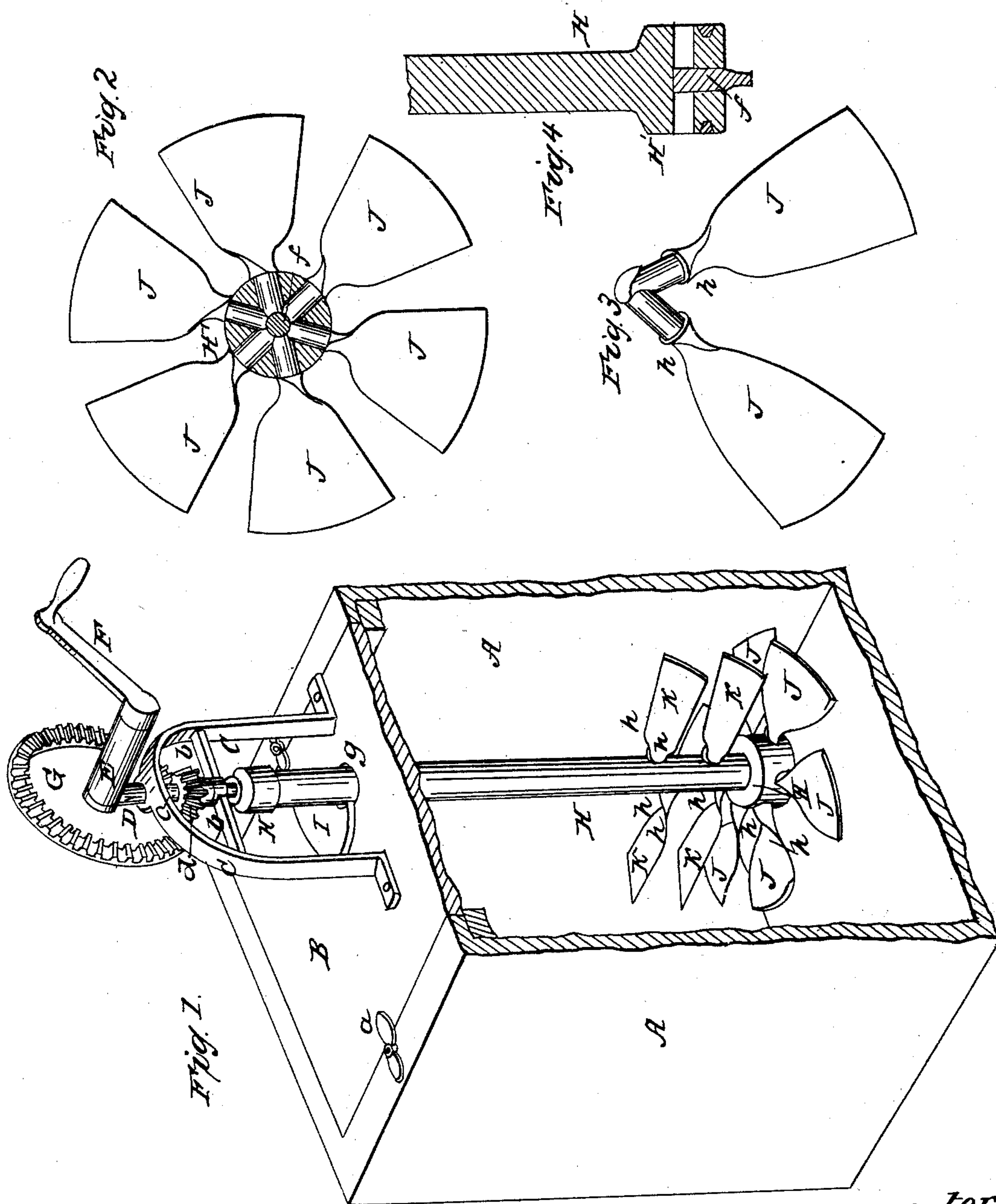


S. T. LAMB.  
Churn Dasher.

No. 30,411.

Patented Oct. 16, 1860.



Witnesses  
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# UNITED STATES PATENT OFFICE.

SALEM T. LAMB, OF NEW WASHINGTON, INDIANA.

## FASTENING BLADES OF CHURN-DASHERS.

Specification of Letters Patent No. 30,411, dated October 16, 1860.

*To all whom it may concern:*

Be it known that I, SALEM T. LAMB, of New Washington, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Churn-Dashers, and that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a perspective view of the churn with a portion of the box broken away to show the dasher in place. Fig. 2, represents a horizontal section through the dasher-staff, just above the lower series of blades. Fig. 3 represents two of the lower series of blades, and the manner of locking their shanks one upon the other to prevent the blades from coming loose, or turning, in the dasher staff. Fig. 4, represents a vertical section through a portion of the dasher-staff.

Similar letters of reference where they occur in the separate figures denote like parts in all the drawings.

My invention consists in the manner in which I unite the lower series of blades with the staff, to cause them to interlock, and mutually hold each other to prevent their becoming loose, or turning in the staff.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

To make a churn that can be thoroughly cleansed is of as much, and probably of greater, importance than its facility for easy churning, and hence I have given that prerequisite particular attention while at the same time I have contrived the mechanism so as to be easily and efficiently operated, as well as readily removed, and replaced in the box.

