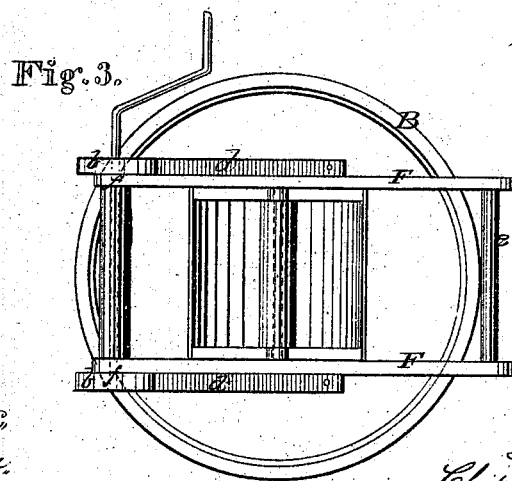
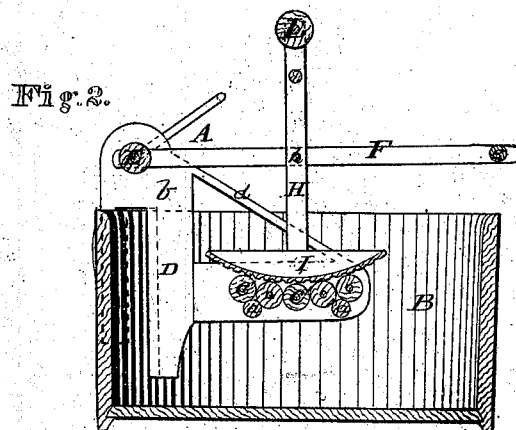
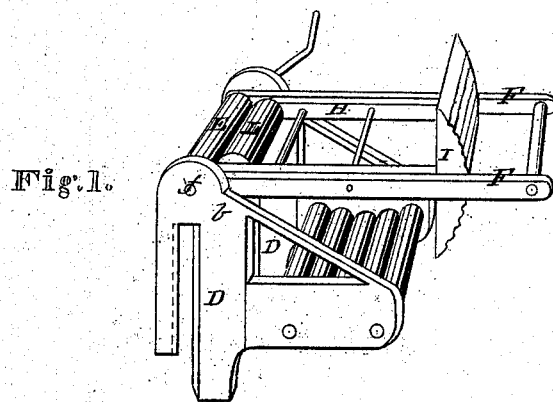


L. Hale,
Washing Machine.
No. 108,019. *Patented Oct. 4. 1870.*



Witnesses,
Chas. Henryson,
Edw. P. Hall.

Inventor,
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United States Patent Office.

LUKE HALE, OF HOLLIS, NEW HAMPSHIRE.

Letters Patent No. 108,019, dated October 4, 1870.

IMPROVEMENT IN WASHING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LUKE HALE, of Hollis, in the county of Hillsborough and State of New Hampshire, have invented a new and valuable Improvement in "Washing-Machines;" 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 drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a perspective view of my invention.

Figure 2 is a central vertical section.

Figure 3 is a top view.

My invention relates to washing-machines, and consists in a washer and wringer, so constructed and arranged that the clothes may be rubbed as much as may be necessary, and then wrung without removing the washer; and it further consists in adapting said machine to be attached securely to the common circular washing-tub without making any change whatever in the tub.

A represents the frame of the machine, made of such length and breadth that it may be placed in any wash-tub in the same manner as a wash-board.

The side boards *b* are connected and held in the proper position by means of the bars *a* and rollers *c*, for which they are adapted to serve as end bearings.

O O represent a series of rollers arranged in the arc of a circle.

These rollers have their end bearings in the cheeks *b b* of the frame A, and are usually arranged in such a manner that they shall not be in contact with each other.

d are braces, which hold the rollers *O* steady and in place.

The frame A is intended to fit into a common washing-tub, marked B, which tub can be made of any shape or form.

This frame is attached to the wash-tub by means of the two vertically-slotted standards D.

These standards are secured together at their upper ends by the roller E, for the purpose of keeping them in position.

The roller E is intended to be covered with rubber, for the purpose hereafter mentioned.

F represents arms extending entirely across the tub.

These arms are connected at their fore ends by the rod *e*, which rests on the edge of the tub, and serves as a support.

These arms are pivoted to the cheeks at *f*.

The hand-rod *e* is in a convenient position for the operator standing at the tub to press the rubber I down upon the articles to be washed.

H represents the perpendicular operating arms, which carry the rubber I, and are pivoted to the transverse arms F, at *h*, as shown on the drawing in fig. 2.

These arms are let into mortises, and are made fast to the sides of the rubber I.

The oscillating rubber I is corrugated or furrowed on its lower and convex surface, which is so curved as to correspond with the concave bed of rollers.

The rubber I can be lifted out of the tub, when it is desired, by throwing the arms F back in an inclined position.

The rubber I, being suspended in the manner shown on the drawing, will conform to the thickness or bulk of the material to be operated upon.

E and L represent two wringing-rollers, to be constructed of rubber and made in the usual manner.

The roller E is attached to the upper end of the frame A, and has its journals secured in the side pieces *b* of the said frame; and connected to this roller is the crank K, which operates and puts the rollers in motion.

The roller L is secured between the upper ends of the arms H.

Both rollers are brought together in the position as shown in fig. 1; after the clothes or fabrics are thoroughly washed, they are then passed through the wringing-rollers in the usual manner.

This machine can be applied to or removed from any washing-tub without the necessity of altering the tub in any manner.

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

1. In combination, the vertically-slotted cheek-pieces *b*, horizontal levers F, arms H, concave bed of rollers *O O*, and oscillating rubber I, with convex corrugated under surface, substantially as specified.

2. In combination with the elements of the first claim, the wringing rolls E L, when arranged as specified.

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

LUKE HALE.

Witnesses:

SAML. T. WORCESTER,
HERVEY B. ATHERTON.