J. BRINKERHOFF.

Churn.

No. 37,214. Patented Dec. 23, 1862.

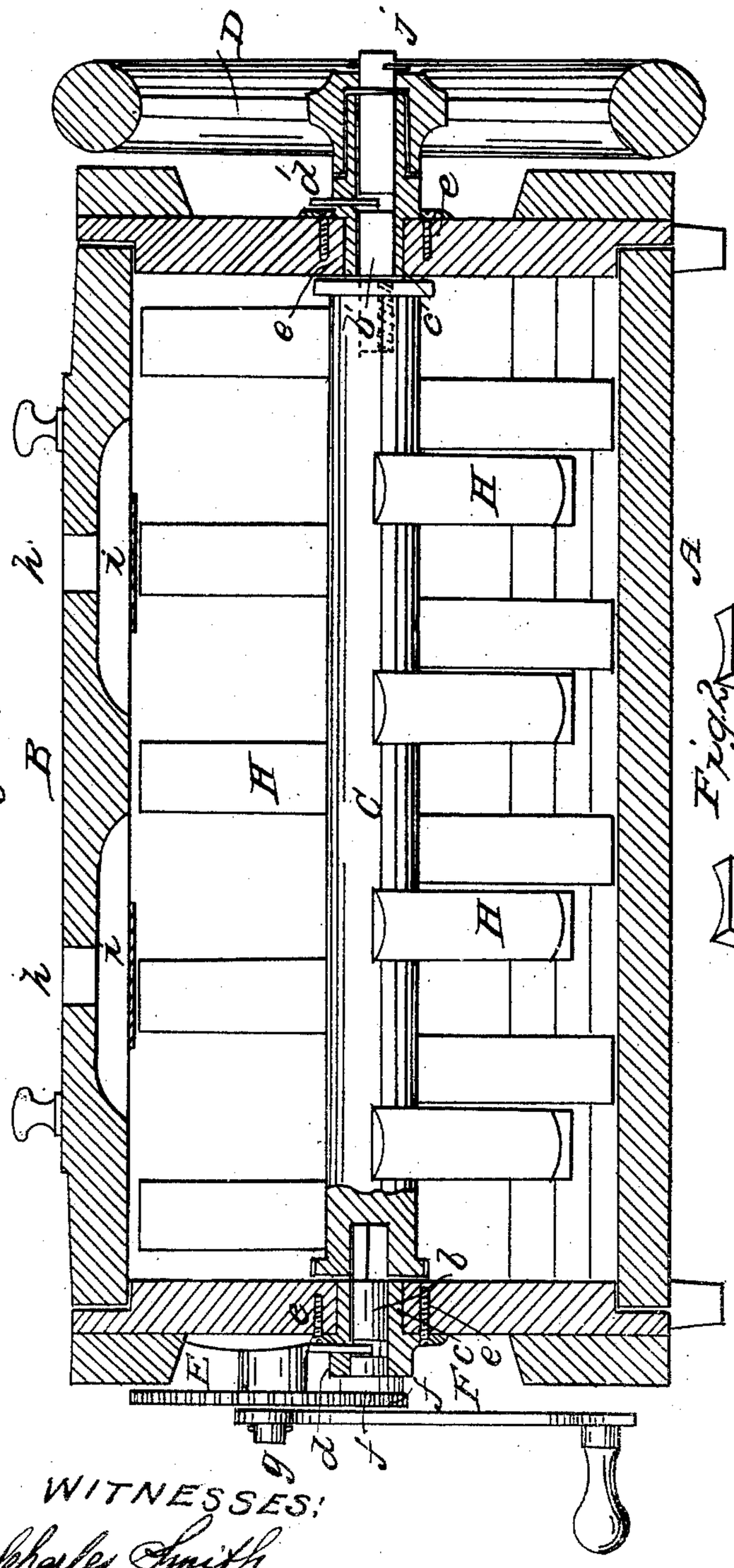

Fig. 1,

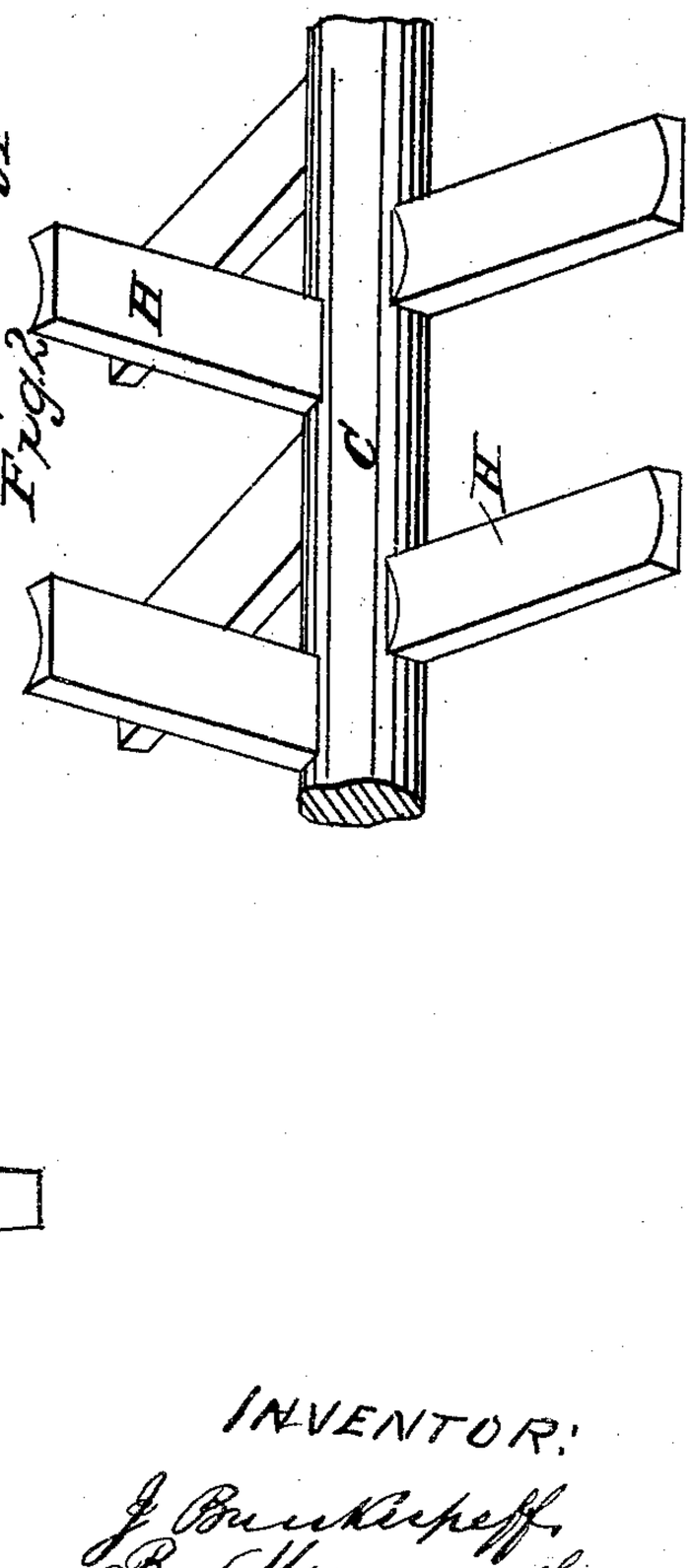

Fig. 2

WITNESSES:

Chas. Smith

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UNITED STATES PATENT OFFICE.

JACOB BRINKERHOFF, OF AUBURN, NEW YORK.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **37,214**, dated December 24, 1862.

