

J. Crum, Churn.

No. 110,902,

Patented Jan. 10. 1871.

Fig 1.

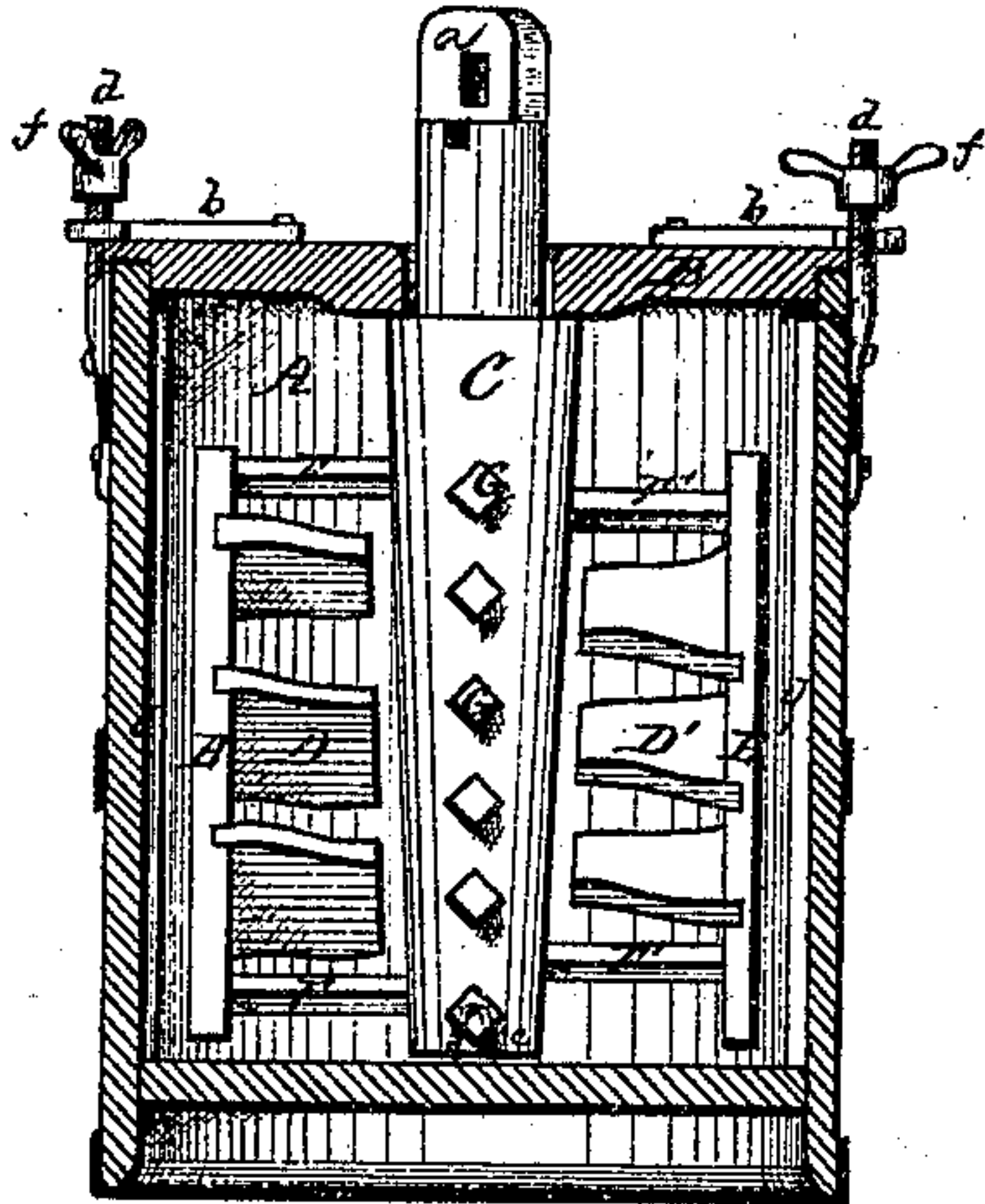


Fig 2.

