(No Model.)

J. S. CARTER & I. C. WIGHTMAN.

MILK COOLER.

No. 288,011. Patented Nov. 6, 1883.

FIG-1-

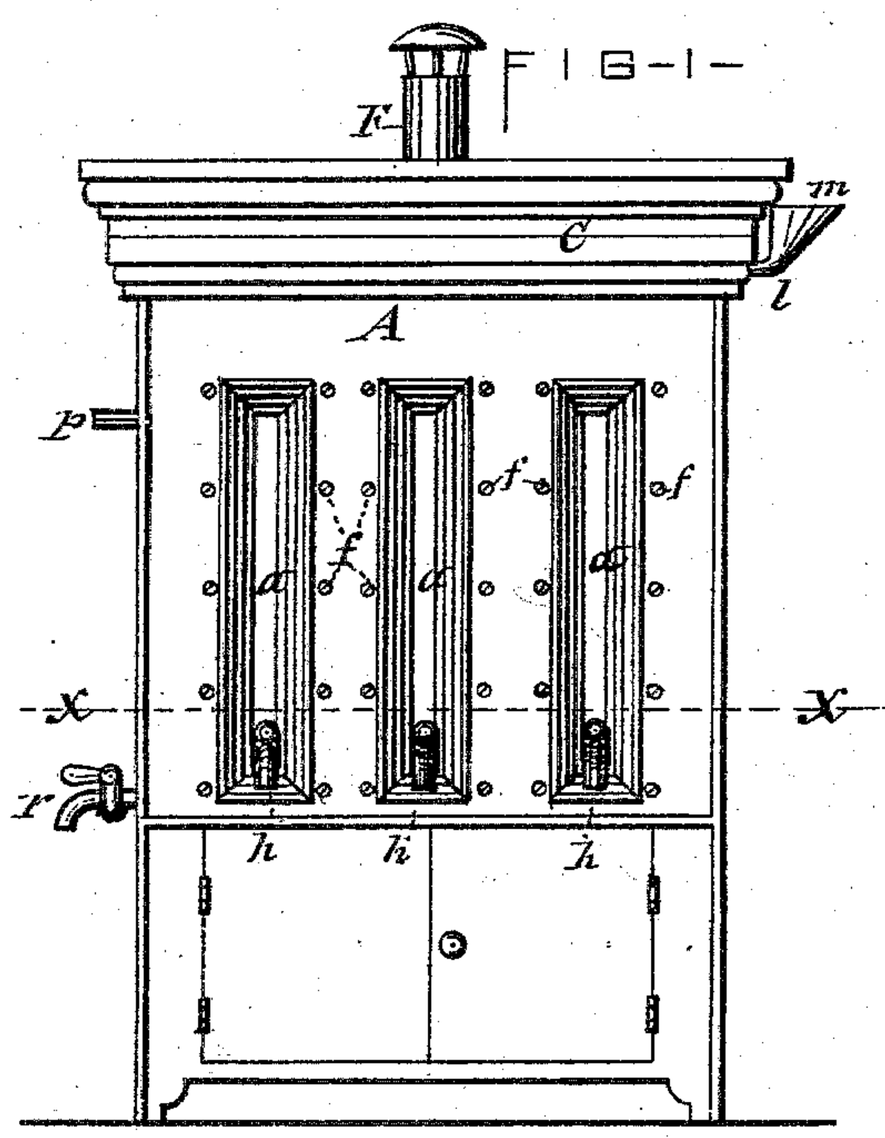


