

KIDDER & SHOREY.

REFRIGERATOR.

No. 64,330.

Patented Apr. 30, 1867.

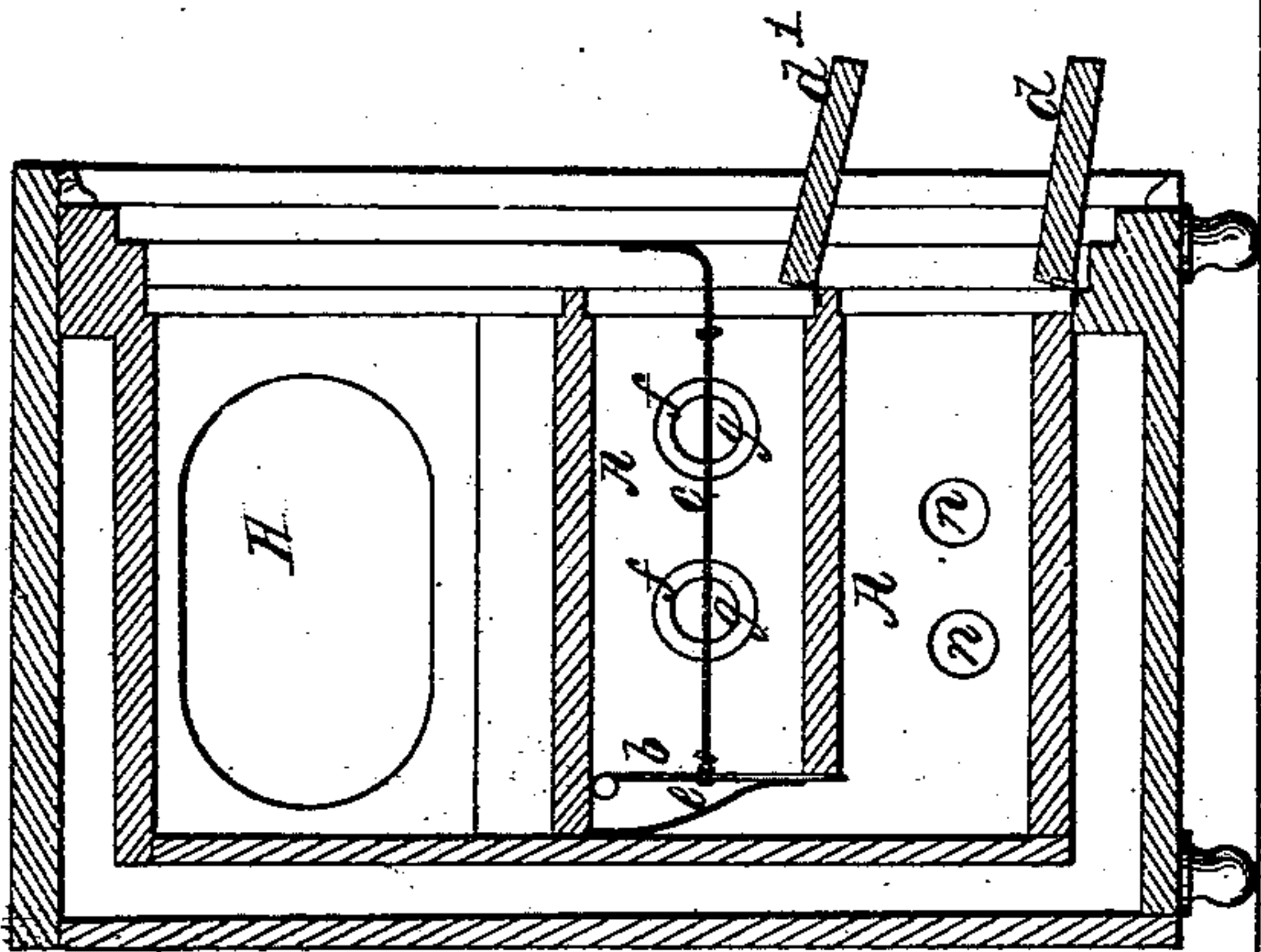


Fig. 2.

