May 22, 1934. E. SCHNEE 1,959,842

GLASS AND TUMBLER WASHER

Filed Aug. 1, 1932 2 Sheets-Sheet 1

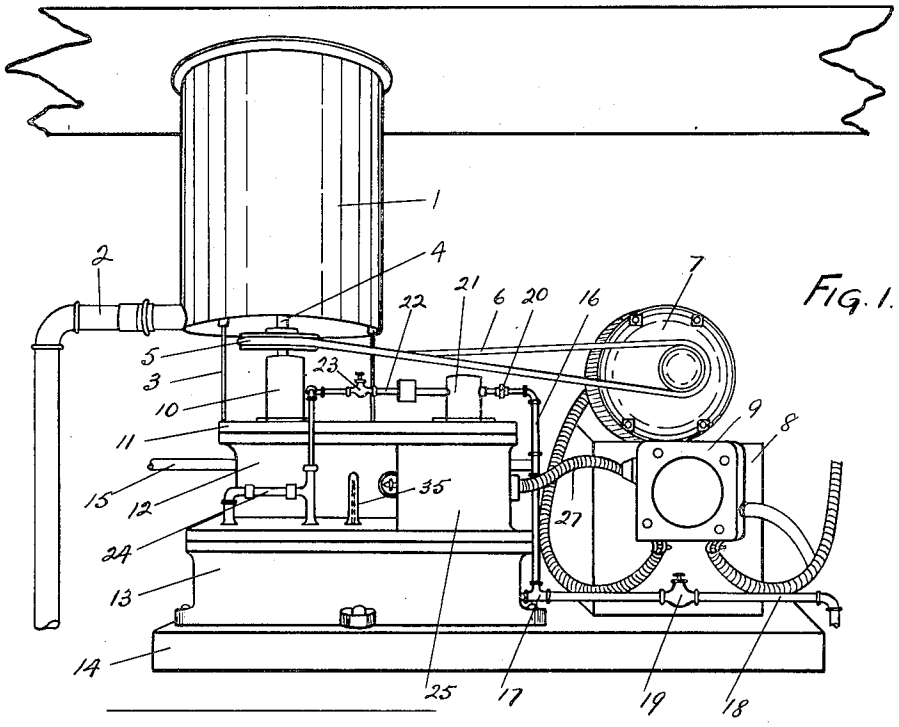


FIG. 1.

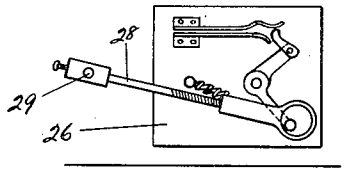


FIG. 2.

FIG. 3.

