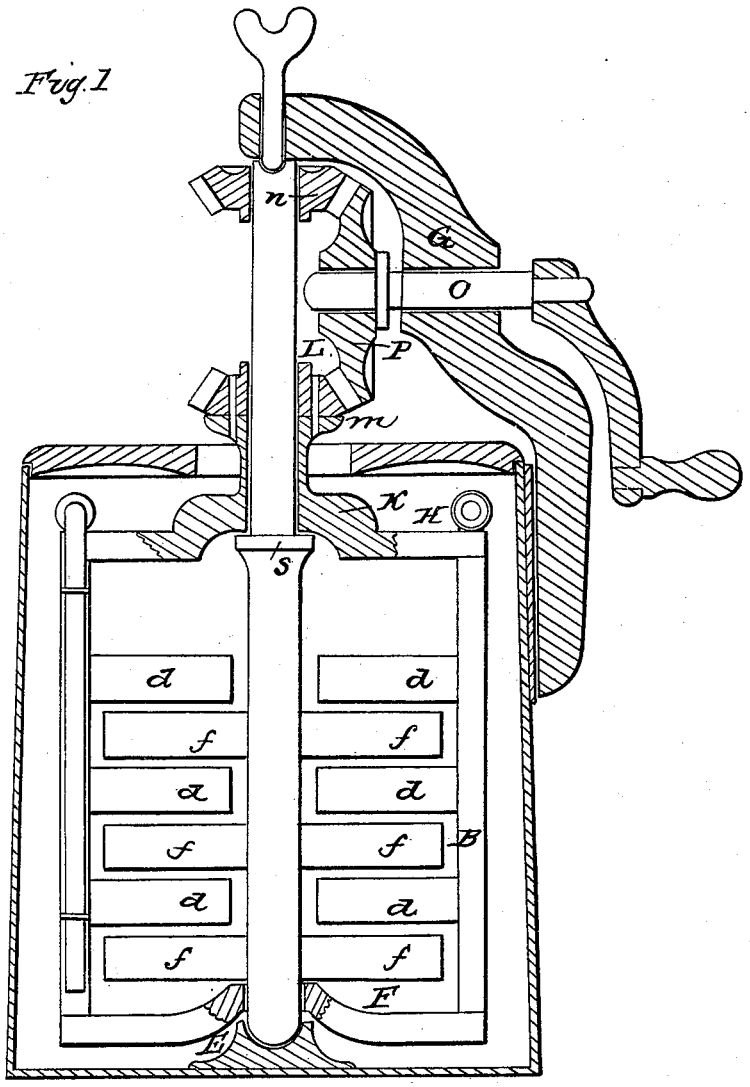
W. BOYNTON.

Churn.

No. 52,664. Patented Feb. 20, 1866.

Fig. 1



Witnesses

C. A. Alexander

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UNITED STATES PATENT OFFICE.

WILLIAM BOYNTON, OF AUBURN, NEW YORK.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **52,664**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, WILLIAM BOYNTON, of the city of Auburn and State of New York, have invented certain new and useful Improvements in Churns; and I hereby declare that the following is a true and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in the use of certain mechanical devices to facilitate the process of churning milk.

The annexed drawing, designated by Figure 1, represents a vertical section of my churn.

The body of the churn (marked A) is cylindrical in form. Within the cylinder A is inserted the frame B, made of an oblong form, and having the vertical shaft C passing through it at its center.

The frame B is furnished with a series of slats, *d*, which extend from the two sides of B to within a small distance of shaft C. Shaft C is also supplied with the slats *f*, which pass freely between the slats on B when C is revolving, as hereinafter described.

E represents a circular block of wood, fastened to the bottom of the churn A, and having at its center a socket to receive the lower end of shaft C, which passes through and extends below the curve in bar F, that serves to connect the two sides of frame B together. The upper end of shaft C is reduced in size from the shoulder S.

To admit of the free play of shaft C an opening is made in the cross-bar H, and above this opening the yoke K is firmly secured to H. Through the yoke K a perforation is made of sufficient size to admit of the free play of the reduced portion of shaft C.

At the upper end of yoke K is the flange *m*, and upon the surface of the flange the bevel-wheel L rests. Through flange *m* two pins are inserted at opposite sides of the flange, which extend upward sufficiently far to penetrate the bevel-wheel L, and thus hold it securely in place while the machine is operating and the shaft C rapidly revolving.

At the the upper end of shaft C a second bevel-sheel, *n*, is firmly secured to the said shaft, the face of *n* being downward, while the face of *m* is upward. This position of the two bevel-wheels admits of both being geared into one driving-wheel, thus driving the shaft C and the frame B in opposite directions.

P, which designates the driving-wheel, is fastened to the inner end of shaft O, which passes horizontally through the arm G, the lower end of G being secured to the side of churn A by pins or screws, that can be removed when necessary. The upper end of G extends a little beyond the top of shaft C, and is penetrated by a pin, which answers as a pivot to shaft C.

To the outer end of shaft O the crank is attached for operating my churn.

The frame B is furnished at each of its opposite sides with a metal tube, *i*, the tubes being made bell-shaped at top for the purpose receiving a large supply of air during the rapid motion of the frame B.

This arrangement I consider of great advantage in the production of butter from either milk or cream, for whether the introduction of air in expediting the production of butter proceeds from mechanical or from chemical action the quantity introduced into the milk at the time of its violent agitation must materially affect the result.

I disclaim being the original inventor of the devices described in the above specification; but

What I do claim, and for which I desire to secure Letters Patent, is—

The combination of the frame B, the shaft C, the arm G, the bevel-wheels *m* and *n*, the driving-wheel P, and air-tubes *i*, the whole arranged substantially as and for the purpose herein described.

WILLIAM BOYNTON.

Witnesses:
HORACE T. COOK,
WM. MACDOUGALL.