(No Model.) 2 Sheets—Sheet 1.

W. I. HALL.

REFRIGERATOR.

No. 317,126. Patented May 5, 1885.

Fig: 1

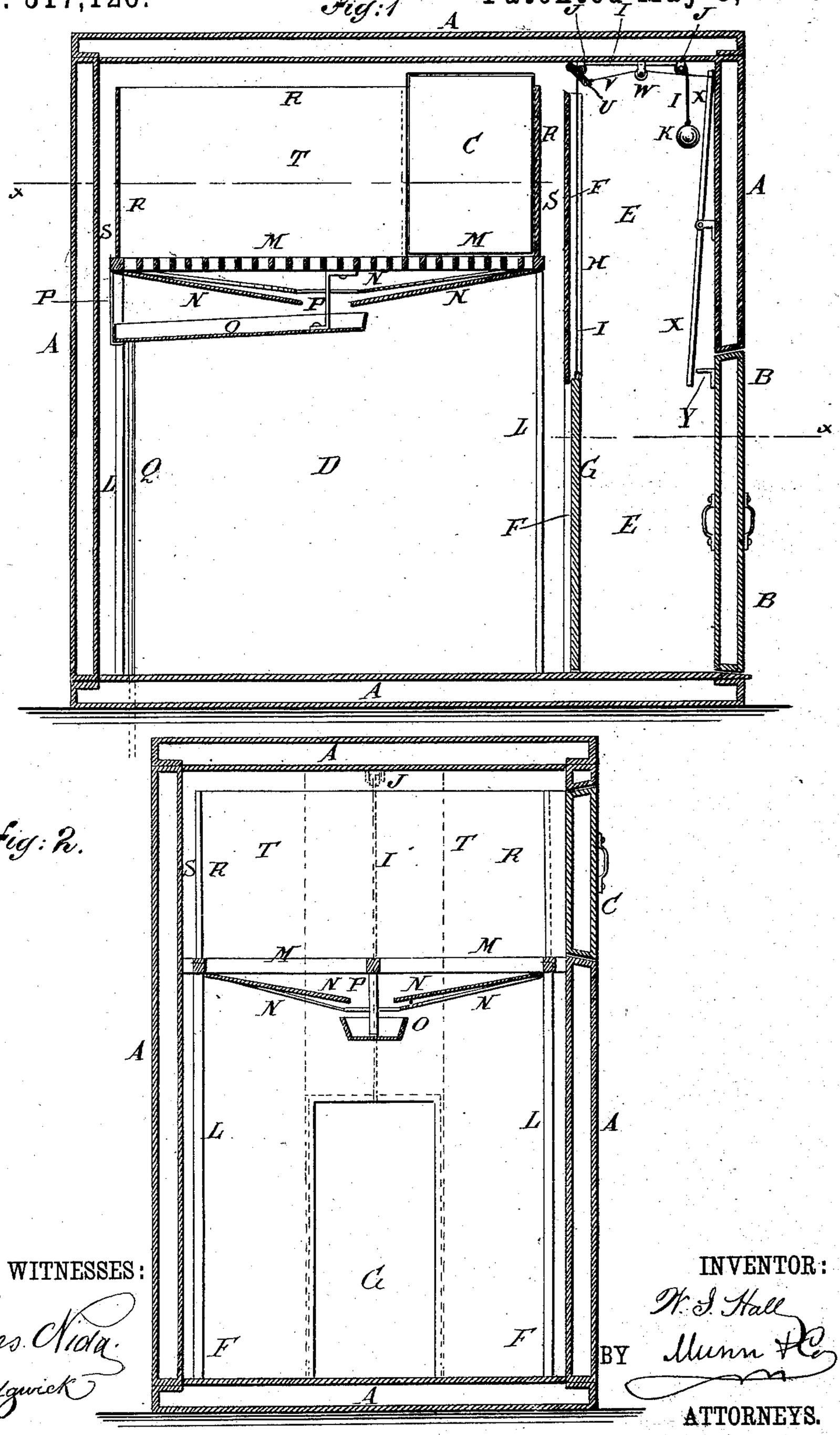

Fig: 2.

WITNESSES:

Chas. Nida.

C. Bedgwick

INVENTOR:

W. I. Hall

BY Munn & Co

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

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Fig: 3.

