2 Sheets—Sheet 1.

A. R. FOWLER.

Washing-Machine.

No. 209,035. Patented Oct. 15, 1878.

Fig. 1.

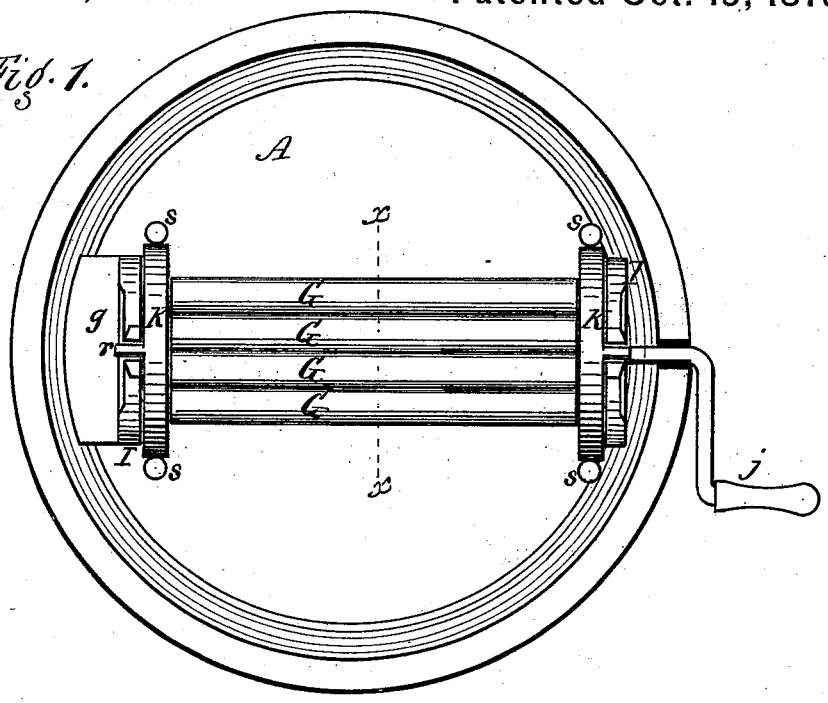

Fig. 2.

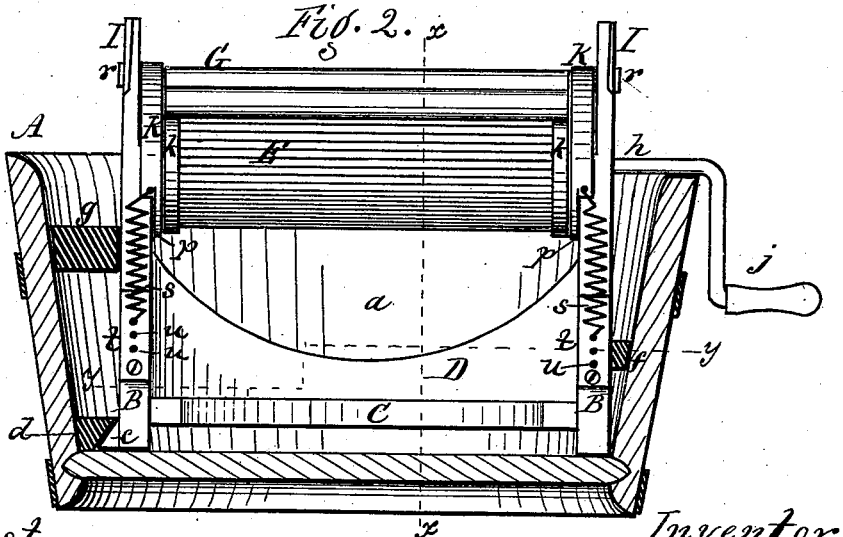

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Fig. 3.

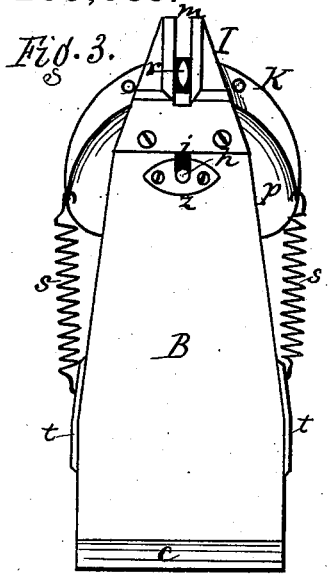


Fig. 4.

