

J. R. GILDA.  
CHURN.

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993,675.

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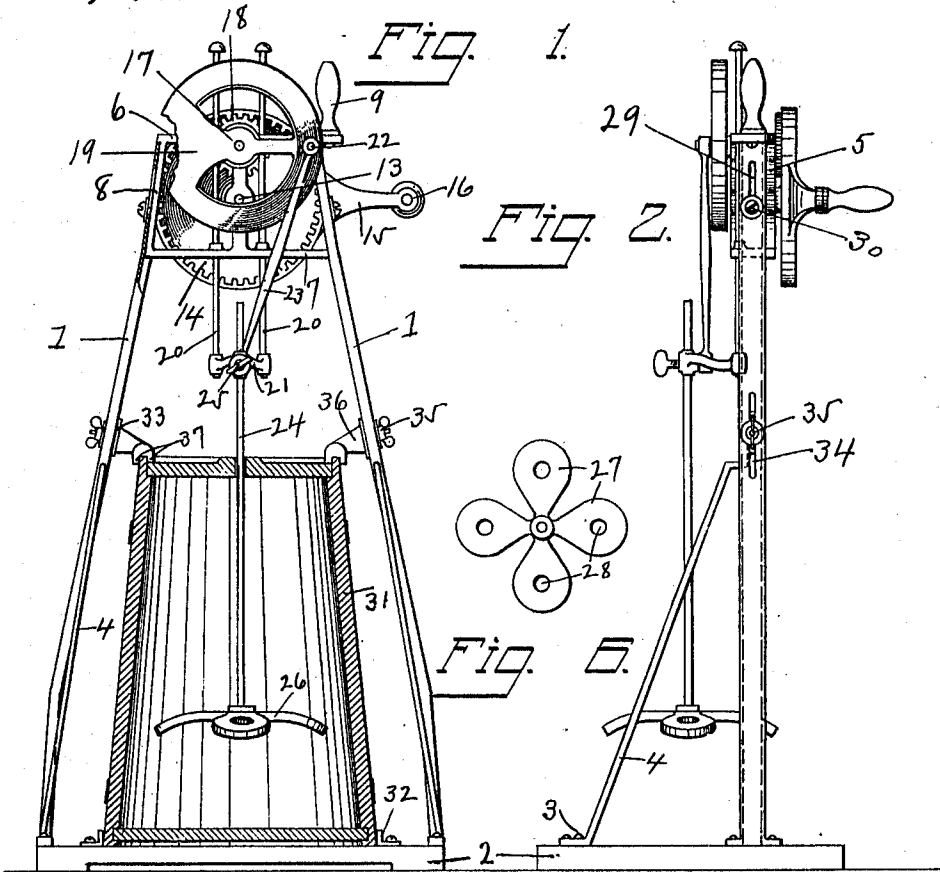


Fig. 3.

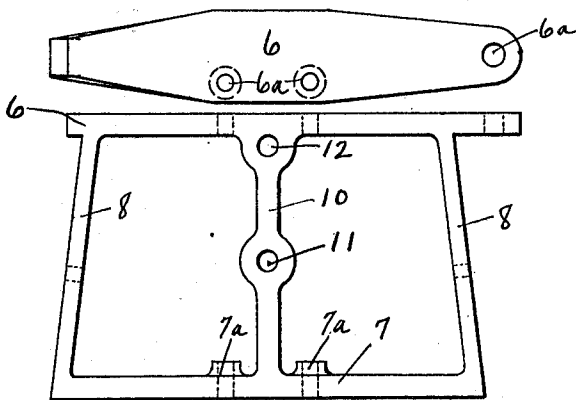
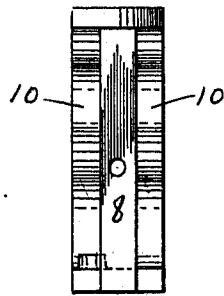


Fig. 4.



WITNESSES:  
C. H. Pillsbury  
Volira Mit.

Fig. 4.

INVENTOR:  
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his attys.

# UNITED STATES PATENT OFFICE.

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## CHURN.

993,675.

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To all whom it may concern:

Be it known that I, JOHN R. GILDA, a citizen of the United States, and a resident of St. Louis, in the State of Missouri, have invented a certain new and useful Churn; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to gear driven churns of the vertical dasher type, and has for its object the provision of a churn of simple, efficient and durable construction, and which is readily adjustable to accommodate crocks or receptacles of different sizes.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification and a preferred embodiment thereof illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of a churn embodying my invention, with the fly wheel partly broken away and the crock in cross-section. Fig. 2 is an end elevation of the same. Figs. 3, 4 and 5 show details of the frame head in which the operating mechanism is mounted, Fig. 3 showing a side view, Fig. 4 a top view, and Fig. 5 an end view of said frame head. Fig. 6 shows a detail view of the dasher.

Referring to the drawings, the supporting standards 1 extend upwardly and inwardly from opposite sides of the base-piece 2, to which they are secured by bolts or screws 3. The base-piece may be either of wood or sheet metal. Braces 4 extend from the base-piece to the supporting standards midway their ends. The upper ends of the standards 1 are provided with longitudinal grooves on their inner faces to accommodate the frame-head 5, and for convenience and cheapness of manufacture, I prefer to make and have shown the standards as made of U-shaped angle-iron throughout their length.

