

982,889

2 SHEETS--SHEET 1.

[illegible]

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A. B. SMITH.
WASHING MACHINE.
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Patented Jan. 31, 1911.

2 SHEETS—SHEET 2.

Fig. 3

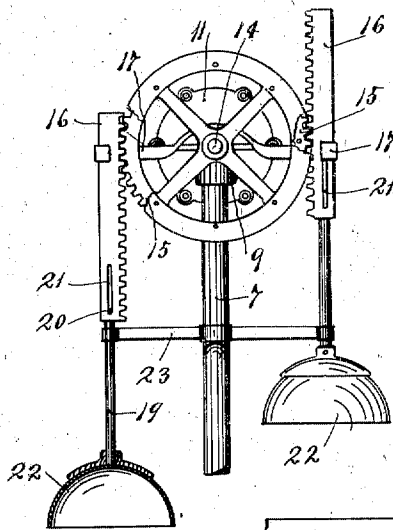


Fig. 2

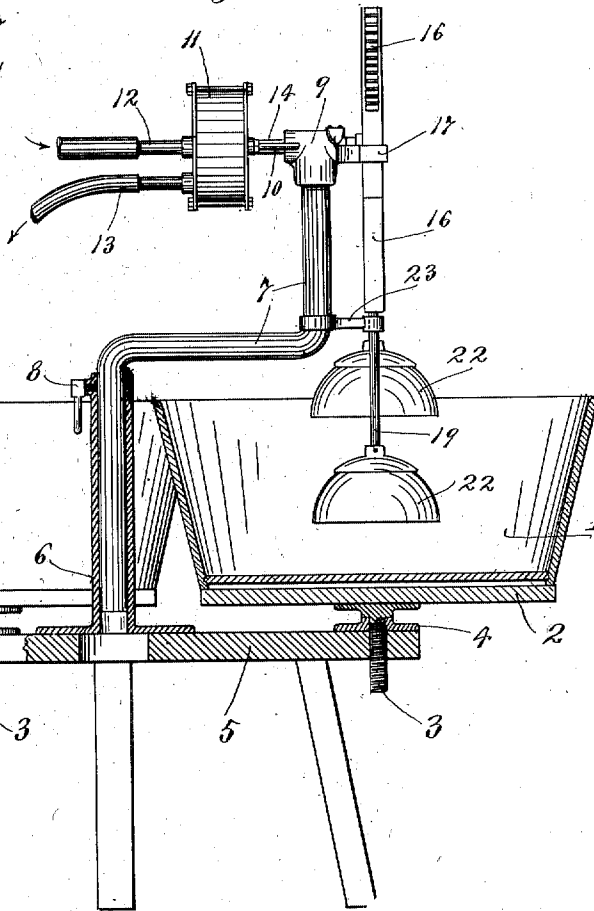
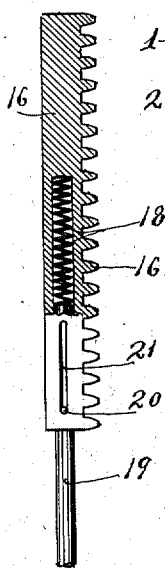


Fig. 4



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UNITED STATES PATENT OFFICE.

ARTHUR B. SMITH, OF MINNEAPOLIS, MINNESOTA.

WASHING-MACHINE.

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To all whom it may concern:

Be it known that I, ARTHUR B. SMITH, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, 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 has for its object to provide an improved washing machine and for this end it consists of the novel devices, and combination of devices hereinafter described and defined in the claims.

Particularly, my invention is directed to the provisions of a simple and highly efficient washing machine wherein a multiplicity of tubs are employed in connection with motor driven plungers provided with cup-shaped heads for engagement with the clothes and arranged to be alternately reciprocated, and arranged to be positioned for action on the clothes contained in any one of the several tubs. So far as the broad idea of the invention is concerned, the tubs may be either of the ordinary type of wooden tub with suitable supports, or they may be the stationary tubs of a laundry equipment.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view of the improved washing machine. Fig. 2 is a view partly in side elevation and partly in vertical section on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a detail in front elevation showing the reversely movable plungers and the connections for supporting, guiding and reciprocating the same, and Fig. 4 is a detail partly in side elevation and partly in vertical section showing the detailed construction of one of the longitudinal yielding plunger rods.

