(No Model.)

A. R. HERBEIN.

WASHING MACHINE.

No. 302,401. Patented July 22, 1884.

Fig. 2.

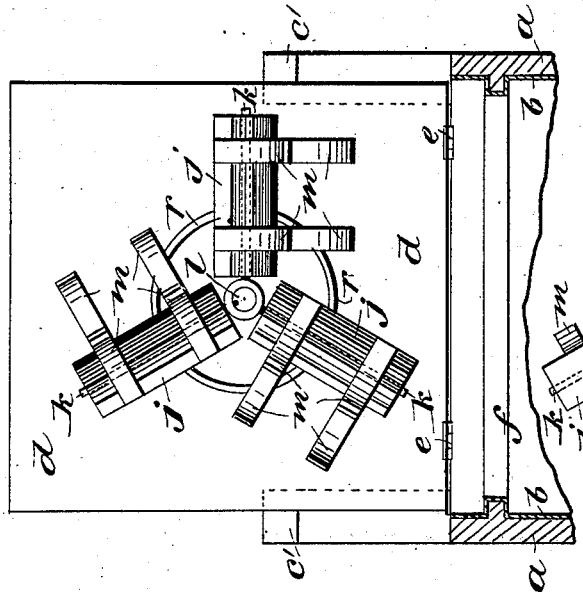


Fig. 3.

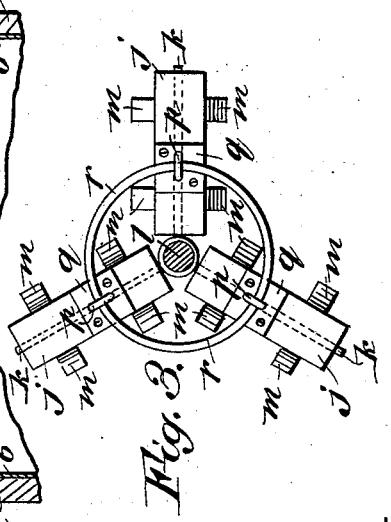
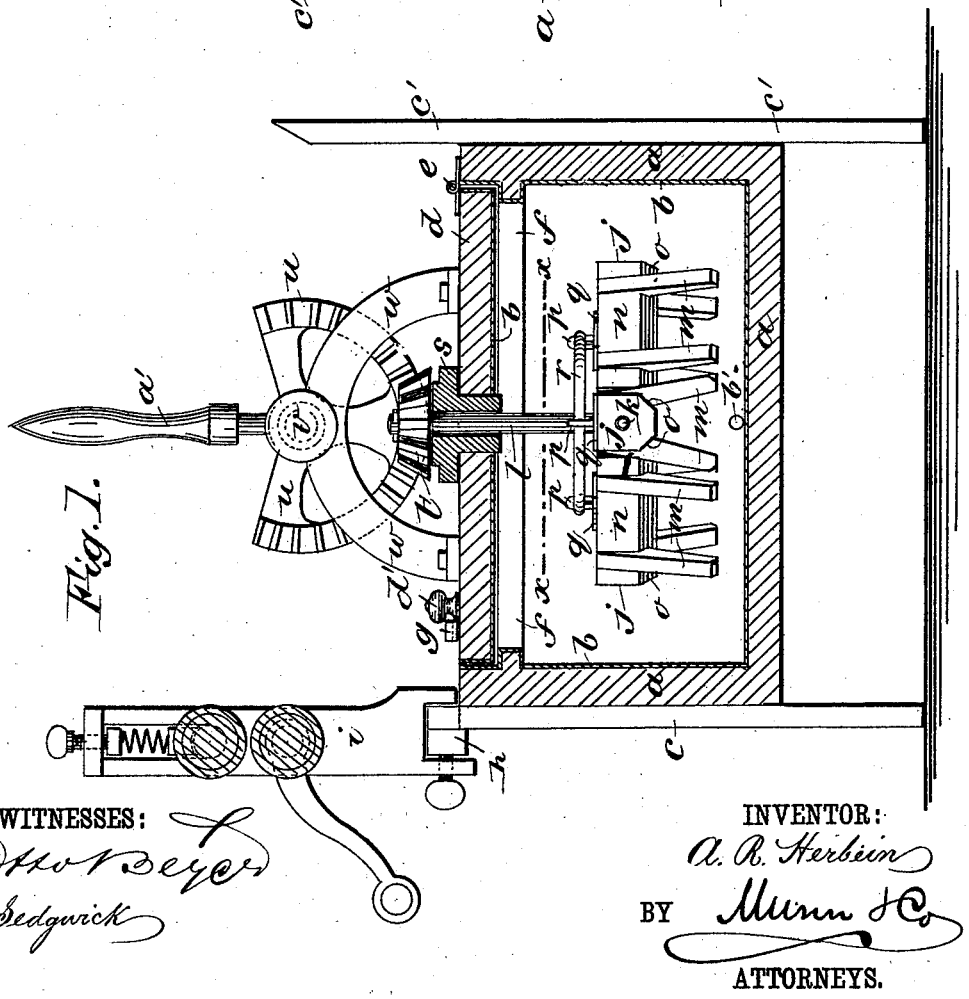