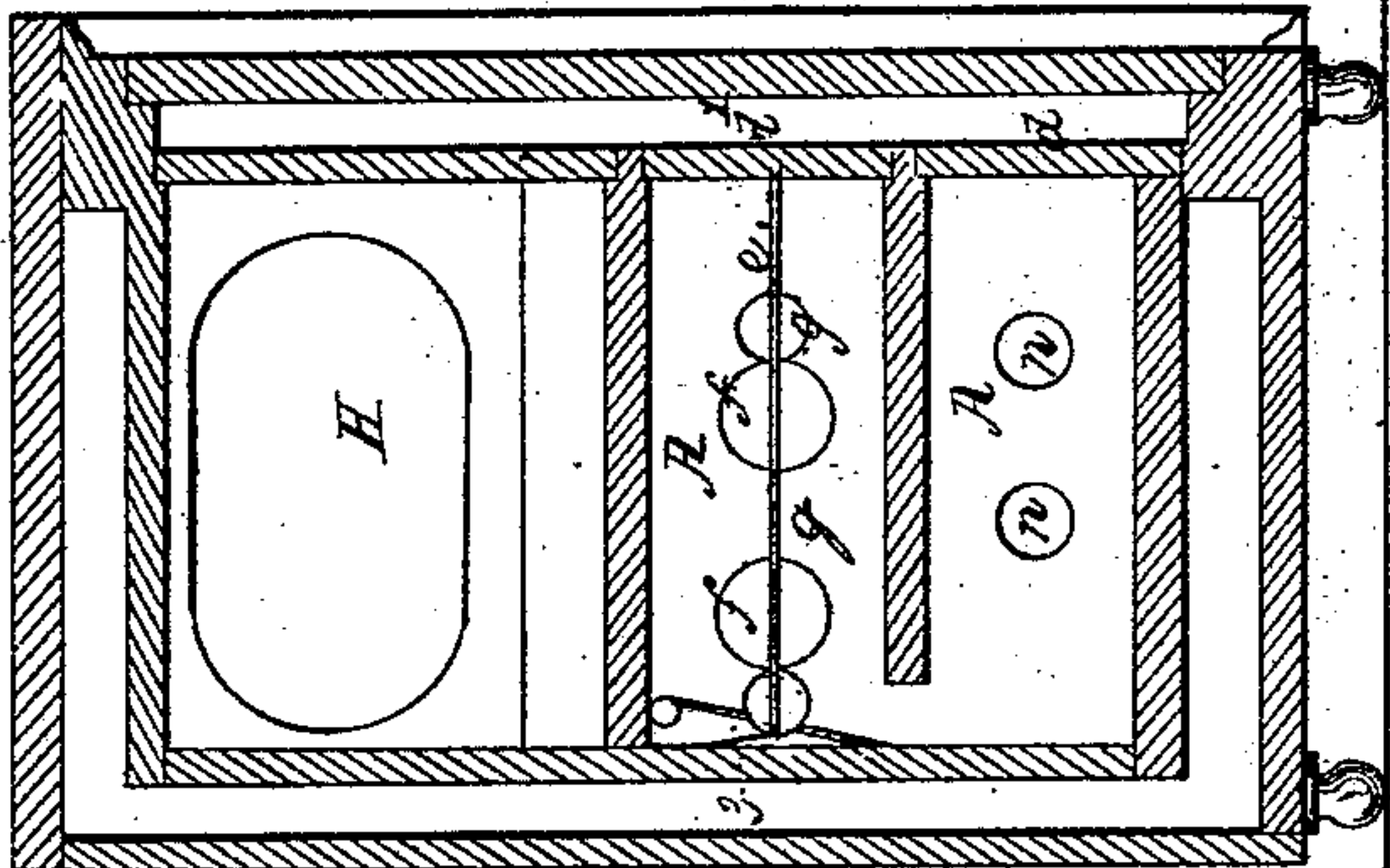


Fig. 3.

