J. A. Hanger.

Churn.

No. 94,312. Patented Aug. 31, 1869.

Fig. 1

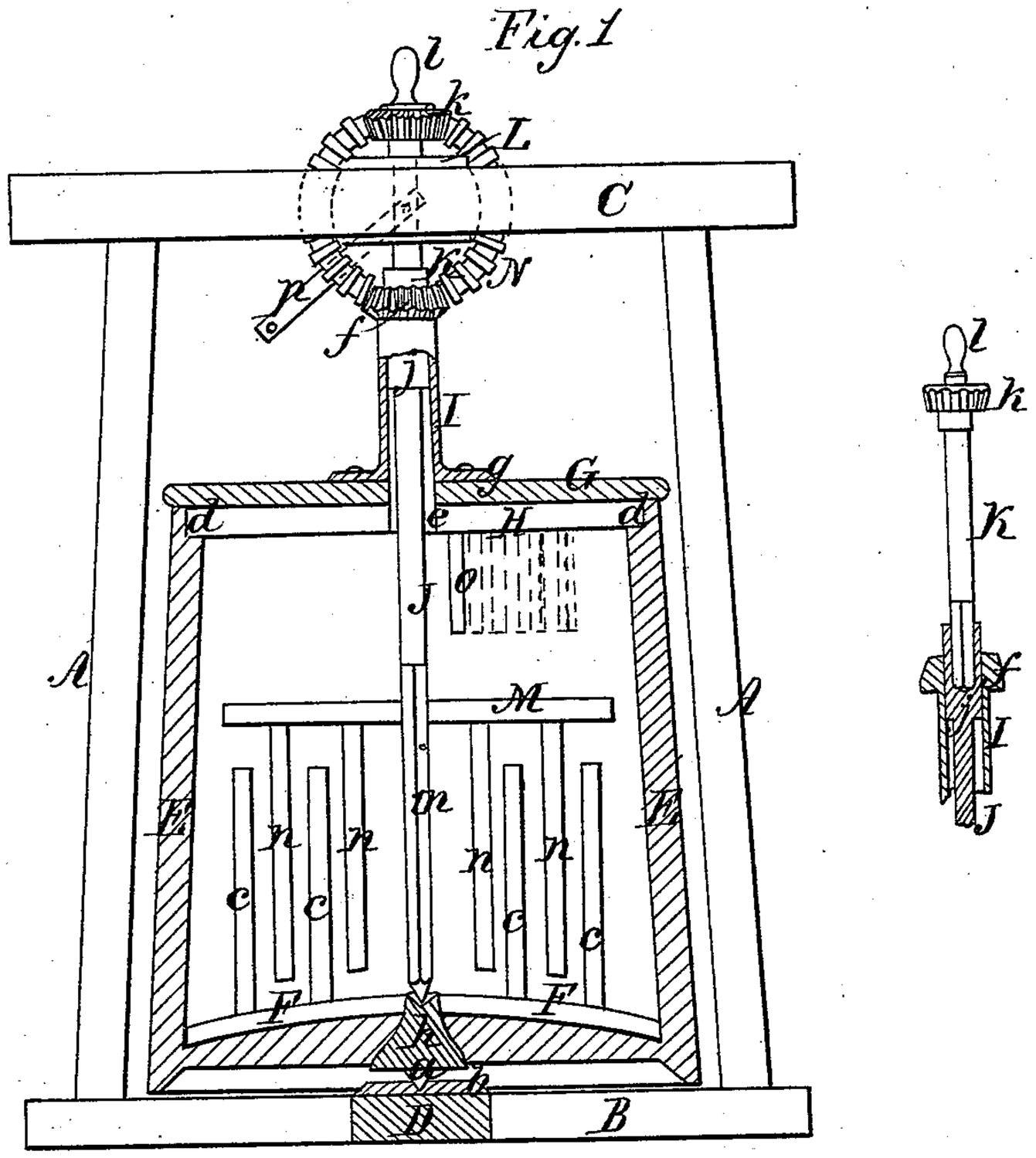
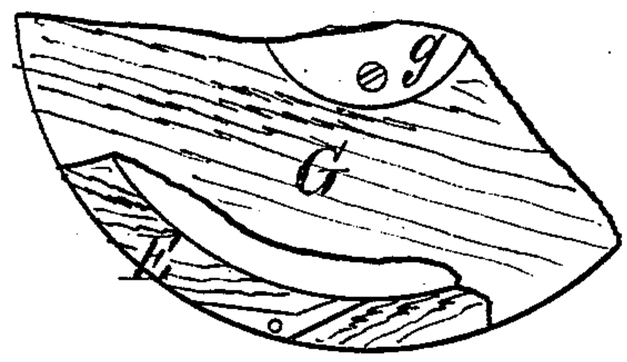


Fig. 2



Witnesses
Geo. W. Rothwell
Phil. F. Larner

Inventor
Jacob A. Hanger
By Wedderburn & Co
Attys

United States Patent Office.

