

W. V. ROOKER.
MILK COOLER AND AERATOR.
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989,054.

Patented Apr. 11, 1911.

Fig. 1.

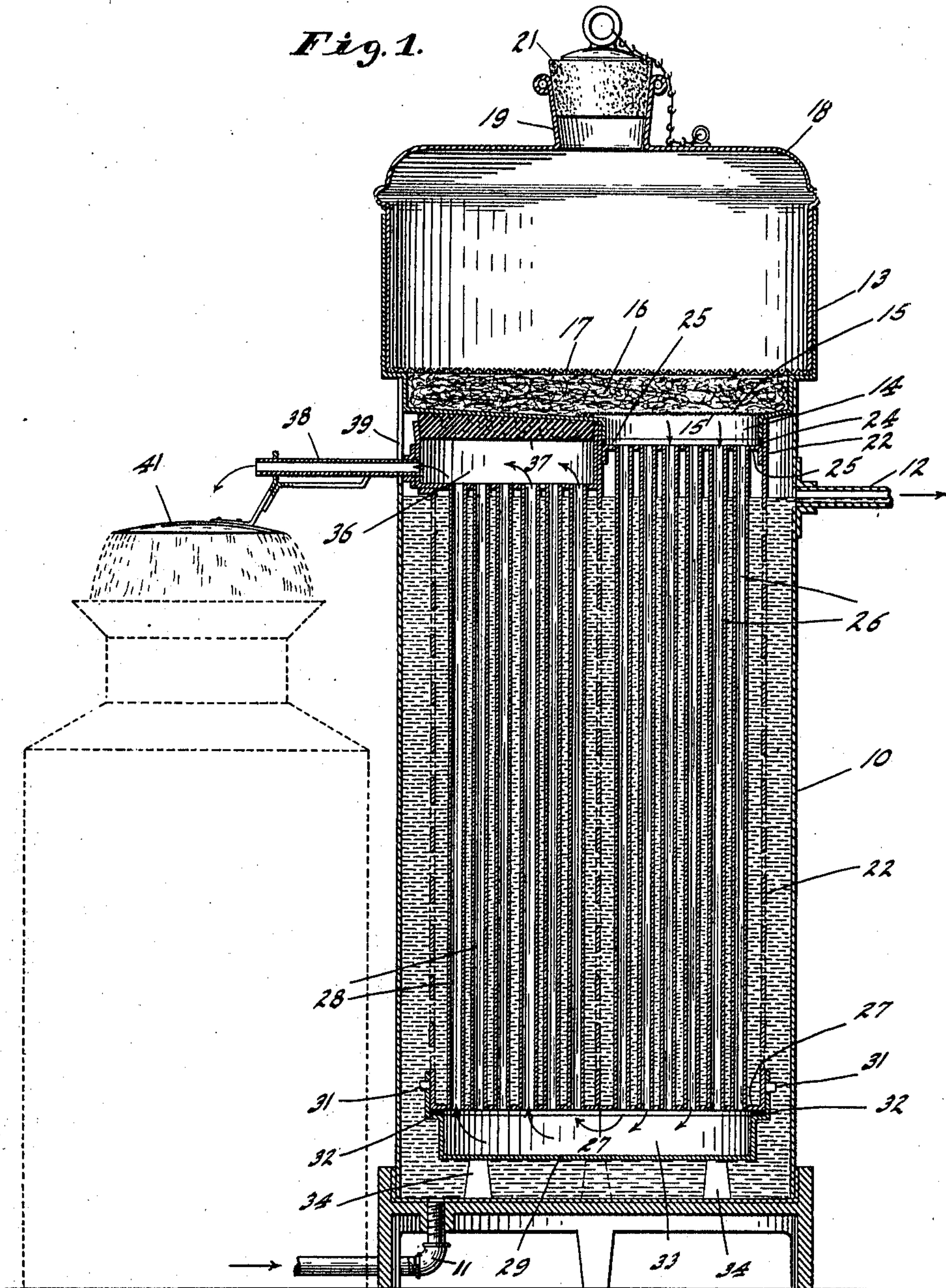
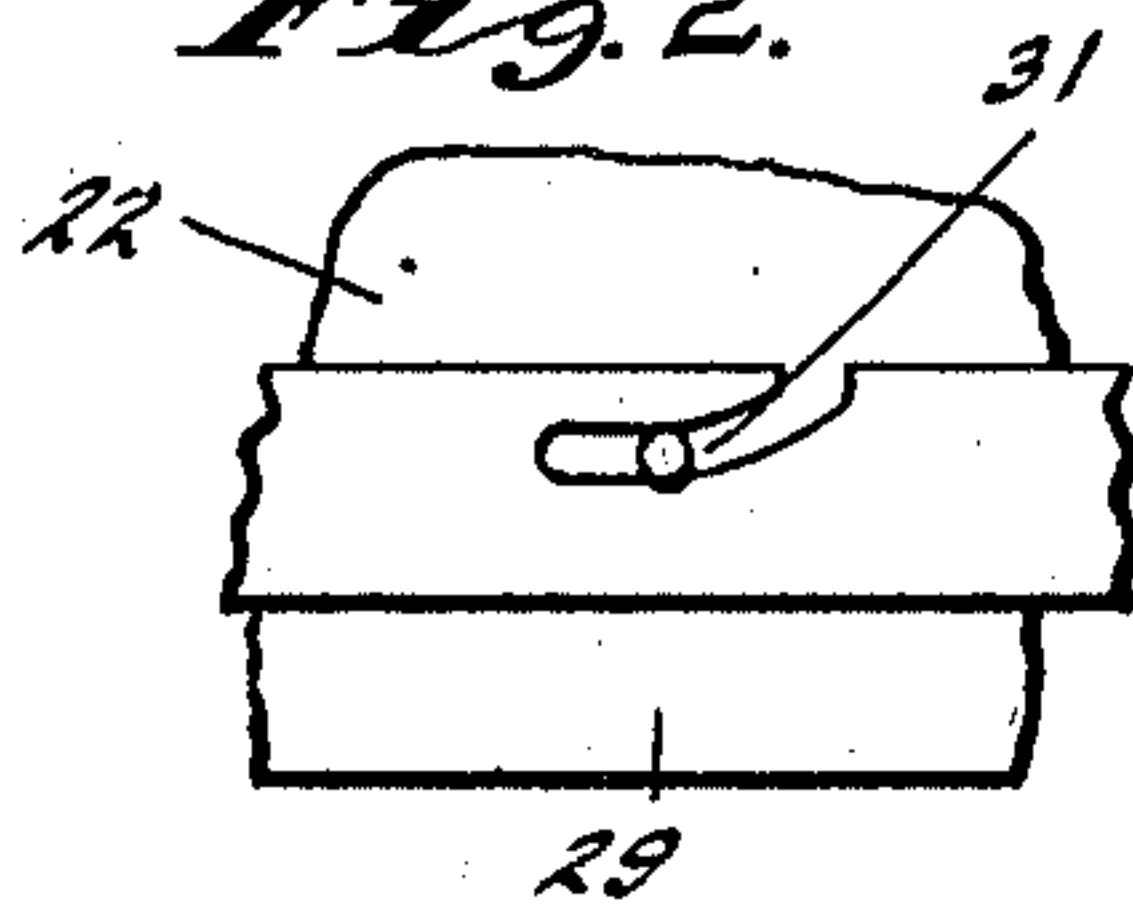


