Dec. 6, 1938. V. J. SINKWICH 2,138,943

ALKALI SOLUTION DISPENSER FOR DISHWASHING MACHINES

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FIG. 1

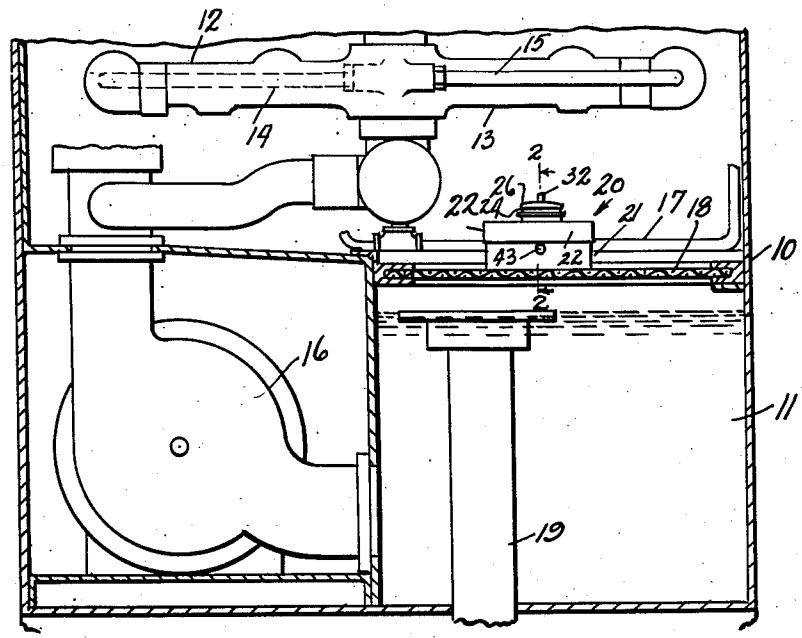
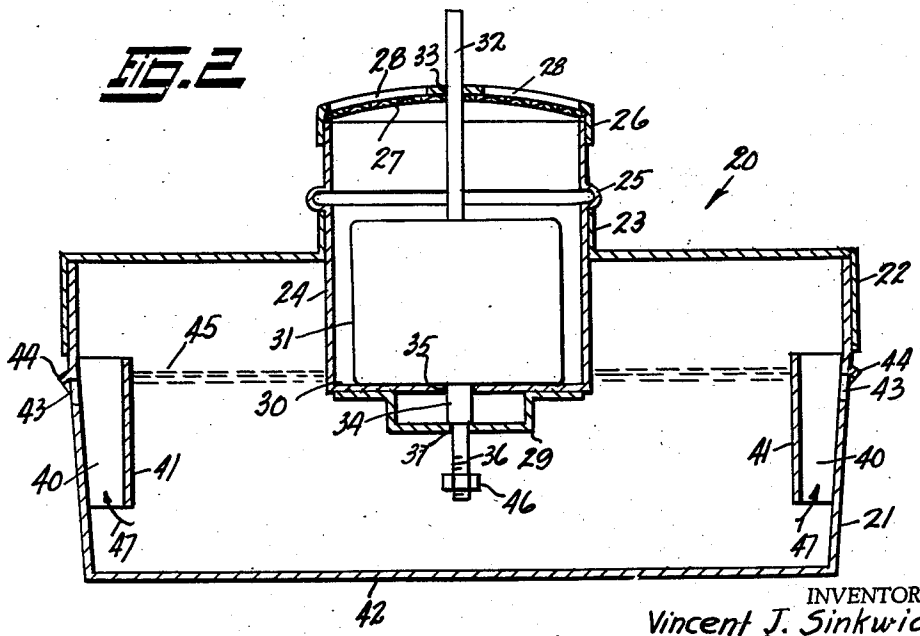


