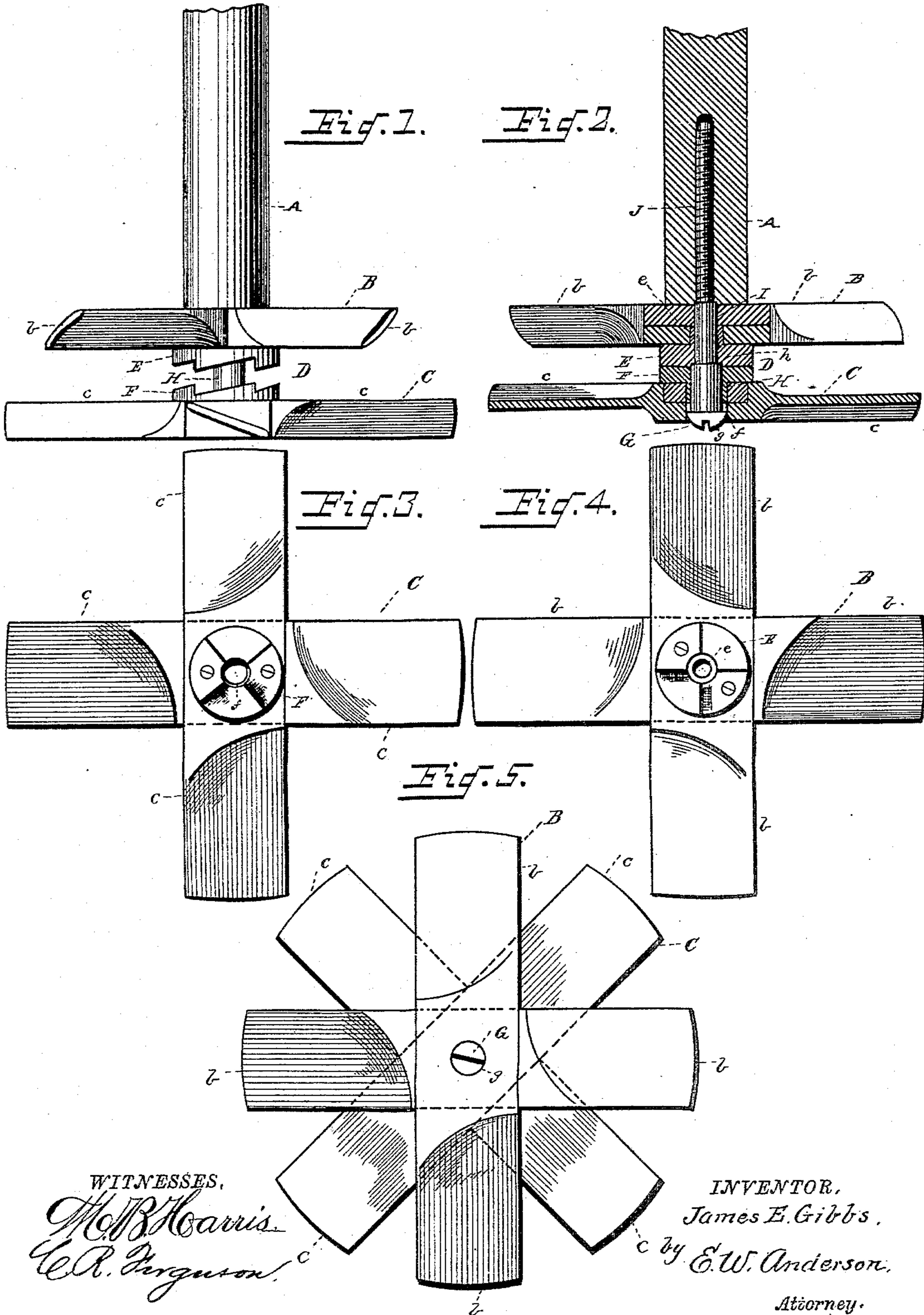


(No Model.)

J. E. GIBBS.
CHURN DASHER.

No. 380,282.

Patented Mar. 27, 1888.



WITNESSES,
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UNITED STATES PATENT OFFICE.

JAMES EDWIN GIBBS, OF JONESBOROUGH, TENNESSEE, ASSIGNOR OF ONE-HALF TO WILLIAM G. MATHES, OF SAME PLACE.

CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 380,282, dated March 27, 1888.

Application filed November 10, 1887. Serial No. 254,806. No model.)

