2 Sheets—Sheet 1.

A. D. SMITH & J. B. COLLISON.

WASHING-MACHINE.

No. 185,792. Patented Dec. 26, 1876.

Fig. 1.

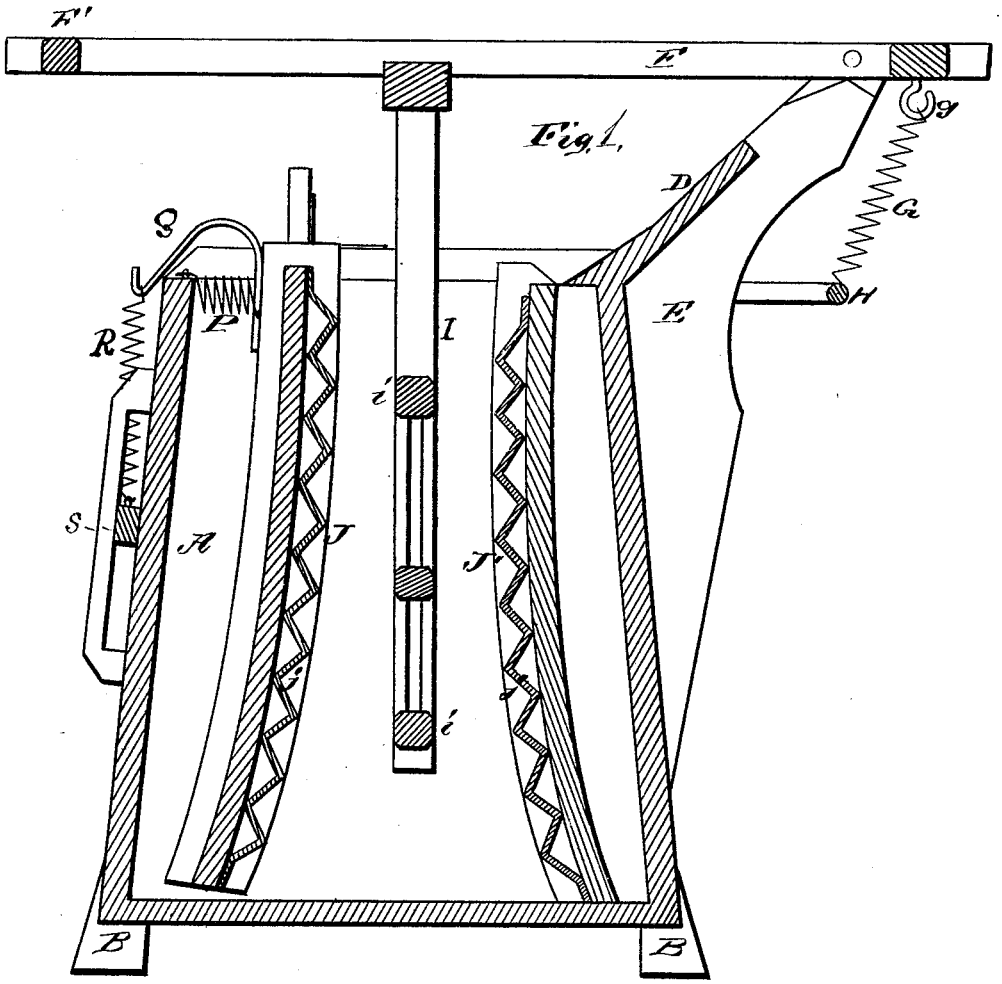
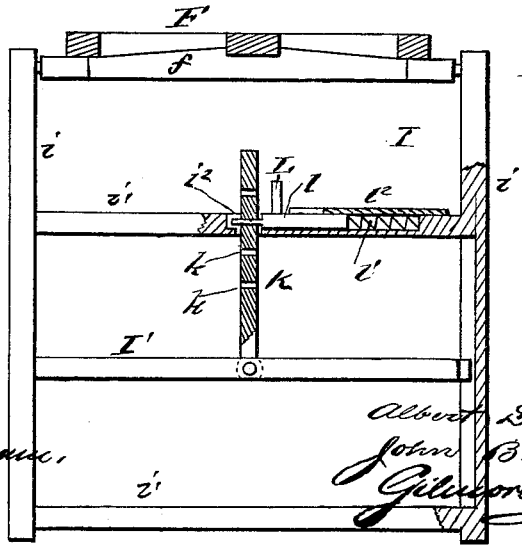


