J. J. BATE.

REFRIGERATOR.

No. 184,748. Patented Nov. 28, 1876.

Fig. 1.

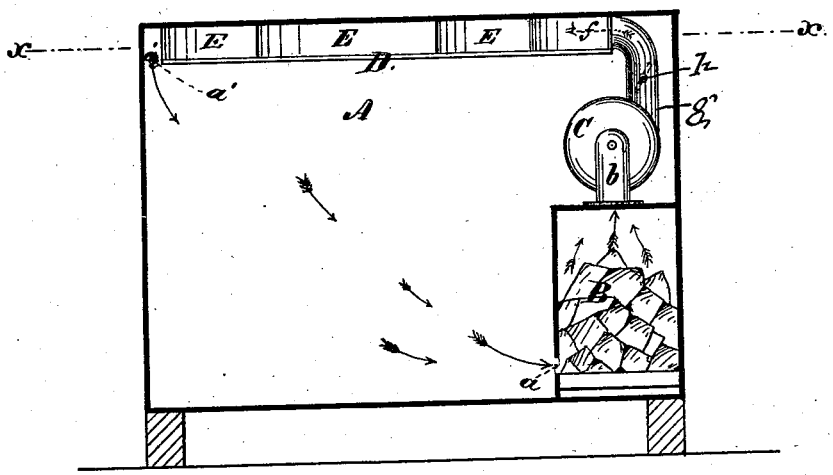
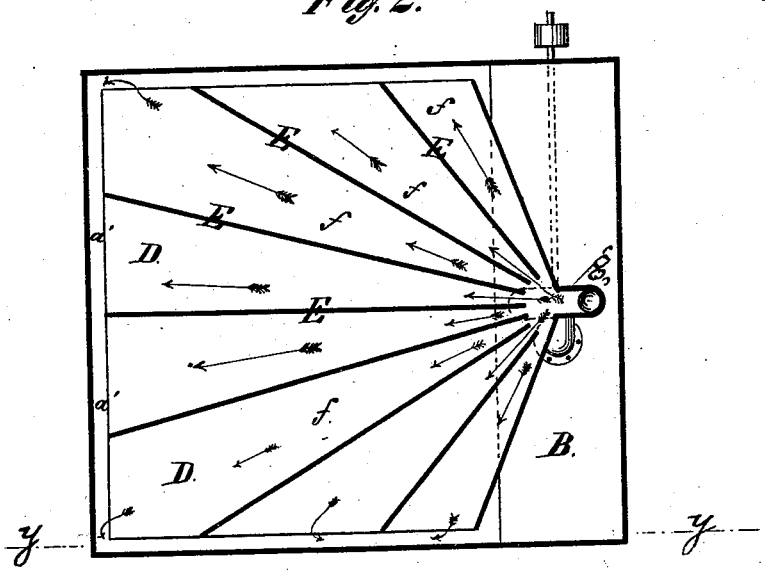


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN J. BATE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **184,748**, dated November 28, 1876; application filed July 29, 1876.

To all whom it may concern:

Be it known that I, JOHN J. BATE, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Refrigerators, of which the following is a specification:

This invention relates to a novel and improved construction of refrigerators, whereby provision is made for the distribution of the circulating refrigerated air, throughout the circumference of the chill-room; and also for the ready graduation of the velocity of the circulation, the invention comprising a novel combination of circumferential openings with a false ceiling provided to the chill-room, and in due relation with the fan-blower and ice-box; also, a novel combination of radial distributing-partitions with a false ceiling provided to the chill-room, and with the ice-box and fan-blower of the refrigerator; also, a novel combination of a valve intermediate between the ice-box and the radiating-partitions above the false ceiling aforesaid.

Figure 1 is a vertical sectional view of a refrigerator made according to my invention, taken in the line Y Y of Fig. 2. Fig. 2 is a horizontal sectional view of the same taken in the line X X of Fig. 1.

A is the chill-room or closed chamber of the refrigerator. B is the ice-box, provided with an opening, *a*, at or near its bottom, whereby the interior of the ice-box communicates with that of the chill-room. C is a fan-blower, rotated by the usual or any suitable means, and connected with the upper part of the ice-box by a pipe, *b*. D is a false ceiling, placed at any suitable distance—say, one, two, or more inches—below the true ceiling *c* of the chill-room. This false ceiling does not extend quite to the sides of the chill-room, thereby leaving an opening or openings, *a'*, around the circumference of said false ceiling. Within the space or chamber *f*, between the false ceiling D and the true ceiling *c*, are arranged partitions E, which radiate from the upper end of the pipe *g*, which extends upward from the shell or casing of the fan-blower C, connecting said fan-blower with the aforesaid space or chamber *f*.

In the pipe *g* is placed a valve, *h*, by which the flow of air, hereinafter set forth, through the said pipe may be checked as occasion may require.

In the operation of the invention the fan-blower draws the air upward and inward through the opening *a*, and upward through the ice-box, through the pipes *b g*, to the chamber *f*, whence it is ejected between the partitions E, and out through the openings *a'* downward into the chill-room A, whence it passes again to the ice-box, and so on in continual circulation.

When desired, the direction in which the air circulates may be changed, the air being drawn upward into and through the space or chamber *f*, and thence downward through the ice-box, and out and back through the chill-room A to the openings *a'*. The degree of circulation, or rather the velocity with which the air is caused to circulate within the chamber A, may be regulated by turning the valve *h* to diminish the available diameter of the pipe, provision being thus made for determining the degree of circulation independent of the speed of rotation of the fan-blower.

It is, of course, sufficient to the purposes of my invention that the opening *a'*, be at the circumferential part of the false ceiling D, though not exactly at the outer circumference thereof; and, also, that a continuous system of small openings may be substituted for one continuous opening, these being mere modifications of my invention, and operating on identically the same principle as the same.

What I claim as my invention is—

1. The false ceiling D, having a circumferential opening, *a'*, in combination with the fan-blower and ice-box, all arranged in relation with each other and within the chill-room A, substantially as and for the purpose set forth.

2. The system of radiating partitions E in combination with the false ceiling D, the fan-blower C, and the ice-box B, all arranged in relation with each other and the chill-room A, substantially as and for the purpose herein set forth.

3. The valve *h* in the pipe in combination with the system of radiating partitions E, the false ceiling D, the fan-blower C, and ice-box B, all arranged in relation with each other and within the chill-room A, substantially as and for the purpose herein set forth.

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