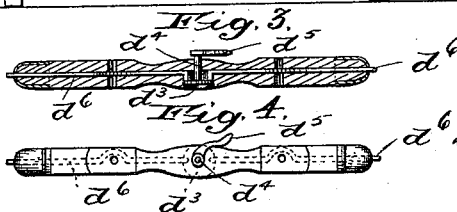
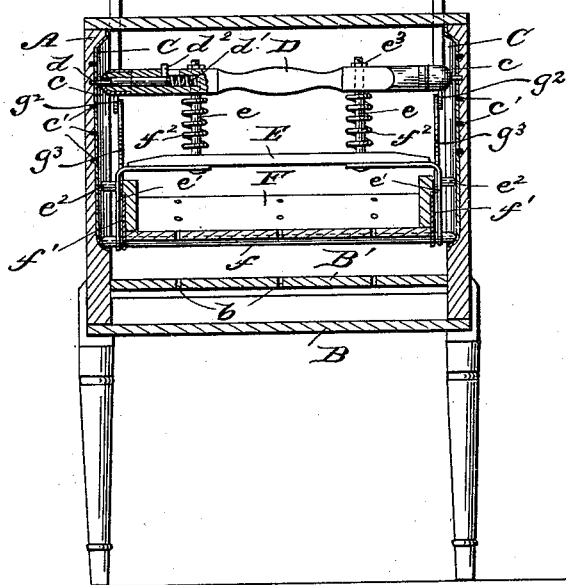


W. F. DAY & J. A. PIERCE.  
WASHING MACHINE.

Patented July 31, 1894.



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# UNITED STATES PATENT OFFICE.

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## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,659, dated July 31, 1894.

Application filed May 7, 1894. Serial No. 510,328. (No model.)

*To all whom it may concern:*

Be it known that we, WILBUR F. DAY and JONATHAN A. PIERCE, citizens of the United States, residing at Austin, in the county of Mower and State of Minnesota, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to machines for washing clothes and particularly to that class of machines in which the agitation is effected by a rocker, and it has for its object to provide a machine in which the action of said rocker upon the clothes will be such as to subject the clothes to a minimum of wear and tear but which, at the same time, will thoroughly cleanse them.

In the accompanying drawings Figure 1 is a longitudinal section of our machine. Fig. 2 is a cross section on line 2—2 of Fig. 1. Fig. 3 is a sectional view of the cross bar from which the rocker holding frame is suspended, showing a modified form of the means for operating the pins or rods which hold said cross bar in place, and Fig. 4 is a plan view of the same.

A denotes the suds box or tank preferably rectangular in shape and provided with a double bottom consisting of the parts B and B'. The lower bottom B is an ordinary tight bottom which, together with the sides and ends of the box A, forms a water tight receptacle. The auxiliary bottom B' is provided with perforations *b* and its upper surface is corrugated as shown clearly in Fig. 1.

The box A has two vertical plates C attached to its sides, midway of its length, and said plates are provided with grooves *c* extending from the top of the box to a point near the bottom thereof. These grooved plates are provided with holes *c'* for the reception of the ends of pins or rods *d* projecting from the ends of a cross-bar D to hold said bar in a fixed position.

Suspended from the cross-bar D by means of rods *e* is a frame consisting of the bar E provided with depending arms *e'* having near their upper ends guide studs *e<sup>2</sup>* entering the grooves *c* in the plate C.

F is the rolling pressure rocker pivoted to the lower ends of the arms *e'* preferably by

means of a rod *f* at or below the bottom of the said rocker, the end of said rod preferably extending outward through plates or ears *f'* attached to the said rocker and serving to hold the said rod securely in place. The opposite ends of the rod *f* project outward beyond the arms *e'* and extend into the grooves *c* in the plates C, thus serving, in co-operation with the studs *e<sup>2</sup>*, to guide the frame consisting of the cross-bar E and arms *e'* up and down in the said grooves of the said plate.

Interposed between the cross bars D and E and surrounding the rods *e* are spiral springs *f<sup>2</sup>* which permit of a vertical movement of the frame in which the rocker F is hung, as the said rocker is vibrated back and forth in the tank or suds-box A on the clothes placed beneath it.

The downward movement of the frame, in which the rocker is hung, under the action of the springs *f<sup>2</sup>*, is limited by the nuts *e<sup>3</sup>* at the tops of the rods *e*, the rocking movements of the rocker causing the latter to rise more or less and compress said springs which serve to force the said rocker downward when its movements permit of such action, or at the times when it assumes the normal or middle position shown in Fig. 1.

