

(No Model.)

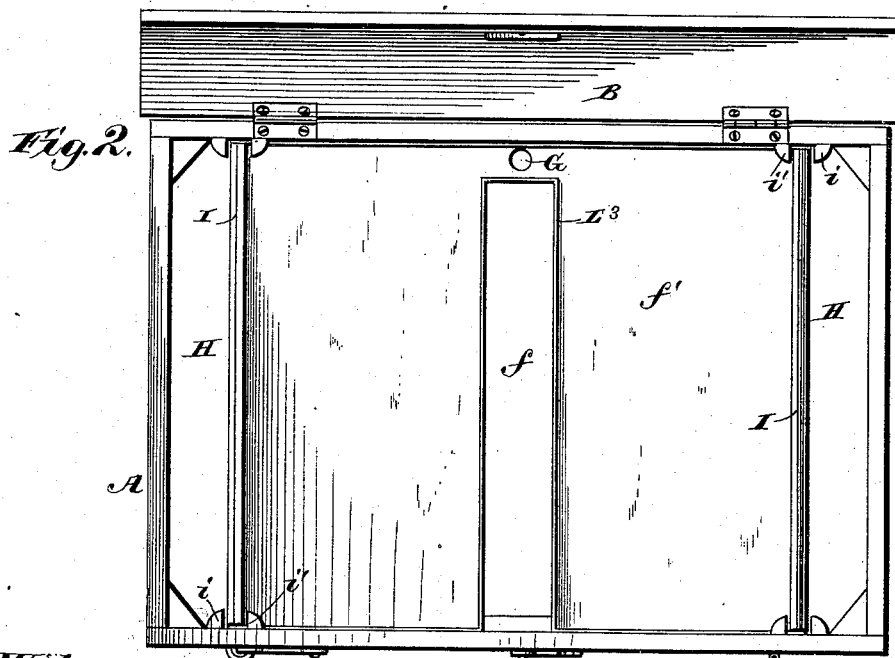
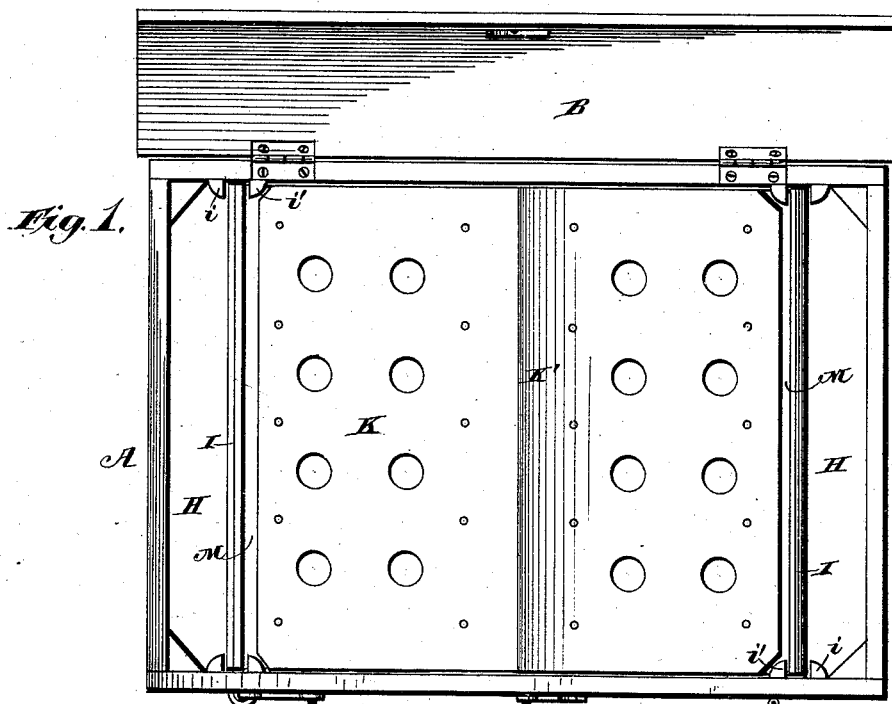
2 Sheets—Sheet 1.

C. H. LEONARD.

REFRIGERATOR.

No. 261,736.

Patented July 25, 1882.



Witnesses,
Robert Corbett
J. A. Rutherford

Inventor,
Charles H. Leonard
By *James L. Norris*
Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

