

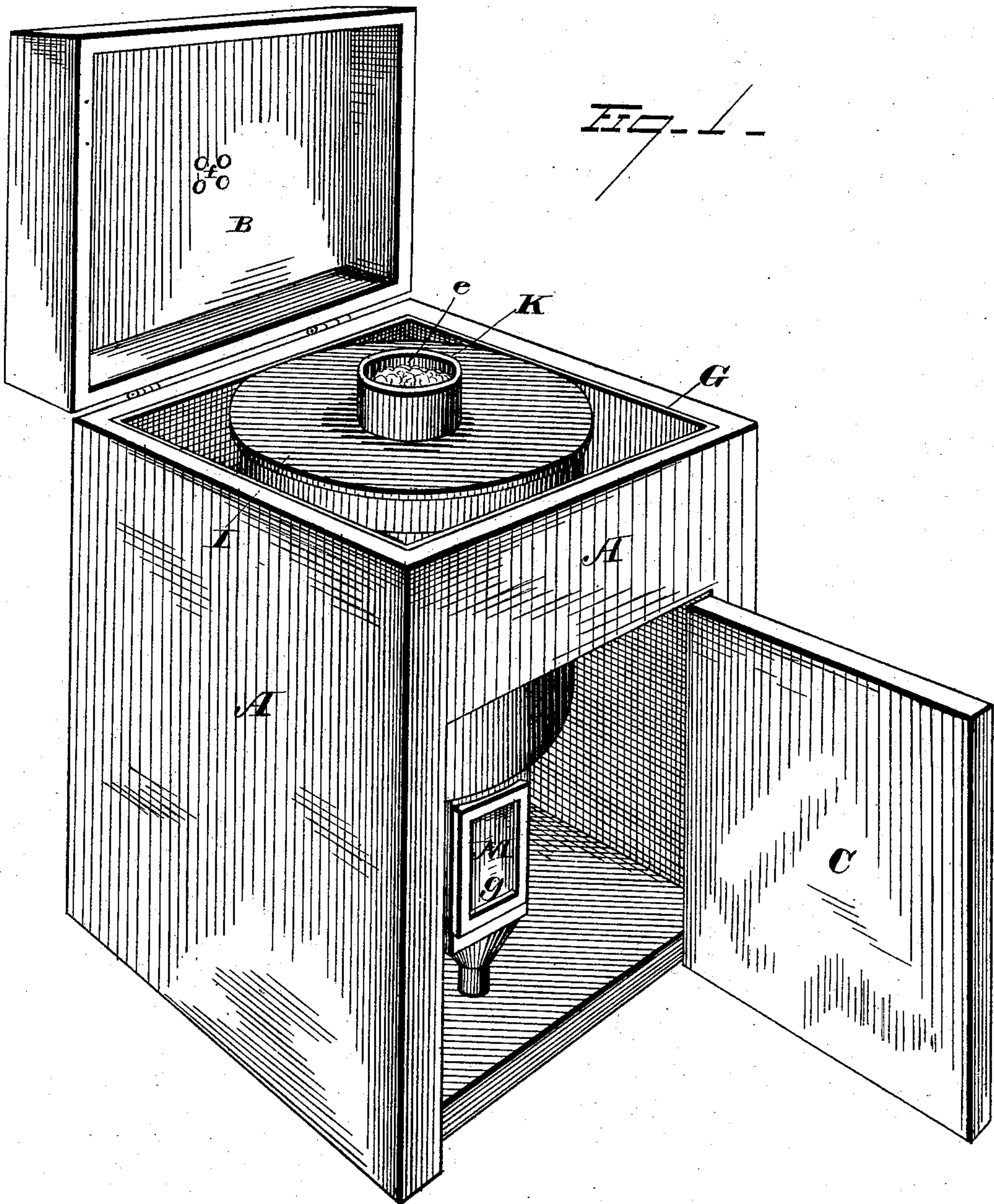
(No Model.)

D. B. WOOSTER.
Milk Cooler.

3 Sheets—Sheet 1.

No. 242,805.

Patented June 14, 1881.



