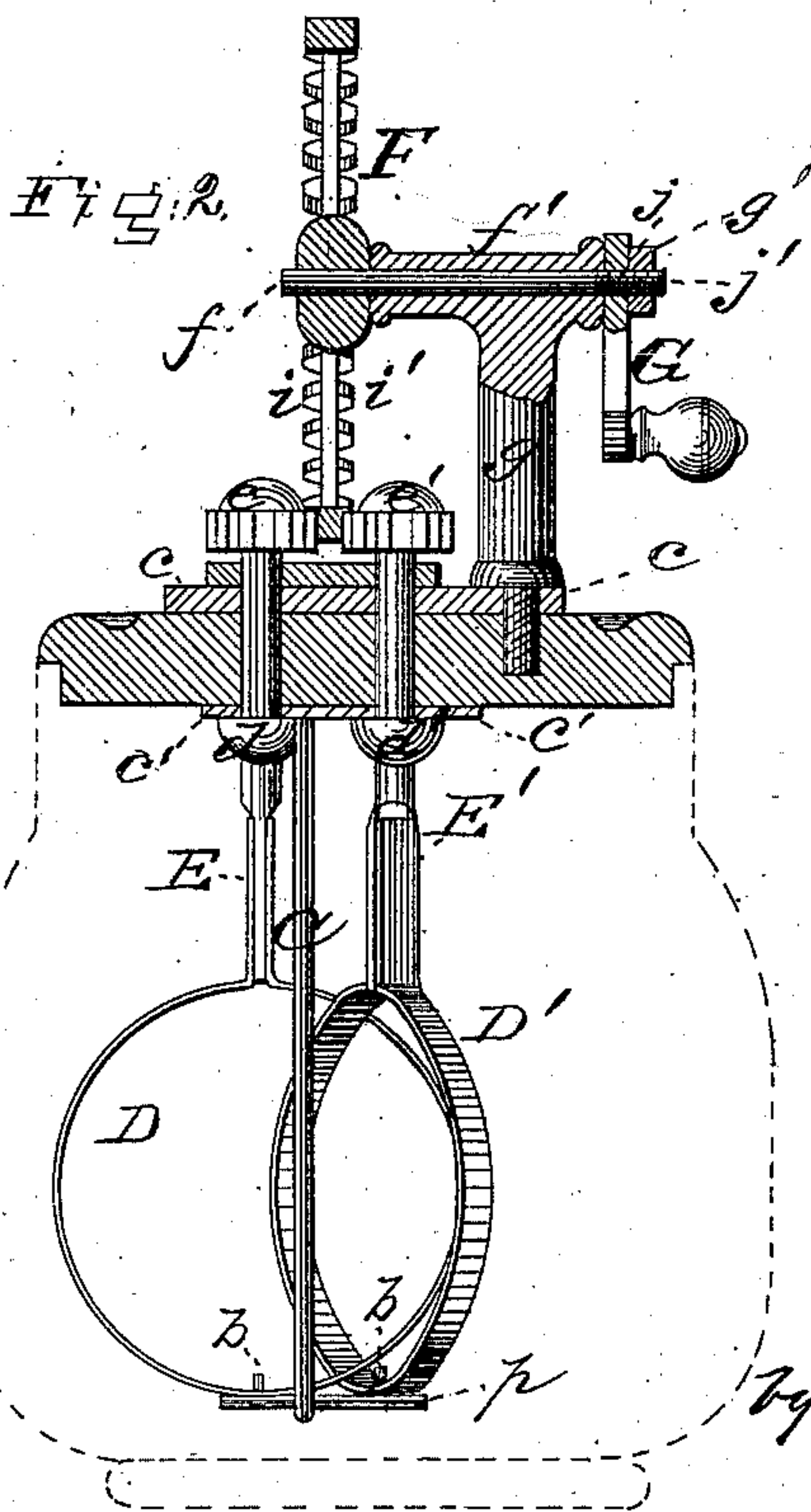
