April 13, 1926. 1,580,640

R. BIBBY

WASHING MACHINE

Filed Sept. 8. 1924

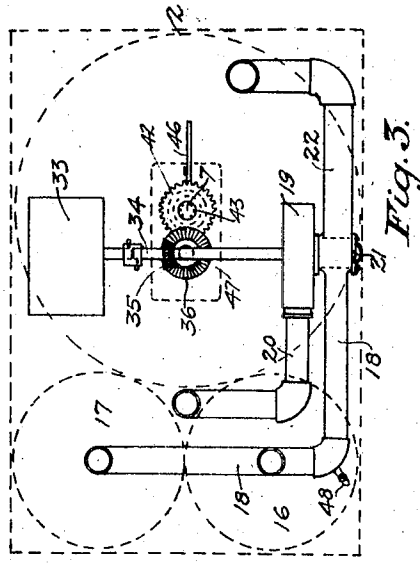


Fig. 3.

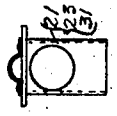


Fig. 5.

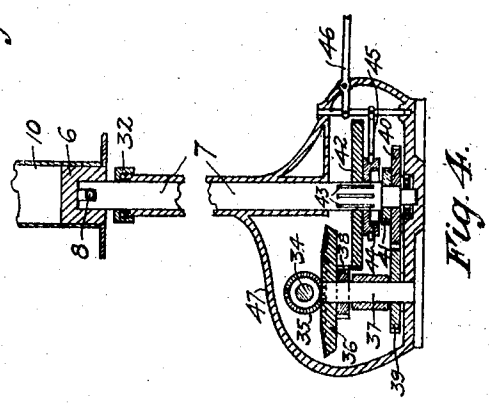


Fig. 4.

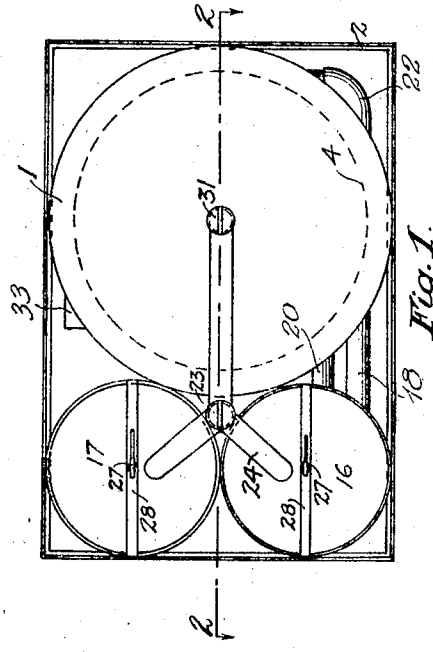


Fig. 1.

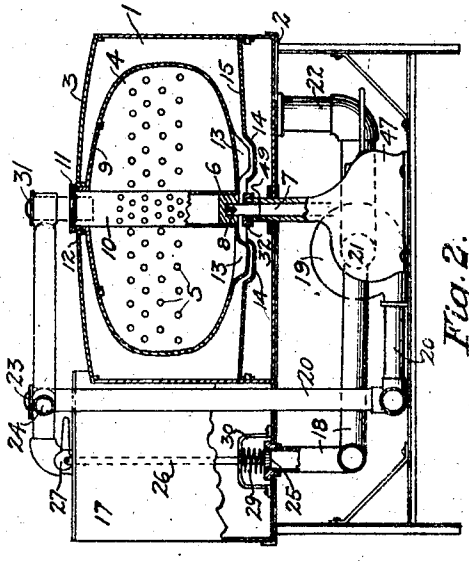


Fig. 2.

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UNITED STATES PATENT OFFICE.

REGINALD BIBBY, OF EDMONTON, ALBERTA, CANADA.

WASHING MACHINE.

Application filed September 8, 1924. Serial No. 736,604.

To all whom it may concern:

Be it known that I, REGINALD BIBBY, a subject of the King of Great Britain, and residing at the city of Edmonton, in the Province of Alberta, in the Dominion of Canada, have invented a new and useful Washing Machine, of which the following is the specification.

My invention relates to improvements in washing machines and consists of a revolving perforated bowl placed inside of a stationary tub and operated by gears which are controlled by a motor or other power. Two tanks are placed alongside of the stationary tub to hold rinse water and suds. A system of piping connects the tanks to a centrifugal pump, which delivers the water to the revolving bowl inside the stationary tub and also returns the water from the tub to either of the tanks, as desired.

The object of this invention is to perform the washing of clothes in one operation. The clothes are placed in the revolving bowl to which either the suds or the rinse water is admitted from their respective tanks, according as to whether the clothes are being washed or rinsed, and after the water is circulated a sufficient length of time, it is then returned to either tank. After the water has been drawn off, the clothes are whirled in the revolving bowl and the surplus water thrown off, leaving the clothes ready for hanging on the line.

I attain these objects by means of the mechanism as illustrated and more fully described in the accompanying drawings, in which:—

Fig. 1 is a top view showing the arrangement of the tanks and tub.

Fig. 2 is a sectional view of tub and revolving bowl, with the location of the tanks and system of piping on the line 2—2 in Figure 1.

Fig. 3 is a plan of the piping and mechanism underneath the tanks and tub.