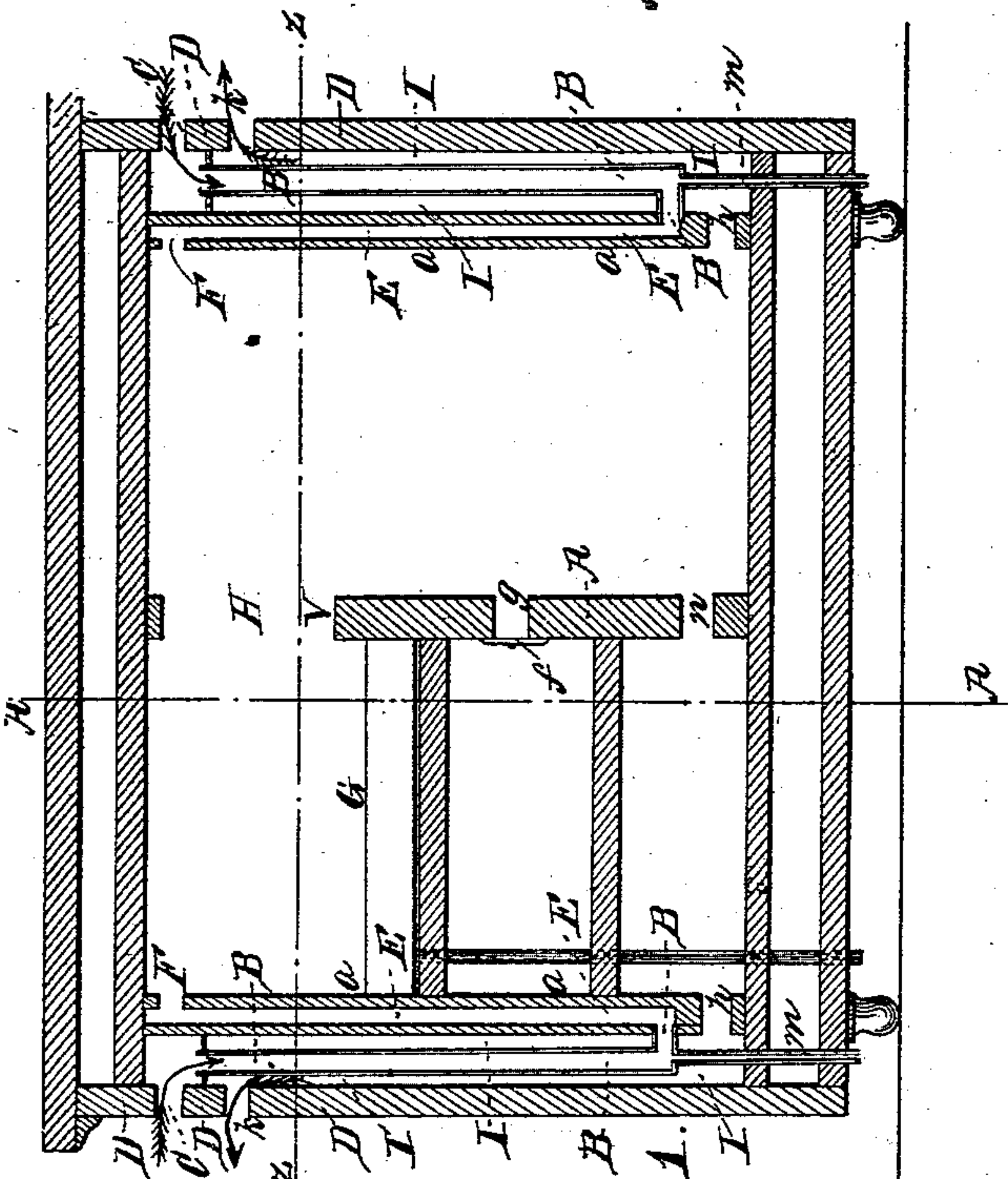


Fig. 1.

