; and, as its temperature may rise, such air will flow upward through the passage E and over the apron D to the ice. Thus it will be seen that there will be produced a constant circulation of air within the refrigerator. Any moisture which may condense on such parts of the interior of the refrigerating-chamber that may be over the aprons will drop upon them or the ice, or fall on the plane I. Finally, any water from the ice will be discharged into the trough H.

It will also be seen that any moisture that may be condensed on the lower sides of the aprons will run down the same into the trough.

And, furthermore, as the air in the refrigerator will be the coldest at or near the bottom thereof, the air in the ventilating-pipe will be so cooled as to cause a descending current of air to take place therein, whereby the foul air or gases that may be formed in the refrigerator will be discharged therefrom.

The operation of the refrigerator on the air within it is somewhat analogous to that of a syphon on a liquid passing through it, the ice-receptacle constituting, as it were, the longer leg of an air-syphon.

The ice always resting on the longer apron causes it to present a large cooling surface to the neighboring air, whereby any moisture therein will be liable to be condensed on such surface. The construction of the refrigerator is admirably calculated to keep dry the air within it.

I make no claim to any thing, combination, or arrangement described and represented in either of the United States patents No. 13,802, dated November 13, 1855, and 31,901, dated April 2, 1861.

I claim as my invention—

1. The refrigerator, as made or provided with the aprons D and F, the inclined plane I, the trough H, and air-passages E G, arranged within the box A in manner substantially as described.

2. The refrigerator, as so made, and as having the ventilating-pipe K arranged in it in manner and to operate as set forth.

ANDREW J. CHASE.

Witnesses:

R. H. EDDY,

J. R. SNOW.