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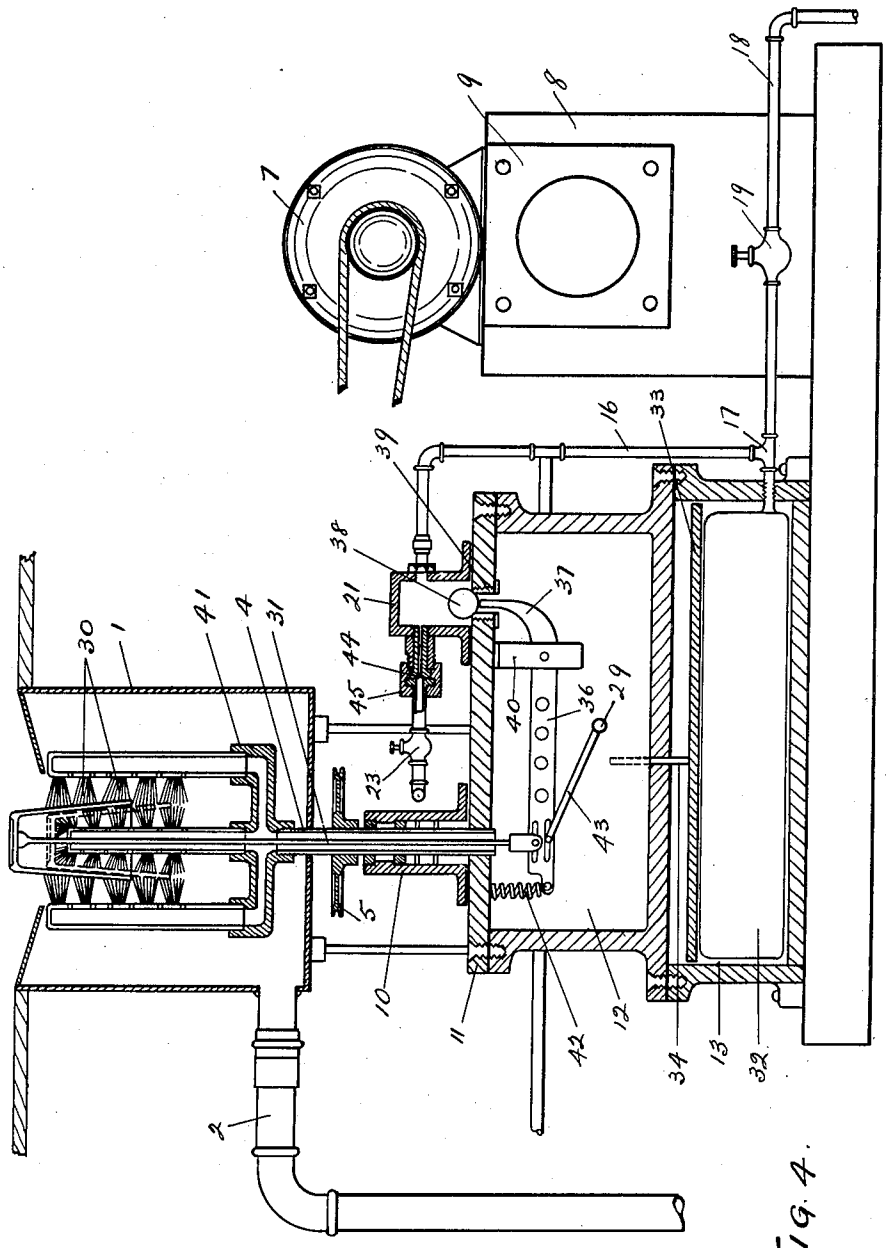


FIG. 4.

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GLASS AND TUMBLER WASHER

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7 Claims. (Cl. 15—75)

This invention relates to a power operated machine for washing and antiseptically cleaning drinking glasses and other like containers by a solution of water and an admixture of a measured quantity of a chemical antiseptic cleansing fluid in combination with revolving brushes and water sprays.

An object of my invention is to speed the operation of washing and cleansing of tumblers where the same are used in large quantities.

A further object of my invention is to provide quick and convenient means for the antiseptic cleansing of tumblers by providing a mechanism that automatically dispenses a measured quantity of antiseptic cleansing fluid to the water passing through the machine for cleansing purposes.

A still further object of my invention is to provide a machine that will operate in conjunction with all hydrostatic pressures and may be automatically operated by simply applying the glasses or tumblers to the brushes.

Still another object has been to simplify the construction and mechanism of machines of this character whereby the costs of same are greatly reduced and economies of operation are effected.

A particular object of my invention has been to provide a machine of this character that will operate as successfully with glasses of light and fragile construction as with glasses of heavier mould without breakage.

A final object of my invention has been to eliminate the necessity of using any dangerous pressure of force to the glasses in applying them to the brushes to either start the machine or brushes or water sprays, thereby making it possible for a child to operate the machine if desired.

My invention consists essentially of the construction and arrangement of parts more specifically pointed out and described in the following specification and further illustrated in the accompanying drawings forming part of this application and in which:

Figure 1 is a perspective view of the washing machine positioned below the drain board and shows the washing bowl and motor driving the machine.

Figure 2 is a detail view of the quick break switch shown covered in Figure 1 and mounted upon the side of the machine and connected to the electric motor through the panel box on the motor stand.

Figure 3 is a perspective view of the drain board and shows washing bowl and revolving brushes and top of the control rod.

Figure 4 is a sectional elevation of the main body of the machine and shows antiseptic chamber and inflation receptacle therein, also washing solution chamber with pivoted lever mounted therein with mixing chamber and washing bowl with revolving brushes mounted upon the top of washing solution chamber.

In these drawings like parts are represented by like numerals and in Figure 1 the numeral 1 indicates a metal bowl having the drain pipe 2 connected therewith, while 3 indicates its supports. Through the bottom of the bowl 1 there extends a hollow shaft 4 on which is mounted the grooved pulley 5 driven by the belt 6 from the motor 7. The motor is mounted on a suitable stand 8 on the side of which is secured the panel box 9 containing the wiring connections of the motor.

