T. ALLEN.

WASHING-MACHINE.

No. 169,397. Patented Nov. 2, 1875.

Fig: 1.

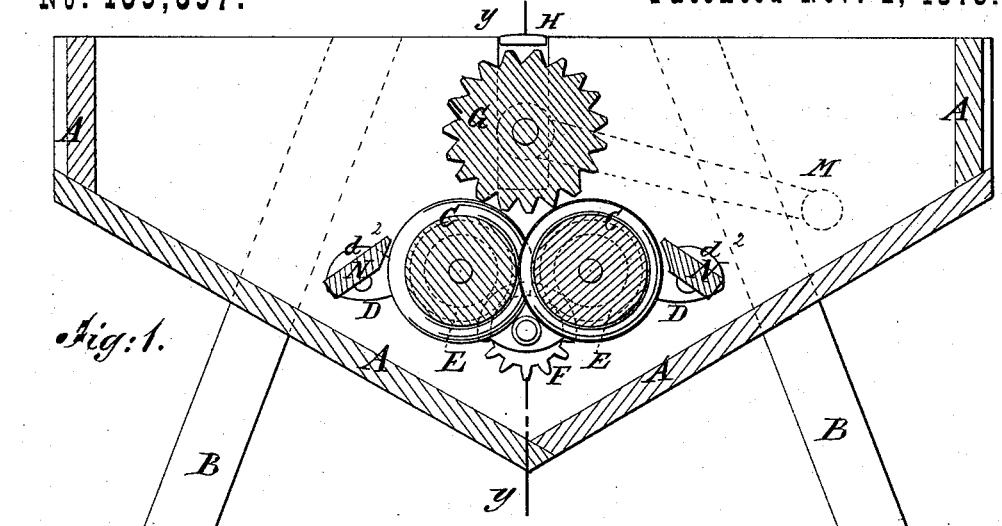


Fig: 3.

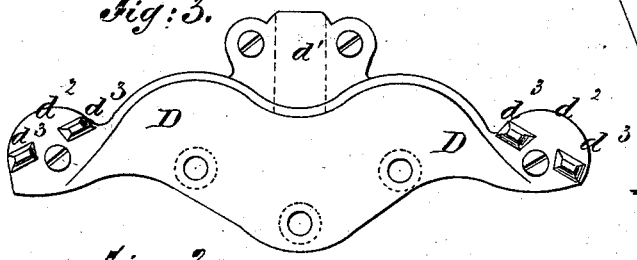


Fig: 2.

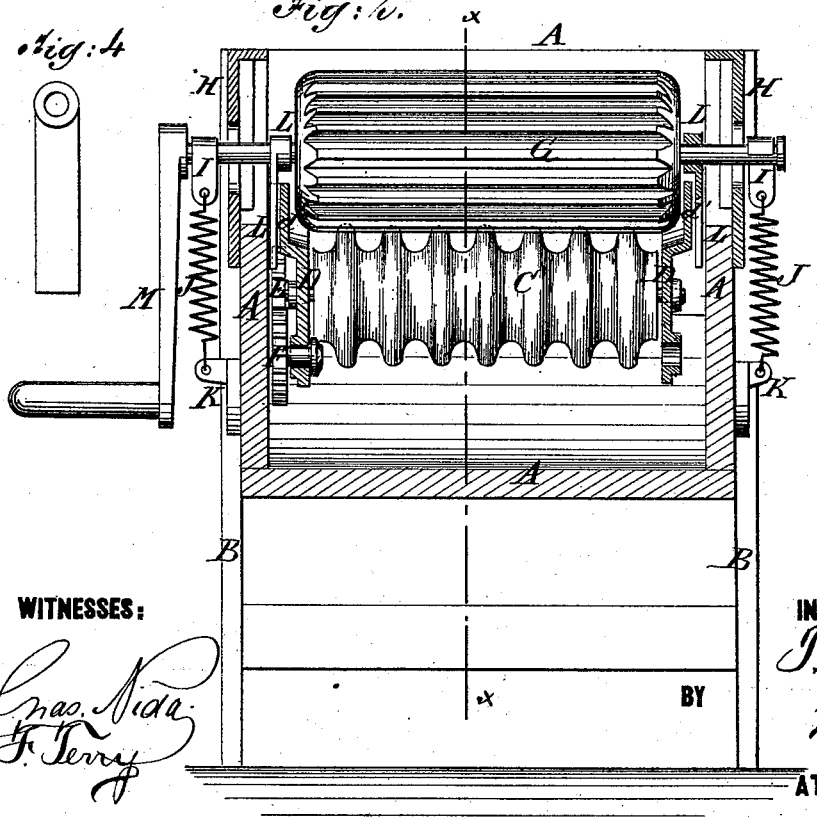
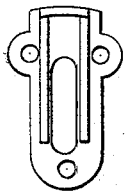


Fig: 4

Fig: 5.



