





# United States Patent Office.

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*Letters Patent No. 73,601, dated January 21, 1868.*

## IMPROVED WASHING-MACHINE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, HENRY HELM, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and improved Washing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved method of constructing washing-machines, whereby the same are more convenient, and clothes are more thoroughly and quickly washed.

It consists of a rectangular tub divided into three parts, within which rotates, vibrates, or rocks a cylindrical washer or presser, working upon rollers, which are held against said washer by elastic bands attached to an elastic ring on the movable bearings of said rollers; and it consists in having a seat, in combination with the tub on which the operator sits while at work; and it consists, also, in said washer being driven by two treadles, so that the same may be operated by feet, the operator sitting upon a seat provided for that purpose. In the accompanying plate of drawings—

Figure 1 is a plan view of my invention.

Figure 2 is a central longitudinal vertical section of the same, taken in the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

T is the tub. *l* are legs supporting same. W is a rotating, vibrating, or rocking washer or presser. H are rollers. *r* are wheels or movable bearings on the journal of rollers H, in which said rollers H turn. *e* are elastic bands in grooves in bearings *r*. *a* are elastic bands attached to bands *e* and *e'*. *e'* are elastic bands in grooves on wheels upon the journal of the shaft D. *w* are wheels, by means of which motion is communicated to washer W. B is a soaking-box. S' is a shelf on box B. C' is a lid on box B. *u* are uprights or partitions dividing tub T into three parts. S is a seat. *b* are arms or supports of seat S. *g* are pivots, on which arms *b* turn. *t* are treadles. C are connecting-rods, connecting treadles *t* to wheels *w*. *p* are pivots connecting treadle *t* to rods C. *p'* are crank-pins in wheels *w*. *a'* are pivots in two of the legs *l*, on which treadle *t* turns.

The tub T is a rectangular box, supported by suitable legs, *l*, the bottom of the same being made lowest in the middle, as shown in the drawing. The tub T is divided into three water-tight compartments by the partitions *u*, as shown in the drawing, so as that cold water and hot water may always be kept ready for use, and separate from the suds contained between the partitions *u*, one of said parts being covered with the top or shelf S' and lid C', forming the box B, which is a soaking-box for boiling water or suds, and in which the clothing to be washed is contained and soaked.

Between the two sides of the tub T, rotating or vibrating in suitable bearings in said sides, and also between said partitions, *u*, and parallel to the same, is the washer W. Said washer W consists of a suitable shaft, D, extending beyond the sides of the tub T, to receive the wheels *w*, and upon said shaft D are two or more circular disks, rigidly attached to the same, and upon the circumference of said disks, and all around the same, are rigidly secured any convenient number of strips, *f*, at equal distances apart, extending across, in a line parallel with the shaft D; so as to form a cylindrical ridged washer, W, hollow at the inside, I, so as to allow the water to have access to the upper as well as lower side of the clothes while being washed. Said washer W is of sufficient length to reach nearly across on the inside of the tub T, as shown in the drawing. Upon the shaft D, and between the ends of the washer W and the sides of the tub T, one upon each end, and so as that the shaft D will turn in them without the disks turning themselves, are two wheels or circular disks, provided on their circumference with a groove. In said grooves are elastic bands *e'*. Upon the under side of the washer W, and in a line parallel with same, are four or more rollers H, of nearly equal length with the washer W, so arranged as to conform to the under side of said washer W, as shown. Said rollers H are provided with journals at each end, upon which said journals are the wheels or circular disks *r*, through a hole in which said disks *r* said journals extend, and in which the rollers H turn, so as that the disks *r* themselves do not turn. The sides of the tub T are provided with grooves on the inside, to receive the end of the spindle of the rollers H, so that said rollers may be kept in position, and to allow the same to move from and towards the centre of the shaft D of washer W. Upon the circumference of said disks *r* are grooves, in which are the elastic bands *e*. To said elastic bands *e* are attached, at one end, the elastic bands *a*, which said bands *a* are also attached, at



the other end, to the elastic band *e'*, so as that the rollers H are held, by said bands *a*, against the washer W, and so, also, that, by the stretching of said bands *a* and said bands *e* and *e'*, clothing may be received between the washer W and the rollers H, and held by said rollers H against the washer W.

The washer W may be modified in form. It may consist of a hollow cylinder, perforated with holes, or of disks, having the strips *f* of any shape, or it may consist of a cylinder, plain or fluted, so as to press and rock the clothing, as above described.

Upon each end of the shaft D, and upon the outside of the tub T, are the wheels *w*, in the side of each of which said wheels *w*, and near the edge of the same, so as to be at right angles to each other, are suitable crank-pins, *p'*. Upon the feet of two of the legs *l*, on one end of the tub T, and pivoted to each of said legs *l*, are the treadles *t*. Pivoted to said treadles *t*, and so as to connect the same with the crank-pins *p'*, are the connecting-rods C, in the ordinary way of making connections, whereby a reciprocating vertical motion is changed to a vibrating or rocking motion, so as, by means of the treadles *t*, and connecting-rods C, and wheels *w*, a continuous rotary, vibrating, or rocking motion is given to the washer W.

To each of the sides of the tub T is pivoted an arm or support, *b*, by the pivot *g*. Upon said supports *b*, which are bent of proper form to receive the same, and extending from one support to the other, is the seat S, so arranged that, when in use, said seat S will rest against the legs *l*, as shown, or the same may be turned over upon the machine, or be taken away altogether. In the part of the tub T, marked with an asterisk in the drawing, hot water may be contained in such a way as to be readily admitted to the washer W. The lid C' may be secured to the shelf S' by hinges, or in other convenient manner.

The operation is such that, the clothes having been thoroughly soaked in the water in the box B, the lid C' may be raised or removed, and one or more pieces taken from said box B, and laid upon the shelf S', where they are filled with soap, the operator at the same time giving motion to the washer W by the treadles *t*, one of said treadles *t* moving up when the other of said treadles *t* moves down. Said clothes are then carried between the washer W and the rollers H, where they are thoroughly soaked and washed, by being pressed, by the rollers H, against the washer W.

Constructed as above shown and described, it constitutes a cheap and convenient washing-machine, which may be operated by the foot, leaving the hands free to feed the machine, and fill the clothing with soap. It may be constructed of wood, or wood and metal combined.

The lid C' may be secured to the part S', by hinges, or other convenient way, and, with the part S', forms a shelf, on which the clothing is filled with soap preparatory to being washed.

I claim as new, and desire to secure by Letters Patent—

1. The elastic rings *e*, upon the grooved wheels *r* of the rollers H, attached, by the elastic strips *a*, to the central elastic ring *e'* upon the shaft D, all constructed and operating as described, for the purpose specified.

2. The combination of the rollers H, suspended from the shaft D, by the elastic bands and rings, grooved rollers *r*, washer W, strips *f*, box T, divided into three compartments by the vertical partitions *u*, crank-wheel W, rods C, treadle *t*, and pivoted seat S, as herein described, for the purpose specified.

3. The combination of the elastic rings *e* *e'*, and elastic strips *a*, with the rollers H, shaft D, and vibrating washer W, as herein described, for the purpose specified.

HENRY HELM.

Witnesses:

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