

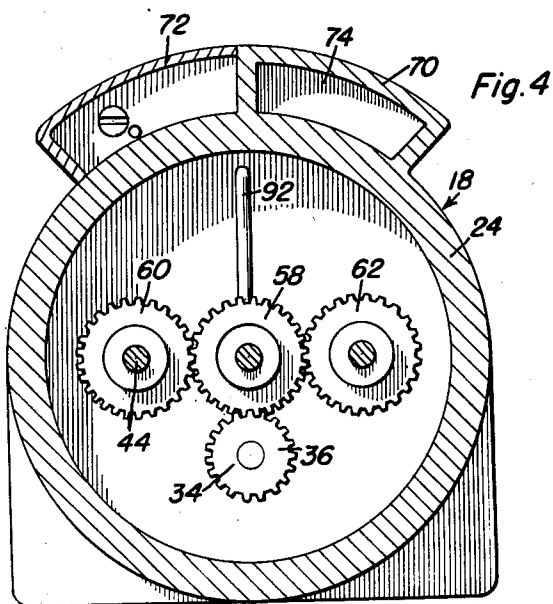
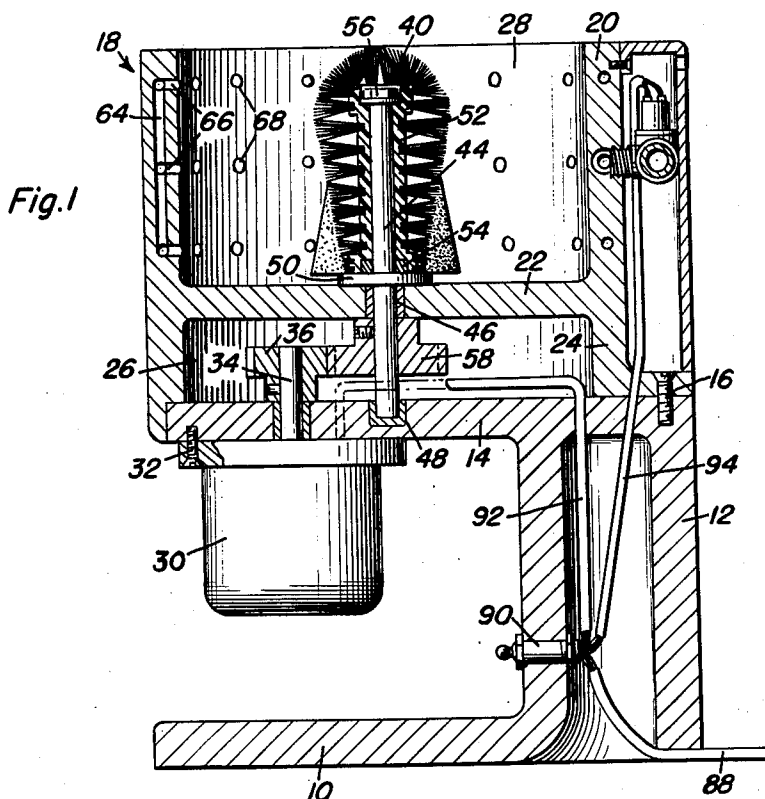
April 28, 1953

