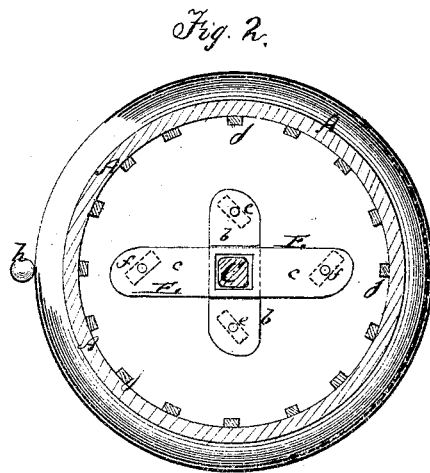
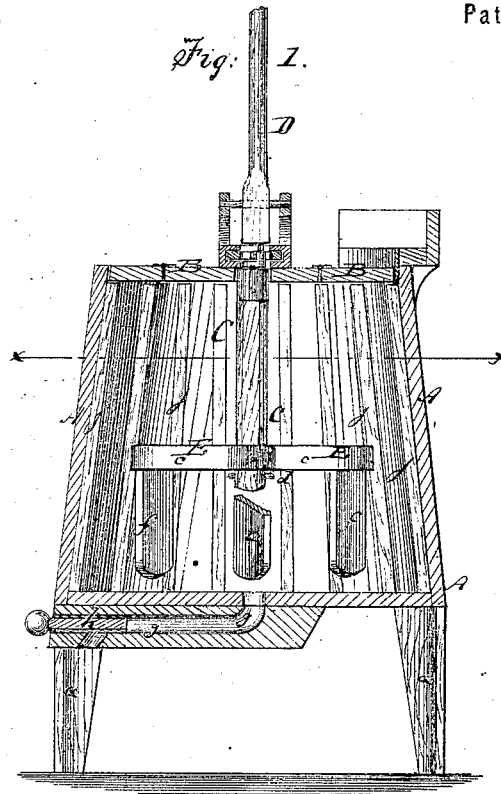


JOHN J. KIMBALL.  
Improvement in Churns.

No. 114,306.

Patented May 2, 1871.



Witnesses:

*P. C. Dietrich*  
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# United States Patent Office.

JOHN J. KIMBALL, OF NAPERVILLE, ILLINOIS.

Letters Patent No. 114,306, dated May 2, 1871.

## IMPROVEMENT IN CHURNS.

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

To all whom it may concern:

Be it known that I, JOHN J. KIMBALL, of Naperville, in the county of Du Page and State of Illinois, have invented new and improved Machinery for Agitating Cream, Suds, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical central section of my improved machine for agitating cream, suds, &c.

Figure 2 is a horizontal section of the same taken on the plane of the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements in the disposition of the agitating-bars which are employed on the rotating dashers of churns or washing-machines, and has for its object to insure a more thorough agitation of the liquids by simple means than was hitherto accomplished by more complicated devices.

The invention consists in setting the dasher-rods to vertically adjustable arms of different lengths and at equal angles of inclination, so that the rods will move the liquid outwardly, causing it to strike the walls of the box, which repels the same, thus producing opposite currents and thorough agitation.

A in the drawing represents the vessel or box within which my improved agitating device is contained. It is made of cylindrical or truncated conical form, of suitable size, and may be supported on standards *a a*, as shown.

B is the lid or cover of the vessel A. It is so put on that it may be bodily removed, together with its appendages, and is preferably double-jointed to permit convenient access to the interior of the vessel.

Through the center of the cover B is fitted a vertical shaft, C, which is hung in suitable manner.

The upper end of the shaft C is connected in suitable manner with a lever, D, or such other mechanism whereby rotary motion can be imparted to it. The shaft is suspended into the vessel A, but does not necessarily extend to the bottom of the same. Its lower portion is squared, as shown.

A cross, E, formed of two bars, *b* and *c*, of unequal lengths, is fitted loosely upon the shaft C within the

vessel A, and has a square aperture to fit said shaft and be revolved by the same. The cross is vertically movable on the shaft, and is in its lowermost position supported by a pin, *d*, fitted through the lower part of the shaft.

The dasher-rods *e e* and *f f* are affixed to the arms *b c* of the cross respectively, so that they are suspended therefrom into the vessel A, as shown.

The arm *b* being considerably shorter than *c*, it follows that the rods *e e* on *b* are nearer together than the rods *f f* on *c*. This gives a more extended beating-surface than could be had if the rods were all in one circle.

Each dasher-rod is of prismatic form, and affixed obliquely to the cross, and so that the beating-faces of the rods *e* are parallel with those of *f*, as is clearly indicated in fig. 2. By this means I produce an outward current in the vessel A, as the rods force the liquid outwardly toward and against the ribbed sides of the box, whence it is repelled, obtaining a consequent thorough agitation.

The upward adjustability of the cross on the shaft aids further in properly agitating the liquid, since it causes the dasher to rise or fall from the active currents to the more undisturbed portion of the liquor in washing-machines, permitting the insertion of more or less goods.

The liquid from the box A can be drawn off through a suitable opening at or near the bottom, the drawing showing a pipe, *g*, which is closed by a plug, *h*, whenever the discharge-opening *i* is to be stopped.

The inner sides of the vessel A are or may be roughened by means of projecting ribs *j j*, as shown.

It is evident that a disk or plate may be used in place of the cross E.

Having thus described my invention,

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

The vertically-adjustable rotary dasher, provided with agitators *e e f f* placed perpendicularly at different distances from the center, each pair having its faces parallel and diagonally inclined, to operate substantially as herein shown and described.

JOHN J. KIMBALL.

Witnesses:

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