

(No Model.)

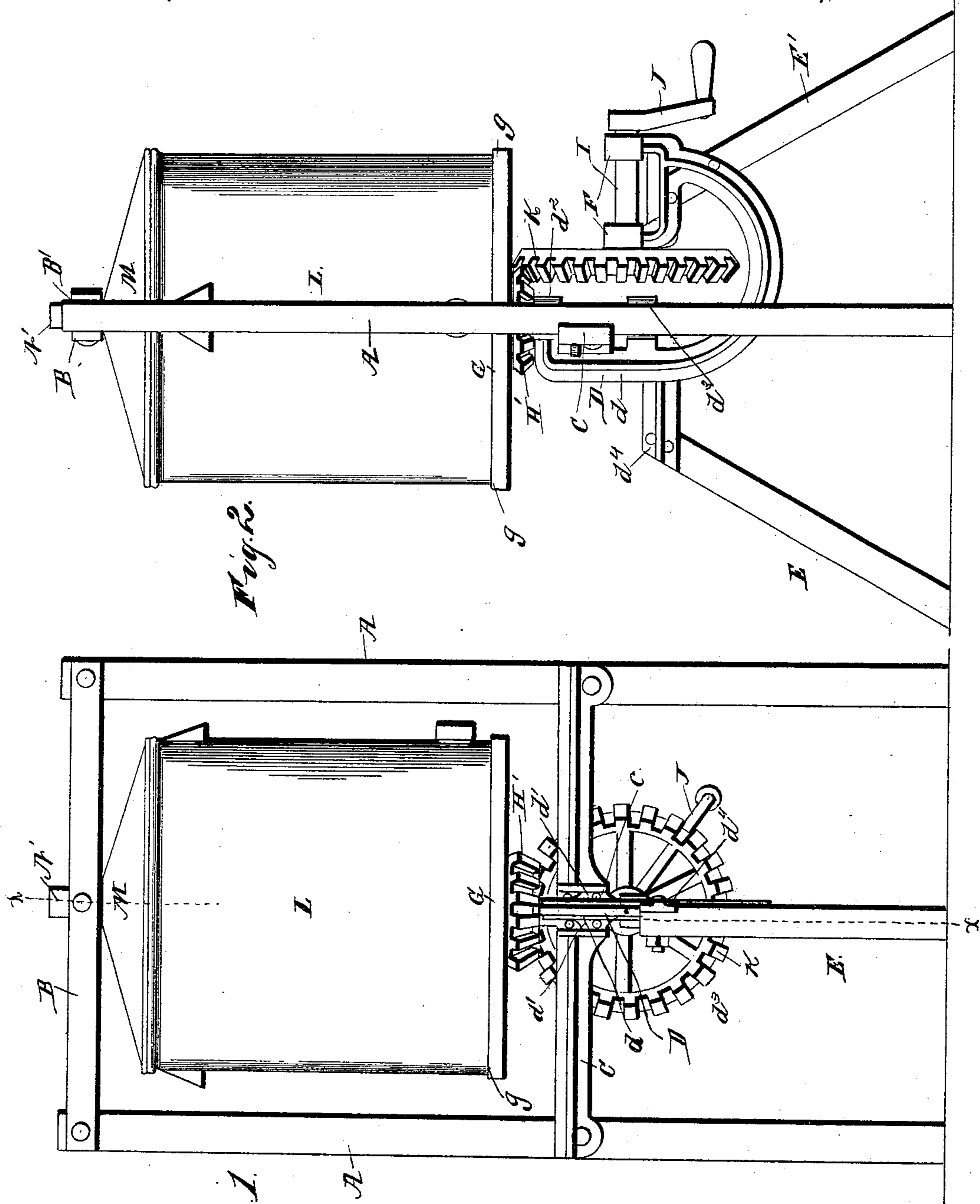
2 Sheets—Sheet 1.

G. BACKSTER, Jr., & J. F. REIFF.

CHURN.

No. 373,511.

Patented Nov. 22, 1887.



