

(No Model.)

G. W. BULLIS.
REFRIGERATOR.

No. 407,059.

Patented July 16, 1889.

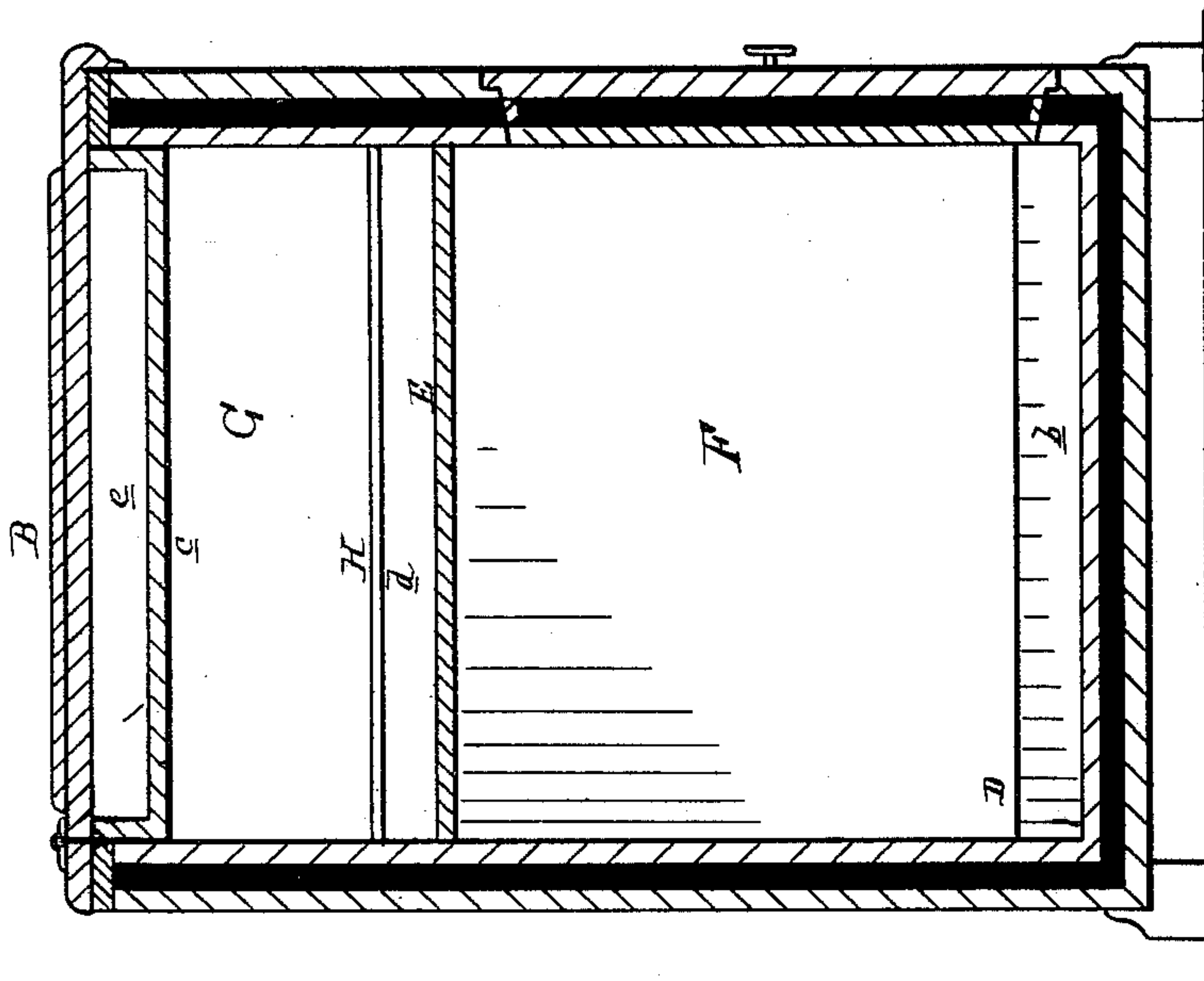


Fig. 2.

