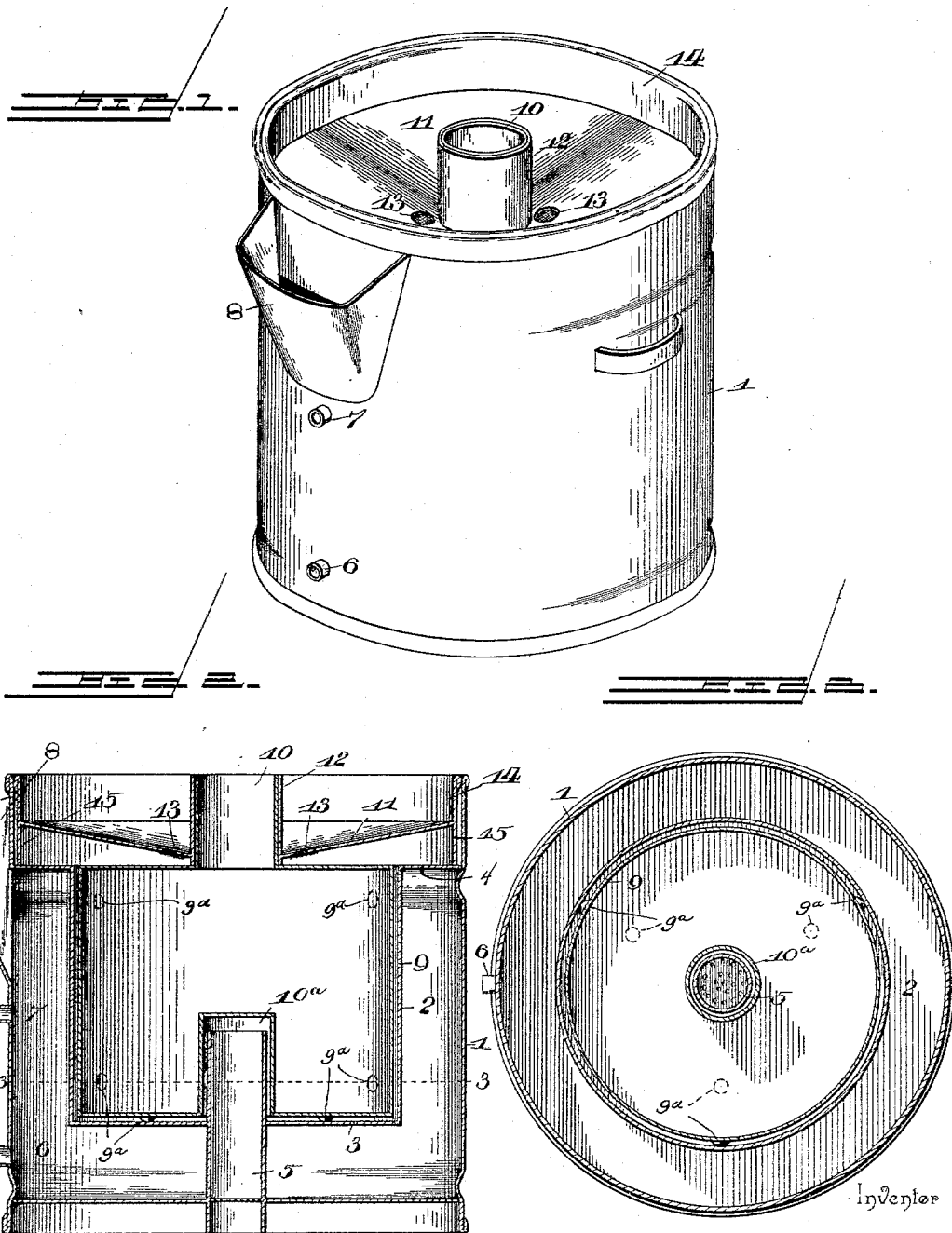


(No Model.)

M. THOENI.
MILK COOLING APPARATUS.

No. 566,817.

Patented Sept. 1, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

MARTIN THOENI, OF MONTICELLO, IOWA, ASSIGNOR OF ONE-HALF TO
ADOLPH MILLER, OF SAME PLACE.

MILK-COOLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 566,817, dated September 1, 1896.

Application filed August 10, 1895. Serial No. 558,911. (No model.)

To all whom it may concern:

Be it known that I, MARTIN THOENI, a citizen of the United States, residing at Monticello, in the county of Jones and State of Iowa, have invented a new and useful Milk-Cooling Apparatus, of which the following is a specification.

