J. R. LUDLOW.
Refrigerator.

No. 212,808. Patented Mar. 4, 1879.

Fig. 1.

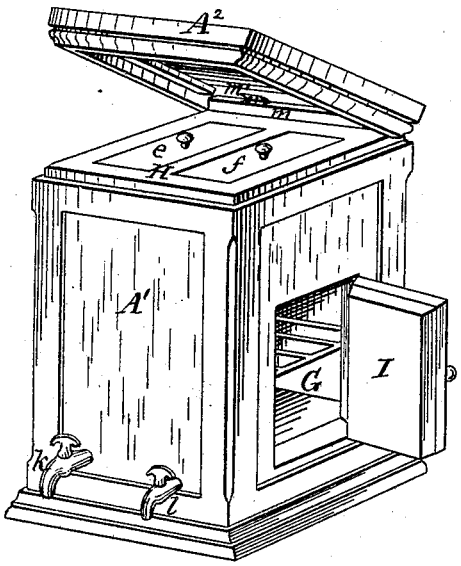


Fig. 2.

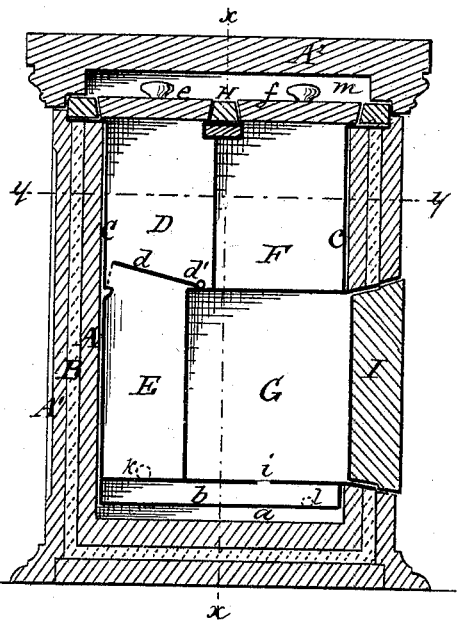


Fig. 3.

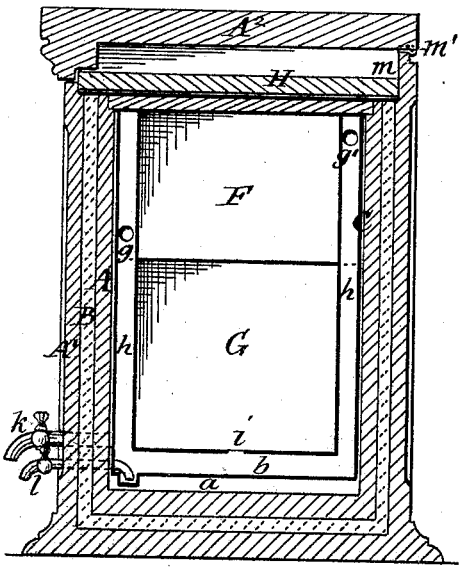
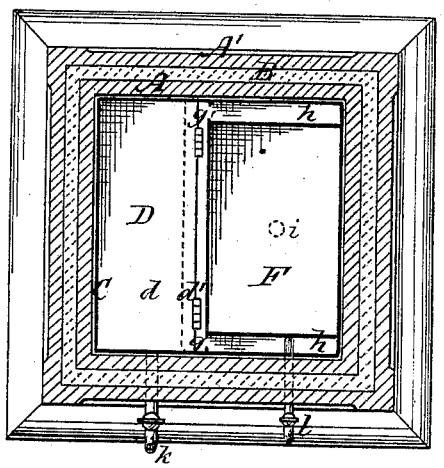


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN R. LUDLOW, OF NORFOLK, VIRGINIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **212,808**, dated March 4, 1879; application filed October 16, 1878.

To all whom it may concern:

Be it known that I, JOHN R. LUDLOW, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Refrigerators; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the refrigerator in perspective. Fig. 2 represents the same in longitudinal vertical section. Fig. 3 represents the same in transverse vertical section on line *x x* of Fig. 2. Fig. 4 represents the same in horizontal section on line *y y* of Fig. 2.

