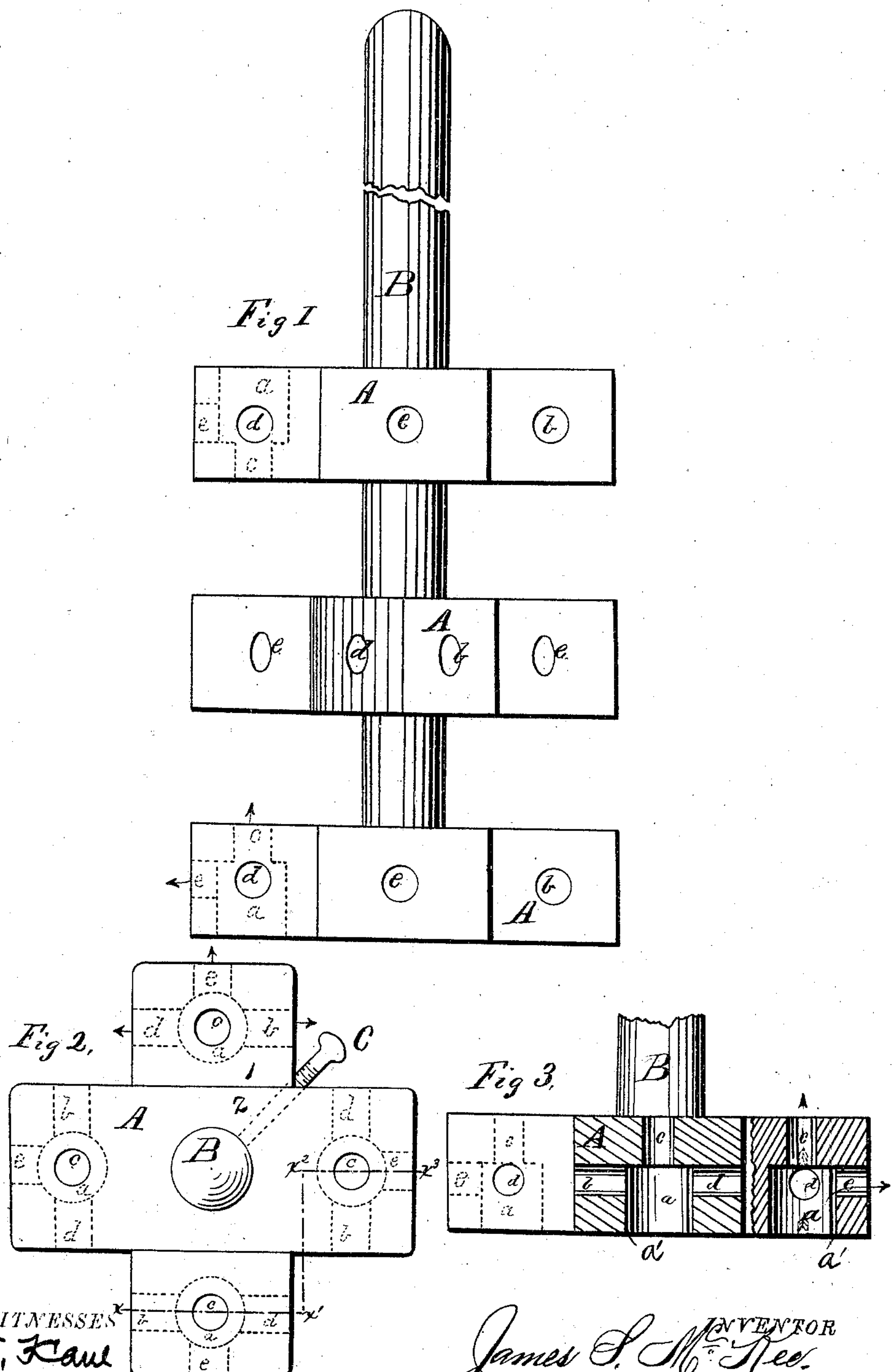
J. S. McKEE.
Churn-Dasher.

No. 212,616. Patented Feb. 25, 1879.



