

(No Model.)

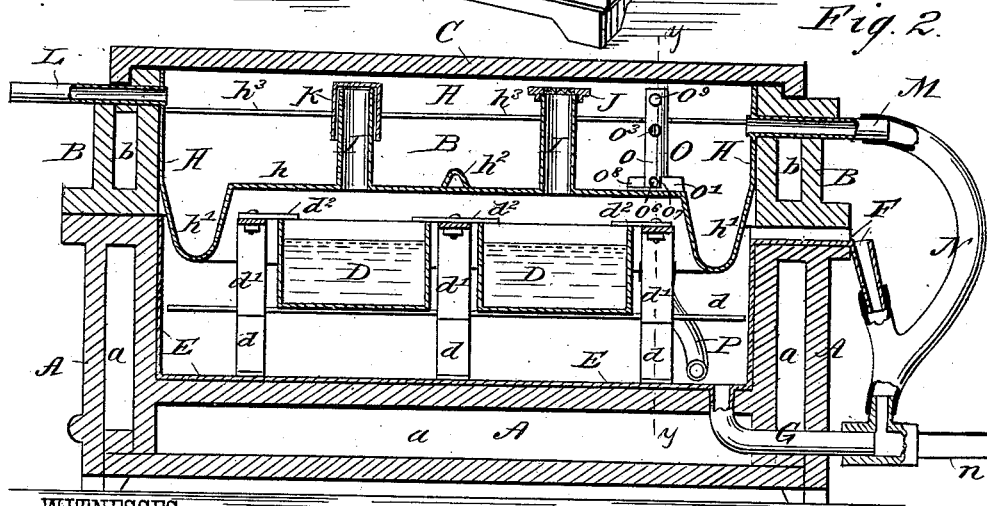
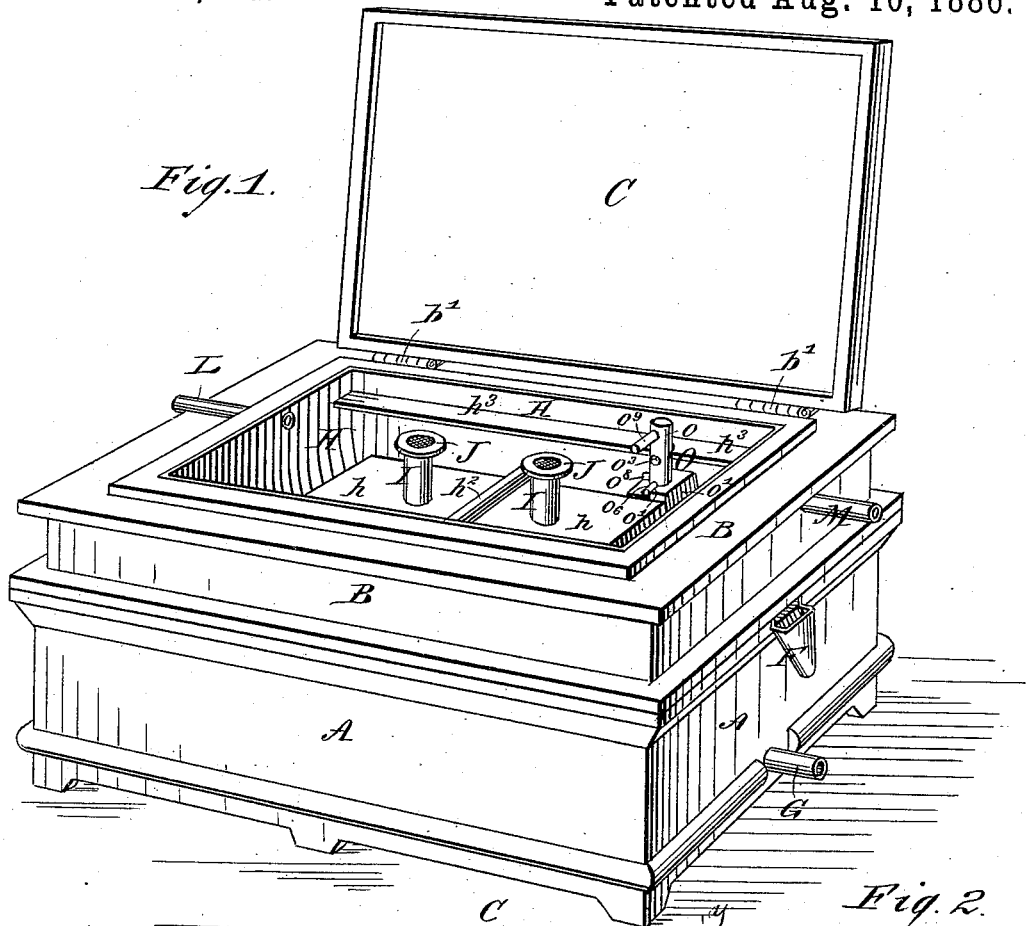
J. H. BRAMKAMP.