FIG. 2



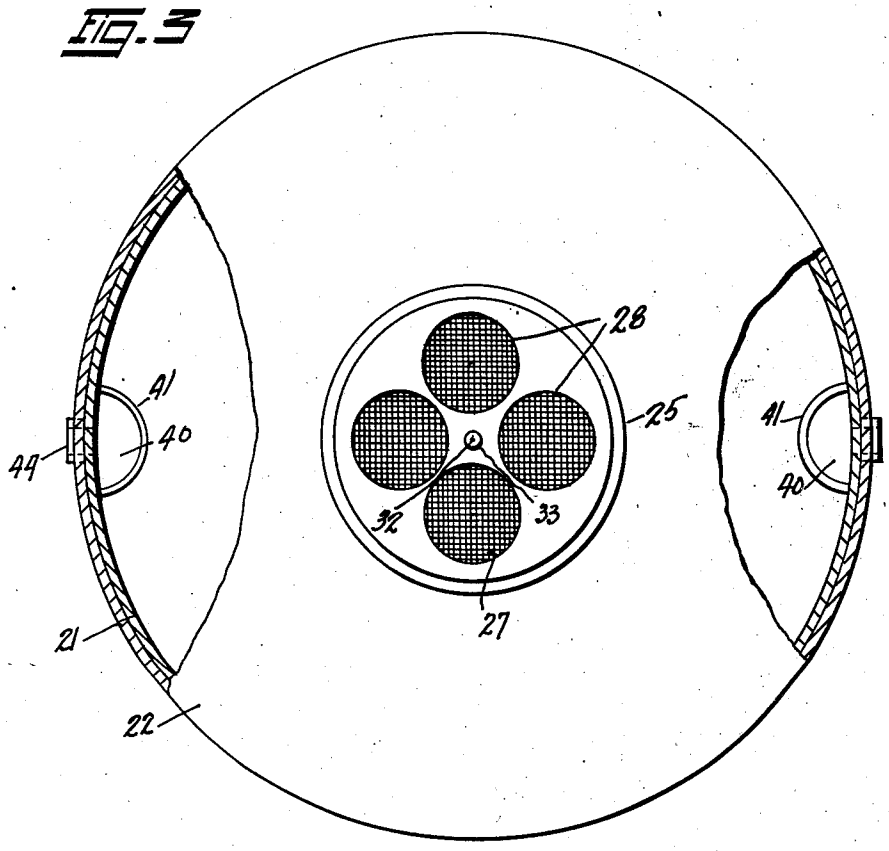
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Filed June 23, 1937 2 Sheets-Sheet 2

FIG. 3



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Patented Dec. 6, 1938 2,138,943

UNITED STATES PATENT OFFICE

2,138,943

ALKALI SOLUTION DISPENSER FOR DISH WASHING MACHINES

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Application June 23, 1937, Serial No. 149,831

2 Claims. (Cl. 141—9)

This invention relates to alkali solution dispensers for dish washing machines and has for one of its objects the provision of such a device the use of which will insure a balanced and uniform dispensation of the alkali solution.

Another object of the invention is the provision of a device of this character which will economically dispense the alkali solution and thus provide a considerable saving in the consumption of the alkali.

A further object of the invention is the provision of a device of the nature referred to comprising an alkali solution dispensing tank or receptacle having a self cleaning water inlet valve to prevent corrosion and clogging of the valve port and thus insure an adequate flow of water to the receptacle at all times.

A still further object of the invention is the provision of such a device in which the alkali solution dispensing receptacle is provided with one or more conduit forming pockets at the circumferential wall of the receptacle and positioned above the bottom thereof and outlet openings in the said wall leading outwardly of the said pockets and below the top of the said pockets to insure the dispensation of an adequate amount of the alkali solution at all times.

Another object is to produce a device of the character described in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and co-relation of parts herein fully described and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which, for the purpose of illustration, is shown in the accompanying drawings, in which—

Figure 1 is a fragmental longitudinal sectional view of a dishwashing machine showing my improved dispensing device as applied thereto;

Fig. 2 is a sectional view of the dispensing device taken on line 2—2 Fig. 1;

Fig. 3 is a top plan view of my dispensing device with parts of the cover thereof broken away.

Referring now to the drawings in detail 10 indicates the body or casing of a dishwashing machine having a compartment 11 for the reception of an alkaline solution.

In the dishwashing machines now commonly used there is provided an upper and a lower revolving spraying mechanism between which a tray of dishes to be washed is placed. In the accompanying drawings I have shown only a portion of the lower spraying mechanism as the said spraying mechanism forms no part of my invention.

The said lower spraying mechanism comprises a rotatable or revolving device having tubular wash arms 12 and 13 and a pair of tubular rinse arms 14 and 15. The wash arms 12 and 13 are supplied with water having an alkali solution therein by means of a motor driven pump 16 in communication with the chamber or compartment 11 and the rinse arms 14 and 15 are supplied with fresh water through a pipe line 17 with which they are suitably connected.

It is to be understood that if no other source of alkali solution were provided outside of the solution in the compartment 11 the said solution would soon be dissipated as the fresh water from the pipes 14 and 15 enters the compartment 11 through the strainer 18 diluting the contents of the said compartment and causing same to overflow and pass out through the drain pipe 19

To overcome this undesirable feature I provide an auxiliary alkali holder and dispenser 20 which may be placed upon the strainer 18 or upon any other suitable portion of the lower part of the washing machine. The said dispenser comprises a bowl-like receptacle 21 having a cover 22 which fits over the open top thereof. The cover 22 is provided with a central upstanding annular flange 23 upon which there is supported an inner can-like receptacle 24 which is preferably provided with a shoulder or bead 25 for supporting same upon the flange 23. The inner receptacle 24 is provided with a cover 26 the inner surface of the top wall thereof being lined with a wire mesh screen 27, the said screen underlying openings 28 in the top wall of the cover 26. A bracket 29 is secured to the bottom wall 30 of the can or receptacle 24. Located within the said receptacle 24 is a float 31 having an upper stem 32 which passes through a central opening 33 in the cover 26 and is guided therein. A lower stem

34 passes through a valve opening 35 in the bottom wall 30, and a reduced stem portion 36 passes through a central opening 37 in the bracket 29.

