

(No Model.)

M. L. HOYT.
CHURN VALVE.

No. 463,422.

Patented Nov. 17, 1891.

Fig. 1.

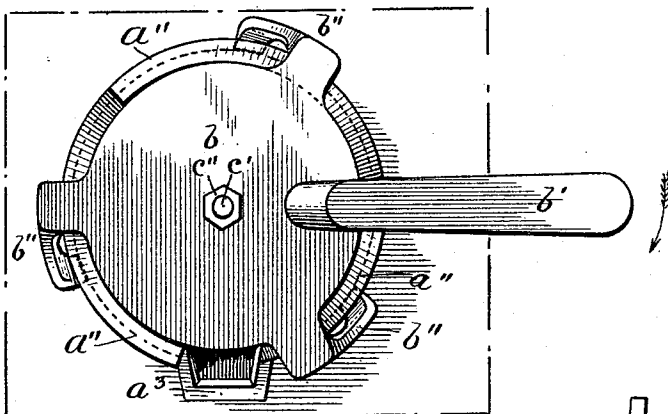


Fig. 2.

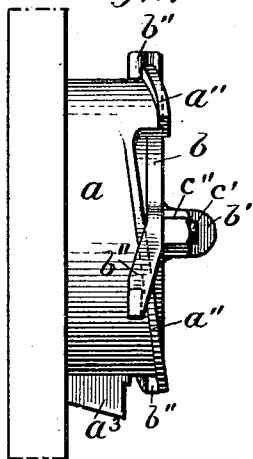


Fig. 3.

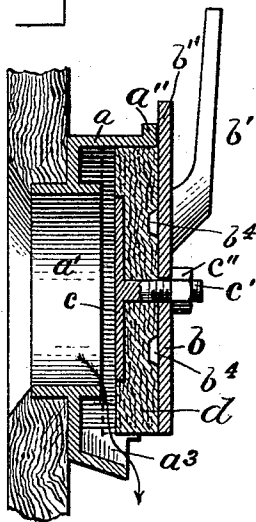


Fig. 6.

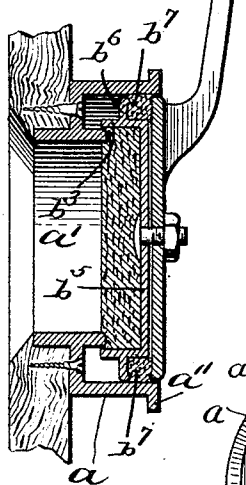


Fig. 4.

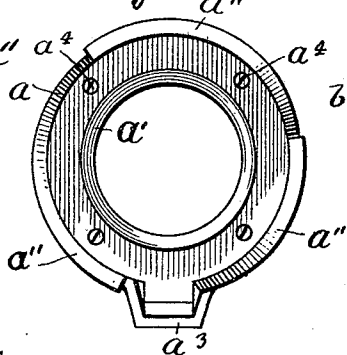
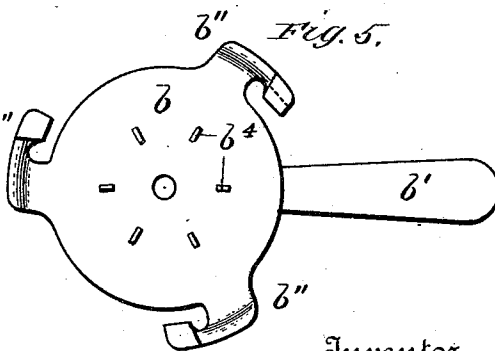


Fig. 5.



Witnesses

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CHURN-VALVE.

SPECIFICATION forming part of Letters Patent No. 463,422, dated November 17, 1891.

Application filed June 25, 1891. Serial No. 397,512. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW L. HOYT, a citizen of the United States, residing at Ballston Spa, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Milk - Gates for Churns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention will be fully understood and appreciated from the following description, when taken in connection with the annexed drawings, in which—

Figure 1 represents a front elevation of my improved milk-gate, the adjacent portions of the churn-body being shown; Fig. 2, a side elevation thereof; Fig. 3, a vertical sectional view, showing the gate partially open; Fig. 4, a front view, reduced, of the cup secured to the churn around the opening; Fig. 5, a view of the inner side of the stopper-plate, the cork disk being removed; Fig. 6, a sectional view showing another manner of employing and securing the cork packing.

