Mar. 5, 1929. T. G. MELISH 1,703,946

DISHWASHER

Filed Aug. 4, 1927

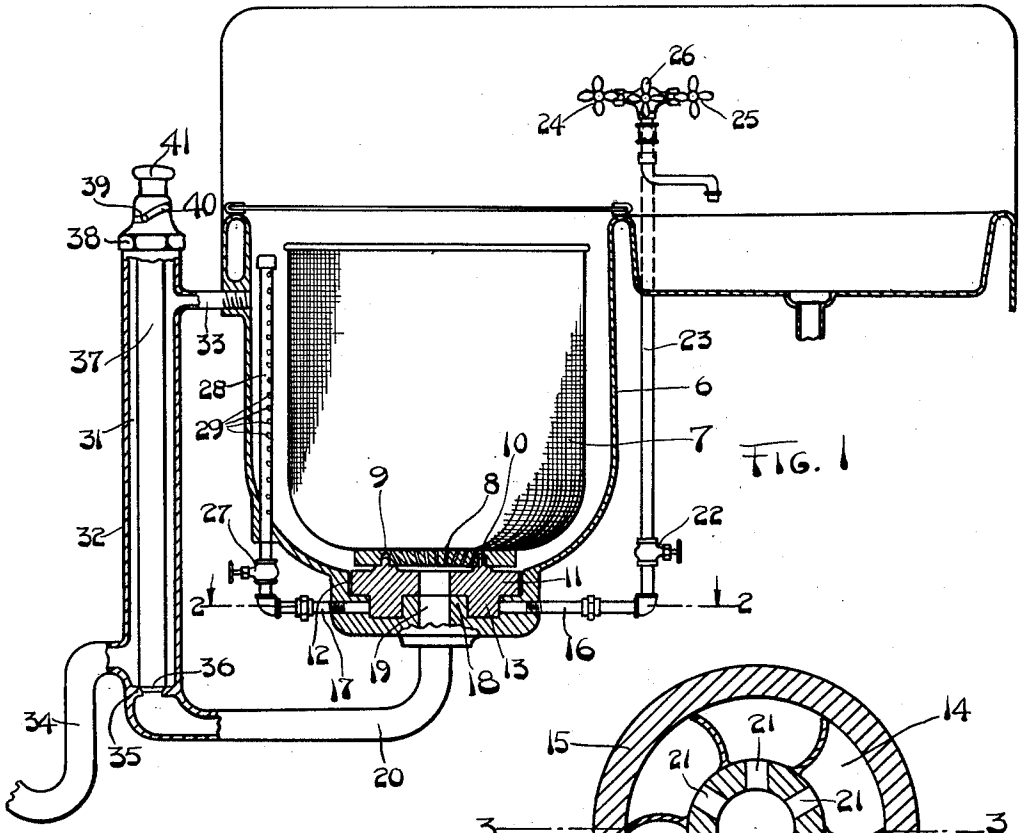


FIG. 1

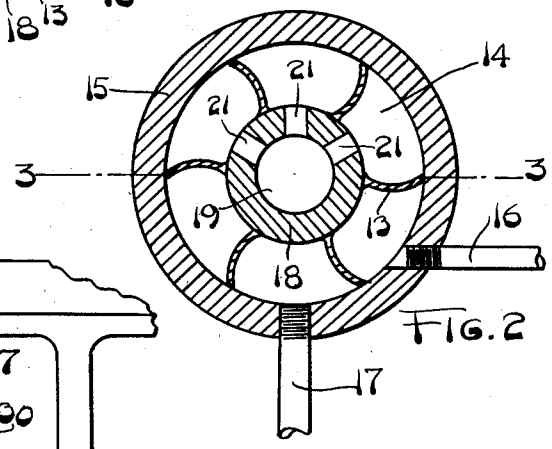


FIG. 2

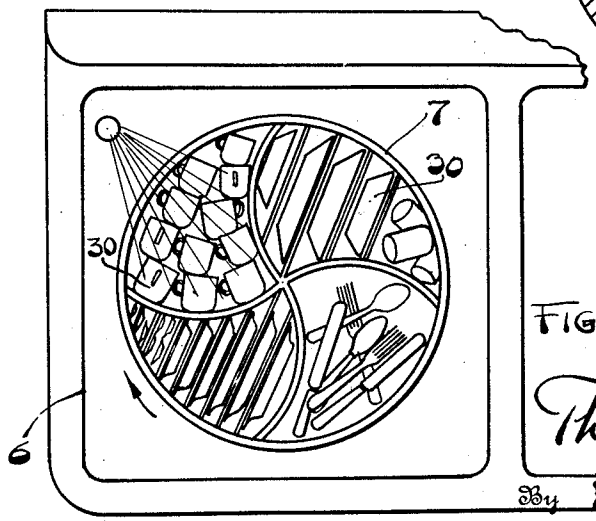


FIG. 3

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UNITED STATES PATENT OFFICE.

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DISHWASHER.

Application filed August 4, 1927. Serial No. 210,665.

This invention relates especially to a dish washer of the power type, which has for an object to use the water which is used as the cleansing agent, as the propelling agency or source of power by which the operating parts of the washer are moved.

A further object is to produce an improved washer which, although readily adaptable to portable construction, is particularly adaptable to be built into sinks as a fixture or built-in feature of the kitchen equipment.

An additional object is to produce an improved washer in which simplicity and reasonable cost of construction is combined with efficiency of operation in a structure which may be incorporated in either portable or fixture built forms.

These and other objects are attained in the dish washer which I have described in the following specification and which I have illustrated in the accompanying drawing, in which:

Fig. 1 is a sectional elevation of a sink equipped with a washer embodying my invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 upon a somewhat enlarged scale.

Fig. 3 is a plan view showing a washer such as I have illustrated in Fig. 1, the sink portion having been broken away.

In the preferred embodiment of my invention the sink is provided with a relatively deep basin 6 which contains the washer parts and which in itself constitutes the tub which holds the water used in washing the dishes. Within this tub is the dish receptacle or basket 7 which is built for rotation so as to hold and properly support the dishes in the presence of the water and contained cleansing elements. This basket is preferably of woven wire construction which is sufficiently substantial to withstand not only the weight but also the centrifugal force with which rotation of the basket will tend to throw the dishes toward and to hold them against its outside rim. This basket is mounted upon, woven upon or otherwise secured to a circular plate or disc 8 which is preferably quite plain except for holes 9 therein to receive pins 10 which extend upwardly from a rotating disc-like turbine wheel 11 in the bottom of the tub.