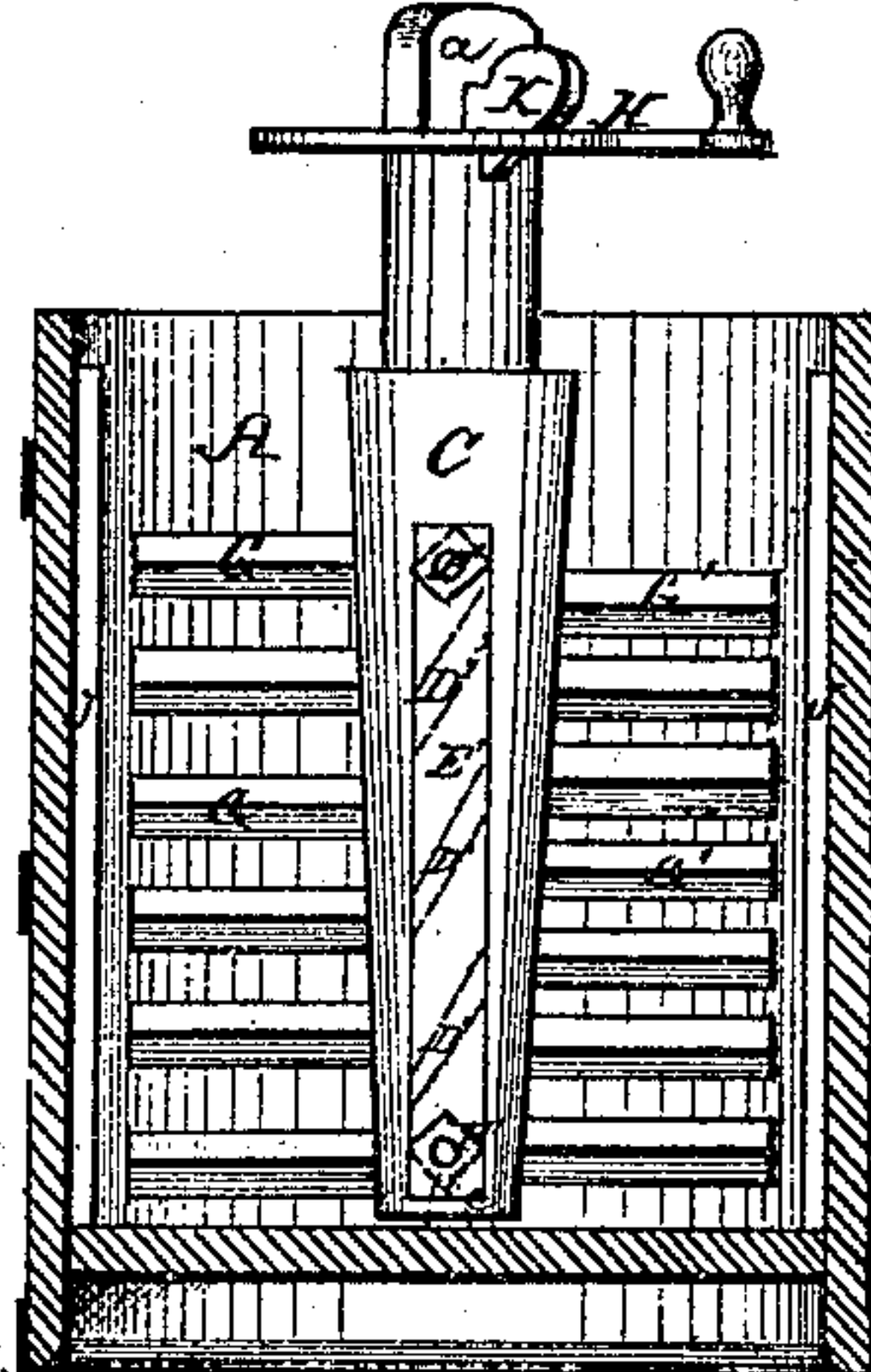


Fig 3.

