(No Model.)

D. H. MATHIAS.

WASHING MACHINE.

No. 457,452. Patented Aug. 11, 1891.

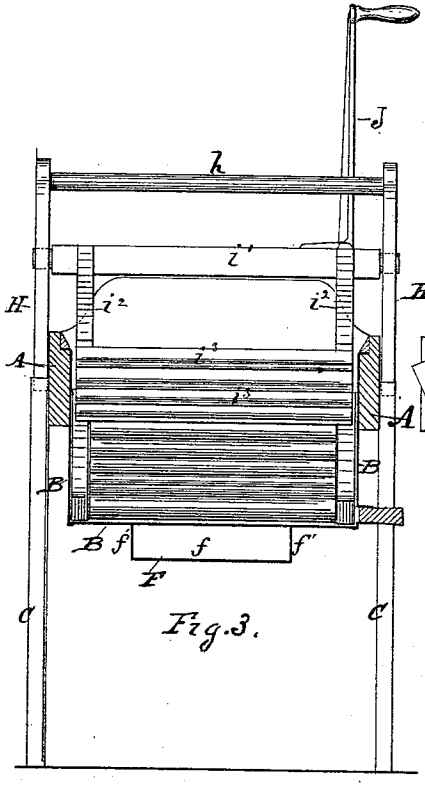


Fig. 3.

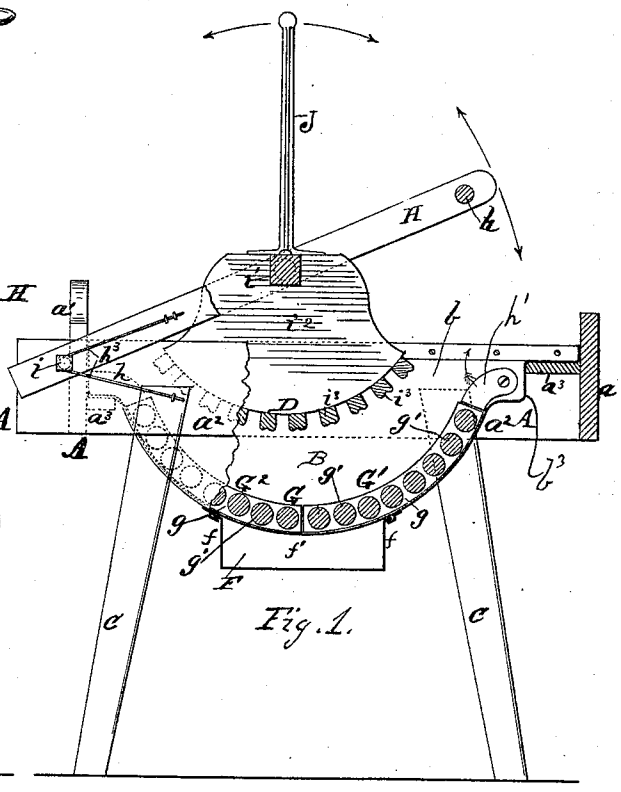


Fig. 1.

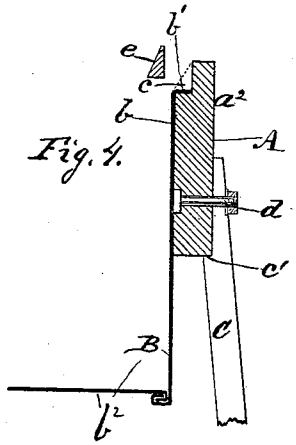
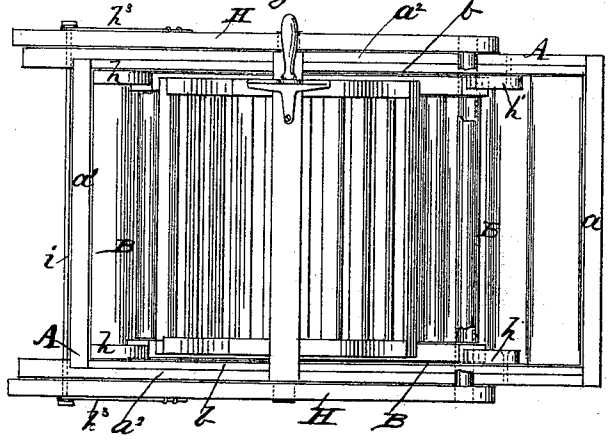


Fig. 4.

Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID H. MATHIAS, OF ALBANY, NEW YORK, ASSIGNOR OF ONE-HALF TO JAMES H. SIMONSON, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,452, dated August 11, 1891.

Application filed May 22, 1891. Serial No. 393,741. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. MATHIAS, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in washing-machines; and it consists of combinations of devices and parts hereinafter particularly described, and specifically set forth in the claim.

The object of my invention is to combine with the frame of the machine a sheet-metal tub having all around its upper edge margin a laterally-extended flange for engagement with the top edge margin of the said frame, and holding devices which will hold with said flange and frame and secure the same together, so that the said tub will be held from shifting in relation to said frame. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a sectional view in direction from end to end. Fig. 2 is a plan view. Fig. 3 is a sectional view side to side. Fig. 4 is a section of one side of the tub-frame and the tub and the device for holding the tub in place in the frame.

The same letters refer to like parts throughout the several views.

In the drawings, A A is a suitable frame made of wood, preferably, and with a rectangular form by the employment of the end pieces a a' and side pieces a^2 a^2, suitably framed and secured together and surrounding the opening which is to receive the tub B. The side pieces a a have in their upper edge margins suitable rabbets or receptacles c for receiving the holding flanges or ledges of the tub B, which are provided at the sides b of the same, as at b' b'. Secured at the respective end pieces a a' and between the side pieces a^2 a^2 are the transverse supporting-pieces a^3 a^3, which support the respective ends of the tub, as shown in Fig. 1. This frame is supported by suitable legs C C, secured to the frame A, and preferably by means of a single bolt d with each leg, the bolts being passed through the side pieces from their inner sides, and then through the upper ends of the legs, as shown in Fig. 4, when they are secured to the respective side pieces a^2 a^2 of the frame by screw-threaded nuts d. These legs thus secured to the frame are readily removable, and have made with them the supporting-shoulders c', which shoulders serve as bearing-surfaces for support of the frame A from the lower side edges of the side pieces a^2 a^2 of the same, while the bolts d bind said legs in place with the frame and allow them to be readily detached from the same.

The end-piece a of the frame A is made with a width sufficient to extend it above the plane of the upper edges of the side pieces a^2 of the same to make it suitable for recieving a wringing-machine, (not shown,) and the opposite end piece a' is also extended above the upper edges of the side pieces of the tub to a distance sufficient to adapt it to operate as a support to the oscillating rubber D, when it is lifted out of the tub and carried by the levers E E back to the top edge of said end piece a', as is the general practice in this class of washing-machines when the tub is to be charged or when the clothes are to be removed.

The tub B is made throughout of metal, and preferably of galvanized sheet-iron, tin, or copper, having its sides b b secured with its ends and bottom portions b^2 b^2 in a water-tight manner by any of the well-known means practiced by sheet-metal workers. This tub has its bottom made with a curved form corresponding with the curve of the circle required by the oscillations of the rubber D when operating with a charge. The sides b b of this tub are each provided with an outwardly-extended ledge or flange b', which seats in the rabbet c in the upper edge margins of the side pieces a^2 of the frame A. These ledges or flanges b', together with the end portions b^3 b^3 of the bottom portion b^2 of the tub, supported on pieces a^3 a^3 of the frame, support the tub within the frame A, so that it can be readily removed at will from the same. This removable tub may be held secured in

place in frame A by any suitable means; yet preference is given to the employment of removable binding-strips *e e*, which can be secured in place by several screws or pins, as may be preferred, so as to cause said binding pieces or strips *e* to hold the flanges *b' b'* in place with the side pieces of the frame, and thereby prevent the tub from shifting in the same when the machine is being operated.