WITNESSES

E. J. Nottingham
Herman Moran

INVENTOR

D. B. Wooster
R. H. Seymour
ATTORNEY

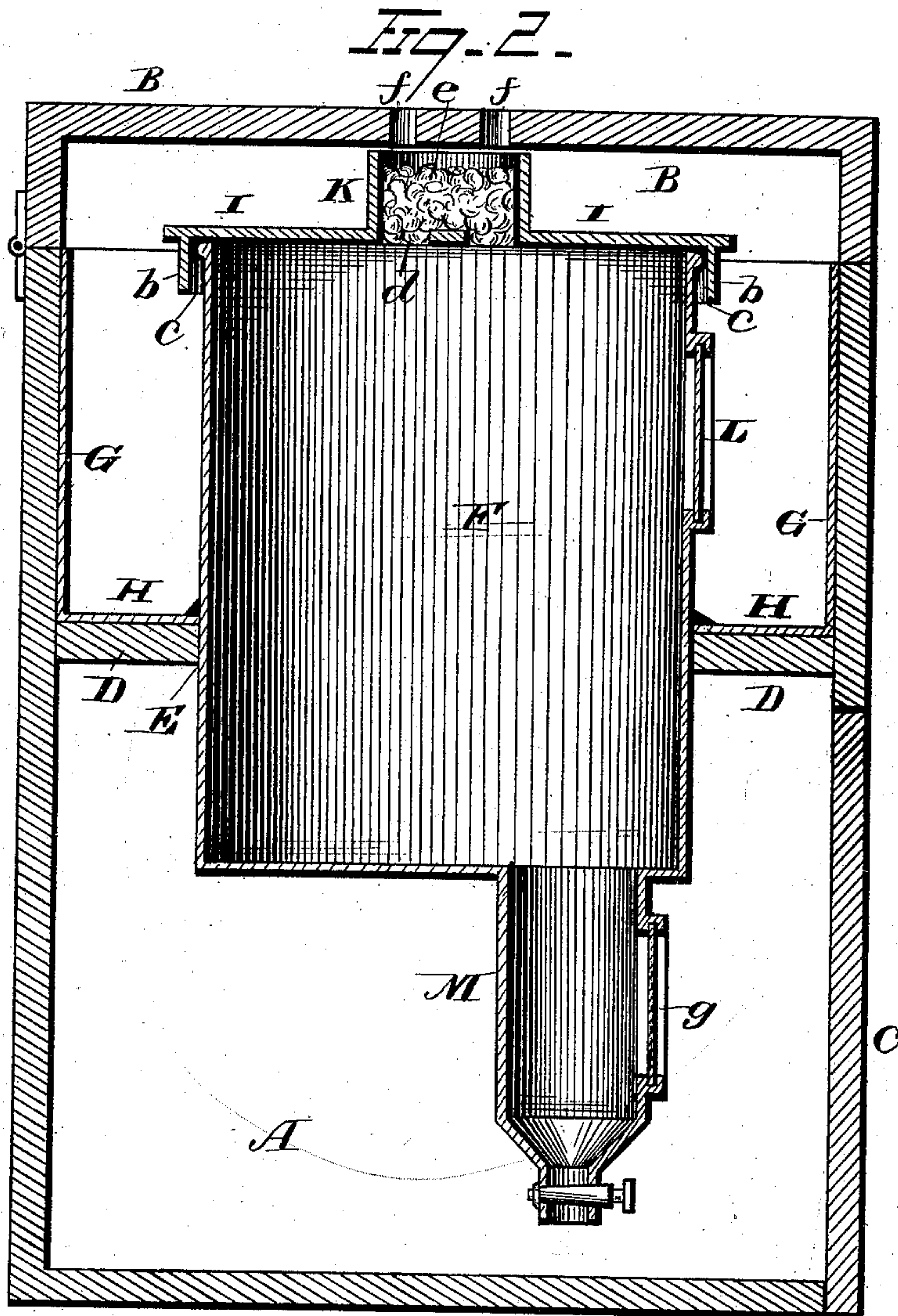
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3 Sheets—Sheet 2.

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E. J. Nottingham
Herman Moran

INVENTOR

D. B. Wooster
By H. A. Symmon
ATTORNEY

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3 Sheets—Sheet 3.

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Fig. 3.

