July 4, 1950 F. W. KENT 2,514,000

DISHWASHING APPARATUS

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Fig. 1.

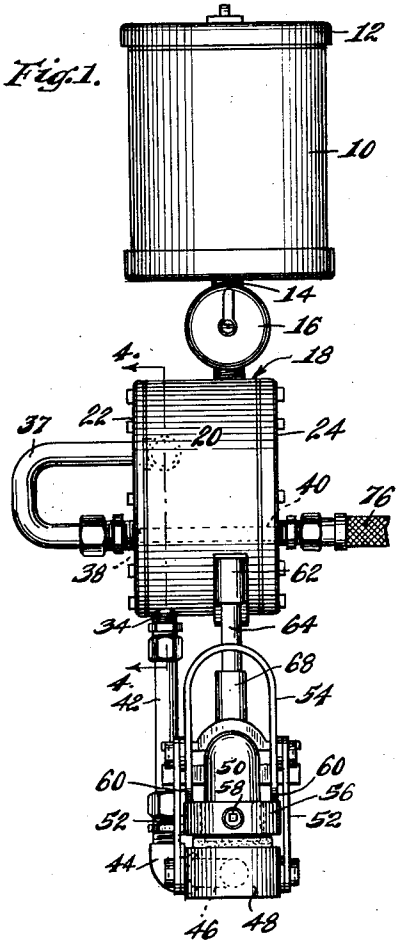
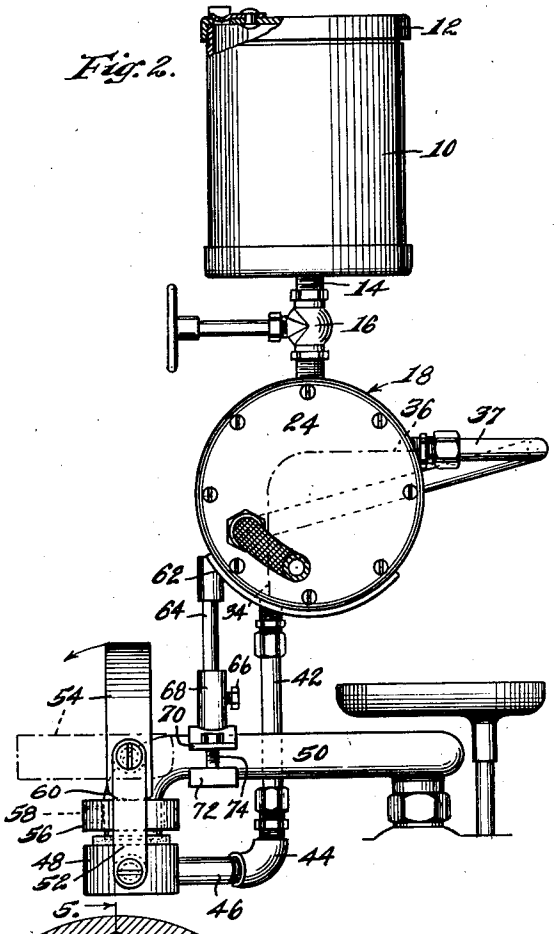


Fig. 2.



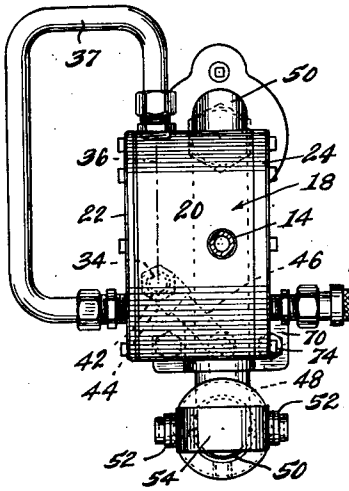


Fig. 3.