Fig. 1.



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ADAM R. HERBEIN, OF FLEETWOOD, PENNSYLVANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 302,401, dated July 22, 1884.

Application filed August 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADAM R. HERBEIN, of Fleetwood, in the county of Berks and State of Pennsylvania, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, efficient, and durable machine for washing clothes, and one which may be operated easily, and which will have a quick action in cleansing the clothes without injury to the clothes.

It relates particularly to that form of washing-machine in which a tub or case is provided with a vertical shaft journaled in a hinged cover, and carrying within the case radial arms with downwardly-projecting stirrers, and which shaft has a pinion at the top gearing into a cog-wheel, with a handle, by oscillating which handle the stirrers are oscillated to wash the clothes.

My invention consists in the peculiar means for connecting the stirrers or rubbers to the vertical shaft, so that their connection may be loose and not rigid, and hence less liable to tear the clothes, and in other details of construction, as will be hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional elevation of my improved clothes-washing machine and a wringer secured thereto at one side. Fig. 2 is a sectional elevation of a part of the body or tub of the machine, with the cover or lid thrown back on its hinges; and Fig. 3 is a plan view of the clothes-rubbing bars, and with the shaft in section on line *x x*, Fig. 1.

The letter *a* represents a tub or vessel for receiving the clothes to be washed, said tub being preferably of square or rectangular form, and having any suitable metallic inner lining, *b*, or not, as preferred. Legs *c c'* support the tub *a* at a convenient height, and the legs *c'* at one side of the machine rise above the body *a*, and are preferably beveled on the top from the inside faces upward, as shown, these legs *c'* serving as a stop to the cover or lid *d*, to prevent swinging it over backward too far on its hinges *e*. I provide cleats *f* around the tub *a*, on which the cover *d* may rest when closed, and to which the closed cover may be locked by any suitable buttons, *g*, fixed to the sides of the tub *a*, so as to be turned over the edges of the lid. The cover may also have an inner lining, *b*, if desired. The body *a* has firmly fixed to its top edge, and along the side opposite the hinges, *e*, a stout strip or bar, *h*, on which any ordinary style of clothes-wringer may be securely clamped, as at *i*, for wringing out the clothes directly from the tub *a*.