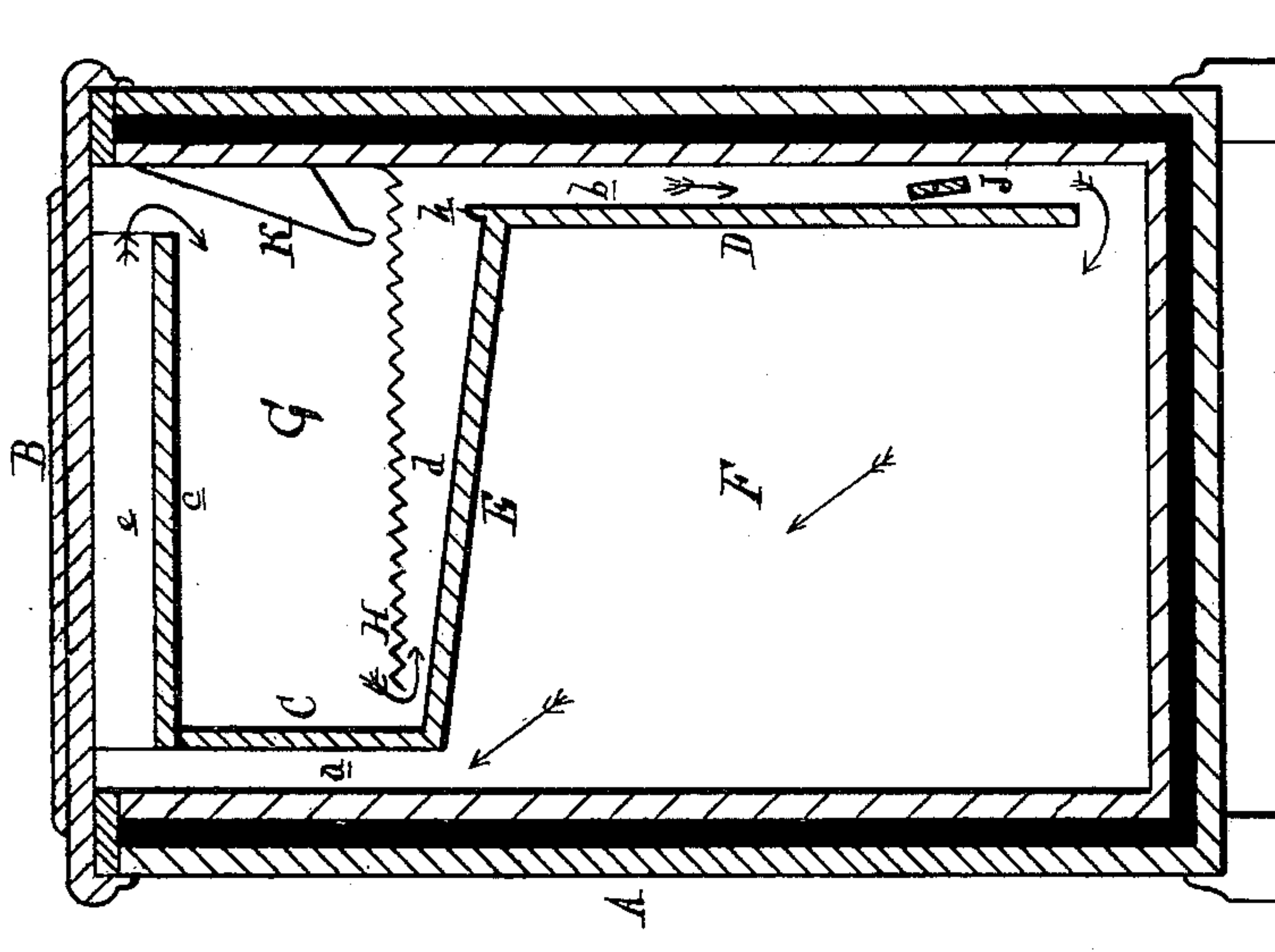


Fig. 1.

Attest.
F. Noville
J. Lehman

Inventor.
Geo. W. Bullis.
By *A. S. Maynard*

Att'y.

UNITED STATES PATENT OFFICE.

GEORGE W. BULLIS, OF ANN ARBOR, MICHIGAN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 407,059, dated July 16, 1889.