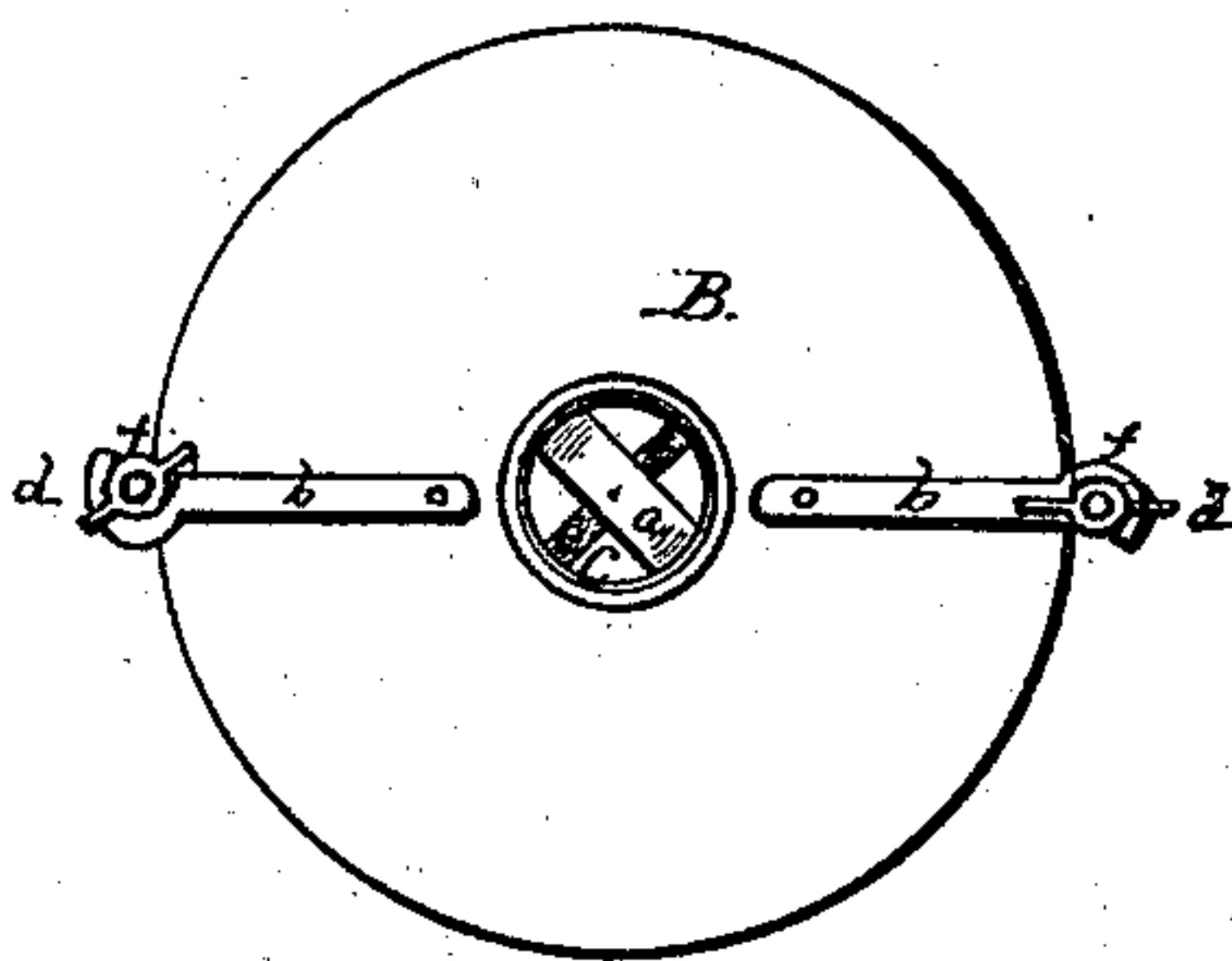


Fig 4.