The frame-head 5 is provided with top and bottom cross pieces 6 and 7 and the side pieces 8, the latter being of such width as to slide freely within the grooves in the upper ends of the standards 1. The ends of the top piece 6 project over the upper ends of the standards 1, forming a finish for the

top of the frame and preventing the top piece 6 from dropping below the upper ends of the standards. One end of the top piece 6 projects a sufficient distance beyond the standard to afford a bearing for the handle 9, which is riveted or bolted to the top piece 6 through the aperture 6<sup>b</sup>, thus affording a convenient means for gripping and steadying the frame with one hand while the crank is being turned with the other.

The frame-head 5 is provided with the cross piece 10, having apertures 11 and 12 therethrough. In the aperture 11 is secured a spindle 13 upon which is mounted the internally toothed gear-wheel 14, provided with crank-arm 15 and handle 16, through which power is supplied to operate the churn. Journalled through the aperture 12 is a short shaft 17, carrying on one end the small gear-wheel 18, which meshes with the gear-wheel 14, and on the other end a fly-wheel 19, the gear-wheel 18 and fly-wheel 19 being keyed to the shaft so as to move in unison.

The top and bottom pieces 6 and 7 of the frame-head are provided with registering apertures 6<sup>a</sup> and 7<sup>a</sup> through which the parallel guide-rods 20 slide freely. These guide-rods are connected at their lower ends by a yoke 21, which yoke is in turn connected to the pin 22 near the periphery of the fly-wheel by the rod 23, so that the revolution of the fly-wheel causes a vertically reciprocating movement of the yoke.

The central portion of the yoke 21 is provided with a vertical aperture through which the upper end of the dasher-rod 24 passes, being held in place therein by the thumb-screw 25, the dasher-rod carries at its lower end the dasher 26, which is composed of four fan-shaped wings or fins 27, as shown in Fig. 6. These wings or fins are formed with one or more apertures 28 and have their sides curved downwardly, so as to prevent a concave surface on their lower sides and a convex surface on their upper sides, thus materially aiding in the churning operation. By this construction the cream and particles of butter are forced more readily through the openings in the dasher on the down stroke and the more readily slide from the top of the dasher on its up stroke.

In order to accommodate the frame to crocks or receptacles of different heights, I

make the frame-head adjustable in the standards 1 by means of slots 29 in the standards, the frame-head being secured in any desired position therein by means of the  
 5 set-screws 30. The crock or receptacle 31 may be of any desired shape within the limits of the size of the frame, and may be held in position therein by means of lugs 32  
 10 on the base piece, as shown, or in any other suitable manner, as by stamping a flange or rib in the base-piece when the same is made of sheet metal. To assist in holding the crock or receptacle in position, I provide brackets 33, adjustably secured to the stand-  
 15 ards by means of the slots 34 and set-screws 35 and having arms 36 extending over and gripping the upper edge of the crock or receptacle between the two lugs 37.

I wish it understood that my invention is  
 20 not limited to any specific construction or arrangement of the parts, except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new, and desire to secure by Let-  
 25 ters Patent, is,—

1. In a device of the class described, the combination of a frame comprising a base piece, and a pair of oppositely-disposed vertical standards mounted thereon and having  
 30 the upper ends of their inner faces formed with longitudinal grooves and their central portions formed with longitudinal slots; a quadrangular head adjustably mounted in said frame and consisting of side pieces slid-  
 35 ably fitted in said grooves and top and bottom cross-pieces connecting said side pieces; driving mechanism mounted in said head; and a pair of brackets adjustably mounted in said slots and provided with inwardly-  
 40 extending arms formed at their free ends with devices for engaging a receptacle disposed between said standards.

2. In a device of the class described, the combination of a frame comprising a base  
 45 piece, and a pair of oppositely-disposed vertical standards mounted thereon and having the upper ends of their inner faces

formed with longitudinal grooves, a quad-  
 rangular head adjustably mounted in said frame and consisting of side pieces slidably  
 50 fitted in said grooves and top and bottom cross-pieces connecting said side pieces, the top cross-piece having its ends projecting across the upper ends of said standards and adapted to rest thereon, to limit the move-  
 55 ment of said head in one direction; driving mechanism mounted in said head; and clamping means connected to said standards below said head for engaging a receptacle disposed between the standards. 60

3. In a device of the class described, the combination of a frame comprising a base piece, and a pair of oppositely-disposed vertical standards mounted thereon and having  
 65 the upper ends of their inner faces formed with longitudinal grooves; a quadrangular head adjustably mounted in said frame and consisting of side pieces slidably fitted in said grooves, top and bottom cross-pieces connecting the side pieces and formed with  
 70 alining apertures, and a vertical cross-piece connecting the first-named cross-pieces and formed with a pair of apertures located one above the other; a spindle journaled in the one of the apertures in the vertical cross-  
 75 piece; a gear secured to said spindle and provided with an operating handle; a shaft journaled in the other aperture in said vertical cross-piece; a fly-wheel and a gear secured to said shaft, said gear meshing with the first-named gear; a pair of vertical guide  
 80 rods slidable in the apertures in said top and bottom cross-pieces; a yoke connecting said guide rods adjacent the lower ends thereof; a pin secured to said fly-wheel; and  
 85 a rod connected at one end to said pin and at the other end to said yoke.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JOHN R. GILDA

Witnesses:

MAX WEIL,

J. N. CHAMBERLIN.