The outer receptacle 21 may be provided with one or more conduit forming pockets, two such pockets 40 being shown in the present disclosure. The said pockets are formed by means of semi-tubular sections 41 secured to the peripheral or circumferential wall of the receptacle 21, the bottom of the said tubular sections 41 being spaced a short distance above the bottom wall 42 of the said receptacle. Leading outwardly from each of the said pockets 40 through the circumferential wall of the receptacle 21 is a port or opening 43, the said holes being positioned below the top of the said semi-tubular sections 41. The said port holes or outlet opening 43 may be partly covered by protecting extensions 44.

The operation of the device is as follows:

The receptacle 21 is filled with a strong alkali powder or compound to approximately the height indicated at 45 Fig. 2 and is placed upon the screen 18. The pumping operation is started and some of the water coming from the washing arms 12 and 13 will enter the float receptacle 24 through the openings 28 and will tend to fill same up causing the float 31 to rise. The force of the dishwashing machine spray passing through the screen and striking the top portion of the float which is above water level, causes this float to bob up and down as well as the float shaft, the said upward movement being limited by a nut 46 threaded upon the lower end of the stem. As the float shaft bobs up and down, the inlet valve opens and closes, thus admitting spurts of water into compartment 21. At the same time this bobbing up and down of the float shaft rams through the valve opening any food particles which may tend to block valve opening.

As the receptacle 21 is filled through the inlet valve, a portion of the water filters through the alkaline compound and slowly rises in the side tubes 41 as indicated at 47. The rise is slow because the compound is dense. The remainder of the water coming in through the inlet valve, overflows over the top of tubes 41. This overflowing water and the rising-solution fuse together and go out through the portholes 43. At this stage of operation the alkaline compound is to the level approximately, as shown at 45. The compound is gradually consumed during operation of the apparatus and its level lowered. When the compound is below the open lower ends of the side tubes 41, all of the water entering compartment 21 through the inlet valve passes through the bottom of the side tube 41 and outward through porthole, still maintaining the same strength.

It will be readily seen that without the conduit 41 the strong alkali powder or compound would soon be dissipated and after a short time nothing but the top layer of water entering from the float receptacle would escape through the openings 43 to replenish the alkali solution supply in the washing machine compartment 11. However with the introduction of the said conduits the solution must perforce come from the bottom at all times whether or not there is an overflow from the top, thus insuring an adequately strong solution at all times to replenish the contents of the compartment 11 to be pumped for dishwashing purposes.

I may here state the pump 16 is of the intermittent type, that is, it runs for a short time, then stops and after a short lapse starts again. This intermittent operation causes the float 31 to move up and down, said movement tending to dislodge any alkali deposit in the valve opening 35 as well as in the bearing openings 33 and 37 preventing any clogging of the device and insuring a stead flow of water through the said valve opening and a stead replenishing supply of alkali solution to the compartment 11. I also find that due to the arrangement of the conduits 41 with relation to the outlet openings 43 there is a much slower yet even and balanced dissipation of the alkali solution than would be the case without the use of the said conduits thus resulting in a great saving in the consumption of alkali.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. An alkali solution dispensing device comprising a solution carrying receptacle having an outlet opening in the peripheral wall thereof, an open ended pocket carried by the said peripheral wall at the said opening and extending vertically within the receptacle with its open lower end spaced from the bottom of the receptacle and its open upper end extending above the opening, a top for said receptacle, a water admitting receptacle extending through said top into the solution carrying receptacle, the said water admitting receptacle having a valve opening formed in its bottom, a valve stem extending vertically in said water receptacle and through the said opening, and a float carried by said stem within the water receptacle for the purpose specified.

2. An alkali solution dispensing device comprising a solution carrying receptacle having an outlet opening in the peripheral wall thereof, a vertically disposed open ended pocket carried by the said wall within the receptacle at the said opening and extending above and below the opening with its open lower end spaced from the bottom of the receptacle, a water admitting receptacle extending into the solution carrying receptacle through the top thereof, the said water admitting reecptacle having a valve opening at its bottom, a cover overlying the water admitting receptacle and provided with inlet openings, a screen for the inlet opening, a movable valve including an upper portion extending through the cover and a lower portion extending vertically in the water receptacle and passing through the valve opening at the bottom of the water receptacle and adapted to close the same, and means for moving the valve upwardly and shifting its lower portion out of closing relation to the outlet opening.

VINCENT J. SINKWICH.