(Model.)

R. LUCAS & W. DOOTSON.

CHURN.

No. 336,011. Patented Feb. 9. 1886.

Fig. 1

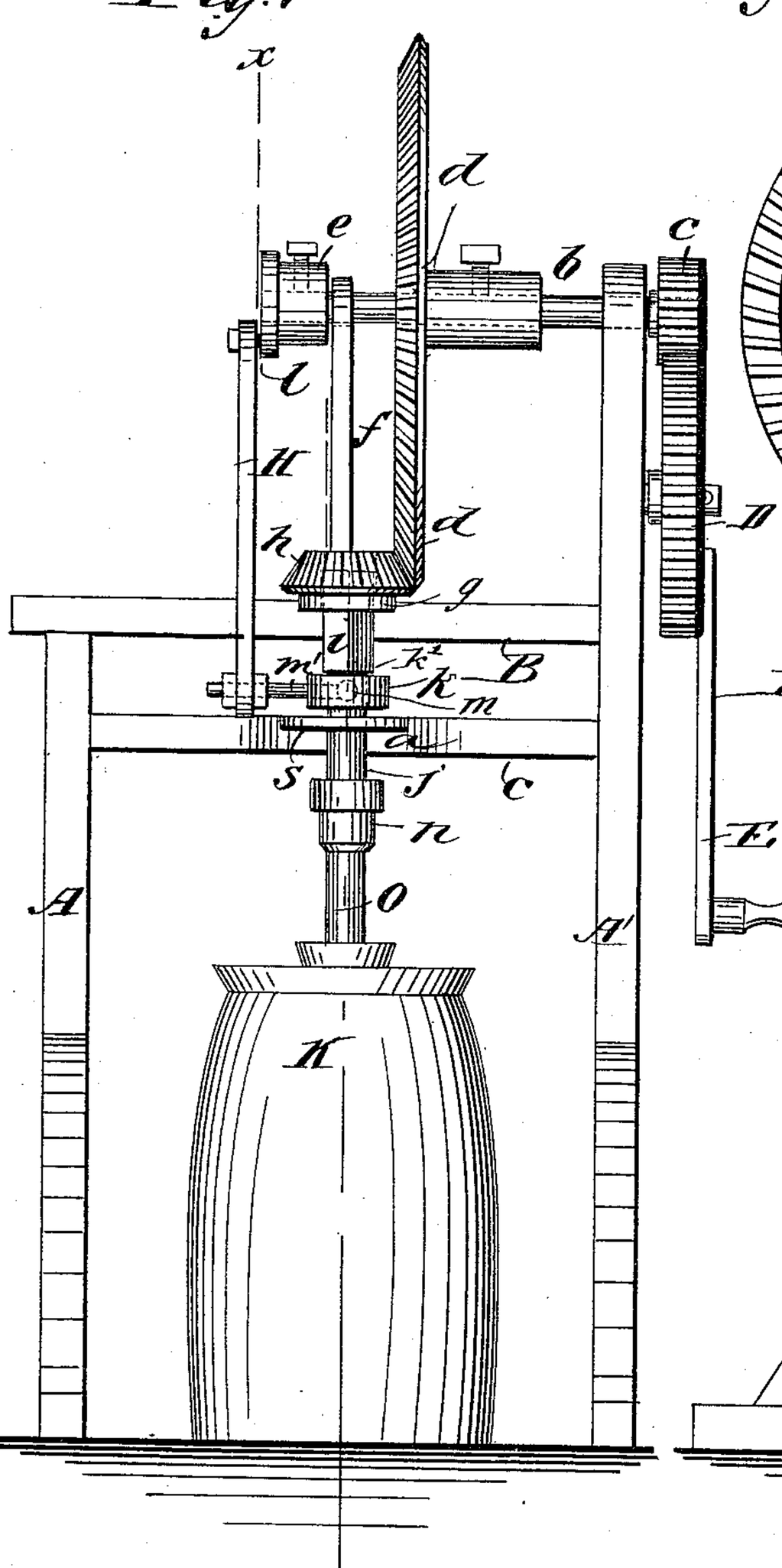
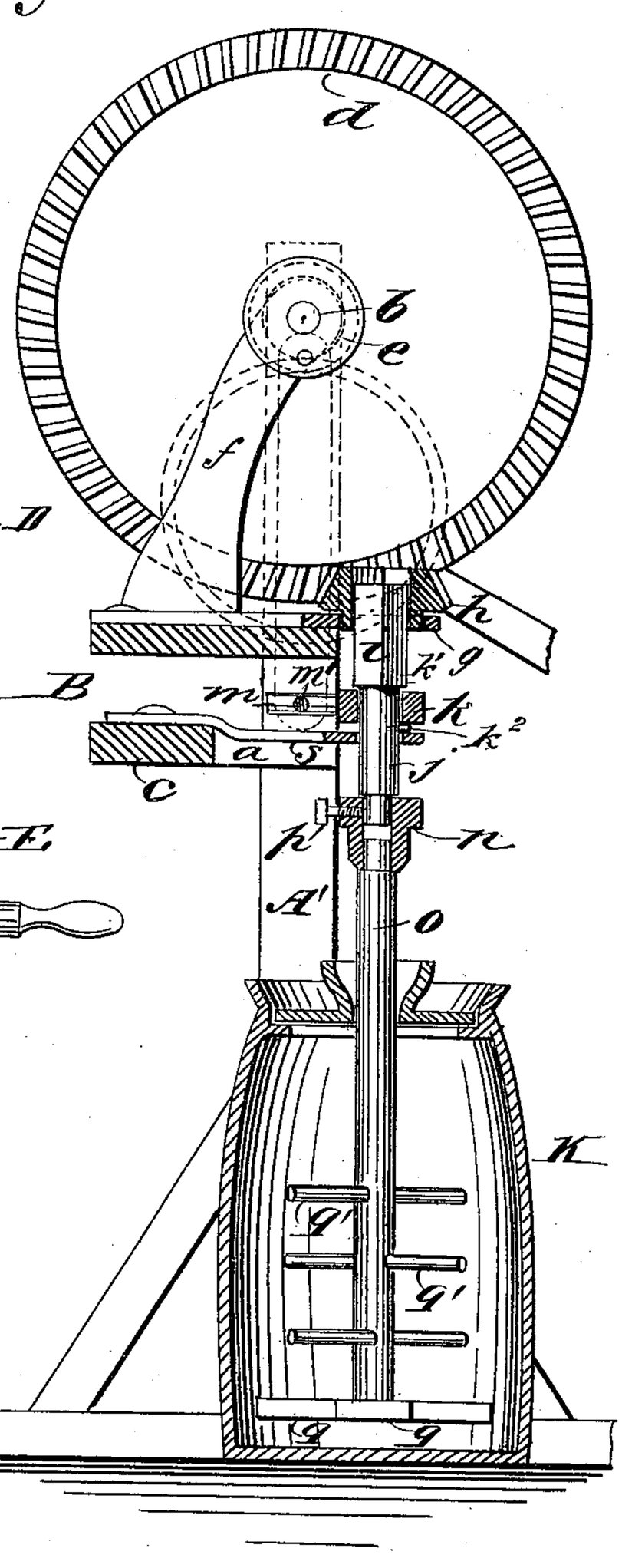