Application filed March 30, 1888. Serial No. 268,948. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BULLIS, a citizen of the United States, residing at Ann Arbor, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in refrigerators; and the invention consists in the peculiar construction, arrangement, and combination of the various parts, whereby a continuous circulation of cold air is produced through the ice-receptacle and through the preserving-chamber, all as more fully hereinafter set forth.

15 Figure 1 is a central vertical section through my improved refrigerator from end to end, and Fig. 2 is a similar view at right angles to Fig. 1.

20 In the accompanying drawings, which form a part of this specification, A represents the body or box of my improved refrigerator, the walls of which should preferably be made double, with the intervening space filled with some suitable non-conducting material, as is customary in the construction of devices of this character. In the front of this box suitable doors are provided, through which access to the interior of the preserving-chamber may be had, while its top B is hinged at its rear side, and upon raising it access may be had to the ice-receptacle.

25 Within the body or box I rigidly secure a vertical partition C between the front and rear walls of the box, leaving an air-passage *a* between such partition and the adjacent end of the box. At the opposite end is likewise secured a similar, though higher, vertical partition D, with an air-space between it and the wall of the box, and these two partitions are connected by an inclined partition E, thus forming a preserving-chamber F in the lower part of the box and an ice-receptacle G in the upper part.

30 The cover B, I provide with a depending open-ended box *c*, which, when the cover is closed, forms an air-passage *e*, communicating at one end with the air-passage *a* and at the opposite end with the interior of the ice-

receptacle G. At one side, at the top and opposite the exit end of the air-passage *e*, is placed a deflector K. In the bottom of this ice-receptacle, and a short distance above the horizontal transverse partition, is secured an ice rack or bottom H, the edge of which should be substantially in close contact with the walls of the receptacle, excepting at or near the end of this ice-rack, adjacent to the partition C, sufficient opening should be left to allow the air in its circulation to pass beneath the bottom H. The vertical edges of the partitions C and D should also be in close contact with the walls of the box, so as to confine the air within the passages and thus compel a more perfect circulation.

35 In practice, the parts being constructed and arranged substantially in the manner described, ice being placed in the ice-receptacle, a current of cold air is immediately established, which passes through the ice-receptacle and ice confined therein, and it must follow that the air is immediately reduced in temperature to a point below that of the air within the preserving-chamber. This cold air passes through the air-space *d*, below the bottom H, to the air-passage *b*, from which it emerges at the bottom into the preserving-chamber, forcing the warm air therein out through the passage *a* at the diagonally-opposite corner of the chamber, and thence through the passage *e* of the cover into the ice-receptacle. Thus, while the doors and cover are kept closed, the air is continually in circulation through the device, and carries with it the foul air and moisture thrown off by the articles within the preserving-chamber, while in its passage through the ice-receptacle and in contact with the ice it is again cooled and purified and deprived of the odors and moisture taken up in its passage through the preserving-chamber.

40 The condensation and water that are caused by the slowly-melting ice are conducted by the partition E to a proper drip-pipe at its lower edge, a rib or ledge *h* at the top of the partition D preventing their escaping down the passage *b* into the preserving-chamber.

45 J is a valve or shut-off located within the passage *b*, which may be turned so as to close such passage when desired—as, for instance,

when the doors of the preserving-chamber are to be left open for any length of time or when in the act of charging the ice-receptacle.

I am aware of a refrigerator having an ice-
5 receptacle with a rack, a passage descending from the ice-receptacle at one side of the refrigerator, and a preserving-chamber opening into the ice-receptacle. In my device the cold
10 air enters one corner of the preserving-chamber and the heated air passes completely over the ice-receptacle and enters it at one corner, and, going around the rack, passes through the ice-receptacle twice before descending to the preserving-chamber, thus insuring the
15 complete cooling of the air.

What I claim is—

In a refrigerator, the combination of the preserving-chamber F at the bottom, the ice-

receptacle G at the top, having the rack H, there being a space between the rack and partition C, the air-passage *a* on one side leading from the top of the chamber F, the air-passage *e* at the top leading from the passage *a* to the opposite side of the receptacle G, and the air-
25 passage *b* at the opposite side from the passage *a*, the passage *b* leading from the bottom of the receptacle G to the bottom of the chamber F, as set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 26th day of
30 March, 1888.

GEORGE W. BULLIS.

Witnesses:

JUSTIN B. BULLIS,
WM. W. WHEDON.