

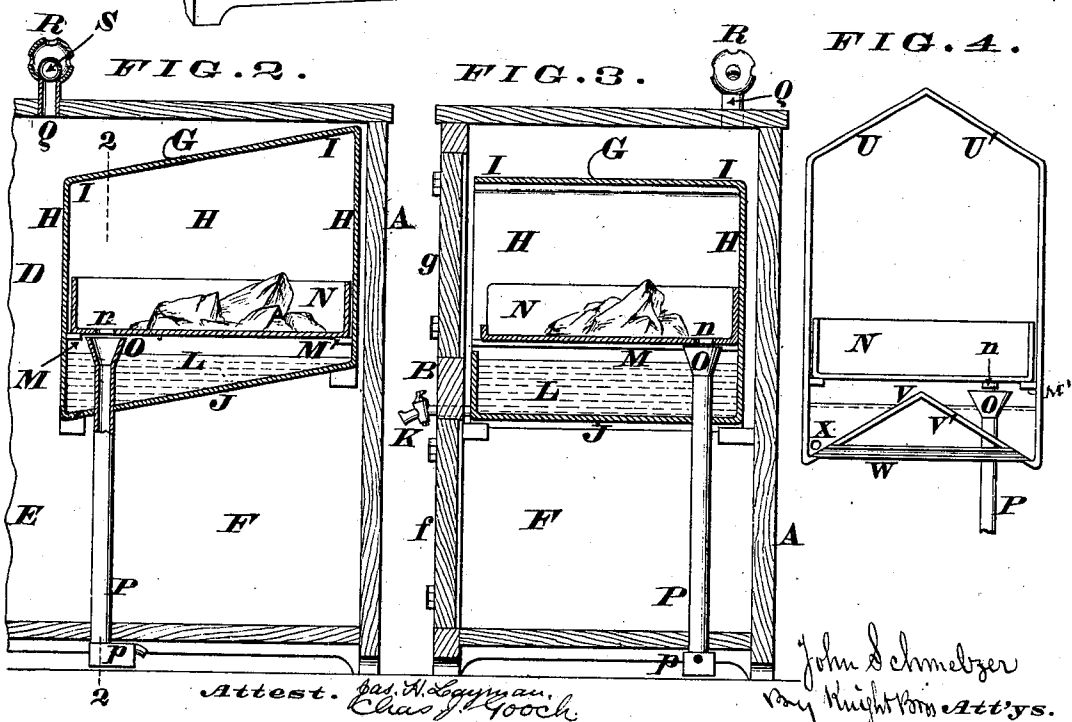
Patented Sept. 14, 1875.

[illegible]

FIG. 2.

FIG. 3.

FIG. 4.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE

JOHN SCHMELZER, OF CINCINNATI, OHIO.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **167,695**, dated September 14, 1875; application filed August 2, 1875.

To all whom it may concern:

Be it known that I, JOHN SCHMELZER, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification:

This is an improvement in those refrigerators whose construction permits the use of an inferior or impure article of ice for the purpose of preserving meats, vegetables, liquors, &c., and for cooling drinking-water, without imparting any disagreeable flavor whatever to the articles thus placed within the cooler.

To accomplish this result I provide a tray or pan, which is separate and distinct from the ice-chamber proper, and said tray is furnished with a drip-pipe, through which the waste water escapes as rapidly as the ice melts within the tray. The location of this tray is in the ice-chamber immediately above the water-tank; but, as there is no communication between said tray and tank, it is evident that the contents of the latter cannot be contaminated by the drippings from the former.

My invention furthermore comprises a relief valve or vent, which automatically opens the moment there is any appreciable accumulation of impure air within the refrigerator, said valve being adapted to seat itself and thus close the ventage the instant the excess of vapor has escaped.

By this arrangement the air of the apparatus is always maintained in a perfectly pure and sweet condition, and, consequently, articles deposited in my refrigerator will retain their natural flavor and purity much longer than if deposited within the ordinary unventilated apparatus in common use.

In the accompanying drawing, Figure 1 is a perspective view of my improved refrigerator, the doors of the ice-chamber and those of one of the cooling-apartments being thrown open. Fig. 2 is a longitudinal section through the apparatus at the line 1 1. Fig. 3 is a transverse section of the same at the line 2 2 on Fig. 2. Fig. 4 represents a modification of the ice-chamber.

