Andrew J. Chase's Improvement in Refrigerators.

101582

PATENTED APR 5 1870

Fig 1.

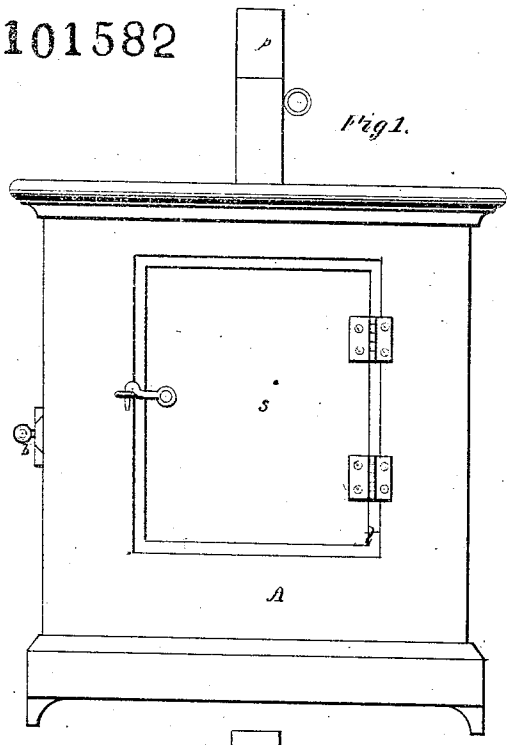


Fig 2.

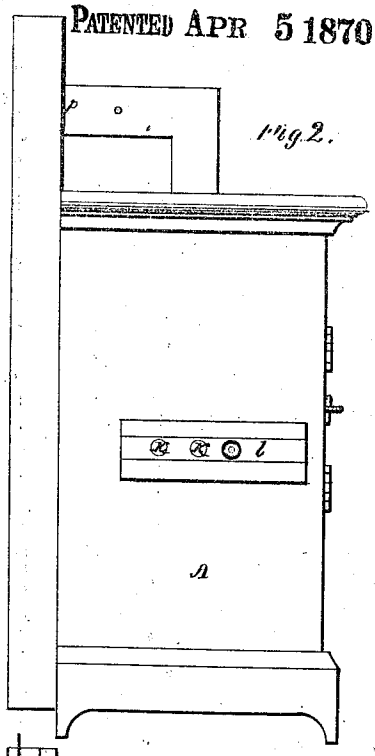


Fig 3.

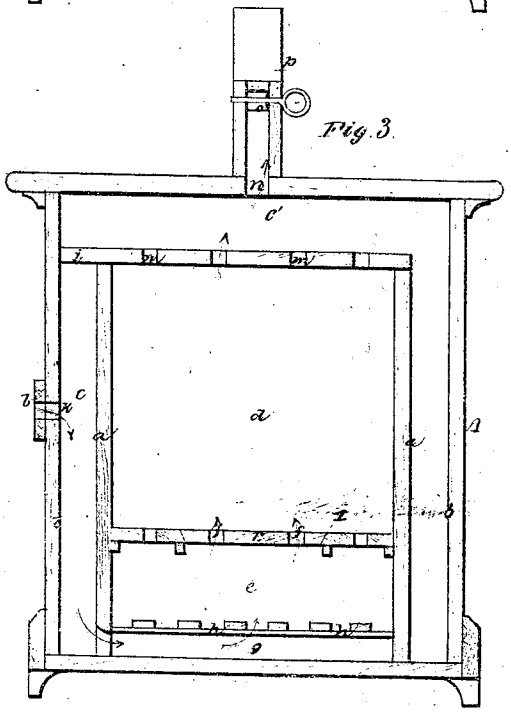
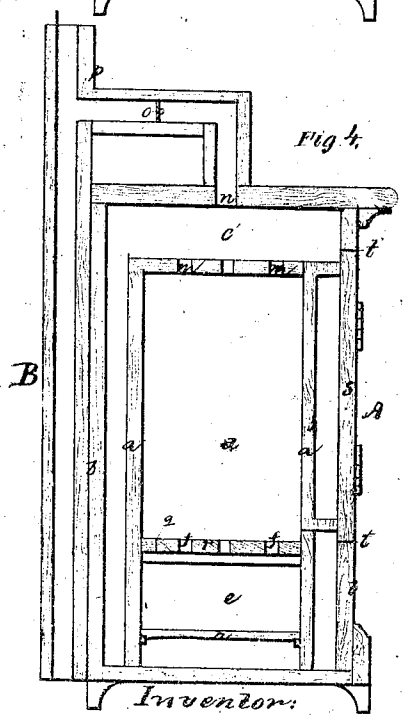


Fig 4.



Witnesses
S. N. Piper
J. R. Snow

Inventor:
Andrew J. Chase
by his attorney.
R. H. Eddy

A. J. Chase,

Refrigerator.

