J. GRAVENSTINE.

Improvement in Refrigerators.

No. 127,864. Patented June 11, 1872.

FIG. 1.

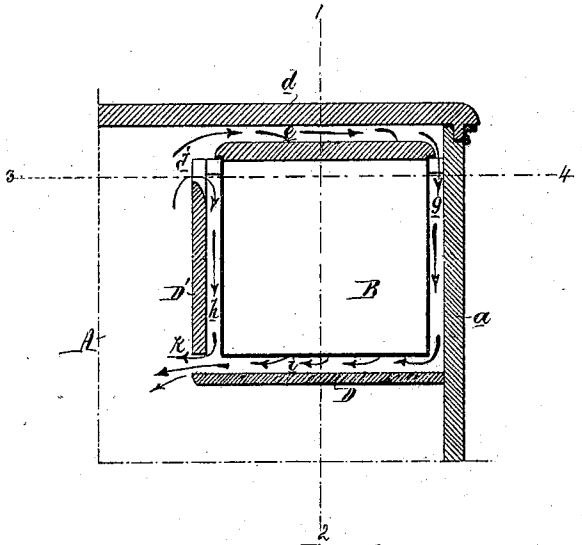

FIG. 2.

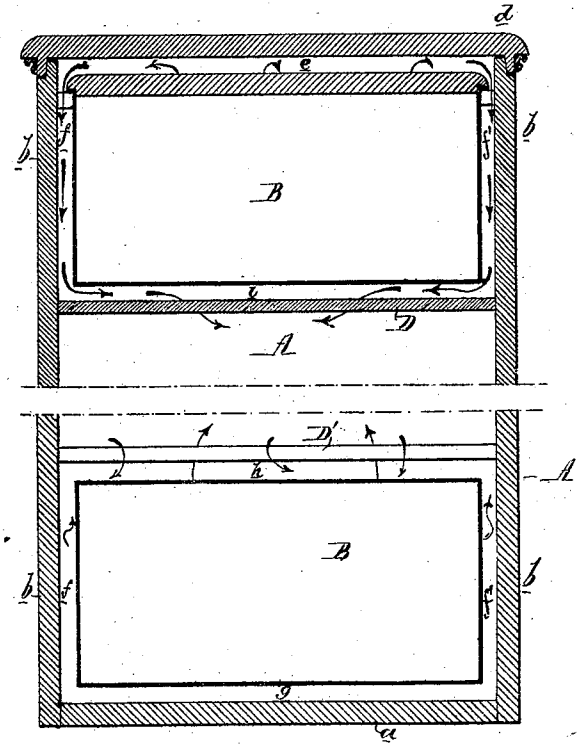

FIG. 3.

WITNESSES,
Harry Smith
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by his Attys
Howson and Sons

UNITED STATES PATENT OFFICE.

JOHN GRAVENSTINE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. 127,864, dated June 11, 1872.

Specification describing Improvements in Refrigerators, invented by JOHN GRAVENSTINE, of Philadelphia, Pennsylvania.

Improvements in Refrigerators.

My invention consists of certain improvements in refrigerators, fully described hereafter; the object of said improvements being to insure in a closed or air-tight chest a thorough circulation of air in contact with the ice-box.

In the accompanying drawing, Figure 1 is a sectional view of one end of a refrigerating-chest with my improvements; Fig. 2, a transverse section on the line 1 2, Fig. 1; and Fig. 3, a sectional plan on the line 3 4, Fig. 1.

In refrigerators, closed or air-tight, heretofore made, the ice-box with the casing surrounding the same and passages for the circulation of air have been arranged at about the center of the casing or casket, and extended downward from the top into the body of the latter. This arrangement, although advantageous for an upright refrigerating apparatus or corpse-preserving case, occupies too much room for a refrigerating-chest of ordinary size intended for domestic purposes, it being necessary in the latter, in order that there may be sufficient space for the meats and other provisions, to arrange the ice-box at one end of the chest. To accomplish this, however, and to obtain at the same time the circulation around the ice-box, requires a peculiar arrangement of parts and air-passages, which I will now proceed to describe.

On reference to the drawing, A represents a portion of a refrigerating-chest, of which *a* is the end, *b b* the opposite sides, and *d* the top or lid. The closed ice-box B is suspended, in any suitable manner, in the angle formed by the top and end of the chest, and occupies nearly the whole width of the latter between the opposite sides; and beneath the said box, and secured to the sides and end of the chest, there is a partition, D, and at the outer or front end of the same a partition, D′, secured to the sides of the chest. The ice-box thus arranged is removed a little distance from the top, sides, and end of the chest, so as to form between the same and the latter air-passages *e*, *f*, *f′*, and *g*; and between the front of the said chest and a partition, D′, is a passage, *h*, and between the bottom of the same and the partition D a passage, *i*. The ice-box is thus entirely surrounded by air-passages, all communicating freely with each other, and with the interior of the chest A, through openings *j* and *k* at the upper and lower ends of the partition D′ in front of the box. The air in the narrow passages *f*, *f′*, *g*, and *h*, being in immediate contact with the sides of the ice-box, will become quickly cooled, and will descend into the space or passage *i* beneath the said box, and pass thence through the opening *k* into the chest, and the warm air from the latter will pass through the opening *j* into the space *e* above the ice-box, and, becoming cooled, will descend, through all of the passages *h*, *f*, *f′*, and *g*, into the bottom passage *i*, and pass from the latter into the chest through the opening *k*. A constant circulation in the direction of the arrows is thus maintained in the chest and around the ice-box without the admission of any external air, and this circulation will continue, but with decreasing rapidity, as the temperature within the chest approaches equalization. The passage *e* enables a current of air to be brought into contact with the top of the box, as well as with the sides of the same, thus facilitating the cooling of the air. The partition D′ and passage *i* at the bottom of the box might be dispensed with, and the cold air be permitted to descend from the side passages directly into the chest; but I prefer to employ the said partition, as it facilitates the cooling of the air, and also directs the latter through the opening *j* toward the main body of the chest, as indicated by the arrows in Fig. 1. The said partition D′ may, if desired, be inclined downward toward its front end, for the purpose of thus facilitating the outward passage of the air.

I claim as my invention—

In a closed or air-tight refrigerating-chest, the combination, substantially as described, of the air-passage *e* above the ice-box and air-passages extending round the sides of the said box.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN GRAVENSTINE.

Witnesses:
WM. A. STEEL,
JOHN K. RUPERTUS.