

J. COCHRAN, Jr.
Churn.

No. 217,065.

Patented July 1, 1879.

Fig. 1.

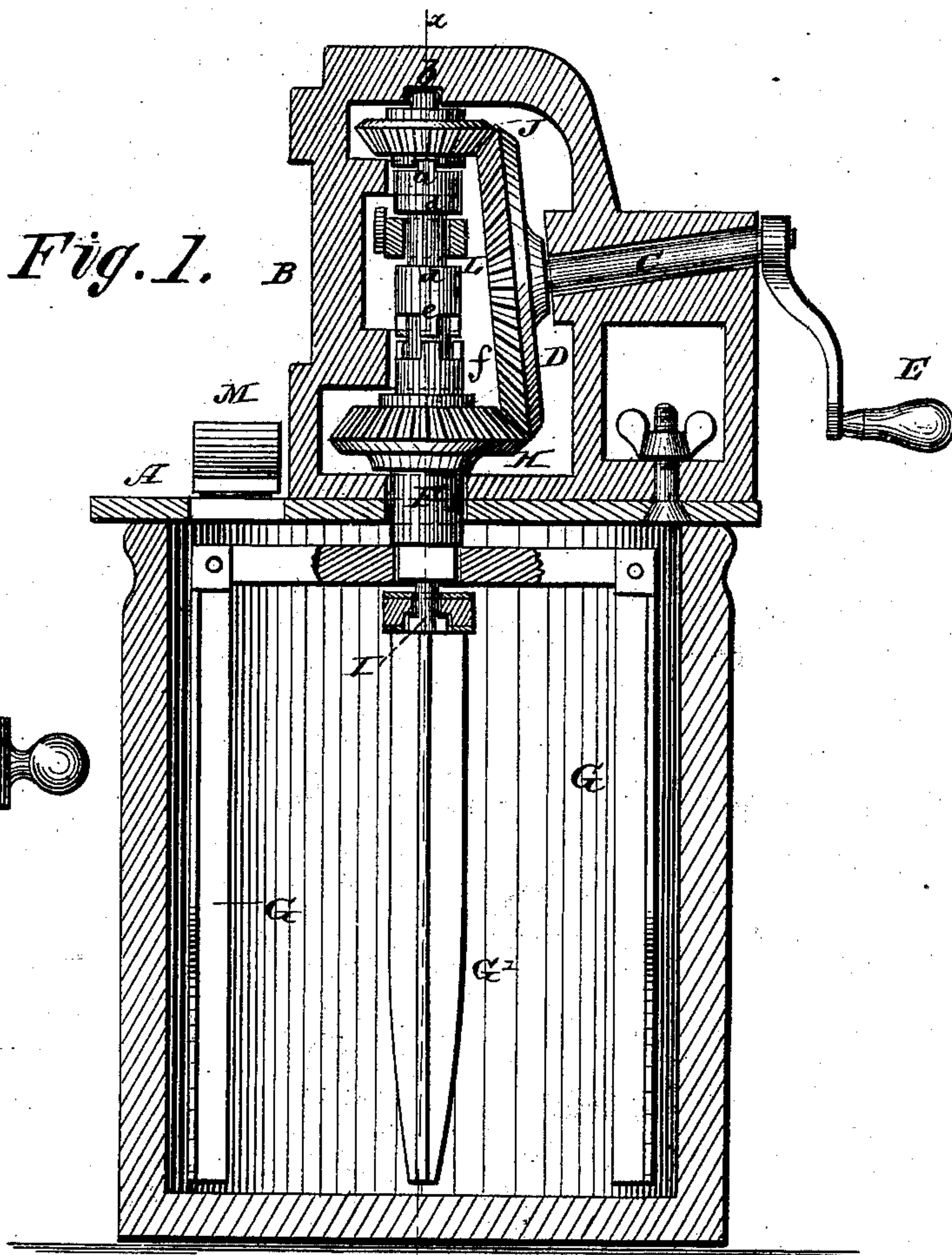
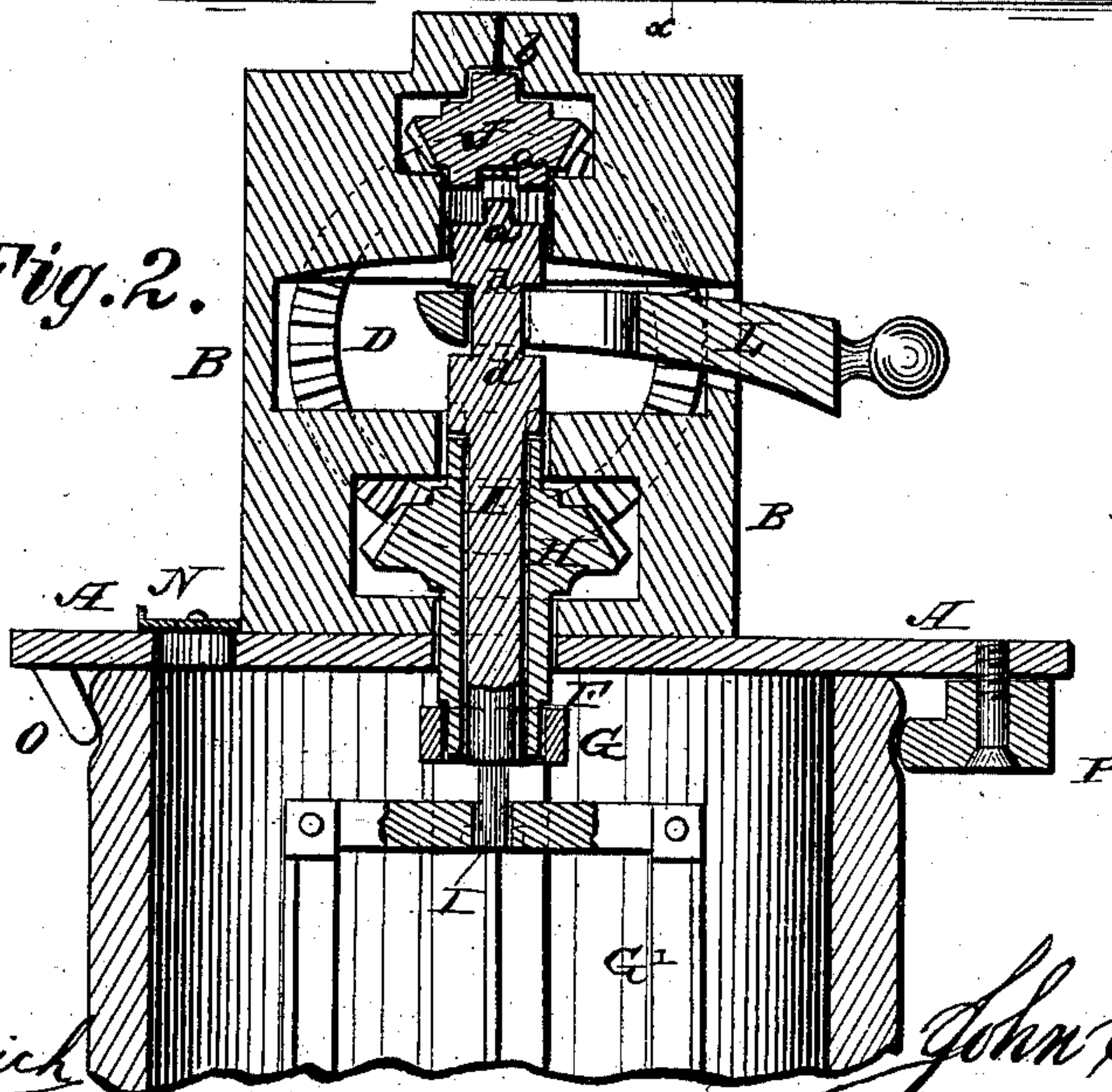