No. 101,582. Patented Apr. 5. 1870.

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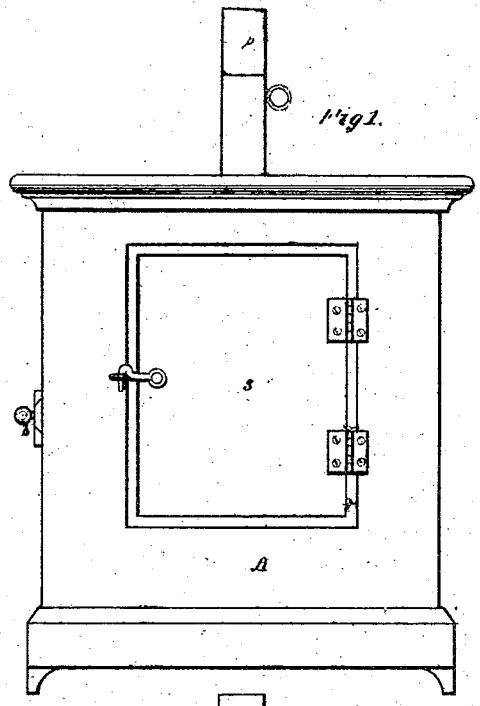

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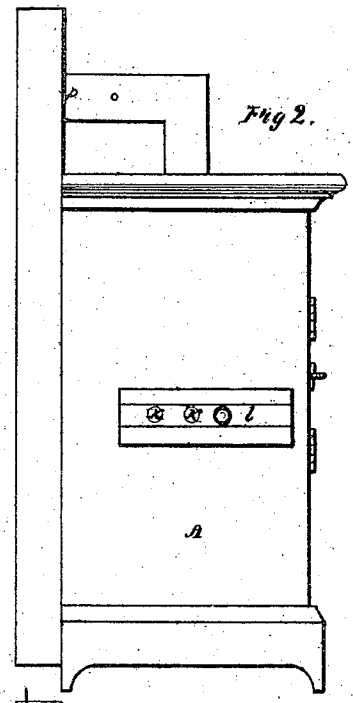

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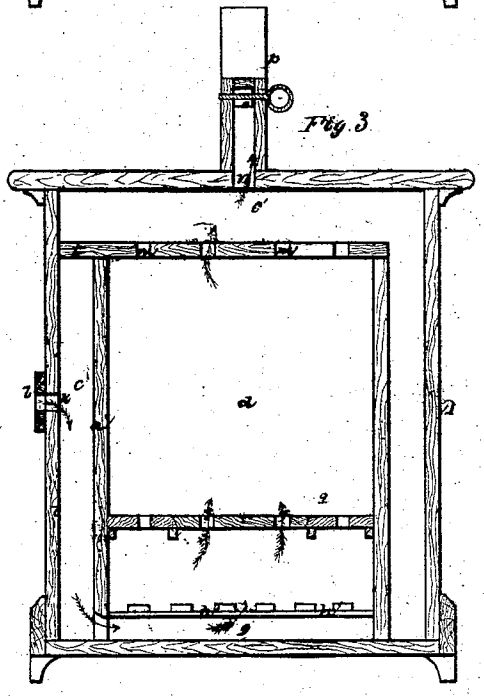

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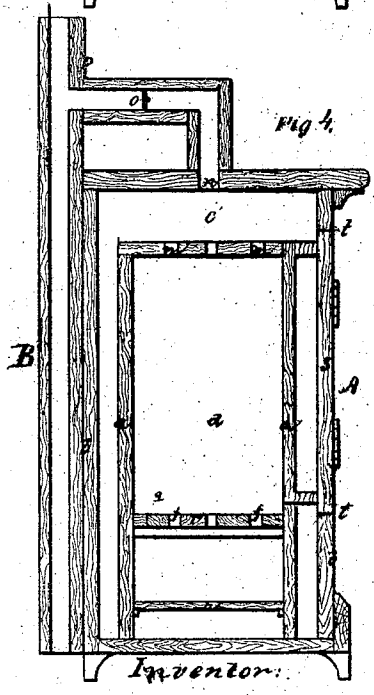

Witnesses

S. N. Piper

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Inventor:

Andrew J Chase

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United States Patent Office.

ANDREW J. CHASE, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 101,582, *dated April* 5, 1870.

IMPROVED REFRIGERATOR.

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

To all persons to whom these presents may come:

Be it known that I, ANDREW J. CHASE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Refrigators for Keeping Vegetables, Meats, or other Articles in a Cool State; and I do hereby declare the said invention to be fully described as follows, reference being had to the accompanying drawings making part of my specification, and of which—

Figure 1 denotes a front elevation;

Figure 2, a side view;

Figure 3, a longitudinal section; and

Figure 4, a transverse section of a refrigerator made in accordance with my invention.