The hollow shaft 4 is carried in the bearing 10 mounted upon the cover plate 11 of a washing solution chamber 12, which chamber is in turn mounted upon an antiseptic chamber 13 forming the lower part of the machine. The whole machine is mounted upon the base 14 comprising the support.

A water supply pipe is indicated at 15 traversing the back of the machine and being connected into the upright pipe 16, the lower end of which is connected into the bottom of the antiseptic chamber 13 through the T 17, the outer branch of which is connected into the drain pipe 18 having the valve 19 positioned in it.

The upper part of the pipe 16 is connected through the coupling 20 into the mixing chamber 21, the opposite side of which is connected to the antiseptic chamber 13 by the pipe 22 having the valve 23 in the line. The pipe line 22 is connected into the antiseptic chamber 13 through the horizontal sight feed glass 24 by which the flow of the antiseptic fluid may be observed.

Positioned upon the side of the washing solution chamber 12 is a switch box 25 containing a quick break switch 26 (not shown in Figure 1), controlling the motor 7. The switch 26 is connected to the panel box 9 by the lead 27.

An enlarged view of the switch 26 is shown in Figure 2 and it is operated by the switch arm 28 mounted upon the rod 29 extending through the side of the washing solution chamber 12, which bearing is in turn connected to a pivoted lever arm 36 mounted in the washing solution chamber shown in the sectional elevation Figure 4.

In Figure 3 is shown a perspective view of the drain board of the washing machine showing the partly covered top of the bowl 31 containing the

revolving brushes 30 in the centre of which is shown the extending top of the control rod 31 by which the machine is operated.

In Figure 4 the antiseptic chamber is shown at 13 containing an inflation receptacle 32 connected to the upright water supply pipe 16 through the T 17. On the top of the receptacle 32 is a plate 33 serving both to depress the inflation receptacle when being emptied and as a support to a pair of plunger arms 34 positioned upon each side of the antiseptic chamber 13, one of the arms serving as a gauge to indicate the amount of fluid in the chamber 13 and being positioned within an open faced gauge glass holder 35 located upon the flanged base of the washing solution chamber 12 and between the switch box 25 and the horizontal sight feed glass 24 (see Figure 1) while the opposite arm is positioned in an enclosed tube and merely acts as a balance member to the plunger arm used as an indicator. Both the plunger arms operate in closed tubes and compress a certain amount of air in the top of the tubes that tends to keep the plunger and the plate 33 in a level position upon the top of the inflation receptacle 32.

The washing solution chamber 12 is set upon the antiseptic chamber 13 and has mounted upon the underside of the cover 11 a lever arm 36 having one end upturned at 37 for the purpose of contacting and displacing a ball valve 38 positioned within the mixing chamber 21 and having a seat 39 formed in the cover 11.

The lever arm is pivoted in the bracket 40 secured to the underside of the cover 11 and the opposite end of the lever is secured to a control rod 31 positioned within the hollow shaft 4 and extending upwards through the centre column of the perforated brush holder 41 mounted upon the top of the hollow shaft 4 and inside of the metal bowl 1. The revolving brushes 30 are secured to the brush holder 41. A spring 42 is attached to the end of the lever arm 36 to retain the lever in a closed position.

The hollow shaft 4 is carried in the bearing 10 mounted upon the cover plate 11 and has its lower end open to the washing solution chamber 12.

Connected to the end of the lever arm 36 immediately below its connection to the control rod 31 is the switch lever 43 connected to the bearing 29 extending through the side of the washing solution chamber 12 and being connected to the switch arm 28 operating the switch 26 (see Figures 1 and 2).

Between the valve 23 and the mixing chamber 21 is placed the restricted nozzle 44 admitting the antiseptic fluid to the mixing chamber. The nozzle 44 is secured in place by the coupling 45 and various sized nozzles may be used to proportion the antiseptic fluid to the water flow.

A filling plug, not shown, is provided for the antiseptic chamber 13.

In operation the machine is set up and connected to a water supply, the antiseptic fluid chamber 13 is filled with fluid while the inflation receptacle 32 is collapsed.

