(No Model.)

R. A. WOOLDRIDGE.

CHURN.

No. 339,243. Patented Apr. 6, 1886.

FIG. 1.

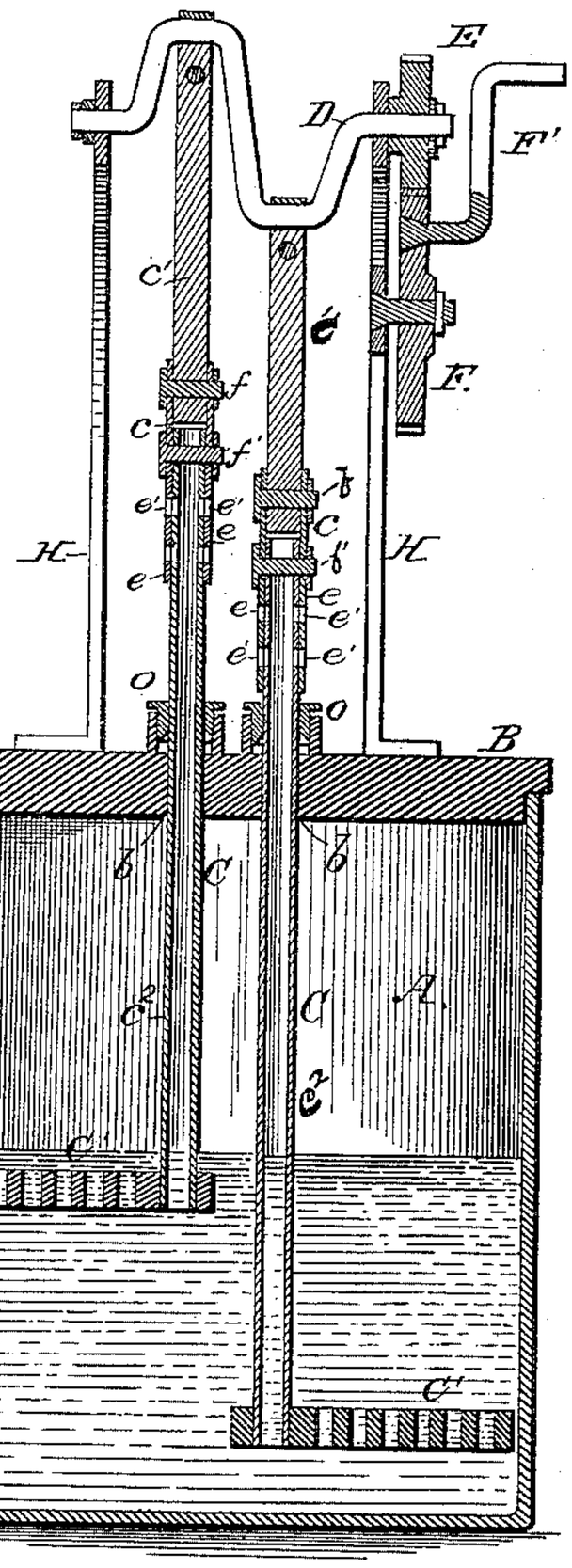
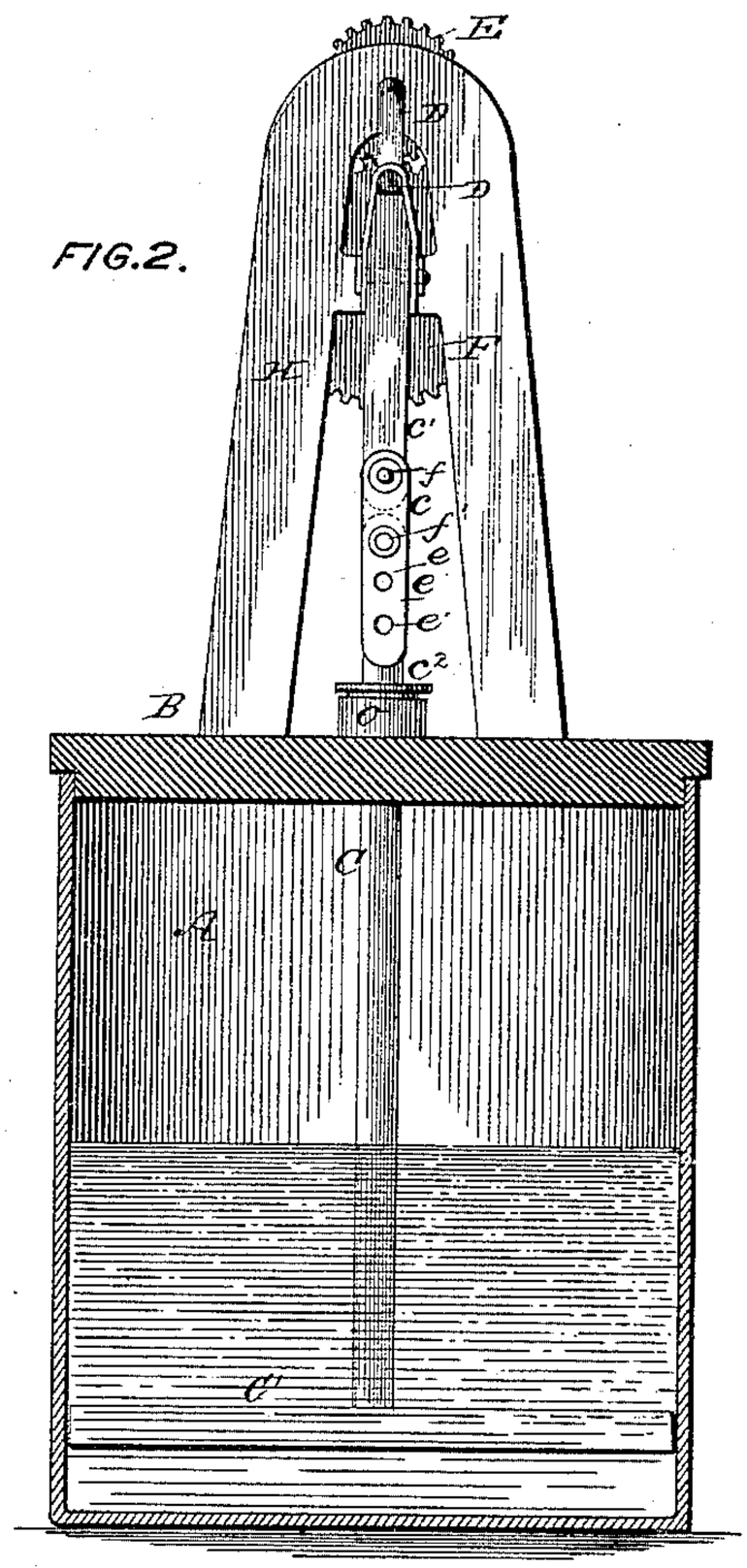


