E. S. EARLEY.

Refrigerators.

No. 135,209. Patented Jan. 28, 1873.

Fig. 1.

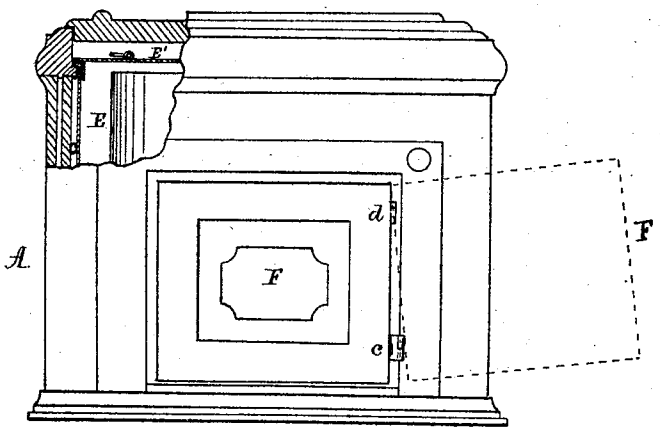
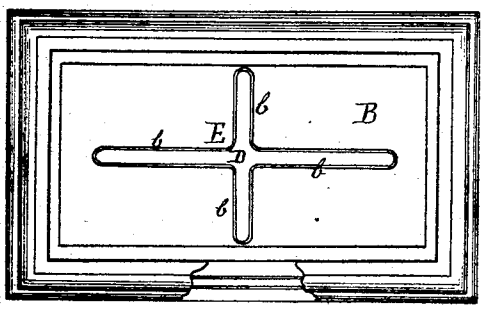
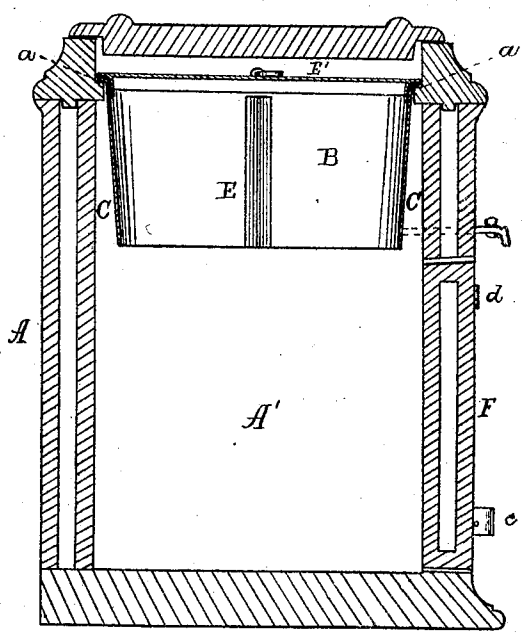


Fig. 3.

Fig. 2.





Witnesses:

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James D. Stewart

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UNITED STATES PATENT OFFICE.

EDWARD S. EARLEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **135,209**, dated January 28, 1873.

To all whom it may concern:

Be it known that I, EDWARD S. EARLEY, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Refrigerators; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a front view, partly broken away, of the device embodying my invention. Fig. 2 is a top or plan view, partly broken away, and the cover or lid being removed. Fig. 3 is a transverse vertical section.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in providing the ice box or chamber with a central cold-air discharge. It also consists in providing the ice box or chamber with a central discharge and side spaces for cold air. It also consists in lining the inner faces of the two walls of which the body of the refrigerator is constructed with paper coated with varnish in order to prevent the escape of cold air from the refrigerator, and the entrance of warm air thereinto.

Referring to the drawing, A represents the body or case of the refrigerator, which may be of usual form and construction. Within the body A, at the upper part thereof, is suspended the ice box or chamber B, (one or more,) which consists of a suitably-formed receptacle with flanges *a*, which rest on ledges in the top of the body in such a manner that between the sides of the ice-box and those of the body A there will be left spaces C C for cooling the air on the sides of said box. An opening, D, is formed in the center of the ice-box B, and from the opening rises a pipe, E, which extends to nearly the top or cover E′ of the box and forms an air communication between the body A′ of the refrigerator and the box B, without, however, permitting the ice or dripping to pass through said opening. In order to increase the surface of said communication the opening and pipe are made with a series of wings, *b b*, (in the present case extending at right angles to each other,) whereby the box may be said to have two side surfaces—that is to say, a surface on the outside of the box, and an inside surface at the winged pipe E.

It will thus be seen that the air in the box is directly and thoroughly cooled and descends through the pipe E, thereby reaching the main portion of the body A below the box and subjecting the articles of food in said portion to the consequent cooling (and freezing) action. This is further assisted and perfected by the cooling of the air at the sides of the box, owing to the air being permitted to circulate in the spaces C, and in contact with the ice-cold sides of the box, the same action occurring at the bottom of the box. Thus there are three volumes of cold air passed to the article of food—one directly from the inside of the ice-box, another from its bottom, and the other from the outside thereof. In the former cases the cold air is directed centrally to the food-receiving portion of the body A, and in the latter case to the sides thereof, whereby the whole of said portion is cooled. F represents the door of the portion A of the refrigerator.

It is well known that such doors are often left open or not sufficiently closed to confine the cold air. This is a serious defect, and is remedied by my invention, which consists in rendering the door self-closing. To this end I construct or extend the lower hinge *c* of the door so that its joint is outwardly beyond the joint of the upper hinge *d*, whereby, when the door is opened to any extent within half-way, its disposition is to return to its normal position and thereby close.

By this construction and arrangement of the hinge springs are dispensed with, and while the hinges support the door they also cause the automatic closing of latter.

The refrigerator will be formed with double walls, with a space between them, and on the inner faces of the two walls, on opposite sides, I apply paper as a lining, the same being previously or subsequently coated with asphaltum varnish. The two linings are separated by the space between the walls, and on account

of their nature and application the cooled air in the body A cannot escape, and the warm air from the outside enter said body, whereby the objects of the invention are fully realized.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The ice box or chamber having a central cold-air discharge, substantially as set forth.

2. The winged pipe E and opening D, in combination with the ice box or chamber B, substantially as set forth.

3. The combination, with the body A, of the ice-box having a central discharge, D, and a side space or spaces, C, for cold air, substantially as stated.

4. The opposite inner faces of the double walls with linings of paper coated with varnish, substantially as and for the purpose set forth.

The above signed by me this 31st day of October, 1872.

E. S. EARLEY.

Witnesses:

JOHN A. WIEDERSHEIM,

J. W. HAMPTON, Jr.