Fig. 2.



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ROBERT LUCAS AND WILLIAM DOOTSON, OF ATHENS, GEORGIA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 336,011, dated February 9, 1886.

Application filed August 21, 1885. Serial No. 174,978. (Model.)

To all whom it may concern:

Be it known that we, ROBERT LUCAS and WILLIAM DOOTSON, of Athens, in the county of Clark and State of Georgia, have invented a new and Improved Churn, of which the following is a full, clear, and exact description.

The object of our invention is to produce a churn wherein the dasher-blades will be given a rotary and a reciprocating motion from a single movement of the crank-handle; and the invention consists of certain details of construction and combinations of parts to be hereinafter described, and specifically pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a front elevation of our improved churn; and Fig. 2 is a vertical sectional view of the same, taken on line *x x* of Fig. 1.

A A′ represent the standards of the frame employed to support the dasher-operating mechanism, said standards being connected by the broad cross-bar B and the lower cross-bar, C, which is hollowed out centrally, as shown at *a*. A shaft, *b*, carrying a pinion, *c*, oblique beveled toothed wheel *d*, and a crank-head, *e*, all of which are fast on the shaft, is mounted in bearings formed in the head of the standard A′ and in a supporting-bracket, *f*, extending upward from the cross-bar B, the crank-head *e* being secured to the projecting end of the shaft *b*. A large gear, D, is studded to the standard A′ in position to engage with the pinion *c*, motion being imparted to the wheel D by a crank-handle, E, that is fixed thereto. A metal plate, *g*, formed with a round opening, projects outward at right angles to the cross-bar B, and acts as the support and bearings for the beveled pinion *h*, which has a hub that rests in the opening in the plate *g*, the parts being so adjusted that the pinion *h* meshes with the wheel *d*. The central opening in the pinion *h* is square, and within this opening there is fitted the squared head *i* of the dasher-shaft *j*. The square faces of the head *i* are about equal in width to the diameter of the main part of the shaft *j*, which is turned off abruptly, thereby forming a series of shoulders, *k′*, at the point where the squared head commences. A loose collar, K, encircles the upper rounded portion of the shaft *j*, and this collar K is supported in position by a pin, k^2, and the shoulders *k′*. A pitman, H, reaches from the crank-pin *l* to engage, by means of its pin *m′*, with an arm, *m*, that extends from said collar. The lower end of the dasher-shaft *j* is formed to fit within a coupling-piece, *n*, that is carried by the dasher O, the shaft *j* being held in place by a thumb-screw, *p*.

The dasher-blades consist of the usual crossed pieces, *q q*, and of sticks *q′*, passed through the dasher-bar O in various directions; the number of these sticks depending upon the amount of cream to be churned in the vessel or churn-barrel. (Shown at K.) An arm, *s*, that projects outward from the bar C, acts as the lower bearing for the shaft *j*.

In operation the crank-handle E is turned in either direction desired, which movement will impart a rotary motion to the pinion *h*, and consequently to the dasher-shaft and dasher, while the pitman H will act to impart a reciprocating motion to said dasher, so that by simply turning the crank-handle a double motion is given to the dasher-blades, thereby thoroughly agitating the cream; while by simply alternating the direction of rotation by throwing the crank E back and forth in the arc of a circle the agitation may be somewhat increased by reason of the continual change in the direction of rotation.

Such an operating mechanism as we have described is simple, strong, and durable, and at the same time most effective in operation, being, moreover, adapted to most any form of churning-vessel.

We are aware that it is not new to simultaneously impart a vertical and a rotary motion to the dasher by means of a gear or toothed wheel engaging a trundle-wheel or pinion and a pitman connected to the said gear or toothed wheel and the dasher-shaft.

Having thus described our invention, we

claim as new and desire to secure by Letters Patent—

In a churn, the dasher-shaft having the head *i*, and made in two parts, connected together by a sliding coupling, *p n*, in combination with the shaft *b*, carrying gear *d*, and crank-head *e*, pinion *h*, fitted upon the dasher-shaft head *i*, the pitman H, connected to said crank-head, and the collar *k*, provided with an arm, *m*, having connection with the pitman H, said collar acting upon the lower end of the dasher-shaft head *i*, substantially as and for the purpose set forth.

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Witnesses:
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