

(No Model.)

H. J. LOCKHART.

WASHING MACHINE.

No. 380,396.

Patented Apr. 3, 1888.

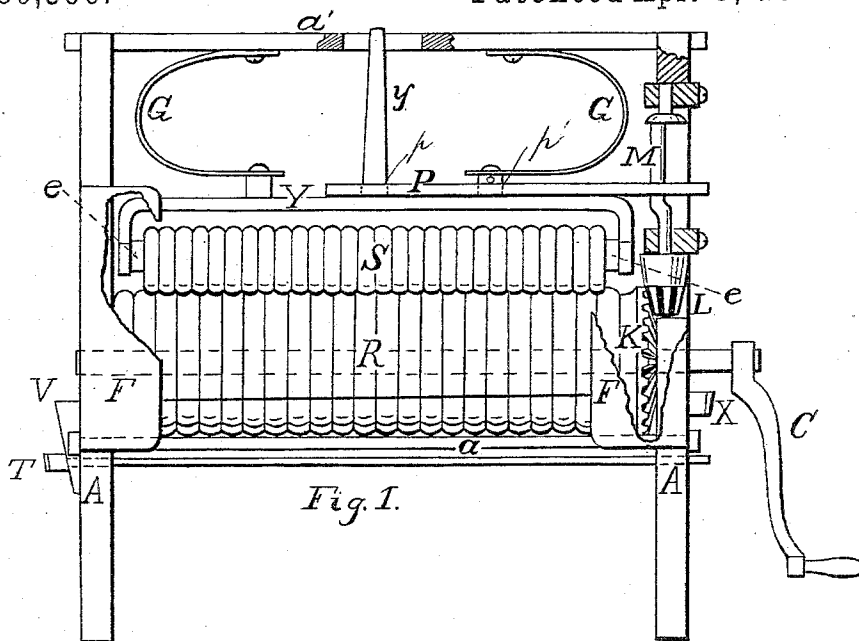
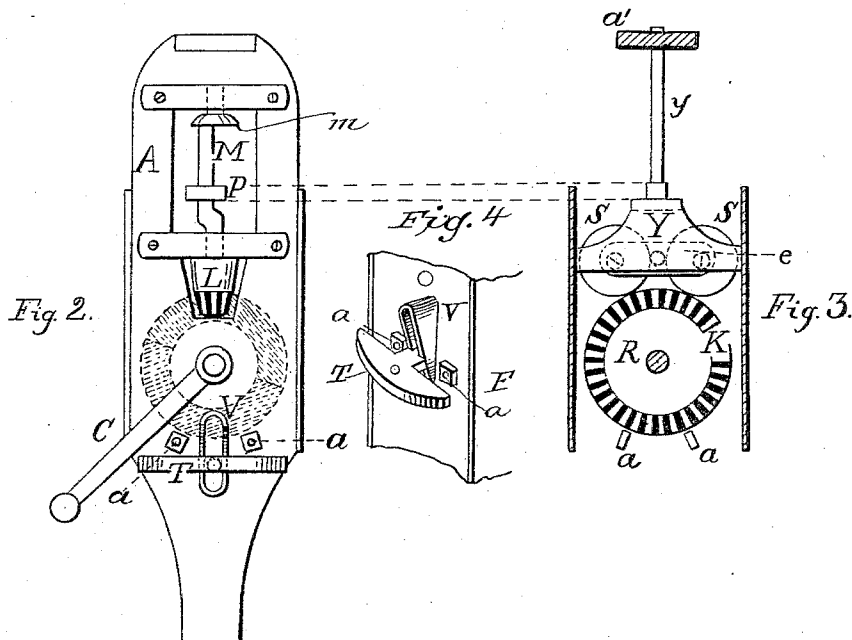


Fig. 1.



WITNESSES:

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HORATIO J. LOCKHART, OF FOSTORIA, OHIO.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 380,396, dated April 3, 1888.

Application filed May 20, 1885. Serial No. 166,088. (No model.)

To all whom it may concern:

Be it known that I, HORATIO J. LOCKHART, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Washing-Machine, of which the following is a specification.

My invention relates to improvements in washing-machines in which the material to be washed is drawn between revolving rollers, one or more of which has also a longitudinal reciprocating movement to accomplish the necessary rubbing of the goods. It also relates to the construction of the large roller and to the means for securing the machine in the tub.

The objects of my invention are to provide a simple, durable, and easy-running machine, to avoid the checking and unequal shrinkage of the large roller, and to lessen its weight and to secure a new device for fastening the machine in the tub. I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the entire machine. Fig. 2 is an end elevation; Fig. 3, an end view just inside of the end piece shown as Fig. 2; and Fig. 4 is a detail view illustrating the T-brace and the wedge.

The frame A is made of metal or wood, or both, and is of any suitable size. It consists of two upright end pieces connected by two flat cross-bars of metal, *a a*, and the flat wooden or metal top piece, *a'*, all substantially as shown. In the end pieces is journaled the large roller R, one journal of which is extended outside its bearing, and is provided with a crank, C, for operating the machine.