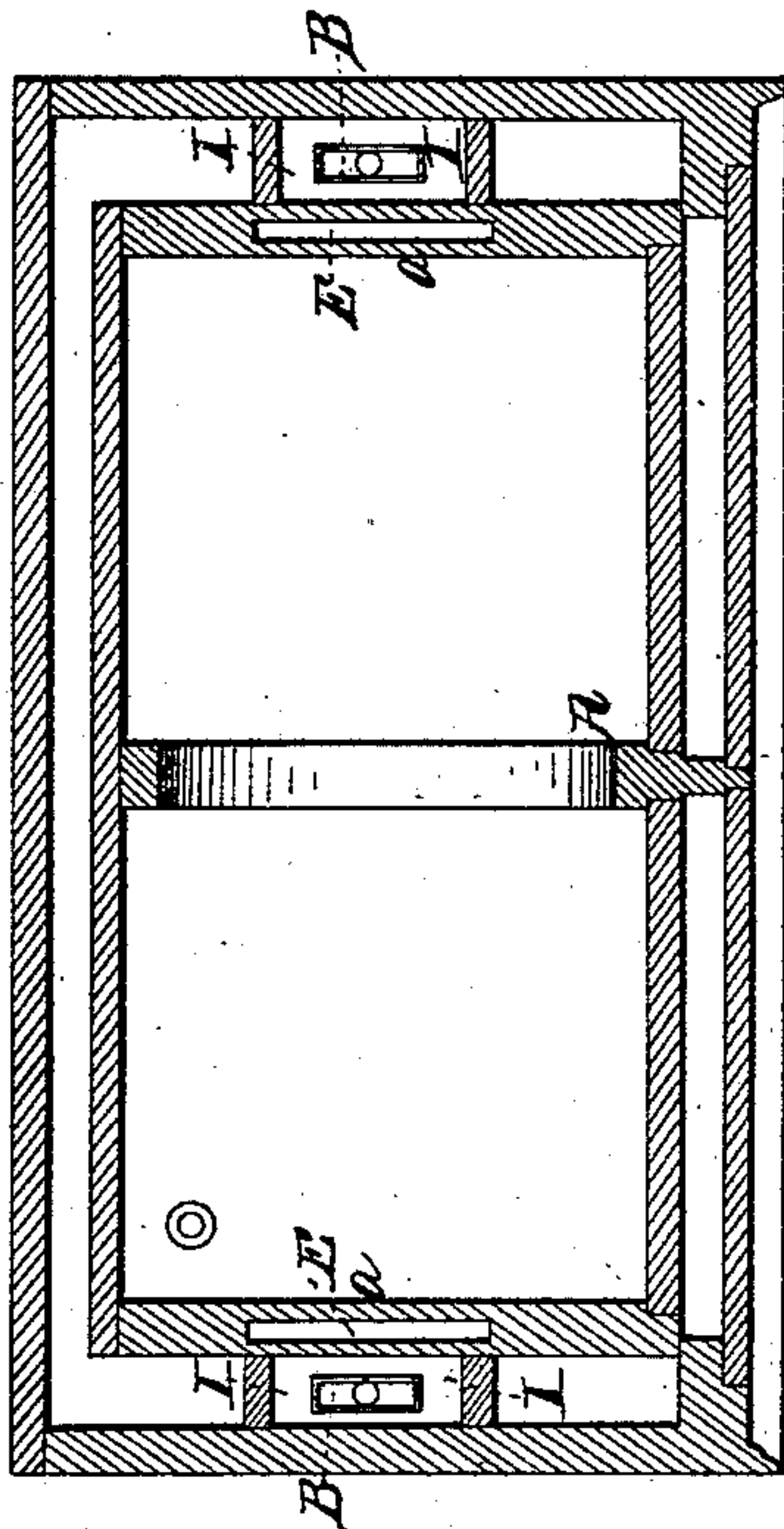


Fig. 4.

