

L. A. ASPINWALL.  
Improvement in Washing-Machines.

No. 128,353.

Patented June 25, 1872.

Fig. 2.

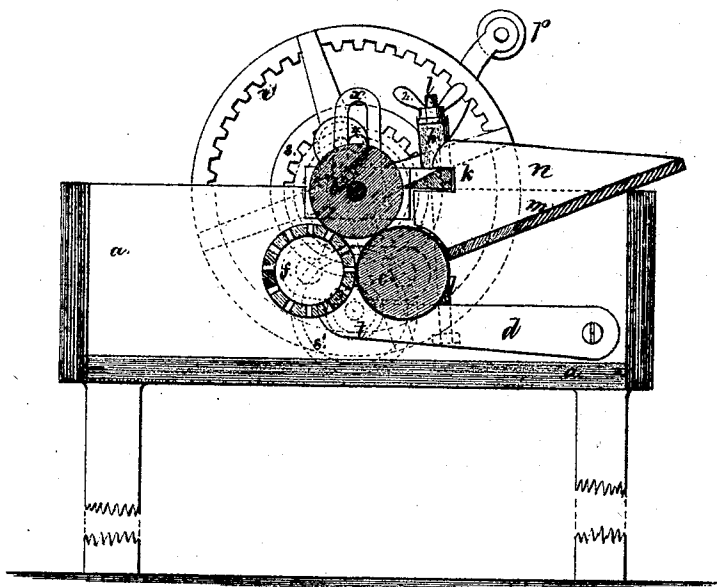
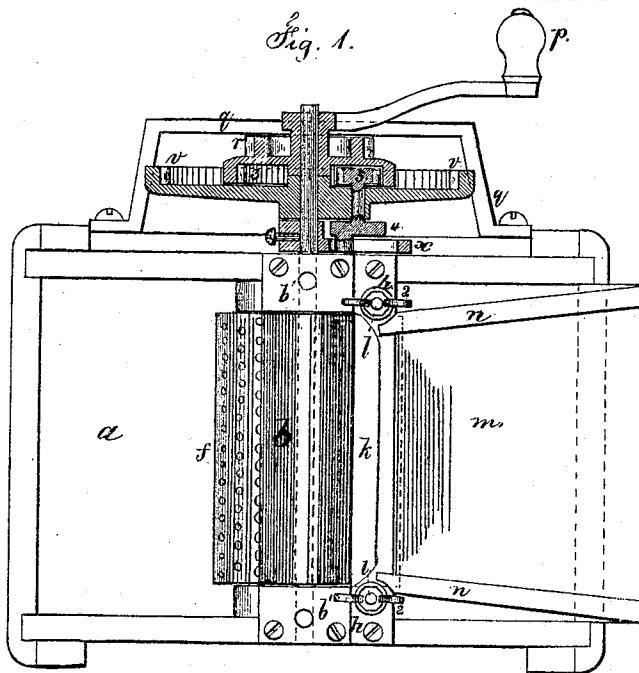


Fig. 1.



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Witnesses.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 128,353, dated June 25, 1872.

*To all whom it may concern:*

Be it known that I, L. AUGUSTUS ASPINWALL, of Albany, in the State of New York, have invented an Improvement in Washing-Machines; and the following is declared to be a correct description of the same.

In this washing-machine there are two or more rollers kept together by a yielding force. The clothes pass between them, and the motive power is a crank; but instead of the rollers continuing to turn in one direction they receive an oscillatory rotary movement by means of gearing interposed between the motor-crank and the rollers, so that while the clothes are progressed gradually through between the rollers they receive an increased number of pressures, which force out the water and carry with it the dirt from the clothes.

In the drawing, Figure 1 is a plan of the machine, and Fig. 2 is a vertical longitudinal section.