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

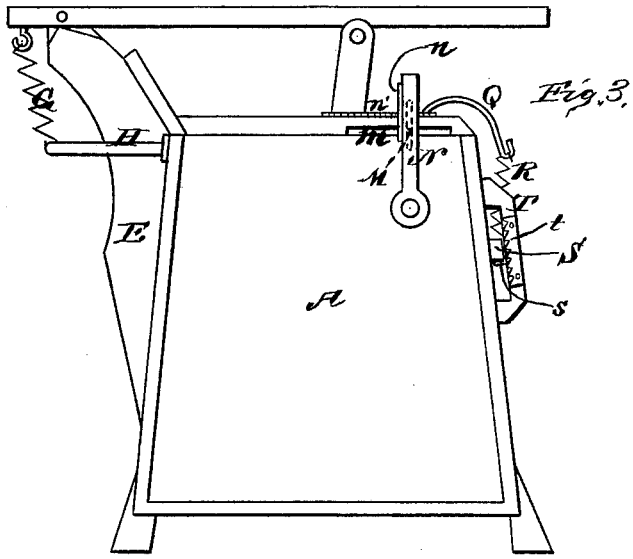
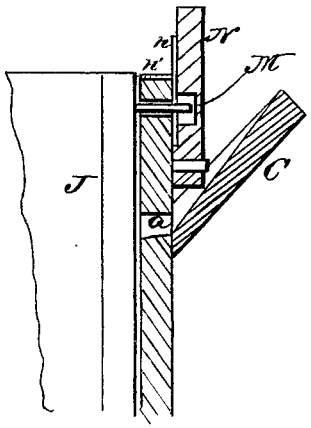


Fig. 5.



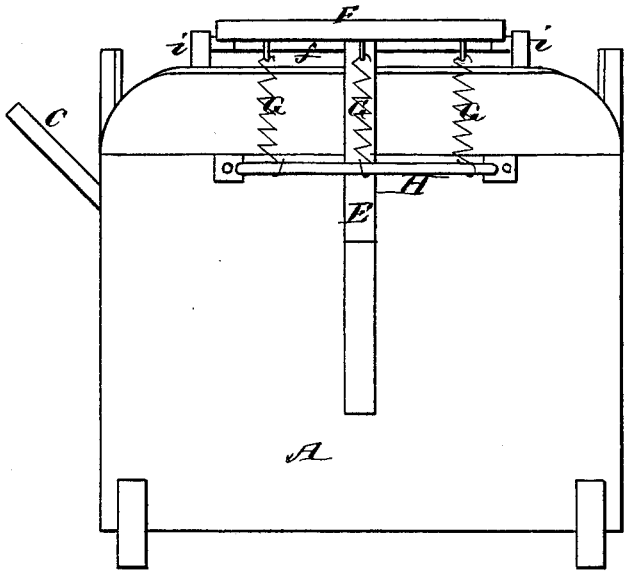


Fig. 4.

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ALBERT D. SMITH AND JOHN B. COLLISON, OF NELSONVILLE, OHIO.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **185,792**, dated December 26, 1876; application filed October 28, 1876.

To all whom it may concern:

Be it known that we, ALBERT D. SMITH and JOHN B. COLLISON, of Nelsonville, in the county of Athens, and State of Ohio, have invented a new and valuable Improvement in Washing-Machines; and we 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 a central vertical section, and Fig. 2 is a detail view of the frame. Fig. 3 is a side elevation of our washing-machine, and Fig. 4 a rear view thereof. Fig. 5 is a detail view, and Fig. 6 is a rear view, of the same.

This invention relates to machines for washing clothes and other fabrics; and it consists in the construction and arrangement of the parts hereinafter set forth.

In the annexed drawings, A designates the suds-box or casing of my washing-machine. Said suds-box is rectangular in form, and is provided at the corners of its bottom with four short supporting standards or legs, B B. To one end of said box is rigidly secured an upwardly and outwardly inclined wringing-board, C, which is recessed on its upper and inner face to prevent the escape of any of the water and suds wrung out of the clothes or other fabrics. The water and suds so expressed find their way back into the suds-box A through an opening, *a*, in the end of the same, just above the attachment of said wringing-board. To the back of said suds-box, at the top thereof, and extending along its whole length, is secured an inclined deflecting or guiding board, D, which serves to convey back into suds-box A whatever water may be raised out of the same, and over the rear line thereof, by the action of the operating-frame and the clothes-sash hereinafter described. To this deflecting or guiding board, and to the rear of suds-box A, I rigidly secure a standard, E, which rises above said suds-box and deflecting-board, and to the top of which is pivoted an operating lever-frame, F. Said lever-frame F is pivoted near its rear end, and is provided in front with a cross-bar, F′, which may be grasped and drawn down by the hands of the operator. Said lever-frame is also provided at its rear end with three hooks, *g*, which are respectively adapted to catch into the upper ends of three helical springs, G, that are secured by their lower ends to a horizontal bar or large staple, H, which is rigidly attached to the rear of said suds-box A. Said springs operate to tilt upward the front part of said said lever-frame and the clothes-sash attached thereto. By unhooking one or more of them the power of said washing-machine may be adjusted conformably to the texture and general character of the garments to be washed.