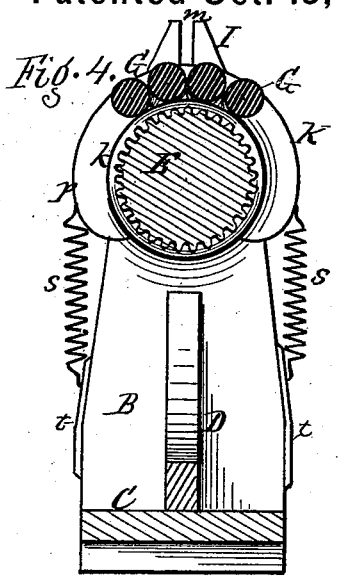


Fig. 5.

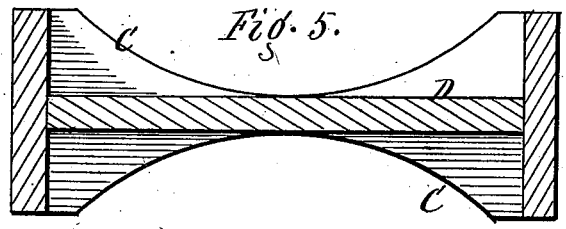


Fig. 6.

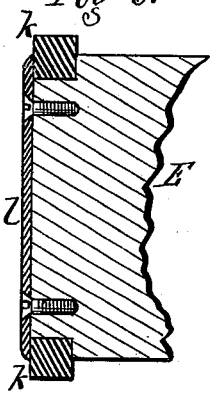


Fig. 7.

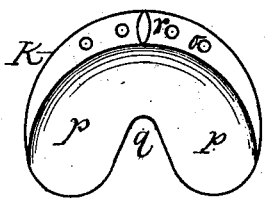
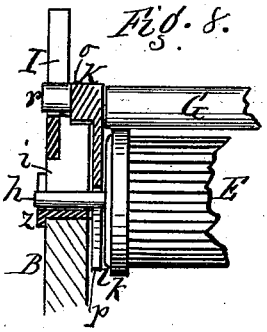


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALBERT R. FOWLER, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **209,035,** dated October 15, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, ALBERT R. FOWLER, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Washing-Machines; and I 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 accompanying drawings, in which—

Figure 1 is a plan of my improved machine. Fig. 2 is a front elevation of the machine resting in a tub. Fig. 3 is an end elevation. Fig. 4 is a cross-section on the line *x x* of Figs. 1 and 2. Fig. 5 is a horizontal section on the line *y y* of Fig. 2. Figs. 6, 7, and 8 are detail views.

My improvement relates to that class of machines in which a corrugated roller, having above it a series of pressing-rollers, is used, between which rollers the goods are passed to be washed.

The invention consists in the construction and arrangement of parts hereinafter more fully described.

A represents an ordinary tub, in which the machine is placed for use. The frame of the machine consists of two upright standards, B B, connected at the bottom by a horizontal cross-piece, C, from which rises a vertical cross-piece, D, secured at the ends to the standards. The edges of the horizontal cross-piece are concaved in as far as the line of the vertical cross-piece, as shown in Fig. 5, and the top of the vertical cross-piece D is also concaved, as shown in Fig. 2, thereby leaving a clear space, *a*, through the machine beneath the rollers, whereby clear passage is left for the water and plenty of room is given to the clothes.

This frame is secured in the tub as follows: *c* is a small bevel piece secured to the foot of one of the standards B. *d* is a block secured fast to the bottom of the tub by screws. The inner edge of the block *d* is cut out of dovetail form, to make a socket to receive the bevel piece *c*, but the ends of the block are left uncut, so that when said bevel piece is inserted in the socket it cannot slip or move laterally. *f* is a curved piece attached to the outside of the other standard B. The curve approximates that of the tub. In fitting the frame in the tub the frame rests upon the bottom, with the curved piece *f* fitting one side. The block *d* is then brought up to cover the bevel piece *c*, and is secured to the bottom of the tub, as before described. This allows the machine to be removed by simply raising the end of the frame opposite the bevel piece *c*. *g* is a locking-piece, which is also curved on its outer edge to fit the tub, and has a square inner edge to fit the standard. It is dropped loosely into the space between the standard and tub, and is of such width as to stand high in the tub over the block *d*. In this position it serves as a lock and a brace to prevent the removal of the machine. When so secured the machine is a fixture with the tub and is perfectly secure. By taking out the locking-piece the machine can be readily removed. By this means the machine can be fitted in any tub without difficulty.

