A. F. Lapham,

Washing Machine,

No. 47,433. Patented Apr. 25, 1865.

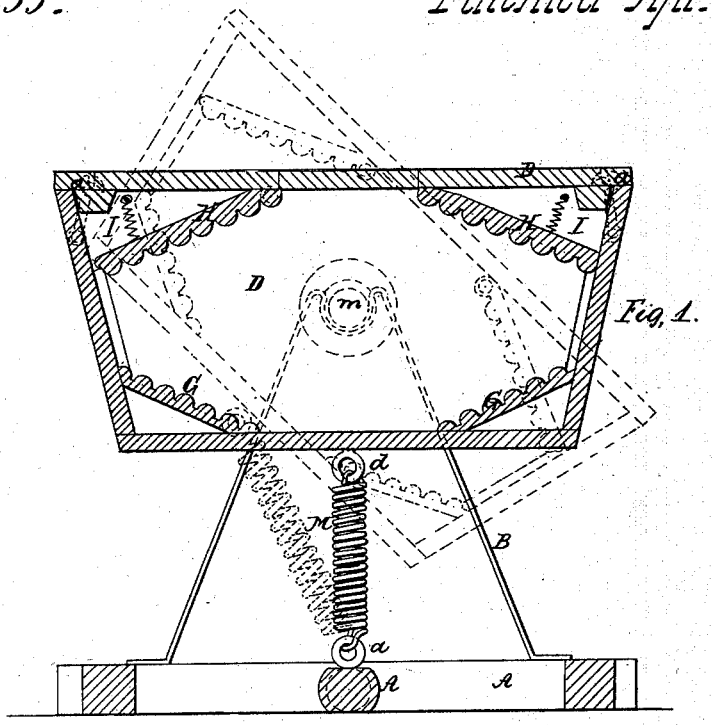


Fig. 1.

Fig. 2.

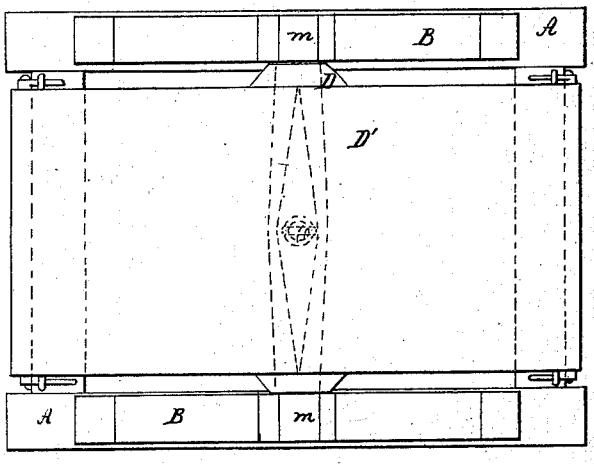
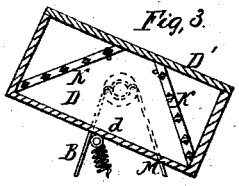


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ANDREW F. LAPHAM, OF NEW YORK, N. Y.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. **47,433**, dated April 25, 1865.

To all whom it may concern:

Be it known that I, ANDREW F. LAPHAM, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Washing-Machines—useful also in churns; and I do hereby declare that the following is a full and exact description thereof.

The accompanying drawings form a part of this specification.

Figure 1 is a vertical longitudinal section of a washing-machine with my improvements. The dark lines show the vibrating vessel in a horizontal position, while the red outlines show the same at the inclination to which it may be oscillated. Fig. 2 is a plan view of the same machine. Fig. 3 is a vertical central section of a churn with my improvements, or a part of my improvements. It is on a smaller scale than Figs. 1 and 2.

Similar letters of reference indicate like parts in all the figures.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation by the aid of the drawings and of the letters of reference marked thereon.

A is an open horizontal frame of wood, and A′ is a central cross-piece therein, which carries a stout ring or eyebolt, *a*. Two frames, B B, are fixed on the frame A and adapted to support cylindrical trunnions.

D is a long box or vessel, having a stout ring or eyebolt, *d*, in its bottom, and a cover, D′, held tightly on its top by hooks E, or their equivalents, as represented. The cover D′ may be continuous across the entire top of the machine, or it may be made with a large opening in the center, as may be preferred.

M is a stout coiled spring connecting the eyes *a* and *d* in the manner indicated, and *m m* are stout trunnions fixed on the sides of the box or vessel D. The trunnions *m m* support the box on the frames B B and allow it to oscillate. The spring M tends to draw the box powerfully down into the bearings on the frames B B, and to cause it to immediately return to its horizontal position after it has been rocked or oscillated.

G G are inclined boards, grooved on their upper surfaces and fixed in the box D.

H H are inclined boards, grooved on their lower surfaces and hung on the pivots *h h*, so that they are free to move thereon within certain limits.

I I are springs, which tend to keep the boards H H always in or near the positions indicated.

In using the machine for washing clothes, I introduce the water and the clothes, with or without soap, or the like, and after tightly securing the cover D′ proceed to rock the box D and its contents violently by causing it to oscillate on its trunnions *m m*. The rocking motion is controlled and aided by the spring M—that is to say, its approach to the horizontal position eases the spring M and its divergence therefrom stretches and strains said spring, causing it to exert a force, checking its divergence, and aiding it in its return motion. The rocking of the box D, with the water and clothes therein, agitates the latter very powerfully without rubbing them injuriously. The action of the spring M, unlike a pendulum or any mass affected by gravity alone, allows the oscillation to be repeated as rapidly as may be desired, and always aids the returning motion from the end of each oscillation, and always causes the box D to assume and maintain a horizontal position without care or effort on being left at rest. The clothes, on rushing violently with the water into either end of the box D, are rubbed against the inclined board G and thrown up and agitated further against the hinged incline H, which, by yielding through the action of the spring I, avoids concussion. On the return of the water and clothes the reverse motion makes a still further agitation.

The machine may be used in the same condition for churning, and the agitation will produce the desired churning effect; but I prefer to introduce a grated or slotted partition, K, on each side of the center of the box D, as indicated in Fig. 3. These may be used either as a substitute for the boards G and H or additional thereto, as may be preferred. In either the bars or slots in the open parti-

tions K K serve to divide and agitate the cream.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The spring M, combined and arranged relatively to the rocking box D and bed A, or its equivalent, substantially in the manner and for the purposes herein set forth.

2. The hinged boards H H and springs I I, in combination with a rocking box, D, adapted for washing or churning, substantially as and for the purpose herein set forth.

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