J. J. BATE.

REFRIGERATOR.

No. 189,990. Patented April 24, 1877.

Fig. 1.

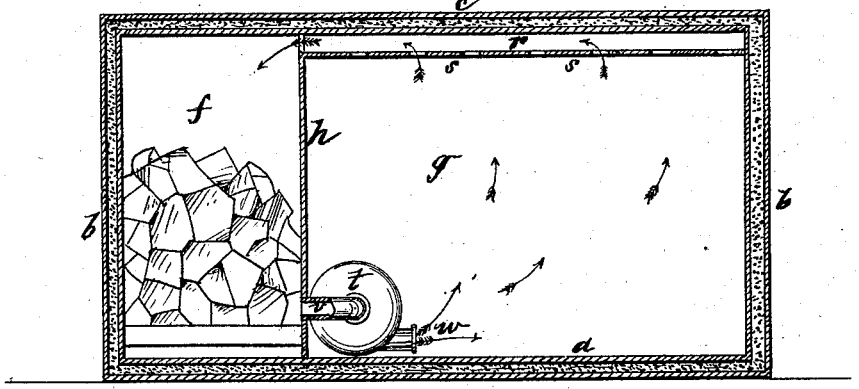
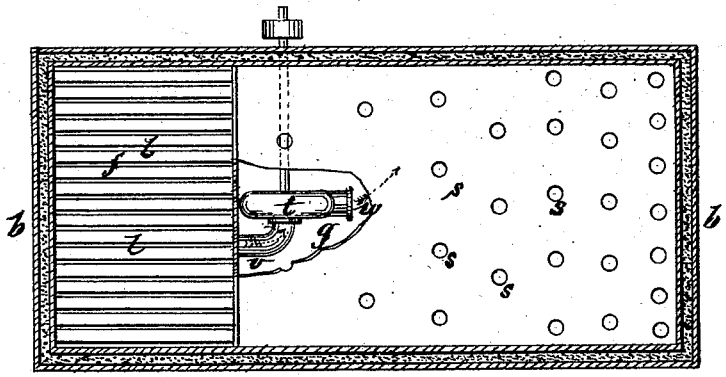


Fig. 2.



Witnesses:
A. A. Seaman
F. B. Groff

Inventor
John J. Bate.
per James A. Whitney.
Atty.

UNITED STATES PATENT OFFICE

JOHN J. BATE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **189,990**, dated April 24, 1877; application filed July 7, 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 is designed to secure a more uniform circulation of air than has ordinarily been found practicable in that class of such apparatuses in which the circulation is dependent upon the use of a blower.

My invention comprises a refrigerator divided by a perforated horizontal partition into a lower cooling-chamber and an upper air distributing and circulating chamber, combined with an ice-chamber having an upper air-inlet and lower air-outlet, and an air exhausting and forcing device arranged to draw the warm air uniformly into the upper chamber, and to cause it to pass into the ice-chamber, so as to produce a gradual downward circulation through said ice-chamber, to and through the lower cooling-chamber. By this construction of the apparatus the cooling-chamber is kept of nearly uniform temperature throughout, and a material economy of ice is secured.

Figure 1 is a vertical sectional view of a refrigerator made according to my invention. Fig. 2 is a horizontal sectional view of the same.

The bottom *a*, sides *b*, and top *c* of the refrigerator are, by preference, made double, and lined with non-conducting material, of any usual character, and the refrigerator or refrigerating apparatus is to be of dimensions suitable to the material to be received or transported, and to the quantity of ice employed. The ice-chamber *f* is separated from the cooling-chamber *g* by a partition, *h*, preferably of galvanized iron. Above the cooling-chamber *g* there is a circulating-chamber, *r*, that is separated from *g* by a perforated partition, *s*. The blower *t*, that is driven by a suitable shaft and pulley, *u*, or otherwise, is provided with a suction-pipe, *v*, connecting with the lower part of *f*, to draw air from the air-space *r* by the suction of the fan-blower through the ice-chamber, and finally out from the blower at *w*, so that the air is caused to circulate continuously through the respective chambers *r* and *g* and the ice-chamber *f*.

What I claim as my invention is—

1. The combination of the cooling-chamber *g*, an air distributing and circulating chamber of nearly equal horizontal dimensions, situated above, and separated from it by a perforated partition, *s*, an ice-chamber having an upper air-inlet extending its entire width, or nearly so, and a lower air-outlet communicating with an air exhausting and forcing device, substantially as and for the purpose set forth.

2. The cooling-chamber *g*, and the circulating-chamber *r* in the upper part thereof, separated by the partition *s*, that is perforated throughout, in combination with an ice-chamber and a blower, which latter causes a continuous circulation of air throughout the cooling and ice chambers, substantially as set forth.

JOHN J. BATE.

Witnesses:
H. WELLS, Jr.,
EDWARD HOLLY.

550 words