No. 661,793. Patented Nov. 13, 1900.

A. W. DOLPH.

CHURN.

(Application filed Apr. 23, 1900.)

(No Model.)

FIG. 1.

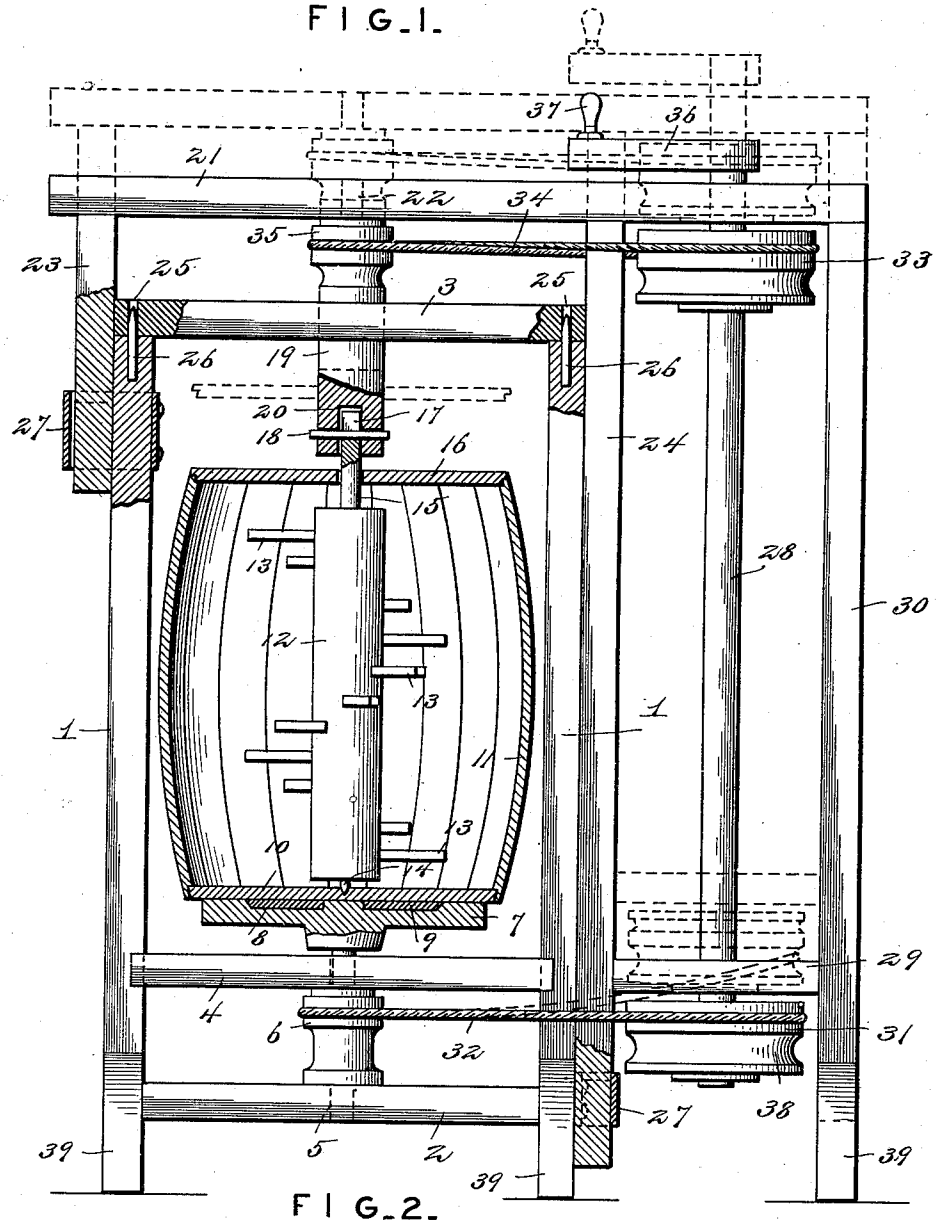
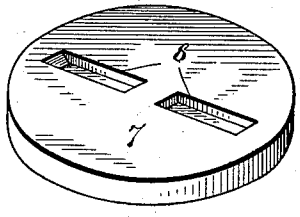


FIG. 2.



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ANDREW W. DOLPH, OF CHEROKEE, IOWA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 661,793, dated November 13, 1900.

Application filed April 23, 1900. Serial No. 14,069. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. DOLPH, a citizen of the United States, residing at Cherokee, in the county of Cherokee and State of Iowa, have invented a certain new and useful Churn, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to churns of the class known as "rotary," and the object in view is to provide a double-action churn in which the churn-body and dasher are simultaneously rotated in opposite directions for the purpose of more quickly churning the cream and in which a movable and sliding frame carrying the driving-gear is associated with a stationary frame in which the churn-body is mounted, whereby the gear-frame may be elevated and disconnected from the dasher-shaft, so as to enable the lid of the churn-body and the dasher to be removed. The churn-body itself is removably mounted upon a supporting-disk, with which it is interlocked and by which it is adapted to be revolved.

Other objects and advantages of the invention will appear more fully in the course of the ensuing description.

The invention consists in a double-action churn embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claim.

