

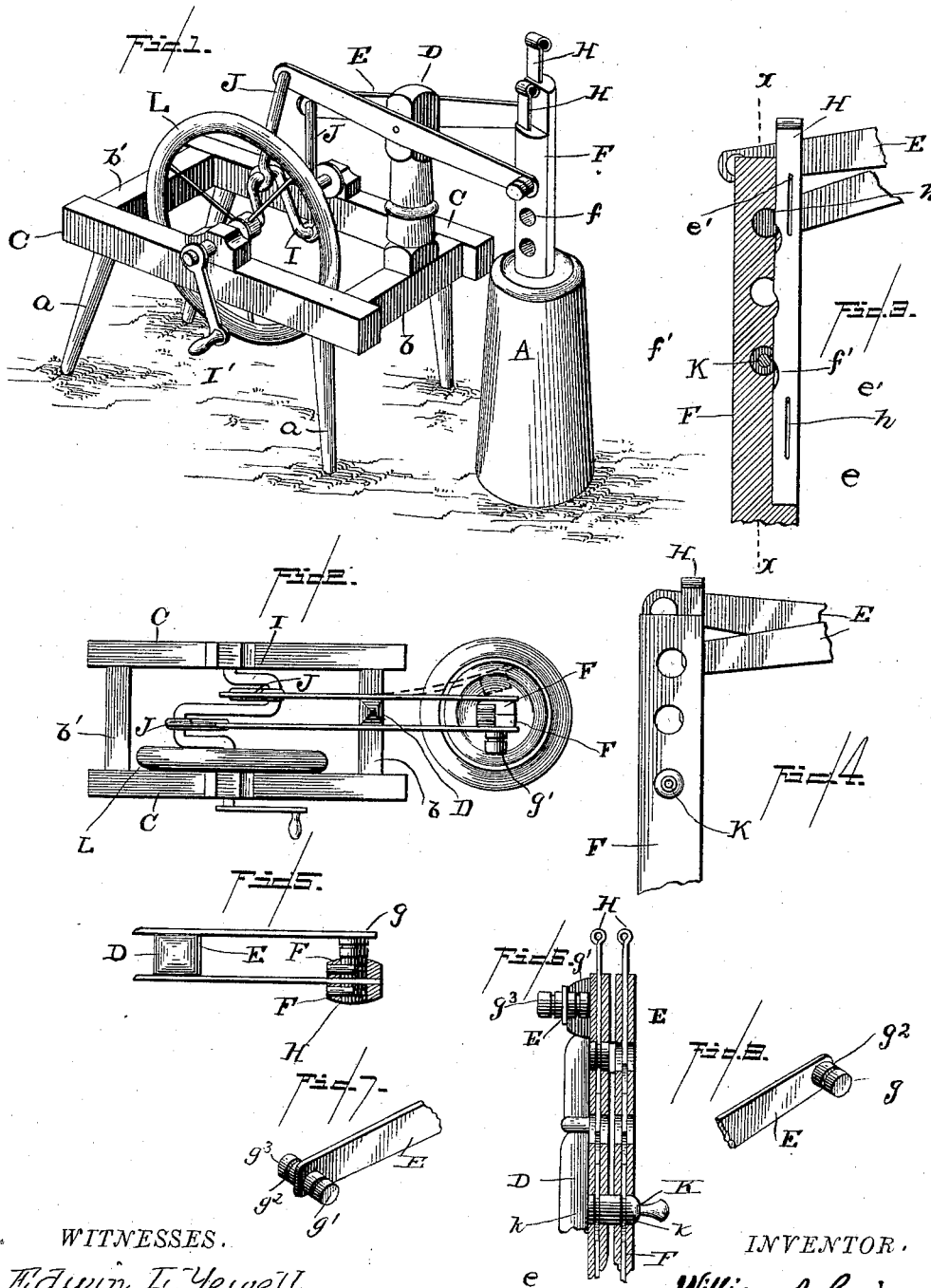
(Model.)

W. B. GRIMES.

CHURN.

No. 385,617.

Patented July 3, 1888.



WITNESSES.

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CHURN.

SPECIFICATION forming part of Letters Patent No. 385,617, dated July 3, 1888.

Application filed November 21, 1887. Serial No. 255,803. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM B. GRIMES, a citizen of the United States, residing at Enfield, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Churns; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

The invention relates to churns of that class which have a double dasher.

The object of the invention, chiefly, is to improve the general structure of this class of devices, to simplify the operating mechanism, to provide means for adjusting the dashers to the quantity of cream to be churned, and to have the parts so constructed that the adjustments can be quickly made and the two dashers can be used separately or together as a single dasher.

The improvement consists in the peculiar construction and combination of parts, which hereinafter will be more fully set forth, claimed, and shown in the annexed drawings, in which—

Figure 1 is a perspective view of a churn embodying my invention; Fig. 2, a plan view of the churn; Fig. 3, a side view, partly in section, of the upper ends of the dasher-shafts, showing the means for connecting them with the operating-levers; Fig. 4, a side view of the upper ends of the dasher-shafts, showing the manner of connecting them with a single lever; Fig. 5, a plan view, parts broken away, of the front ends of the operating-levers, showing the manner of connecting them with a single operating-lever; Fig. 6, a vertical section on the line X X of Fig. 3; Fig. 7, a perspective view of the front end of one operating-lever, and Fig. 8 a perspective view of the front end of the other operating-lever.

