

M. J. STETSON.
 ROTARY CHURN DASHER.
 APPLICATION FILED OCT. 3, 1901.

NO MODEL.

FIG. 1.

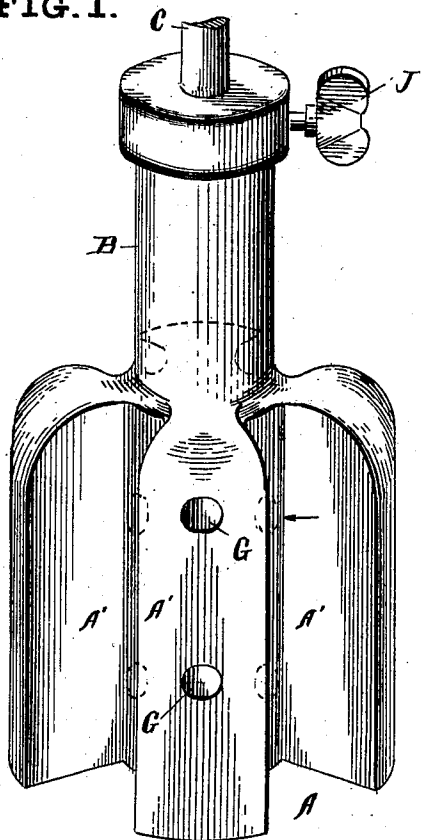


FIG. 2.

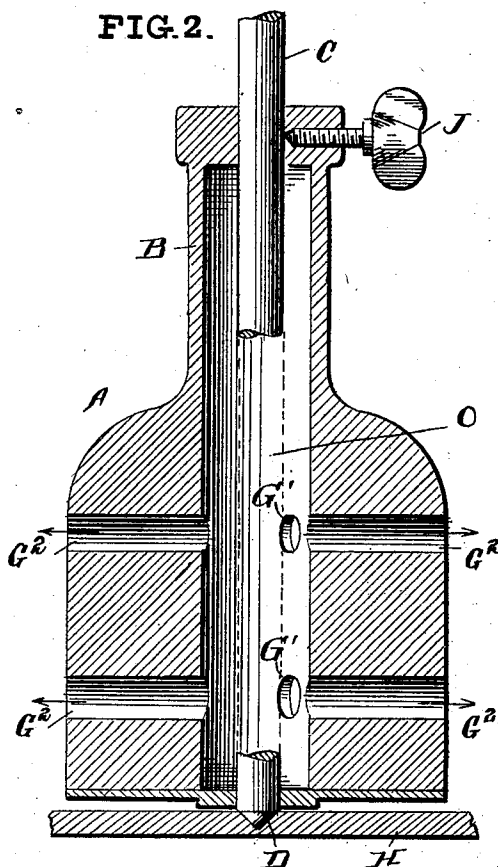


FIG. 3.

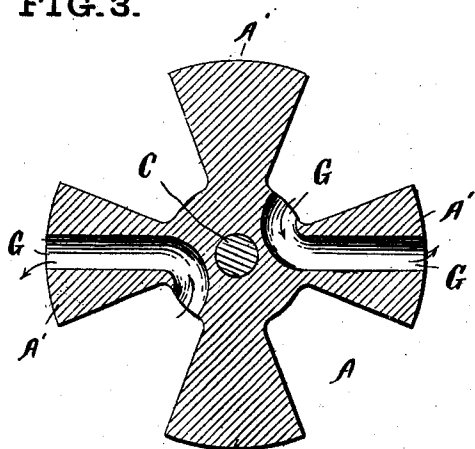
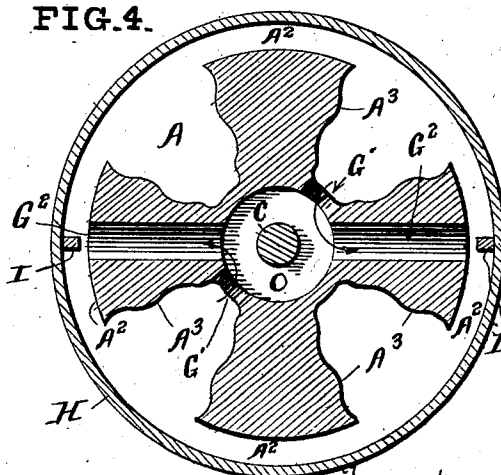


FIG. 4.



Witnesses A'
 Chas. K. Naville.
 M. E. Brown

Inventor
 M. J. Stetson
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UNITED STATES PATENT OFFICE.

MYRON J. STETSON, OF NEW YORK, N. Y.

ROTARY CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 718,227, dated January 13, 1903.

Application filed October 3, 1901. Serial No. 77,381. (No model.)

