

Feb. 27, 1923.

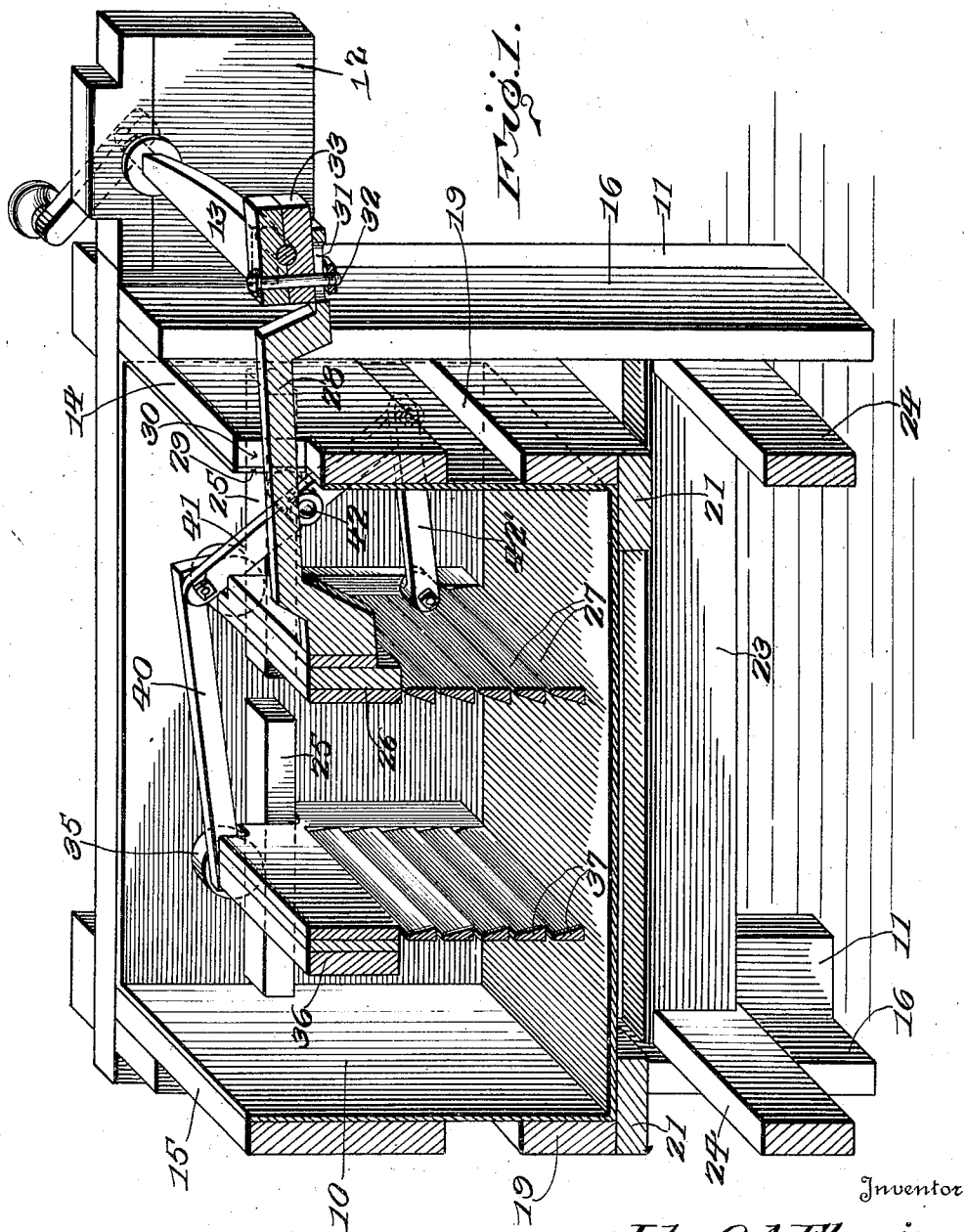
1,447,017

J. Q. A. FLEMING

WASHING MACHINE

Filed Aug. 30, 1921

2 sheets-sheet 1



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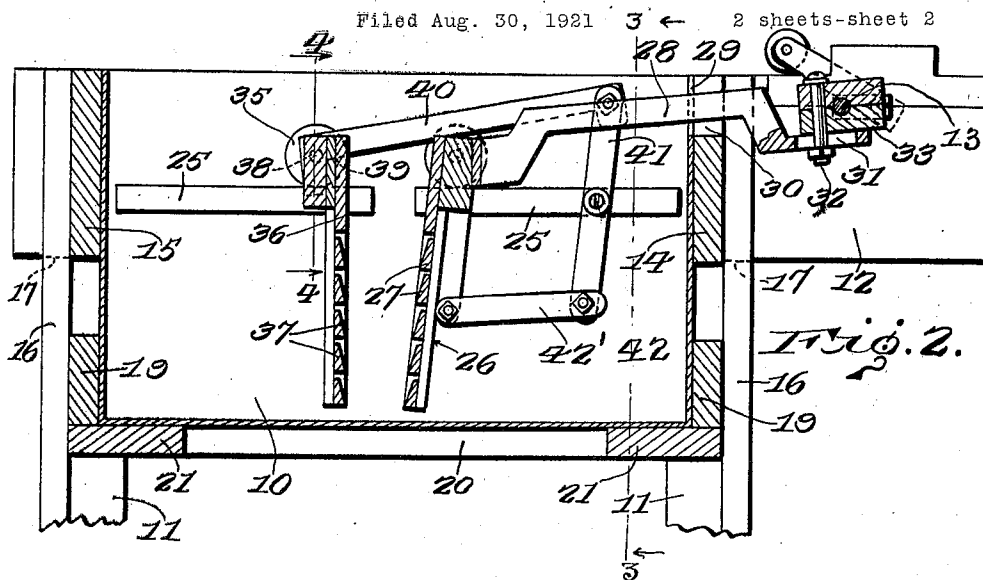