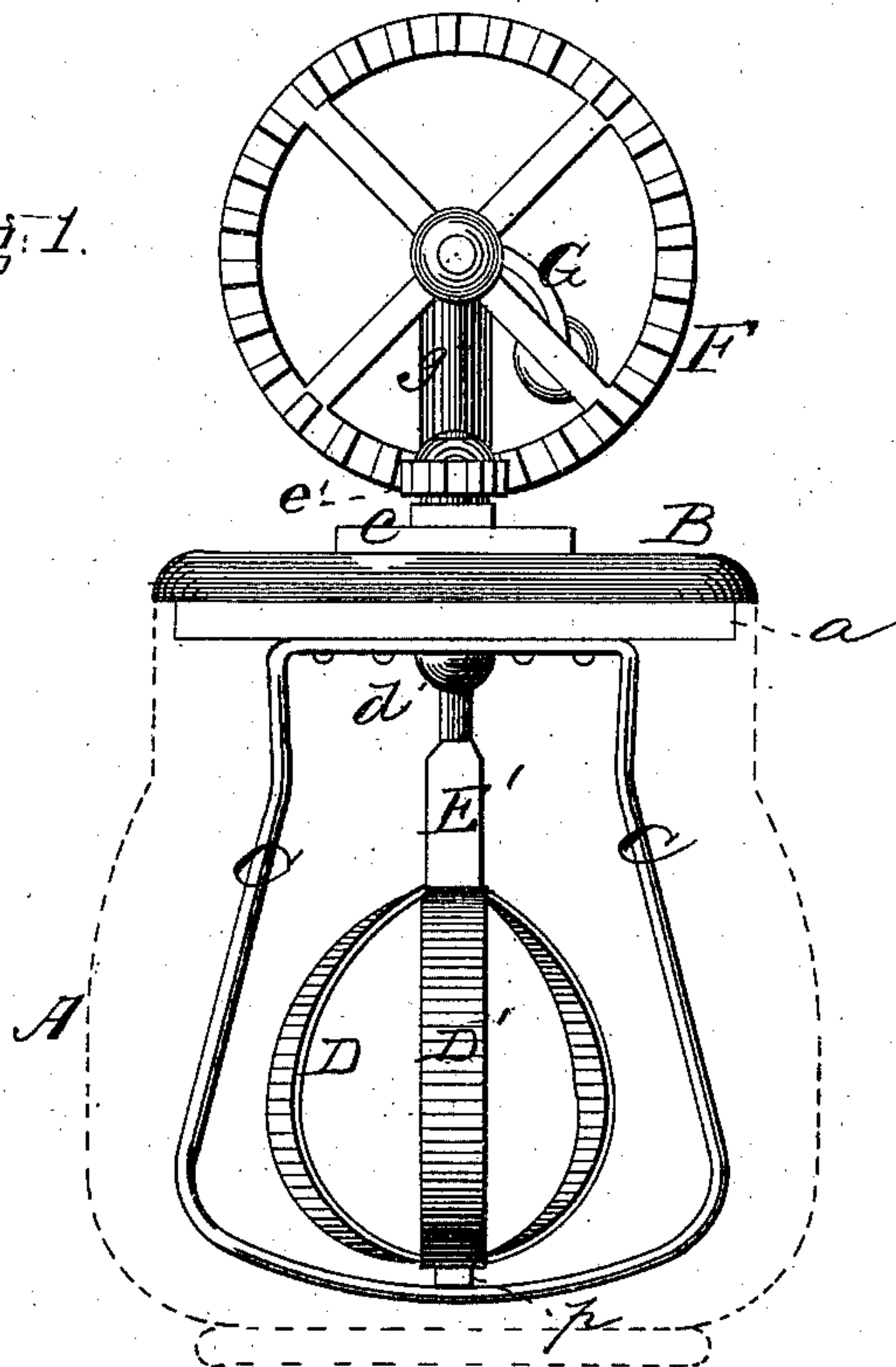