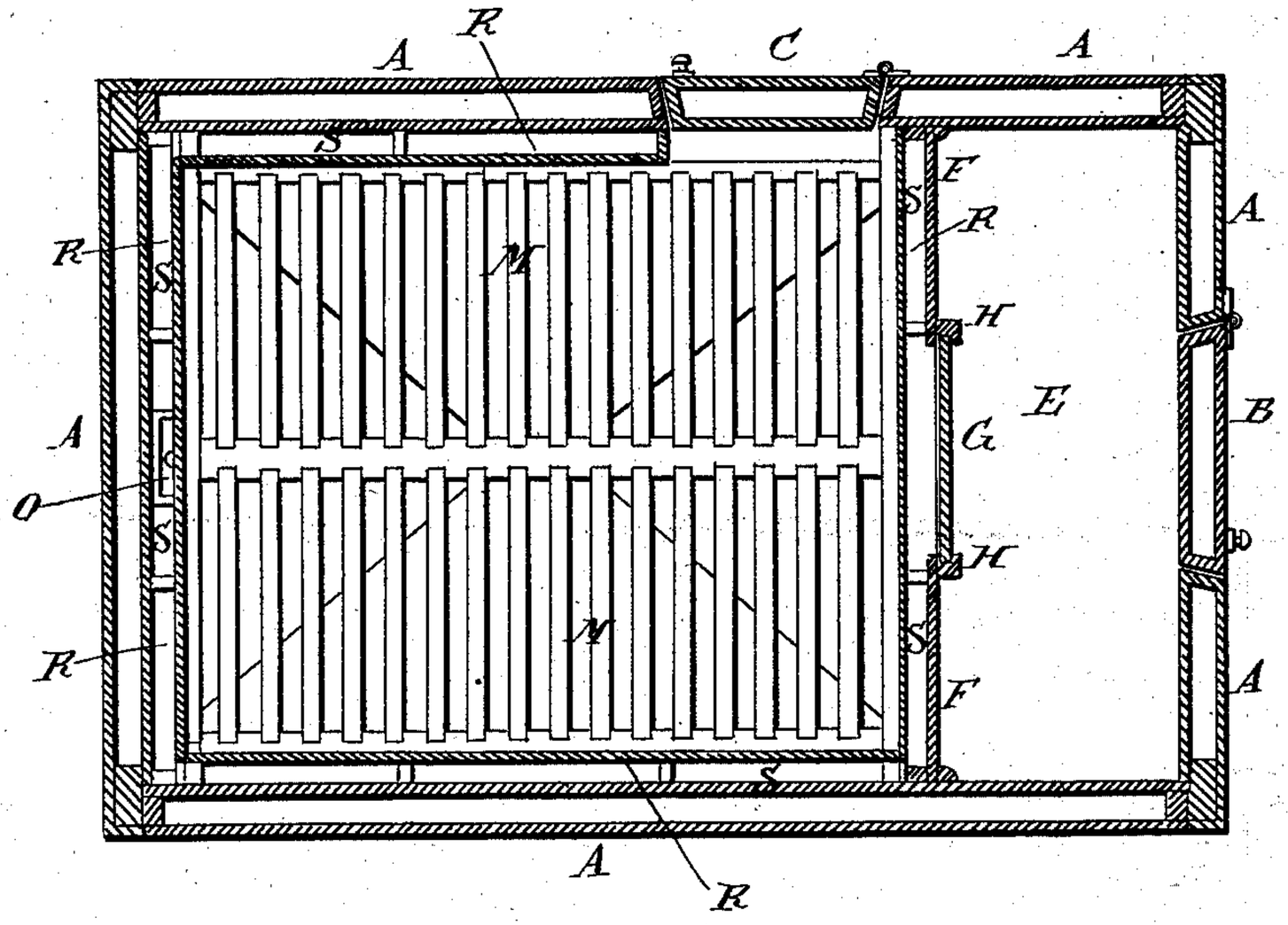
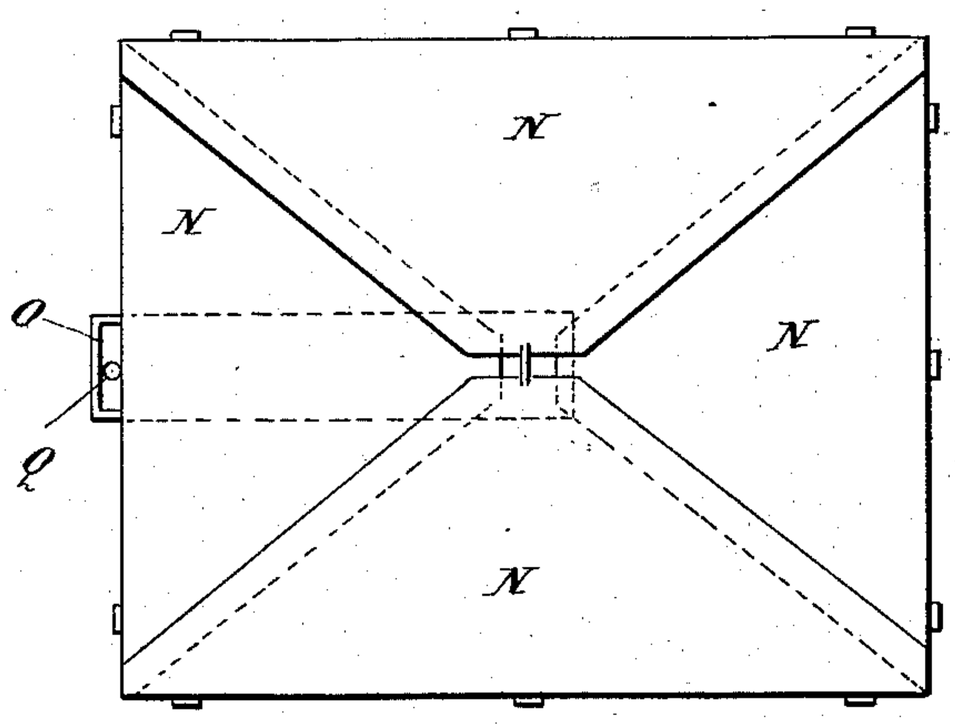


