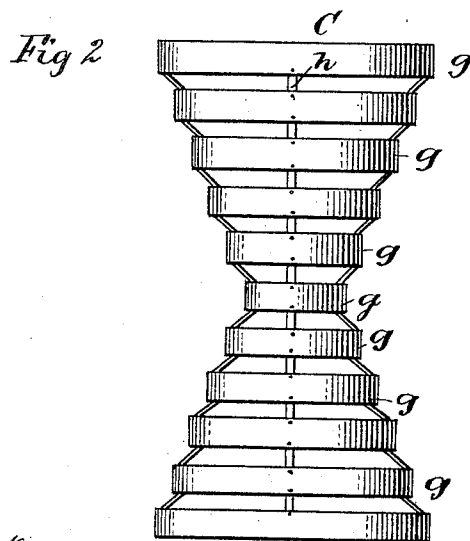
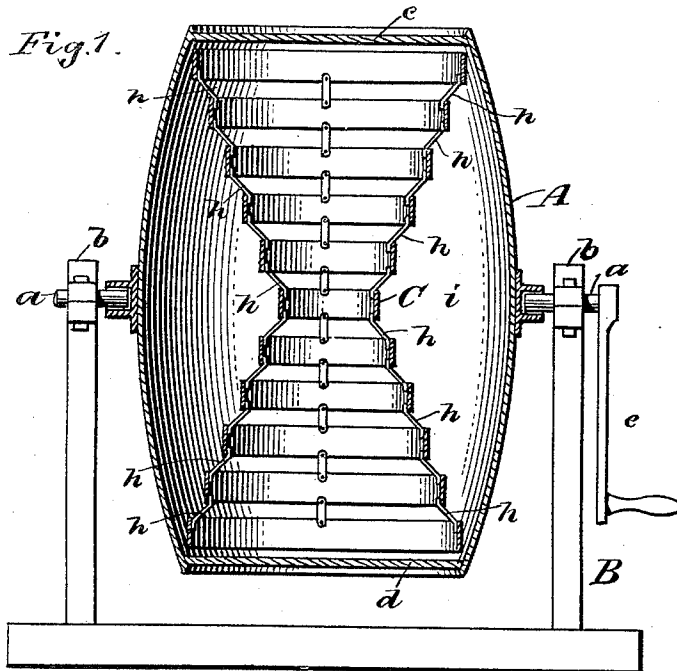


(No Model.)

J. T. MARK.
CHURN.

No. 462,568.

Patented Nov. 3, 1891.



WITNESSES:

J. F. Clark.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN T. MARK, OF STRAWN, ASSIGNOR OF ONE-HALF TO FRANK BUCHER,
OF HARTFORD, KANSAS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 462,568, dated November 3, 1891.

Application filed March 21, 1891. Serial No. 386,163. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. MARK, of Strawn, in the county of Coffey and State of Kansas, have invented a new and useful Churn, of which the following is a full, clear, and exact description.

This invention relates to an improvement in barrel-churns, and particularly to that class wherein the churn-body is rotated upon trunnions, the object being to provide a device of the type indicated, which will be of simple construction and efficient in action, and will afford means for the quick removal and replacement of the interior parts for cleansing and other purposes.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described, and specifically pointed out in the claims.

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

Figure 1 is a sectional side elevation of the device complete, and Fig. 2 is a view of the cream-agitator removed from the churn-barrel.

The body A of the churn is preferably made in barrel form, but is not restricted to such a shape, as it may also be given the form of a rectangular box and work efficiently. The churn-body A is mounted upon a supporting-frame B free to rotate on its transverse axis by the engagement of the oppositely-projecting trunnions *a* with boxes *b* on the tops of the frame-standards, said trunnions having a secure attachment upon the churn-body near its longitudinal center. There is a removable head *c* provided for the churn-body A, which is secured in place so as to form a liquid-tight joint therewith, any suitable securing device being utilized which may be preferred. The end wall *d* of the churn-body opposite the removable head *c* is made integral with said body.

Upon one of the trunnions *a* a crank-handle *e* is affixed at its outer end, affording means to rotate the churn-body A in the direction of its longitudinal axis, and thus dash the contents of the same from one end toward the other end of the cream-chamber or churn-body.

The parts described are not of a novel form, the invention consisting in the construction of the cream-agitator. The cream-agitator C is composed of a series of thin rings *g*, which are of a suitable breadth and are successively diminished in diameter from each end ring to the center ring. Preferably the rings *g* are secured one to the other concentrically by bracket-plates *h*, which are attached by their end portions, so as to retain the rings separated a short distance from each other, leaving a gap between each pair of connected rings to permit air and liquid to pass freely through the dasher, striking on the edges of the rings when the churn is operated. As will be seen in Fig. 1, the concentric arrangement of the dasher-rings *g* and their regular decrease in diameter from the end rings to the junctional center ring affords a skeleton structure having an intercellular space, which has a series of annular channels of communication with regard to the space *i* that surrounds the agitator. The dimensions of the agitator C should be such as compared to the length and diameter of the churn-body A at its ends that the end rings of the agitator will loosely fit against the interior surface of the churn-body, so as to avoid objectionable rattle laterally or longitudinally when the device is in use and at the same time allow the agitator to be slid endwise through the opening when the head *c* is displaced for such a purpose.

In operation the cream in proper quantity is introduced within the churn-body A and the head *c* secured in place by any preferred means. A rotation of the device in either direction will cause the mass of liquid to dash against the free ends of the rings *g* and be broken up into sheets which pass through the spaces between the rings and impinge upon the edges of the opposite set of rings, thus carrying the contained cream through the confined air in the churn, quickly breaking up the butter globules and releasing the butter. After the butter is granulated, which is speedily effected with but little labor, it can be gathered into a mass by alternate oscillations of the churn slowly in opposite directions. When the churning is completed, the head *c* should be removed and the agitator withdrawn, when the butter and buttermilk can be

readily removed from the churn-body. By the return of the agitator C within the churn-body the introduction of hot water and subsequent attachment of the head *c* the churn-body and agitator can be completely cleansed in a short time if the device is rotated on the frame B.

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

1. A tubular barrel-churn dasher open at both ends and comprising a series of spaced

concentric connected band-like rings *g* of varying diameter, said rings being one above the other edgewise, substantially as set forth.

2. A hollow churn-dasher formed of a series of spaced concentrically-connected rings and increasing in diameter from its center to its ends, substantially as set forth.

JOHN T. MARK.

Witnesses:

JNO. W. STRATTON,
W. J. BROGAN.