E. W. HOAG.

MILK-COOLERS-

No. 194,909. Patented Sept. 4, 1877.

Fig. 1.

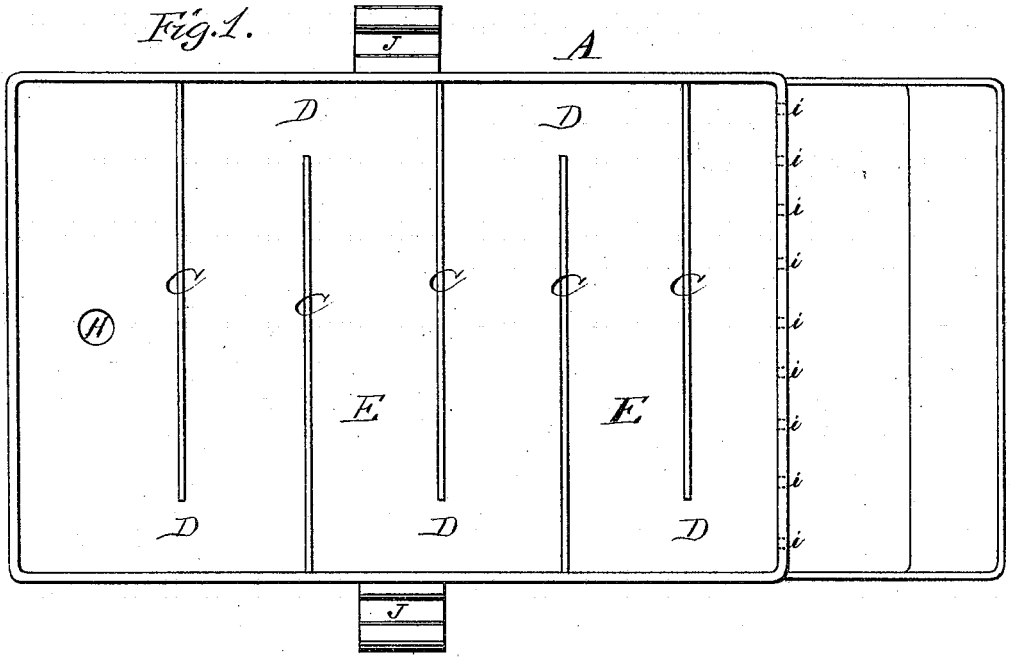
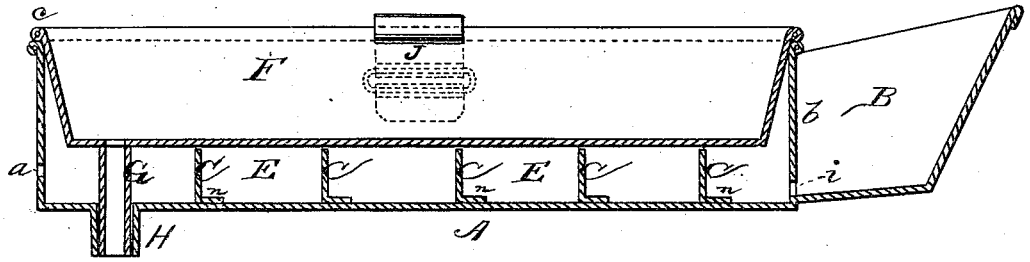


Fig 2



WITNESSES

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IMPROVEMENT IN MILK-COOLERS.

Specification forming part of Letters Patent No. **194,909**, dated September 4, 1877; application filed February 24, 1877.

To all whom it may concern:

Be it known that I, E. W. HOAG, of Plattsburg, in the county of Clinton and State of New York, have invented a new and valuable Improvement in Milk-Coolers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of the water-reservoir, and Fig. 2 is a longitudinal vertical section of the milk-cooler.

This invention has relation to improvements in milk-coolers, the object of which is to keep milk at a uniform temperature during the formation of cream; and the nature of the invention consists in combining with an outer water-vat, having transverse partitions forming a labyrinthine channel and an inner milk-pan seated therein, a tempering-reservoir at one end of the former communicating therewith by spaced perforations at the bottom of the reservoir, which reservoir is designed to receive ice, which, in melting, will raise the water in the vat to a faucet, through which it will overflow into a receptacle, and thus temper the water in the vat. It also consists in angular spring-catches hinged to the sides of the water-vat, and adapted to be thrown up over the edge of the milk-pan, whereby the latter is detachably connected to the former, so that it may be readily removed, as will be hereinafter more fully set forth.

In the accompanying drawings, the letter A designates a preferably rectangular metallic vessel, having at one end an overflow-cock, *a*, and at the other an extension, B, separated from the body of the vat A aforesaid by a partition, *b*. This partition at its lower edge has a number of spaced perforations, *i*, extending from side to side of the vat. C represents spaced transverse partitions secured to the bottom and one side of the vat, and separated from the remaining side thereof by a space, D, forming a serpentine channel, E, through which the liquid poured into the reservoir B will pass on its way to the overflow-cock *a*. The upper edge of the water-pan will be wired in the usual manner to prevent its sides and ends from bending out of shape, and to afford a bearing for the correspondingly-wired edge of the milk-pan F. The latter is also of metal, and fits snugly inside of the pan A. It is also of such a depth that, while the wired edge-rim *c* bears upon the upper edge of the water-pan, its bottom will rest upon and be supported by partitions C. The effect of this construction is that the bottom being prevented from sagging when the pan is filled with milk, all working of the bottom relative to the sides is absolutely prevented, and the constant tendency to leaking at their junction effectually obviated. At the same time that the bottom of the pan is adequately supported by the said partitions it is subjected to the cooling influences of cold-water currents flowing out of the ice-box, through perforations *i*, to the discharge-spout cock *a* in a serpentine course, thus causing the said partitions to discharge the double function of supporting the bottom of the vat, and delaying and thus obtaining the full effects of said currents.

G represents a draw-off pipe extending through the bottom of pan F and having its lower end engaged with a pipe, H, projecting from the bottom of pan A. When the cream has formed and has been skimmed off the contents of the pan F may be drained off through pipe G by opening a valve within the same. Partitions C are L-shaped in cross-section, the object of this construction being to stiffen them and to provide means for properly securing them to the bottom of the pan. This is done by soldering one of the wings *n* to the pan, as shown in Fig. 2.

The operation is as follows: The pan being filled with milk, water is poured into the end box B until it overflows through faucet *a*, its level being the same in the box and in the reservoir A. The box B is then supplied with a sufficient quantity of ice, which rapidly lowers the temperature of the water, and causes, by its melting, a slow current from the said box to the overflow *a*. By this means but a small quantity of water is needed, and its escape from the overflow being very slow and the quantity of the overflow proportionate to the increase of fluid arising from the melting of the ice, its effect in tempering the milk will

be very uniform and the refrigerant properties of the ice fully utilized. Pans A F are detachably connected with each other by means of spring-catches J. These are pivoted in any suitable manner to the upper edges to pan A, and are made of angular form from any suitable metal. These latches may be swung up on their pivots and sprung over the edge of pan F, thereby detachably connecting it with pan A and preventing it from floating as the latter is filled.

What I claim as new, and desire to secure by Letters Patent, is—

In combination with the vat A and pan F seated therein and supported by partitions C, the vibrating spring-latches J adapted to be thrown up and sprung over the edge of the said pan, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EDWIN WM. HOAG.

Witnesses:
H. L. ISHAM,
WM. SMITH.