Fig: 4.



WITNESSES:

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C. Sedgwick

INVENTOR:

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BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WASHINGTON IRVING HALL, OF CHESTER, NEW YORK.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 317,126, dated May 5, 1885.

Application filed January 22, 1885. (No model.)

To all whom it may concern:

Be it known that I, WASHINGTON IRVING HALL, of Chester, in the county of Orange and State of New York, have invented a new and useful Improvement in Refrigerators, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1, Sheet 1, is a sectional side elevation of one of my improved refrigerators. Fig. 2, Sheet 1, is a sectional rear elevation of the same. Fig. 3, Sheet 2, is a sectional plan view of the same, taken through the broken line *x x*, Fig. 1. Fig. 4, Sheet 2, is a plan view of the drip-plates.

The object of this invention is to provide refrigerators constructed in such a manner as to economize ice, promote convenience in their use, and allow a more regular temperature to be maintained than is practicable with refrigerators constructed in the ordinary manner.

The invention relates to a refrigerator constructed with a partition having a door and dividing the refrigerator into two unequal compartments, and with an ice-supporting rack placed in the upper part of the larger compartment and provided with a set of drip-plates, a drip spout and pipe, and a casing extending nearly to the top of the refrigerator, whereby the drip-water will be carried off and the cooling-chamber will be constantly supplied with cold air. The door of the partition slides up and down, and is provided with a cord, pulleys, and a balancing-weight, whereby entrance can be readily had to the cooling-chamber without materially lowering its temperature. The partition does not extend quite to the top of the refrigerator, and the space thus formed is automatically closed when the outer door is opened and opened when the outer door is closed by a door cord and lever operated by an arm attached to the said outer door, as will be hereinafter fully described, and then claimed.

The outer walls, A, of the refrigerator and the outer doors, B C, are made double. The spaces between the parts of the walls A and of the doors B C may serve as air-chambers to prevent heat from entering through the said walls and doors, or may be filled with charcoal or other suitable non-heat-conducting material.

The interior of the refrigerator is divided into two unequal chambers, D E, by a partition, F, in the lower part of which is a doorway to give admittance to the cooling-chamber D, and which is closed by a door, G, sliding vertically in guide-cleats H, attached to the said partition.

To the upper end of the door G is attached the end of cord I, which passes over guide-pulleys J, pivoted to supports attached to the top of the chamber E.

To the free end of the cord I is attached a weight, K, of sufficient gravity to so nearly balance the door G that the said door will remain in any position into which it may be adjusted, and so that the said door can be easily opened and closed.

In the four corners of the cooling-chamber D are placed four posts, L, intermediate posts being used when the size of the cooling-chamber D may require it.

Upon the upper ends of the posts L is placed a rack, M, to receive the ice, which is thus supported in the upper part of the said cooling-chamber.

