(No Model.)

O. LINEBARGER.

CchurN.

No. 454,750. Patented June 23, 1891.

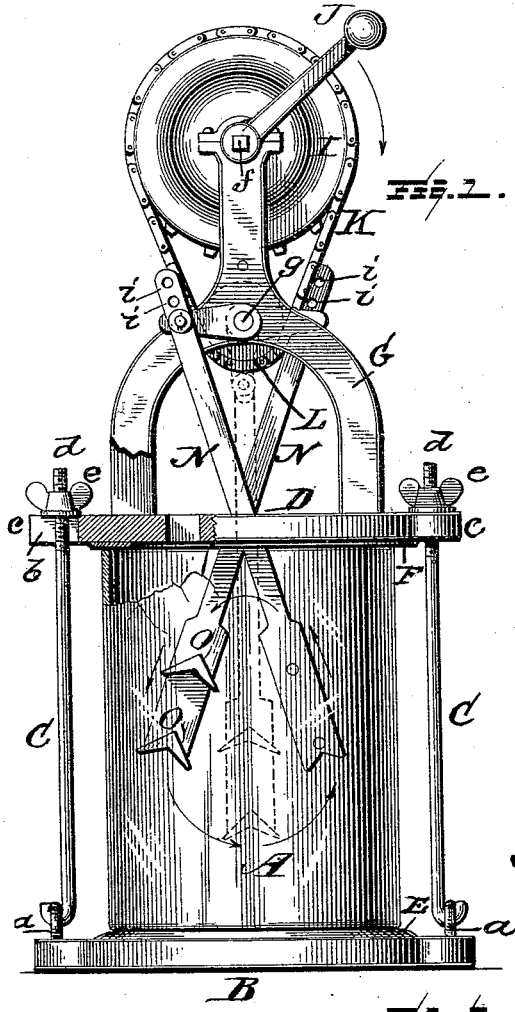

Fig. 1.

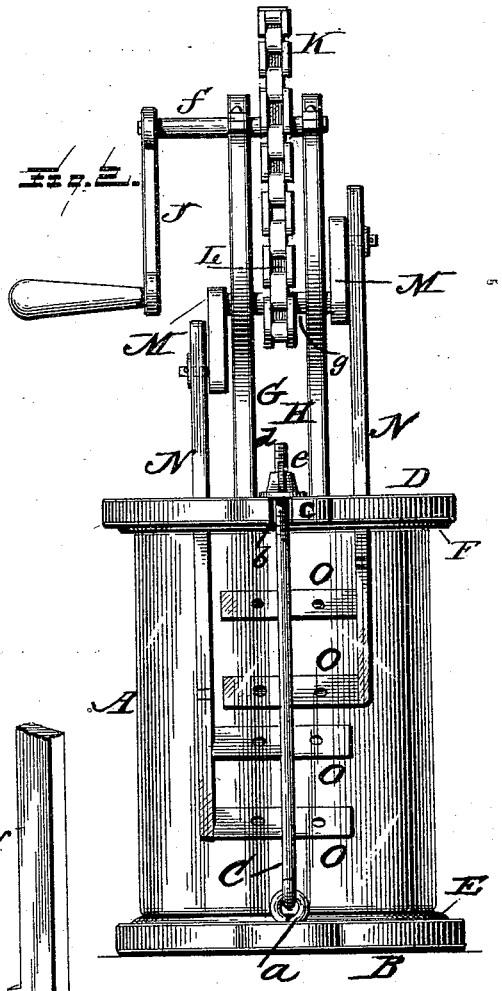

Fig. 2.

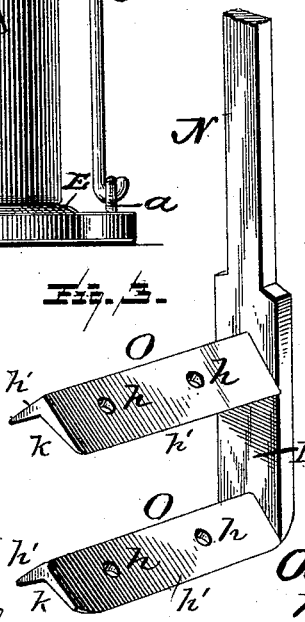

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

OLIVER LINEBARGER, OF COUNCIL BLUFFS, IOWA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 454,750, dated June 23, 1891.

Application filed October 13, 1890. Serial No. 367,960. (No model.)

To all whom it may concern:

Be it known that I, OLIVER LINEBARGER, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, 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 same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings represents an elevation of my improved churn with a portion thereof in broken section; Fig. 2, a similar view at right angles to that of Fig. 1; Fig. 3, a detail view, in perspective and on an enlarged scale, of the dasher.