After filling the antiseptic chamber 13 the water supply is turned on through the pipe 15 and the water immediately fills the mixing chamber 21 and the inflation receptacle 32 until a pressure is set up upon the antiseptic fluid in the chamber 13 equal to the water pressure in the supply pipe 15 which forces the antiseptic fluid out through the pipe line 22 up to the valve 23 which is now opened and the antiseptic fluid in the pipe 22 meets the water pressure from the mixing chamber 21, the pressures being equal.

If a glass is now applied upon the brushes 30, see Figure 1, and the control rod 31 depressed, it immediately acts upon the pivoted lever arm 36 and displaces the ball valve 38 from its seat 39 and a water flow is set up through the mixing chamber 21 from the pipe line 22 containing the antiseptic solution and the water supply line 15 and 16. This water flow being mixed with the antiseptic fluid comprises the washing solution and fills the washing solution chamber and is forced up through the hollow shaft 4 and through the perforated brush holder 41 into a series of water sprays.

Coincident with the depressing of the control rod 31 the interconnected lever arm 36 has acted upon the switch lever 43 mounted upon the bearing 29 extending through the side of the washing solution chamber 12 and this has served to act upon the switch arm 28 connected to the motor switch 26 and has started the motor 7 and the brushes 30 revolving.

Immediately the glass is removed from the control rod 31 the lever arm 36 is raised under the action of the spring 42 (and also under the action of the hydrostatic pressure acting upon the ball valve 38 forcing it to its seat and acting upon the upturned end 37 of the lever arm 36), thereby shutting off the flow from the mixing chamber 21 to the washing solution chamber 12 and to the revolving brushes 30 and stopping the machine through the switch 26 being interconnected with movement of the control rod 31. Thus every time the control 31 is depressed it serves to start the motor 7 and the brushes 30 revolving, and also the water sprays through the perforated brush holder 41, at the same time the washing solution is mixed and proportioned through the mixing chamber 21.

Immediately the machine is stopped so is the water flow therethrough, and the washing solution chamber and the revolving mechanism connected therewith are relieved of all hydrostatic pressures through the closing of the ball valve 38 in the mixing chamber 21.

Having now fully described my invention, what I claim as new and desire to be protected in by Letters Patent, is:

1. In a power actuated mechanical glass washing machine, a motor, a bowl, revolving brush-carrying means located in said bowl and adapted to receive a glass for cleaning, driving connections between said motor and said brush-carrying means, said brush-carrying means having a water passage with outlets constituting water spraying means cooperating with said brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a mixing chamber communicating with said antiseptic fluid chamber and with said washing solution chamber and with said water supply, a valve in said mixing chamber to control the communication between said mixing chamber and said solution chamber, a control rod, a lever pivoted between its ends within said solution chamber and having one of its ends disposed to engage said valve and having its other end connected with said control rod, said lever serving to act through said valve against hydrostatic pressure within said mixing chamber to effect fluid flow from said mixing chamber through said solution chamber to said water spraying means, means cooperating with said mixing and antiseptic chambers to effect a balance of the pressure of the water flow from said supply and that of the antiseptic fluid flow

into said mixing chamber, and means to convey solution from said solution chamber to said brushes.

2. In a power operated mechanical glass washing machine, a bowl, brush carrying means mounted to revolve in said bowl and adapted to receive a glass for cleaning, a motor cooperatively connected with said brush carrying means, said brush carrying means having a water passage with outlets constituting water spraying means cooperating with the brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a mixing chamber communicating with said antiseptic fluid chamber and with said washing solution chamber and with said water supply, a valve controlling the communication between said mixing chamber and said washing solution chamber, a control rod, a lever actuated thereby for opening said valve to permit solution to flow to said spraying means via said solution chamber, means cooperative with said mixing and said antiseptic fluid chambers to balance the pressure of the water flow from said supply and that of the antiseptic fluid flow into the mixing chamber, means to convey the washing solution from said washing solution chamber to said water spraying means, and means to start and stop the motor and consequently the revolving brushes by movement of said rod.

