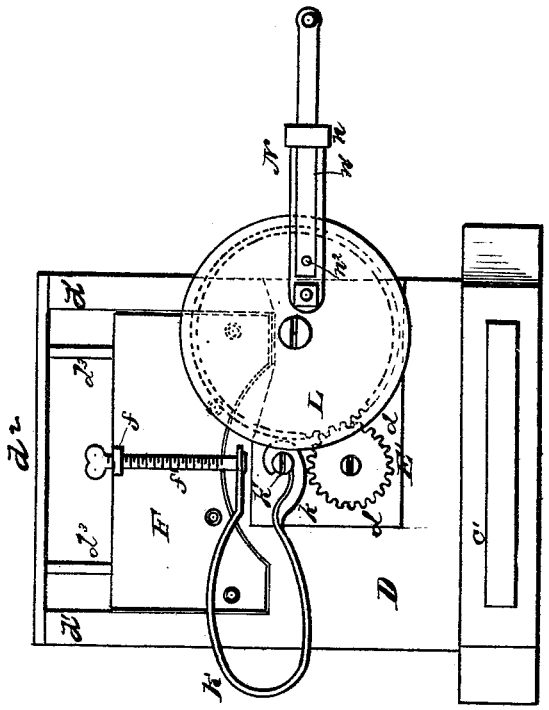
2 Sheets—Sheet 1.

J. M. CURTICE.

WASHING-MACHINE.

No. 180,849. Patented Aug. 8, 1876.

Fig. 2.



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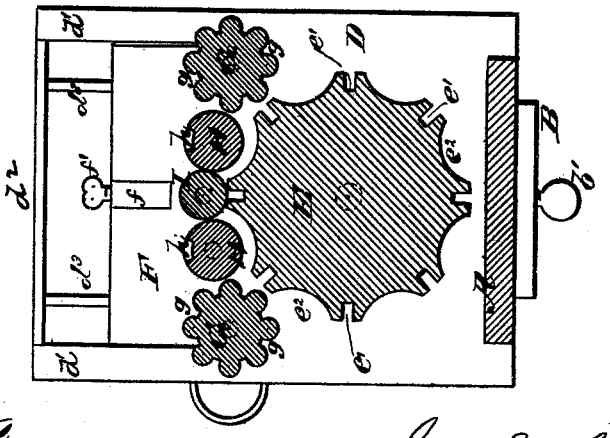

WITNESSES.

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2 Sheets—Sheet 2.

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Fig. 3.

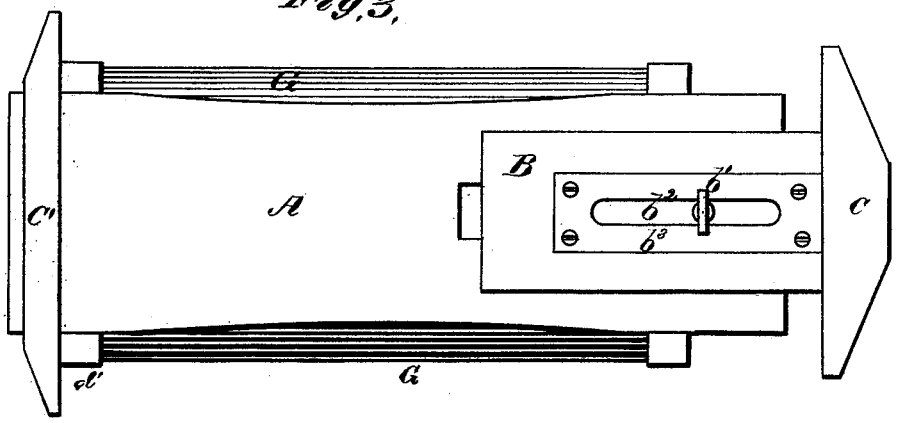

Fig. 4.

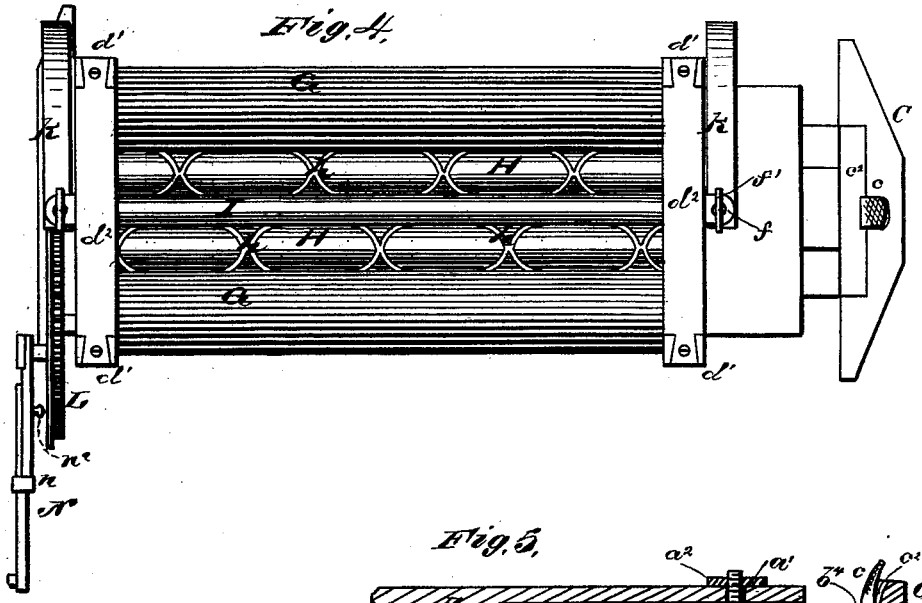

Fig. 5.

