

(No Model.)

S. J. LOVELESS.

CHURN.

No. 386,838.

Patented July 31, 1888.

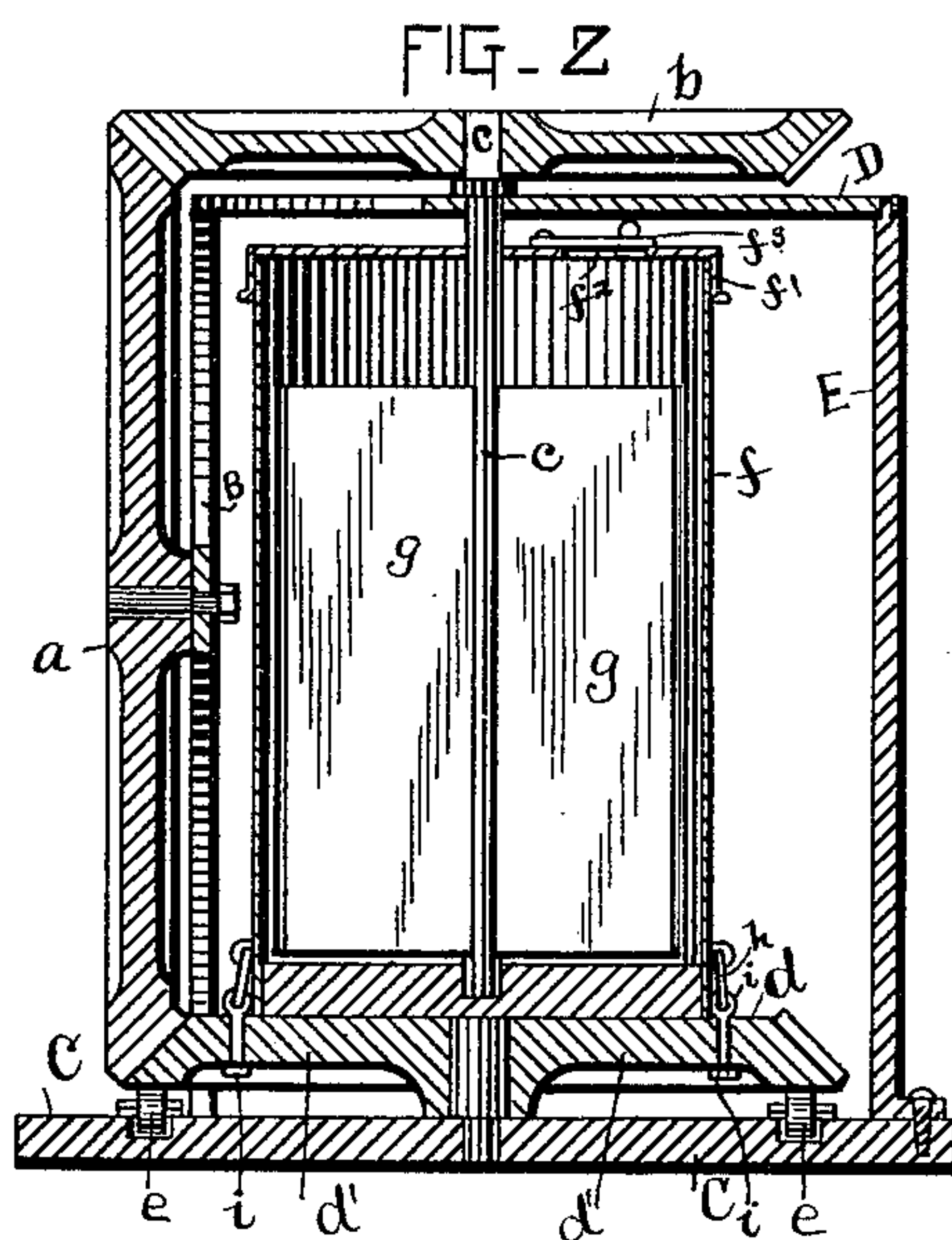
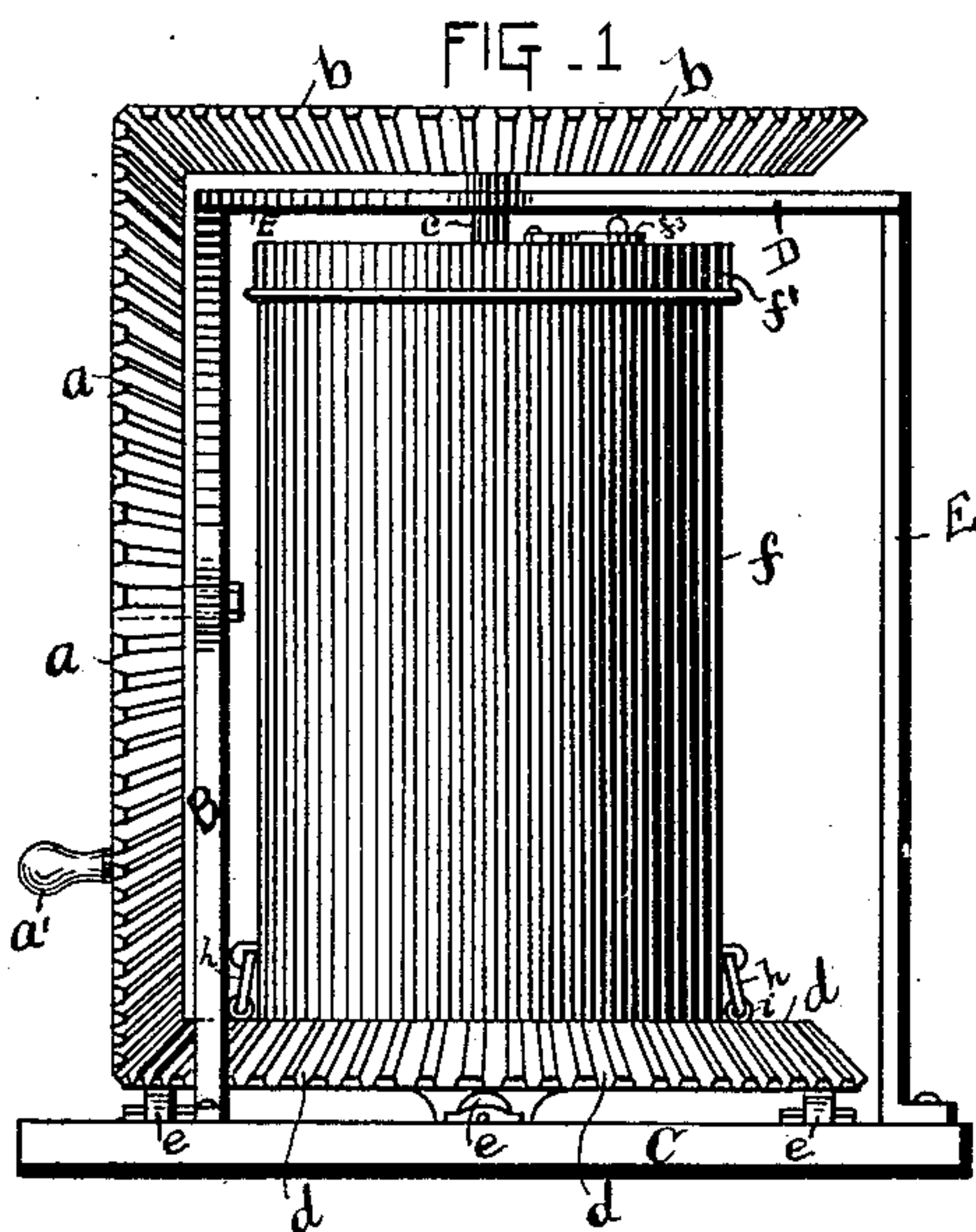


