S. CHILD.

Refrigerator.

No. 82,597. Patented Sept. 29, 1868.

Fig 1.

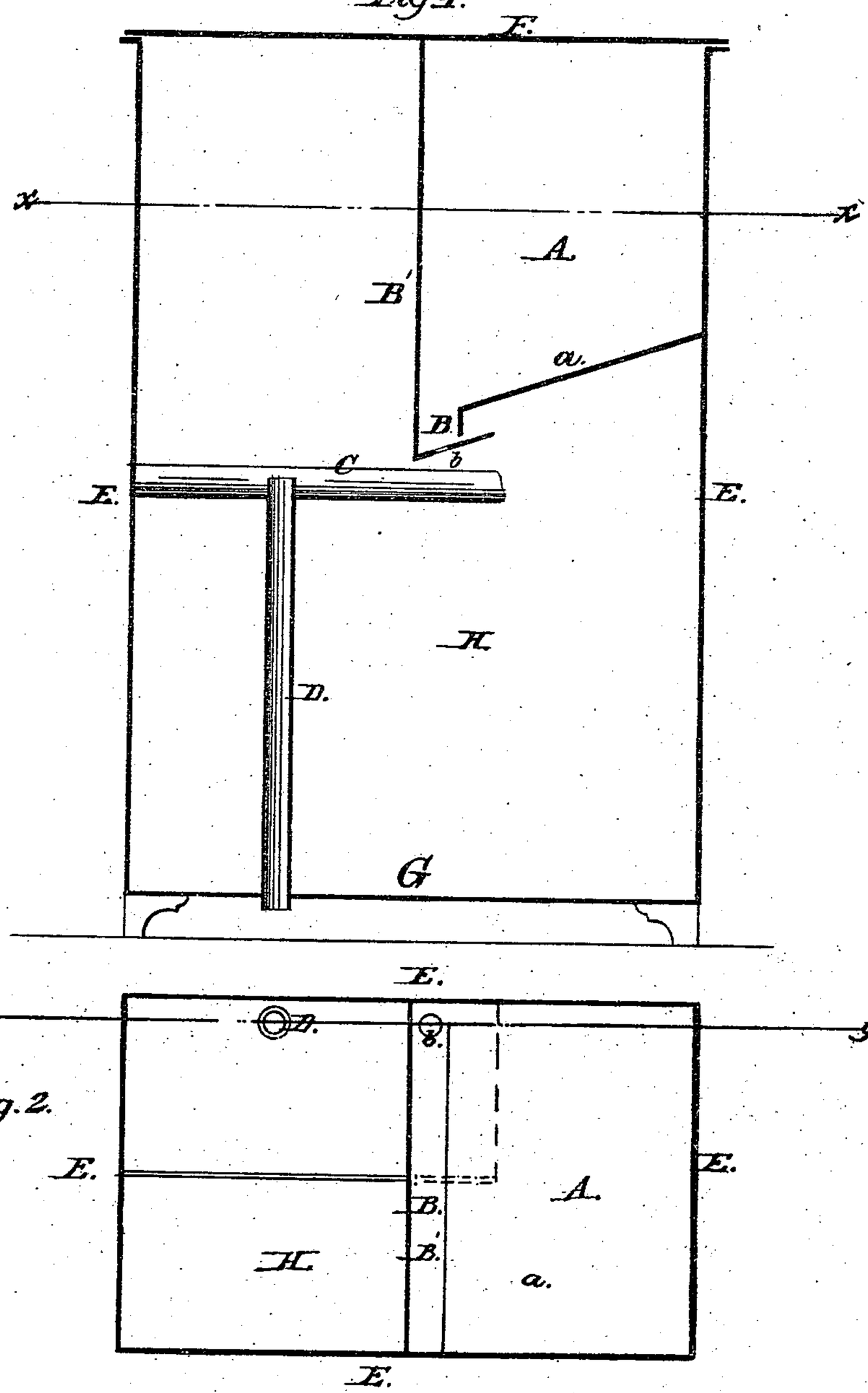


Fig. 2.




WITNESSES:

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# United States Patent Office.

SAMUEL CHILD, OF BALTIMORE, MARYLAND.

*Letters Patent No.* 82,597, *dated September* 29, 1868.