My invention relates to milk-coolers, and has for its object to provide a simple, inexpensive, and efficient device having exposed surfaces for contact with the liquid to be cooled, whereby said surfaces may be readily cleansed, thus adapting the device especially for use as a milk-cooler, and, furthermore, to so construct the device as to adapt it for use as a milk-strainer.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a cooler constructed in accordance with my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates an outer casing or cylinder within which is arranged an inner cylinder of smaller diameter and terminating short of the upper and lower ends of the casing, said inner cylinder being provided with a bottom 3 and having its upper edges connected with the sides of the main or outer cylinder by a horizontal annular web or partition 4. Registering openings are formed in the centers of the bottoms of the outer and inner cylinders, and fitting in said openings is an outlet-tube 5, which projects at its lower end below the plane of the bottom of the outer cylinder and at its inner end above the plane of the bottom of the inner cylinder, and upward to a point midway between the top and bottom of the inner cylinder. Communicating with the interior of the outer cylinder, respectively, at its bottom and at an intermediate point are the inlet and outlet openings 6 and 7, through which water or other cooling agent may be introduced and withdrawn. Also communicating with the interior of said outer cylinder

is a hopper 8, through which water, ice, or other material for the cooling of the milk may be introduced.

Fitting loosely in the inner cylinder and corresponding in shape therewith is a receptacle 9, which fits sufficiently loosely in the inner cylinder to form a narrow space between its sides and the walls of said cylinder. The upper closed end of the receptacle is flush with the horizontal web or partition 4, which forms a shoulder in the outer cylinder or casing, and projecting upwardly from the center of the top of the receptacle is a tubular neck or extension 10. Said receptacle is provided in its bottom with a tubular socket 10^a, closed at its upper end and approximately equal in length with the upward extension of the outlet-tube, the closed upper end of the socket being spaced from the upper end of the outlet-tube.

The funnel 11 fits in the top of the outer cylinder or casing, and is provided at its center with a sleeve 12, which receives the neck or tubular extension of the receptacle, said neck or extension and the sleeve terminating approximately in the plane of the upper edge of the outer cylinder or casing. Located in the floor of the funnel contiguous to said sleeve are openings 13, fitted with strainers of wire-gauze or its equivalent, said floor of the funnel being depressed toward the center in order to cause liquid placed therein to seek outlet through the openings. The funnel is also provided with a peripheral upstanding flange 14, which extends upward to a point near the plane of the upper edge of the outer cylinder or casing, whereby if the liquid introduced into the funnel overflows said flange it will pass into the cylinder or casing. Said funnel is also provided with a depending annular flange 15, which is seated upon the annular shoulder 4, surrounding the top of the inner cylinder.

The annular chamber between the exterior and interior cylinders is adapted to contain a cooling agent which may be withdrawn and replaced as made necessary by the raising of the temperature thereof, and the central receptacle, which is removably fitted in the seat formed by the inner cylinder, is also adapted to receive a cooling agent, such as ice or water, or both. The milk or other liquid to

be cooled is placed in the funnel and passes through the wire-gauze screens, covering the openings in the bottom thereof, and subsequently flows laterally over the top of the central receptacle and finds its way through the narrow annular passage between the sides of said receptacle and the walls of the seat formed by the inner cylinder. Said liquid, after reaching the bottom of the seat, passes up through the socket and thence out through the outlet-tube into a suitable vessel. (Not shown.) A tube or hose may be fitted upon the projecting outer extremity of said outlet-tube to convey the liquid to a distance, if necessary. The outlet-tube is provided with a perforated outer end, forming an auxiliary strainer.

From the above description it will be seen that those surfaces which are exposed to contact with the milk or other liquid to be strained and cooled are readily accessible to facilitate cleansing, as found necessary in all vessels which are used in connection with milk. The central receptacle may be grasped, to facilitate its removal from the seat in which it is fitted, by the central projecting neck or extension. Any suitable means may be employed for holding the exterior surface of the receptacle out of contact with the interior of the inner cylinder, such as knobs or projections 9^a, formed by drops of solder or equivalent material adhering to the exterior surface of the receptacle, as shown clearly in Figs. 2 and 3.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. The combination of an exterior casing, an inclosed cylinder spaced from the casing to form a surrounding receptacle for a cooling agent and terminating short of the top of the casing, a horizontal annular web extending outwardly from the upper edge of the cylinder to the wall of the casing to close the top of the latter and support the cylinder, the interior of the inner cylinder forming a seat and provided with a bottom outlet, a receptacle removably fitted in said seat to form a surrounding passage communicating with said outlet, and a funnel removably seated in the top of the casing upon said annular web and being provided in its bottom with outlet-openings, substantially as specified.

2. The combination of an exterior casing for a cooling agent, an inclosed cylinder terminating below the top of the casing, a horizontal web connecting the upper edge of the cylinder with the wall of the casing to form a shoulder closing the top of the casing; a receptacle removably fitted in the casing, and provided at the center of its top with an upstanding inlet-neck terminating flush with the upper edge of the casing, an outlet-tube communicating with the cylinder at its bottom, and an annular perforated funnel fitting removably in the top of the casing and seated upon said shoulder and also provided at its center with a sleeve embracing and extending to the top of the neck of the receptacle, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARTIN THOENI.

Witnesses:

F. J. DALLENBACH,
M. W. HERRICK.