The object of my invention is to secure economy in the use of ice, to save the water melting from the ice, and to produce great efficiency in cooling the chambers containing food or other perishable articles, by means of currents of cold air in passages surrounding and connected with said chambers.

My invention consists in a refrigerator having a series of rectangular chambers, separated by stationary metallic partitions, so that the odors contained in one will not contaminate the other, and a rectangular water-back reservoir under the ice-chamber, extending to the bottom and in the rear of the main chamber, in connection with cold-air passages.

In the drawings, A represents a wood case, forming the interior of the refrigerator, (before it is lined with metal.) This case is surrounded on all sides and bottom with rosin-felt or felt B, which is again inclosed in an ornamental outside case, A^1, thus producing solid, and at the same time non-conducting, walls for the refrigerator. Within the case A there is a metallic case, C, to protect the former from all interior dampness. This case is flanged at the top, where it rests upon the edge of the wood case and covers the felt. It is thus suspended to form a dead-air chamber, *a*, under its bottom, to additionally protect and maintain the low temperature of the air accumulating in the cold-air passage or space *b*. Perforated supports may also be placed in the spaces *a* and *b* to sustain the case C. This case C is divided by metal partitions into four chambers, all of which are rectangular in form, and thus easily made and without any waste of material.

The chamber D is intended to receive the ice used to cool the whole case. Its bottom *d* is hinged at *d'*, to permit, when turned up, of free admission to the cold-water chamber E. This bottom can be either perforated or made to fit loosely upon its seat, to allow the water melting from the ice to escape and collect in the water-chamber. The other two chambers are intended to receive substances to be preserved, the upper chamber, F, being intended for milk, butter, &c., and the lower or main chamber, G, for meats, &c. The ice-chamber D and chamber F are closed with tapering covers *e* and *f*, fitting in a frame, H, placed above them, and a hinged lid, A^2, covers the whole top of the refrigerator. As this lid is ordinarily made and hinged the refrigerator cannot rest close to a wall, as the lid projects when turned up a considerable distance over the frame. To obviate this I extend the frame upward, at *m*, about half the thickness of the lid, and secure to its top the hinges *m'*, uniting the lid to the refrigerator-frame.

The main chamber G is opened and closed with a door, I, placed on the front or side of the refrigerator. Cold air is conducted from the opening *g*, on the side and near the bottom of the ice-chamber, to the cold-air space *b*, under the main chamber, through the cold-air spaces or passages *h*, Figs. 3 and 4, extending on two sides, and from top to bottom, of the chambers F and G, thus surrounding them on three sides with air at a low temperature, and, if desired, ventilating with it the lower chamber, G, through the opening *i*, that can otherwise be closed with a valve, and the air returned to the ice-chamber through the opening *g'*. The opening *g* being lower than the opening *g'*, a continuous current of air is thus created to circulate around the cooling-chambers.

In operation, ice is placed in the chamber D. This ice, in melting, produces ice-water, which is collected in the rectangular chamber E, from which it can be drawn through the faucet *k*. The cold air surrounding the ice escapes through the opening *g* into the space on the side of the cooling-chambers F and G, and

under the latter, where it circulates either into the chamber G through the opening *i*, or back to the ice-chamber through the opening *g'*, according to the condition (open or closed) of the opening *i*. If any moisture collects in the bottom space *b*, it can be removed through the small faucet *l*.

Having now fully described my invention, I claim—

1. In a refrigerator, the combination of a series of rectangular chambers, separated by stationary metallic partitions, with a rectangular ice-chamber and ice-water chamber under the ice-chamber, the ice-water chamber extending to the bottom and in the rear of the main chamber, substantially as and for the purpose described.

2. In combination with the refrigerating-chambers F and G, placed one above the other, and constructed to form a shelf supporting the door *d* and its hinge, and the rectangular ice and water chambers, also placed one above the other, the hinged bottom or door *d* of the ice-chamber, substantially as and for the purpose specified.

3. The combination of refrigerating-chambers, placed one above the other, and rectangular ice and water chambers, also placed one above the other, the latter extending to the bottom of the apparatus, with the air-passages *g g' h* and bottom passage, *b*, extending under the water and main chamber, in the manner shown and described.

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