F is a hood made, preferably, of sheet metal and of square form, with its sides and ends *f f f' f'* secured to the bottom portion b^2 of the tub and extended downwardly about two inches, more or less. This hood is made about from ten to fifteen inches square, and is placed at the lowest drop of the curved bottom of the tub, as shown, and it operates to prevent the heat and smoke of an oil-lamp from readily passing from the area of the bottom b^2 contained in the boundary of the downwardly-projected walls of said hood.

G is the roller concave composed of the sections G' G^2. These sections are each formed of the curved frame-pieces *g g* and series of rollers *g' g'*. These sections of this roller concave is made on curves corresponding with that of the bottom of the tub A, and are readily removable at will. Secured to the ends of the sides of the tub are stationary or fixed stops *h h*, and at the opposite ends of the said sides are the pivoted stops *h' h'*, which when turned in direction of arrow 1, Fig. 1, allow the sections G' G^2 to be readily removed, while when turned down, as shown, they operate to hold down on the ends of the first section G' and bind it down from lifting and cause at the same time this first section G' to hold section G^2 in place with its upper end bearing against the stops *h h*. By this form of construction of the roller concave in sections G' G^2 and the employment of the stops *h h* and *h' h'* the said concave can be readily removed from the tub and out of contact with the metal of the same and be allowed to dry until required to be used, while the tub can be wiped dry in all its parts after being used.

H H are the pressing-levers of the rubber D, which levers are pivoted with the side portions of the tub-frame A by means of the pivot-bolt *i*. The rubber D is pivoted in place between said levers H H and with the same by means of the roller-bar *i'*, to which the sides i^2 i^2 of the said rubber is secured. The face side of this rubber D is made with a convex form on a curve less than that of the face side of the roller concave G, as may be suitable to allow a charge of clothes of, say, from two to three inches in depth when spread out on the said roller concave, as is usual with this form of machine. The rubbing-bars i^3 i^3 of this rubber may be of revolving character, as rollers, or be stationary, as may be selected, and be plain or corrugated, as shown. This rubber is oscillated by means of any suitable handle-lever J, secured to the roller of the rubber or to the side piece i^2 of the same, or both, as may be preferred. The free ends of the rubber-levers are held connected by means of the cross-bar h^2, and the said levers are made to be elastic by means of suitable springs h^3 h^3 of any suitable material and form.

By my above-described improvements in this machine the several parts of the same may be detached at pleasure and reassembled, as may be required. The tub will at all times be water-tight, the necessity of that care and attention required when the sides are of wood and the bottom is of metal or wood, as heretofore, is obviated, and all liability of the joint between the bottom and sides becoming open, as in the case where wooden sides are used and a rotting of the same takes place, is avoided. The roller-concave can be readily removed from the tub and be separately cared for or placed away when the machine is not in use, and the tub itself can be readily removed from the frame and hung up at the side of the room or building, so as to be in situation where it will not be liable to be injured when not in use, so that it will not be in condition, situation, or position to become a receptacle for articles which by their weight or careless introduction will tend to cause a starting of the joints, as is the case where the tub is securely and permanently held with the body and legs of the machine as heretofore made.

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

In a washing-machine, the combination, with the tub-frame A, supported by legs and having its sides provided with rabbets or ledges *c* and its ends with transverse supporting-pieces a^3 a^3, of the sheet-metal tub B, having with its side walls the flanges *b'*, and with its ends the seating portions b^3 b^3, and provision for binding the said ledges *b'* tight down on the ledges *c* of the frame, substantially as and for the purposes set forth.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

DAVID H. MATHIAS.

Witnesses:
ALEX. SELKIRK,
A. SELKIRK, Jr.