3. In a power operated mechanical glass washing machine, a bowl, brush carrying means mounted to revolve in said bowl and adapted to receive a glass for cleaning, a motor cooperatively connected with said brush carrying means, said brush carrying means having a water passage with outlets constituting water spraying means cooperating with the brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a mixing chamber communicating with said antiseptic fluid chamber and with said washing solution chamber and with said water supply, a valve controlling the communication between said mixing chamber and said washing solution chamber, a control rod, a lever actuated thereby for opening said valve to permit solution to flow to said spraying means via said solution chamber, means cooperative with said mixing and said antiseptic fluid chambers to balance the pressure of the water flow from said supply and that of the antiseptic fluid flow into the mixing chamber, means to convey the washing solution from said washing solution chamber to said water spraying means, said lever being fulcrumed at a point between the points where it engages with said valve and said control rod.

4. In a power operated mechanical glass washing machine, a bowl, brush carrying means mounted to revolve in said bowl and adapted to receive a glass for cleaning, a motor cooperatively connected with said brush carrying means, said brush carrying means having a water passage with outlets constituting water spraying means cooperating with the brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a mixing chamber communicating with said antiseptic fluid chamber and with said washing solution chamber, and with said water supply, a valve controlling the communication between said mixing chamber and said washing solution chamber, a control rod, a lever actuated thereby for opening said valve to permit solution to flow to said spraying means via said solution chamber, means cooperative with said mixing and said antiseptic fluid chambers to balance the pressure of the water flow from said supply and that of the antiseptic fluid flow into the mixing chamber, means to convey the washing solution from said washing solution chamber to said water spraying means, and means to vary the rate of flow of the antiseptic fluid to said mixing chamber.

5. In a power operated mechanical glass washing machine, a bowl, brush carrying means mounted to revolve in said bowl and adapted to receive a glass for cleaning, a motor cooperatively connected with said brush carrying means said brush carrying means having a water passage with outlets constituting water spraying means cooperating with the brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a mixing chamber communicating with said antiseptic fluid chamber and with said washing solution chamber and with said water supply, a valve controlling the communication between said mixing chamber and said washing solution chamber, a control rod, a lever actuated thereby for opening said valve to permit solution to flow to said spraying means via said solution chamber, means cooperative with said mixing and said antiseptic fluid chamber to balance the pressure of the water flow from said supply and that of the antiseptic fluid flow into the mixing chamber, means to convey the washing solution from said washing solution chamber to said water spraying means, means to start and stop the motor and consequently the revolving brushes by movement of said rod, said last named means comprising a switch lever, said switch lever being mounted on said washing solution chamber and having one arm connected to said first mentioned lever and having its other arm connected to an electric switch controlling the electric motor of the washing machine whereby on movement of said control rod and the lever actuated thereby said switch is operated.

6. In a power operated mechanical glass washing machine, a bowl, revolving brushes located in said bowl and adapted to receive a glass for cleaning, water sprays cooperating with said brushes, a water supply, an antiseptic fluid chamber, a washing solution chamber, a duct between said washing solution chamber, and said sprays, a mixing chamber, a duct between said mixing chamber and said washing solution chamber, a valve in said mixing chamber for controlling passage of fluid therefrom to said last named duct, said mixing chamber having a connection with said water supply and having a restricted fluid inlet from said antiseptic fluid chamber, a control rod, a lever, said rod engaging said lever which in turn engages said valve to effect a water flow and discharge of the water sprays when said rod is moved, and means to discharge the antiseptic fluid from its chamber through said restricted fluid inlet into said mixing chamber, said means comprising an inflatable receptacle positioned within said antiseptic fluid chamber and connected to the water supply of the washing machine whereby a pressure is set up on the antiseptic fluid contained within said chamber, thereby forcing said fluid through said restricted fluid inlet into said mixing chamber when said valve is opened, and means to rotate said brushes.

7. In a power operated glass washing machine, a motor, a bowl, a brush and a spray nozzle holder rotatably mounted in the bowl, brushes and spray nozzles carried by said holder, means for rotating said holder from said motor, which means includes a hollow shaft connected to said holder and in communication with said nozzles and driving connection between said motor and shaft, a

washing solution chamber in communication with said shaft, a mixing chamber, a valved duct between said mixing chamber and said solution chamber, means to deliver water under pressure to said mixing chamber, an antiseptic fluid chamber, means for delivering the fluid from said last named chamber by water pressure to said mixing chamber, a valve in said delivery means, a control rod in said hollow shaft, and a connection between said rod and the valve of said valved duct, and means governed by the movement of said control rod for controlling the operation of said motor.

EMIL SCHNEE.