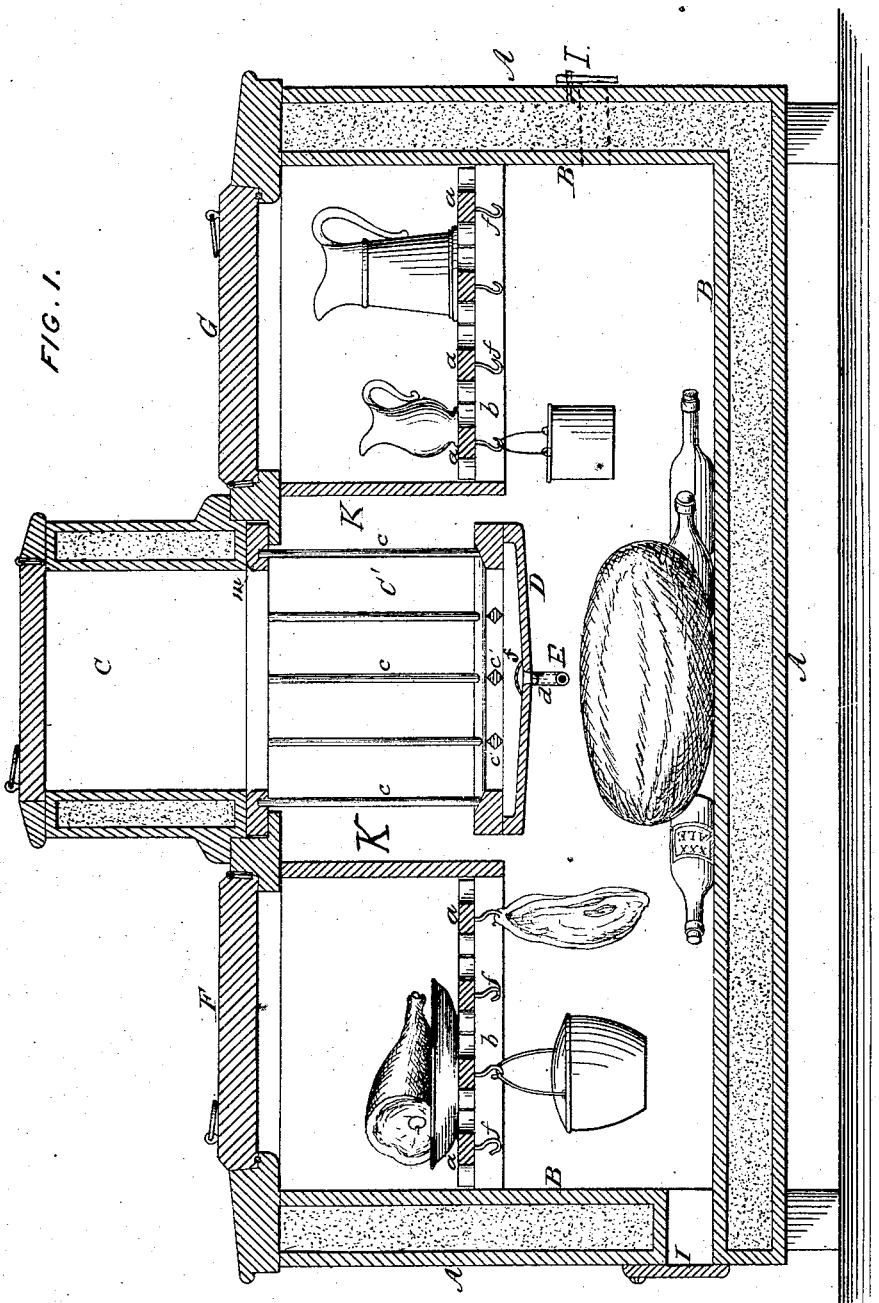
2 Sheets--Sheet 1.

I. SILSBY.

Refrigerator.

No. 160,357. Patented March 2, 1875.

FIG. 1.



WITNESSES:

John C. Crampton

Augustus Sherman

INVENTOR:

Isaac Silsby

2 Sheets--Sheet 2.

I. SILSBY.

Refrigerator.