WITNESSES:

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TIMOTHY ALLEN, OF FORT MADISON, IOWA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **169,397**, dated November 2, 1875; application filed October 2, 1875.

To all whom it may concern:

Be it known that I, TIMOTHY ALLEN, of Fort Madison, in the county of Lee and State of Iowa, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *x x*, Fig. 2. Fig. 2 is a vertical cross-section of the same, taken through the line *y y*, Fig. 1. Fig. 3 is a detail face view of one of the plates that support the lower rollers and cover the feed-gearing. Fig. 4 is a detail view of the guide for the upper roller. Fig. 5 is a detail view of one of the slotted bearings for the upper roller.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved washing-machine, simple in construction, convenient in use, and effective in operation, washing the clothes quickly, thoroughly, without becoming clogged, or straining or stretching the clothes, and which will allow any part of the clothes to be operated upon separately.

The invention consists in the combination of the ring-grooved rollers, the flanged plates provided with the lugs, and the gear-wheels with the longitudinally-grooved roller and the suds-box; in the combination of the sliding guards with the journals of the upper roller, and with the recessed lugs of the flanged plates; and in the combination of the tongues formed upon the end lugs of the flanged plates, and the guard and guide bars having grooves formed in their ends, with the said flanged plates and with the lower rollers, as hereinafter fully described.

A represents the suds-box, the sides and ends of which are vertical, and its bottom inclines downward from the ends toward the middle, as shown in Fig. 1. The suds-box A is supported by legs B, attached to its sides, and which are made of such a length as to raise the machine to a convenient height. C C are two parallel rollers, the faces of which are grooved transversely in such a way that the projections of the one roller may enter the grooves of the other, as shown in Fig. 1. The journals of the rollers C revolve in holes in the plates D, which are cast with flanges upon their upper-end edges, and with lugs d^1 d^2 upon the middle part of their top edge, and upon their ends, to receive the screws by which the said plates D are secured to the sides of the suds-box A. To the journals of the rollers C, at one or both ends of said rollers, and beneath the plates D, are attached gear-wheels E, the teeth of which mesh into the teeth of an intermediate gear-wheel, F, pivoted to the lower part of the plate or plates D, and the effect of which is to cause the two rollers C to revolve in the same direction and at the same velocity. The rollers C are revolved by friction from the roller G, placed above them, and the face of which is grooved or corrugated longitudinally, as shown in Figs. 1 and 2. The journals of the roller G pass through and revolve in vertical slots in the castings or bearings H, which are inserted and secured in vertical slots in the upper part of the sides of the suds-box A. Upon the journals of the roller G, upon the outer sides of the suds-box A, are hung two hooks, I, to the shanks of which are attached the upper ends of the spiral springs J. The lower ends of the springs J are attached to lugs K, formed upon plates attached to the lower parts of the sides of the suds-box A. The springs J hold the roller G down to its work, and at the same time allow it to yield to accommodate itself to the varying thickness of the clothes being operated upon. The journals of the roller G, upon the inner sides of the sides of the suds-box A, pass through holes in the upper ends of the guards L, the lower parts of which enter sockets formed to receive them upon the outer sides of the top lugs d^1 of the plates D, to keep the roller G from longitudinal movement in its bearings. To one of the journals of the roller G is attached the crank M, by which the machine is operated. Upon the inner sides of the end lugs d^2 of the plates D are formed inclined tongues d^3, which enter grooves in the ends of the bars N. The inner corners of the upper edges of the bars N are beveled off, so that the said bars may set up close to the lower roller C, and thus serve as guards to prevent the clothes from working in beneath said rollers,

and as aprons to guide the clothes as they pass between the rollers C C and the roller G.

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

1. The combination of the ring-grooved rollers C, the flanged plates D, provided with the lugs d^1 d^2, and the gear-wheels E E F, with the longitudinally-grooved roller G and the box A, substantially as herein shown and described.

2. The combination of the sliding guards L with the journals of the upper roller G, and with the recessed lugs d^1 of the flanged plates D, substantially as herein shown and described.

3. The combination of the tongues d^3, formed upon the end lugs d^2 of the flanged plates D, and the guard and guide bars N, having grooves formed in their ends, with the said plates D, and with the lower rollers C, substantially as herein shown and described.

TIMOTHY ALLEN.

Witnesses:
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