I designates a clothes-sash pivotally hung from lever-frame F, so as to have vertical vibration in suds-box A, between two upright wash-boards, J J′. Said clothes-sash (as shown in Fig. 2) consists of two standards, *i i*, which are pivoted by their upper ends to the ends of a cross-bar, *f*, of lever-frame F, and of three cross-bars, i^1, i^1, and I′. Cross-bars i^1 i^1, the highest and the lowest of the three, are fixed; but the middle cross-bar I′ is vertically adjustable, so as to adapt the sash-frame I to be used with clothes of various kinds and sizes. This adjustment is effected by means of a vertical rod or bar, K, which is rigidly secured at its lower end to the middle of said adjustable cross-bar, and which passes up through a perforation, i^2, in upper cross-bar i^1. The ends of said adjustable cross-bar I′ are provided with tongues, which set into vertical grooves on the inner sides of standards *i i*, and move freely up and down in the same. Said adjustable cross-bar I′ is locked in any vertical location desired by means of a sliding horizontal pin, *l*, which slides in a groove on the top of upper fixed cross-bar i^1, and enters any one of a series of transverse perforations, *k*, in rod K. Said pin *l* is actuated by a spring, l^1, which presses against its rear end, as shown; and said pin is covered by a sheet-metal casing, l^2. Said pin may be withdrawn from said perforations *k* by means of a handle or grasping piece, L, which is rigidly secured to the upper side of it. The cross-bars and standards of sash I are all rounded, so as to preserve the clothes from injury.

Wash-boards J J′ both curve outward at the middle, so as to present convex faces to said

clothes-sash I. Said faces are covered with transversely ribbed or corrugated metal sheets *j j*. Rear wash-board J′ is fixed in its position; but front wash-board J is free at the bottom and sides, and adjustably secured at the top, as follows: Short journals or gudgeons M M, two in number, are secured to the sides of said adjustable wash-board J—one on each side thereof—and pass through horizontal slots *m m* in the ends of suds-box A. The outer ends of said gudgeons M are secured to levers N N, which are pivoted to the ends of said suds-box. By moving said levers forward or backward said wash-board J is correspondingly adjusted. Said levers and wash-board may be locked in any desired position of such adjustment by means of vertical catch-plates or catches *n n* on said levers, which are adapted to engage with notched horizontal plates or racks *n′ n′*, secured to the top of suds-box A, at the ends thereof, as shown in Fig. 5.

The upper part of the back of said adjustable wash-board J is provided with two helical expansion-springs, P P, which are secured by their rear ends to the inner side of the rear of suds-box A. Said springs operate to force the upper end of said adjustable wash-board J toward the clothes-sash already described, when said springs are compressed by drawing levers N backward. The rear of said wash-board is also provided at its top with a hook, Q, which is connected by a helical spring, R, with a vertically-vibrating lever, S, which is pivoted by one end to the front of said suds-box A. Said lever S is provided with a horizontal catch-plate, *s*, which engages with a vertical notched plate or rack, *t*, rigidly secured to a vertical bar, T, that is attached by lugs or foot-pieces to the front of said suds-box. The operation of spring R is the reverse of that of springs P P.

By means of said springs, levers, and locking devices, adjustable wash-board J may be adjusted to, and secured in, various positions with relation to the said clothes-sash, so as to regulate the amount of friction applied to the fabrics carried thereby. The washing is effected by moving said clothes-sash up and down rapidly between said wash-boards.

Various modifications may be made without departing from the spirit of our invention. For instance, one spring P may be used instead of two; also one lever N may be used instead of two. In other cases the number of parts, as well as their construction and arrangement, may be changed; but we prefer the devices as shown.

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

1. In a washing-machine, the wash-board J, pivoted at its lower ends to the suds-box A, said wash-board being curved at its bottom and straight at the top, and provided with expanding-springs P, levers S, and spring R, attached to the upper part, in combination with stationary wash-board J′, clothes-sash I, operating substantially as described.

2. In a clothes-sash for a washing-machine, an adjustable cross-bar, I′, and perforated adjusting-rod K, in combination with stationary cross-bar *i*, having spring locking device recessed therein, substantially as described, and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

ALBERT D. SMITH.
JOHN B. COLLISON.

Witnesses:
E. GARDNER,
C. K. SANDS.