J. M. STANTON ET AL
MACHINE HAVING ROTARY BRUSH FOR WASHING
AND CLEANING GLASSES AND CUPS

2,636,199

Filed Nov. 24, 1950

2 SHEETS—SHEET 1



James M. Stanton
Frank Bertolero
INVENTORS

BY *Almon W. Brown*
and *Harvey E. Jackson*
Attorneys

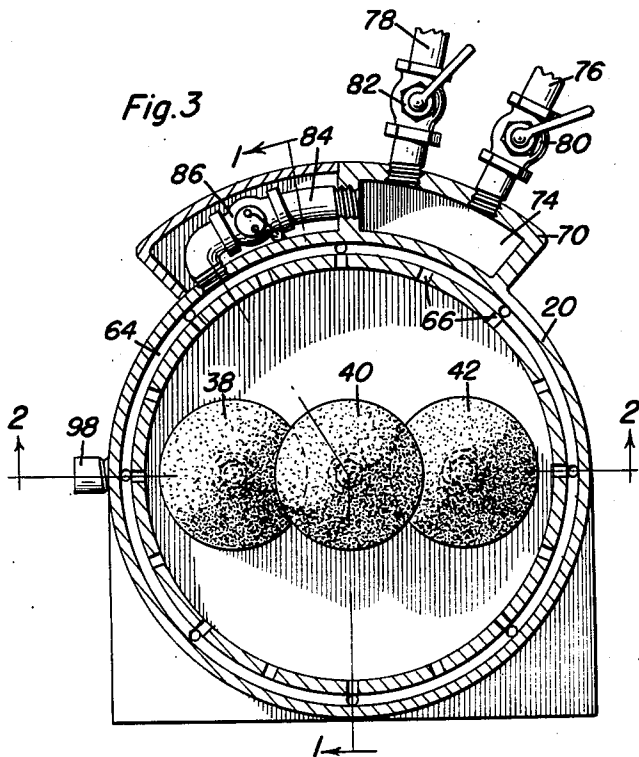
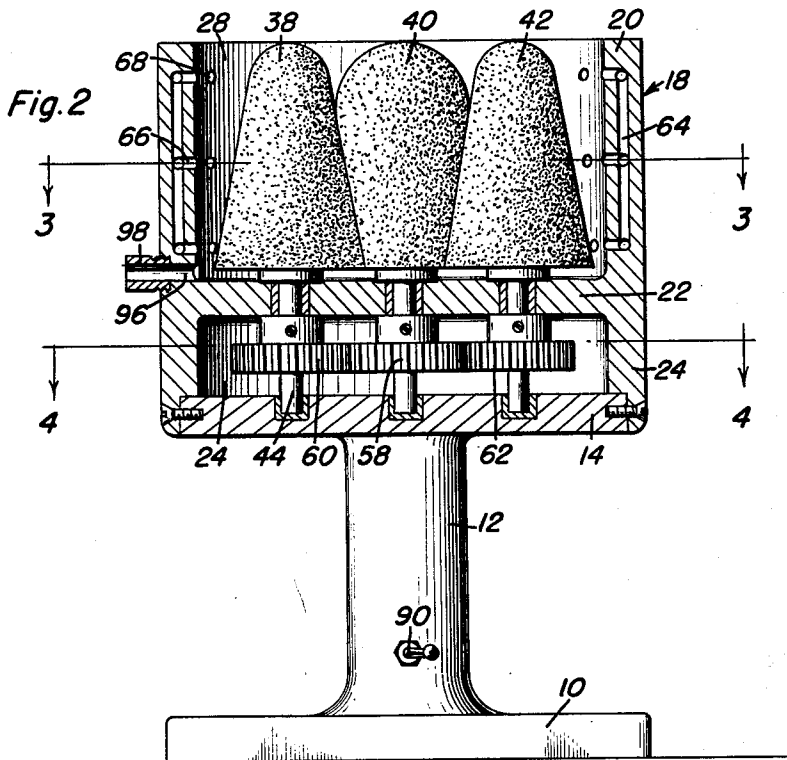
April 28, 1953

J. M. STANTON ET AL
MACHINE HAVING ROTARY BRUSH FOR WASHING
AND CLEANING GLASSES AND CUPS

2,636,199

Filed Nov. 24, 1950

2 SHEETS—SHEET 2



James M. Stanton
Frank Bertolero
INVENTORS

BY *Albance A. Orison*
and *Harvey B. Jacobson*
Attorneys

UNITED STATES PATENT OFFICE

2,636,199

MACHINE HAVING ROTARY BRUSH FOR
WASHING AND CLEANING GLASSES
AND CUPSJames M. Stanton, Buffalo, Wyo., and
Frank Bertolero, Lead, S. Dak.

Application November 24, 1950, Serial No. 197,477

4 Claims. (Cl. 15—75)

1

This invention comprises novel and useful improvements in a glass and cup washer and cleaner and more specifically pertains to a power operated rotary brush device and cleaner for efficaciously cleansing glasses, cups and the like and particularly for effectively cleaning the necks of bottles and the like and for cleansing the rims of glasses and cups of lipstick and the like.

The principal object of this invention is to provide a compact and readily portable device for efficaciously and quickly cleansing glasses, cups and similar articles with ease and certainty.

A further object of the invention is to provide a rotary brush cleansing and washing device in which the supply of cleansing fluid and the operation of brushes may be simultaneously and automatically controlled.

A still further object of the invention is to provide a rotary scrubbing device for the purposes above setforth, in which the supply of cleansing fluid from both a hot and a cold source may be readily mixed in an improved and compact arrangement; and may be admitted to the cleansing chamber simultaneously with the operation of the rotary brushes thereof.

A still further object of the invention is to provide an improved rotary brush cleanser in accordance with the foregoing objects having improved means for supplying a quantity controlled and temperature regulated cleansing fluid in spray arrangement upon the articles being scoured by the rotary brush assembly.