To all whom it may concern:

Be it known that I, JAMES EDWIN GIBBS, a citizen of the United States, and a resident of Jonesborough, in the county of Washington and State of Tennessee, have invented certain new and useful Improvements in Churn-Dashers; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of my improved dasher with the clutch disengaged. Fig. 2 is a vertical section of the same with the clutch engaged. Fig. 3 is a plan view of the bottom blade. Fig. 4 is a bottom view of the top blade, and Fig. 5 is a bottom view of my improved dasher.

The invention relates to churn-dashers, being an improvement on a patent granted to me on the 23d day of September, 1879, and numbered 219,934; and it consists in the construction and novel combination of parts hereinafter described, illustrated in the drawings, and pointed out in the claims hereto appended.

Referring to the drawings by letter, A designates the dasher-staff, and B C the upper and lower beaters, respectively. The said beaters are similar, except that they have their outstanding radial blades inclined laterally in opposite directions but at equal angles. Any number of blades can be used in each beater; but it is preferable that each should have four, for the reason that each beater then has the least number of opposite blades, and that the blades of one beater interfere the least with those of the other, as will be hereinafter apparent.

The upper beater, B, Fig. 1, is composed of four equidistant blades, the opposite blades being preferably made integral with each other, and all the blades being inclined laterally at equal angles in the same direction.

The lower beater, C, is composed of an equal number of blades, *c*, in all respects similar to the blades *b*, except that they are inclined at equal angles in the opposite direction, so that the lower beater will turn oppositely to the upper beater.

D is a clutch made in two sections, E and F, each consisting of a crown or face ratchet having radial shoulders and a sleeve standing centrally from its back, the bore of the sleeve extending through to the face of the section. The section E has its sleeve *e* fitted in a central opening formed at the crossing of the integral blades of the upper beater, B, and is secured to said beater, so as to turn therewith, by screws or otherwise, as shown. The lower section, F, of the clutch D has a similar but larger sleeve, *f*, fitted into a similar opening in the lower beater, C, and similarly secured to said beater. The section E is on the lower surface of the beater B and the section F is on the upper surface of the beater C, so that when the parts are in place the clutch-sections face each other and are in position to engage.

G is a retaining-screw having a head, *g*, that rests partly within the central opening through the lower beater, and has the lower end of the sleeve *f* resting upon it. The stem of the said screw consists of a lower and larger unthreaded part, H, an upper and smaller unthreaded part, I, and a threaded end portion, J, which is screwed into the lower end of the dasher-staff, the parts H and I being of different diameters from the circumferential shoulder *h*, upon which the face of the upper section, E, of the ratchet rests, the unthreaded part I of the screw being fitted loosely in the sleeve *e*. The sleeve *f* of the lower clutch-section fits loosely over the unthreaded part H of the screw G, so that it can both rotate and rise freely thereon. The shoulders of the clutch-section are so situated in regard to the blades of the corresponding beaters that when the said sections engage the blades of one section make angles of forty-five degrees with the adjacent blades of the other section, or stand at equal distances from said adjacent blades.

When the dasher is reciprocated, the lower beater is forced upward by the pressure of the cream, into which it is forced downward, and the clutch-sections E and F are engaged together, the blades *b* of the upper section standing above and at angles of forty-five degrees to the blades *c* of the lower section, so that while the beaters can turn laterally on the dasher-staff, and will so turn before a torsional strain comes on said staff, neither beater will

✓ rotate except sufficiently to take the torsional strain off the said staff, as the beaters tend to rotate in opposite directions and counterbalance. When the dasher-staff is drawn upward, 5 the lower beater falls, the clutch-sections are disengaged, and the beaters, being free of each other, rotate in opposite directions and make oppositely-circulating vortices in the cream as the dasher ascends. The ascent or pull up- 10 ward of the dasher is thus made more easy, and simultaneously oppositely-flowing currents are produced in the cream.

Having described my invention, I claim—

1. The combination, with the dasher-staff 15 and the screw provided with the head, the two unequal-sized unthreaded portions forming the circumferential shoulder, and the threaded end, of the beaters having blades inclined laterally at equal angles, those of one beater being inclined in opposite directions to those of 20 the other beater, and the ratchet-faced clutch-

sections engaged, respectively, to the lower surface of the upper beater and to the upper surface of the lower beater, and engaging when the blades of said beaters make angles of forty- 25 five degrees with each other, substantially as specified.

2. The herein-described churn-dasher, composed of the staff A, the beaters B C, having, respectively, the four equidistant blades *b c*, 30 the ratchet-faced clutch-sections E F, secured, respectively, to the upper and lower beaters, and the screw-pin G, provided with the head *g* and the unthreaded portions H I, substantially as specified. 35

In testimony whereof I affix my signature in presence of two witnesses.

JAMES EDWIN GIBBS.

Witnesses:

F. F. DOSSER,
R. N. DOSSER.