FIG. 3

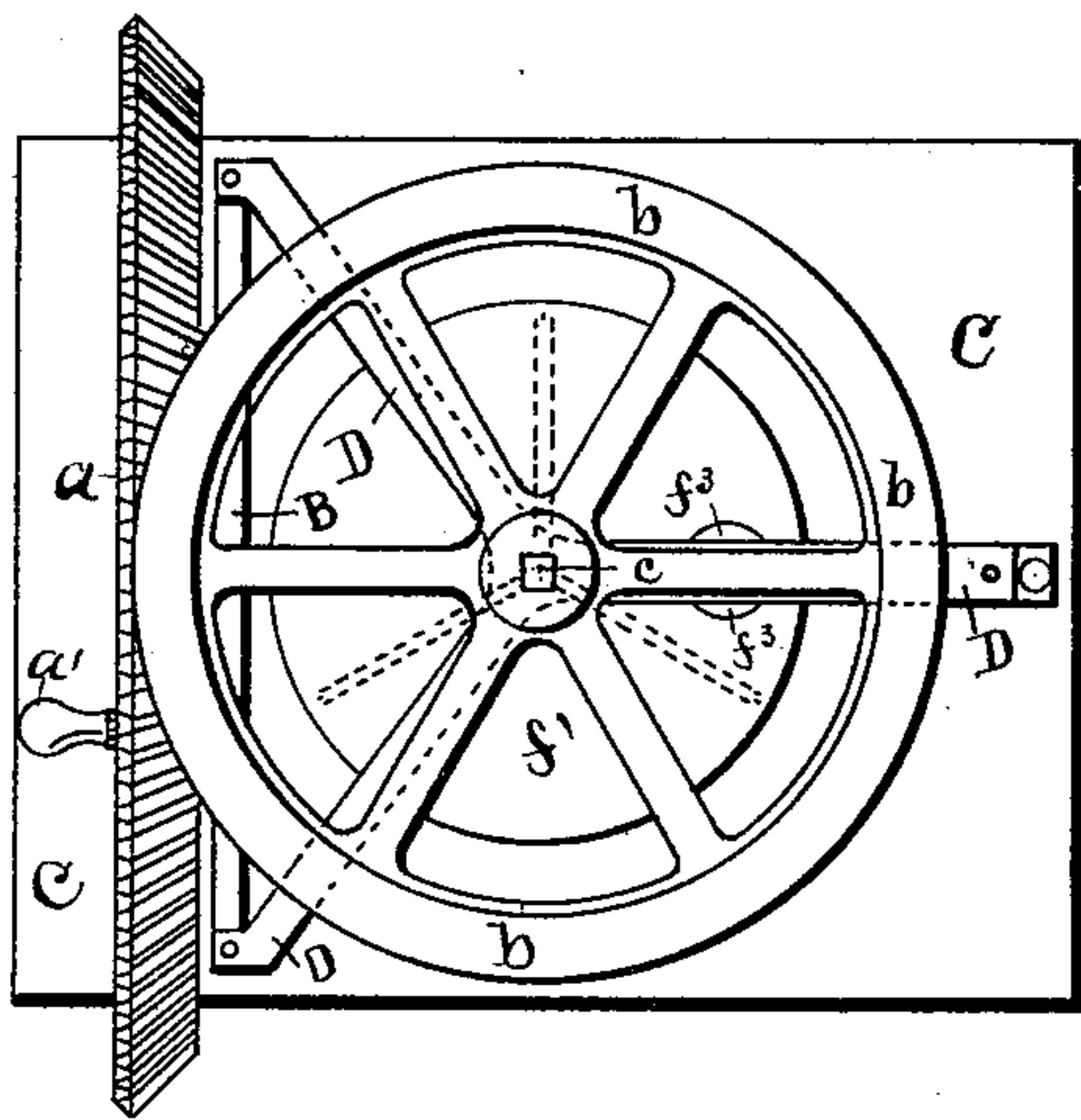