The churn-operating mechanism is supported on the frame, which is of any ordinary form, and is composed of the feet or supports *a*, the end beams, *b* and *b'*, and the side beams, *C*. The standard *D*, which supports the operating-levers *E*, has its lower end fitted to the cross or end beam, *b*. The dasher-shafts *F* are

adjustably connected with the ends of the operating-levers *E*, and have a series of openings, *f*, in their upper ends, which are adapted to receive the projections *g* and *g'*, that extend laterally from each of the operating-levers, respectively. The projections *g* and *g'* have annular grooves *g''*, into which fit the locking-plates *H*. These locking-plates *H* are seated in kerfs or grooves in the dasher-shafts, and have a longitudinal movement therein to lock or unlock the dasher-shafts from the operating-levers. Each plate *H* is held in its movements in the said kerf or groove *e* by the pins *e'*, which pass through slots *h*, formed in the said locking-plate, and is wide enough to have its inner edge extend into the openings *f*. This inner edge is provided with notches *f'*, which correspond with the openings *f*, so that when the locking-plate is pulled out to its utmost limit the notches *f'* and the openings *f* will be in register and the openings *f* will be unobstructed, so that the projections *g* or *g'* may be readily passed through any of them. When the projections are in position in the openings and the locking-plates are pushed in, the notches *f'* thereof are carried out of register with the openings *f*, and the locking-plates engage with the groove *g''* and positively lock the dasher-shafts and operating-levers together.

The double or compound crank-shaft *I* is journaled in suitable bearings on the side beams, *C*, one end being extended beyond its bearing and provided with the crank *I'*. The cranks *i* of the shaft *I* are of equal length, and extend in diametrically-opposite directions, and are connected with the operating-levers *E* by the pitmen *J*. The cranks are arranged close together, so that they may be connected directly with the operating-levers by straight connections, and the operating levers may be placed near together.

The operating-levers are thin and wide, so as to yield laterally, but remain rigid in the direction of motion. By reason of the capability of the operating-levers to yield laterally they may be readily detached from the dasher-shafts, as shown by Fig. 2, by springing them to one side of the plane of the dasher-shaft sufficiently far to disengage the projection *g* from the opening *f*, in which it may be fitted, first taking care to slide out the locking-plate

H. If it be desired to use the double dasher as a single dasher in the churn A, one of the shafts is disconnected from the operating-lever and secured to the other dasher in any desired manner, but preferably by the means shown, which is a rod or locking-pin, K, conforming in cross-section to a cross-section of the projections g and g' , having an annular groove, k , at each end. This rod is passed through two co-incident openings in the dasher-shafts, and held therein by the locking-plates H, fitting in the grooves k , which is shown most clearly in Fig. 6.

Instead of the locking pin K to lock the two shafts F together, one of the projections, as g' , may have a corresponding projection, g'' , extending from the opposite side of the lever and in line with the projection g' , so that the lever may be placed between the two shafts F, and have the projections g' and g'' engage with each shaft, respectively, by entering corresponding openings therein, as will be readily understood. In each instance the detached or free dasher will be arranged in a different plane from that in which the free lever is working, so that there will be no interference between the dashers and the said free lever. This will be readily comprehended from Figs. 5 and 6.

The balance-wheel L on the crank-shaft I gives steadiness to the movement of the operating parts and prevents any jar or uneven motion.

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

1. The herein shown and described churn-operating mechanism, composed of the frame, the compound crank-shaft having a balance-wheel and provided with a crank, the standard, the operating-levers, the pitmen connect-

ing one end of the levers with the crank-shaft, the lateral projections at the other ends of the said levers, the two dashers, each having a series of openings to receive the said projections and each having a kerf in its edge, and the locking-plates fitted in the said kerfs, substantially as and for the purpose described.

2. The combination, with the dasher-shaft having a series of openings, of the operating-lever having a projection extending laterally therefrom to fit in one of the said openings, and adapted to yield laterally to disengage the projection from the opening, substantially as and for the purpose described.

3. The combination, with the dasher-shaft having a series of openings and the operating-lever having a lateral projection provided with an annular groove, of the locking-plate, substantially as set forth.

4. The combination, with the dasher-shaft having a series of openings and a kerf or groove in its edge, and the operating-lever having a lateral projection provided with an annular groove, of the locking-plate having slots and notches in its lower edge and the pins extending through the slots, substantially as and for the purpose described.

5. The combination, with the two operating-levers and the dasher-shafts having each a series of openings, of the locking-plates and the short rod or locking-pin having an annular groove near each end, substantially as and for the purpose specified.

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

WILLIAM B. GRIMES.

Witnesses:

O. SLEMMONS,
JAS. B. ROGERS.