In the accompanying drawings, Figure 1 is a vertical sectional view of a churn constructed in accordance with the present invention. Fig. 2 is a detail perspective view of the supporting-disk upon which the churn-body is mounted.

Similar numerals of reference are employed to indicate corresponding parts in the two views.

The churn contemplated in this invention comprises a stationary frame which is composed of parallel standards 1, connected near their lower ends by a bottom cross-bar 2 and at their upper ends by an upper cross-bar 3. The standards 1 are further connected at an intermediate point below the churn-body by an additional cross-bar 4. Journaled in the cross-bars 2 and 4 is a vertical shaft 5, carrying a grooved pulley 6. The shaft 5 extends above the cross-bar 4 and has fixedly mounted thereon a churn-body-supporting disk 7, which is provided in its upper surface with a plurality of depressions or recesses 8 for the reception of correspondingly-shaped lugs or projections 9 on the bottom 10 of a revoluble churn-body 11. The churn-body 11 is loosely placed upon the supporting-disk 7 and is caused to rotate with the disk by means of the interlocking lugs 9 and recesses or depressions 8.

The churn is provided with a vertical dasher 12, embodying radiating and spirally-arranged beaters 13. At its lower end the dasher is provided with a pintle 14, which enters a central socket in the bottom 10 of the churn-body, and is provided at its upper end with a shaft or shank 15, which passes through a central opening in the removable churn-lid 16. The extremity of the shank 15 is bifurcated or slotted, as shown at 17, to receive a pin or key 18, which extends transversely of a rotatable head or chuck 19, said pin passing across an opening or socket 20 in the lower end of the head, which socket is adapted to receive the shaft 15, as clearly shown in Fig. 1. The rotatable head or chuck 19 is journaled in the upper cross-bar 3 and also in the top bar 21 of the movable frame which carries the operating-shaft. The head 19 is provided at its upper end with a reduced shank or spindle 22, which is journaled in the top bar 21, as shown in Fig. 1. Depending from and rigidly secured to the top bar 21 are parallel slide-bars 23 and 24, which are connected at a point below the bar 21 by the cross-bar 3, hereinabove described, said cross-bar being carried by the movable frame and being provided with openings 25 to receive dowel-pins 26, projecting from the upper ends of the parallel standards 1 of the stationary frame, so that when the movable frame is lowered into operative position the cross-bar 3 acts as a brace for the standards 1. Connected to the standards 1 are metal sockets 27 in the form of loops, which are adapted to receive the slide-bars 23 and 24 and guide and steady the sliding frame in its movement up or down. The slide-bar 24 is longer than slide-bar 23, and the socket 27, which receives the bar 24, is located near the base of the stationary frame, while that socket

which receives the slide-bar 23 is arranged near the top of the stationary frame. The operating-shaft 28 is journaled at its lower end in a cross-bar 29 and at its upper end in the top bar 22, and the outer ends of the bars 29 and 22 are connected by a standard 30, which, together with the standards 1, rests upon the ground, floor, or other support upon which the churn is placed. Mounted fast upon the lower end of the operating-shaft 28 is a drive-pulley 31, from which a driving-band 32 extends around the pulley 6, above referred to. Adjacent to the upper end of the shaft 28 is another drive-pulley 33, from which a crossed belt 34 passes around a pulley 35 on the head or chuck 19. The operating-shaft 28 may be turned by means of a crank 36, provided with a handle 37, or by a belt from any suitable motor, and when said shaft is revolved the churn-body and dasher will be simultaneously revolved in opposite directions for the purpose of more thoroughly agitating the contents of the churn-body and more quickly producing butter. The frame, consisting of the vertical bars 23, 24, and 30 and the cross or horizontal bars 3, 21, and 29, is adapted to be slid upward, as indicated by the dotted lines in Fig. 1, so as to disengage the head or chuck 19 from the dasher-shaft and at the same time leave sufficient space for the lid 16 and dasher 12 of the churn to be removed and replaced. Each of the drive-pulleys 31 and 33 is provided with an additional groove 38, so that the driving bands or belts may be placed therein before elevating the slide-frame, so as to prevent the driving-belts from being unduly stretched and rendered inoperative. Each of the standards 1 and 30 is provided at its bottom with diverging feet or braces 39 to give a firm support to the frame of the churn as a whole.

I do not desire to be limited to the exact details of construction hereinabove set forth, but reserve the right to change, modify, or vary the construction within the scope of this invention.

Having thus described the invention, what is claimed as new is—

A churn comprising an upright stationary frame and an upright slide-frame arranged side by side and slidingly associated and connected, fixed vertical dowel-pins on one of said frames adapted to engage the other frame when the parts are in their operative position, a revoluble disk journaled in the stationary frame, a pulley thereon, a churn-body removably mounted on the disk and adapted to interlock therewith, a vertical driving-shaft at the side of the churn-body mounted in and movable with the slide-frame, a rotary head detachably connected with the dasher-shaft, a pulley thereon, and belts connecting the driving-shaft with the pulleys on the rotary head and churn-body-supporting disk, substantially as described.

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

ANDREW W. DOLPH.

Witnesses:
B. F. DOLPH,
F. F. BARNES.