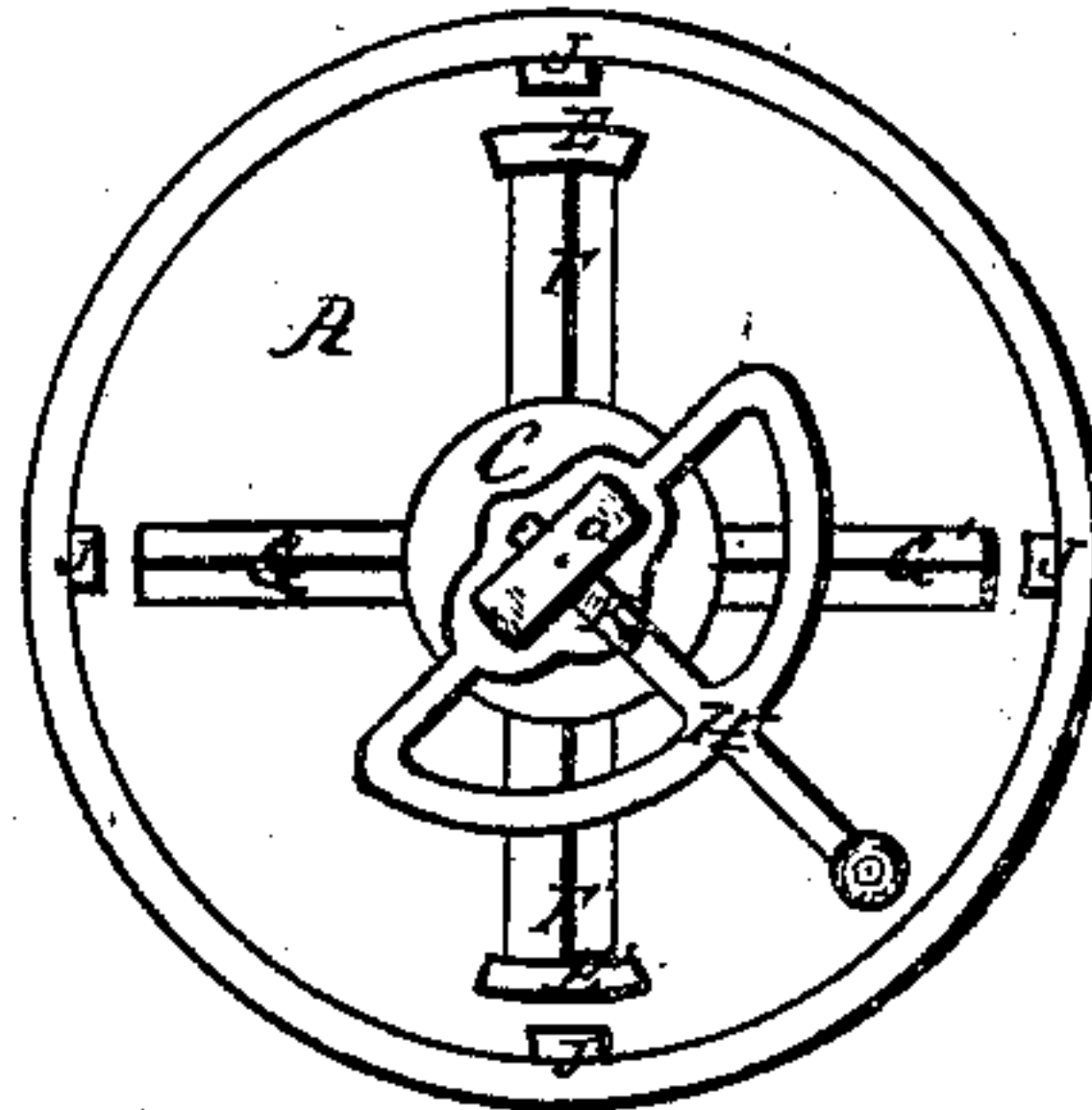
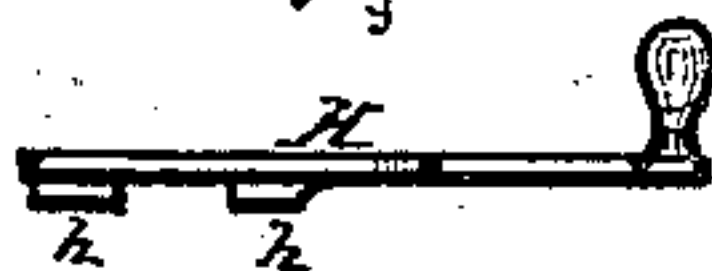


Fig 5.



WITNESSES:

John W. Munday
Lewis L. Coburn

INVENTOR:

John Crum

United States Patent Office.

