(No Model.)

M. O. STODDARD.

Milk Setting Apparatus.

No. 240,861. **Patented May 3, 1881.**

Fig. 1.

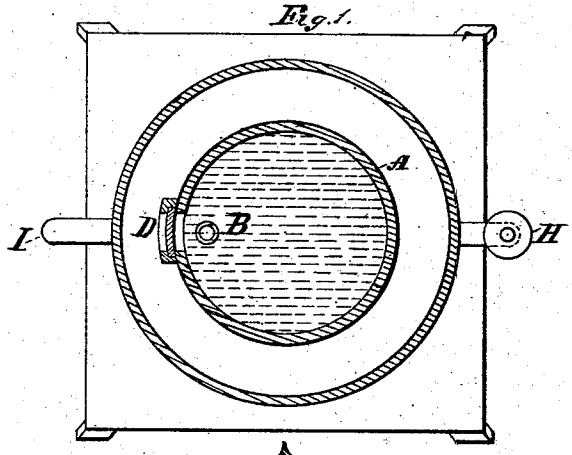


Fig. 3.

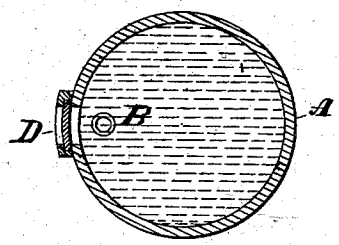


Fig. 2.

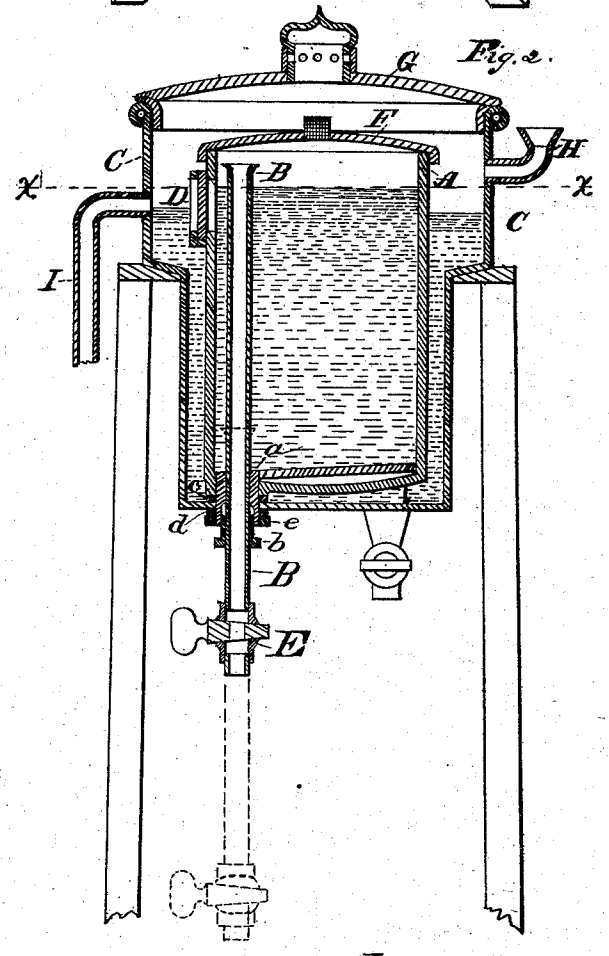
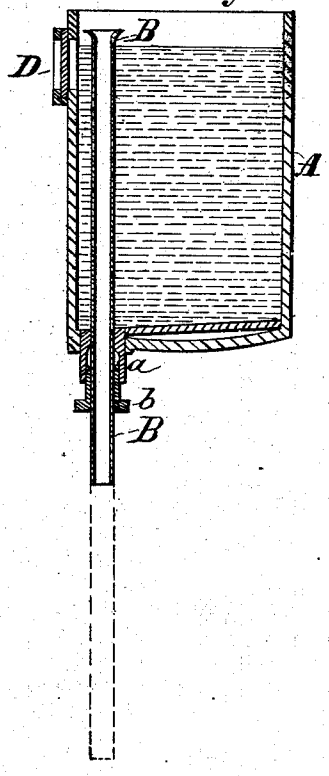


Fig. 4.