The nature of such invention consists in combining a draught-flue or chimney with the refrigerator, and arranging and supplying the ice-chamber to the refrigerating-chamber, so that the air, after passing through the former chamber or in contact with ice therein, may enter the bottom of the latter chamber, and thence pass up through it and out of its top, and from thence into and through the chimney or draught-flue.

In the drawings—

A denotes the refrigerator; and

B, the chimney or draught-flue, which is to extend above the refrigerator a sufficient height to create a draught of air through such refrigerator, or its ice and refrigerating-chambers.

The refrigerator has an inner case, *a*, and an outer case, *b*, with air spaces *c c'* between the two, and surrounding the inner case either in whole or in part.

The refrigerating-chamber, or that in which the articles to be preserved or cooled are to be placed, as shown at *d*, as within the case *a*, and as having the ice-receptacle or chamber *e*, disposed below it and opening into it by a series of holes or passages *f f f*.

Below the ice-chamber is a space, *g*, for conducting air to it, there being openings *h h* through the bottom of the said ice-chamber.

The said space *g* communicates with the side space *c*, which is separated from the space *c'* by a partition, *i*, and there are one or more openings *k* made through the side of the outer case, and into the space *c*, such opening or openings being provided with a slide or other proper valve *l*, the valve and the opening or openings constituting what is termed an air-register.

The refrigerating-chamber has openings *m m* leading out of its top and into the space *c'*, from which a pipe, *n*, provided with a damper, *o*, is extended to a draught-flue or chimney, *p*, the whole being as represented.

In the drawings a large opening, *q*, is exhibited as made through the floor of the refrigerating-chamber, and provided with a door, *r*, such being to enable the ice-chamber to be supplied with ice as occasion may require. There is also a door, *s*, and opening, *t*, therefor, arranged in the front of the refrigerating-chamber, as in many other refrigerators.

The space or air-duct beneath the ice-chamber may have applied to it a cess-pool, or other proper means of allowing the escape of the water which may drip from the ice.

I am well aware of most, if not all, the various refrigerators in use in which the ice is placed in the upper portions thereof, whereby the natural tendency of the cooled air to descend, and that of the warmer air to rise, are productive of a circulation of air through the refrigerating-chamber.

When the ice is placed in the upper part of a refrigerator it has the disadvantage of being in the portion where the air is generally at a higher temperature than that at the bottom of the refrigerator; consequently the ice is more liable to become melted, and to be affected by whatever may be in the refrigerating-chamber. There is also the danger of flooding the interior of the refrigerator, or the refrigerating-chamber, in case of stoppage of the waste-duct, the same when occuring rendering the walls dampened, liable to mold, or become more or less acid.

In my refrigerator all these difficulties are avoided, as the air after entering the space *c* descends therein, and passes into the space beneath the ice-chamber, thence up through the latter and against the ice; when therein and becoming cooled has a tendency to remain in contact with the ice, but as the articles in the refrigerating-chamber will raise the air therein to a higher temperature, it will rise and flow into the draught-flue, the cooler air also rising and taking the place of the discharged air. The draught-flue will create a powerful upward current, such as will overcome the tendency of the cool air to remain about the ice, and therefore such air will be drawn upward and circulation of it will be effected through the refrigerator, as I have proved after numerous experiments. Thus it will be seen that by means of the chimney or draught-flue, air will be drawn from below and through the ice-chamber, and thence up through the refrigerating-chamber, whereby the temperature of the latter will be uniformly maintained, and all the vapors and noxious gases will be carried off by the draught-flue. By having the refrigerating-chamber over the ice-chamber all danger of flooding the latter is avoided.

In my invention the ice-chamber necessarily has the air-duct beneath it in order that the air may be cooled by contact with the ice before passing through the bottom of the refrigerating-chamber. This may be the case should the ice-chamber be disposed alongside of the refrigerating-chamber, or at a distance therefrom, as I have contemplated making refrigerators.

I claim as my invention—

The arrangement of the ice-chamber directly over the air-receiving duct, or between such and the refrigerating-chamber, and combining with the latter the draught-flue and holes of induction and exit of the air, the whole being substantially as specified.

Also, the arrangement of the separate air-spaces *c c'*, the ice-chamber, the refrigerating-chamber, the air-duct below the ice-chamber, the draught-chimney and the damper and register, the said ice and refrigerating-chambers under such arrangement being provided with induction and eduction-openings as described, and arranged so that the ice-chamber shall be beneath the refrigerating-chamber, and over the air-duct extended underneath the bottom thereof.

A. J. CHASE.

Witnesses:

R. H. EDDY,

J. R. SNOW.