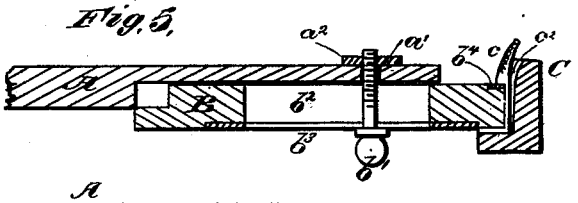

Fig. 6.

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UNITED STATES PATENT OFFICE.

JESSE M. CURTICE, OF RIDGEVILLE, INDIANA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **180,849**, dated August 8, 1876; application filed June 3, 1876.

To all whom it may concern:

Be it known that I, JESSE M. CURTICE, of Ridgeville, in the county of Randolph and State of Indiana, have invented a new and valuable Improvement in Clothes-Washers; 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 of reference marked thereon.

Figure 1 of the drawings is a representation of an end view of my clothes-washer, and Fig. 2 is a transverse sectional view of the same. Fig. 3 is a bottom view. Fig. 4 is a plan view thereof. Figs. 5 and 6 are detail views of the same.

This invention relates to devices for washing fabrics and for pressing the water therefrom; and it consists in a series of rollers peculiarly grooved, as hereinafter described; also in vertically-movable slides, which are supported by detachable springs, which springs are compressed or expanded by a screw; and in auxiliary devices, hereinafter more particularly set forth and claimed.

In the accompanying drawings, A designates a solid bed, which supports the operating parts of the device, and which is provided on its lower side, at one end, with a longitudinal dovetailed groove or mortise, *a*. In groove *a* slides a dovetailed extension-piece, B. D D are standards, which are rigidly attached to the bed A, and one of which is provided on its outer face with a metal plate, *d*.

The main roller E is journaled in standards D D. Standards D D are also provided with rigid upright extensions d^1 d^1 d^1 d^1. Extensions d^1 d^1 are connected at their tops by cross-pieces d^2 d^2, preferably constructed of metal. These cross-pieces have fixed to them the upper ends of vertical guide-rods d^3 d^3, the lower ends of which guide-rods d^3 d^3 are embedded in or attached to the standards D D. On these guide-rods d^3 d^3 d^3 d^3, and between extensions d^1 d^1 d^1 d^1, slide the two vertically-adjustable roller-supporting pieces F F, in which are journaled five rollers, G, G, H, H, and I. On the upper end of each one of the supporting-pieces F F is fixed a perforated projecting plate, *f*, which is screw-tapped to receive adjusting-screw *f'*, that is attached at its lower end to the upper end of a bow-spring, K. The lower end of each spring K is curved at *k*, so as to fit the screw-bolt or lug *k'*, which is fixed to plate *d* or to the standard D. Spring K thus supports the rollers G, G, H, H, and I, but allows the automatic adjustment of said rollers toward or from the main roller E. One gudgeon, *e*, of main roller E is extended through and beyond plate *d*, and it carries a pinion spur-wheel, E', which meshes with main gear-wheel L, provided with a flange, and it is operated by crank N. This crank is made extensible by guide *n*, slot n^1, and set-screw n^2, so as to give any amount of leverage desired.

The main roller E is grooved with deep narrow grooves e^1, and with broad concave grooves e^2, which are arranged alternately. The narrow grooves e^1 create a "suction" by reason of the water running out of them as they turn. The concave grooves e^2 receive buttons and other projecting attachments of the clothing which is being cleaned, and so preserve them from damage. The five smaller rollers are journaled parallel to one another, the inner one, I, being the smallest. Rollers H H lie next to roller I, and are somewhat larger. Rollers H H are provided with double spiral grooves *h h*. They exactly correspond to one another. Each one of the outer pair of rollers G G is grooved longitudinally at *g g*, and they are larger than rollers H H. They also exactly correspond to one another.

The operation is as follows: The clothes, when taken from the water, are passed in between main roller E and the outside roller G. The longitudinal grooves *g* and the spaces between them spread the water about in the clothes, and thus assist in cleaning them. The clothes then pass under roller H, which is somewhat nearer than roller G to the main roller E, and which, consequently, exerts a greater pressure, that forces out some of the water, while the double helical grooves *h h* spread the remaining water, cleaning the cloth still more. Finally, the smooth roller I (which is the nearest of all the rollers to the main roller E, and which, consequently, exerts the greatest pressure) expresses the remaining water. The clothes

are then dipped again and drawn through from the opposite side, in like manner.

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

1. The combination of detachable spring K with adjusting-screw f', roller-supporting plate F, and guide-rods d^3 d^3, substantially as and for the purpose set forth.

2. In a washing-machine, the roller E, provided with the alternating deep grooves e^1 e^1 and shallow concave grooves e^2 e^2, substantially as and for the purpose set forth.

3. The double-grooved main roller E, in combination with the longitudinally-grooved roller G, substantially as and for the purpose set forth.

4. The combination of the double-grooved main roller E with the longitudinally-grooved roller G and the roller H, provided with double helical grooves, substantially as set forth.

5. The combination of the double-grooved roller E with smooth roller I and grooved rollers G G H H, substantially as set forth.

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

JESSE M. CURTICE.

Witnesses:

F. S. ADDINGTON,

L. F. BAILEY.

1,250 words