H. L. BRALY.

WASHING MACHINE.

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1,034,413.

Patented Aug. 6, 1912.

Fig. 1.

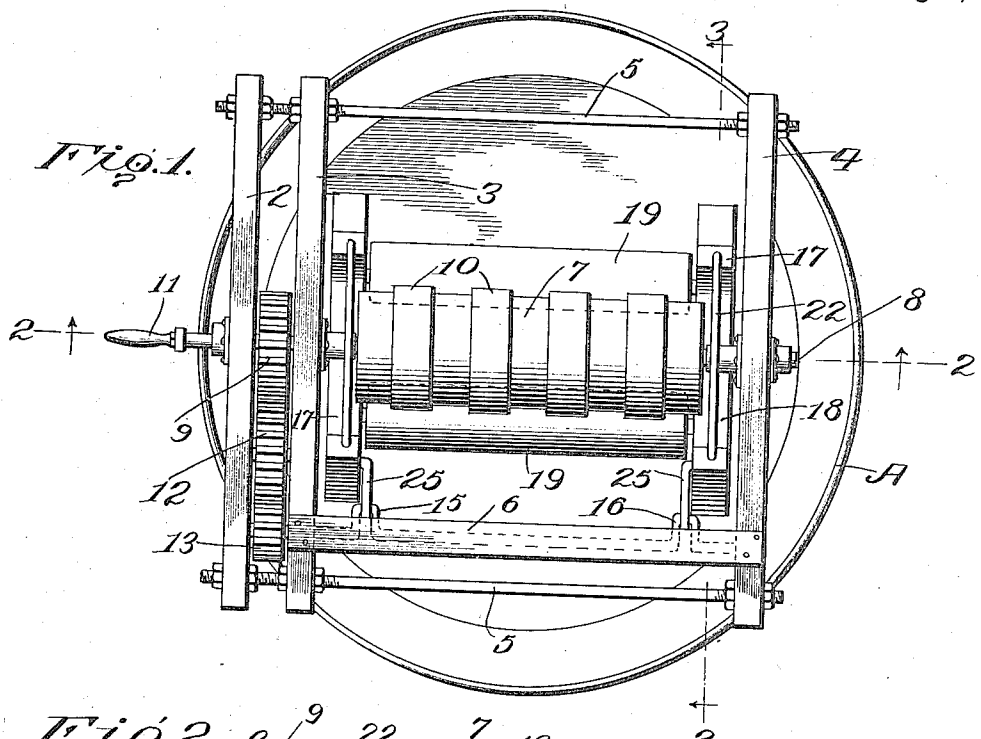


Fig. 2.

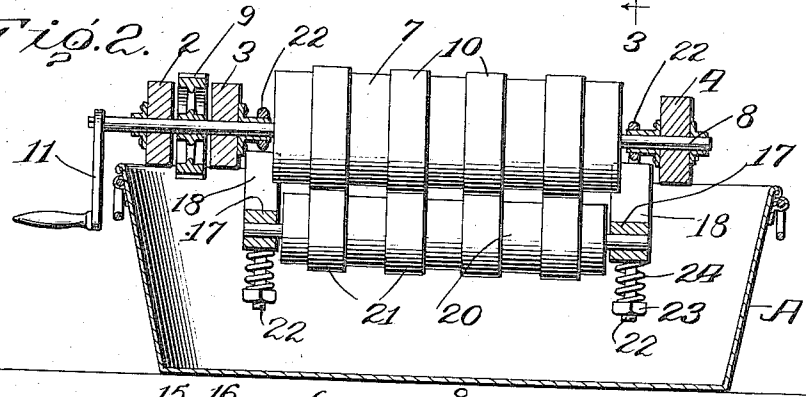
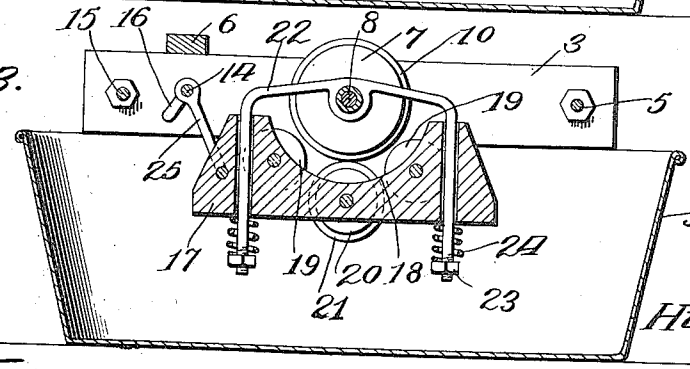


Fig. 3.



Witnesses

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WASHING-MACHINE.

1,034,413. Specification of Letters Patent. Patented Aug. 6, 1912.

Application filed June 20, 1911. Serial No. 634,353.

To all whom it may concern:

Be it known that I, HUGH L. BRALY, citizen of the United States, residing at Shamrock, in the county of Wheeler and State of Texas, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to washing machines and the primary object of the invention is the provision of a washing machine in which hot suds may be passed rapidly through the clothes submitted to the action of the machine.

A further object is to provide in this connection a machine in which the clothes are passed through the suds as before described and simultaneously submitted to a rubbing action.

