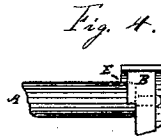
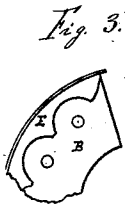
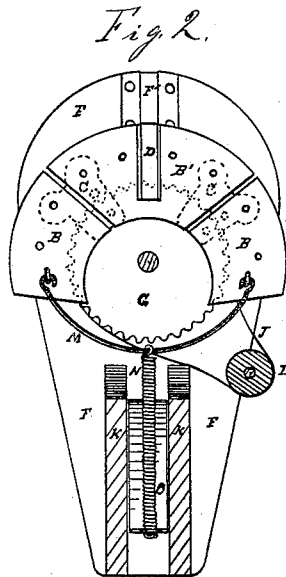
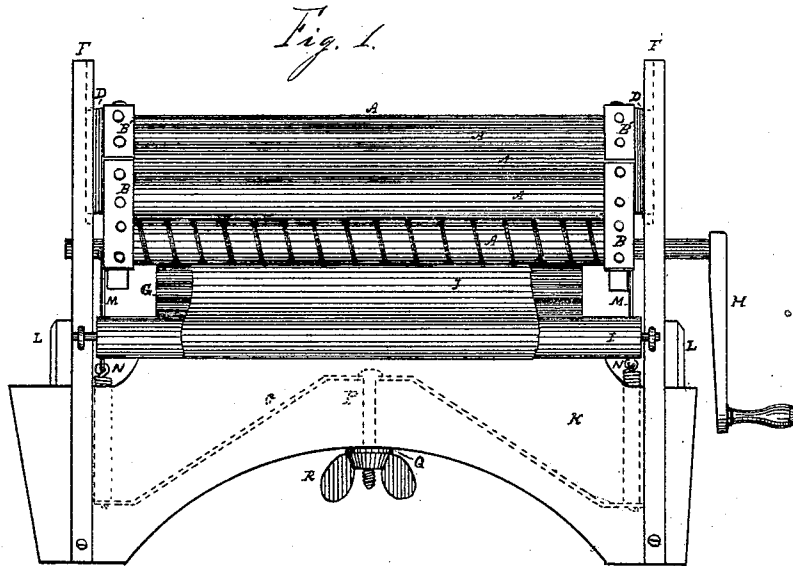


A. H. CALKINS.

Improvement in Washing-Machines.

No. 131,149.

Patented Sep. 10, 1872.



WITNESSES

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2 Sheets--Sheet 2.

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Fig 5.

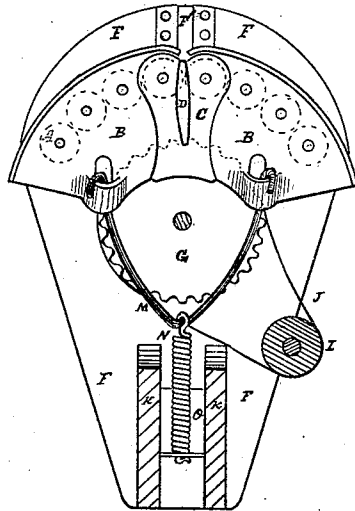


Fig 6.



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UNITED STATES PATENT OFFICE.

ALMON H. CALKINS, OF CHESTERTON, INDIANA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 131,149, dated September 10, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, ALMON H. CALKINS, of Chesterton, in the county of Porter and State of Indiana, have invented certain new and useful Improvements in Washing-Machines, of which the following is 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 drawing forming a part of this specification, and in which—

Figure 1 represents a front elevation of my improved washing-machine; Fig. 2, a vertical section of the same in the plane of the line x x ; Fig. 3, a side elevation of a part of the inner face of one of the segmental pieces; Fig. 4, an end view of one of the segmental pieces, showing the position of the rollers therein. Fig. 5, also represents a vertical section of my improved machine, in the plane of the line x x , showing a modification in the construction, arrangement, and application of the hinge-plate; and Fig. 6 represents an end view of the hinge-plate, so modified, more clearly showing the vertical ridge thereon.

My invention relates to that class of washing-machines in which the clothes are turned between a large corrugated roller and a yielding jacket of small rollers, the whole being supported upon a frame attached to a tub; and it consists in certain novel features in the construction and arrangement of the various parts of the machine, which features are hereafter more particularly mentioned; the object of my invention being to render the operation of the machine more effectual and simplify its construction.