FIG-2-

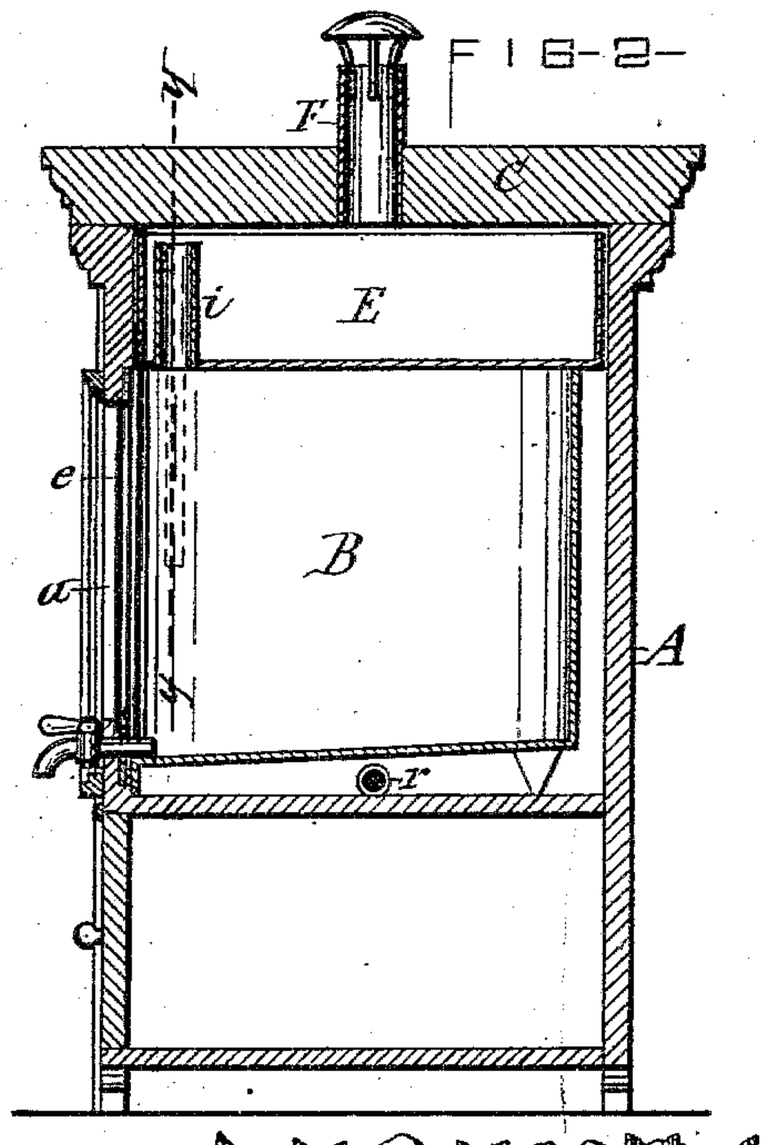


FIG-3-

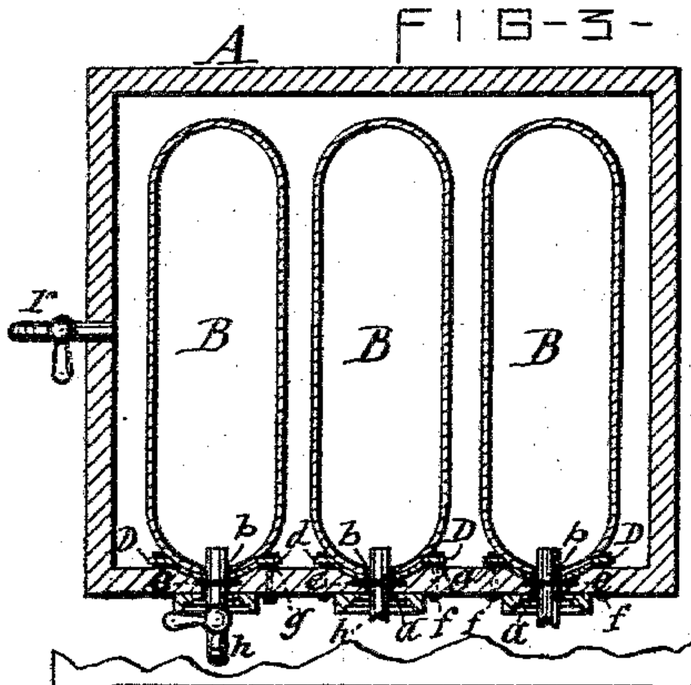
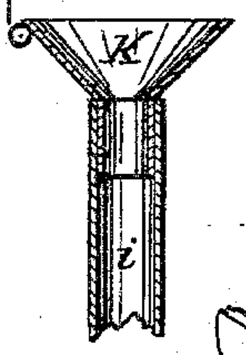