JACOB A. HANGER, OF STAUNTON, VIRGINIA.

Letters Patent No. 94,312, *dated August* 31, 1869.

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, JACOB A. HANGER, of Staunton, in the county of Augusta, and State of Virginia, have invented a new and useful Improvement in Churns; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable others skilled in the art to which my invention appertains, to make and use the same, reference being had to the accompanying drawings, making a part of this specification, and in which—

Figure 1 is a vertical central section of my improved churn, and

Figure 2, a partial top view of the same, a portion of the cover being broken away.

My invention relates to that class of churns in which the tub and dasher are both revolved, but in opposite directions, by means of the same drive-wheel; and

It consists in a dasher, fitted loosely on the shaft, so as to turn therewith, but move vertically thereon, so that the upper part of the dasher floats on top the cream, thus permitting the free circulation of air through the cream, in the tracks of the vertical arms of the dasher.

Another feature of improvement is the cover of the churn, which is turned out of a solid block or plank, and prevented from warping by a cross-piece let into the under side of the cover, and projecting therefrom at each end, so as to rest in recesses in the top of the tub, and thus couple the cover with the tub, whereby they both turn together.

My invention will be fully understood by reference to the accompanying drawings, considered in connection with the following description.

A A represent the side-pieces of the framing, set in a base, B, and connected together at the top by a cross-piece, C.

D is a transverse piece, fixed centrally to the part B, so as to enlarge the base.

E represents the tub, made in any suitable manner, and having affixed to the centre of its bottom, underneath, a pin, *a*, of any description, which rests in a socket, *b*, secured on top the base B D.

Across the bottom of tub E is fixed a strip, F, in which are set vertical arms *c*.

G is the cover of the churn, which is turned in a solid piece from a block or plank, and has a piece, H, set across the grain, in a groove in the under side, to prevent the cover from warping.

The ends of this cross-piece project, as at *d d*, and rest in recesses formed for their reception in the inner edge of the top of tub E.

e is a central opening in the cover.

I represents a tubular shaft, formed or provided at its upper end with a bevelled pinion, *f*, and with a flange, *g*, at its base, by means of which it is made fast to the cover.

J represents the dasher-shaft, which passes down through the tubular shaft I, and rests in a socket, *h*, provided at the centre of the bottom of the churn.

The upper part of the dasher-shaft is enlarged, as at *j*, to fit the bore of the tubular shaft I; and in the top of this enlargement is formed a square socket, which receives the similarly-shaped end of a key, K, as shown more clearly in the detail view in red.

This key is formed or provided with a bevelled pinion, *k*, above which is a knob, *l*, and it passes down through an opening made in the cross-piece C, and also in a metallic cap, L, secured to said cross-piece.

On the square portion *m* of the dasher-shaft a cross-bar, M, is fitted.

In this bar are fixed arms *n n*, projecting downward and alternating with the stationary arms.

The bar M is loosely fitted on the dasher-shaft, so that it has a vertical movement thereon.

The object of this is to permit said cross-bar to float or remain on the surface of the cream within the churn.

By this means, the openings or passages made by the dasher-arms in the body of the cream extend from the surface thereof to the bottom of the churn, thus allowing the free circulation of air all through the cream.

In the body of the churn, near or at the top thereof, I make passages, *o o*, as shown more clearly in fig. 2, extending entirely through. As the tub revolves, currents of air are induced to flow into the churn through these passages.

The churn and dasher are rotated by means of a bevelled gear-wheel, N, which is mounted on a stud projecting from the side of the cross-bar C, and engaging with the pinions *f k*.

The wheel N is provided with a suitable handle, *p*.

When the crank *p* is rotated, the tub and dasher are both revolved, but in opposite directions.

By a small expenditure of power, the revolutions of the tub and dasher are made very rapid, and the desired effect is thus produced in an unusually short time, the operation being greatly facilitated and made more perfect by the free circulation of air drawn in at the passages *o* by the rotation of the tub.

By simply drawing out the key K, the tub may be detached from the framing, to be filled, emptied, or cleansed, the cover being lifted off for this purpose.

I do not claim rotating the tub and dasher in opposite directions, the former being provided with a tubular shaft, through which the dasher-shaft passes, as I am aware that this is not new; but having thus described my invention,

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

1. The cross-bar M, provided with arms *n*, when vertically movable upon the rotary dasher-shaft J, within the rotating tub E, in combination with the arms *c*, fixed to the bottom of the churn, substantially as and for the purpose described.

2. The cover G, turned in a solid piece, and provided with the cross-piece H, the ends of which project and rest in recesses in the churn body, substantially as and for the purposes set forth.

To the above I have signed my name, this 3d day of March, 1869.

JACOB A. HANGER.

Witnesses:

JOHN A. WIEDERSHEIM,

PHIL. F. LARNER.