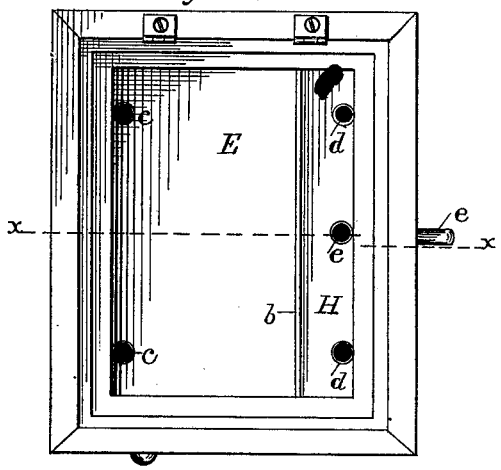
J. C. SUMMERS & M. G. COMBS.

Refrigerator.

No. 220,188. Patented Sept. 30, 1879.

Figure, 1.



Figure, 2.

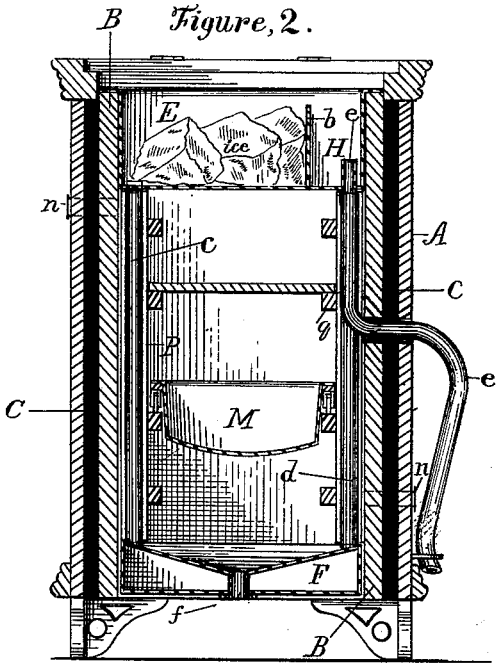


Figure. 3.

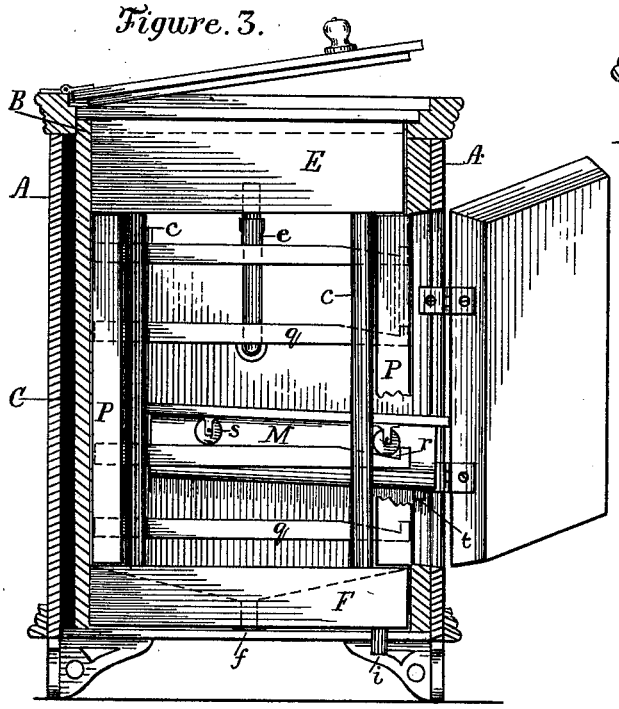
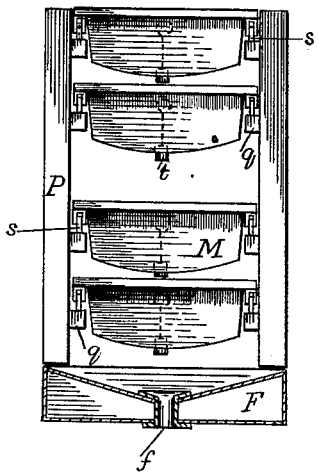


Figure. 4.



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UNITED STATES PATENT OFFICE.

JOHN C. SUMMERS AND MATHEW G. COMBS, OF SHELLSBURG, IOWA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **220,188**, dated September 30, 1879; application filed March 13, 1879.

