(No Model.)

W. DULIN.

CHURN DASHER.

No. 588,408. Patented Aug. 17, 1897.

Fig. 1.

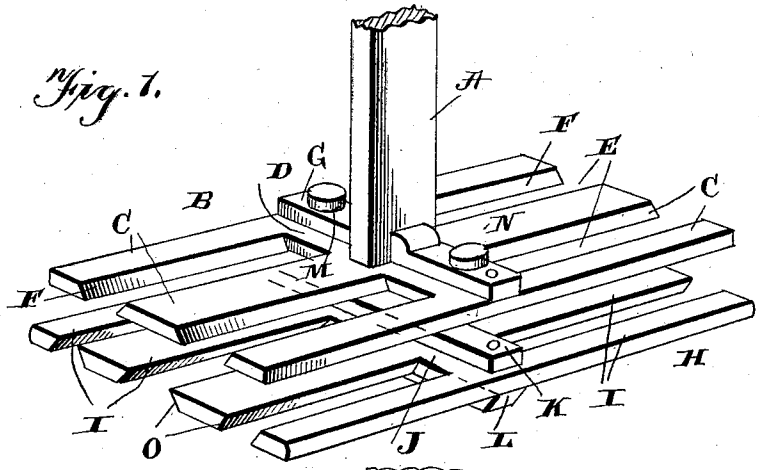


Fig. 2.

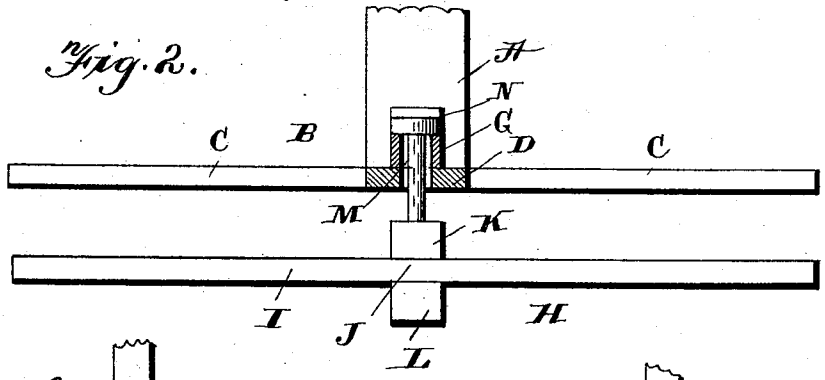


Fig. 3.

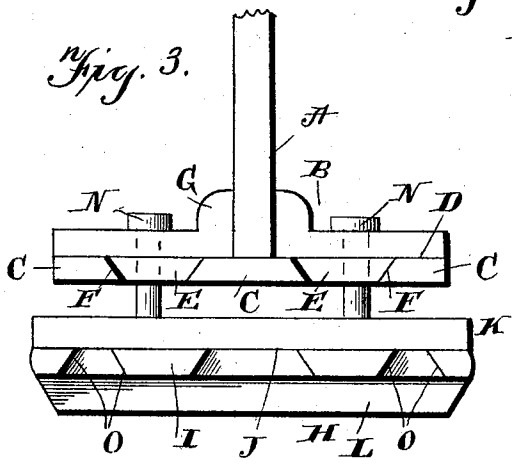
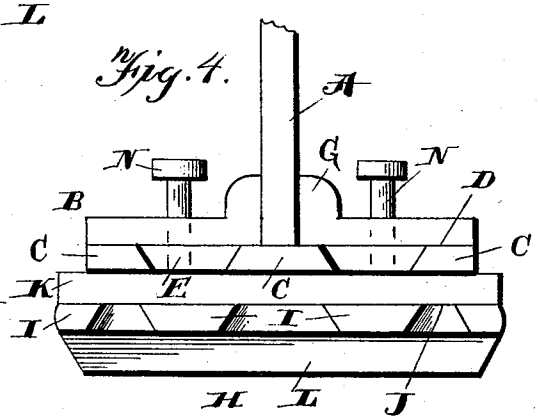


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 588,408, dated August 17, 1897.

Application filed March 23, 1897. Serial No. 628,897. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DULIN, of Chanute, in the county of Neosho and State of Kansas, have invented certain new and useful Improvements in Churn-Dashers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to churn-dashers, and the object is to provide a simple dasher of improved form for effectually separating butter from cream.

The invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter fully described and claimed, and illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view of the dasher. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is an end view of the dasher, showing the position of the parts during the upward stroke. Fig. 4 is a similar view showing the position of the parts during the downstroke.

A designates the staff, which is centrally secured to the double comb-shaped part B, the latter having three teeth or projections C, extending from opposite sides of the central web portion D, the projections being separated by slots or cuts E. The edges of the teeth bounding these slots or cuts are beveled from their top surfaces downward, as indicated at F. Web D is reinforced by transverse strip G.

The lower comb-shaped part H has four teeth I on each side of its central web J, the latter being reinforced on top by strip K and on its bottom by strip L. Web D and strip G of the upper comb are formed with vertical openings M to accommodate headed pins N, secured to strip K of the lower comb. Said openings are larger than the pins, and the distance between the pin-heads and strip K is greater than the combined thickness of web D and strip G, so that the lower comb part is not only afforded vertical play with relation to the upper comb, but the parts are free to wabble, as will be understood.

Teeth I of the lower part alternate with the slots E of the upper comb and are beveled from their under sides upward, as shown at O, or in opposite direction to form the teeth of the upper comb.

In operation during the upward stroke of the dasher the under part is in its lowermost position, as shown in Fig. 3, and the cream is afforded free and comparatively unobstructed passage downward through slots E of the top comb, while during the downward stroke the lower comb is raised as closely as possible to the upper comb, as seen in Fig. 4, with the effect that slots E are materially obstructed by teeth I, causing the cream to strike with considerable force against the under side of projections C. As the downstroke of a reciprocating dasher is more effectual than the upstroke, the automatic adjustment of the parts, as herein described, places the dasher in its most effectual adjustment while moving downward. It also renders the churning operation comparatively easy, as the parts are separated as much as possible during the upstroke and little retard the cream as it passes freely through the comb-like parts. The beveled edges of the teeth also materially assist in rendering both the up and down strokes easy, as considerable friction which would otherwise occur is avoided.

Actual tests have demonstrated the effectiveness of the dasher. The action thereof, while being sufficient to effectually separate the butter, is not so violent as to injure the same, a fault attributal to many churn-dashers now used. The dasher is of simple construction and may be manufactured at small cost and is adapted to work in any form of churn-body or other vessel where a reciprocating dasher may be used.

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

1. In a churn-dasher, the combination of a staff, an upper breaking device, and a lower breaking device, the upper breaker fixed to the staff, the lower breaker loosely secured centrally between its ends to, and adapted to move vertically with respect to the upper breaker, the loose central mounting of the lower breaker permitting it to oscillate as well as to move vertically with respect to the

upper breaker, substantially as shown and described.

2. In a churn-dasher, the combination of the staff, the upper double-ended comb-shaped breaker secured centrally to the staff and formed with vertical apertures in a line with the staff extending transverse the breaker, the lower double-ended comb-shaped breaker, and headed pins smaller in diameter than the diameter of the upper-breaker apertures and extended therethrough and uniting with the lower breaker in a line extending transverse and centrally across the same, whereby the lower breaker is movable vertically with relation to the upper breaker and also adapted to oscillate with respect thereto, substantially as shown and described.

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

WILLIAM DULIN.

Witnesses:
A. N. ALLEN,
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