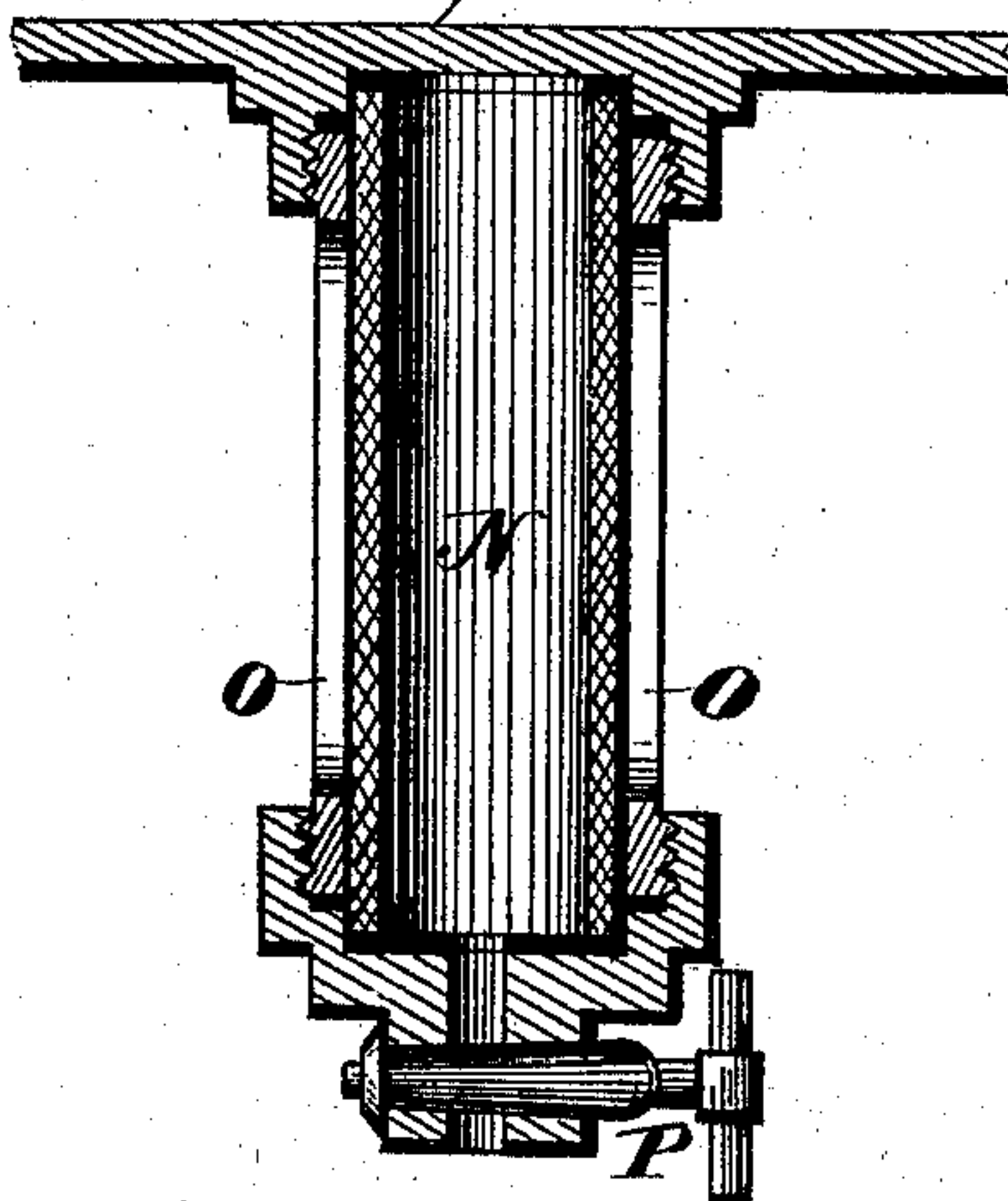
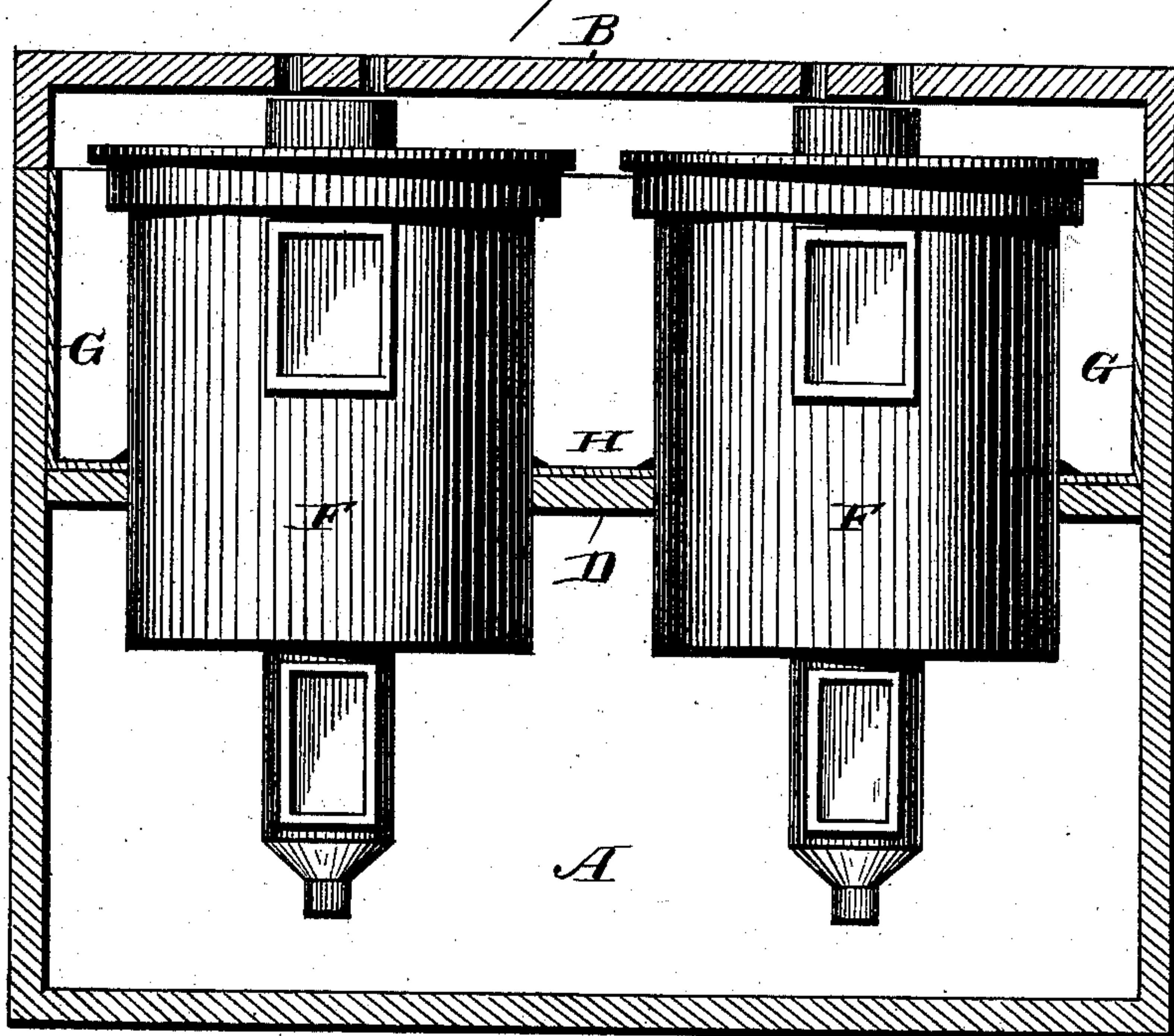