FIG. 2.



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ROBERT A. WOOLDRIDGE, OF EAST LYNNE, MISSOURI.

CHURN.

SPECIFICATION forming part of Letters Patent No. 339,243, dated April 6, 1886.

Application filed December 30, 1885. Serial No. 187,160. (No model.)

To all whom it may concern:

Be it known that I, ROBERT A. WOOLDRIDGE, a natural born citizen of the United States, residing at East Lynne, in the county of Cass and State of Missouri, have invented certain new and useful Improvements in a Churn, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to churns; and it consists in certain improvements therein, to be hereinafter fully described.

The object of my said invention is to provide a pair of reciprocating churn-dashers, which shall be operated in a cylindrical wooden or metallic churn, said dashers together forming a cylindrical disk which is equal to the inner periphery of the churn, and each moving independently of the other, being attached to dasher-staffs provided with knuckle-joints near their centers and hung from an eccentric-shaft, which is mounted in U-shaped supports secured to the top or head of the churn and rotated by a crank so geared that at each revolution of the same three strokes of the dashers are given.

In the drawings, Figure 1 is a vertical section of my device, and Fig. 2 is a cross-section of the same, showing the manner of connecting the tops of the dasher-staffs to the shaft, &c.

A represents a cylindrical churn, the sides and bottom being integral, and having the head B removably fitted therein. This head is provided with openings *b b*, to permit the passage of the dasher-staffs C, which are hung to the eccentric-shaft D, said shaft being journaled and revolving in the U-shaped uprights or supports H, which are attached to or cast with the head B. One end of this eccentric-shaft carries a gear-wheel, E, which receives its motion from another and larger gear-wheel, F, mounted on a spindle or projecting stud in a cross-bar of one of the supports H, and said wheel F is revolved by the crank F'.

By making the wheel F one-half larger than the wheel E it follows that one revolution of wheel F carries wheel E and the eccentric-shaft once and a half around, causing three strokes of the dasher-staffs C alternately, these stafis having knuckle-joints *c* near their centers. Thus the strokes of the dashers are multiplied and the process of butter-making is facilitated.

The two sections of the dasher-staff C are designated, respectively, by the letters *c* for the upper and c^2 for the lower, and they are connected by metallic side pieces, *e*, having openings *e'* therein, to receive pivot-pins *f f'*, passing through the ends of the sections *c'* and c^2. The lower end of each side piece *e* has two or more openings, *e'*, to allow the distance between the ends of the sections to be changed, thus enabling the dasher-staffs to be lengthened or shortened at will to change the depth of the stroke.

The head or top B of the churn fits into the cylinder, and is provided with a projecting flange to retain it in its place, and it can be readily removed to fill or empty the cylinder or to clean the dashers and dasher-staffs.

The dasher-staffs are preferably made cylindrical, but may be made square, and the lower sections are made hollow to allow air to pass freely into the churn.

The dashers C' being semi-cylindrical and together of the exact size of the inner periphery of the churn-cylinder, and having a great many perforations through their faces, the cream will be comminuted and forced through the perforations in the dashers and thoroughly beaten and mixed at each revolution of the crank, and all the butter will be speedily extracted. The openings *b* in the top are lined with a boxing of brass or Babbitt metal in order to fit closely to the lower section, c^2, of the dasher-staff C, so that no cream can escape even should the churn be full or nearly so, while the air entering by the longitudinal openings or hollows in the lower sections will greatly facilitate the formation of the butter, and the openings will permit the escape of odors from the churn while being operated.

The operation is as follows: Lift the cover or top from the cylinder by means of the supports H. This will carry with it all the mechanism. Then introduce the cream, replace the cover, and revolve the eccentric-shaft by means of the handle or winch, and a change from cream to butter will quickly take place.

I am aware that churns opening at the top are not new; nor are reciprocating or divided

dashers, nor an eccentric-shaft. Therefore, I claim none of these, broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

In a reciprocating dasher-churn, the combination of the cylinder A with the removable head B, provided with openings *b* for the passage of the closely-fitting dasher-staffs, the hollow dasher-staffs C, jointed, as described, and connected by the metallic slides *e*, which are provided with a series of openings, *e'*, and the pivot-pins *f f'*, and the mechanism whereby motion is imparted to the said shafts, all substantially as herein shown and described.

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

ROBERT A. WOOLDRIDGE.

Witnesses:

C. H. MORROW,

I. P. WHEELER.