A still further object of the invention is to provide a rotary brush cleanser in conformity with the foregoing objects which shall include a novel construction and arrangement of a cleansing tank incorporating therein an improved cleansing fluid spray construction; wherein the tank is detachably mounted upon a supporting surface; and wherein depending supporting walls of the tank cooperate with the supporting surface to define a readily accessible gear casing for the device.

These, together with various ancillary features and objects of the invention, which will later become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which is illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a vertical sectional view through one suitable embodiment of the device incorporating therein the principles of this invention, this view being taken substantially on the plane indicated by the broken section line 1—1 of Figure 3;

2

Figure 2 is a vertical transverse sectional view through the device taken substantially on the plane indicated by the section line 2—2 of Figure 3;

Figure 3 is a horizontal sectional view through the brush and washing compartment or tank of the invention, taken substantially on the plane indicated by the section line 3—3 of Figure 2; and

Figure 4 is a horizontal sectional view taken substantially on the plane indicated by the section line 4—4 of Figure 2, and illustrating more particularly the gear casing assembly of the invention.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, it will be seen that the improved scrubbing and washing device in accordance with this invention comprises a supporting stand consisting of a flat base 10 having a hollow standard 12 rising therefrom and which is provided with an integral horizontally disposed supporting plate 14. Detachably mounted upon the supporting plate 14, as by fastening screws 16, is a tank unit indicated generally by the numeral 18 and which is provided with a preferably circular side wall 20 and a bottom wall 22, the latter having marginal depending walls 24 which rest upon the supporting plate 14, and defined therewith, a hollow chamber or gear casing 26. The bottom wall 22 and the side wall 20 define a washing tank 28 having an open upper end.

Referring now more particularly to Figures 1 and 4, it will be seen that an electric motor 30 is detachably secured as by fastening screws 32 to the underside of the support plate 14, and has its armature shaft 34 extending through the support plate and into the gear casing 26, being provided with a driving gear 36 therein.

Referring more particularly to Figures 2-4, it will be seen that a plurality of rotary brushes are disposed within the tank 18 in the washing chamber 28 therein. Each of these brushes, designated by the numerals 38, 40 and 42, comprises a central spindle 44 which extends through the bottom wall 22 and into the support plate 14, being journaled in these members as by bushings or sleeves 46 and 48, the spindle further having an annular collar or plate 50 which is adapted to rest upon the bottom wall 22 of the tank.

Each of the brushes further includes a sleeve 52 which encircles the upper portion of the spindle 44, and which has recessed or countersunk ends which respectively receive a washer or fastening nut 54 upon the spindle adjacent the collar 50 and a removable clamping nut 56 at the

other end of the spindle. The brushes further include a plurality of bristles which extend entirely outwardly about the spindles and beyond the upper end of the same to completely enclose the spindle and sleeve, the bristles being of any desired configuration, as for example, conical in the case of the brushes 38 and 42; and in the form of an inverted cone having a rounded upper end as regards to the brush 40.

Each of the spindles, upon the portion which extends through the gear casing 26, has fixedly secured thereto a gear, gears 58, 60 and 62 being provided for the spindles of the brushes 40, 38 and 42 respectively. As shown more clearly in Figure 4, the gear 36 of the armature shaft 34 of the motor 30 is in mesh with the gear 58 of the spindle of the brush 40, while the latter gear in turn is in mesh with the spindles 60 and 62 of the brushes 38 and 42. Thus, the connecting means for operatively driving the brush spindles from the motor are completely enclosed in a gear casing which is formed within the confines of the tank of the washer in a manner to permit ready access to the same.

It will be understood that the shape of the brushes will be such as to permit the same to efficiently enter such hollow articles as cups, glasses, bottles and the like for effectively and quickly cleansing the interior of these articles, the bottoms of the same, and the necks and rims of the articles.

This cleansing operation is assisted by the provision of a plurality of jets of cleansing fluid directly into the interior of the tank 22 and against the articles held upon the cleansing brushes.

For this purpose, a suitable conduit system is provided for supplying cleansing fluid to the interior of the tank and spraying the same from nozzles against the articles applied to the brushes. This communicating conduit means may conveniently include a fluid jacket 64 in the form of an annular chamber which may be mounted upon either the exterior or interior of the side wall 20 of the tank, but preferably, as shown, is integrally formed within the side wall as by casting or the like during the manufacture of the tank. In any event, this fluid jacket is provided with a plurality of fluid delivery conduits 66 which pierce the wall of the tank and are provided with discharge orifices or spray nozzles if desired 62 which direct the cleansing fluid centrally of the tank and towards the rotary brushes journaled therein.