The cross-bar D may be placed in different vertical positions by entering the ends of the pins or rods *d* into any of the holes *c'* in the plates C, to raise and lower the working position of the rocker according to the quantity of clothing in the suds box A. To this end one of the said pins or rods *d* is, in the form of our invention shown in Fig. 2, forced outward into its holding position by means of a spring *d'* and by pressing upon the stud or finger piece *d<sup>2</sup>* the said spring may be compressed to withdraw the pin *d* from the hole *c'* of the plate C, and thus disengage the cross-bar D to permit it to be placed in a lower or higher position, or to permit the rocker F to be lifted when the clothes are to be placed beneath it in the suds-box.

If desired both of the pins or rods *d<sup>b</sup>* may be made movable as shown in Figs. 3 and 4, the inner ends of said pins or rods being attached to a disk *d<sup>3</sup>* at the lower end of a rod *d<sup>4</sup>* provided at its upper end with a handle *d<sup>5</sup>* by which it may be turned to move the said rods in and out relative to the cross-bar D,

this form of locking device for the said cross bar obviating the use of the springs as  $d'$ , and rendering the locking action of the said pins or rods positive.

5 The rocker F is provided with a corrugated and perforated bottom and is operated by means of levers G pivoted at  $g$  to the sides of the suds-box A, said levers being connected by a cross bar  $g'$ . The levers G are provided  
10 with arms  $g^2$  connected by links  $g^3$  to the sides of one end of the said rocker F.

When our machine is to be used the cross-bar D is disengaged from the plate C and said cross bar may then be lifted to raise the  
15 rocker F sufficient to permit the clothing to be placed in the suds-box together with the water and cleansing material, said rocker, when replaced, resting upon the clothing in the suds-box. As the rocker is oscillated by  
20 means of the operating levers G it will have a rising and falling movement in addition to its rocking movements, owing to the pressure of the opposite ends of the rocker on the clothing placed beneath it, the springs  $f^2$   
25 yielding to permit the rocker to rise and the stress of said springs forcing it down again when in the operation of the rocker such action is permitted, or when it assumes the position shown in Fig. 1. These rising  
30 and falling movements of the rocker cause the suds to pass through the perforations  $f^3$  in the said rocker, and also through the perforations in the auxiliary or false bottom B' of the suds-box or tank A; thereby in-  
35 suring thorough agitation of the suds, and forcing the same through the clothing being cleansed. It will thus be seen that the oscillating and vertical movements of the rocker D will properly agitate the suds without much  
40 frictional rubbing movement against the clothing so that the latter may be thoroughly cleansed with a minimum of such frictional contact of the rocker therewith as would be likely to produce wear and tear.

45 Having thus described our invention, we claim and desire to secure by Letters Patent—

1. In a washing machine, the combination  
50 with a suds-box or tank provided with a corrugated and perforated false bottom and hav-

ing vertically grooved plates in its sides, said plates having each a series of holes, of a rocker having a corrugated and perforated bottom, a frame to which said rocker is hinged at a  
55 point co-incident with or below its bottom and which frame is provided with projections extending into said grooves to permit of a vertical movement of said frame and of the rocker carried thereby, and to guide said  
60 frame vertically, a cross-bar placed above said frame and provided with pins or rods, so as to be vertically adjustable in said plates, by means of said holes, springs interposed be-  
65 tween said cross-bar and said frame to permit of yielding vertical movements of said rocker when in operation, and means for operating said rocker.

2. The combination with a tank or suds-box A having the bottom B and the corrugated auxiliary or false bottom B' provided with  
70 perforations  $b$ , of the plates C at the sides of the said suds box or tank midway of the length of the latter, and provided with the grooves  $c$  and perforations  $c'$ , the cross bar D provided with pins or rods to enter the said  
75 holes  $c'$ , one or more of said pins or rods being movable relative to said cross bar to permit the latter to be detachably secured to the said plates C, the cross bar E provided with depending arms  $e'$  having guide studs  $e^2$  en-  
80 tering the said grooves  $c$ , the springs  $f^2$  interposed between said cross-bars D and E, the rods  $e$  by means of which said cross-bar E is suspended from said cross-bar D, the rocker F having a perforated and corrugated bottom  
85 and pivotally hung to the lower ends of the said arms  $e'$  by means of the rod  $f$  the ends of which project outward beyond the said arms  $e$  and into the said grooves  $c$  of the plate C, the operating handle G having the arms  $g^2$ ,  
90 and the links  $g^3$  connecting the said arms to the said rocker, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILBUR F. DAY.  
JONATHAN A. PIERCE.

Witnesses:

WILLIAM M. HOWE,  
E. B. CRANE.