No. 160,357. Patented March 2, 1875.

FIG. II.

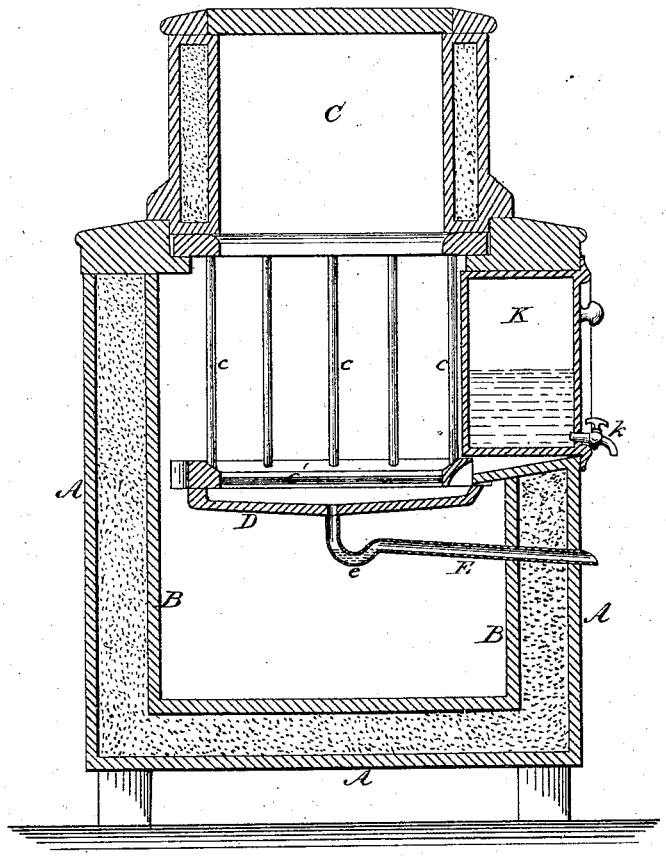


FIG. III.

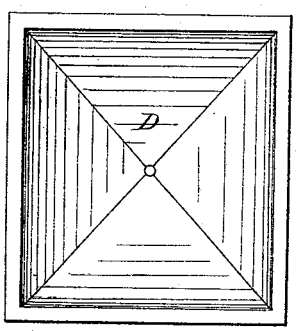
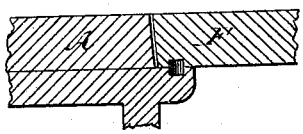


FIG. IV.



WITNESSES:

John Langhlan

Augustus Sherman

INVENTOR:

Isaac Silsby

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ISAAC SILSBY, OF GEORGETOWN, DISTRICT OF COLUMBIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **160,357**, dated March 2, 1875; application filed September 30, 1874.

To all whom it may concern:

Be it known that I, ISAAC SILSBY, of Georgetown, in the District of Columbia, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The object of my invention is to provide a refrigerator which will keep all articles placed therein in a better state of preservation and at a more regular temperature by having each article surrounded on all sides with cold air, with a less quantity of ice, and by furnishing means to purify the air and to put in or take out articles without materially affecting the temperature of the chest; and my invention consists in an ice-receptacle with open top and sides, with drip-bottom and sealed drip-pipe suspended in an open air-chamber, and having a superposed air-chamber; and it further consists in a self-closing valve seated on the wall of the refrigerator opposite the door, so that on quickly closing the door the foul air is forced through the valve, which immediately closes, thus retaining the refrigerated air.

In the drawing, Figure 1 represents a vertical longitudinal section. Fig. 2 is a vertical section. Fig. 3 is a plan view of the drip-pan. Fig. 4 is an enlarged view of the lid-joint.