Fig. 4.



WITNESSES

E. C. Nottingham
Herman Moran

INVENTOR

D. B. Wooster
By H. A. Symmon
ATTORNEY

UNITED STATES PATENT OFFICE.

DANIEL B. WOOSTER, OF MARSHFIELD, VERMONT.

MILK-COOLER.

SPECIFICATION forming part of Letters Patent No. 242,805, dated June 14, 1881.

Application filed May 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, DANIEL B. WOOSTER, of Marshfield, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Milk-Coolers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in apparatus for cooling milk.

In the accompanying drawings, Figure 1 is a view, in perspective, of my improved milk-cooler. Fig. 2 is a vertical section of the same. Fig. 3 represents a modification of the transparent eduction-tube. Fig. 4 is a modified form of cabinet, showing its adaptation for the reception of two or more milk-receptacles.

A represents a box or cabinet, preferably made of wood, and provided with a hinged lid, B, and a swinging or sliding door, C. A partition, D, having a central perforation, E, is secured within the cabinet.

F represents an elongated milk-receptacle, the upper portion of which extends above partition D, and the lower portion depends below the same.

G is a sheet-metal ice-receptacle, the upper edges of which are secured to the upper edges of the cabinet, and its bottom H is supported upon the partition D. The central portion of the sheet-metal bottom H is cut away to correspond to the outer configuration of the milk-receptacle, which latter is attached thereto in a water-tight manner.