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM V. ROOKER, OF HAMILTON COUNTY, INDIANA.

MILK COOLER AND AERATOR.

989,054.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed November 21, 1910. Serial No. 593,544.

To all whom it may concern:

Be it known that I, WILLIAM V. ROOKER, a citizen of the United States, residing on a farm in the county of Hamilton and State of Indiana, have invented a new and useful Milk Cooler and Aerator, of which the following is a specification.

The object of my invention is to produce a neat and efficient apparatus by means of which fresh milk may be readily cooled and aerated, the construction being such that its parts can be readily separated to facilitate cleaning.

The accompanying drawings illustrate my invention.

Figure 1 is a central vertical section of an apparatus constructed in accordance with my invention; Fig. 2 a fragmentary detail of the bayonet joint.

In the drawings, 10 indicates a container of any desired form provided preferably with a water induction pipe 11 and an eduction pipe 12, although these pipes may be omitted or varied in their relation to the container 10, as desired. Sleeved into or fitted upon the upper end of the container 10 is a receiver 13 provided at its lower end with an outlet 14 which is smaller than the container 13 and is preferably cylindrical, for a reason which will appear. Over the inner end of the outlet 14 I place a strainer 15 which may be made of wire cloth and above this strainer 15 I arrange a layer of filtering material 16, conveniently cotton fiber, which is protected by an upper strainer 17 of wire cloth, the two strainers 15 and 17 and the fiber 16 being readily removable for cleansing. Sleeved into the open upper end of the container 40 is a bell cover 18 provided with an inlet neck 19 into which may be inserted either a filling funnel (not shown) or an air tight plug 21, the purpose of which will appear. Telescoped with the outlet 14 is a tubular carrier 22 connected to the outlet 14 with a packing gasket 24 in any suitable manner to produce a fluid tight joint.

