L. R. MILLS.

Improvement in Washing-Machines.

No. 114,840. Patented May 16, 1871.

Fig 1.

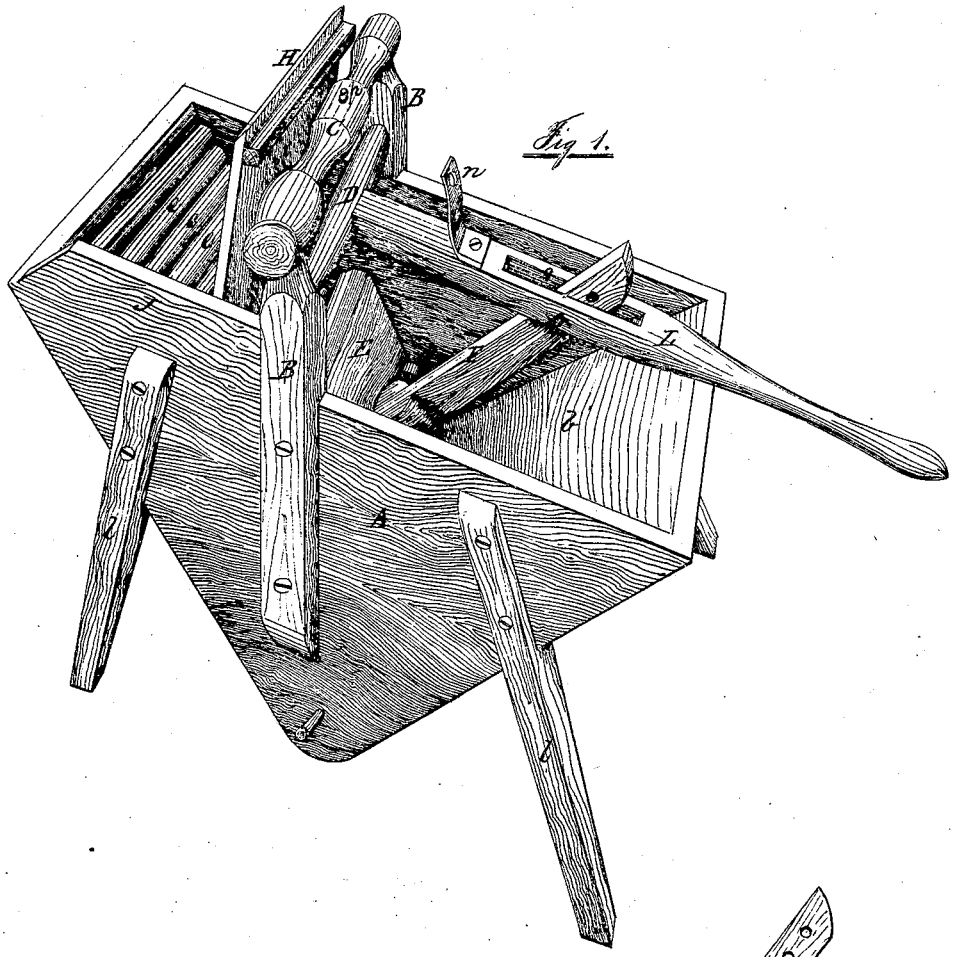
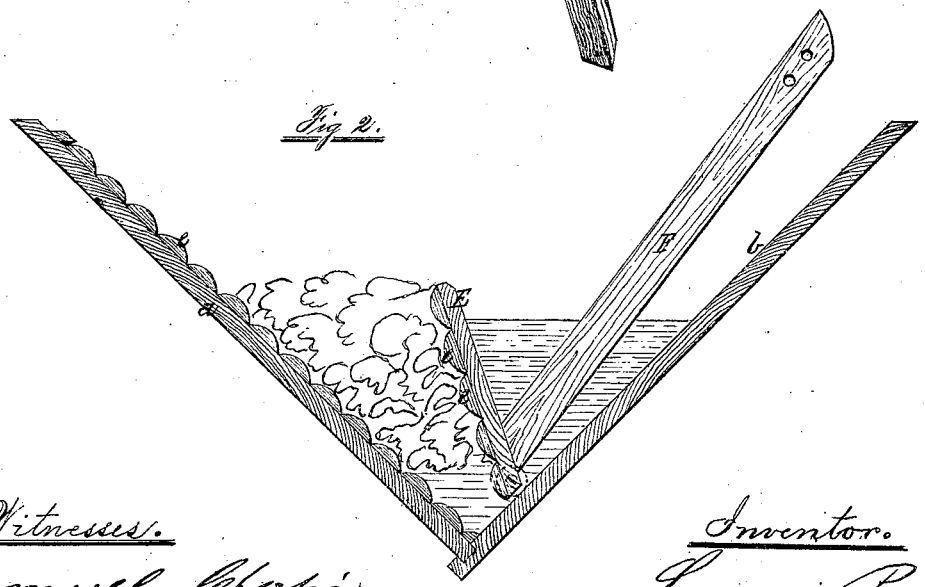


Fig 2.



Witnesses.

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LAURENCE R. MILLS, OF TEKONSHA, MICHIGAN.