## 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 I, SAMUEL CHILD, of the city and county of Baltimore, and State of Maryland, have invented a new and improved Refrigerator, which I call "The Maryland Refrigerator;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section, through the line *y y* of fig. 2.

Figure 2 is a cross-section, through the line *x x* of fig. 1.

This improved refrigerator is so constructed that the meltings of the ice are retained in a position where they can be used to absorb the gases, vapors, or odorous matters that are given off from the viands, while the ice-cold water, as it becomes charged with these offensive matters, is passed out of the refrigerator without allowing entrance to the external air, and without permitting any air-currents to pass in contact with the ice either over or under it.

A good refrigerator must be capable of maintaining in its interior a temperature low enough to preserve the articles placed therein. It must accomplish this economically, with the least possible consumption of ice; and, most important of all, it must always exhibit a perfectly dry and pure atmosphere. If, with these requisites, it is self-purifying, so that no accumulation of disagreeable odors can possibly occur, it is evidently exactly what is wanted. These indispensable conditions are believed to be more perfectly accomplished by this "Maryland refrigerator" than by any other invention for the purpose yet known.

The introduction or passage of external air through a refrigerator creates moisture and dampness, and robs it of its colder atmosphere, and causes an unnecessary waste of ice. Currents produced within a refrigerator, by passing the warmer atmosphere over and upon the ice, are greatly objectionable, causing a great consumption of ice, and always leaving an extremely bad odor in the ice-chamber, so much so that water placed therein cannot be drank, as those who have bought such refrigerators have no doubt discovered. For the purification of a refrigerator, disinfectants cannot be used, but an absorbent can. This we have self-supplied, and renewed and changed, as used in the Maryland refrigerator.

The principle of this refrigerator may be described as follows: The air leaves the ice-chamber at a temperature as near as practicable to 32°, descends by its own gravity to the lower parts of the preserving-chamber, and the warmer atmosphere rises towards the upper parts of the refrigerator, and in its passage comes in contact with the cold water formed by the melting of the ice, and contained in an open vessel. By such contact with this cold water the moisture of the air is condensed, it becomes dried, and at the same time the odors and vapors present are absorbed and passed out of the refrigerator by means of the waste water. This process is continued so long as the refrigerator contains any ice. Hence, by retaining the meltings of the ice in a vessel of a particular construction, which is self-discharging, and placed in a proper position, we are enabled to purify a refrigerator more perfectly and with a less quantity of ice than has ever before been accomplished.

It must be borne in mind that, since cold water is an absorbent of gases and vapors to a definite, and therefore a limited, extent, this power is useless unless, as in the invention which I claim, a provision is made for discharging the water already saturated with offensive matters, and for maintaining a constant new supply of pure cold water.

In the drawings, A represents the ice-chamber, having an inclined bottom, *a*, which discharges the water formed from melting the ice upon a gutter, B, having a discharge-orifice, *b*, whence it flows into a water-condensing pan, C, from which, after rising to a certain height, it escapes through a waste-pipe, D. B′ is a partition, which separates the ice-chamber from the chamber above the water in the pan C. E E are the walls, F the cover, and G the bottom of the refrigerator.

The ice is placed in the chamber A, and the food or other article to be cooled is placed on suitable shelves or in vessels, in the preserving-chamber H. As the air in the ice-chamber is cooled, it descends to the preserving-chamber, and keeps the food in a suitable condition for use. The water formed by the melting of the ice accu-

mulates in the pan C, where it absorbs the gases, odors, &c., that rise from the food, and flows off through orifice of pipe D, carrying with it the offensive matters referred to.

It will be observed that the pan C occupies a very small portion of the refrigerator, so that the gases and odors passing upward from the provision-chamber are unobstructed. They therefore cannot be condensed against the bottom of the pan C, but are directed at once to the upper portion of the refrigerator and absorbed by the water in the pan.

The whole operation of the refrigerator is therefore exactly that which I have above described, combining all the essential requisites of a refrigerator especially adapted to the preservation of food and other articles which emit gases or disagreeable odors.

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

The arrangement of the pan C, having the waste-pipe D, with relation to the provision-chamber H, the ice-chamber A, and gutter B, as herein described, for the purpose specified.

SAMUEL CHILD.

Witnesses:

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