

E. A. FRANKLIN.
CHURN DASHER.
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955,394.

Patented Apr. 19, 1910.

Fig. 1.

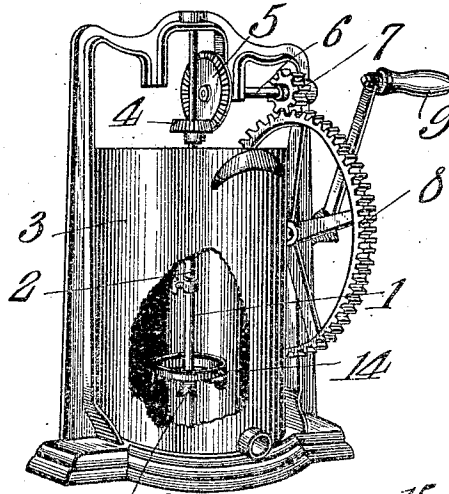


Fig. 2.

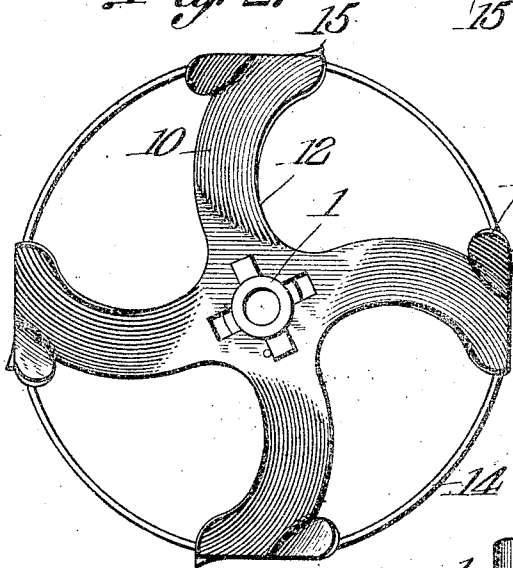


Fig. 4.

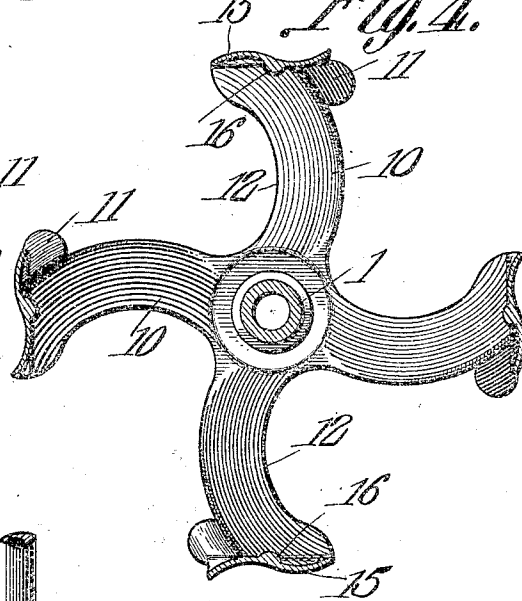
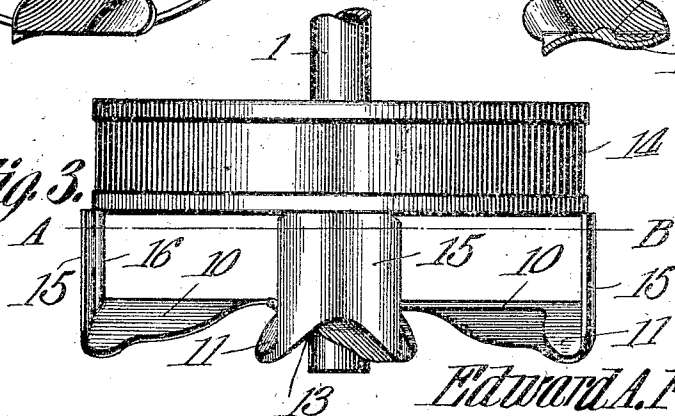


Fig. 3.



Witnesses

E. A. Franklin
Robert D. Lawson

Inventor

Edward A. Franklin
C. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

EDWARD A. FRANKLIN, OF NORTH CHICAGO, ILLINOIS.

CHURN-DASHER.

955,394.

Specification of Letters Patent.

Patented Apr. 19, 1910.

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To all whom it may concern:

Be it known that I, EDWARD A. FRANKLIN, a citizen of the United States, residing at North Chicago, in the county of Lake and State of Illinois, have invented a new and useful Churn-Dasher, of which the following is a specification.

This invention relates to rotary churn dashers of that type disclosed, for example, in Patent No. 835,672, issued to me on November 13, 1906.

One of the objects of the present invention is to provide a dasher of this character having a novel arrangement of arms whereby the cream can be directed along intersecting paths both in upward and downward directions and inwardly and outwardly with relation to the periphery of the dasher.

