(No Model.)

N. J. TUBBS & C. W. STEELE.

CHURN DASHER.

No. 589,951. Patented Sept. 14, 1897.

FIG. 1.

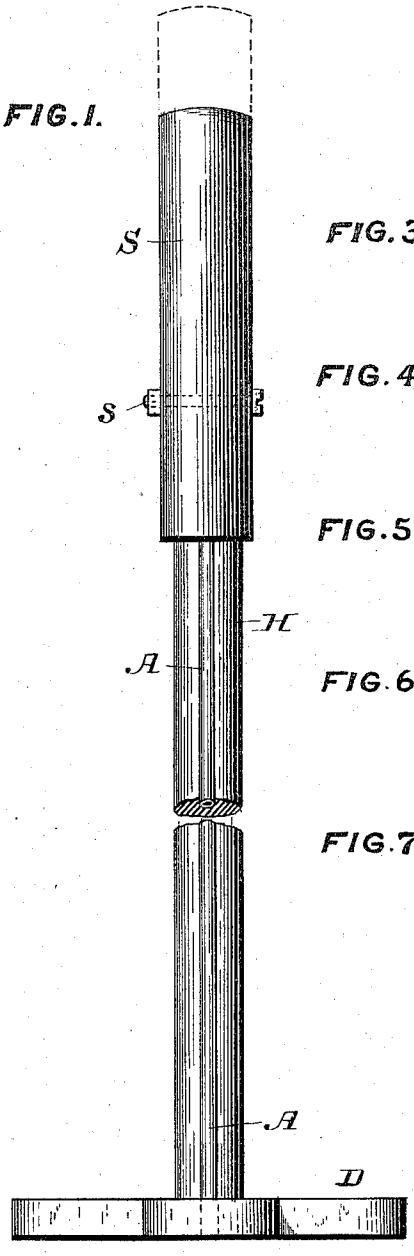


FIG. 3.

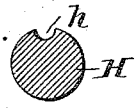


FIG. 4.

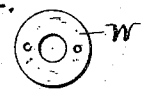


FIG. 5.

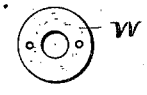


FIG. 6.

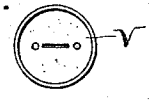


FIG. 7.

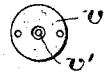
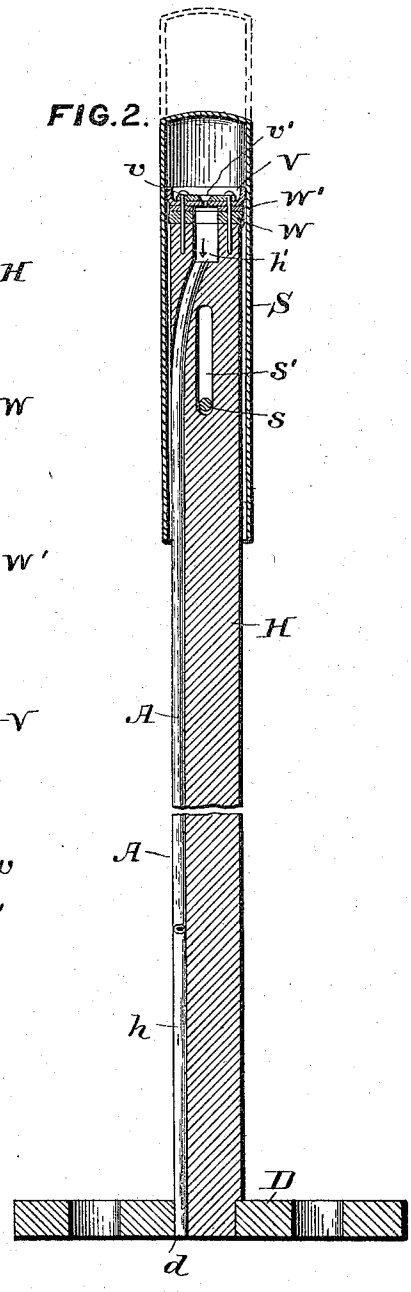


FIG. 2.



ATTEST.

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NELSON J. TUBBS AND CORNELIUS W. STEELE, OF KNOXVILLE, TENNESSEE.

CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 589,951, dated September 14, 1897.

Application filed November 30, 1896. Serial No. 613,941. (No model.)