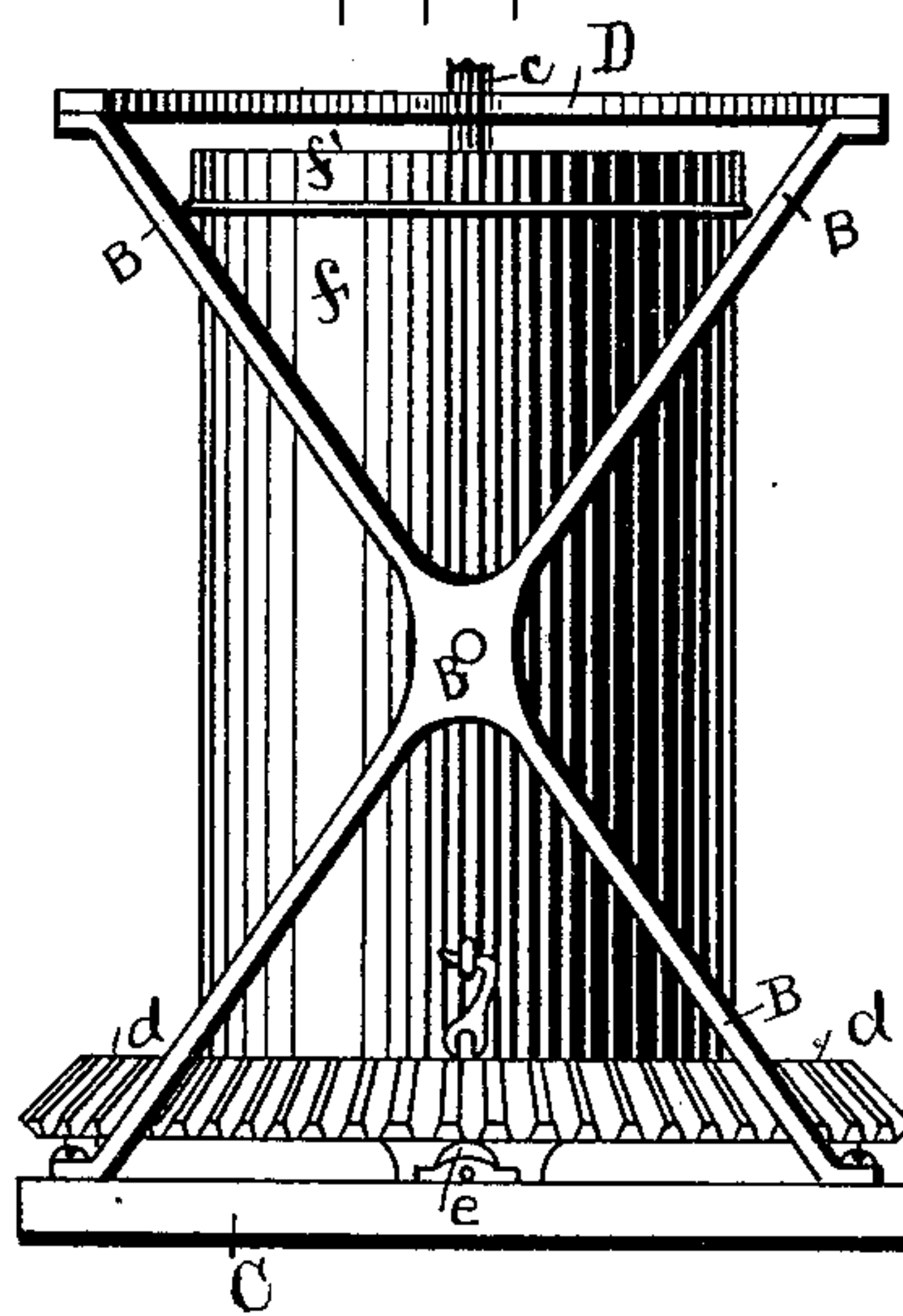


