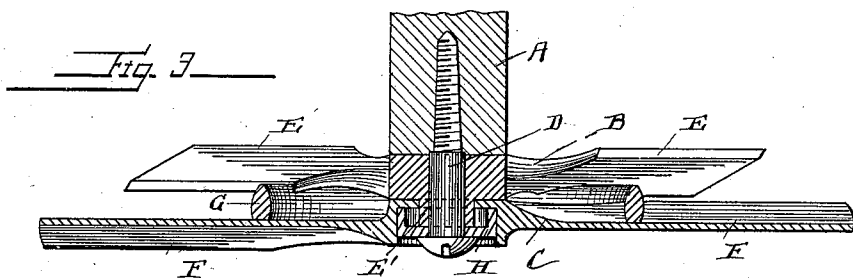
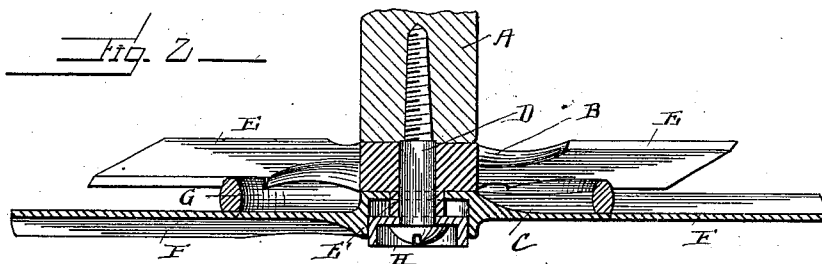
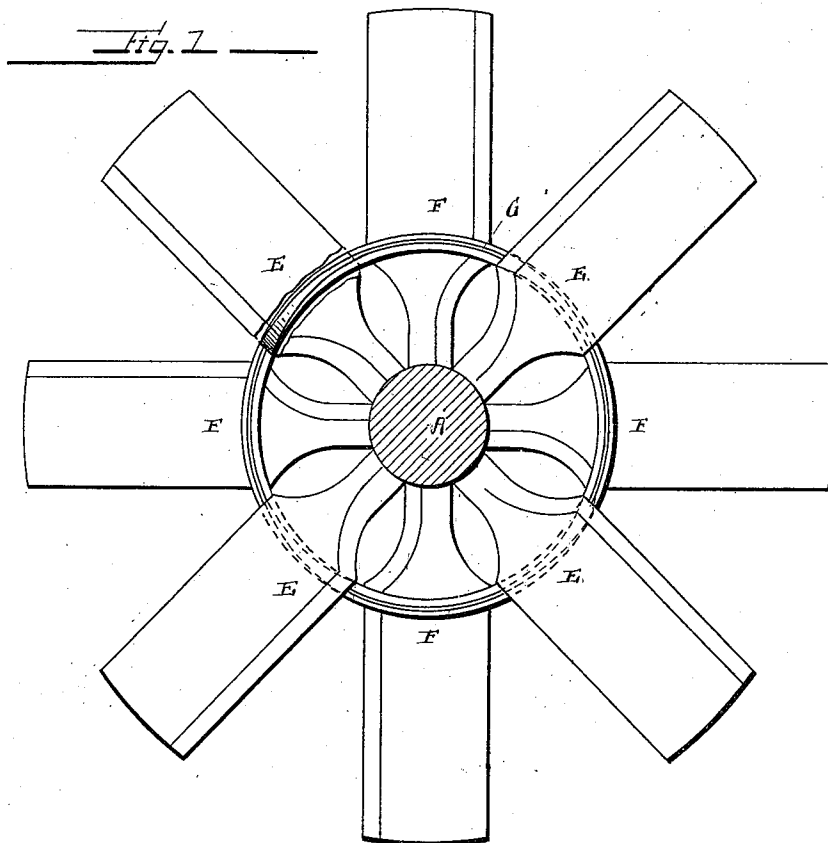


(No Model.)

J. E. GIBBS.
CHURN DASHER.

No. 507,612.

Patented Oct. 31, 1893.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES EDWIN GIBBS, OF CHATTANOOGA, TENNESSEE, ASSIGNOR OF ONE-HALF TO JOHN W. VETTER, OF SAME PLACE.

CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 507,612, dated October 31, 1893.

Application filed August 31, 1893. Serial No. 484,468. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWIN GIBBS, a citizen of the United States, and a resident of Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Churn-Dashers; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a bottom plan view of the invention. Fig. 2 is a vertical section of same and Fig. 3 is a similar view with the cup shaped washer reversed.