The machine illustrated in the drawings includes 3 ordinary wooden tubs 1 independently supported by small tables 2 and depending axially located threaded stems 3 that work with screw thread engagement in nut box 4 secured to a supporting frame 5. The threaded stems 3 adapt the tables 2 to be independently, vertically adjusted by rotation. Rigidly secured to the central portion of the frame 5 and extending upward

therefrom is a tubular pedestal 6. This tubular pedestal 6 is located equidistant from the axes of the several threaded stems 3 and this is done for a purpose which will presently appear. A crank like pedestal 7 has a depending stem that works in the tubular pedestal 6 with freedom for both vertical movements and for rotary movements about the axis of the said pedestal 6. A clamping screw 8 which works through the upper portion of the pedestal 6 and pinches against the stem of pedestal 7 serves to yieldingly hold the latter in any desired set position. To the upper end of the crank portion of the said pedestal 7 the bearing head 9 is rigidly secured and is provided with projecting arms 10 to which the case of an alternating water motor 11 is rigidly secured. This alternating motor 11 is of a well known commercial type and the construction thereof need not here be detailed, it being sufficient to note the water inlet pipe 12 to the motor case and the water outlet pipe 13 from the motor case, and the motor shaft 14 which by the motor is given an oscillatory movement and is journaled in the motor case and in the bearing head 9. To the extended end of the motor shaft 14 is secured quite a large spur gear 15 that meshes with the teeth of the pair of racks 16. These racks 16 are guided in vertical movements by the ends of the guide bar or bracket 17 which is secured to the head 9. Said racks 16 constitute parts of the dasher head operating plungers and they are provided in the lower portions with axial recesses that receive coiled springs 18 and the upper ends of plunger stems, or rods 19. The springs 18 tend to force the stems 19 downward in the support to the lower end of the racks and such movements are limited by stop pins 20 on the said stems that work in slots 21 in the said racks. To the lower ends of the plunger stems 19 are secured inverted cup-like, or bell shaped dasher heads 22. To insure vertical movements of the plungers, the stems 19 are arranged to work through a guide bar or bracket 23 secured to the upper crank portion of the pedestal 7.

As it is evident by vertical adjustment of the pedestal 7, the dasher heads 22 may be raised above the tubs, and by oscillatory adjustments of said pedestal the dashers may be positioned for action on the clothes in any one of the said tubs. By vertical adjustment of said pedestal 7, and by verti-

cal adjustment of the tables 2, the dashers may be arranged for the proper action on the clothes in the several tubs. When the motor is thrown into action the plungers will be reversely reciprocated and the dasher heads will be alternately thrown into action on the clothes. When the dasher head is forced tightly down against the clothes, more or less air caged in the said dasher head will be caused to escape through the clothes thereby producing a bubbling action which will assist in washing the clothes. When the dasher head is raised a partial vacuum produced therein will lift up and loosen the clothes and thereby change the position of the clothes. When the dasher heads are tightly pressed against the clothes the spring 18 will be compressed and the plunger shortened up. This provides for a very considerable variation in the amount of clothes contained in the tub without requiring adjustment of the tub in respect to the adjustable pedestal 7.

The provision of the several tubs makes it possible to use rinsing water in one of the tubs and to put the different kinds of clothes in suds contained in the other tubs.

What I claim is:

1. In a washing machine, the combination with a frame, of a tub connected to said frame and vertically adjustable in respect thereto, a pedestal secured to said frame adjacent to said tub, a pair of vertically

movable plungers connected to said pedestal, and provided at their lower ends with dasher heads, and means for reversely reciprocating said plungers, substantially as described.

2. A washing machine, the combination with a frame, of a multiplicity of tubs connected thereto but free for independent vertical adjustments thereon, a pedestal connected to said frame with freedom for vertical and rotary adjustments, vertically movable plungers carried by said pedestal, dasher heads applied to the lower ends of said plungers, and means for reversely reciprocating said plungers, substantially as described.

3. In a washing machine, the combination with a frame work having a nut block, of a table having a threaded stem engaging said nut block, for vertical adjustment of said table, a tub on said table, a pedestal adjacent to said tub, vertical movable plungers carried by said pedestal, dasher heads applied to the lower ends of said plungers, and means for reversely reciprocating said plungers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR B. SMITH.

Witnesses:

F. D. MERCHANT,
HARRY D. KILGORE.