FIG. 4



WITNESSES:

Geo. B. Traver,  
Ira S. Kochng.

INVENTOR

Soloman J. Loveless  
BY  
C. C. Shepherd  
HIS ATTORNEY



# UNITED STATES PATENT OFFICE.

SOLOMAN J. LOVELESS, OF NEAR MOUNT STERLING, OHIO.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 386,838, dated July 31, 1888.

Application filed March 23, 1888. Serial No. 268,193. (No model.)

*To all whom it may concern:*

Be it known that I, SOLOMAN J. LOVELESS, a citizen of the United States, residing near Mount Sterling, in the county of Pickaway and State of Ohio, have invented a certain new and useful Improvement in Churns, of which the following is a specification.

My invention relates to the improvement of churns wherein the contents of the churn are agitated by the rotation of the churn and the rotation in an opposite direction of an internal paddle; and the objects of my invention are to construct a simple and inexpensive form of churn of this class by means of which the churn cylinder and paddle may be easily and rapidly rotated in opposite directions one from the other; to make said churn-cylinder detachable from the rotating mechanism; to provide means for filling the churn-cylinder without detaching the same, and to provide the lower gear-wheel on which the churn-cylinder rests with frictional as well as a pivotal bearing in the frame-work. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved churn. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a plan view, and Fig. 4 is a view taken from the front or operating side of the churn, with the side and top cog-wheels removed.

Similar letters refer to similar parts throughout the several views.

The frame-work of my device consists of an oblong bottom plate or board, C, having extending upwardly therefrom and from near one end thereof a frame-piece, B, preferably in the form of an X, as shown in Fig. 4 of the drawings. From this side frame-piece, B, is made to extend outwardly a Y-shaped frame-piece, D, the outer ends of the diverging arms of the latter being detachably secured to the upper ends of the arms of the frame-piece B by means of tenons formed on the upper ends of the latter and made to enter mortises formed in the ends of the diverging arms of the frame-piece D. The outer end of the single arm of the piece D is also mortised, and is made to fit over a tenon projecting upwardly from the upper end of a vertical frame-piece, E, the lower end of which is secured to the end of the bot-

tom board, C, opposite that to which the frame-piece B is secured. To the center of the X-shaped side frame, B, is pivoted, as shown, a miter-wheel, *a*, from the outer side of which is made to project eccentrically a handle, *a'*.

Fixed upon the upper squared end of a vertical shaft, *c*, made to pass through the center of the upper frame-piece, D, is a miter-wheel *b*, which, extending at right angles with the wheel *a*, is made to gear therewith. Pivoted to the upper side of the bottom frame piece, C, is a miter-wheel, *d*, gearing with the wheel *a*. Pivoted in depressions formed in the upper surface of the frame-piece C, or between suitable bearings made to project therefrom, are small friction-wheels *e*, upon which is adapted to bear and be revolved the rim of the wheel *d*.

Detachably supported, as hereinafter described, upon the upper side of the wheel *d*, is a cylindrical can, *f*, having a cover, *f'*, provided with a central shaft-hole and a circular opening, *f''*, on one side thereof, adapted to be closed by a similarly-shaped cover, *f'''*, pivoted to the top of the can, as shown.

The shaft *c* is made to pass through the central shaft-hole of the can-cover *f'*, and extending into the can preferably has its lower end pivoted in a socket formed in the bottom of the bottom plate of the can. A portion of the shaft within the can has projecting therefrom at different angles blades or paddles *g*.

The can *f* may be secured in its position upon the wheel *d* by means of two or more hooks, *h*, the lower end of each of which is linked with an eye formed on the upper end of a bolt, *i*, the latter being made to pass through a hole formed in one of the spokes or arms *d'* of the wheel *d*, and provided with a nut on its lower end, as shown. The hooks *h* are made to engage with staples or eyes formed on the outer side of the can *f*, as shown.

The operation of my device is as follows: Grasping the handle *a'* and turning the wheel *a* will operate to revolve the wheels *b* and *d* in opposite directions. The revolution of the wheel *b* will cause the paddle shaft *c* to revolve within the can, and the revolution of the wheel *d* will operate to revolve the can *f* in an opposite direction. It will be seen that by these opposite movements of the can and paddle the milk within the can *f* will be subjected to such

agitation as will tend to hasten the formation of butter. It will also be observed that milk or water may be poured into the can at any time through the opening  $f^2$  of the cover  $f'$  without necessitating the removal of the latter.

5 The can may be readily detached from the operating mechanism by removing the upper wheel,  $b$ , and frame-piece D and disengaging the hooks  $h$ .

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

The combination, with the bottom plate, C, provided with anti-friction wheels  $e$ , of the frame-work B D E, secured to the bottom plate, 15 the miter-wheels  $a$  and  $b$ , pivoted to the frame-work, the miter-wheel  $d$ , pivoted to the bottom plate, the can  $f$ , detachably supported on the miter-wheel  $d$ , and the dasher shaft  $c$ , substantially as described.

SOLOMAN J. LOVELESS.

In presence of—

C. H. HANAWALT,

W. H. ALKIRE.