Another object is to provide a device of this character which is of simple construction and which will operate to quickly form butter.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings, Figure 1 is a perspective view of a complete churn having the present improvements embodied therein, a portion of the churn body being broken away to show the dasher. Fig. 2 is a bottom plan view of the dasher. Fig. 3 is a side elevation thereof. Fig. 4 is a section on line A—B Fig. 3.

Referring to the figures by characters of reference 1 designates a tubular hub or sleeve designed to receive a shaft 2 which is mounted for rotation within the churn body 3, said shaft receiving motion through gears 4 and 5 from a shaft 6 which in turn is actuated by gears 7 and 8, this last mentioned gear 8 being mounted on a shaft which may be operated by means of a crank 9 or the like.

The sleeve or hub 1 has curved arms 10 extending therefrom at regular intervals, the advancing edge of each arm being convexed from its inner to its outer end, there being a downwardly and forwardly inclined lip 11 at the outer end of this convexed edge, the said lip operating to deflect upwardly any liquid in the path thereof. The rear

edge of each arm is concaved from end to end as shown at 12, and, as clearly indicated in Fig. 5 each arm has its upper and lower faces inclined downwardly and rearwardly toward the concave edge 12 thereof so that, during the forward movement of the arm, the lower face thereof will operate as a deflecting means for directing downwardly any liquid in the path thereof. Inasmuch as the lip 11 is inclined downwardly and forwardly it will be seen that, at the outer end of each of the arms 10, a V-shaped inverted channel 13 is thus produced, and through which is free to pass that portion of the liquid deflected by the outer end portion of the arm 10.

A ring or hoop 14 is arranged above the ends of the arms 10 and is concentric with the sleeve or hub 1, this hoop being connected to each of the arms 10 by means of an agitating blade 15 which is ogee-curved in transverse section so that one edge portion of the blade serves to deflect inwardly any liquid in the path thereof while the opposed edge portion of said blade serves to direct outwardly any liquid in its path. The adjoining blades however are oppositely disposed as clearly indicated in Fig. 4. An agitating rib 16 is formed upon the middle portion of the inner face of each blade 15, the said rib being perpendicular to the plane of movement of the dasher.

In operating the dasher the same is turned from left to right by means of the gearing shown and described. The advancing convex edges of the blades will divide the cream so that that portion thereof in the path of the lower inclined face of the blade will be deflected downwardly and a portion thereof passed radially through the inverted V-shaped channel 13. A portion of the cream will be engaged by the deflecting lip 11 of the arm and forced in a direction opposite to that portion of the cream deflected by the arm. Moreover the agitating blades will alternately direct the cream inwardly and outwardly during this upward and downward deflection thereof and the rib 16 will further agitate the cream and break up the fatty globules. It will be apparent therefore that as the churn dasher rapidly rotates the cream will be quickly converted into butter.

It is to be understood of course that various changes may be made in the construction

and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention.

What is claimed is:—

- 5 1. A rotary churn dasher including a hub, curved arms extending therefrom, and a curved blade upstanding from the outer end of each of said arms, the adjoining blades being shaped to deflect cream in opposite directions respectively.
- 10 2. A rotary churn dasher including a hub, arms extending therefrom, upstanding blades upon the outer ends of the arms, each of said blades being curved from its front to its rear edge and adjoining blades being adapted to deflect liquid in opposite directions respectively.
- 15 3. A rotary churn dasher including integral arms, upstanding blades upon the outer ends of the arms, and curved from their front to their rear edges, adjoining blades being shaped to deflect liquid inwardly and outwardly respectively, and an agitating projection upon the inner face of each blade.
- 20 4. A rotary churn dasher including integral arms, upstanding blades upon the outer ends of the arms, each blade being curved from its front to its rear edge, the blades on adjoining arms being oppositely disposed to direct liquid outwardly and inwardly respectively, and an agitating rib upon the inner face of each blade and extending from the top to the bottom thereof.
- 25 5. A rotary churn dasher including integral arms, each of said arms being transversely inclined, a forwardly and downwardly inclined lip upon the outer end portion

tion of the advancing edge of each arm, said lip and the adjoining portion of the arm forming an inverted channel beneath the 40 arm.

6. A rotary churn dasher including integral arms, each of said arms being inclined upwardly and forwardly and having a convex advancing edge, and a downwardly 45 and forwardly extending lip upon the outer end portion of the advancing edge.

7. A rotary churn dasher including arms each arm being inclined upwardly and forwardly and having a convex advancing 50 edge, a downwardly and forwardly inclined lip upon the outer end portion of each advancing edge, and an upstanding blade upon the outer end of each arm, said blade constituting means for deflecting liquid radially, 55 the blades upon adjoining arms being oppositely disposed to direct the liquid in opposite directions respectively.

8. A rotary churn dasher including a hub, arms extending therefrom, each arm being 60 inclined upwardly and forwardly and having a convex advancing edge, curved blades upstanding from the outer ends of the arms, the blades on adjoining arms being adapted to deflect liquid in opposite directions 65 respectively, and a hoop upon the upper ends of the blades and concentric with the hub.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD A. FRANKLIN.

Witnesses:

ROBT. J. HAMMOND,
KATY JEAGER.