To all whom it may concern:

Be it known that we, NELSON J. TUBBS and CORNELIUS W. STEELE, citizens of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Churn-Dashers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

We are aware that churn-dashers have been so constructed that when operated air is forced into the contents of the churn through the handle of the dasher, but, owing to the difficulty in suitably boring the air-duct in wooden handles and the indisposition of dairymen to use metallic handles, because of their cost and liability to corrosion, the demand for such devices has not been general. The volume of air that can be advantageously used in churning is comparatively small, for if a large current of air is forced into the churn it has a tendency to splatter the cream and adds proportionately to the labor required to operate the handle, as is apparent, while the boring of a wooden dasher-handle is attended with considerable difficulty, which increases as the diameter of the bore is reduced. We have sought to perfect a device that will introduce air into the contents of a churn in such manner and in such quantities as will effect the best results and which may be supplied at a minimum cost. With these objects in view we insert a tube in a groove in the dasher-handle, continuing the lower end of said tube through an appropriate opening in the dasher, the upper end of the tube opening into a cavity in the upper end of the dasher-handle. Over said cavity in the upper end of said dasher-handle and attached to the top of the handle we provide a thick leather washer, a thin leather washer, a rubber valve, and a valve-cover provided with a small perforation in the order named. The handle is also provided with a sliding sleeve, closed at the top, loosely attached to the upper end of said handle, and adapted to move up and down thereon by means of a bolt through a slot or mortise in said handle, the whole device being so adapted that when the sliding sleeve is pushed downward air is forced through the perforation in the valve-cover, the valve, and leather washers into the cavity in the top of the handle, and thence down the tube into the contents of the churn.

Of the accompanying drawings, Figure 1 represents a side elevation. Fig. 2 represents a vertical section of our improved churn-dasher. Fig. 3 represents a cross-section of the dasher-handle, showing groove in which air-tube is inserted. Figs. 4, 5, 6, and 7 are details showing the leather washers, rubber valve, and valve-cover, respectively.

Similar letters of reference indicate corresponding parts.

In the drawings, D is the dasher, provided with the opening d, through which projects the lower end of the tube A.

H is the dasher-handle, provided with the longitudinal groove h, into which is fitted the tube A and the slot h'. The thick leather washer w, the thin leather washer w', the rubber valve V, and the valve-cover v, which is provided with the perforation v', are then attached to the top of the handle H in the order named, thereby covering the cavity in the top of said handle H. The sliding sleeve S, which is closed at the top, is loosely attached to the end of the handle H and adapted to move upward and downward thereon by means of the bolts s through the slot s', the valve V being made of greater diameter than the washers w and w' and the valve-cover v to obviate any leakage of air on the downward stroke of the sleeve S, as is apparent.

The operation of the device is as follows: The dasher D, attached to the dasher-handle H, is fitted into a churn containing cream or milk in the usual manner. The operator grasps the sliding sleeve S and raises it until the bolt s reaches the top of the slot s', when it is apparent that the dasher D and handle H will be raised. The depression of sleeve S forces the air contained within the sleeve through the perforation v' in the valve-cover v through the valve V, and thence down through the cavity and the tube A into the contents of the churn, the overlapping circumference of the valve V preventing a leakage of air along the handle H. When the sliding sleeve S is raised, it is apparent that the downward pressure on the overlapping circumference of the valve V is relaxed,

whereupon the sleeve is again filled with air, suction of the cream being practically prevented by the smallness of the tube A, and by reason of the lips of the valve V being unable to open materially on the upstroke on account of the smallness of the perforation v' in the valve-cover v, and the further fact that the lips of the valve-cover v are pressed directly against said perforation v', practically closing it when the downward pressure of the sleeve S is relaxed. After concluding the churning, if the handle H be held firmly and the sliding sleeve S is moved upward and downward a moment or two the air thus pumped into the contents of the churn will cause the butter to more readily rise to the surface and will render the separation of the butter more complete and expeditious.

Having described our invention and its operation, what we claim, and desire to secure by Letters Patent, is—

The combination of a dasher, a vertical handle attached to said dasher and provided in its periphery with a longitudinal groove, a tube in said longitudinal groove and suitably attached to said handle, the lower end of said tube extending to and through said dasher and the other end thereof opening into a cavity in the top of said handle, leather washers, a rubber valve, a valve-cover provided with a perforation, said washers, valve and valve-cover being attached to the top of said handle in the order stated and covering the cavity therein, and a sliding sleeve closed at the upper end and attached to and adapted to move up and down on said handle by means of a bolt through a slot in the upper portion of said handle, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

NELSON J. TUBBS.
CORNELIUS W. STEELE.

Witnesses:
W. C. LAWSON,
W. M. SEXTON.