To all whom it may concern:

Be it known that I, JACOB BRINKERHOFF, of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal section of a churn embodying my improvements. Fig. 2 represents in perspective a fragment of a dasher.

Similar letters of reference indicate corresponding parts in the two figures.

The nature of this invention consists in the manner of hanging the balance wheel, whereby the whole weight thereof is supported independently of the driving-shaft, relieving the latter of all strain except what is required to rotate the wheel, and lessening the tendency of one bearing of the driving-shaft wearing away more than the other, and thereby providing against leakage of the cream-vessel where the fly-wheel shaft enters it.

It also consists in the peculiar construction of the blades of the dasher, whereby it is made more effective in its operations both in the formation and gathering of the butter, all as will be hereinafter fully explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a wooden box of oblong rectangular form, furnished with a lid, B, which is supported by a ledge formed on the inner side of the side and end pieces of the box by cutting away a portion thereof at the top.

C is a wooden shaft armed with a series of blades, H, and supported at its ends on the inner ends of short metal shafts *b* and *b'*, which are squared to fit sockets in the wooden shaft. The short metal shafts *b* and *b'* revolve in boxes *c* and *c'*, respectively, and are prevented from casual longitudinal movement therein by keys *d* and *d'*, which pass through slots in the upper half of the boxes and enter at their lower ends latitudinal grooves in the shaft. The boxes *c* and *c'*, at their inner ends, pass through the ends of the box or cream-vessel A, and are rigidly attached thereto by screws *e*, which pass through the flanges of the boxes into the wood.

D is a balance-wheel having a square hole passing axially through it with a cylindrical countersink, the former to fit over the outer square end of the shaft *b'* and the latter to fit over the outer end of the box or hollow stud-shaft *c'*, upon which it revolves. The balance-wheel is attached to the driving-shaft by a pin, *j*, inserted through a hole in the shaft outside of the wheel. The whole weight of the balance-wheel is sustained by the box or hollow stud-shaft *c'*, thus relieving the driving-shaft from undue strain, to which it would otherwise be subjected in order to have the equalizing force of the wheel applied directly to it. The shaft *b*, on its outer end, is provided with a pinion, *f*, which gears into the driving-wheel E, and receives motion therefrom, said driving-wheel being supported by a stud-shaft, *g*, and actuated by a winch, F.

The dasher is composed of a series of radial blades, H, which are grooved longitudinally on one side, and so arranged in spiral lines on the shaft that as it is rotated each successive blade enters and lifts the cream, or the larger portion thereof lying adjacent to that passed through by the preceding blade, thereby, at every revolution of the shaft, lifting and dashing against the sides of the cream-vessel as much cream from one inch of depth as for another the entire length of the shaft, thus exposing evenly and alike to atmospheric action every portion of the cream lying within the arc of the circle described by the blades of the dasher in its rotation. The atmosphere is allowed free entrance to the cream-vessel through apertures *h h'*, which pass through the lid B, opening into grooves on the under side thereof. The cream is prevented from being thrown out through the apertures *h h'* by the action of the dasher by the plates *i i*, which bridge them on the under side. The grooved blades H, beside being more effective than the flat blades in the rapid formation of butter, produce a better article with the same cream by reason of the same being more thoroughly exposed to the atmospheric action. When the butter begins to form, the tendency of each grooved blade is to drive together all of the particles of butter in its wake, thus facilitating the operation of gathering.

I do not claim any of the parts above described, separately considered; but,

Having thus described my invention, what I do claim as new, and desire to secure by Letters Patent, is—

1. The hollow stud-shaft c', short metal shaft b', key d', and fly or balance wheel D, when combined and arranged to operate in the manner and for the purpose specified.

2. The series of longitudinally-grooved blades H, in combination with the horizontal shaft C, on which they are arranged in spiral lines, to operate in the manner and for the purpose set forth.

JACOB BRINKERHOFF.

Witnesses:

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HORACE T. COOK.