Fig. 4 is a detail of the operating gears, showing same in neutral position.

Fig. 5 is a view of a cup valve.

Similar letters refer to similar parts throughout the various views.

1 is a stationary tub supported on a frame 2 which is made of angle irons. 3 is a cover for tub 1. 4 is a revolving bowl having several rows of perforations 5 around its circumference, and has a socket 6 at its base which fits upon a shaft 7, slotted at its end, engaging with a pin 8 which passes through the socket 6. A cover 9 with an opening at its centre fits over a perforated distributing tube 10 and is fastened in place by a nut 11. A flange 12 on the cover 9 acts as a bearing for the revolving of the bowl 4. The base of the perforated tube 10 is secured to the socket 6. A series of cup openings 13 around the bottom of the bowl 4 picks up the water from a trough 14 formed by a false bottom 15 having the central outlet 49 and secured to the sides of the tub 1 by a number of small sockets. The object of these cups is to increase the flow of water through the bowl 4.

Tanks 16 and 17 are placed on the frame 2 alongside of the tub 1, one to contain suds and the other rinse water. By a pipe 18 connected to the base of the tanks, the water runs by gravity to a centrifugal pump 19. Water is first delivered from the tank containing the suds, through the pipe 18 to the centrifugal pump 19 and from there to the rotating bowl 4 by pipe connection 20. When the tank is empty, a cup valve 21 is turned, closing the inlet from the tank and allowing the water to circulate from the tub 1 through pipe connection 22 to the pump and back through the pipe connection 20 to the revolving bowl 4.

The water passing through the bowl 4 is thrown off radially and caught by the tub 1 and returned either through the cups 13 or the centrifugal pump 19 to the bowl 4, thus forming a complete circulation until the clothes are washed. The water is then returned to the tank by closing the cup valve 23 with the connection to the bowl and opening same to a pipe connection 24 which leads to the suds tank 16. Valves 25 are placed at the openings at the bottom of the tanks 16 and 17 and connect by vertical rods 26 to eccentric levers 27 which are supported on strips 28 placed across top of the tanks 16 and 17. Springs 29, held in place by brackets 30, keep the valves closed tight.

After the clothes are washed in the water from the suds tank and the water returned to the tank, the valve is opened at the base of the rinse tank 17 and the water from there is drawn through the centrifugal pump 19 by the opening of the valve 21 into the pipe connection 18 and thence is forced through the pipe connection 20 to the revolving bowl

4, and the same circulation takes place as with the water from the suds tank. After the rinse water has been returned to its tank, the bowl 4 is revolved to throw off the surplus water, after which the clothes are taken from the bowl and are ready for hanging.

A cup valve 31 is placed at the tub inlet, the end of which fits into the distributing tube 10. This valve can be withdrawn to allow the covers 3 and 9 to be lifted from the tub and revolving bowl.

A packing nut 32 prevents leakage of water around the shaft 7.

A motor 33 is connected directly to a shaft 34, one end of which carries the rotating element of centrifugal pump 19. A bevel pinion 35 is fixed to shaft 34 and engages with a bevel gear 36 which drives shaft 37 to which are affixed gear wheels 38 and 39. The gear wheel 39 is engaged continuously with gear wheel 40 which turns freely upon shaft 7 connected to the base of revolving bowl 4. To the upper face of gear wheel 40 is attached a small gear 41. The shaft 7 carries a gear wheel 42 which slides vertically on same by means of keys which fit into keyways 43 cut in shaft 7. At the bottom of gear wheel 42 is affixed an engaging cap 44 with inside gear. Vertical motion is given to the gear 42 and cap 44 by means of a sliding yoke 45 operated by lever 46.

The arrangement of the gears allows for two speeds, low speed for washing and high speed for wringing or whirling of revolving bowl. When desired to throw the gear into low speed for washing or rinsing, the gear wheel 42 is moved upward to engage with the gear wheel 38; for wringing, the gear wheel 42 is moved downward and engaging cap 44 slides down over gear wheel 41, rotating the bowl at high speed.

The whole of the gearing is enclosed by a casing 47.

When desired, the piping system may be drained by a small valve 48 placed in the lower part of the pipe connection 20.

What I claim is:—

1. In a washing machine, a plurality of stationary tubs and a rotatable clothes receptacle in one of said tubs having feed and discharge pipes at its upper and lower ends respectively, and pressure means intermediate of said feed and discharge pipes, and a drainage trough below said clothes receptacle within one of said tubs and cups forming part of the underside of said clothes receptacle and travelling in said trough and adapted to return a portion of the water back to said receptacle.

2. In a washing machine a plurality of stationary tubs of different sizes and a rotatable perforated bowl within the larger of said tubs, said larger tub having a central inlet at the top and a false bottom having a circular trough beneath said bowl, a series of cups projecting from the bottom of said bowl and adapted to travel in said trough and maintain the water flow in said rotatable bowl, said other tubs having outlets connected by pipes to said central inlet in said bowl and pressure means intermediate of said outlets and inlet, means for selectively connecting said outlets and said inlet, and means for connecting said outlet from said larger tub to said other tubs.

Signed at the city of Edmonton, this 16th day of August, 1924.

REGINALD BIBBY. [L. S.]