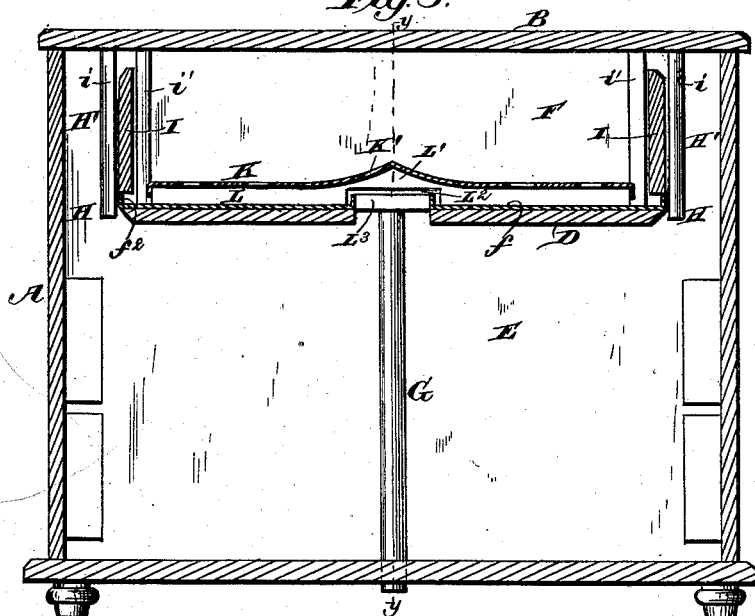


Fig. 4.

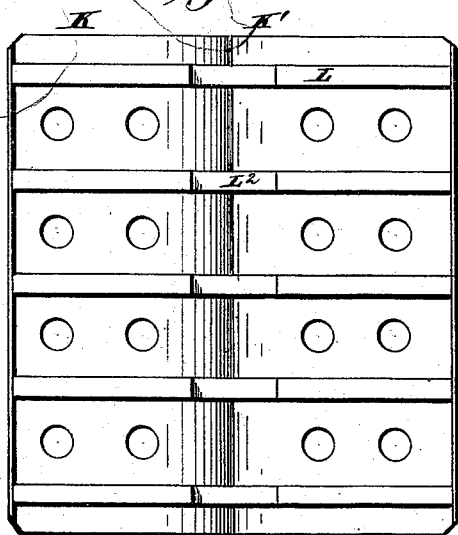
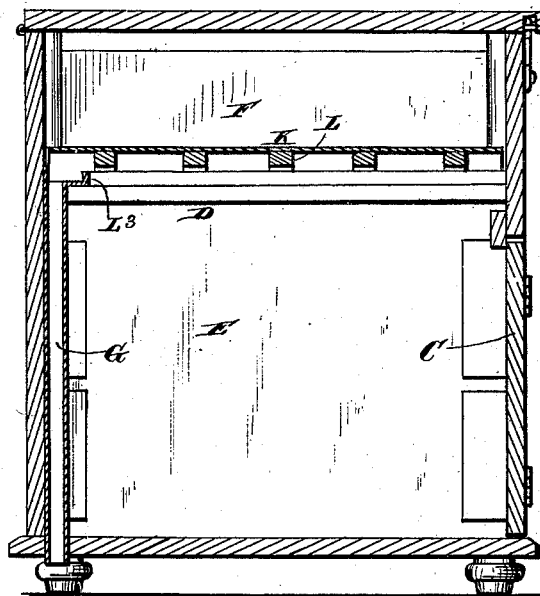


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES H. LEONARD, OF GRAND RAPIDS, MICHIGAN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 261,736, dated July 25, 1882.

Application filed June 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LEONARD, a citizen of the United States, residing at Grand Rapids, Kent county, Michigan, have invented new and useful Improvements in Refrigerators, of which the following is a specification.

The main objects of this invention are to provide removable vertical walls between the ice-chamber and the flues or air-passages that are employed for conducting the air from a lower provision-chamber up into the superposed ice-chamber; and, also, to provide in said chamber a removable ice-rack, whereby ready access can be had to all parts of the refrigerator. A further object is to provide an improved construction of ice-rack for supporting the ice that is employed for cooling the air; and, also, to provide an improved construction and organization of the several parts of a refrigerator, whereby a cheap and simple article is obtained. These objects I attain by means of the devices illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the refrigerator with its lid open; Fig. 2, a like view, with the ice-rack removed; Fig. 3, a transverse section taken on a vertical plane through Fig. 1, and Fig. 4 shows the under side of the perforated ice-rack. Fig. 5 is a section through the line *yy* of Fig. 3.

The letter A indicates the refrigerator-box, which is provided with a hinged lid, B, and with a door, C, at the front. The interior of this box is divided by means of a horizontal partition, D, into two chambers, the lower one, E, being the provision-chamber for containing such perishable articles as it is desired to keep cool, and the upper ice-chamber, F, being adapted to contain the requisite supply of ice for refrigerating the air within the lower chamber.

The partition D is formed with a central slot or opening, *f*, extending from, or nearly from, side to side of the box, and is preferably composed of wood, having a tin, zinc, or other suitable sheet-metal covering, *f'*, which is turned up along its outer edges, and also along the edges of the central opening, so as to form a shallow pan for the water which drips from the melting ice. A water-pipe, G, leads from

this drip-pan down through the box, so as to carry off the water which collects in the pan. A space, H, is left between each of two opposite walls of the box and its partition, so as to allow the upward circulation of air from the provision-chamber into the ice-chamber.