In the drawings, *a* designates a flanged ring or cup, which is secured to the churn-body around the exit-opening for the milk. This cup has formed integrally with it around its opening a tube *a'*, whose inner portion extends into and lines the exit-opening and whose outer end projects a short distance from the face of the ring and forms a raised seat for the packing on the stopper or gate. The outer annular flange of the ring *a* projects outwardly a considerable distance beyond the outer end of tube *a'*, and its outer edge is notched or formed with three segmental inclined planes, each of which is provided with a radially-projecting flange *a''*, these flanges being inclined similarly to the segments on which they are formed. A short spout *a³* is formed on the lower side of the cup-shaped ring to conduct the milk off when the gate is opened.

The stopper or gate consists of a metallic disk *b*, approximately the diameter of the cup, so as to fit freely therein and provided with a radial operating-handle *b'*. This disk has formed integrally with its edge three radial arms *b''*, which are equidistant from each other, and are turned laterally and inwardly and have lugs upon their ends engaging un-

der the respective inclined flanges *a''* of the cup. A cork or other disk *d*, fitting the cup *a*, is secured to the inner face of the disk and adapted to bear upon the outer end of the tube *a'* and form a packing. This packing is held in place on the disk *b* by means of radial lugs *b⁴* on the disk, and a smaller disk *c*, carrying a central bolt *c'*, that passes out through the cork and disk *b* and has tapped on its outer end a nut *c''*, as shown most clearly in Fig. 3, or it may be secured in place, as shown in Fig. 6—that is, it may be fitted snugly within an annular flange *b³*, projecting inwardly from a disk *b⁵*, bolted to the inner face of the disk, said flange *b³* fitting over the outer end of the tube *a'*, and this flange *b³* may be provided with an annular flange *b⁶*, between which and the edge of the disk *b* a packing-ring *b⁷* of cork or other material is clamped, this ring snugly fitting within the cup *a*, or the cork may be secured in place in any other manner. To seat the stopper upon the outer end of the tube *a'*, and thereby close the opening, it is simply necessary to place it within the cup and turn it in the direction indicated by the arrow in Fig. 1, until the arms *b''* engage under their respective inclined flanges *a''*, whereby by continuing the rotation of the stopper any desired pressure may be brought to bear upon the seat. In this way all leakage is prevented and wear of the packing may be compensated for.

To run off the milk without allowing any granules of butter to escape, the stopper is moved away from the seat an eighth or a sixteenth of an inch, whereupon the milk will escape all around the narrow opening thus formed and be conducted off by the spout *a³*. The great advantage of this construction lies in the fact that strainers and sieves which have been heretofore employed to catch the small lumps of butter that float in the milk are done away with, no straining device of any character being required with this invention.

Another advantage is that the opening through which the milk is allowed to escape, although very narrow, extends all around the seat and is unobstructed, whereby sufficient milk to fill the spout *a³* and cause a steady stream to flow is supplied.

Providing the gate or stopper with three

radial arms to engage under a similar number of inclined planes is advantageous in that the stopper is prevented from tilting and is always kept parallel with its seat within the cup. This gate, besides the advantages enumerated, has additional advantages, such as cheapness, simplicity, its capability of being readily removed for cleaning, &c.

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

1. The combination, with the ring provided with a central opening flanged to form a seat, this ring being provided at its outer edge with a flange *a*, extending beyond the said seat and provided with a series of segmental inclined flanges *a''*, of a stopper consisting of a disk *b*, carrying a packing-disk on its inner side, said packing-disk being adapted to press against the seat within the same, said disk *b* being provided with a series of radial arms *b''* bent over and under the segmental flanges *a''*, as and for the purposes described.

2. The combination of a cup or ring *a*, secured over the opening in a churn, and provided with a tube fitting within said opening and projecting outwardly therefrom to form

a seat, the flange of this cup being provided with a series of radially-extending inclined flanges *a''* and a spout *a*³, and a stopper consisting of a metal disk fitting within the cup and provided with radial arms *b''*, engaging under the said inclined flanges, and a handle for rotating it, a packing *d* being secured to the inner face of said disk, substantially as described.

3. The combination, with a cup-shaped ring provided with an interior seat, of a stopper consisting of a disk *b*, provided with means for pressing it to its seat, a disk *b*⁵, clamped to the inner face of the disk *b*, and provided with an inwardly-turned flange *b*³, which is in turn provided with an annular flange *b*⁶, a packing-disk secured within the flange *b*³, and a packing-ring *b*⁷, clamped between the flange *b*⁶ and the outer edge of the disk *b*, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

MATTHEW L. HOYT.

Witnesses:

GEORGE M. COOK,
GEO. L. LEWIS.