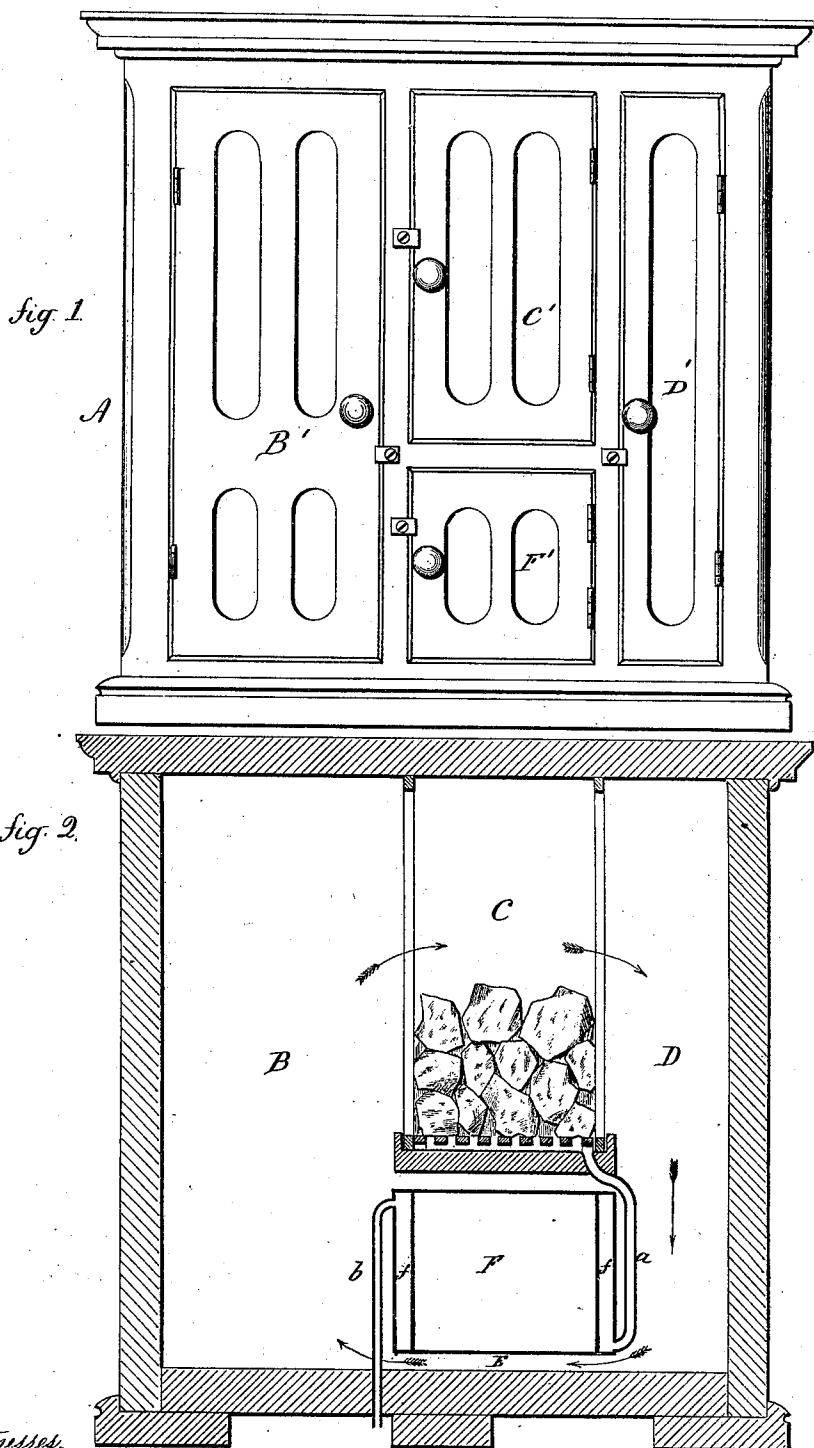


H. G. PLUMB.
REFRIGERATOR.

No. 176,678.

Patented April 25, 1876.



Witnesses.
W. H. Channing.
Eliza Broughton.

Harvey G. Plumb
By Atty. Inventor
Wm. S. Earle

UNITED STATES PATENT OFFICE.

HARVEY G. PLUMB, OF NEW MILFORD, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO ISAAC B. BRISTOL, OF SAME PLACE.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **176,678**, dated April 25, 1876; application filed January 24, 1876.

To all whom it may concern:

Be it known that I, HARVEY G. PLUMB, of New Milford, in the county of Litchfield and State of Connecticut, have invented a new Improvement in Refrigerators; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1, front view; Fig. 2, vertical central section.

This invention relates to an improvement in refrigerators or cooling apparatus, the object being to form a circulation of the air within the cooling-chamber; and it consists in a central ice-chamber, combined with a chamber at each side, one of which is larger than the other, both opening into central ice-chamber; also a passage from one to the other below the ice-chamber, whereby, in consequence of the said differential chambers, one is cooled more rapidly than the other, thereby forcing the air to flow from the larger to the smaller above, or through the ice and from the smaller to the larger below, as more fully hereinafter described; also, in combining with an ice-chamber an auxiliary cooling-chamber below.

A represents the outer case, divided internally into compartments B, C, and D, the compartment B considerably larger than the compartment D, in practice best results being found by making B twice the capacity of D, each extending from top to bottom. Between these is the compartment C, the floor of which is raised, and with the sides open, one into the compartment B and the other into the compartment D, so as to allow free circulation of air, the compartments B and D also connecting below the ice-compartment C by a passage, E.

The case is provided with a door, D', for the compartment D, C', for the ice-compartment C, and B' for the larger compartment B. The compartment C is partially filled with ice.

The compartment D, being smaller than the compartment B, will be more rapidly cooled by the ice than the larger compartment B; hence the cooling air will settle to the bottom of the compartment D, while the less

cool air will flow from the compartment B over or through the ice to the compartment D, to follow the cooler air descending in the compartment D. At the same time the air thus cooled in the compartment D will flow through the lower part of the ice-compartment into the lower part of the compartment B, and then the temperature, raised, in consequence of the air in the compartment B being warmer, will return over or through the ice to the compartment D, and thus maintain a constant circulation from the smaller compartment D to the compartment B below the ice, and from the compartment B to the compartment D over the ice.

As an auxiliary cooler there is arranged beneath the ice-compartment a fourth compartment, F, to which a door, F', opens. This compartment is formed of hollow walls *f*, and the water from the melting ice is led by a tube, *a*, to or near the bottom of the hollow wall, and an escape-pipe, *b*, leads from the upper part of the hollow wall outside the case to draw off the waste water.

The water, being very cold, will fill the walls of the compartment F, and, to that extent, cool that compartment, as well as the lower part of the chambers; but in the use of this compartment it is necessary that there should be a passage below it, from one side chamber to the other, for free circulation.

I do not wish to be understood as broadly claiming an automatic circulation, created in a refrigerating device by means of the ice-chamber, as such I am aware is not new; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The differential compartments B D, combined with the intermediate ice-compartment C, with the communication between the compartments B and D below the compartment C, and also through the compartment C.

2. In a refrigerating device, the combination of the auxiliary cooling-chamber F, constructed with hollow walls, and with a conductor for the water into said hollow walls from the ice-chamber, and an outlet from said hollow walls, substantially as described.

HARVEY G. PLUMB.

Witnesses:

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