Witnesses
Geo. Thayer
C. E. Doyle

Inventors
Geo. Backster Jr.
J. F. Reiff
By their Attorneys
Chas. H. Lea

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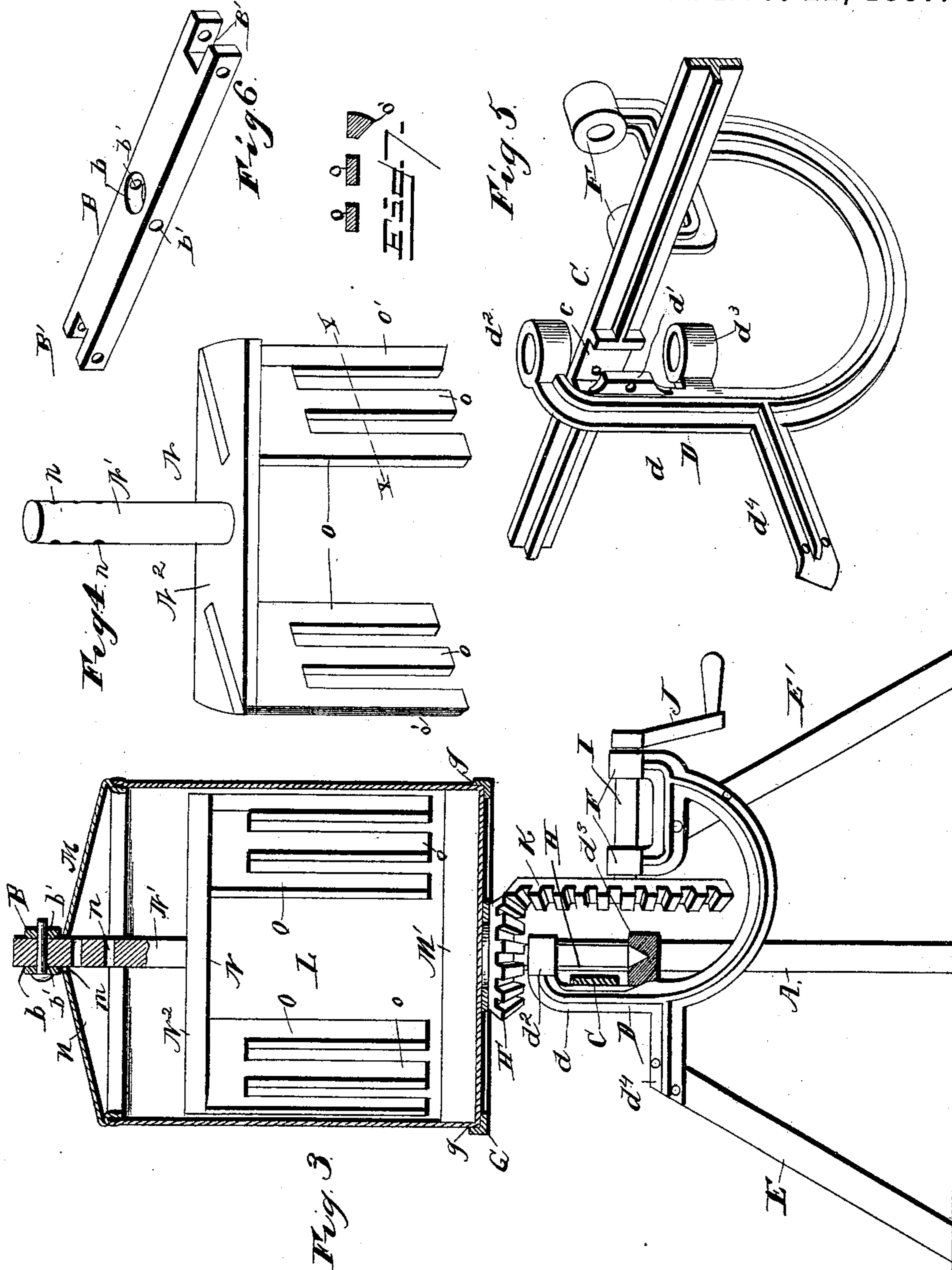
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UNITED STATES PATENT OFFICE.

GEORGE BACKSTER, JR., AND JOSEPH FREDRICK REIFF, OF AURORA,
ILLINOIS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 373,511, dated November 22, 1887.

Application filed July 27, 1887. Serial No. 245,444. (No model.)

To all whom it may concern:

Be it known that we, GEORGE BACKSTER, Jr., and JOSEPH FREDRICK REIFF, citizens of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Churns, of which the following is a specification.

Our invention relates to an improvement in churns; and it consists in a certain novel construction and arrangement of parts, fully described hereinafter, and specifically pointed out in the claims.

The object of the invention is to provide improved supporting devices for the operating mechanism.

The invention consists in certain details of construction, more fully set forth hereinafter, and illustrated in the accompanying drawings, in which—

Figure 1 is a rear view of the churn. Fig. 2 is a side view of the same. Fig. 3 is a section on the line $x x$, Fig. 1. Fig. 4 is a detail view of the dasher. Fig. 5 is a detail view of the casting with the parts detached. Fig. 6 is a detail view of the pivoted transverse bar. Fig. 7 is a section of the dasher on the line $x x$ of Fig. 4.

Referring by letter to the drawings, A A designate the side supports or uprights of the device, and B designates a bar pivoted to one of the said uprights and movably secured to the other. The said bar is provided at the center with an opening, b , for a purpose to be described, and b' represents a smaller opening at right angles to the opening b and communicating therewith. The ends of the said bar B are provided with notches B' B', adapted to receive the upper ends of the said side uprights, A A, and aligned perforations are formed in the ends of the bar and the uprights, through which, at one end of the bar, is passed a bolt to pivot the bar to the upper end of the upright, and at the other end a pin is passed through the said perforations.

C designates a transverse (preferably metallic) bar, secured at the ends to the uprights A A, below the central points thereof, and the center of the said bar at the rear side is provided with a vertical groove, c .