To the outer edges of the rack M are connected the outer edges of four triangular drip-plates, N, the inner angles of which are cut off, and which are made of such a size that the inner edges of the adjacent plates will overlap each other, as indicated in Fig. 4. The end drip-plates are placed a little lower than the side plates, as shown in Figs. 1 and 2, to form spaces for the cold air that passes from the ice down through the rack M to pass down into the cooling-chamber D. The drip-plates N incline downward from their outer edges to their inner angles, and the said inner angles are so arranged that the drip-water from all the plates will fall into the spout O, which is supported by rods P from the rack M, and which inclines downward toward its outer end.

From the lower end of the drip-spout O a pipe, Q, leads out through the bottom or side of the cooling-chamber, to conduct the drip-water out of the refrigerator.

The rack M is made a little smaller than the space in which it is placed, and from its edges,

except opposite the doorway through which the ice is inserted, and which is closed by the door C, a casing, R, extends up nearly to the top of the refrigerator, as shown in Figs. 1 and 2. With this construction the cold air from the ice will pass down through the rack M and through the spaces between the drip-plates N into the cooling-chamber D, and the warmer air from the said cooling-chamber will pass up through the spaces S, around the rack M and the casing R, and will pass over the upper edge of the said casing into the ice-chamber T to be again cooled, so that a circulation of air will be maintained, and the air in the cooling-chamber D will be kept cool.

The partition F does not extend quite to the top of the refrigerator, and the opening thus formed is closed by a door, U, hinged at its upper edge to the said top of the refrigerator.

To the lower part of the door U is attached the end of a cord, V, which passes over a guide-pulley, W, pivoted to a support attached to the top of the refrigerator, and its other end is attached to the upper end of a lever, X. The lever X is pivoted to a support attached to the inner surface of the front wall of the refrigerator, and its lower end extends downward, so as to overlap the upper part of the door B.

To the inner surface of the upper part of the door B is attached an arm, Y, in such a position that when the door B is closed the said arm Y will strike against the lower end of the lever X and push it inward, swinging its upper end outward and opening the door U, so that the warm air in the entrance-chamber E can pass into the ice-chamber T and be cooled.

When the door B is opened, the lever X is released, and the door U is closed by its own weight, so as to prevent the cold air from the ice-chamber T from passing out into the entrance-chamber E and escaping through the doorway, so that all the cold air that will be wasted will be the air contained in the entrance-chamber E.

In using the refrigerator, when a person has opened the door B and entered the entrance-chamber E, he closes the said door B, opens the door G, and enters the cooling-chamber D. In returning he enters the entrance-chamber E, closes the door G, and then opens the door B and passes out, leaving the cooling-chamber D at about the temperature it had before the person entered the refrigerator.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A refrigerator constructed, substantially as herein shown and described, with a partition provided with a door and dividing the refrigerator into two unequal compartments, and with an ice-supporting rack placed in the upper part of the larger compartment, and provided with a set of drip-plates, a drip-spout and pipe, and a casing extending nearly to the top of the refrigerator, whereby the drip-water will be carried off, and the cooling-chamber will be constantly supplied with cold air, as set forth.

2. The combination, with the refrigerator, of the partition F, the sliding door G, and the cord, pulleys, and weight I J K, substantially as herein shown and described, whereby entrance can be readily had to the cooling-chamber without materially lowering its temperature.

3. The combination, with the walls of the refrigerator and the partition F, of the posts L, the ice-supporting rack M, and the casing R, extending from the edges of the rack M nearly to the top of the refrigerator, substantially as herein shown and described, whereby a circulation is established between the ice-chamber and the cooling-chamber, as set forth.

4. In a refrigerator, the combination, with the rack M, of the triangular drip-plates N, having a space between their overlapped adjacent edges, and the drip spout and pipe O Q, substantially as herein shown and described, whereby the drip-water will be caught and conducted from the refrigerator without preventing the circulation of air between the ice-chamber and the cooling-chamber, as set forth.

5. In a refrigerator, the combination, with the partition F and the outer door, B, of the door U, the cord and pulley V W, the lever X, and the arm Y, substantially as herein shown and described, whereby the space between the said partition and the top of the refrigerator will be automatically closed when the outer door is opened, and opened when the outer door is closed, as set forth.

WASHINGTON IRVING HALL.

Witnesses:
GEO. RILEY,
CHAS. H. WESTERVELT.