No. 814,548. PATENTED MAR. 6, 1906.

L. M. KRIDELBAUGH.

CHURN.

APPLICATION FILED SEPT. 11, 1905.

Fig. 1.

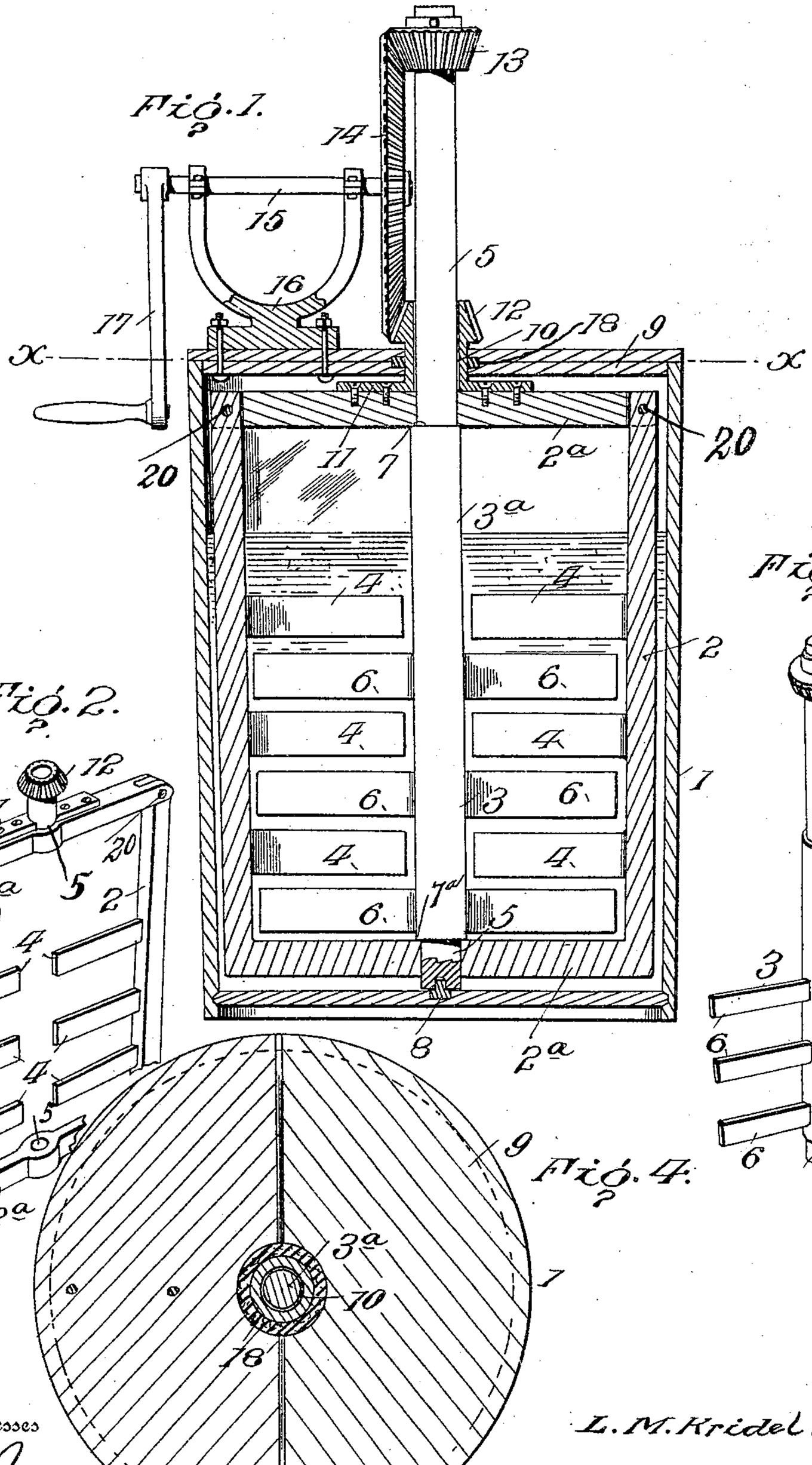

Fig. 2.