Fig. 3.



Fig. 2.



Witnesses:

P. Dietrich
Frank H. Druffy.

Inventor

John Cochran, Jr.

Per C. H. Watson & Co. Attorneys.

UNITED STATES PATENT OFFICE.

JOHN COCHRAN, JR., OF LEBECK, MISSOURI.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **217,065**, dated July 1, 1879; application filed April 1, 1879.

To all whom it may concern:

Be it known that I, JOHN COCHRAN, Jr., of Lebeck, in the county of Cedar and State of Missouri, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of churns in which two dashers are so arranged on separate shafts as to be rotated in opposite directions by suitable connection with bevel-gears; and it consists in the construction and combination of certain parts, as will be hereinafter described, and set forth in the claims.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a central vertical section of a churn embodying my invention. Fig. 2 is a similar view, taken on the line *x x*, Fig. 1; and Fig. 3 is a plan view of the slide L.

A represents the churn-lid, on top of which is a housing, B, for containing the operating mechanism. This housing is made in two parts, which are fastened to the lid and to each other by screws, bolts, or other convenient means. C is the horizontal shaft, provided at its outer end with a crank, E, and at its inner end with a bevel-gear wheel, D, for operating the two sets of dashers.

G and G' are the two sets of dashers. The dashers G are attached to the lower end of a sleeve, F, which passes through the lid A and into the housing B, and within the housing said shaft is provided with a bevel-gear wheel, H, which meshes with the gear-wheel D at the bottom. The dashers G' are attached to the lower end of a shaft, I, which passes through the sleeve F, and at its upper end is a bevel-gear, J, smaller than the gear H, connected thereto by a clutch, as shown at *a*. This bevel-gear J meshes with the main gear D at the top, and thus, by the rotation of the shaft C, the sleeve F and shaft I are rotated in opposite directions, and consequently the dashers G G', connected to said sleeve and shaft, are also rotated in opposite directions.

The bevel-gear J has bearings at *b b* in the housing, which prevent any up-and-down movement of said gear; but the shaft I has a limited up-and-down movement or adjustment by means of a wedge-slide, L, passing through one side of the housing, and having a slot for the passage of the shaft. The shaft has two circumferential collars, *d d*, between which the slide L passes, and on the bottom of the lower collar is a clutch, *e*, to engage with a corresponding clutch on the upper end of the sleeve F.

When the slide L is pushed in, the shaft I is raised far enough to cause it to engage with the bevel-gear J by means of the clutch *a*, while the clutch *e* is disengaged, and when in this position the dashers are rotated in opposite directions. When, however, the slide L is drawn outward, its wedge or inclined portion is retracted from under the collar *d* on shaft or rod I, and hence the said shaft drops down until its upper clutch, *a*, is entirely disconnected from the gear-wheel J and its lower clutch, *a*, connected with a clutch, *f*, upon the sleeve or hollow shaft F of the lower gear-wheel, H. In this position the upper gear-wheel, while free to revolve, has no connection whatever with the shaft or rod I. This shaft being, however, now connected with sleeve F by the clutch, as above stated, both dashers will be adapted to rotate together and in the same direction. When the wedge or slide is pushed in, its inclined surface acts against collar *d*, and thereby raises shaft I until its lower clutch is freed from the clutch on shaft F and its upper clutch brought into engagement with a suitable groove or notches formed in the under side of the small upper gear-wheel. In this position the two shafts F and I will be rotated in reverse directions when the crank-handle, horizontal shaft, and gear-wheels transmit motion thereto.

The dashers are constructed of vertical bars G and G', fastened to the ends of cross-bars at their upper ends, and these cross-bars are fastened, respectively, to the lower ends of the sleeve and shaft.

The vertical bars or paddles of the dashers are made T-shaped in their cross-section, which gives a flange on each side along the outer edge of the paddle to hold the milk to its

proper place and to prevent the cream from leaving the center of the churn.

In the lid A is a hinged door, M, and a slide, N, the former to see how the churning is progressing, and the latter to uncover a vent for the escape of air. The lid is fastened by two hooked projections, O, and a cam, P, to any suitable churn-body.

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

1. In a churn having two sets of dashers operated in opposite directions by means of the bevel-gears D H J, as described, the mov-

able shaft I, having the clutches *a e*, for the purposes herein set forth.

2. The combination, with the shaft I, having collars *d d* and clutches *a e*, of the slotted wedge-slide L, sleeve F, and bevel-gear J, substantially as and for the purposes herein set forth.

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

JOHN COCHRAN, JR.

Witnesses:

WAID H. LUSK,
JAMES F. LUSK.