JOHN CRAM, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND JOHN S. CRAM, OF SAME PLACE.

Letters Patent No. 110,902, dated January 10, 1871.

IMPROVEMENT IN CHURNS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN CRAM, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Churns, of which the following is a specification, reference being had herein to the accompanying plate of drawings, which forms part of this specification, and in which—

Figures 1 and 2 are sectional views, and

Figures 3 and 4 are, respectively, plan views of figs. 1 and 2.

Figure 5 is a view of the lever H detached.

Like letters of reference indicate like parts in the several figures.

General Description.

A is an ordinary cylindrical vessel, which I usually make of wood, of a convenient size, and fitted with a cover, B, made with a rebate around the outer edge, so that it shall fit closely over the churn-vessel.

O is vertical shaft, which has its lower bearing upon a pivot-point, *c*, indicated by dotted lines in figs. 1 and 2, and situate at the center of the bottom of the churn vessel.

The shaft O is provided with a shoulder at its upper part, upon which the cover B rests, said cover being made with an aperture through which the upper portion of the shaft projects.

D D' are vanes or paddles carried by standards E E', which are supported from the shaft O by the arms F F'. These vanes or paddles are placed at an incline, so that, upon revolving the shaft, the liquid contents of the churn will be forced by said vanes in a current either up or down, as the said shaft may be turned in one direction or the other.

G G' are square arms set in vertical lines on said shaft O, and radiating therefrom at right angles to the arms F F'.

These square arms are also set cornerwise; or, in other words, so that in revolving the shaft, the surface of said arms strike the contents of the churn at an angle, each arm presenting at both sides an upper and a lower incline, which tends to bring the particles of cream together as the contents of the churn is forced through between the arms by the motion of the shaft.

The top of the shaft O is formed with a tenon, *a*, extending the entire diameter of the shaft in one direction.

H is a lever or crank, having an aperture which fits over the tenon *a*, as shown at fig. 4.

The lever H is provided with projections *h*, which fit into cavities *e* in the shoulder at the top of shaft O, and serve to render the attachment of the lever H more rigid and firm.

K is a key or wedge, inserted in a hole in the tenon *a*, for the purpose of holding the lever H in place.

J J are strips attached to the interior of the churn-vessel, and extend vertically from the bottom

to a point near the top. The purpose of these strips is to prevent the milk in the churn from passing too freely around the sides in operating the churn.

In practical use of my invention, I do not revolve the shaft O completely and continuously in one direction, but make a half revolution in one direction, and then a half revolution in the reverse direction, and continue this motion until the butter is formed, lessening it toward the last by lessening the arc of the revolution until the butter is properly collected.

The operation of my invention is as follows:

The milk is agitated by the vanes D D', which tend to throw the particles of cream downward. The arms G G' also agitate the milk and tend to collect the particles of cream together.

The motion of the shaft at the half revolution is reversed, and the tendency of the vanes D D' is now to throw the particles upward, while the arms G G' act the same as before.

By the half revolution I obtain a larger amount of agitation, by reason of the currents thus formed, than I would obtain by a complete revolution, and also the reverse action of the inclined vanes or paddles.

The cover B is held in place by the hooks *b b*, which engage the screws *d d*, which screws are provided with thumb-nuts *f f*, which may be tightened down upon the hooks *b*, and thus made to hold the cover firmly in place.

The cover is very conveniently and easily removed by simply loosening the nuts *f* and casting off the hooks *b*.

However, to entirely remove the cover, the lever H must be removed, which is readily done by first withdrawing the key K.

My invention forms altogether a most convenient and effective churn, being very rapid in its collection of the butter and very thorough, and being, at the same time, very conveniently arranged, so that access may readily be had to the interior of the churn at any time. It is also exceedingly cheap and durable.

Claims.

Having thus fully described my invention,

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

1. The inclined vanes or paddles D D', carried by standards E E', in combination with the shaft O and square arms G G', the said arms G G' being arranged to present a double incline surface, as described, substantially as specified and shown.

2. The crank or lever H, having projections *h*, in combination with the shaft O, constructed as specified and shown.

Witnesses:

LEWIS L. COBURN,
J. W. MUNDAY.

JOHN CRAM.