In order to form vertical flues H' at two sides of the ice-chamber, I provide the walls I, which have their ends slid in between cleats *i*, secured to the sides of the box. The outer cleats, *i*, are arranged in juxtaposition to the edges of the partition at the sides where the spaces H occur, while the inner cleats, *i'*, are located above the drip-pan or sheet-metal covering of the partition and set a short distance back from the edges thereof, so that when the vertical partitions or walls I are fitted between these cleats they shall rest closely up against the turned-up portions or flanges *f*² of the sheet-metal covering or drip-pan. These vertical walls are readily detachable, and hence, when it is desired, can be removed, so that access can be had for cleaning out the refrigerator. Said walls do not extend up to the top of the box, so that a space is left between the top edge of each wall and the lid, thereby establishing communication between the flues H' and the ice-chamber.

K indicates a removable ice-rack for supporting the ice within the ice-box. This ice-rack consists of a perforated sheet-metal plate, having a centrally raised or arched portion, K', extending entirely across it. This plate is secured upon a suitable number of parallel slats or bars, L, extending across the under side of the plate transversely to the line along which the perforated plate is raised or arched. Each bar has at its middle a raised portion, L', which fits in the concavity formed by the arch of the plate, thereby strengthening the latter and firmly supporting it along its arch. These cross-bars raise the ice-rack above the drip-pan, and are each formed with a notch, L², in the under side, so as to span and fit over the raised edge or flange L³ of the drip-pan, which runs along the slot or opening through the partition.

The ice-rack is not equal in width to the space between the removable walls that separate the ice-chamber from the flue, so that when the ice-rack is supported upon the par-

tion a space, M, will be left between the ice-rack and said walls, thus allowing the water which trickles down upon the drip-pan through the perforated ice-rack to flow over the latter outwardly between the cross-bars, and thus to pass around the ends of the latter and flow to the waste-pipe.

The removable ice-rack can be readily taken out of the ice-chamber, whereby the drip-pan can be cleaned when required.

Ice being placed upon the ice-rack, the cold air descends through the slot in the partition into the provision-chamber. The warmer air from said chamber ascends through the side passages or flues, and, passing over the walls thereof, enters the ice-chamber, where it is cooled, purified, and condensed, and then, passing down under the ice-rack again, descends into the ice-chamber, whereby a constant circulation is maintained.

The removable walls and ice-rack can be cheaply made, easily applied, and readily removed, so that access can be had to every portion of the refrigerator.

The flues and their removable walls are herein shown at the sides of the refrigerator; but it will be evident that they can be located at the front or back portions of the same or made to slide horizontally through the front or end of the refrigerator.

It will be observed that the ice-rack is not perforated along its central arch, whereby water from the ice will not drip into the lower chamber through the slot. The arch causes the water from the ice to pass toward the sides of the ice-chamber, and such moisture as will collect upon the under side of the rack, instead of condensing and dropping through the slot, will follow the inclined undersides of the arched part of the plate, and finally drop into its drip-pan. Hence, while a free circulation is maintained through an opening in the bottom of the ice-chamber, yet no water or moisture therefrom will find its way into the lower provision-chamber by reason of the peculiar construction of the ice-rack, which not only shields the slot from the water from the melting ice, but also conducts off such water as may condense upon the under side of the ice-rack.

What I claim is—

1. The combination, in a refrigerator divided by a slotted horizontal partition into an ice-chamber and a provision-chamber, of the re-

movable walls I, located above the partition and separating the ice-chamber from the side flues or air-passages, substantially as described.

2. The combination, in a refrigerator, of the partition dividing the refrigerator into an ice-chamber and a provision-chamber, with the perforated removable ice-rack, K, substantially as described.

3. The combination, in a refrigerator, of the removable walls I, separating the ice-chamber from the side flues or air-passages, and the removable ice-rack K, supported upon a partition between the side walls, substantially as described.

4. The combination, in a refrigerator, of the partition D, dividing the box into an ice-chamber and a provision-chamber, and having a vertical slot or opening, with the sheet-metal drip-pan *f* located upon the partition, and having a corresponding slot or opening flanged along its edges, and the perforated ice-rack K, having a central raised or arched portion, K', which spans the opening through the drip-pan and the partition, substantially as described.

5. The combination, in a refrigerator, of the slotted partition dividing the refrigerator-box into two compartments, with the perforated removable ice-rack arched along its middle portion and provided on its under side with a series of notched cross-bars, and the walls I, separating the ice-chamber from the flues or air-passages leading up from the provision-chamber, substantially as described.

6. A refrigerator consisting of a box divided by a horizontal slotted partition into an upper and a lower chamber, the vertical air-passages H', separated from the upper ice-chamber by removable walls I, and the removable perforated ice-rack K, supported by and somewhat elevated above the partition, and the drip-pan located upon said partition and provided with a central opening, said members being constructed and organized substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

CHARLES H. LEONARD. [L. S.]

Witnesses:

HENRY J. CARR,
FRANK E. LEONARD.