# G. B. SATTERLEE.

## Water-Evaporating Refrigerator.

No. 161,062. Patented March 23, 1875.

Fig. 1.

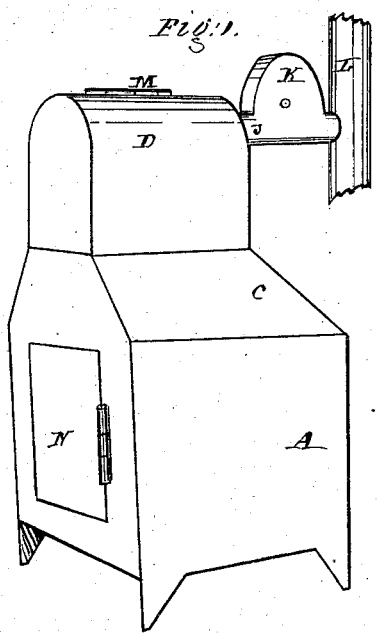



Fig. 2.

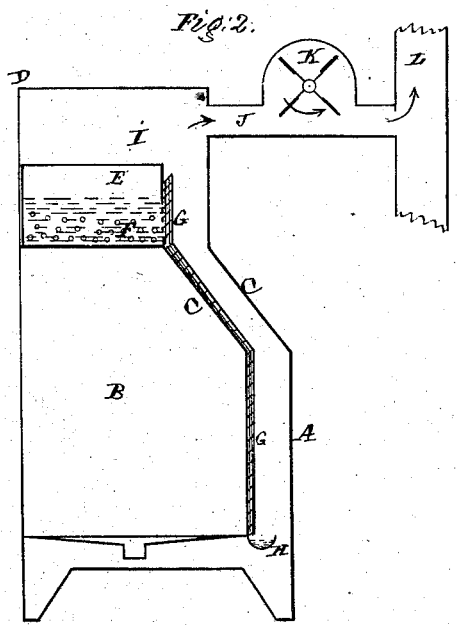
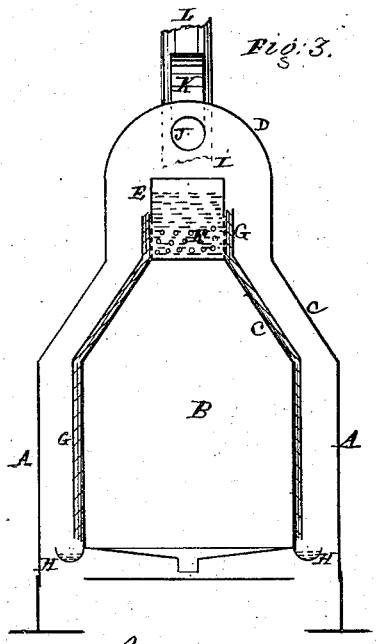



Fig. 3.




Witnesses.
C. A. Barrill
R. Rowley

Inventor.
George B. Satterlee

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

# UNITED STATES PATENT OFFICE.

GEORGE B. SATTERLEE, OF NEW YORK, N. Y.

## IMPROVEMENT IN WATER-EVAPORATING REFRIGERATORS.

Specification forming part of Letters Patent No. **161,062**, dated March 23, 1875; application filed July 21, 1874.

*To all whom it may concern:*

Be it known that I, GEORGE B. SATTERLEE, of the city, county, and State of New York, have invented an Improved Water-Evaporating Refrigerator, of which the following is a specification:

The object of my invention is to make a refrigerator for family and other purposes without the use of ice; and the nature of my improvements consists in the manner of constructing a water-evaporating refrigerator-box by combining with the dome or evaporating space or chambers an exhaust-blower and an exhaust-pipe, in combination with the flue of a chimney, stove, or other heating apparatus, for the purpose of obtaining a rapid current of air through the evaporating-chamber, and in contact with the exposed surface of the leech-cloth, and thus, by the rapid evaporation of the water therefrom, abstract the heat from the cooling-box, for preserving the articles therein contained; but to describe my invention more particularly I will refer to the accompanying drawings forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a perspective view of the refrigerator. Fig. 2 is a longitudinal cut section of the same. Fig. 3 is a transverse cut section of the same.

Letter A represents the external walls of the refrigerator, which are intended to be made of wood; and if deemed necessary, to insure the greatest amount of insulation of the interior, cooling-box B may be backed with a zinc lining, and filled in with charcoal in the usual way of making ice-boxes or refrigerators. The shape of the upper half or upper part of the refrigerator is sloped inward, somewhat like the roof of a house, as represented by the letters C, and terminating at the top in an oblong dome, D. Within these outer walls of the refrigerator, and distant therefrom some two or more inches on all sides, is arranged a sheet-metal cooling-box, B, of a similar shape, up to the top of the sloping sides of the external walls. At the apex of the cooling-box is solidly attached a water-box, E, having a water-tight bottom and perforated sides, as represented by the letters F. To the sides of the water-box, and covering the perforations therein, are attached sheets of any suitable felt, cloth, or hair fabric, G, of sufficient length and breadth to jacket completely the external sides of the cooling-box to its lowermost edges. These edges are bent or curved outward, as shown by the letters H, to form drip-cups for the collection of any water escaping from the leech-cloth surrounding the cooling-box. Above the water-box is formed an air-collecting chamber, I, into one end of the upper side of which is inserted an air-conduit, J, in which is arranged an exhaust-blower, K.

The conduit J is intended to lead into a stove-pipe or chimney-flue, L, or other flue where a draft or current is obtained by the action of a stove, range, or lamp, and thus, either with or without the aid of the exhaust-blower, cause a rapid current of air to ascend up the evaporating-space between the external sides of the cooling-box and internal sides of the refrigerator-walls, to evaporate the water from the leech-cloth surrounding the cooling-box, and thus, by the rapid evaporation of the water, abstract the heat from the interior of the cooling-box, to preserve the food contained therein.

As will be obvious the accomplishment of this result is entirely due to the rapid evaporation of the water by a constant current of air. To obtain this object is the reason for making the sides of the refrigerator and cooling-box sloping from the top downward, so that the water will leech gradually and uniformly down the sides of the cooling-box, and the upward-ascending currents of air will flow rapidly and at the same time closely in contact with the sides of the cooling-box to evaporate the water from the leech-cloth.

For the purpose of refilling the water-box from time to time as the water is exhausted therefrom, a door, M, is made in the side of the oblong dome for that object. Letter N is the door of the cooling-box.

Having now described my invention, I will proceed to set forth what I claim and desire to secure by Letters Patent of the United States.

In combination with the water-evaporating refrigerator hereinbefore described, the air-collecting chamber I under the dome D, eduction-pipe J, exhaust-blower K, and chimney flue or pipe L, substantially as described, and for the purposes set forth.

GEORGE B. SATTERLEE.

Witnesses:

R. ROWLY,

CHARLES L. BARRITT.