From the above it will be observed that a water-tight ice-receptacle is formed within the cabinet around the upper end only of the milk-receptacle.

The top *a* of the milk-receptacle F extends slightly above the top of the body of the cabinet, or the upper edge of the ice-receptacle, so that should cold water be poured into the ice-receptacle and the latter completely filled the water is prevented from entering the milk-receptacle F.

A cover, I, provided with a downwardly-projecting flange, *b*, is secured to the top of the milk-receptacle. The flange *b* does not fit

the periphery of the milk-receptacle snugly, an open space, *c*, between the same being formed. As the water rises in the ice-box it will form a liquid seal between the cover and the milk-receptacle, and thus prevent any admission or escape of air between such parts of the apparatus.

To the top of cover I is secured a curb or ring, K, having a perforated bottom, *d*, and within said curb or ring is placed loosely a filling, *e*, of cotton or other porous material. The hinged lid B is provided with perforations *f*, which register with the ventilating-ring K. By means of this construction and arrangement of parts the air is allowed to enter through the perforations in the lid, pass through the porous packing, and into the milk-receptacle, the porous material serving to purify the air by filtering all germs of impurity therefrom before it comes in contact with the milk.

L is a transparent gage or port located in the upper portion of the milk-receptacle, and serves to admit of the ready inspection of the milk for the purpose of ascertaining whether or not all the cream has risen to the surface of the milk. If desired, another similar port may be provided in the lower portion of the milk-receptacle.

To the lower end of receptacle F is attached a transparent tube, M, having a stop-cock or spigot connected with its lower end. The tube M is comparatively small relative to the size of the milk-receptacle, and enables all the milk to be drawn off without allowing the escape of the cream therewith.

Heretofore the lower ends of milk-coolers have been provided with transparent cream-gages; but when such gages are attached to the milk-receptacle itself it is found very difficult, if not impossible, to accurately separate the milk from the cream. By forming a transparent cream-gage in the small eduction-tube all the milk can be drawn off before the cream makes its appearance, and then the spigot is closed and the cream drawn off in a separate vessel.

In Fig. 1 the eduction-tube is represented as being provided with a section, *g*, of glass to allow the ready inspection of the cream. Instead of such construction that illustrated in Fig. 3 may be employed in lieu thereof.

In Fig. 3, N is a glass tube, and O an open-work casing, one end of which is attached to the milk-receptacle, while the other end is provided with any suitable valve or spigot, P.

5 I have shown my invention in Fig. 1 as consisting of a single milk-receptacle; but the cabinet may be of any desired size, and any number of milk-receptacles placed therein, as shown in Fig. 4; and therefore I would have it understood that I do not limit myself to any particular number of milk-receptacles that may be arranged within a suitably-constructed cabinet. Again, the milk-receptacle and cabinet may be of any desired form, either round, square, 10 or rectangular, as my invention is not confined to any particular shape of apparatus.

When ice or cold water is placed in its receptacle around the upper end of the milk-receptacle the milk in the upper portion of the 20 vessel is reduced in temperature, and the cream contained therein is separated in whole or in part. The cold milk then descends, and its place is supplied by a current of warmer milk ascending from the lower end of the milk-receptacle. The cooling of the milk continues, and the cream is separated therefrom. This action of the milk is constant, there being a constant downward current of cold milk and an upward current of warmer milk, which latter, when it reaches the top of the milk-receptacle, is reduced in temperature and parts with its cream. This action of milk insures a speedy rising of the cream, as every particle of the

contained milk is subjected to a continuous reduction of temperature.

The ice-box is provided, or may be provided, with suitable inlet and outlet pipes for running water, to insure a constant stream of pure cold water in direct contact with the milk-receptacle.

I make no broad claims in this patent to the many essential and broad features of improvement embodied in the apparatus shown and described, as such broad claims are embraced in my application filed January 17, 1879.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with a cabinet or box furnished with a separate water-tight ice-receptacle, and a lid to cover the cabinet and ice-receptacle, of a vertically-elongated milk-receptacle passing centrally through the bottom of the ice-receptacle, so that the upper portion will be inclosed within the ice-receptacle, and 55 the lower end project below the same, and a ventilated cover fitting upon the top of said milk-receptacle, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 27th 60 day of April, 1881.

DANIEL B. WOOSTER. [L. S.]

Witnesses:

E. M. WOOSTER,

DANIEL R. LOVELAND.