The box *a* of the washing-machine is of suitable size and material. The upper roller *b* is preferably of rubber, and its shaft is sustained in the bearings *b'* *b'*, and projects at one end beyond the box *a* for the gearing, hereafter described. The lower roller or rollers are within the box *a*, supported by the levers *d*. I have shown the two rollers *e f*, having their journals above such levers *d*, and pressed up toward the roller *b* by the springs *h*, that are above the cross-bar *k*, so as to be entirely away from the action of the hot water and suds, which allows of adjustment at any time. India rubber is preferable for the springs, being compact; but springs of other character may be used, and the suspending rods *l* and nuts *2* apply the power of such springs to the levers *d* and adjust the force of such springs.

It is not new to support the upper roller by means of springs above water. In my machine the rollers that are in the water are allowed to yield by springs that are above the water.

The cross-bar *k* forms a trough, in which a bar of soap is to be laid, and the roller *b* rubbing against the soap abrades the same sufficiently to supply the required quantity of soap, and thereby dispenses with soaping the clothes by hand, as usual. This soap-box or trough might be placed above the roller *b*.

I find it desirable to make the roller or rollers *e f* of wood, but rubber or similar material may be used. I have shown the roller *e* with water-passages formed of grooves running spirally around its periphery, and the roller *f* as hollow and perforated with numerous small holes, so that the water will be admitted with sufficient freedom to the clothes while confined between the rollers, and alternately squeezed and relieved during the rapid oscillations of the rollers. The rollers may all be hollow and perforated, if desired.

The clothes are laid upon the inclined feed-board *m* that is formed with the converging sides *n*, and supported by the notches in said sides *n*, resting upon the cross-bar *k*, so as to be easily removed for cleaning out the machine after washing. The washing operation will be effected by the progressive movement of the clothes through between the rollers and the squeezing and vibrating operations to which they are subjected in consequence of the oscillatory movement given to the rollers, in addition to the rotary, as next described. The crank *p*, external gear *r*, and internal gear *s* are all connected together, but they revolve freely upon the projecting shaft of the roller *b* without turning that shaft. The gear-wheel *r* rotates the wheel *s'* and pinion *t* that are supported by a gudgeon upon the frame *g*, and the pinion *t* gives a progressive movement to the internal gear-wheel *v*, that is also loose upon the shaft of the roller *b*, and supports a short shaft with a crank, 4, at one end, and a pinion, 5, at the other, that is driven by the internal gear *s*. Upon the shaft of the roller *b*, and firmly attached thereto, is the slotted crank-arm *x*, into which the crank-pin 4 passes. This crank-arm *x* may be connected with the crank-pin by a connecting-rod, if desired.

It will now be understood that the crank-pin 4 vibrates the crank-arm *x* and gives to the roller *b* an oscillatory motion, and by contact to the rollers *e f* the same movement; and that as the wheel *v* is moved around progressively the roller *b* will be revolved at the same speed through the shaft crank-pin 4 and pinion 5, carried around by and with said wheel *v*, thereby the aforesaid oscillatory and rotary movements will be communicated to the washing rollers. This movement may be obtained from a different arrangement of gearing inter-

posed between the crank and rollers, so as to operate as before described, and give the increased number of pressures each revolution of the crank. A roller might be used in connection with the roller *b*, to act as a wringer, to deliver the fabrics above the water in the box *a*.

I claim as my invention—

1. The washing-machine rollers *b e f*, arranged as specified, and receiving the oscillatory rotary movement, substantially as set forth.

2. The washing-machine roller or rollers *f*, made with numerous perforations, substantially as set forth.

3. The levers *d*, supporting the roller or rollers *e f*, in combination with the suspending rods *l*, springs *h*, and nuts 2, arranged substantially as and for the purposes set forth.

4. The soap-box or trough *k*, applied to and combined with the washing-machine roller *b*, as and for the purposes set forth.

5. The removable feed-board *m*, with notched converging sides *n*, supported by the cross-bar *k*, as and for the purposes set forth.

6. The crank-arm *x* attached to the shaft of the roller *b*, in combination with the crank-pin 4 that is revolved by the pinion 5 and wheels *s*, and is carried around by the wheel *v* that receives its motion from the gearing *r s' t*, substantially as set forth.

Signed by me this 23d day of May, A. D. 1872.

L. AUGT. ASPINWALL.

Witnesses:

A. V. DE WITT,  
CHAS. T. F. SPOOR.