Fig. 3.

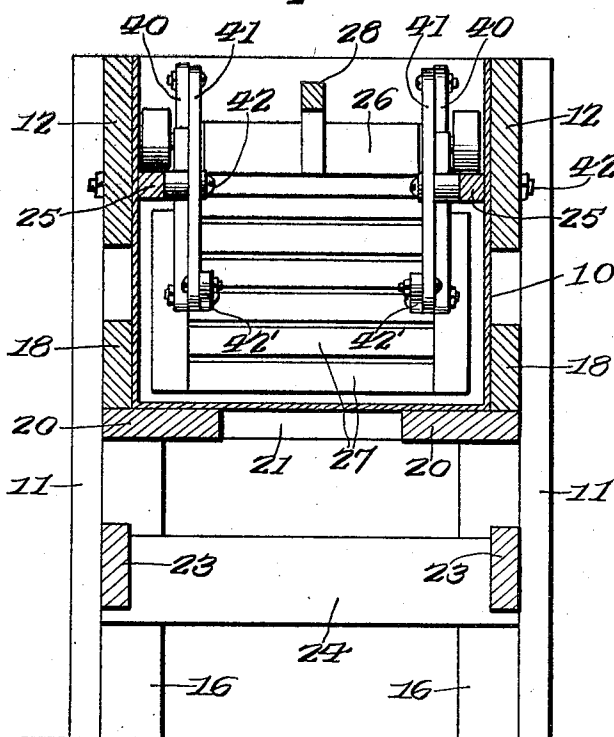
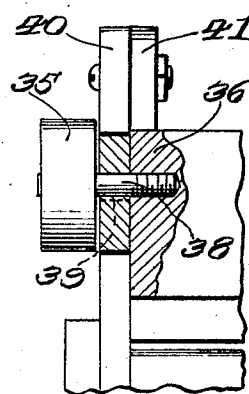


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN Q. A. FLEMING, OF MARTINSBURG, WEST VIRGINIA.

WASHING MACHINE.

Application filed August 30, 1921. Serial No. 496,994.

To all whom it may concern:

Be it known that I, JOHN Q. A. FLEMING, a citizen of the United States, residing at Martinsburg, in the county of Berkeley, State of West Virginia, 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.

This invention relates to washing machines and it has for its object to provide an improved construction in which the material to be washed is placed in a tank of water and is therein compressed through the medium of such mechanism as will cause a rubbing of the material and a turning of the material over and over to present successive portions to direct contact with the combined squeezing and rubbing members.

It is a further object of the invention to provide such specific mechanism for this purpose as may be economically manufactured and may be operated with the expenditure of a minimum of energy, whereby to enhance its commercial value.

In the drawings.
Figure 1 is a view showing the casing in vertical longitudinal section, the crank shaft and pitman in vertical longitudinal section and the remainder of the mechanism in perspective with the combined squeezers and rubbers retracted to the limit.

Figure 2 is a longitudinal section through the tank and its contained mechanism, in a central vertical plane, with the combined pressers and rubbers advanced to show the lower end of the oscillatory squeezer and rubber thrown forwardly to turn over the material.

Figure 3 is a transverse section on line 3—3 of Figure 2, to include both sides of the tank.

Figure 4 is a detail view, partly in section, of the connection between the arm 40 and the squeezing member 36—37.

Referring now to the drawings, the present washing machine comprises a tank 10 which, in the present embodiment of the invention, is illustrated as rectangular in form and this tank is mounted in a frame comprising the uprights or legs 11 which are connected at the sides of the frame and at their upper ends by the parallel sup-

ports 12 that extend at one end beyond the legs and have journaled in them a crank shaft 13 that may be rotated in any desired manner and from any suitable source of power. The supports 12 are connected by the front and rear transverse members 14 and 15, beyond which the side supports 12 project and against these front and rear members 14 and 15 are secured the leg members 16 that are cut away at their upper end portions to receive the corresponding portions of the side members 12 and to provide shoulders 17 on which these side members rest. Other side members 18 are secured against the inner faces of the leg members 11 and abut the leg members 16, while other end members 19 are secured against the inner faces of the leg members 16 and abut the side members 18. Strips 20 and 21 are secured against the lower edges of the members 18 and 19 respectively and project beyond their inner faces to constitute flanges upon which the tank 10 rests. Additional side and end members 23 and 24 are provided to further brace the legs.