In the upper end of the tubular carrier 22 immediately below the gasket 24 is a transverse partition 25 provided with a plurality of perforations into each of which is tightly secured the upper end of a depending tube 26. The several tubes 26 extend down somewhat near the bottom of container 10 and the lower ends of these tubes are secured into the bottom plate 27

of the carrier 22. Also secured in the bottom plate 27 are the lower ends of a series of upwardly extending tubes 28 which correspond in number or capacity with the tubes 26. Detachably secured to the lower end of the carrier 22 is a basin 29 conveniently connected to the carrier by means of bayonet joints 31 with a packing gasket 32 arranged so that a fluid tight joint may be made between the basin and carrier so as to thus form a chamber 33 which serves to connect the lower ends of the two series of tubes 26 and 28. Suitable supporting posts 34 may be arranged upon the bottom of container 10 so as to form a support for basin 29 and the parts to which it is connected. The upper ends of tubes 28 are secured in the perforated bottom of a chamber 36 secured to the carrier 22 and having an open upper end which will be closed, when the parts are in place, by the tight plug 37 secured to the under side of the bottom of receiver 13. Leading from chamber 36 is a discharge pipe 38 which projects through a slot 39 formed in the upper end of container 10.

It is undesirable, in an apparatus of this kind, to have any valves for controlling the flow of milk through the apparatus because it is difficult to keep valves clean. I therefore provide no valve in the outlet pipe 38 but it will be noticed that the bell cover 18 is of sufficient depth to project practically to the bottom of receiver 13 so that when receiver 13 has milk in it (the outflow from this chamber being restricted by the size of pipe 38) outflow from the pipe 38 may be fairly quickly stopped by the insertion of the air tight plug 21 in the neck 18.

In order to aerate the milk after it has been cooled, I detachably secure to the discharge pipe 38 an inverted basin-like plate 41 upon which the milk will be discharged and from which it will flow in a thin conical stream into any suitable receptacle as indicated in dotted lines in Fig. 1.

The walls of the carrier 22 are perforated as indicated so as to permit a free flow of cooling fluid around the pipes 26 and 28. In operation a continuous stream of cold water will be maintained in the container 10 and the milk will be poured into receiver 13 from whence it will pass down through screen 17, filter 16, screen 14, pipe 26, basin 29, pipes 28 and out through pipe 38 becoming cooled during this passage. If running

water is not available, iced brine or ice may be substituted and it is for this reason that the carrier 22 is in the form of a perforated wall which will serve to protect the tubes 26 and 28 from injury. These tubes and other parts will, of course, be of such suitable material as to be free from attack by the milk.

It will be noticed in this construction that the parts through which the milk flows are all inclosed yet are all readily accessible for cleaning, so that the device is very sanitary.

I claim as my invention:

1. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a tube carrier secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

2. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a strainer arranged in the outlet from said receiver, a tube carrier secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

3. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a strainer and filter detachably arranged in the outlet from said receiver, a tube carrier secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin associated with the lower ends of both of said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

4. A milk cooler comprising a main fluid container for a cooling medium, said con-

tainer having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

5. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a strainer arranged in the outlet from said receiver, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

6. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged to cover said open top and having a discharge outlet in its lower end, a strainer and filter detachably arranged in the outlet from said receiver, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both of said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, and a delivery pipe leading from said delivery chamber.

7. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged upon said open top and having a discharge outlet in its lower end, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set

of tubes discharge, having an open upper end giving access to the tubes which lead thereto, a plug carried by the bottom of the receiver and adapted to close the open end of said discharge chamber, and a delivery pipe leading from said delivery chamber.

8. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged upon said open top and having a discharge outlet in its lower end, a strainer arranged in the outlet from said receiver, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, having an open upper end giving access to the tubes which lead thereto, a plug carried by the bottom of the receiver and adapted to close the open end of said discharge chamber, and a delivery pipe leading from said delivery chamber.

9. A milk cooler comprising a main fluid container for a cooling medium, said container having an open top, a milk receiver detachably arranged upon said open top and having a discharge outlet in its lower end, a strainer and filter detachably arranged in the outlet from said receiver, a tube carrier detachably secured to said outlet, a tube chamber carried by said carrier and associated with the discharge outlet of the receiver, a set of tubes leading downwardly

from said tube chamber, a second set of tubes, a basin detachably associated with the lower ends of both of said tubes to form a chamber of communication therebetween, a delivery chamber into which said second set of tubes discharge, having an open upper end giving access to the tubes which lead thereto, a plug carried by the bottom of the receiver and adapted to close the open end of said discharge chamber, and a delivery pipe leading from said delivery chamber.

10. A milk cooler comprising a main fluid container for a cooling medium, a receiver, a milk conduit leading from the bottom of said receiver through the container and having an open discharge end, and an air tight sealing bell fitted into the receiving end of said receiver, said receiving bell comprising a receiving neck, and an air tight removable plug therefor, whereby flow of milk from the open discharge outlet may be interrupted by means of said bell.

11. A milk cooler comprising a main fluid container for a cooling medium, a receiver, a milk conduit leading from the bottom of said receiver through the container and having an open discharge end, and an air tight sealing bell fitted into the receiving end of said receiver, whereby flow of milk from the open discharge outlet may be interrupted by means of said bell.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this nineteenth day of November, A. D. one thousand nine hundred and ten.

WILLIAM V. ROOKER. [L. S.]

Witnesses:

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THOMAS W. McMEANS.