This invention has relation to certain new and useful improvements in churn dashers, and has for its object the provision of an article of this character of improved construction and increased utility, all as will hereinafter appear; and the invention consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claims.

Referring to the accompanying drawings illustrating the invention, the letter A designates the dasher shaft or post which carries my improved dasher. Said dasher consists of two sections—an upper section B, and a lower section C. The upper section B consists of a central hub working against the lower end of the dasher, and journaled upon a bearing screw D, and carrying a series of radial horizontal blades E, and a vertical, hollow spindle or sleeve E'. The lower section C consists of a central hub journaled upon the hollow spindle or sleeve E', and from which radiate a second series of blades F, which are also rigidly attached to a ring G of comparatively large diameter and concentric with the hub. The upper face of said ring is constructed to form a ratchet clutch, as shown, the teeth of said clutch being designed to engage with and lock the blades of the upper series in the manner more fully hereinafter described. The lower face of the hub of the lower section C is cup-shaped, and forms a seat for a cup-shaped, reversible washer H.

The hollow spindle or sleeve E' is of suffi-

cient length to allow the section C a limited vertical movement thereon when the washer H is in the position shown in Fig. 2 with its cup-shaped face downward. When, however, the washer is reversed, as shown in Fig. 3 so that its cup-shaped face receives the projecting end of the spindle or sleeve E', and the screw D is tightened, the two sections will be rigidly held to each other.

The operation is as follows:—The two series of blades are inclined at the same angle to the longitudinal plane of each, but in opposite directions from a vertical plane thereof. Upon the down-stroke of the dasher, as soon as it comes in contact with the cream, the lower section C is buoyed up thereby so that the blades of the upper section are locked against the clutch teeth of the ring G. The two series of blades being oppositely inclined and of equal number and surface area it is apparent that the action of the cream on one series is equal to that upon the other, but in opposite directions, and that the sections being locked together by the clutch ring, the rotary force exerted on one series will be counterbalanced by that on the other, so that upon the down-stroke, neither section will rotate. Upon the up-stroke however, the lower section falls out of engagement with the upper, and both sections rotate in opposite directions.

My object in making the ratchet ring G of such large diameter is as follows:—Inasmuch as it is attached to the blades of the lower series at points well out from the hub or center, it greatly stiffens and strengthens them, so that the hub may be made much lighter than would otherwise be required, leaving openings near the center of the dasher which greatly lessen the force required for the down-stroke, and also causing more agitation of the cream while churning. The large diameter of the ring also serves to relieve the shock when the blades lock in the ratchet on the down-stroke. The ratchet teeth on said ring are so located as to stop the blades of the one section midway between those of the other, as seen in Fig. 1.

In collecting or gathering the butter it is desirable that the blades be fixed against rotation in the up as well as the down-strokes, and this may be accomplished by reversing

the washer H in the manner before described, and as shown in Fig. 3, and tightening the bearing screw, thus clamping the two sections together during both strokes.

5 I prefer to cast the dasher from aluminum, on account of the lightness and non-corrosive properties of this substance, sufficient alloy with other metal being used to give it the necessary strength. I do not limit myself how-
10 ever, to the use of any special material.

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

1. In a churn-dasher, the combination of
15 the two sections carrying each a radial series of blades oppositely inclined to the vertical plane thereof, of a clutch-ring of comparatively large diameter arranged concentric with the hub of, and attached to the blades of one
20 of said series, the teeth of said ring being arranged to engage directly with the blades of the other series, substantially as specified.

2. In a churn-dasher, the combination with
25 an upper section having a hollow spindle or sleeve, a lower section journaled on said hollow spindle or sleeve, the bearing screw, and

the cup-shaped reversible washer carried by said screw and engaging the lower face of the said lower section, substantially as specified.

3. The herein described improved churn- 30
dasher, comprising the dasher stick or shaft, the upper section working against the lower end of said stick or shaft and carrying a series of blades, and having a hollow sleeve or
35 spindle, a lower section journaled on said sleeve or spindle, said lower section having a hub formed with a cup-shaped cavity, the clutch ring arranged concentrically with said hub, the bearing screw, and the cup-shaped
40 reversible washer, said sections carrying each a series of similar blades, but inclined in opposite directions to a vertical plane thereof, said clutch ring being attached to the blades
45 of the said lower section and having its teeth adapted to engage with the blades of the upper section substantially as specified.

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

JAMES EDWIN GIBBS.

Witnesses:

P. S. GRIFFITH,
C. L. PEACOCK.