S. B. HOWD.

Churn.

No. 4,887. Patented Dec. 12, 1846.

FIG. 3.

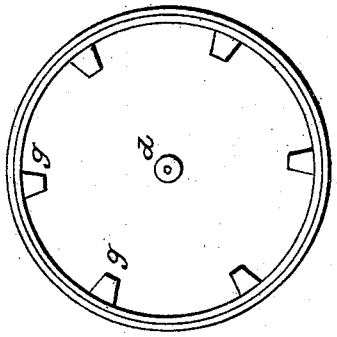


FIG. 2.

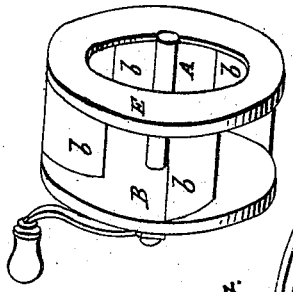


FIG. 4.

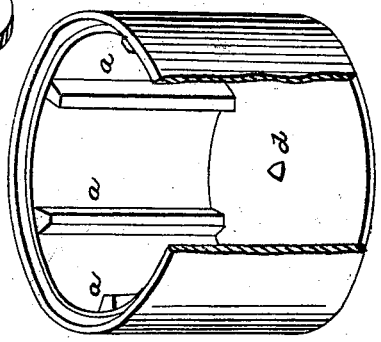
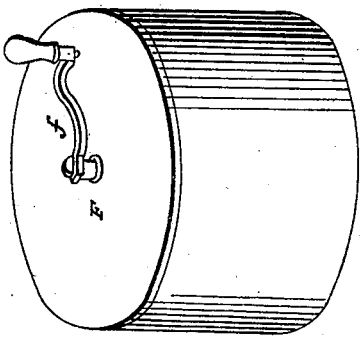


FIG. 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAML. B. HOWD, OF ARCADIA, NEW YORK.

CHURN.

Specification of Letters Patent No. 4,887, dated December 12, 1846.

To all whom it may concern:

Be it known that I, SAMUEL B. HOWD, of the town of Arcadia, county of Wayne, and State of New York, have invented a new and Improved Churn; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification.

The nature of my invention consists in constructing a churn having a rotary dasher which draws the milk and cream in at its end and expels it at its periphery against stationary breakers fixed at the inner circumference of the tub in which it revolves. I take a tub of any convenient shape and size, say a common wash tub or water pail or if the quantity to be churned is large then a larger tub made for the purpose in the usual way of making hooped tubs, and at the inner circumference thereof I fix any convenient number of stationary breakers *a a a a* Figure 4 of any convenient shape. These breakers rest on the bottom of the tub and may extend upward to the cover and may be fastened to the side of the tub by screws driven from the outside or they may be steadied and kept in place by attachment to a hoop or hoops and thus be removed for convenience in cleaning. Within the tub above described is placed the dasher thus made.

To a vertical shaft A Fig. 2 at a point just below the cover of the tub is attached a disk at right angles to the axis of the shaft as at B Fig. 2 of such diameter as will revolve within a fourth or half of an inch of the breakers. To the under side of this disk are fastened at one of their ends four or more curved or straight paddles or wings, *b b b* Fig. 2, the outer edges of which extend to the periphery of the disk and the inner edges to a point half way between the periphery and center of the disk. The other end of these paddles is fastened to a rim E Fig. 2, the diameter of which is equal to that of the disk and the width of which is equal to half its semidiameter thus leaving an orifice in it around the shaft through which the milk and cream is drawn equal in extent across to the semidiameter of the disk. The relative length of the part of the shaft below the disk and of the paddles is such as to allow the rim to revolve two or more inches from the bottom of the tub so as to afford space for the milk and cream to pass freely under the rim to the orifice in it. The outer and inner edges of these paddles are located in planes coinciding with tangents to the circle bounding the orifice in the rim, *vide* Fig. 2. The foot of the dasher shaft is stepped in the center of the tub on a common step, *d* Figs. 3 and 4 and passes upward through the center of the cover that closes the tub at the top, F Fig. 1.

For the purpose of turning the dasher a crank is attached to the dasher shaft at the upper end above the cover, *f* Fig. 1. And if greater velocity is required than can be given by the crank attached directly to the shaft as is most frequently the case, a common spur wheel and pinion may be applied, the pinion being attached to the shaft of the dasher and the spur wheel to a horizontal shaft to which the power is communicated by crank or otherwise. When operated the dasher should be turned in the direction in which the inner edges of the paddles point. This will draw the milk and cream up through the orifice in the rim and throw it from between the paddles off tangentially on every side against the breakers, as by reference to drawings will more fully appear.

Fig. 1 in the accompanying drawings is a perspective view of the whole churn when put together.

F is the upper end of the dasher shaft, *f* is the crank by which the dasher is turned.

Fig. 2 is a perspective view of the dasher when out of the tub and laid in a horizontal position.

A is the shaft.

B is the disk to which the upper ends of the paddles are attached. E is the rim to which the lower ends of the paddles are fastened and in which is the orifice through which the milk and cream is drawn.

b b b are the paddles.

Fig. 3 is a view of the bottom of the tub, the step and a cross section of the breakers; *g g g* cross sections of the breakers.

Fig. 4 is a perspective view of a part of

the tub with the dasher out, and cover off. *a a a* are breakers. *d* is the step that supports the dasher.

What I claim as my invention and desire to secure by Letters Patent is—

The construction of a churn having a rotary dasher which when in motion draws the milk and cream in at its end and expels it at its periphery against stationary breakers fixed at the inner circumference of the tub in which it revolves in the form and manner and for the purpose of the foregoing specification set forth.

SAMUEL B. HOWD.

Witnesses:
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