D. F. BLAIR.
CHURNS.

No. 194,572.

Patented Aug. 28, 1877.

Fig. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID F. BLAIR, OF OWOSSO, MICHIGAN, ASSIGNOR OF ONE-HALF HIS
RIGHT TO GEORGE MOSES, OF SAME PLACE.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **194,572**, dated August 28, 1877; application filed
July 28, 1877.

To all whom it may concern:

Be it known that I, DAVID F. BLAIR, of Owosso, in the county of Shiawassee and State of Michigan, have invented a new and valuable Improvement in Churn-Dashers; 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 drawings is a representation of a side view of my invention, and Fig. 2 is a vertical central section thereof.

This invention has for its object the improvement of churns having rotary dashers; and the nature of the invention consists in the arrangement and novel construction of the dashers, of its bearings, and of the operative mechanism for the dashers, as will be hereinafter more fully described and claimed.

In the annexed drawings, the letter A designates a cream tub or box of any known form, and B its lid, having a rabbeted edge, *a*, by means of which it is applied to the said tub or box, and forms a tight joint therewith.

C represents a metallic bail, rigidly secured to and depending from the said lid, and provided upon its lower end with a transverse metallic plate, *p*, at right angles to the plane of the said bail, and provided at each end with a vertical spindle, *b*, extending through a suitable bearing in the lower end of the dashers D D'. These are formed by bending flat strips of metal into circular or oval form and securing them to the ends of the metallic shafts E E', with their planes at right angles to each other. These shafts are extended through the lid B, and have their bearings in metallic plates *c c'*, secured, respectively, to the upper and under side of the said lid. They are also prevented from upward displacement relative to the lid by means of collars *d d'*, which abut against the plate *c'* aforesaid. These shafts are spaced, and carry upon their upper ends the pinions *e e'*, keyed or otherwise secured thereto, which bear upon the plates *c*, and hold the said shafts against downward displacement.

F represents a master-wheel, having at each edge of the perimeter, and at right angles to the plane of motion, a set of teeth, *i i'*, that mesh, respectively, with those of the pinions

e and *e'*. This wheel has a spindle, *f*, upon which it is rigidly secured, that has its bearings in a metallic sleeve, *f'*, supported on a standard, *g*, extended upward from and secured to the bearing-plate *c* aforesaid.

The spindle *f* has its free end projecting through the sleeve *f'*, said free end being provided with a rectangular crank-arm seat, *j*, upon which the operating crank-arm G is applied, and with a screw-threaded rabbet, *j*, upon which a holding-nut, *g'*, is applied. When this arm is operated the dasher-shafts will be rotated in opposite directions through the medium of the pinions *e e'* and the double-face master-wheel, and the dashers will be rapidly actuated.

It will be observed that the entire operative mechanism of my improved churn is attached to the lid, and depends upon the bail for its lower bearings—that is to say, the cream-tub has no bearings or connection with the dashers; consequently my improved dasher may be applied to any tub whatsoever, and, after being used, may be raised bodily out of the same without unstepping its lower ends.

The principal objection to the employment of rotary dashers in churns has heretofore proven to be the difficulty of stepping the lower journals thereof in the bottom of the cream-tub when full of cream. This objection is perfectly overcome by the employment of the bail and bearing-strip above described, and no recesses are left in the bottom, which, being filled with cream after the withdrawal of the dasher, are very difficult to keep clean, and, being not clean, are, from the fermentation and souring of their contents, apt to cause a corresponding effect on the cream.

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

In a churn-lid, the combination of the bail C, provided with the transverse bearing-plate *p* of the dashers D D', journaled in said plate at their lower ends, and the shafts E E', supporting the said dashers, and journaled in said lid, substantially as specified.

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

DAVID F. BLAIR.

Witnesses:

H. H. FRAIN,
GEORGE MOSES.