Witnesses.

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MOSES W. KIDDER AND MOSES W. SHOREY, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 64,330, dated April 30, 1867.

IMPROVED REFRIGERATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, MOSES W. KIDDER and MOSES W. SHOREY, both of Lowell, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful improvements in Refrigerators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal vertical section.

Figure 2, a transverse section on the line A B of fig. 1.

Figure 3 is a similar section when the inner doors are closed.

Figure 4 is a horizontal plane section on the line *y z* of fig. 1.

This invention consists, first, in a peculiar arrangement of tubes or passages for ventilation, whereby all the air which enters the refrigerator passes through tubes or pipes which are surrounded by the cold air, which passes out, and by such cold air is considerably cooled before it reaches the interior compartments; second, our invention consists in the employment of a non-conducting substance or material for the sides *a* of the inner passage E, to prevent the air which passes in through said passage affecting the temperature within the compartments; third, our invention consists in the use and application of a valve, *b*, to the back of either or all of the compartments, or to either side thereof, and so arranged that opening either of the inner doors *d* allows the valve therewith connected to close and prevent cold air from other compartments escaping through the opened one, or external air entering through the same; and when all the inner doors are closed the valves connected are opened to admit a free circulation of the cold air within into all the compartments.

One end of an operating-rod, *c*, is attached to the valve *b*, and the other end projects beyond the vertical partition A, to be acted upon by the door *d'* to open the valve when the door is closed. A spring, *e*, closes the valve *b* when the door *d'* is opened. All the compartments may have valves *b*, springs *e*, and rods *c* connected therewith, to be acted upon by the doors *d*, so that when the door of any one compartment is opened, and the valve of such compartment is closed, the cold air contained in the other compartments cannot pass out through the opened one, nor can warm or external air enter through the opened compartment. Valves *f* are arranged on the rod *c* to cover the holes *g*, made through the vertical partition A, when the compartment door is opened. The tubes, pipes, or passages B are for the admission of air, which passes in at the opening C, made through the end D of the refrigerator. The inward current of air passes down the passage B, thence inward, and then upward through the passage E, and through the opening F, into the upper part of the ice-box G, where it is cooled, and from which ice-box the cold air passes through a large opening, H, made through the vertical partition A, and through smaller openings *n* into all the other compartments. The cold air passes out through the openings *h*, into and upward through the spaces or passages I, around the tubes B, and out at the openings *k* near the ingress opening C. The outward current of cold air coming in contact with the external surfaces of the tubes B has a tendency to cool the air passing in through the latter tubes, so that the air which enters the refrigerator is rendered much cooler by the cold air which passes out, thus keeping the interior of the refrigerator at a much lower temperature, and causing the ice to endure much longer, or a smaller quantity of ice to answer the desired purpose. The pipes *m* are designed for the removal of the condensed vapor of the air entering through the tube B and condensed by the cold air surrounding the same. And we contemplate enlarging the induction tube B and contracting the size of the eduction tube or passage I so as to allow the induction tube to surround the eduction tube, and thereby produce the same result of cooling the air which passes into the refrigerator by the cold air which passes out, by surrounding the onward current of cold air by the inward current of warmer air, instead of the reverse, as shown and described.

1. We claim, first, the arrangement of the induction tube B within the eduction tube or passage I, in the manner and for the purpose set forth.

2. The use and application of valves *b* and *f* to the back or either side of each or any of the compartments, said valves being operated by opening and closing the inner doors, substantially as and for the purpose explained.

3. The combination of the tubes, pipes, or passages arranged for ventilation, as set forth, the valves *b* and *f*, and rods *c*, with the refrigerator, the whole arranged to operate substantially as and for the purpose set forth.

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Witnesses:

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