E. A. FIRBY, Jr.

Reciprocating-Churn.

No. 168,976. Patented Oct. 19, 1875.

Fig 1

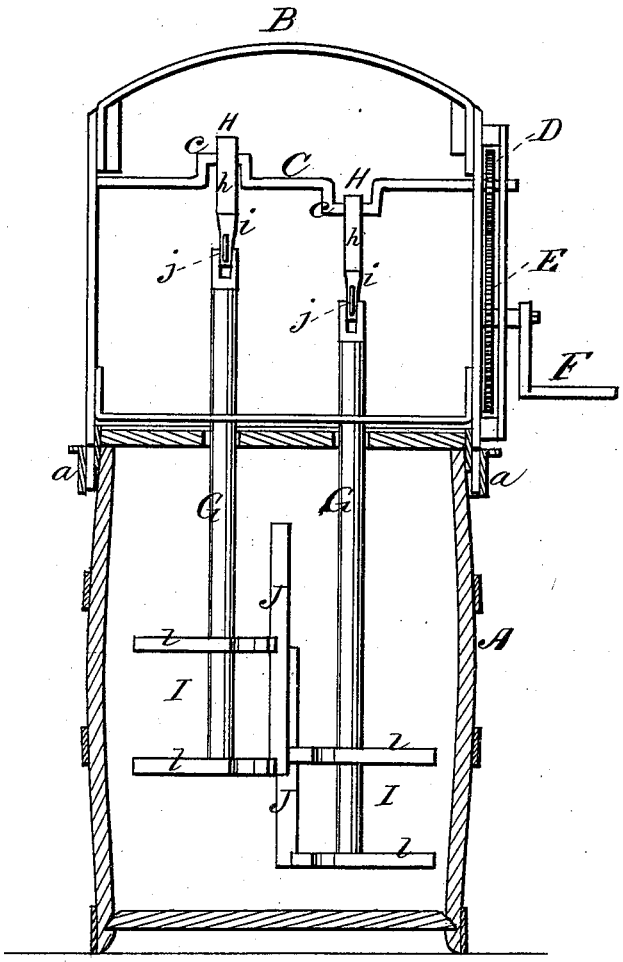
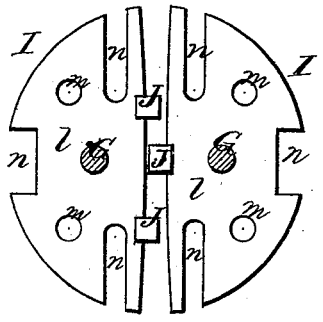


Fig 2



WITNESSES

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EDWIN A. FIRBY, JR., OF NORWALK, OHIO.

IMPROVEMENT IN RECIPROCATING CHURNS.

Specification forming part of Letters Patent No. **168,976**, dated October 19, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, EDWIN A. FIRBY, JR., of Norwalk, in the county of Huron and State of Ohio, have invented a new and valuable Improvement in Churns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical section of my churn, and Fig. 2 is a detail view of the same.

This invention has relation to improvements in churns, wherein a set of semicircular perforated dashers, arranged in pairs, are alternately operated by reciprocating shafts, receiving alternately motion from a crank-shaft actuated by a set of gear-wheels and a crank-arm; and the nature of the invention consists in slide-bars rigidly secured to the contiguous edges of the semicircular dashers, whereby they are prevented from interlocking during their time of actuation, and are prevented from being broken and detached in consequence of the said interlocking.

In the annexed drawings, A designates an ordinary barrel-shaped vessel, having sockets *a* upon its upper edge diametrically opposite each other, which sockets are adapted to receive the free ends of an arched frame, B, affording bearings for a horizontally-arranged crank-shaft, C, having cranks *c*. D indicates a pinion rigidly secured upon one end of shaft C, and E a cog-wheel secured in position in suitable bearings below the same, the teeth of the latter engaging with those of the former, causing shaft C to be rotated in its bearings when the cog-wheel is actuated by crank-arm F, keyed upon a projecting end of the shaft thereof. Shaft C is connected pivotally to pitman-shafts G by means of arms H, which consist of a main portion, *h*, and a second part, *i*, the latter being recessed into the former, and rigidly secured thereto by means of a thumb-screw, *j*. The lower ends of these sections each afford half-bearings for a hinge-pin in the upper bifurcated end of pitmen G, and the said sections are clamped together around the said pin by means of the thumb-screw, as shown in Fig. 1. By this means the pitmen are capable of being detached when it is necessary for the purpose of cleansing, repairing, or replacing the dashers, and they are as readily reattached. These dashers I are composed each of two semicircular wooden plates, *l*, arranged, one above the other, on pitmen G, which plates are provided with a suitable number of perforations, *m*, and with openings *n* extending inward from their peripheries, as shown in Fig. 2. When crank-arm F is actuated a vertically-reciprocating motion will be imparted to pitmen G, the one ascending while the other descends, and communicating a corresponding movement to dashers I. In order to prevent the interlocking and the consequent injury of these dashers, fender-bars J are rigidly secured to the contiguous edges of plates *l*, as shown in Figs. 1 and 2, two of the said bars being secured to the plates of one dasher, and one to those of the other, the latter bar being preferably located between the other two. These bars, during the actuation of the dashers, will effectually prevent their interlocking, and at the same time serve as slides to guide them in their movements.

What I claim as new, and desire to secure by Letters Patent, is—

In a churn, the slide-bars J, rigidly secured to the contiguous edges of the semicircular dashers, as and for the purpose herein set forth.

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

EDWIN AUGUSTUS FIRBY, JR.

Witnesses:
ETHAN A. PRAY,
BUSHNELL POST.