E is a fluted or corrugated roller, made of wood, and G G G are the small pressing-rollers which rest over it. The clothes are passed alternately forward and back between these rollers by turning the crank *j*. The journals *h h* of the fluted roller rest in open slots *i i* in the top of the wooden standards, and these slots are lined with metallic bushings *z z*, as shown in Figs. 3 and 8. *k k* are rubber packing-rings inserted in rabbets or grooves turned in the ends of the fluted roller, as shown in Fig. 6. These packing-rings project some distance beyond the face of the roller, so as to take the tread of the pressing-rollers G G G without allowing the latter to bear upon the periphery of the fluted roller. The rings are held in place on the roller by end caps *l l*, which are screwed to the roller, thereby forming clamps. The caps may be of metal or wood. These packing-rings, in addition to taking the tread of the pressing-rollers, as described, prevent noise and obviate the breaking of buttons.

I I are metallic bearings, attached to the top of the standards B B by screws. They are halved onto the standards, presenting a flush outside. They cover the slots *i i* and keep the journals of the fluted roller in place. Each of

these bearings has a vertical open-topped slot, *m*. K K are bearing-plates at opposite ends of the machine. They receive the journals of the pressing-rollers G G, having holes to receive them. Each of these bearing-plates has a thick rim, *o*, at the top, which projects over a portion of the top of the wooden standard, as shown in Fig. 8, and a thin vertical flange, *p*, which projects down in the space between the ends of the rollers and the standard, the center of the bearing-plate being hollowed out to form a socket, *q*, which fits over the journal of the fluted roller. In inserting these bearing-plates in place the journals of the pressing-rollers G G are placed loosely in their sockets in the plates; and when the plates are inserted inside the standards said pressing-rollers are as securely retained as if they were permanently attached to the bearing-plates. *r* is an oval or convex-sided lug of the bearing-plate, which projects through the slot *m* of the bearing I. This lug, resting in the slot, keeps the bearing-plate centered and in proper place, but at the same time the convex sides of the lug allow the bearing-plate to rock or turn to a certain degree, for a purpose presently to be described.

s s s s are four spiral springs attached to the several corners of the two bearing-plates K K, on opposite sides, as shown. Each bearing-plate has two of these springs, the object of which is to draw the bearing-plates downward and produce the desired pressure of the rollers G G G.

t t t t are plates attached to the edges of the standards B B, near the bottom, and provided with a set of adjusting-holes, *u u*. The springs *s s* have hook ends, which hook into these holes, and also into holes in the bearing-plates K K. By hooking higher or lower in the holes *u u* the pressure of the upper rollers may be increased or lessened at pleasure. This arrangement enables the parts to be easily separated and taken apart.

The bearing-plates K K, constructed as before described, are in convenient form for holding the pressing-rollers, as the journals of the latter can be simply fitted in their sockets, and when in place said bearing-plates retain the rollers in proper working position, but when removed the whole falls apart, leaving the rollers free. These bearing-plates, by being provided with the oval lugs *r r*, also allow rocking action laterally, so that the rollers may incline in either direction at either end, allowing pressure upon any inequality of the clothes passing through. The inside flanges, *p p*, also serve as guards to prevent the clothes catching between the ends of the rollers and the standard, and to prevent an open space at that point, as in ordinary machines of the class, and which would otherwise be left as the bearing-plates are raised.

Having thus described my invention, I do not claim, broadly, bearing-plates or jackets at the ends of the machine for receiving and holding the small pressing-rollers; but

I claim—

1. In a washing-machine, such as described, the bearing-plates K, constructed with the thick upper flange, *o*, resting upon and overlapping the top of the wooden standard B, and serving as a thick bearing for the journals of the pressing-rollers, and with their flanges *p p* projecting down in line with or below the bottom of the large roller, E, to serve as a guard to prevent the clothes catching between the end of said roller and the standard as said bearing-plate is raised, said bearing-plates being held down by the coiled springs *s s*, as herein shown and described.

2. In a washing-machine, such as described, the combination, with the washing-roller E and pressing-rollers G G, of the rubber rings *k k* on the ends of the washing-roller, projecting outward to form a tread for the pressing-rollers, for the purpose of gaging the distance between said rollers, preventing noise, and obviating the breaking of buttons, as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT R. FOWLER.

Witnesses:
R. F. OSGOOD,
W. L. PALMER.