Fig. 3.

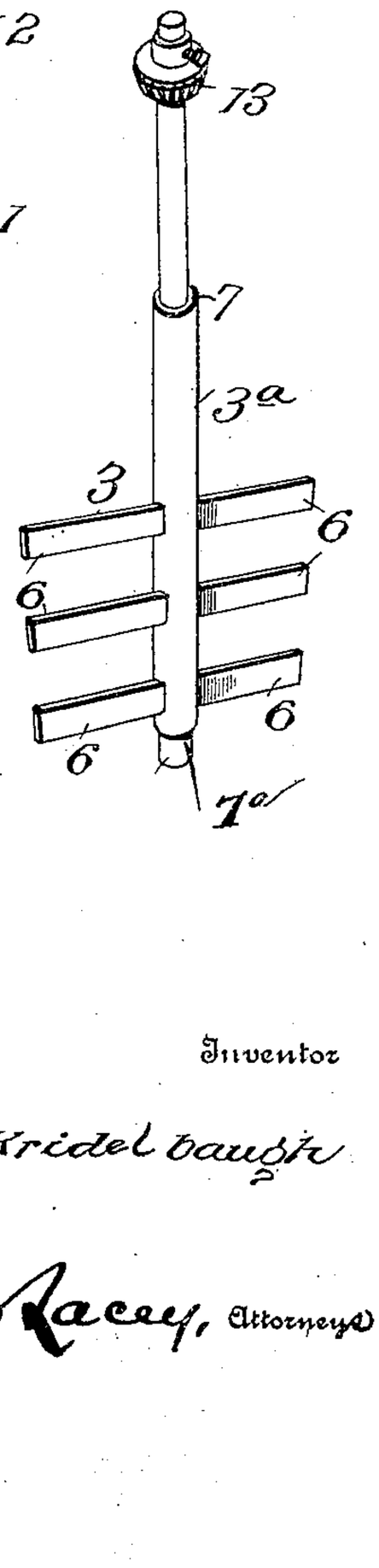

Fig. 4.

Witnesses

W. Inuce

H. V. Woodson.

Inventor

L. M. Kridelbaugh

By Kirk & Racey, Attorneys

UNITED STATES PATENT OFFICE.

LONIE M. KRIDELBAUGH, OF HITEMAN, IOWA.

CHURN.

No. 814,548. Specification of Letters Patent. Patented March 6, 1906.

Application filed September 11, 1905. Serial No. 277,963.

To all whom it may concern:

Be it known that I, LONIE M. KRIDELBAUGH, a citizen of the United States, residing at Hiteman, in the county of Monroe and State of Iowa, have invented certain new and useful Improvements in Churns, of which the following is a specification.

The object of this invention is to provide improvements in that type of churns utilizing two rotating dashers moving in opposite directions, and the essential feature of the invention resides in the special form of cover designed to prevent the cream or other contents of the churn from splashing out.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

Figure 1 is a vertical sectional view of the churn embodying the invention. Fig. 2 is a detail perspective view of the outer dasher. Fig. 3 is a detail perspective view of the inner dasher. Fig. 4 is a horizontal section taken above on the line X X of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the invention, the numeral 1 denotes the churn-body, and the same is of any suitable form such as is ordinarily in use. The rotating dashers are designated 2 and 3, the dasher 2 being the outer dasher and comprising a frame of somewhat rectangular form and a plurality of horizontal arms 4, which project from the inner face of the sides of the frame of said dasher 2. The upper and lower horizontal bars of the frame of the dasher 2 (indicated at 2^a) are provided with openings 5, forming bearings for the shaft 3^a, which form a part of the inner dasher 3. The inner dasher 3 comprises a shaft 3^a, above mentioned, and a number of horizontal arms 6, which project from opposite sides of the shaft, the arms 6 of the inner dasher being adapted to operate in rotating between the arms 4 of the outer dasher 2. Arms 4 of the outer dasher 2 have the inner ends thereof terminating a short distance from the shaft 3^a on the dasher 3. The effect produced by the arrangement of the arms 4 and 6 of the dasher 2 and 3 is conducive to thorough agitation of the liquid in the churn-increasing the efficiency of the machine in a manner which will be obvious. The outer dasher is supported by the shaft 3^a of the inner dasher 3, said shaft 3^a being formed with a shoulder 7 near the upper portion thereof, which shoulder abuts with the under side of the outer bar 2^a on the frame of the dasher 2, properly positioning the dasher 2 with reference to the coöperating dasher 3. The lower end of the shaft 3^a has a suitable bearing 8 in the bottom of the churn 1.