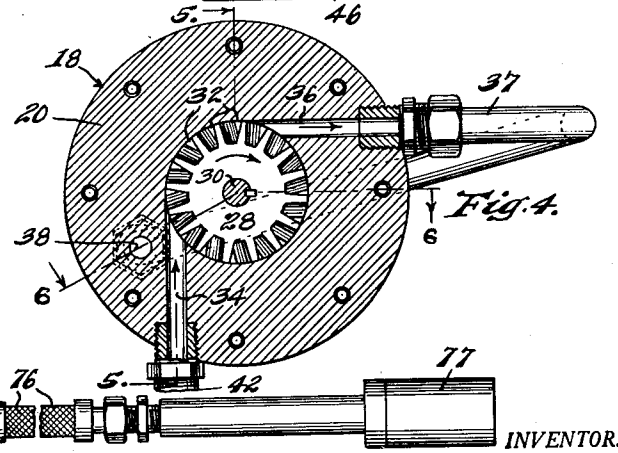


Fig. 4.

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Fig. 5.

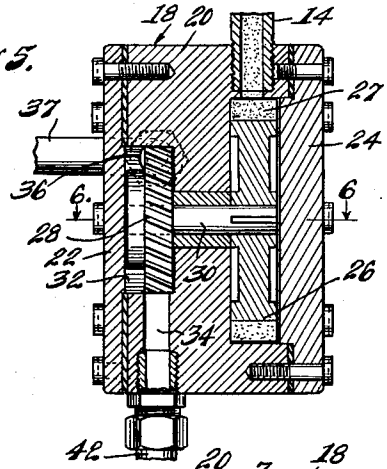


Fig. 6.

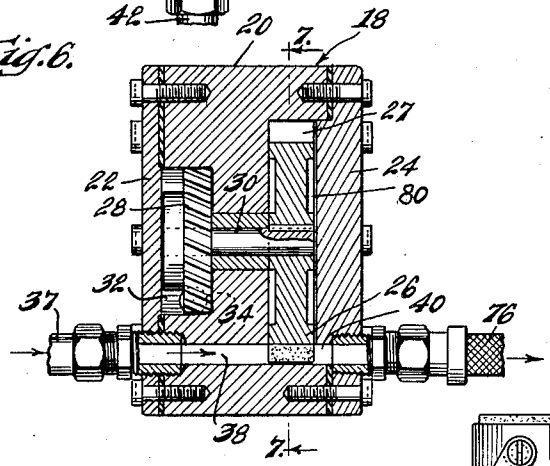


Fig. 7.

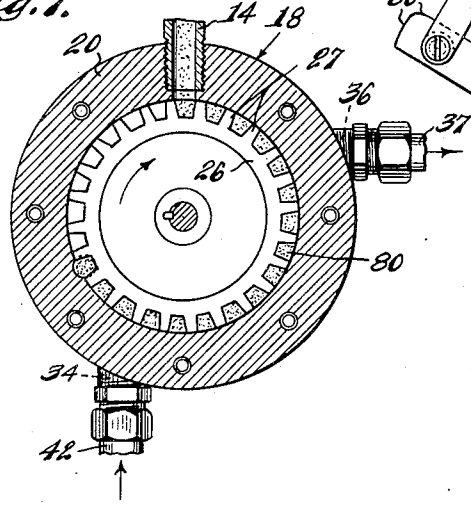
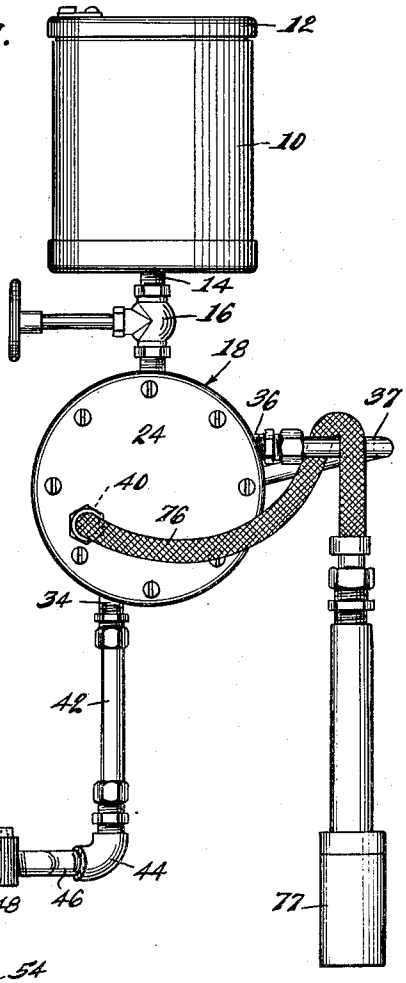


Fig. 9.