FIG-6-



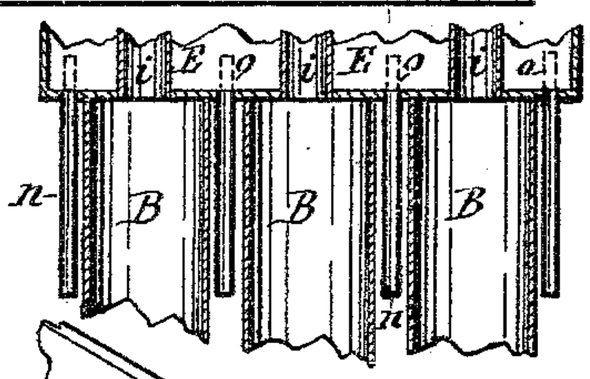


FIG-8-

FIG-5-

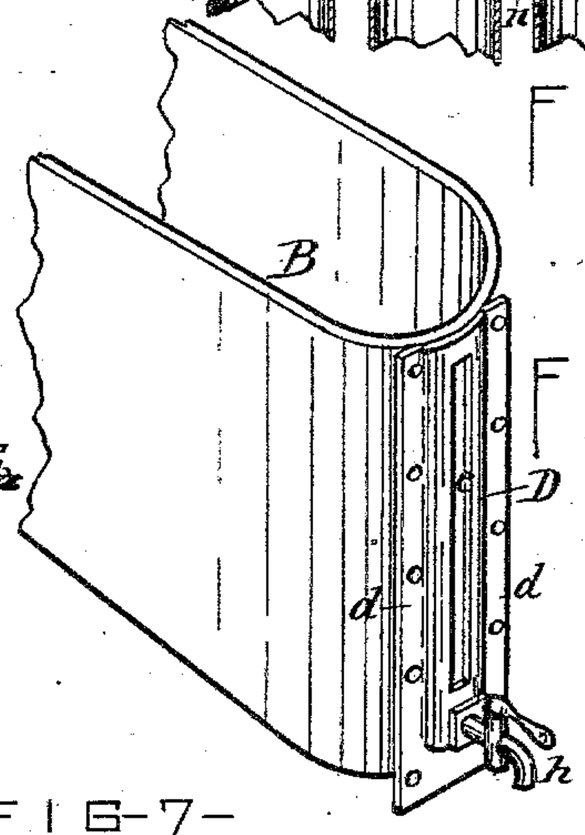


FIG-7-

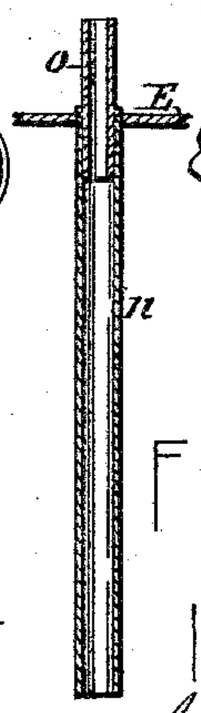
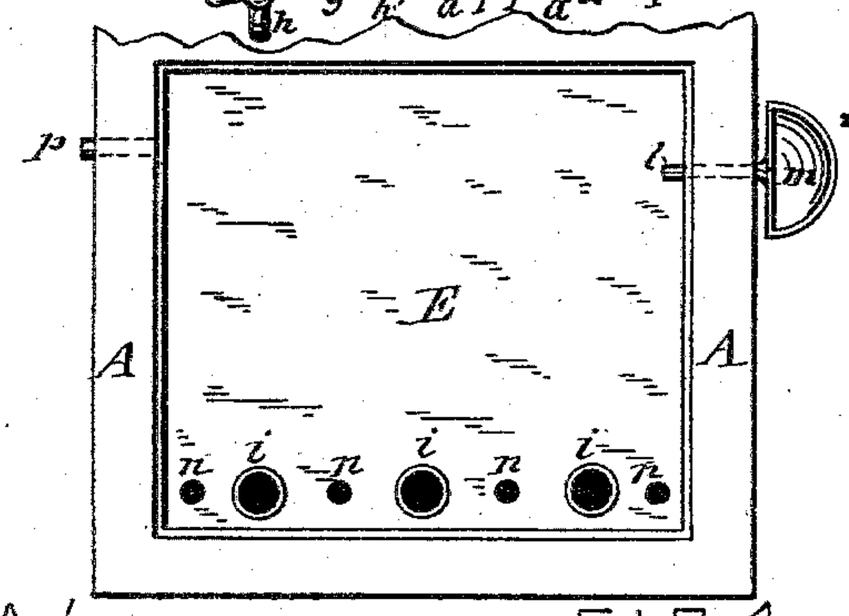


FIG-4-



WITNESSES

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his Attys

UNITED STATES PATENT OFFICE.

JOHN S. CARTER, OF SYRACUSE, AND IRA C. WIGHTMAN, OF NORWICH, N. Y.

MILK-COOLER.

SPECIFICATION forming part of Letters Patent No. 288,011, dated November 6, 1883.

Application filed June 30, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. CARTER, of Syracuse, Onondaga county, New York, and IRA C. WIGHTMAN, of Norwich, in the county of Chenango, in the State of New York, have invented new and useful Improvements in Milk-Coolers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in certain improved means for securing a cream-glass water-tight between the front end of a milk-tank and the adjacent wall of a cooling case or cabinet inclosing said tank, the tank and cabinet being provided, respectively, with vertical slots, through which to observe the condition of the milk, all as hereinafter more fully explained and set forth in the claims.

In the annexed drawings, Figure 1 is a front view of our improved dairy-cabinet. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a horizontal section taken on line *x x* in Fig. 1. Fig. 4 is a plan view with the cover removed. Fig. 5 is an isometric view of one end of the milk-tank and its appurtenances. Fig. 6 is an enlarged sectional detail view of the combined milk-induction and ventilating pipe with the funnel applied thereto. Fig. 7 is an enlarged detached sectional view of the conduit which conducts the water from the refrigerating-pan to the water-space surrounding the milk-tanks; and Fig. 8 is a vertical section of the upper part of the milk-tanks and their connections with the superimposed refrigerating-pan, taken on line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

