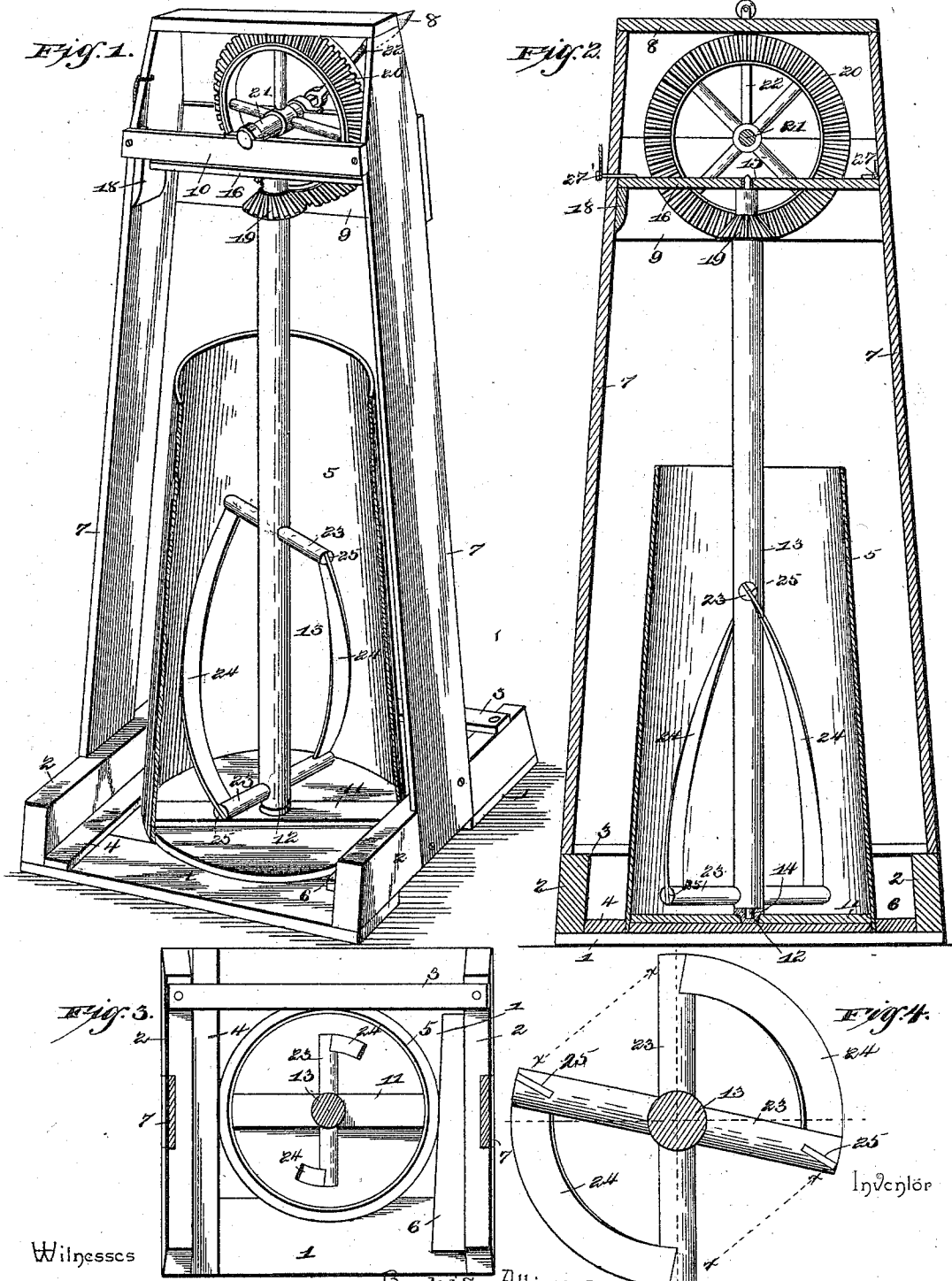


(No Model.)

J. P. ROGERS.
CHURN.

No. 582,095.

Patented May 4, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES P. ROGERS, OF KYLE, TEXAS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 582,095, dated May 4, 1897.

