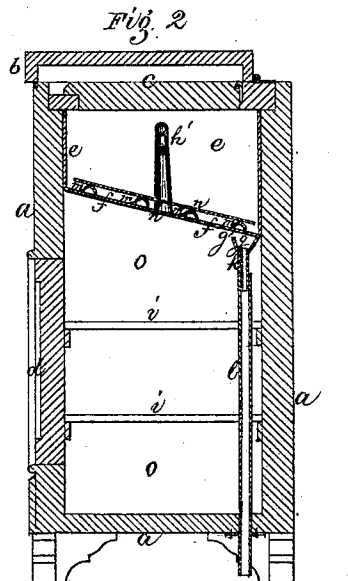
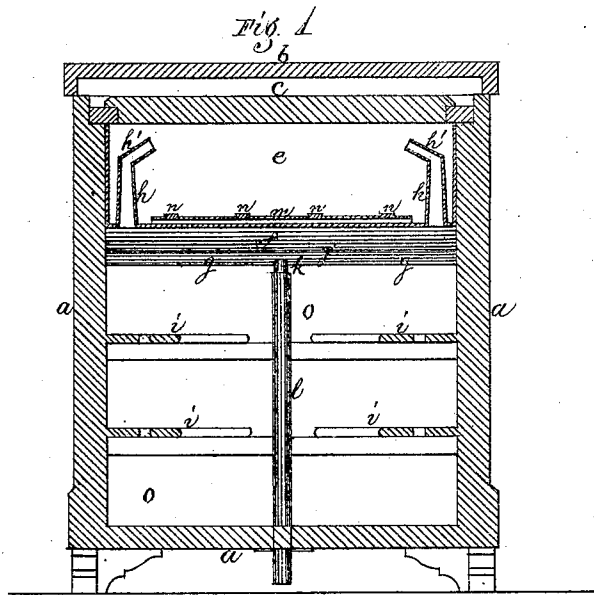


E. S. COLTON.

Improvement in Refrigerators.

No. 130,981.

Patented Sep. 3, 1872.



Inventor.

Edward S. Colton
by his Attorney
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Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD S. COLTON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. 130,981, dated September 3, 1872.

SPECIFICATION.

I, EDWARD S. COLTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Refrigerators, of which the following is a specification:

Figure 1 of the accompanying drawing represents a central longitudinal vertical section, and Fig. 2 is a central transverse vertical section of my improved refrigerator.

The present invention relates to certain new and useful improvements in refrigerators, whereby a simple, economical, and effective apparatus is secured, that will produce a perfectly dry air, prevent dampness, taint, or mustiness of the meat contained therein, or the intermingling of the taste or odor of one article of food with another, and that requires but a comparatively small quantity of ice for its effective operation. My improvements consist, mainly, in arranging, as will be hereinafter more fully explained, the ice-chamber of a refrigerator above the meat compartment, and constructing it of galvanized iron or other suitable metallic material formed with an inclined bottom having proper apertures opening into a longitudinal trough, connected by an outlet with an eduction-pipe, the ice-chamber being provided with vertical tubes opening at the bottom into the food-compartment below, and inclined at the top so as to partly extend up over the ice, so that when any excess of heat, dampness, or steam, &c., arising from the meat, &c., is too great to be carried off, by the means provided for it, and hereinafter explained, it is conveyed up through the vertical tubes into the ice-chamber, where, becoming cooled, the heat or vapor, &c., is condensed and flows down the inclined bottom of the ice-chamber into the trough, from which it is conveyed through the eduction-pipe of the refrigerator into the vessel prepared to receive it, and all the steam, &c., collecting on the under side of the bottom of the ice-chamber, which forms the top of the food compartment, is carried down, as it condenses, into the trough through a longitudinal opening in the upper part of the face of the trough, thus keeping the food-chamber at all times free from dampness, steam, &c., and preserving the articles contained therein perfectly sweet.

In the drawing, *a* represents the outer case of a refrigerator provided with suitable covers, *b* and *c*, and door *d*. In the upper part of the case *a* is placed a galvanized iron or other suitable metallic ice-tank or chamber, *e*, formed with an inclined bottom, *f*, that has suitable outlets opening into a longitudinal trough, *g*, formed on or attached to the under side of the lower end of the bottom *f*; and having on its face an opening, *g'*, extending across its length below the under side of the bottom *f*. Extending upward from the bottom *f*, at each end, are tubes *h h*, formed at the top with inclined portions *h' h'*, that slope upward and inward a short distance toward the center of the ice-chamber, and at the bottom with apertures opening into the food-chamber *o* of the refrigerator, which is provided with adjustable shelves *i i i i*. The trough *g* is provided with an outlet-pipe, *k*, which connects with an eduction-pipe, *l*, that passes through the refrigerator and out at the bottom, under which a vessel may be set for the collection of the drainage received by the trough *g*. Resting on the bottom *d* of the ice-chamber *e* is a rack, of galvanized iron or other suitable material, arranged with arched or other proper-shaped longitudinal bars, *m m m m*, supporting transverse bars *n n n n*, on which the ice is deposited and its weight evenly diffused, so as not to bear too much upon any one portion of the bottom *d*, and to allow of the dripping of the ice to flow down the inclined bottom *d* into the trough *g*. By the use of the metal rack an ice-tank may be constructed of thin material and without the use of any board or thick under support, and thereby enabling the cold to penetrate more directly into the chamber below.

Reference being had to the drawing, it will readily be seen that the meat, &c., is kept entirely separate from the ice, and that any steam or dampness, &c., arising from the former is carried up and collects on the under side of the bottom *f*, where it becomes condensed by the cooling properties of the ice held in the tank *e*, and flows into the trough *g* through the opening *g'*, and out of the refrigerator through the eduction-pipe *l*.

Ordinarily the means above described would be sufficient to carry off the dampness, &c., collecting in the food-chamber, but at times,

when the refrigerator is full or overloaded, the steam, &c., arising is too great to be rapidly condensed, in which case the tubes *h h* carry off the excess of steam, &c., over the ice, where it is speedily condensed, and the food-chamber relieved of the dampness, &c., which could not otherwise be carried off, but would remain, and taint the meat, &c., or give a disagreeable flavor or odor to the articles contained in the refrigerator.

My invention may be used with equal facility either in an upright or chest form.

Having thus fully described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

A refrigerator, arranged with an ice-tank or chamber, *e*, constructed of galvanized iron or

other suitable metallic material, and having an inclined bottom, *f*, on which rests a galvanized or other suitable metallic rack, the said bottom *f* being provided with upright tubes *h h* and proper outlets opening into a longitudinal trough, *g*, attached to the bottom of the lower portion of the tank *e*, which connects with an education-pipe, *l*, passing through a food compartment, *o*, provided with shelves *i i i*, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD S. COLTON.

Witnesses:

CARROLL D. WRIGHT,
SAM'L. M. BARTON.