To all whom it may concern:

Be it known that I, MYRON J. STETSON, a citizen of the United States, residing at 148 East Thirty-fourth street, in the city, county, and State of New York, have invented new and useful Improvements in Rotary Churn-Dashers, of which the following is a specification.

This invention relates to rotary churn-dashers of the kind known as "single rotary churn-dashers."

The object of the invention is to secure an effective circulation of the cream or milk while the dasher is in rotation.

Figure 1 is a perspective view of a churn-dasher involving the general principles of my invention. Fig. 2 is a vertical central section of a modified form of churn-dasher, showing a broken section of the churn-bottom. Fig. 3 is a horizontal section of the dasher of Fig. 1 on the plane of the openings through the wings of the dasher. Fig. 4 is a horizontal section of the dasher of Fig. 2 on the plane of the openings through the wings of the dasher, showing also a section of the surrounding churn-cylinder.

Let A indicate the body of the churn-dasher, which is composed of any suitable material, preferably aluminium. The body is in cross-section substantially in the form of a Maltese cross. The central portion B is extended upward as a spindle of a generally cylindrical form. An axial perforation extends through the entire length of the body and spindle.

A shaft C extends through the central perforation of the dasher, which is secured to this shaft in any convenient way, as by a set-screw J, (shown in Fig. 2;) but other well-known means for holding the dasher to its shaft may be employed.

The shaft C projects at the bottom of the dasher, where a point D serves as a pintle to enter a suitable bearing in the churn-bottom. The shaft C is caused to rotate by any well-known means, and when rotated will cause the dasher to rotate with it.

The arms or vanes A' of the cruciform dasher-body project nearly to the inner surface of the surrounding churn-body H, as will be seen in Fig. 4, and form beaters to act on the cream. Ribs I, projecting inwardly from the churn-body, may also be supplied to pre-

vent the cream from moving around in a swirl or vortex in the interior of the churn.

So far as has been described the churn and dasher construction are believed to be old.

In the wings or vanes A', or at least two of them, there are horizontal passages extending from near the axis to near the periphery of these arms or vanes. Thus in Figs. 1 and 3 these passages G have their entrance-openings between the arms or vanes of the cruciform portion of the dasher, and after extending inwardly a short distance the passages curve outwardly within the dasher and have their exit at the periphery of arms A'.

The arrows, Fig. 1, show the approximate direction of bodies of liquid which pass through these openings when the dasher is in motion.

The rotation of the dasher in either direction at a moderate speed when immersed in liquid in a churn will draw liquid through the passages G in the dasher, probably by centrifugal action, and this flow of the cream or milk when such is churned tends, as I believe, to aerate the milk and to much hasten the process of churning by throwing continuous streams of milk or cream outwardly against the churn-body.

In the construction shown in Figs. 1 and 3 the proximate faces of the arms or vanes A' are substantially plane faces.

In the modification shown in Figs. 2 and 4 the arms or vanes A² have vertical flutes or corrugations A³ in the spaces between these arms or vanes. These flutes serve to break up and separate the cream. The dasher has also a central chamber O, surrounding the vertical shaft C. The passages G' enter the body of the dasher between the vanes and extend to this inner chamber O, where said passages terminate and form the inlet-passages. Passages G² lead outward from the inner chamber O and form exit-openings at the periphery of the arms or vanes.

As it is necessary that all parts of a churn be kept clean, the shaft C may be detached by loosening the set-screw J, and access is then had to chamber O by means of the openings at the ends of the said chamber.

For convenience of construction the lower end of the dasher and chamber O may be covered by a separate plate when desirable, the

same being secured to the dasher in any suitable manner, although it is desirable that, as far as may be, the dasher be in a single piece to avoid the accumulation of stale or rancid cream in crevices therein.

What I claim is—

1. A churn-dasher having its body formed of a single piece of material, the main part of said body being cruciform in cross-section, with vertical wings or vanes, certain of said vanes having horizontal passages extending from near the center of the body to the periphery of said vanes, other vanes being imperforate, the passages having inlet-openings between the arms.

2. A churn-dasher having a central vertical shaft, and a body attached to said shaft, said body being cruciform in cross-section, and having passages extending from the spaces between said arms toward the central shaft, and communicating passages extending thence outward to the periphery of said arms.

3. A churn-dasher having a body composed

of a single piece of material, cruciform in cross-section, having vertical arms with corrugated or fluted proximate surfaces, certain of said arms having horizontal passages extending from the space between the arms and terminating at the periphery thereof, other arms being imperforate.

4. A churn-dasher having a body cruciform in cross-section with a central chamber, a vertical shaft passing through said chamber, a passage opening from between the arms into said chamber and a communicating passage extending thence radially to the periphery of an arm, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 3d day of September, 1901.

MYRON J. STETSON.

Witnesses:

NATHAN BURKAN,
KATHRYN BROSNAN.