D represents a bracket or casting having the

vertical arm d , which is provided with short lateral ears d' d' , adapted to fit in the groove c , and the said ears and the transverse bar C are provided with aligned perforations, through which are passed bolts to secure the said casting to the transverse bar. It will thus be seen that the casting which carries the operating means of the churn (as hereinafter described) is detachably secured to the transverse bar of the frame. The front side of the said vertical arm d is provided with the vertically-aligned bearings d^2 d^3 , the lower one, d^3 , being a cone-shaped socket, for a purpose to be described. The rear side of the said vertical arm d of the casting is provided with a rearwardly-extending arm, d^4 , to the outer end of which is secured the upper end of the leg or support E. The lower end of the upright d is curved forwardly, and the front upturned end thereof is provided with the horizontally-aligned bearings F F. A supporting-leg, E', similar to the leg E, is secured at the upper end to the front portion of the said casting.

G designates a disk or plate provided with the annular upturned flange g on the outer edge at the upper side; and H designates a vertical shaft secured to the under side of the said plate at the center, having a cone-shaped lower end, and the said shaft is designed to be journaled in the vertical bearings d^2 d^3 , with the cone-shaped lower end bearing in the similarly-shaped socket.

H' designates a beveled gear-wheel secured to the under side of the plate G around the upper end of the shaft H.

I represents a horizontal shaft journaled in the bearings F F, the outer end of which is provided with the crank-arm J, and the inner end of which is provided with the beveled gear-wheel K, to mesh with the gear-wheel H'. It will be seen that when the crank J is turned the wheel K, operating on the gear-wheel H', will cause the plate G to rotate.

L designates the body of the churn, comprising a wooden or tin tub adapted to rest on the plate G, with the lower edge thereof within the vertical flange g thereon, so that when the said wheel is rotated the churn-body will also be rotated, and there will be no risk of the body slipping off the wheel.

The top or cover M of the churn-body is pro-

vided with a round aperture, *m*, the center of which aligns with the center of the vertical opening *b* in the pivoted bar B. *M'* is a transverse bar extended across the bottom of the churn-body, on the inside, to aid in the agitation of the contents of the said body.

N designates the dasher, comprising the vertical bar *N'*, the transverse bar *N²*, secured at the center to the lower end of the latter, and the blades *O*, secured to the under sides of the bar *N²* at the ends. The said vertical bar *N'* passes up through the aperture in the top of the churn-body and into the vertical opening *b* in the transverse bar B, and is provided with a series of small transverse perforations, *n*, to align with the opening or perforation *b'*, that is arranged at right angles to the opening *b*. A small pin is passed through the said aligned perforations to hold the dasher shaft or rod *N'* rigid with the frame of the churn. The dasher-blades *O* are inclined to force the contents of the tub outwardly away from the center of the same, and the said blades are formed with three or more parallel vertical legs, *o*, which are adapted to violently agitate and cut the milk and cause the butter to be rapidly separated. The front side of the leg *o*, which is close to the side of the tub, is provided with a beveled projection, *o'*, to prevent the butter from clinging to the side of the said tub, and also to draw the contents inwardly and aid in the agitation of the milk.

We wish it to be understood that we do not claim the arrangement of parts whereby the dasher is held rigid and the churn-tub is rotated around the same. Neither do we claim the arrangement of the operating means by which the churn is rotated.

We are also aware that it is old to provide the wheel which supports the churn-body with an upturned flange to prevent the body from slipping off, and this we do not claim.

Having thus described the construction and operation of our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a churn, the combination of the up-rights A, transverse bar C, secured to the up-rights, and having a vertical groove, *c*, therein, the casting D, having the vertical arm *d* secured in the said groove, vertical bearings *d² d³*, and the horizontal bearings F F, in the said casting, legs E E', secured to the casting D, horizontal plate G, having the vertical shaft H journaled in the vertical bearings, gear-wheel H' on the lower side of the plate G, shaft I, journaled in the bearings F F, and having the crank J on the outer end and the gear-wheel K on the inner end, meshing with the gear-wheel H', and the churn-body resting on and rotated by the said plate G, substantially as specified.

2. In a churn, the combination of the up-rights A, transverse bar C, having the vertical groove *c* at the center, the casting D, having the vertical arm *d*, ears *d'* on the sides of the said arm, bolted in the groove *c*, bearing *d²* at the upper end of the said arm, conical socket-bearing *d³*, aligned therewith, arm *d⁴*, extending rearwardly from the arm *d*, the leg E, secured thereto, horizontal bearings F F on the end of the curved extension of the said vertical arm *d*, the leg E', secured to the extension, flanged plate G, having a vertical shaft, H, journaled in the bearing *d²*, and bearing at the lower end in the socket *d³*, gear-wheel H' on the under side of the said flanged plate, and horizontal shaft I, journaled in the bearings F, and having the gear-wheel K, to mesh with the wheel H', and the churn-body L, to rest on the flanged wheel and rotate therewith, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

GEORGE BACKSTER, JR.
JOSEPH FREDRICK REIFF.

Witnesses:

ANDREW YOUNG,
GUST YOUNG.