In the drawing, A A represent small rollers. Some of these rollers may be spirally grooved, as shown in Fig. 1. B B' are small segmental pieces arranged together in the form of a larger segment, and C C are plates rigidly attached either to the pieces B or B', and pivoted to the adjacent segmental piece or pieces, as shown by the dotted lines in Fig. 2. The distance between the adjacent radial edges of the pieces B B' is sufficient to admit of a slight turning of the pieces B B on the pivots of the plates C C, and the latter overlap the surface of the former sufficiently to prevent a torsional movement of the said pieces. D is a long vertical

rigid rib or shoulder, projecting outwardly from the piece B'. The ends of the rollers A A have a pivoted bearing in the yielding segmental frame thus formed, so that they will be readily rotated therein by the friction of the clothes against them. E is a rigid shoulder, projecting inwardly from the segmental pieces B B', as shown in Figs. 3 and 4. This shoulder E serves to protect the spindles of the rollers A A against a severe upward strain, but does not extend over the latter sufficiently to prevent them from turning freely by reason of its friction against them during such strain. This shoulder E, however, is only auxiliary to the operation of the machine, and may be dispensed with without materially impairing its usefulness. F F are the standards of the frame, and F' F' are vertical grooves on the inner sides thereof, in which the ribs or shoulders D D have a bearing, and these ribs or shoulders may also be provided with a small vertical ridge on their sides, as represented in Fig. 2, in order to prevent the ends of the said ribs from coming in contact with the standards F F. The features of my improvement in the jacket thus described, are, the broad overlapping pieces or plates C C, and the long vertical ribs or shoulders D D, whereby a more positive vertical movement is obtained. Heretofore the bearing of the jacket in the standards has been formed by a continuation of the spindle of the central roller of the jacket into the groove of the standards, and the spindle being round has admitted of too great a tilting movement of the whole jacket. The function of the plates C C has heretofore been merely to connect the segmental pieces. G is a large, corrugated roller, arranged below the rollers A A, and having a bearing in the standards F F. H is a crank by means of which the roller G is rotated. I is a small roller turning in bearings on the standards F F, and J is an apron about the rollers I and G, for the purpose of feeding the clothes between the latter and the rollers A A. K is the bottom board made in two parallel vertical pieces set into the standards F F. L L are cleats, which, for convenience of transportation, are attached to the standards F F, but which, in use, are removed and attached to the inner side of the tub, so that the machine may be arranged in the latter by setting the

ends of the bottom boards over the said cleats. In order to prevent the machine from sinking too low in the tub the bottom of the cleats L L is provided with lateral projections, extending sufficiently to prevent the machine from sinking lower than may be desired. M is a downwardly-curved flexible rod, the ends of which are hooked into eyes in the pieces B B, respectively, as shown in Fig. 2. N is a close-coiled spring hooked on the central part of the rod M, and extending downward between the bottom boards K K. O is either a flexible or rigid cross-piece, capable of moving freely between the bottom boards K K to the ends of which cross-piece the lower ends of the springs N N are respectively attached. P is a bolt passing through the central part of the cross-piece O, and extending downward between the bottom pieces K K. Q is also a cross-piece lying across the edges of the bottom boards K K, through which latter cross-piece the bolt P also passes. The lower end of the bolt P is screw-threaded, and R is a nut on its threaded end. By tightening or loosening the nut R the tension of the springs N N is either increased or diminished, and the pressure of the jacket of small rollers upon the clothes thereby regulated. By continuing the bottom boards K K entirely across the machine a convenient attachment is provided for the springs N, and the parts operating in connection therewith for the purpose of adjustment, and these parts are shielded from injury.

If preferred, the frame of the adjustable jacket above described may be constructed of only two segmental pieces, as shown in Fig.

5, and when so constructed the plate C is preferably pivoted to the outer segmental pieces, and provided with the shoulder D, as there shown.

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

1. In combination, the vertically-slotted standards F F, yielding segmental pieces B B', hinged together by means of the broad overlapping plates C C, the segmental piece B' being provided with the long vertical rib or shoulder D, the small rollers A A, and large corrugated roller G, all constructed and arranged together substantially as and for the purposes specified.

2. In combination, two or more yielding segmental pieces, B, hinged together by means of one or more broad overlapping plates, C, pivoted to the outer face of the said segmental pieces, the single or central plate C being provided with the long vertical rib or shoulder D, rollers A A, vertically-slotted standards F F, and large corrugated roller G, all constructed and arranged together, substantially as and for the purposes specified.

3. In combination with the subject-matter of the last-foregoing claim, the flexible rod M, springs N, cross-piece O, bolt P, bottom board K K, and nut R, substantially as and for the purposes specified.

ALMON H. CALKINS.

Witnesses:

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