A represents the cabinet, in the form of a wooden case lined with zinc, and provided with a removable cover, C, to afford access to the interior of the cabinet through the top thereof. The front of the cabinet is provided with vertically-elongated openings *a a*—one for each milk-tank B inclosed in the cabinet. The milk-tanks we construct with rounded or semi-cylindrical ends, one of which faces the front wall of the cabinet, and has a vertically-elongated opening, *b*, coinciding with the opening *a* in the cabinet. To the exterior of the aforesaid end of the milk-tank is soldered or otherwise firmly and closely attached a concavo-convex plate, D, having flanges *d d* on its sides and bottom, and a central vertical slot, *c*, coinciding with but somewhat shorter than the slot or opening *b* of the tank. The adjacent wall of the cabinet is concaved to receive the convexed face of the plate D, and around the inner edge of the opening *a* is a rabbet, in which is seated a glass plate, *e*, covering the opening *a*, and secured water-tight by putty or other means. The milk-tank is secured in position by means of bolts *f f*, passing through the front wall of the cabinet and through holes in the flanges *d d* of the plate D, and nuts applied to the ends of the bolts at the back of the flanges *d d*. A packing, *g*, of rubber or other suitable material, is interposed between the aforesaid flanges and the adjacent wall of the cabinet, so as to render the joint water-tight.