To all whom it may concern:

Be it known that we, JOHN C. SUMMERS and MATHEW G. COMBS, of Shellsburg, in the county of Benton and State of Iowa, have invented a new and useful Improvement in Refrigerators and Milk-Safes, of which the following is a specification.

Our invention has for its object to provide a refrigerator which shall be of such construction that cold water from ice melting in a compartment located at the top may pass down pipes placed upon one side and into a box or chamber at the bottom, and up pipes placed on the opposite side into a second compartment located at the top, from whence the water is discharged, thus availing completely of the low temperature of the water. A further object is to provide a refrigerator with means whereby a milk-pan, when drawn partly out, will be lowered at its forward end, to more readily permit the milk to be drawn off from under the cream.

Our invention consists of two water-compartments, placed in the upper part of a refrigerator, and connecting the same through the medium of vertical pipes, and a water-chamber placed in the bottom, as hereinafter fully set forth; and it further consists in providing, upon two opposite sides of the refrigerator, horizontal bars to serve as ways on which to slide a milk-pan, each bar having near one end a slanting notch, as hereinafter set forth; and it further consists in a peculiar construction of the water-chamber placed in the bottom, whereby it is strengthened, so as to withstand the hydrostatic pressure, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a plan view of the top. Fig. 2 is a vertical section on line *x x*, Fig. 1. Fig. 3 is an elevation or side view transverse to that shown in Fig. 2, the side walls being removed. Fig. 4 is a view of the detachable frame, milk-pans, and water-chamber.

The subject-matter hereinafter claimed will now be described.

The outer casing, A, is constructed of wood or other suitable material, and the inner casing, B, is placed so as to leave an air-space, C, between on all the vertical sides. The upper part of inner casing affords a seat for the metal pan, which is provided with a partition, *b*, and thus forms two compartments for water, E and H, being, respectively, the supply and discharge compartments. A metal water-chamber, F, is fitted into and covers the entire bottom of the safe, and is connected with the supply-water chamber E by two pipes, *c c*, and with the discharge-water chamber H by the pipes *d d*. The discharge-water chamber is provided with an outlet-pipe, *e*, the upper end of which projects above the bottom, and thus regulates the height of the water in that chamber, and to its lower end is connected an elbow-pipe or rubber tube, which passes through the side, as shown in the drawings.

The upper side of the water-box F is depressed at the center, (see Figs. 2 and 4,) leaving its upper surface dishing from all its sides, and a tube, *f*, having a flange at each end, is secured in a hole made in the center, with one flange resting on the upper surface and passing vertically through the box. The other flange rests on the lower side of the bottom, by which means the box is enabled to withstand the hydrostatic pressure caused by the water standing in the four pipes connecting to the compartments above. The depressed upper surface and tube *f* may also serve as means to facilitate the washing out of the safe, in a manner readily understood. This box is also provided with a plug or cock, *i*, by which to draw off the water.

Ventilating-tubes *n* are provided, which connect the outer and inner case. On each side of the case is an upright frame, P, having horizontal bars *q*, which are provided at their forward ends with slanting notches *r*.

M represents the milk-pan, provided at the top with side and end flanges. Attached to the under part of each side flange are two rollers, *s*, and the bottom is provided at its forward end with a draw-off hole and plug, *t*. By means of the notches in the bars, the pan, when drawn forward until the roller enters the notch, will be lowered at its forward end, and then, by drawing the plug *t*, the milk will run off from under the cream into a vessel which may be in readiness.

To use the refrigerator, pour water into the supply-compartment, which passes to and fills the box in the bottom, and then rises into the

discharge-compartment at the top, which it fills as high as the end of the overflow or outlet pipe. Ice may then be put in the supply-chamber, and by its gradual melting a circulation of cold water is maintained in the vertical pipes and through the bottom box.

Should a higher degree of temperature than that of the atmosphere be desired, as in winter, warm or hot water may be introduced into the supply-chamber.

Having described our invention, we claim and desire to secure by United States Letters Patent—

1. In a refrigerator, the combination of the supply and discharge water chambers in the top, the vertical pipes *c* and *d*, and the water-box in the bottom, as and for the purpose set forth.

2. In a refrigerator, the water-box in the bottom, having its upper and lower sides secured together by a tube provided with flanged ends, which passes vertically through the center of box, in combination with pipes attached to the box, and connecting with a water-chamber in the top, as and for the purpose specified.

3. In a refrigerator and milk-safe, the horizontal bars *q*, provided near their forward ends with slanting notches *r*, in combination with the milk-pans, as and for the purpose set forth.

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