G. GOFF & H. HARDICK.

RECIPROCATING-CHURNS.

No. 194,868. Patented Sept. 4, 1877.

Fig. 1.

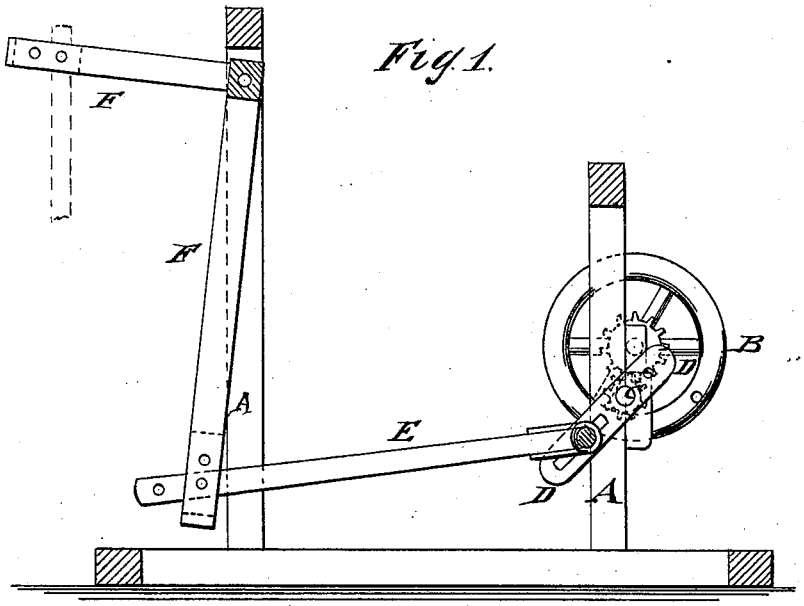
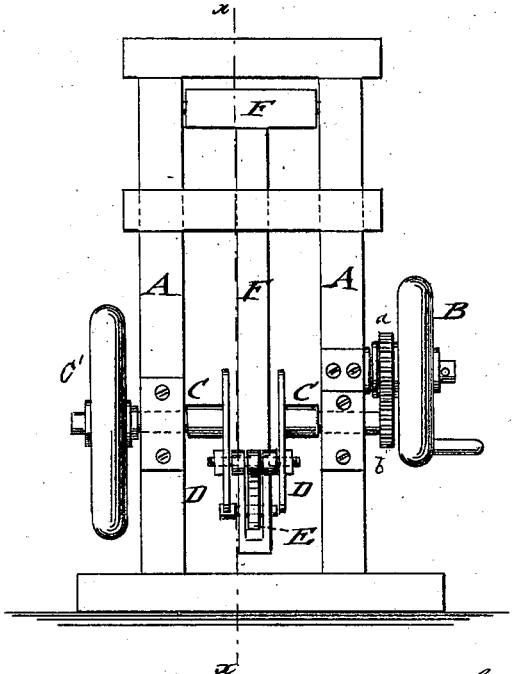



Fig. 2.

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# UNITED STATES PATENT OFFICE.

GROVNER GOFF AND HENRY HARDICK, OF STEVENSVILLE, NEW YORK.

## IMPROVEMENT IN RECIPROCATING CHURNS.

Specification forming part of Letters Patent No. **194,868**, dated September 4, 1877; application filed March 3, 1877.

*To all whom it may concern:*

Be it known that we, GROVNER GOFF and HENRY HARDICK, of Stevensville, in the county of Sullivan and State of New York, have invented a new and Improved Churn-Motion, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of our improved churn-motion, taken on line *x x*, Fig. 2; and Fig. 2 is an end elevation of the same.

Similar letters of reference indicate corresponding parts.

The object of our invention is to furnish for dairymen an improved churn-motion, by which a uniform stroke is imparted to the dasher of the churn with little effort, the length of the stroke being readily adjusted as required.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the drawing, A represents the supporting-frame of our improved churn-motion, to one end of which a revolving crank and fly-wheel, B, turns in suitable bearings.

The crank-wheel B revolves, by a gear-wheel, *a*, and pinion *b*, of smaller size, a double-crank shaft, C, with fly-wheel C′, to the slotted crank-arms D of which the pitman is secured in adjustable manner.

The opposite end of pitman E is pivoted to the lower slotted end of an elbow-lever, F, that is fulcrumed at its angle to a pivot at the top part of frame A.

The connecting ends of pitman E and elbow-lever F are provided with several holes, so that the pivot-connection may be placed at a higher or lower point, for the purpose of producing small changes in the stroke of the dasher, which is pivoted to the similarly-perforated upper end of the elbow-lever.

The adjustment of the pitman in the slotted double crank D admits the lengthening or shortening of the stroke when a considerable change in the same is necessary, while by raising the pitman in elbow-lever the stroke will be more in an upward direction, and by lowering the pitman the stroke will be more in a downward direction.

The pitman-connection of the crank-shaft with the elbow-lever changes the rotary motion of the hand-crank wheel into the reciprocating motion of the elbow, for working the dasher, the fly-wheels, and transmitting-gearing, facilitating the working of the churn, so that the same may be run with but little effort by any one, producing a uniform and effective stroke of the dasher, and facilitating and accelerating the churning operation.

The device is readily applied to the churn, always in order for work, easily adjusted, and effective in operation.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination, with a pitman, E, pivoted at the front end to a swinging elbow-lever, F, of the double-cranked rotary drive-shaft C, having arms, D, slotted, as shown and described, to regulate the throw of the pitman to correspond with any change in the stroke of dasher.

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