Application filed January 26, 1895. Serial No. 536,369. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. ROGERS, a citizen of the United States, residing at Kyle, in the county of Hays and State of Texas, have invented a new and useful Churn, of which the following is a specification.

My invention relates to churns, and particularly to dashers adapted for imparting a combined rotary and linear movement to the contents of a churn, the object in view being to provide a simple, inexpensive, and efficient construction of dasher designed particularly for use in connection with an ordinary tub or receptacle, the same being an improvement upon the construction shown in my Patent No. 225,644, granted March 16, 1880.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a churn constructed in accordance with my invention, partly broken away to show the dasher. Fig. 2 is a vertical section of the same. Fig. 3 is a horizontal section taken on a plane below the upper cross-bar of the dasher. Fig. 4 is a detail plan view of the dasher.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a base having side beams 2, from which rise the standards 7, said side beams being connected by a transverse bar 3, and strips 4 being secured to the base contiguous to the inner surfaces of the side beams to prevent lateral vibration of the churn-tub 5. The upper extremities of the standards are connected by a cross-piece 8 and opposite plates 9 and 10, in the upper edges of which are formed bearings for the driving-shaft 21. Fixed to the driving-shaft is a master-gear 20, having a crank 22.

The dasher is provided with a staff 13, having a reduced upper extremity 15, fitted in a bearing at the center of a bearing-bar 16, said bearing-bar being hinged, as at 27, to one of the standards and being adapted to rest at its free end upon a stop-block 18, secured to the

other standard. A securing-pin 27' is employed to maintain said bearing-bar in its normal position. The tub or receptacle 5 is provided at its bottom with a transverse cleat 11, having a central socket 12, in which is mounted the reduced lower extremity 14 of the dasher-staff. Motion is communicated to the dasher-staff by means of the master-gear 20, which meshes with the pinion 19.

The dasher embodying my invention consists of upper and lower cross-bars 23, carried by the staff 13 and having their extremities connected by blades 24. The arms of the cross-bars, which are connected by each blade, are arranged at an obtuse angle to each other, as indicated by the right-angularly-disposed dotted construction-lines of Fig. 4, the object of this arrangement being to increase the length of the blades without adding to the height of the dasher.

The blades are fitted at their upper and lower extremities in kerfs 25, formed in the extremities of said arms of the cross-bars, and these kerfs are arranged at an inclination corresponding with the inclination of the contiguous portions of the blades and also diagonally with relation to the length of the arms, whereby the outer edges of the blades are disposed in advance of radii extending through the inner edges of the blades. The advantage derived from this arrangement of the blades is that instead of forcing the fluid contents of the churn outward centrifugally during the rotation of the dasher, as when radially-disposed blades are employed, the effect is to impart a directly rotary motion to the contents. In other words, the blades advance with their faces perpendicular to the direction of the motion imparted to the fluid. (See *xx*, Fig. 4.) Under these circumstances the spiral disposition of the blades or their rearward inclination toward their lower ends causes the contents of the churn to be forced vertically downward and thereby produces a violent agitation of the same without dashing or scattering the liquid or causing the same to splash over the top of the tub or receptacle in case the cover is removed.

Various changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

5 Having described my invention, what I claim is—

10 A rotary churn-dasher comprising a vertical dasher-staff, upper and lower cross-bars fitted centrally to the staff to form oppositely-extending radial arms provided in their
15 extremities with inclined kerfs 25 disposed obliquely with relation to the length of the arms, and spirally-disposed cross-sectionally flat dasher-blades fitted at their ends in the kerfs of corresponding arms of the cross-bars, said
15 corresponding arms, which are connected by each dasher-blade, being disposed in vertical

planes at an obtuse angle to each other, whereby each blade traverses an arc greater than ninety degrees, the disposition of said kerfs providing for the disposition of the outer edges 20 of the blades in advance of radii extending through the inner edges thereof to insure the blades advancing with their faces perpendicular to the direction of the motion imparted to the fluid, substantially as set forth. 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES P. ROGERS.

Witnesses:

J. L. McCORKLE,

G. D. HARGIS.