The external portions of the apparatus are substantially the same as shown in the patent granted to me July 16, 1872—that is to say, the rectangular box, case, or housing A

is provided with horizontal beams B, and vertical ones C, to which latter are hinged the doors or shutters of the various compartments or chambers of the refrigerator. In the present case, however, the refrigerator is divided into but four compartments, D, E, F, and G, of which the compartments D, E, and F are intended for reception of the articles to be cooled, while the chamber G is to contain the ice. These several compartments are provided, respectively, with hinged doors *d d'*, *e e'*, *f f'*, and *g g'*, which, when thrown open, permit free access to the entire interior of the refrigerator. The ice-chamber G is lined on both sides and rear with sheet metal, H, and said chamber has a sloping roof or ceiling, I, and a correspondingly-inclined floor or bottom, J. I prefer to slope this roof and floor from one end of the refrigerator toward the middle of the same, in order that the faucet K, which is to draw off all the water from chamber G, may be located as near as possible in the center of the front of the apparatus. The lower portion L of chamber G is arranged to be used as a tank for containing pure water for drinking and other purposes, and, if preferred, said tank may be lined with tin or other substance not liable to oxidation. Situated above this water-tank L and on opposite sides of chamber G are two flanges, cleats, or bearers, M M', which serve to support a sliding tray or pan, N, which constitutes the ice-receptacle proper of said chamber. In order that the water produced by the melting of ice within the tray N may at once escape, the floor of said tray is perforated at *n*, which perforation is located directly above a funnel, O, the latter being attached to the upper end of a waste-pipe, P, which is carried down through the refrigerator, and is furnished, beneath the floor of the same, with a water-trap, *p*, that prevents the entrance of air through said waste-pipe. As there is no communication between the tank L and pipe P, it will readily be understood that the contents of said tank cannot be contaminated by the escape of water from tray N.

The automatic escape of vitiated air from the refrigerator is accomplished in the following manner: Communicating with the upper portion of the interior is a pipe, Q, surmount-

ed by a cage or basket, R, within which is confined a light spherical valve, S, of india-rubber or other appropriate material. In its normal position this valve is seated upon the upper end of pipe Q, but the very moment there is any appreciable accumulation of impure air at the top of the refrigerator said valve instantly rises, and thus permits the escape of such objectionable vapors. Immediately upon the escape of such vapor the valve drops to its seat, and thereby prevents the entrance of external air to the refrigerator. The shell or basket that incloses the relief-valve may take the shape of an urn, vase, or other appropriate ornamental member, and thereby add to, instead of detracting from, the appearance of the apparatus.

In the modification shown in Fig. 4 the ice-chamber is represented as having a roof-shape, U U', of the same form as shown in my patent previously alluded to, the floor V V' corresponding with the roof, and being provided with a horizontal channel, W, for maintaining the water in the tank at a uniform level.

X represents an orifice that communicates with the faucet wherewith the pure water is drawn off from the tank as required.

It is evident that these improvements may be applied to beer-coolers and all apparatus of a similar character.

Furthermore the disposition of the cooling-apparatus, with reference to the ice-chamber, may be varied to suit the size of the refrigerator, or the use to which it is to be put.

I am aware that refrigerators have been proposed whose ice-compartment is (like mine) separated from the water-chamber, and others in which the water of condensation has been conducted, by a special passage, out of the refrigerator; such, therefore, I do not separately or broadly claim.

I claim as my invention—

1. In combination with an ice-chamber, G, having a clear-water tank, L, at the bottom of the same, and insulated therefrom, the removable receptacle N n, and the waste-pipe P, whereby the contents of said receptacle are prevented commingling either with those of said tank or with the interior of the refrigerator.

2. The pipe Q, communicating with the upper portion of the refrigerator A, and provided with the automatic vent or relief valve S and confining-guard R, for the purpose designated.

In testimony of which invention I hereunto set my hand.

JOHN SCHMELZER.

Attest:

GEO. H. KNIGHT,
WALTER KNIGHT.