2 Sheets—Sheet 1.

MILK COOLER.

No. 347,085.

Patented Aug. 10, 1886.



WITNESSES:

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JOHN HENRY BRAMKAMP, OF DENVER, COLORADO.

MILK-COOLER.

SPECIFICATION forming part of Letters Patent No. 347,035, dated August 10, 1886.

Application filed December 7, 1885. Serial No. 185,005. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY BRAMKAMP, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and Improved Milk-Cooler, of which the following is a full, clear, and exact description.

My invention relates to milk coolers or creamers, and has for its principal object to facilitate the charging of the milk into the cooler and the raising of the cream without uncovering the pans to the outside air and dust, and whereby the milk may at once be introduced into the cooler for the best effect in securing quickly the maximum quantity of pure cream from the milk.

The invention consists in certain novel features of construction and combinations of parts of the milk-cooler, all as hereinafter fully set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the milk-cooler with the top lid raised. Fig. 2 is a vertical longitudinal sectional elevation of the cooler, taken on the line *x x*, Fig. 4. Fig. 3 is a plan view of the cream-pan box, and shows the middle lid open and broken away. Fig. 4 is a transverse vertical sectional elevation of the cooler, taken on the line *y y*, Fig. 2; and Fig. 5 represents detail views of the upper outlet-valve.

The lower part or pan-box, A, of the milk-cooler is made with double bottom and side walls, providing air-spaces *a*; and to the top of the box A is hinged at *a'* the cover B, which has double side walls, providing air-spaces *b*, and to the cover B is hinged at *b'* the top lid, C, of the cooler. The air-spaces *a b* protect the inside of the cooler from the heat of the atmosphere, and may be filled with any suitable non-conducting material.

The cooler may be made of any desired length to accommodate any number of shallow cream-pans D, which are supported with their tops about level with the top of the box A upon a suitable metal frame-work, *d*, attached to the bottom and sides of a sheet-metal lining, E, with which the interior of the box A is covered, to make it water-tight. To the

frame-work *d* are fixed standards or bridge-pieces *d'*, to the tops of which are pivoted buttons *d''*, which are turned over the top edges of the cream-pans to hold them securely in place. (See Figs. 2 and 3.) The pans D have handles at their opposite ends, and are made shallow, as shown, a shallow pan giving better results in permitting the rise from the milk of a larger quantity of cream in a short time than is possible with deep cans.

The box A is provided with an overflow-spout, F, and also has a lower outlet-pipe, G, which may have any preferred form of valve, and through which the water used in cooling the milk may escape, as hereinafter more fully described.

The cover B of the pan-box has an interior water-tight sheet-metal lining, H, the central or bottom portion, *h*, of which is raised, and whereby is formed a pendent trough-shaped part, *h'*, which enters the box A around the milk or cream pans D and water-seals the pans against the entrance of air when the cooler is in use. A cross-piece, *h''*, is fastened to the bottom *h* of lining H and to the sides of the lining, thereby stiffening the lining.

In the lining H, and directly over each of the pans D, is fitted a tube, I, through which the milk may be passed or strained into the pans, and the tubes may be covered with the perforated caps J, to allow the heat and odor to escape from the milk in the pans and exclude flies or insects therefrom, or with the close caps K when the milk has cooled and the caps J are removed from the tubes.

At one end of the cover B is fitted the water-supply pipe L, and in the opposite end is fitted the overflow-pipe M, which may be connected to a discharge-pipe, N, with which also the spout F and lower outlet, G, may be connected (see Fig. 2) and whereby all the water-outlets of the cooler may discharge through one pipe, as at *n*, to the outside of the building.

In the cover B, and preferably at one side and near the overflow-pipe M, is fitted a discharge-valve, O, which consists of two parts, a plug, *o*, and a socket, *o'*, in which the plug is fitted, and which is held in the depressed part *h'* of the lining H by washers and nuts on the end of the plug *o* below the part *h'*, through which latter the plug passes. (See Fig. 4.)