Above and resting upon the large roller R are two small rollers, S S, which revolve by friction upon the large roller, or upon the goods which the large roller may be carrying through. These small rollers are held in place by the two end pieces, *e e*, each having two holes in it to form a bearing for one end of each small roller. The rollers are then journaled and secured by means of four headed screws or nails driven through these bearings into the roller-axis, as shown. The two end pieces, *e e*, have also each a third hole, as shown in Fig. 3, midway between the roller-bearing holes, through which they are pivoted on the

metal yoke-frame Y. This frame is kept in its place in line with the large roller by the arm *y*, which projects up from the center of the frame into the top piece, *a'*, and by the side flanges, F, against which the ends of the frame Y rest.

The small rollers S S are kept pressing down upon the large roller R by means of the two flat steel springs G G, one end of each spring being securely fastened on the under surface of the top piece, *a'*, and the other end securely fastened on the upper surface of the frame Y, as shown. When varying thicknesses of material are passed through the machine, this arrangement allows the small rollers to rise and fall, as necessary, and at the same time keep pressing firmly upon the clothes.

The necessary rubbing of the goods as they pass through the machine is accomplished by the longitudinal reciprocating movement of the small rollers S S. This motion is secured by the bevel gear-wheel K on the large roller working the smaller gear L, keyed on the vertical crank-shaft M, which is journaled in the end piece of the machine-frame. The crank part of the shaft M is connected by a pitman-rod, P, to the yoke-frame Y on the arm *y*, thus imparting the desired movement when the large roller is turned. To accommodate this movement, the place in the top piece, *a'*, is made into a longitudinal slot, and the flanges F are wide enough to confine the ends at all times. The pitman is connected to the yoke-frame at two points, arm *y* passing through a perforation at *p*, near the inner end of the pitman, and a projection from said yoke-frame also passes through another perforation at *p'*, near the central portion of the pitman, the lower arm of one of the springs G being also secured upon the same projection. The crank-shaft M is formed with a collar or disk, *m*, at the upper end of its crank portion, instead of the usual bend in the crank-shaft, and this disk prevents the pitman from binding at that point if it should reach such point in use. The purpose of the flanges F is also to prevent the clothes from getting over the ends of the rollers R S S, and they are consequently made to stand nearly against the circumference of said rollers, as shown. They may also be made to conform to the shape of the rollers more

closely than is shown in the drawings, if necessary. To prevent the material from winding around the large roller, the flat cross-pieces *a a* are placed so that one edge of each
 5 lies lengthwise close to the roller, as shown. The rollers *R S S* are circumferentially corrugated and made of wood, metal, porcelain, or glass.

In order to fasten the machine into the tub
 10 or other receptacle, a **T**-brace, *T*, is made, of wood and metal or wholly of metal, and placed with the stem part lengthwise under the large roller *R* through holes made in the machine-frame for that purpose. When in place, a nut
 15 may be run on the end which was put through to keep the brace *T* from coming out. The brace is now movable lengthwise, and a metal wedge, **V**-shaped, as represented in Figs. 1 and 2, and as most clearly shown in Fig. 4, so
 20 that it bears equally on both sides of the cross-piece of the **T**-brace and also against the end of the machine, is used to vary the position of the **T**-brace, and thereby the machine may be
 25 For tubs of flaring sides the projection **X** on the end of the machine is also necessary.

I am aware that prior to this invention washing-machines have been made having one
 30 large revolving roller with two or more laterally-reciprocating rollers bearing upon it, and I therefore do not claim this principle broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

35 1. The combination of a bevel gear-wheel, *K*, secured to roller *R*, the smaller bevel gear-wheel, *L*, meshing with and moved by said gear *K*, the crank-shaft *M*, forming the axis of and revolved by the smaller gear, *L*, the main frame

having its cross-bar *a'* provided with a slot, 40 the yoke-frame having an arm entering said slot, the rollers in said frame, and the pitman *P*, all substantially as herein shown and described.

2. The main frame having its cross-bar *a'*, 45 provided with a vertical slot elongated in the direction of the length of said bar, the yoke-frame movable longitudinally in said frame and having an arm, *y*, entering the said slot in cross-bar *a'*, and the rollers, all com- 50 bined substantially as set forth.

3. The combination of the supporting-frame having cross-bar *a'*, provided with a slot, the yoke-frame *Y*, having an arm, *y*, entering said slot, the plates *e*, pivoted to said frame *Y*, the 55 rollers *S*, journaled to said plates *e*, the roller *R*, crank-shaft *M*, gears *K L*, pitman *P*, and springs *G G*, all arranged and adapted for use substantially as set forth.

4. The combination, in a machine substan- 60 tially as described, of a supporting or main frame having an opening forming a way for the stem of the **T**-brace, the **T**-brace having its stem movable in said opening, and the wedge interposed between the head of said brace and 65 the main frame, substantially as set forth.

5. The main frame having a projection on one of its ends, the **T**-brace with its stem movable longitudinally in an aperture in the frame, with its cross-piece projecting from the oppo- 70 site end of the frame, and the bifurcated wedge interposed between the cross-piece of the brace and the frame of the machine, substantially as set forth.

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Witnesses:

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