In the drawing, A is the center main casing or chest, with an inner lining, B, the space between these being single, or divided into two or more spaces, which space or spaces are filled with a non-conducting material, such as paper, charcoal, bark, sawdust, ashes, or feathers, &c. The bottom and six inches, more or less, up the side and ends of the inner lining B are covered with zinc, lead, or galvanized iron, and the remaining portion of the side and ends is covered with paper, if desired. In the center of the casing I arrange the ice-box C, partly extending into the main box, and having at its lower end a grating, consisting of iron and wooden rods *e*, which are held at their upper ends in the bottom of the box C, and are supported at their lower ends by a wooden grating mortised into the sides of the chest B, the bars *c* *c'*, which are square, set diamond wise, to present the smallest surface to the ice, and to allow the drip-water to run off freely; or the iron or wooden rods *c* and the bars *c' c'* are suspended by a flange resting in a rabbet, in which the solid or lined portion of the ice-box is placed. Thus the upper portion of the ice-box C is lifted out of the rabbet when the lower grating of the bars *c* and the bars *c' c'* is lifted out of the lower portion of the rabbet, thus enabling any repair of the upper or lower parts of the ice-box C without injury to any other portion of the chest. Under this grating is arranged the drip-pan D, which is secured to the frame of the grating, and so constructed as to catch the water from all sides of the grating, and conduct it to a center, as shown in Fig. 3, through which center is a hole into a trap, *e*, on the drip-pipe E, which trap prevents the air from entering the chest, as there will be always water in the bend. On each side of the iron or wooden grating is arranged a cold-air chamber by incasing the grating, leaving sufficient space for the cold air to pass down, and for the preservation of the ice, and to prevent the outside air from striking the ice when either of the lids F G is opened to place articles into the chest. These lids, which are made heavy, are kept tight by a rubber packing placed in grooves cut in the rabbet, upon which the door closes, as shown by H in Fig. 4, thus forming a perfectly-tight joint. In each end of the main chest are arranged a number of bars, *a a*, which rest on cleats *b*, fastened to the sides of the chest. The bars *a* are provided with hooks *f*, from which meat, pails, or other articles may be suspended. In one side of the main box A is inserted into the cold-air chamber a water-cooler, K, of an elongated and flat form, provided with a suitable spigot, *k*, the cooler having placed under it a drip-pan, constructed to catch on all sides any condensation that may form on the outer surface of the cooler. This drip-pan is connected with, and discharges its water into, the main drip-pan under the ice-box C, thereby preventing the possibility of any water dripping into the main chest, and insuring a dry cold air. The ice is placed in the box C, when the cold air then passes down and circulates all around the articles placed in the refrigerator, and at a uni-

form temperature. At the lower end, opposite the lid G, is a valve, I. The normal condition of this valve is to remain closed. Through this valve the foul air may be forced out by raising the lid G and closing it suddenly. The valve opens and closes automatically with the movement of the lid G. The object of making this valve self-closing is to prevent the waste which would occur if the outlet were constantly open. The valve may be simply a rubber or leather flap-valve, or in any suitable manner by which its action is rendered automatic. This is a very important feature in my refrigerator, as with all others the doors or lids have to remain open until the impure air escapes, thereby increasing the temperature to the detriment of the articles placed therein, and requiring more ice to cool it down again.

The form and combination of the chest is adapted to allow one end of the chest for private use by locking the lid G, while the opposite end is sufficient for family use. Also, one end may project into the dining-room, while the ice-box and the opposite end remain in the adjoining pantry, by piercing the partition between the rooms. Bottles, melons, and articles of that kind may be placed under the grating, or, if preferred, in a sliding box so arranged as to be easily drawn from under the grating.

To meet the public demand for a cheap, economical refrigerator, and one adequate to the end herein proposed, I can, when desired, cut off the end adapted for private use, and retain sufficient room, with all the other qualities that are claimed for the chest.

Having thus described my invention, I claim—

1. The combination of the chamber B with the ice-receptacle C′, the same consisting of the supporting-flange *m*, bars *c c*, drip-bottom D, with sealed drip-pipe E, surrounding air-chamber K, and superposed air-chamber C, as and for the purpose described.

2. The combination, with the chamber B, of the lid G and self-closing valve I, whereby, in closing the lid, a current of air is forced through the chamber B, and the chamber immediately closed, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of September, 1874.

ISAAC SILSBY.

Witnesses:
JOHN COUGHLAN,
AUGUSTUS SHERMAN.