For agitating the clothes and the water in the tub *a*, to quickly soften and thoroughly remove the dirt from the clothes, I employ three or more rubbing bars or blocks, *j*, which are bored lengthwise to fit loosely on strong pins or bars *k*, which latter are fixed rigidly in the driving-shaft *l*, or a collar thereon, and project therefrom radially and in horizontal plane. These blocks *j* each have four pins or teeth, *m*, arranged in pairs at or near each end of the block, the opposite pins *m* of each pair inclining outward toward their lower ends, so that each complete rubber or agitator *j m* has the general form of a small four-legged bench or stool. It will be noted that blocks *j* have opposite vertical or nearly vertical faces or sides *n*, and that their lower corners are cut away to leave beveled faces *o* below the vertical faces *n*, the angle or corner between faces *n o* being quite clearly defined, for purposes to be described hereinafter.

To secure the rubbing-blocks *j m* to the shaft *l*, I slip the blocks on the bars *k* and drive a staple, *p*, into the back or top of each block, said staples *p* inclosing in their eyes or loops the ring *r*, which ring thus serves to hold the blocks *j m* on the bars *k*, while permitting a free oscillation of the blocks on the bars to either side, said oscillation being limited by contact of the side edges or corners of the tops of the blocks *j* with the ring *r*, as will readily be understood. The staples *p* may be driven directly into the backs of the wood blocks *j*; but I prefer to form the staples with or fix them to metal plates *q*, which may be fastened to blocks *j* by screws for a more substantial connection, and these plates *q* also receive the wear by the striking of the backs of the blocks

against the ring *r* in limiting the axial swing of the blocks, as above described.

For operating the rubbers *j m*, I fit the shaft *l* in a journal-bearing, *s*, fixed suitably to the cover *d*, and to the top of the shaft, and, preferably on a squared portion thereof, I fix above the cover *d* the bevel-pinion *t*, which meshes with a segmental gear-wheel, *u*, pivoted horizontally at *v* in an arched yoke or bar, *w*, firmly screwed or bolted to the cover. The operating-handle *a'* is fixed rigidly to the segmental gear *u*, and so as to project at about a right angle from a line drawn through the ends of the gear of the segment *u*, which latter is geared with the pinion *t* in the normal position shown in Fig. 1, so that by rocking the handle *a'* toward and from the operator, which is an easy movement causing little fatigue, the rubbing-blocks *j m* will all be bodily rotated in reverse directions alternately and in horizontal plane. All the operating parts are thus secured to the cover *d*, to be folded back with the cover and out of the way when placing clothes in or removing them from the tub *a*.

In operation, the clothes are placed, with suitable quantities of water and soap, in the tub *a*, the cover *d* is closed and fastened, and the handle *a'* worked to and fro. As the blocks *j* are swung bodily in one direction, they will also swing or turn on the bars *k* in the opposite direction, by contact with the clothes in the tub, the pins *m* of the blocks taking hold of the clothes or acting as beaters, each of the rubbers *j m* having also a tendency to bunch or heap up the clothes before it, and when the motion of the beaters is reversed the pins *m* will act to bunch or heap up the lowered parts or portions of the clothes in the tub, and lower the previously-bunched sections of the clothes, thus practically imparting a wave-like movement to the clothes in all portions of the tub, which will quickly cleanse them.

The advantages of the squared sides *n* and angular faces *o* of the blocks are that the sides *n* much more thoroughly agitate the water than would rounded or sloping side faces of the blocks, while the flat faces *o* have a like good effect on the water, and also serve better in direct rubbing action on the clothes than would a rounded lower edge or side to the blocks.

The tub *a* may have a circular or oval general form at the sides, if desired.

Any suitable opening, *b'*, is provided for drawing off the water from the tub, which opening is to be closed by a plug or cock of any approved kind, and a knob, *d'*, may be fixed to the cover *d*, for convenience in raising and lowering the cover.

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

The combination, with a washing-machine case or tub, of a vertical shaft having radial arms at its lower end, a bearing for supporting said shaft, the longitudinally-perforated rubber block *j*, with legs *m*, the ring *r*, and the staples connecting said ring to the blocks, to prevent them from coming off the arms, but still permitting a loose connection, substantially as set forth.

ADM. R. HERBEIN.

Witnesses:
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