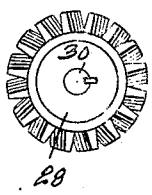


Fig. 8.

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UNITED STATES PATENT OFFICE

2,514,000

DISHWASHING APPARATUS

Frederick W. Kent, Milwaukee, Wis., assignor to Sophia Tank, Milwaukee, Wis.

Application August 20, 1945, Serial No. 611,536

3 Claims. (Cl. 299—84)

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My invention relates to a dish washing apparatus of very simple and inexpensive construction.

It is my purpose to provide such a dish washing apparatus of the kind which can be mounted in the kitchen for instance on the ordinary hot water faucet.

To this end, one of the objects is to provide a convenient simple means for mounting the dish washing apparatus on the faucet.

It is further my object to provide such an apparatus having a soap reservoir for liquid soap and the like, and to provide therewith a mechanism for receiving the soap from the reservoir, thoroughly mixing it with water and discharging it to a washer nozzle.

More particularly, it is my purpose to provide an apparatus for receiving the soap from the reservoir, mixing it with water and discharging it as suds, which apparatus has a water driven wheel and a soap receiving wheel, driven by the first wheel.

It is my purpose to provide means in such an apparatus, whereby the water driving the first wheel is discharged past the periphery of the second wheel for picking up soap thereon.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my dish washing apparatus, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of a dish washing apparatus embodying my invention.

Figure 2 is a side elevation of the same installed on a faucet.

Figure 3 is a top or plan view of the apparatus.

Figure 4 is a detail, sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a detail, sectional view taken on the line 5—5 of Figure 4.

Figure 6 is a detail sectional view taken on the line 6—6 of Figure 4.

Figure 7 is a detail, sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a plan view of the helical gear water wheel; and

Figure 9 is a side elevation of the complete apparatus viewed from the right side of the figure as shown in Figure 1.

In the drawings herewith, I have shown a reservoir 10 for liquid soap or the like, provided with a removable cover 12. Leading from the

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lower end of the reservoir 10 is a pipe 14 in which is a hand control valve 16. The reservoir is supported on the casing 18 for the operating mechanism of the apparatus. This casing consists of a central body 20, Figure 5, and end plates 22 and 24.

In a recess 80 in the side of the body 20 adjacent the plate 24 is a soap carrying wheel 26, which for convenience is sometimes referred to as the soap wheel. It has radial teeth 27 around its periphery with substantial spaces between them.

In the opposite face of the body 20 is a water wheel 28 in the form of a helical gear connected by a shaft 30 with the soap wheel. The water wheel 28 is arranged in a recess 32 deeper than the thickness of the wheel. The body 20 has an inlet passage 34 communicating with the recess 32 at the bottom of the water wheel 28 and off-center thereof, as illustrated in Figures 4 and 6. The body 20 also has an outlet passage 36 leading from the upper part of the recess 32 and communicating with a pipe 37, Figure 4, suitably curved to communicate at its other end with a passage 38 through the plate 22 and the body 20, registering with an outlet passage 40 through the plate 24. The passages 38 and 40 are so arranged that the water passing through them passes between the teeth of the soap wheel 26 at its periphery.

Communicating with the passage 34 is a pipe 42 connected with an elbow 44, which in turn is connected by a pipe 46 to a cap 48 adapted to fit on the lower open end of a faucet 50.

Pivoted to the opposite sides of the cap 48 are links 52, which are in turn pivoted to the arms of a yoke 54 near their ends. A collar 56 is mounted on the faucet 50 around its discharge end by means of set screws 58.