A further object is to provide a machine of this character in which the clothes are not only submitted to a rubbing action but also to a squeezing action, means being provided whereby the water may readily flow off as it is pressed out of the garments.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is a plan view of my washing machine. Fig. 2 is a cross section on the line 2—2 of Fig. 1. Fig. 3 is a cross section on the line 3—3 of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to these drawings it will be seen that my washing machine consists essentially of a supporting frame adapted to be supported upon a tub or other receptacle for hot water, this supporting frame preferably having the form illustrated in the drawings and consisting of the frame bars 2, 3 and 4. The frame bars 2 and 3 are placed relatively close to each other while the frame bar 4 is separated from the bar 3 by a distance somewhat greater than the length of the scrubbing rolls. The frame bars 2, 3 and 4 are held in spaced relation to each other and in proper position by means of transverse rods 5 and a transverse bar 6.

Mounted in the bars 2, 3 and 4 is a main scrubbing roll 7. This roll is mounted upon a shaft which at one end is mounted in suitable bearings in the bars 2 and 3. Mounted upon one end of the shaft 8 of the roll 7 is the toothed gear wheel 9 which is disposed between the bars 2 and 3. The face of the roll 7 is preferably circumferentially grooved so as to provide a plurality of circumferential ribs 10. The end of the shaft 8 is provided with a cranked handle 11 whereby the roll 7 may be rotated.

Mounted between the bars 2 and 3 and meshing with the gear wheel 9 is an intermediate gear wheel 12 which in turn meshes with a toothed gear wheel 13 mounted upon a crank shaft 14 provided with the cranks 15 and 16.

Supported below the main roll 7 are a plurality of scrubbing rolls mounted in a supporting frame, these scrubbing rolls being held in frictional engagement with the main roll and oscillated by means of the crank shaft 14. Preferably, the frame as shown in Fig. 3 consists of two separated bars 17 cut away upon their upper faces in the arc of a circle as at 18 so as to conform to the curvature of the ends of the roll 7. Mounted between these end pieces 17 are the oppositely disposed, parallel, smooth faced rolls 19, and mounted between these rolls is the relatively small circumferentially grooved or ribbed roll 20 having ribs 21 thereon which coincide with the ribs 10 on the roll 7. The end pieces 17 are provided each with a yoke 22 whereby the end pieces with the rolls 19 and 20 may be swung from the shaft of the roll 7. Preferably the yoke 22 has the form of a curved rod, the ends of which extend downward and through openings in the ends of the corresponding bar 17. The depending ends of the rod 22 are screw threaded for engagement with nuts 23. Disposed between each of these nuts and the adjacent face of the bar 17 is a coil spring 24 which surrounds the extremity of the rod 21. These coil springs act to draw the rod 22 downward and thus force the rolls 19 and 20 carried upon the bars 17 into yielding engagement with the face of the roll 7. It will be seen from Fig. 3 that the rolls 19 are disposed in a higher plane than the roll 20 so that all three of the rolls 19 and 20 will contact with the face of the roll 7. It will also be observed that the frame supporting the rolls 19 and 20 has a swinging movement with relation to the roll 7 so that the rolls 19 and 20 may be reciprocated in the direction of rotation of the roll 7. The cranks 15 and 16 on the shaft 14 are connected by small connecting rods 25 to the end pieces 17 so that as the shaft 14 is rotated the end pieces 17 and the rolls 19 and 20 will be

given an oscillation in a direction parallel to the face of the main roll 7.

The operation of my invention is as follows. The supporting frame, composed of the bars 2, 3 and 4, is placed upon a tub A or other receptacle, and hot water and soap thoroughly mixed so as to form a strong suds are placed within the receptacle. The clothes to be washed are now passed over the bar 6 beneath the main roll 7 and between this main roll and the rolls 19 and 20 and out at the other side of the machine. The handle is now either turned or oscillated as desired. As the handle is turned, the clothes will be drawn through the water in the tub by means of the main roll 7, and at the same time the scrubbing rolls 19 and 20 will act to rub the clothes, rubbing the dirt out of them and allowing the suds to come in through contact with the meshes of the fabric. Preferably, the gear wheel 13 is only half the size of the gears 12 and 9 and thus the scrubbing-rolls 19 and 20 will be given two oscillations for each complete revolution of the main roll 7.

It will be seen that the rolls 19 having plain faces act to scrub the clothes against the main roll 7, while the main roll and the roll 20 act to press the water out of the clothes, the circumferential grooves between the ribs of these rolls 7 and 20 letting the water flow away rapidly as it is pressed out of the garments.

The machine is operated by either turning the crank handle 11 continuously in one direction, or alternately operating the handle in opposite directions and by this back and forth movement causing every part of the garment to pass between the ribs on the rolls 7 and 20. By reciprocating the rolls 19 and 20 twice for each complete revolution of the roll 7, the work may be done much more effectively and rapidly without increasing the labor of washing. I have found that hot suds passed rapidly through clothing acts to very expeditiously clean the clothes and that my machine is particularly effective in securing this action.

What I claim is:

In a washing machine, a supporting frame, a main roll mounted thereon and having a plurality of plain faced, spaced corrugations, a shaft for the main roll having a crank handle, a crank shaft mounted on said frame, means for transmitting the motion of the main roll shaft to the crank shaft, oppositely disposed side pieces below the main roll, yokes extending over the ends of the main roll and having downwardly depending lugs passing loosely through the ends of the side pieces, springs engaging the ends of the yokes and bearing against the under sides of the side pieces, yieldingly forcing said pieces toward the main roll, a plurality of rubbing rolls mounted on the side pieces parallel to the main roll, certain of the rubbing rolls being plain faced, certain others of the rubbing rolls being formed with relatively wide corrugations alining with the corrugations of the main roll, and connections between said side pieces and the crank shaft whereby the side pieces and the rubbing rolls will be reciprocated by rotation of the main shaft and main roll.

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

HUGH L. BRALY. [L. S.]

Witnesses:
W. A. WALTERS,
J. E. HUMPHREY.