Below the slot *c* is a faucet, *h*, secured to the plate D, and communicating with the interior of the milk-tank at the base thereof, the bottom of the said tank being inclined toward the faucet, as shown in Fig. 2 of the drawings, so as to admit of drawing the milk-tank perfectly empty through the faucet, which latter protrudes through the lower end of the slot *a* of the cabinet. This arrangement is particularly necessary in this case, owing to the described attachment of the milk-tank to the cabinet, which attachment is not intended to be disturbed, except in case of repairs or renewal of the glass plate *e* or the milk-tank. It will, however, be observed that the glass plate is to a great extent protected against breakage or injury by its disposition on the inside of the cabinet and by its being backed by the plate D bearing against it. The described slots or vertically-elongated ports extend nearly the entire height of the milk-tank, so as to expose through the transparent plate *e* a vertical section of the entire column of milk, and thus admit of observing the condition of the milk or the process of raising cream thereon.

E denotes the refrigerating-pan seated on top of the milk-tanks. Said pan is provided over each milk-tank with a vertical tube, *i*, secured to an opening in the bottom of the pan, and thus communicating with the interior of the subjacent milk-tank. Said tube serves two

functions—viz., to introduce the milk into the tank B without removing the pan E and to ventilate said tank, the former being accomplished by the aid of a funnel, K, removably applied to the tube *i*, as shown in Fig. 6 of the drawings. The ventilation is induced by a ventilator, F, passing through the cover C, as illustrated in Figs. 1 and 2 of the drawings. The refrigeration may be effected either by the application of ice in the pan E or by the introduction of water to said pan. For the latter purpose is provided a pipe, *l*, projecting through the upper part of the cabinet and communicating with the pan at or near its top, the water being introduced through said pipe either by passing it into a funnel, *m*, applied to the outer end of the pipe, as shown, or by extending said pipe to the discharge-pipe of a pump, or to a natural source of water. The bottom of the refrigerating-pan is provided with discharge-pipes *n n*, which extend down between the milk-tanks part way the depth thereof, so as to produce a more thorough circulation of the water around the lower as well as the upper part of the respective milk-tanks. When water is employed for cooling the milk, an overflow-pipe, *o*, is inserted into the mouth of each pipe *n* and adapted to slide telescopically therein, said pipe *o* being of sufficient length to allow it to be raised in the pipe *n*, so as to project a greater or less height above the bottom of the pan, and thus retain in said pan the desired quantity of water.

An overflow-pipe, *p*, taps the cabinet a short distance below the top of the milk-tanks, and thus maintains the latter enveloped in the water.

A faucet, *r*, is applied to the base of the compartment in which the milk-tanks are situated, for the purpose of drawing off the water when desired.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the cabinet and milk-tank provided with corresponding vertically-elongated ports, of a metal plate attached to the milk-tank, and having a similar port and side and bottom flanges, a glass-plate, packing interposed between said metal plate and the inner wall of the cabinet, and bolts for fastening the metal plate to the cabinet, substantially as described and shown.

2. In combination with the cabinet and milk-tank provided with corresponding vertically-elongated ports, a metal plate having a similar but shorter port and side and bottom flanges, a faucet connected to the metal plate and tapping the base of the milk-tank, a glass plate, packing interposed between the metal plate and inner wall of the cabinet, and bolts passing through the flanges of the metal plate and through the adjacent wall of the cabinet, substantially as described and shown.

In testimony whereof we have hereunto signed our names and affixed our seals, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 28th day of June, 1883.

JOHN S. CARTER. [L. S.]
IRA C. WIGHTMAN. [L. S.]

Witnesses:
FREDERICK H. GIBBS,
WILLIAM C. RAYMOND.