O. P. AHLGREN.
Churn-Dasher.

No. 207,379. Patented Aug. 27, 1878.

Fig.1

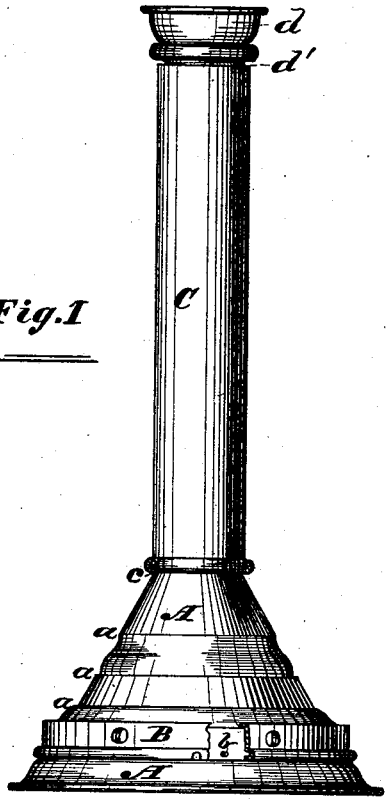


Fig.2

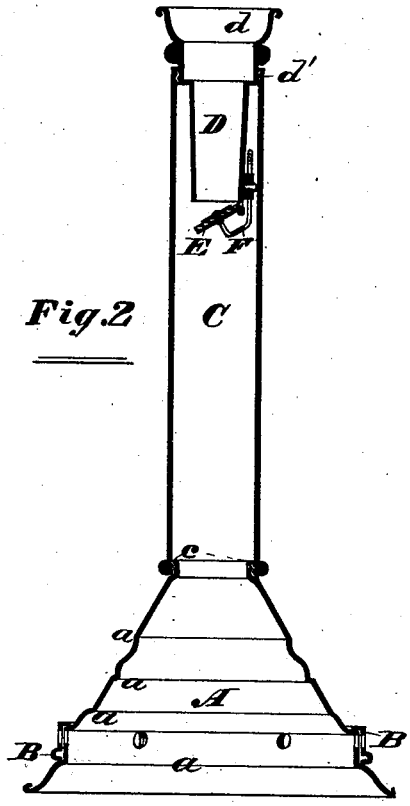


Fig.3

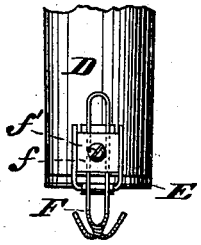
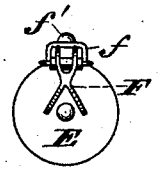


Fig.4



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UNITED STATES PATENT OFFICE.

OLOF P. AHLGREN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CHURN-DASHERS.

Specification forming part of Letters Patent No. **207,379**, dated August 27, 1878; application filed May 21, 1878.

To all whom it may concern:

Be it known that I, OLOF P. AHLGREN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Pneumatic Churn-Dasher, of which I hereby declare the following to be a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view; Fig. 2, a longitudinal vertical section; Figs. 3 and 4, sectional details.

The object of my invention is an improved dasher which may be used for various purposes, and more especially for churning butter.

The nature of my invention consists in having a conical-shaped dasher-head, similar in appearance to an inverted funnel, to which is attached a tubular handle, the exact construction and operation of which will be hereinafter more fully explained.

In the drawings, A represents a conical-shaped dasher-head, having the graduated annular ridges *a a a*, extending in order from the rim of the dasher A to a point near where the handle is connected. B represents a close-fitting ring or collar, which is made to surround the dasher at a point above the rim. This ring is provided with perforations, which correspond with similar perforations in the dasher A. *b* represents a dowel-pin (of which there are two, placed directly opposite each other) inserted in the dasher, which fits into an annular groove in the rim of the ring B. A gain in the groove on the ring B provides a passage-way for the dowel-pin *b*, and allows the ring to be removed and replaced, as may be required. Stops are placed in the annular groove of the ring B, at a short distance from and on both sides of the pin *b*, which permit the ring to only turn a short distance in either direction on the periphery of the dasher.

C represents a hollow handle, threaded at the lower end and connected with the dasher-head A at *c*. This handle can be conveniently made in sections, so as to admit of its being lengthened or shortened, as circumstances may require. On the interior, and near the upper end of the handle, is inserted the valve-tube D, having the enlarged end *d*, and threaded at *d'* to engage with the handle C. To the lower end of the tube D is hinged the flat valve E. Said valve, as shown in the drawings, is formed of a disk of rubber, backed on the under side by a disk of metal of the same diameter, and the upper side of the rubber valve being protected by a similar disk of metal, but of less diameter, so as to admit of the elastic surface of the valve being brought in contact with the lower end of the tube D, thereby securing a noiseless action of the valve. This valve may be constructed of any flexible material which may be found suitable for the purpose.

F represents a wire guard, which is secured by means of the cleat *f* and the set-screw *f'* to the valve-tube D. The cleat *f* has two grooves, which allow the guard F to be moved up or down, so as to be adjusted to and regulate the opening of the valve. The lower end of the guard or regulator F, which comes in contact with the under side of the valve, is bent under and bifurcated, in the manner shown in Fig. 4 of the drawings.

When the operator is desirous of admitting a greater or less quantity of air into the tubular handle C through the valve-tube D, the valve-tube should be removed from the handle C and the wire guard F adjusted to the valve E, so as to increase or decrease the opening in the air-passage, as may be required; or the valve may be entirely closed by the guard F and the air excluded from the handle C; or the valve-tube and the valve attached may be temporarily removed from the tubular handle C, and a cap placed over the upper end of the handle, thus tightly closing the same, and admitting of the dasher being used without the combination of the air passing through the tubular handle C.

After the butter has been separated from the milk, and during the process of gathering the same, it may be found advantageous to close the air-passage through the tubular handle of the dasher.

By having the valve-tube removable, the same is easily cleaned and repaired, and the interior of the tubular handle can also be conveniently and effectively cleaned.

When, in operation, the dasher is raised, the

valve is caused to drop down or open by the force of gravitation or by the pressure of the atmosphere from above, and when the dasher is on the downward stroke the valve is closed by the pressure of the air from below. Thus the air is confined in the hollow handle, and cannot escape therefrom in an upward direction, but must pass down and out through the contents of the churn or liquid in the vessel in which the dasher is being used, which causes a great agitation of the liquid, and the process of churning is quickly finished.

The annular depressions or uneven surface on the inside of the dasher A materially assist in a free and light movement of the dasher, as the air is more gradually forced through the liquid, and the dasher does not come down as solid as when the inside of the dasher-head is an even surface.

By having the perforated ring B adjustable, the size of the perforations in the dasher-head A may be varied, so as to admit of a greater or less volume of the liquid being forced through the openings, for the purpose of breaking up the butter-globules and more thoroughly permeating the liquid with the atmosphere, and during the process of gathering the butter the ring B can be adjusted to entirely close the perforated parts.

This device will be found to be as efficient and useful in washing clothes as in churning butter, and will be very convenient for agitating and mixing various kinds of liquids.

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

1. The combination of the conical perforated dasher-head A, having annular ridges *a a a*, and corresponding depressions on the inner surface thereof, with the perforated ring B, substantially as set forth, and for the purpose specified.

2. The combination, with the hollow handle C, of the removable valve-tube D, having the enlarged end *d*, for the purpose set forth and specified.

3. The combination, with the valve-tube D, of the cleat *f* and the adjustable bifurcated wire guard and valve-regulator F, for the purpose specified.

4. The combination of the flat valve E with the removable valve-tube D, for the purpose specified.

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