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JAMES S. McKEE, OF PARKERSBURG, WEST VIRGINIA.

IMPROVEMENT IN CHURN-DASHERS.

Specification forming part of Letters Patent No. **212,616**, dated February 25, 1879; application filed December 30, 1878.

To all whom it may concern:

Be it known that I, JAMES S. McKEE, of Parkersburg, in the county of Wood and State of West Virginia, have invented a new and valuable Improvement in Churn-Dashers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures marked thereon.

Figure 1 of the drawings is a representation of a side view of my invention. Fig. 2 is a plan view, and Fig. 3 is a sectional view through the line $x\ x^1\ x^2\ x^3$.

This invention relates to the construction of a churn-dasher of the vertically-reciprocating class; and the novelty consists, principally, in the agitators having at each end a large opening, forming a chamber or cavity, and extending from this chamber is a series of passages of smaller diameter in different directions—to wit, vertically, laterally, and horizontally—attached to a dasher-rod, whereby the butter-producing substances in the cream are subjected to great disturbance by being forcibly thrown against the sharp angles and corners or irregular surfaces, and the butter more readily conglomerated, as will be hereinafter more fully set forth and specifically claimed.

On the annexed drawings, A represents the agitators, composed of cross-bars 1 and 2, which are secured to the dasher-rod B by means of a thumb-screw, C. These agitators A are adjustable, and can be placed at different points upon the dasher-rod. The point at which they are placed should be regulated by the amount of cream in the churn. They are also easily removable for the purpose of facilitating cleansing.

The agitators at each end are provided with circular cavities *a*, which extend nearly to the upper side of the agitators A, and from this cavity *a* there are perforations which extend from its sides, ends, and top, as shown, and lettered *b*, *c*, *d*, and *e*.

It will be observed that my agitator A is composed of two pieces, 1 and 2, crossed and united, the outer ends of each piece being provided with vertical walls *a'*, forming a large opening or chamber, *a*, preferably circular. This chamber or cavity *a* extends a little beyond the center or middle of the pieces, (see Fig. 3,) and from this chamber extends, in different directions, the series of passages, four in number, of smaller diameter—the passages *b d* laterally, but in opposite ways, the passage *e* at the end horizontally and the passage *c* vertically.

This construction and arrangement of chambers and passages extending in different directions, owing to the difference in diameter, present a number of shoulders and angles which are desirable in breaking or rupturing the butter-vesicles, and the cream that collects in the chambers *a* is divided into a number of small streams in seeking escape, as indicated by the arrows in Figs. 2 and 3 of the drawings, caused by the downward movement of the dasher through the cream in the churn, thereby greatly dividing and disturbing the cream, and inducing the separation of the butter.

The operation of my invention is as follows: The agitators are secured to the dasher-rod B by the thumb-screw C at the proper distance from each other, and they may be arranged either spirally or otherwise, with the greater number of the agitators arranged so as to have the cavities *a* downward. When the dasher is given a vertical reciprocating motion on the downward stroke, the cream is forced into the large cavities or openings *a* at the bottom of the cross-bars, and is separated into several different streams, which are expelled through the openings *b c d e*, of smaller diameter and in different directions, the numerous angular edges rapidly rupturing the butter-vesicles which are contained in the cream.

It may be desirable in certain cases to place the upper agitator on the dasher-rod, so as to have the cavity *a* on the upper side. When it is so placed during the upward movement of the dasher, the cavity *a* contains a quantity of

cream, which runs out of the perforations in small streams, thereby aerating the cream and hastening the production of butter.

What I claim as new, and desire to secure by Letters Patent, is—

The churn-dasher consisting of two or more agitators, A, arranged on the dasher-rod B, the agitator A, composed of the cross-bars 1 and 2, provided at each end with the chamber *a*, and the series of passages *b c d e*, of smaller diameter, leading from the chamber in different directions, whereby the collected cream in the chamber is divided into a number of streams running in vertical, lateral, and horizontal directions, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES S. McKEE.

Witnesses:
ALFRED G. STAGG,
J. H. FISCHER.