Witnesses.
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A. M. Pierce.

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M. O. Stoddard,
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UNITED STATES PATENT OFFICE.

MARVIN O. STODDARD, OF POULTNEY, VERMONT.

MILK-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 240,861, dated May 3, 1881.

Application filed November 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, MARVIN O. STODDARD, of Poultney, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Milk-Setting Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has relation to that class of devices intended for holding milk for the purpose of obtaining cream therefrom, and for other purposes, and it involves certain novel and useful arrangements or combinations of parts and peculiarities of construction, all of which will be herein first fully described, and then pointed out in the claims.

Figure 1 is a horizontal section of a milk-setting apparatus constructed substantially in accordance with my improvements, the section being taken upon line *x x* of Fig. 2. Fig. 2 is an axial section and partial elevation of an apparatus showing one manner of applying my improvements upon a can surrounded by a water-jacket, or by means for keeping the milk cool. Fig. 3 is a horizontal section, and Fig. 4 a vertical section, of the milk-setting can, unaccompanied by any cooling-jacket, stand, cover, &c., the same representing the principles of my invention, and clearly indicating how my improved apparatus is to be operated, and how the several prominent features of the invention are to be carried out.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

A is a milk-setting can, of any desired size or shape, intended for the reception of the milk. It may, of course, be mounted or shelved in any desired manner, and may be filled wholly or partially with the liquid, according to the circumstances of the case. It is also intended, if desired, to employ the improved device or apparatus in connection with any of the usual forms of cabinets containing one, two, or more cans.

Through the bottom of the can I extend a sliding or vertically-adjustable tube, B, of sufficient diameter to afford a proper outlet for the contents of the can, and I make the tube long enough to reach clear through the bottom from a point above the level of the cream or milk when it is at its highest point. This tube being made to slide through the bottom of the can requires, of course, some suitable form of stuffing-box to guard against leakage. For this a convenient form is indicated in Figs. 2 and 4, wherein the box *a* secured to the can receives the ring of packing material, which latter is firmly compressed about the sliding tube by a jam-nut, *b*, thus securing the desired perfect joint. This form of stuffing-box may be variously modified, as will be readily understood; but it indicates a form easy to be adjusted from the exterior of the can—an important feature in the manufacture, as well as in the manipulation, of the device.

When an outer jacket for the reception of the cooling medium is employed, as in Figs. 2 and 4, the box *a* upon can A projects through the bottom of the jacket C, and is screw-threaded exteriorly as well as interiorly. The packing-rings *c* and *d* are compressed, one above and one underneath the bottom of jacket C, by means of a nut, *e*, fitting upon the box *a*, and the packing for the sliding tube is controlled by a jam-nut, *b*, operable from the exterior of the jacket. This construction prevents any leakage of water about the location of the sliding tube. The upper mouth of the sliding tube remains open, and it is preferably enlarged slightly, as shown, so as to obviate any danger of entirely withdrawing the tube when sliding it to its lowermost position.

From the construction and arrangement indicated it will readily appear that the milk-can may be changed to any desired height, the mouth of the discharging-tube being first located above the level of the contents of the can. Then, if it be required to withdraw the cream without disturbing the milk, the tube is pulled down from the exterior, so that its upper mouth shall extend to the lower line of cream only, and the cream will flow away easily and smoothly, being received in any vessel provided for it. A small portion of the cream may be thus discharged without disturbing the remainder. The milk may afterward be discharged entirely by pulling the discharging-tube down to its lowermost point.

It frequently becomes desirable to draw off a quantity of milk as well as cream, leaving the remainder undisturbed, and this is done by pulling the tube down to any point below the cream-line and replacing it above the cream when the desired supply is obtained. So it will appear that by use of the improved apparatus all the requirements as to withdrawing of all or a part of either the cream or milk may be accomplished at the will of the attendant, and at any time, without disturbing the material left in the can. To withdraw the cream from over the top of the milk while the milk remains undisturbed is of great advantage, because of the certainty with which all the cream may be saved. Another important advantage in drawing the cream first is that when the milk is drawn first if there is any sediment left in the bottom of the can it becomes mixed with the cream as it descends to the bottom of the can, and this seriously injures the product, while, if the cream is first removed from the surface, this objection is entirely obviated. A trifling admixture of milk with the cream can do no harm; but if the milk is of necessity drawn off first, as in most of the apparatus now used, some cream invariably flows away with the milk, and is consequently lost.