The outer dasher 2 consists, essentially, of a U-shaped frame and an upper cross-bar connecting the upper ends of the side members of said U-shaped frame. The upper cross-bar of the dasher is removable, thereby admitting of the inner dasher being readily separated or disengaged from the outer dasher either for purposes of cleaning or making repairs, as may be required. The meeting ends of the cross-bar and side uprights of the frame are connected by a mortise-and-tenon joint, which prevents relative lateral displacement of the parts, a pin 20 passing through transverse openings in the parts forming the joint and serving to prevent opening or separation thereof. The shaft 3^a of the inner dasher is provided near its lower end with a shoulder 7^a, which engages with the upper side of the lower cross-bar of the outer dasher and in conjunction with the upper shoulder 7 serves to prevent relative vertical movement of the two dashers when properly assembled. By having the parts of the U-shaped frame of the outer dasher integrally formed a rigid structure results and connections are obviated and spaces for accumulation of cream or milk are wholly avoided.

The top or cover 9 of the churn is removable, as customary, and is preferably in sections of semicircular form, the straight edge portions of the sections having meeting tongues and grooves and abutting when the sections of the cover are placed in position upon the churn. The cover has a central opening, through which passes the tubular extension 10 of the plate 11, fastened to the upper bar 2^a of the dasher 2 extension. The tubular extension 10 forms a metallic bearing for the shaft 3^a, which passes through said extension, and a pinion 12 is carried by the extension 10. The shaft 3^a passes through the pinion 12 also and rotates independently thereof. A second pinion 13 is attached to the upper end of the shaft 3^a, and the pinions 12 and 13 mesh with a gear 14 on a shaft 15.

The shaft 15 is mounted in the gear-bracket 16 and is operated by the crank-handle 17. In operation handle 17 is revolved and pinions 12 and 13 transmit reverse motion to the dashers 2 and 3, thoroughly agitating the contents of the churn. The opening in the cover 9, through which the shaft 3^a passes, is formed by semicircular recesses in the abutting edge portions of the sections of said cover. These recesses at the opening are formed with grooves, which receive a washer 18 on the extension of the plate 11, said washer snugly fitting about the extension and forming a closure between the cover-opening and the extension and preventing the contents of the churn from splashing out.

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

In a churn, a body, a cover therefor composed of sections having a tongue-and-groove joint in their meeting edges and having a centrally-disposed opening in the vertical walls of which an annular groove is formed, concentric dashers, a plate secured to the outer dasher and having a tubular extension passed through the central opening of the cover and provided at its upper end with a pinion, a washer fitted in the annular groove of the cover and snugly fitting the tubular extension of the plate, the shaft of the inner dasher obtaining a bearing in the extension of said plate, a pinion fitted to the upper end of said shaft, a gear-bracket secured to one side of the cover, a shaft mounted in the arms of said gear-bracket and provided at its outer end with a crank-handle, and a gear fast to the inner end of said shaft and in mesh with the pinions having connection with the respective concentric dashers.

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

LONIE M. KRIDELBAUGH. [L. S.]

Witnesses:
J. H. McCARTY,
J. A. PHILLIPS.