The plug *o* has an interior passage, *o*², which opens into a flexible pipe, *P*, adapted to discharge water into the pan-box *A* below the pans, and at the top of the plug-passage *o*² there is an opening at *o*³ into the cover *B*.
 5 The socket *o'* has apertures or slots *o'*⁴ at its base, and the plug has apertures at *o*⁵, which, when the plug is turned so its stop-pin *o*⁶ strikes a shoulder, *o*⁷, on the top of the socket, and as shown in Fig. 2, will be closed to prevent discharge of water from the cover *B* at the bottom of its depression *h'*; and when the plug is turned so its stop-pin *o*⁶ strikes the shoulder *o*⁸ on the socket, the plug and socket
 10 openings *o*⁵ *o'*⁴ will coincide to allow all the water in cover *B* to discharge through the pipe *P* into the box *A*. The plug-aperture *o*⁵ stands a little below the outlet at *M*, and when a constant water-circulation through the cooler is desired the valve *O* will be closed at *o*⁵ *o'*⁴, and the water entering at pipe *L*, after filling the cover up to the valve-outlet *o*⁵, will pass through the valve-plug and pipe *P* to the bottom of the pan-box *A*, and thence out at its overflow *F*; and
 15 should the water enter faster at *L* than it can pass through the valve the overflow at *M* will carry off the surplus water. By closing the valve *O* at *o*⁵ *o'*⁴ a water-level may be maintained in the cover *B* as high as the outlet *o*⁵ of the valve, when the inflow at *L* is cut off and a constant water-circulation is not desired. The valve-plug *o* has a handle, *o*⁹, above the level of the overflow at *M*.

To the side of the lining *II* of the cover *B*, next the hinges of the cover, is fixed a strip, *h*³, which is intended to catch any drip-water when the cover is thrown back on its hinges to give access to the pans *D* for skimming the cream from the milk they contain.

40 The operation of the cooler is as follows: The cold water may be filled into the box *A* before the milking commences, and the cover *B* will be closed over the pans to water-seal them, and the cover will be supplied with water, as above described. The milk, when warm from the animal is poured through funnel-strainers (not shown) inserted in the tubes
 45 *I*, into the respective pans *D* below the tubes, and when each pan is filled the tube *I* above it will be covered by a perforated cap, *J*, to exclude insects and allow the heat and odor to escape from the milk, and when the milk has cooled, which will very quickly be accomplished, the caps *J* will be substituted by
 50 the closed caps *K*, and the top lid, *C*, will be closed, and the water-circulation may be regulated as desired while the cream rises in the pans.

It is evident that the arrangement of the tubes *I* over the pans *D*, for filling the pans 60 without lifting the cover *B*, is much better than other constructions of coolers requiring a lifting of the cover to fill the milk-pans, as the milk may be at once poured into the cooler, when obtained, and each pan may be filled 65 without exposing the milk in the other pans to the air and dust.

Handles may be provided on the lids *C* *B*, as shown at *c*² *b*² in Fig. 4.

I am aware that a milk-cooler having an outer cover provided with a corrugated metal lining fitted with tubes passing through the lining has before been used to ventilate the cooler; but this construction is clearly distinguishable from my arrangement of inner 75 cover, *H*, provided with tubes *I*, over the pans, which tubes do not pass through the outer cover of the cooler.

Having thus described my invention, what I claim as new, and desire to secure by Letters 80 Patent, is—

1. The combination, in a milk-cooler, of a cream-pan box, *A*, having supports and fastenings *d* *d'* *d*² for the pans, and water-outlets *F* *G*, and a cover, *B*, having a lining, *II*, provided with tubes *I* over the pans, water-inlet 85 *L* and outlet *M*, and an outlet supplying water from the cover to the box, substantially as herein set forth.

2. In a milk-cooler, in which a water-receiving cream-pan box and a water-receiving 90 cover therefor are employed, the combination, with the cover, of a valve, *O*, formed of a plug, and socket *o* *o'*, provided with outlet-apertures *o*⁵ *o'*⁴ at the base of the valve, and the plug having a central passage, *o*², and a lateral outlet, *o*³, substantially as herein set forth. 95

3. A milk-cooler constructed substantially as herein shown and described, and consisting 100 of a box, *A*, provided with cream-pan supports, as at *d* *d'* *d*², and outlets *F* *G*, a cover, *B*, provided with lining *II*, having depressed portion *h'*, tubes *I*, fitted in the cover over the cream-pans, interchangeable tube-caps *J* 105 *K*, water inlet *L* and outlet *M*, a valve, *O*, a flexible pipe, *P*, connected therewith, and a lid, *C*, hinged to the cover *B*, all substantially as herein set forth.

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Witnesses:

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