When the cap 48 is placed against the lower end of the faucet as shown in Figure 2, the links 52 can be swung from their position shown in Figure 9 for example to upright position, and the cam-shaped ends 60 of the arms of the yoke 54 can be forced against the top of the collar 56 until the yoke is in its position shown in Figure 2 for locking the cap 48 to the faucet.

I provide for additionally supporting the casing 18 on a saddle 62 from one end of which extends a downwardly projecting upright support 64, which may be in the form of a piece of pipe.

Adjustably mounted on the lower end of the support 64 by means of a set screw 66 is a tubular extension 68 on a clamp member 70, which rests on the faucet 50 and is locked to the faucet by

means of a coacting clamp member 72 and bolts 74.

Communicating with the outlet 40 is a flexible tube 76 leading to a suitable nozzle 77 through which water is discharged upon the dishes to be washed. This nozzle is more fully described in my co-pending application, Serial No. 609,971 filed August 10, 1945.

In operation the reservoir 10 is filled with a soap solution. It is obvious that flaked or finely divided soap might be used although this might require an agitator not shown.

It is assumed that the apparatus has been clamped on the faucet. The valve 16 is open and the faucet is open to allow water to flow through the apparatus. Water from the faucet passes through the pipe 46, elbow 44 and pipe 42 to the passage 34 and the water wheel 28 and out through the passage 36 to the pipe 37.

The water wheel 28 is thus rotated and through the shaft 30 rotates the soap wheel 26. When the soap wheel is rotated, soap passes down from the reservoir, past the valve 16 into the recess 80 in the body 20 and thus to the top of the soap wheel which receives soap between its teeth, and carries the soap around in the recess 80 in the body 20 to position in line with the passages 38 and 40.

Water from the passage 36 flows through the pipe 37 to the passage 38 across the periphery of the soap wheel 26, picking up soap and discharging it in the form of suds through the passage 40 and the flexible tube 76 to the nozzle 77. The amount of soap furnished can be regulated by adjustment of the valve 16.

After the dishes have been washed with soapy water, the valve 16 can be closed and water can be run through the apparatus for rinsing the dishes.

Since the casing 18 simply rests on the saddle 62, it will be seen that by swinging the yoke 54 from its position shown in Figure 2 in full lines to its position shown by dotted lines, the cap 48 can be released from the faucet and the entire apparatus, except the saddle 62 and its connecting brackets, can be lifted off the faucet and put away.

It is my purpose to cover by my claims any modifications which may be reasonably included within their scope and the scope of my invention.

I claim:

1. In a dish washing apparatus, a reservoir adapted to hold soap, a discharge nozzle, a water supply tube, means for supplying water to the nozzle from the water supply tube and taking up soap in the travel of the water, said means including a casing, a wheel therein in the path of the water and adapted to be driven by the moving water, a soap distributing wheel in said casing having teeth, and arranged to receive soap between its teeth, from the reservoir and to convey the soap into the path of the water after the water has left the first wheel, and means for operating the soap distributing wheel from the first wheel.

2. In a dish washing apparatus, a reservoir adapted to hold soap, a discharge nozzle, a water supply tube, means for supplying water to the nozzle from the water supply tube and taking up soap in the travel of the water, said means including a casing, a wheel therein in the path of the water and adapted to be driven by the moving water, and a toothed rotary member driven by the water wheel for receiving soap between its teeth in small amounts and conveying the soap into the path of the water between the first wheel and the nozzle.

3. In a dish washing apparatus, a reservoir adapted to hold soap, a discharge nozzle, a water supply tube, means for supplying water to the nozzle from the water supply tube and taking up soap in the travel of the water, said means including a casing having end closure plates and recesses adjacent the respective plates, a water wheel in one recess in the path of the water, a soap distributing wheel in the other recess having teeth with spaces between them for conveying soap in small quantities from the reservoir to the path of the water at a point between the water wheel and the nozzle, and a shaft for connecting the wheels.

FREDERICK W. KENT.

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