Secured against the side walls of the tank 10 are the supporting rails 25, there being a pair of these rails against each side of the tank and spaced longitudinally of the latter.

Supported by the rails 25 at opposite sides of that end of the tank adjacent the crank shaft 13 are the supporting rollers carried by the upper end portion of a reciprocatory and oscillatory, combined squeezer and rubber. This combined squeezer and rubber comprises a rectangular frame 26 in which are mounted the transverse parallel slats 27 that are spaced apart and disposed with those edges in the direction of the crank shaft 13 at higher elevations than their opposite or inner edges. To reciprocate this part of the mechanism, a pitman 28 is rigidly secured to the outer face of the upper portion of the frame 26, is carried through a notch 29 in the adjacent end of the tank and a notch 30 registering therewith in the adjacent cross-piece 14, to the crank shaft 13. The outer end of the pitman 28 has a longitudinal slot 31 through which is engaged a bolt 32 that is passed through a split pillow block 33 and when this bolt is loosened, the pitman may be shifted to adjust this particular combined squeezer and rubber with respect to the cooperating squeezer and rubber to

be hereinafter described. It will be understood that with this construction, rotation of the crank shaft 13 will reciprocate the combined squeezer and rubber with its supporting rollers traveling on the supporting rails hereinbefore particularly referred to.

Upon the supporting rails 25 that are secured against the inner faces of the sides of the rear end portion of the tank 10, bear the supporting rollers 35 at opposite ends of the upper portion of a second frame 36, rectangular in form and in which frame are mounted the transverse slats 37 corresponding to the slats 27 hereinbefore referred to. The slats 37 slant transversely with their inner edges, which are those directed toward the slats 27, at lower elevations than their outer edges.

The supporting rollers 35 are carried by stub shafts 38 that project from the frame 36 just above the shoulders 39 of the frame, the stub shafts passing through the arms 40 that are fitted snugly upon these shoulders and thus are held rigidly to the frame 36.

The opposite ends of the arms 40 extend above and beyond the frame 26 and are pivoted to the upper ends of rock levers 41 that are rockingly mounted on bolts 42, passed through the rails 25, the sides of the tank 10 and the side supports 12. Pitmen 42' are pivoted to the lower ends of the rock levers 41 and to the inner faces of the side members of the frame 26, near to the lower end of the latter. Thus, when the frame 26 is reciprocated as hereinbefore explained, the pitmen 42' actuate the rock levers 41 which in turn actuate the arms 40 to reciprocate the frame 36 with its supporting rollers upon the corresponding rails 25. At the same time, the vertical throw of the outer end of the pitman 28 causes oscillation of the frame 26 on the axes or stub shafts that carry its supporting rollers.

It will be noted that with this construction, the two frames 26 and 36 are moved toward and away from each other and that as they move toward each other, the bottom of the frame 26 is advanced with a slightly greater speed than the upper portion of the frame, so that the material to be washed and which is placed between these frames is given a slightly greater pressure at the bottoms of the frames than at their tops, the action of the rock lever 41 in connection with the rigid arms 40 being to give a reciprocatory movement to the frame 36, without appreciable oscillation of it.

The result of the movements of the frames described is that as the frames approach, the frame 26 lifts the materials in contact with it which, however, do not rise in con-

tact with the frame 36 and as the frames recede, the material first falls downwardly across the frame 36 because of its position with its lower edge set further away from the crank shaft end of the crank than is its upper edge and further by reason of the similarly inclined position of the frame 26 at such time. These movements effect a turning over of the material and a rubbing of it against the slats of the frames in addition to being squeezed to force the water through it.

It is found, in practice, that the described mechanism effects an extremely quick and a thorough washing of the materials treated.

What is claimed is:

1. A washing machine comprising a tank, squeezing members mounted in the tank for movement toward and away from each other, reciprocating means for moving one of the squeezing members, and connections between the squeezing members movable under the influence of said reciprocating means to advance the lower portion of one of the squeezing members toward the other squeezing member at a higher rate of speed than the upper portion.

2. A washing machine comprising a tank, guide rails, a squeezing member supported upon the guide rails, means for reciprocating the squeezing member, a second squeezing member supported by guide rails, and connections between the squeezing members for reciprocating the second squeezing member toward and away from the first named squeezing member, and for advancing and retracting the lower portion of the first squeezing member at a greater speed than the upper portion thereof.

3. A washing machine comprising a frame, including side supports and supporting legs beyond which the side supports project at one end, a crank shaft rotatably mounted in the projecting end portions of the side supports, a tank supported between said side supports, a squeezing member mounted within the tank for reciprocation and oscillation, a pitman rigidly connected to the squeezing member in line with its axis of oscillation and connected with the crank of the crank shaft for reciprocation and oscillation of the squeezing member, rock shafts, pitmen connecting the squeezing member with the rock shafts, a second squeezing member mounted for reciprocation within the tank, and arms rigidly connected with the second squeezing member and pivoted to the rock levers for reciprocation of the second squeezing member therefrom.

In testimony whereof, I affix my signature.

JOHN Q. A. FLEMING.