The present invention has for its object to provide a churn that will be simple in construction and easy of operation, the dasher-blades being of such construction as will more effectually agitate the cream when in motion, and thereby render them more effective, and also imparting to the dashers a motion on a line describing an ellipse, each dasher passing alternately over the other and having both an up-and-down and a lateral motion, thereby providing means for securing a perfect agitation of the cream and rendering the churn additionally effective in its operation. These several objects I attain by the construction substantially as shown in the drawings, and hereinafter described and claimed.

In the accompanying drawings, A represents the body or cylinder of the churn, preferably of glass; but any other material may be used, as found desirable, said cylinder being of any suitable height and diameter necessary to hold any given quantity of cream. The cylinder, as above described, rests on a support B, provided with eyebolts *a*, with which detachably engage the hooked ends of clamping-rods C, which engage with open slots *b* in ears *c*, extending from the edge of the cover D. The upper ends of the clamping-rods C are screw-threaded, as shown at *d*, with which engage thumb-nuts *e* for drawing the cover D down tightly against the edge of the churn-cylinder A, as shown. In order to disengage the clamping-rods from the open slots, so that the cover can be removed, it is only necessary to loosen the thumb-nuts and press the rods out laterally from engagement with the open slots, when the cover, with its attachments, hereinafter described, can be removed for cleaning, or by simply loosening the thumb-nuts the churn-cylinder can be removed, as desired. Upon the inner sides of the support and cover, respectively, are elastic cushions E F, so that when the cylinder is of glass or similar fragile material the danger of breaking it by tightening the cover thereon is wholly removed, and, further, the cushion on the cover makes a tight joint between it and the edge of the churn-cylinder.

Connected to the cover D are two brackets G H, extending upright and disposed parallel with each other, and between these brackets is a sprocket-wheel I, connected to a shaft *f*, which has its bearings in the upper ends of said brackets and operated by a crank-handle J, suitably connected to one end of the shaft, which projects out beyond the side of one of the brackets, as shown in Fig. 2. Engaging with the teeth upon the sprocket-wheel I is a sprocket-chain K, which also engages with the teeth of a small sprocket-wheel L upon a small shaft *g*, which also has its bearings in the sides of the brackets. To the projecting ends of the shaft *g* are pitmen M, and to these pitmen are adjustably connected the dasher-shafts N, having upon their lower ends the dasher-blades O—one or more upon each shaft, as found desirable. In the present instance I have shown two upon each shaft, which have perforations *h* and angular or inclined sides *h'*, or, in other words, in shape of an inverted V, as shown more clearly in Fig. 3. The dasher-blades are so connected to the shafts as to project horizontally from the inner sides thereof and the apex of the angle formed by the two sides of the blade being uppermost.

It will be seen by reference to Fig. 2 of the drawings that the pitmen are so connected to the small shaft that their free ends will extend parallel, but in opposite directions, whereby the dashers will have an alternating motion; or, in other words, when one is on its downward stroke the other will be on its upward stroke.

The dashers, as will be noticed by reference to Fig. 1 of the drawings, do not move in a vertical direction, but at an angle, each dasher

at its lower end passing in turn over the other and each describing in its movement an ellipse, as indicated by the arrows, thereby having a compound motion that is peculiar in itself and especially adapted to a churn-dasher where an increased and powerful agitation of the cream is desired with comparatively little exertion by the operator.

The holes in the cover D are of sufficient size to allow of the dasher-shafts through which they pass to assume the angle shown in Fig. 1 and to operate as hereinbefore described, and the shafts at their upper ends have a series of holes *i* to admit of their adjustability in length to adapt them to the amount of cream in the churn-cylinder.

The dasher-blades herein described are different in construction from those in common use in that they have open ends *k* to allow the cream to be forced out therefrom upon each downward stroke of the dasher.

A further and important feature of the invention is the position the blades assume with relation to the dasher-shaft—viz., projecting of the blades from the shaft upon one side only, and that the inner side, thereby enabling the dashers to have a greater sweep than when projecting from both sides and more effectually gathering and agitating the cream from the center of the churn. It will be further noticed that the lower ends of the shafts N are extended in width for the purpose of presenting a wide surface or wall R to the cream. Now upon the downward stroke of the dashers, when the under sides of the blades are brought in contact with the cream, the latter is forced laterally against the wall R, and what does not pass through the perforations of the blades is forced out through the open ends *k*. Thus the peculiar construction of the dasher-blades and their open ends coact with the widened portion of the dasher-shafts at their lower ends.

The above features of construction, in addition to the location of the blades upon the inner side only of the shafts, render them more effective on the cream, causing it to be kept in the greatest possible motion in connection with the peculiar motion of the dasher-shafts, the cream being agitated uniformly at both the top and bottom and at the center, thus bringing the churning to a successful end in a very short space of time and with comparatively little labor on the part of the operator.

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

In a churn, the combination of the dasher-shafts N, extended in width at their lower ends to form walls R, and the inverted-V-shaped perforated dasher-blades O, having open ends *k* and extending from the inner sides only of the shafts, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

OLIVER LINEBARGER.

Witnesses:
L. A. GRAY,
W. E. JOHNSON.