Letters Patent No. 114,840, dated May 16, 1871.

IMPROVEMENT IN WASHING-MACHINES.

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

I, LAURENCE R. MILLS, of Tekonsha, in the county of Calhoun and State of Michigan, have invented certain Improvements in Washing-Machines, of which the following is a specification.

My invention relates to the arrangement and combination, with a suds-box triangular in side shape, and having its bottom formed in two equal and inclined sections, (constituting a right angle,) of a series of flattish bead-strips or corrugations on the one bottom section, and a displacing rubber-head on the other, which rubber-head has a reciprocating motion imparted to it by the means of a lever or handle jointed to the end of a connecting-bar rigidly attached to it, said lever being projected from a rocking-shaft hung between center standards, serving as cleats to stiffen the sides of the suds-box.

The object of my arrangement is to cause the clothes (aided by the flow of the suds-water in which they are immersed) to slip upward over the bead-strips or other corrugated surfaces by means of the impact action of the rubber-head, such rubbing action being continued in their descent with the reflux of the suds on drawing back the rubber-head.

My invention is embodied in the annexed drawing, in which—

Figure 1 is a perspective view of the machine.

Figure 2 is a partial vertical longitudinal section through the center.

A is the triangular-shaped suds-box, the ends, which also constitute the bottom, forming, with each other, a right angle, as shown at *a b*.

The inclined end *a* is covered with flattish bead-strips *e*, as shown, or is otherwise corrugated in the wood, or covered with corrugated sheet metal to form a rubbing-board, and the suds-box is supported on legs *b*, usually set flaring, as seen, to confer longitudinal stability.

B B are two standards rising vertically above the suds-box, one being attached to each side by a lap extension, which should reach nearly across, so as to serve incidentally as cleats to stiffen and secure the sides from warping at the deep central part, in the same manner as the legs strengthen them near their ends by their overlapping extensions.

C is a cross-bar framed to the tops of the standards to stiffen them, and serves as a support for the handle or lever L when elevated to be out of the way.

D is a rocking shaft hung between the standards, in the center of which shaft the end of said lever L is inserted.

E is what I term the displacing rubber-head, which is simply a stout board, the face of which, next the clothes, is also provided with beaded strips or other corrugations.

This board extends across the bottom of the suds-box and traverses with its edge the incline *b*, being provided with a center stem, F, stoutly framed into it, the upper end of which stem passes through a long slot or mortise, *s*, in the lever or handle to which it is pivoted, as seen.

The angle which the face of the rubber E should form with the inclined bottom *a* depends much upon the manner of forming the corrugations; for, if too sharp or abrupt, so as to require a much more vertical set for the rubber, it will merely push the clothes up on the corrugated bottom *a* and lose its function as a rubber.

I usually incline the top edge, so that, when near the end of the down-stroke, it will stand at an angle of about twenty degrees with the vertical toward the clothes, the object being to so compress the clothes as to cause them to slip away from the pressure over both corrugated surfaces, and so produce a rubbing action under slight compression, and not a purely squeezing effect, as in the "Doty" and other machines.

Should the rubbing-edge of the reciprocating head E be deemed injurious, it may be mounted on sunken end rollers, one of which is seen in dotted lines, fig. 2.

H is a splash-cover, hinged by pivots, at *i*, to the suds-box, and, if thought best, the entire box may be inclosed during the washing, so as to retain the steam from the hot suds.

J is simply a projecting strip, to which a wringer may be conveniently attached.

The operation is as follows:

The rubber-head having been drawn back out of the way by elevating the handle L and hooking it up by its strap *n* on the pin *p* of the cross-bar, and the splash-cover turned up against said bar, the hot suds-water and clothes to be washed are then placed in the suds-box and the splash-cover is turned down.

The operator then seizing the lever L works it up and down, pump-handle fashion, so that the rubber-board, at every down-stroke, will press the clothes between it and the inclined bottom *a*. This pressure, aided by the upward surge of the suds, causes the clothes to be displaced and move over the corrugated surface, thereby producing sufficient friction to readily remove the dirt.

On the reverse or up-stroke of the lever the reflux of the suds, aided by the tilting action of the down-stroke on the rubber, causes the clothes to turn slightly and expose fresh surfaces to the subsequent rubbing action.

For delicate fabrics to be washed occasionally by the same machine used for coarser ones, the construction might be such as to permit the angle of the rubber-head to be adjusted to produce a simple pressure, and not the rubbing action hereinbefore described.

The form of the suds-box A causes the suds-water to act with greater efficiency on the clothes when subject to the action of a reciprocating body having a combined pounding and rubbing action than any other form in use, and permits a more compact arrangement of the main operating parts, which can be so disposed out of the way without removal from the box as to save all the dripping on the floor caused by machines with detachable parts.

Claim.

The arrangement and combination, with each other and with the suds-box A, of the standards B B, cross-bar C, rocking shaft D, lever L, holding device *n p*, connecting-stem F, and corrugated rubber-head E, all constructed, arranged, and operated substantially as and for the purpose specified.

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Witnesses:
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