A represents a box of square form, though it may be of any of the known forms for this purpose. On the lid or cover B of the box, which fits down into a suitable seat, and is moreover buttoned as at *a*, or otherwise secured to the box, is fixed a pillar block or bracket C, that has cast or otherwise secured to it a neck piece D, that carries or supports a horizontal sleeve E, through which the shaft that carries the crank F, on one of its ends, and the bevel cog-wheel G, on its other end passes, and freely turns in.

*c*, is a shaft supported at its top in the

bracket C, and at its lower end in a cross brace *b*, fastened to the bracket. This shaft *c*, has upon it a bevel pinion *d*, into which the bevel gear wheel G takes, and thus rotates said shaft *c*. The lower end of the shaft *c* below the brace is made square as at *e*, or many sided, so as to fit into a similarly formed recess or step in the top of the dasher staff H, so as to support and revolve said dasher staff. The bottom of the dasher staff, has a spindle *f* affixed to it, which spindle works in a step in the bottom of the box. To facilitate the uniting of the dasher staff to the gearing which drives it, I cut the opening *g* in the cover through which the staff works, so as to be a part of the larger opening through which the condition of churning process may be examined, said larger opening being fitted with a cover I, that is also cut away so as to come up closely to the staff. When the cover I, is removed the dasher staff can incline entirely out from under the gearing—or can when inclined, and its spindle set in the step in the bottom of the box, be swung immediately under the gearing and united thereto. In addition to this the large opening facilitates the removal of the dasher.

J, J, are the lower series, and K, K, the upper series of blades. These blades are all made with, and united to the dasher-staff by, round shanks, and to prevent these round shanks from dragging in, or resisting the motion of the cream, the spiral lines *h* of the blades are continued entirely up to the dasher staff, so as to aid in impelling the current of the cream instead of resisting it which they would do if round or square and without the continuation of the spiral lines upon them. When the shanks or necks of the blades, are wide and mortised into or through the staff it is impossible to thoroughly cleanse the staff and these portions of the blades. My object in using the necks or shanks to the blades is so that they can be cleansed easily, and then to prevent these necks or shanks from resisting the cream, I form a continuation of the spiral lines *h* of the blades upon them.

The blades are all made slightly concave on their upper sides, and correspondingly convex on their undersides. The lower series J, may be much broader than the upper series, and they all incline in the same direction viz: so as to press the cream down, instead of raise it up as is generally



done. The blades J, have shanks *j* formed upon them, as well as a slight shoulder *i*, where the spiral lines *h* run out, said shoulders fitting tight up against the staff when the blades are set therein. Where the blades J, are placed, the staff is enlarged, so as to form a hub H. The manner of inserting the blades J, or their shanks, in the hub, is as follows. A radial hole having been bored horizontally into the hub to, or slightly past, its center, the shank *j*, which has previously had some white lead or other suitable cement placed around it near its shoulder, is driven in, care being taken that the blade has its proper inclination. The shank when driven in, is to extend full up to the center of the hub. Another radial hole is then bored for the next adjacent blade, the boring tool passing through or cutting off the end of the first shank. The second blade with the same preparation as the first one is then driven in or united, its shank fitting against and overlapping the first driven one, so as to answer as a key to it, to prevent it from turning or becoming loose. The third, fourth, &c., blades are similarly inserted each one forming a key to the preceding one (as may be seen at Figs. 2 and 3, particularly the latter figure). The last blade may be driven with more care than the others, or may be fastened by a pin or otherwise, so as to lock the whole series, or the spindle *f* which may extend up to or through the shanks, as shown in Fig. 2, may serve as a key to lock the whole series of shanks in the hub or staff. The shanks of the blades J, are all set in the same horizontal plane, but the shanks of the upper series of blades are set to break spaces with each other, though inclined in the same direction with the lower ones. They too may be set with white lead or other proper cement, the object being to make a joint that the cream cannot enter, for if it does the churn cannot be kept sweet and clean.

I make a groove around the hub, near its

lower end into which I run molten metal to form a band (as seen at Fig. 4) which cannot come off by any shrinking of the wood, for though it may at times be slightly loose, it cannot drop off, and the wood will when saturated swell up to it again.

The top part of the staff which has the recess for the shank *c* to enter, is made of metal.

In churning considerable motion is given to the dasher in the direction heretofore indicated viz: so as to press down the cream. When the butter is made and ready to be gathered, the same motion in direction is continued, but at a greatly diminished speed, the result of which is that the butter is rolled up into masses by the blades so that it may be easily gathered. When the butter is thus rolled up into masses, and the dasher is to be removed, it is only necessary as the dasher is slowly raised up out of the box to turn it by the hand, in a direction contrary to that in which it was turned while churning, and the blades will pass through the gathered butter without throwing it apart.

The dasher to be cleansed properly is first scalded and washed, and then laid out in the sun to air and dry. It is impossible to find any wood that will not swell and shrink under this operation, and in so doing it is liable to split, or the blades to drop out. Against these difficulties I have carefully guarded in the construction of my churn and effectually too, as experience has proven.

Having thus fully described the nature and object of my invention what I claim therein as new and desire to secure by Letters Patent is—

Interlocking or overlapping of the shanks of the blades J, so that they shall serve to hold each other firmly in the staff as herein described and represented.

SALEM T. LAMB.

Witnesses:

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