To determine the proper degree of depression to be given the discharging-tube, glass panes, as at D, may be provided in the wall of the can, so that the bottom of the cream can be readily seen, and the tube moved down a distance from the surface equal to the depth of the cream, or the upper mouth of the tube may be easily adjusted if seen through the transparent pane. The transparent pane is, however, not a necessity, since the adjustments can be determined easily after once or twice using the apparatus. When adjusted for the outflow there is no danger of too great a quantity of material being discharged, and the attendant's attention may be directed elsewhere, whereas in the older means of discharging the can, wherein all the milk must first be withdrawn, the outlet must be constantly watched, so that it may be closed at the proper instant.

For convenience I may attach a stop-cock, as at E, to the sliding tube, so that, in case it be desired the flow of milk or cream may be arrested without moving the adjustable tube, and the discharging may be resumed at any time from the same point by simply turning the cock. By means of the stop-cock the end of the tube can be left at a point below the cream-line when the can is filled, and the operator thus be enabled to draw milk at any time without disturbing the cream or elevating the tube above the cream to stop the flow.

It is customary to employ cans of this class in connection with cooling apparatus, and I have therefore shown my improved arrangement in connection with a cooler in all essential respects substantially like that shown in the patent of F. W. Moseley, August 19, 1879, No. 218,765, upon which cooler alone, of course, I make no claim.

F is the can-top within the cooler, provided with a vertical opening, and G is the top of the cooler-jacket, having a dome which may be opened and closed at will.

Running water is supplied through any form of inlet, as at H, and discharged through a suitable pipe, I; or ice-water may be allowed to stand in the cooler.

The ventilating-openings are sufficient to allow the escape from the can of any gases which may be lighter than the air, and this escape is facilitated by the current of air rising through tube B, (being left open,) especially while the milk is yet warm. When the milk is cooled down the heavier gases will naturally seek an outlet through tube B, and thus the ventilation of the can made practically perfect under all circumstances and conditions.

For the downward ventilation of the can the upper mouth of the sliding tube should, of course, be adjusted near the upper surface of the cream or milk, and this may be easily done, whether the can be wholly or only partially filled.

The bottom of the can may be inclined, substantially as indicated in the aforesaid patent to Moseley, and the tube arranged at or near the lowest point, so that a complete withdrawal of the contents of the can may be effected. Similar results may be obtained in degree by passing the sliding tube through the wall of the can and near the bottom; but it is preferred to make the tube discharge the contents of the can entirely, so as to avoid the necessity of using a second discharge. By unscrewing the stop-cock on the lower part of the tube the can and tube may be readily removed from the cooler at any time.

I am aware that a stationary ventilating-tube has been employed to conduct the gases downwardly from over the cream, which tube is sufficient for the ventilation of the can when the cream-line falls below the mouth of such tube; and I am also aware that adjustable outlets have been provided for the discharge of the contents of the can, none of which can operate to discharge either part or all of the cream, or part or all of the milk, as the operator may see fit, or in accordance with the purposes and objects of my invention, as hereinbefore set forth.

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

1. In combination with a milk-setting can, a sliding tube adjustable within the can from bottom to top, and adapted to discharge either part or all of the contents of such can, whether the same be filled or only partially filled, substantially as shown and described.

2. The combination, with a milk-setting can, of a sliding tube adjustable within the can from bottom to top and adapted to discharge either part or all of the contents of such can, whether

the same be filled or only partially filled, and a stop-cock applied to such tube exteriorly to the can, substantially as shown and described.

3. In combination with a milk-setting can surrounded by a water-jacket, a sliding discharge-tube passing through the bottoms of both cans and provided with packing to prevent leakage of milk or water, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

MARVIN O. STODDARD.

Witnesses:
F. W. MOSELEY,
CYRUS GATES.