While cleansing fluid may be delivered in any desired manner to the fluid jacket 64, in order to obtain the advantages of this invention, it is preferred to provide the advantageous and compact arrangement disclosed in Figures 1, 3 and 4 of the drawings. Thus, there is integrally formed upon, or if desired, detachably secured to the exterior side wall 20 of the tank 18 an arcuately extending housing 70 having a further arcuately extending casing 72 connected to the side thereof. The housing 70 provides a mixing chamber 74 therein, and a pair of fluid supply conduits 76 and 78, connected with any desired sources of hot and cold fluid under pressure, are provided with manual control valves 80 and 82 by means of which either hot or cold fluid under pressure is delivered to the mixing chamber 74. It will be evident that by properly adjusting the valves a mixture of any desired temperature of fluid may be supplied to the mixing chamber 74. From the mixing chamber 74, a conduit 84 conducts the mixed fluid into the fluid jacket 64. This conduit is provided with a solenoid actuated control

valve 86 of any desired character, the construction of this valve being well known and in itself no part of the present invention.

An electric circuit is provided for supplying electric current simultaneously to the electric motor 30 and to the solenoid operated valve. This electric circuit includes an electric cable 88 connected with any suitable source of electric current, and which extends into the hollow standard 12 where it is connected with any conventional form of toggle switch or the like 90, and from this switch separate conductors 92 and 94 establish electric circuits with the motor 30 and with the solenoid operated valves. The arrangement is such that whenever the electric motor is energized, the solenoid operated valve is moved to its open position so that cleansing fluid from the mixing chambers are delivered through the spray nozzle into the tank at the same time the rotary brushes are operated.

Fluid is discharged from the tank as by a discharge conduit 96 having an outlet connection 98 to any suitable exhaust for the fluid.

It will now be apparent from the foregoing that a very compact washing and cleansing device has been provided having a portable supporting stand upon which the cleansing tank is detachably mounted, the supporting stand directly supporting the electric motor, and the space between the supporting stand and the tank constituting a gear chamber for driving the rotary brushes within the tank from the motor. Further it will be seen that the rotary brushes themselves each have spaced journals for rotatably supporting the same, thereby greatly increasing the effectiveness and life of the rotary brushes. Further, the tank has incorporated therewith an integral cleansing fluid mixing chamber adapted for connection to hot and cold sources of fluid under pressure, and by removable housing encloses a solenoid control valve supported upon the tank and which is operated in unison with electric motor circuit.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A glass and cup washer and cleaner comprising a wash tank having side and bottom walls, a plurality of rotary scrub brushes in said tank having spindles journaled in and extending below said bottom wall, an electric motor and means for connecting said motor and said spindles, conduit means for delivering cleaning fluid into said tank and towards said brushes, a solenoid means controlling delivery through said conduit means, an electric circuit connected to said motor and solenoid means for simultaneous actuation, said conduit means comprising a fluid jacket about the side wall of the tank, nozzles communicating with said jacket and discharging through said side wall into said tank, said conduit means further including a mixing chamber in said tank, means for controllably and selectively delivering hot and cold fluid to said mixing chamber, said solenoid means controlling delivery of mixed fluid from said chamber into said tank.

5

2. The combination of claim 1 including a support having a supporting plate, said tank having depending walls from said bottom wall and resting on said supporting plate to define therewith a casing, said connecting means being housed in said casing.

3. The combination of claim 2 wherein said motor is mounted upon the underside of said supporting plate.

4. The combination of claim 1 including a support having a supporting plate, said tank having depending walls from said bottom wall and resting on said supporting plate to define therewith a casing, said connecting means being housed in said casing, said spindles having their ends journaled in said supporting plate, said connecting means comprising gears on said spindles connected to each other, said motor being connected to one of said spindles.

JAMES M. STANTON. 20
FRANK BERTOLERO.

6

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,554,868	Maxwell -----	Sept. 22, 1925
2,195,615	Chamberlin et al. ---	Apr. 2, 1940
2,221,442	Cunningham -----	Nov. 12, 1940
2,230,404	Healey -----	Feb. 4, 1941
2,242,692	Yingling -----	May 20, 1941
2,253,539	Steinhilber -----	Aug. 26, 1941
2,268,721	Ossowsky -----	Jan. 6, 1942

FOREIGN PATENTS

Number	Country	Date
362,646	Great Britain -----	Dec. 10, 1931