This turbine wheel is the propelling element by which rotation of the basket is secured. In the form I have shown, the disc 11 fits within a recess 12 in the bottom of the tub 6 and has a series of vanes 13 formed thereon, which fit nicely within a correspondingly shaped annular groove 14 in the bottom of the tub. In the outer wall 15 of the tub bottom surrounding the groove 14 in which the vanes 13 travel are located an inlet pipe 16 and an outlet pipe 17, while the inner wall 18 contains a central passage 19 which is the discharge passage leading to the drain pipe 20. In this wall 18 are formed the discharge ports 21 which are used at times during the washing operation.

In the water inlet pipe a valve 22 is provided for starting and stopping the operation of the turbine, a pipe 23 being connected therewith from suitable hot and cold water mixing connections 26 at the sink faucets 24 and 25. The outlet pipe 17 has a valve 27 which controls the starting and stopping of water flow in a spray pipe 28 located in the tub 6. Openings 29 in this pipe are so placed as to spray water onto the dishes 30 in the basket 7 as it is rotated, the direction of rotation being preferably against the spray, although this may not be necessary. Suitably placed with relation to the tub is a combined discharge valve and overflow device 31 which has an outer cylindrical shell 32 to which the overflow pipe 33 is connected at its upper end and a suitable trap 34 at its lower end. A valve seat 35 between drain pipe 20 and trap 34 permits a valve 36 to be seated thereon to permit the tub to be emptied. This valve is at the lower end of a rod or plunger 37 within the shell 32 and which extends through a cap 38 where a pin 39 and slot 40 control the seating and unseating movement by means of a knob 41.

The arrangement of the dishes within the basket 7 may be made as most convenient and in accordance with especially designed braces or supports within trays contained within the basket, all of which is of secondary importance inasmuch as it does not partake of the features of the invention. Another feature which is but incidental to the salient features of the invention lies in the disclosed location and relation of the overflow discharge device 31. This would preferably be better placed and the trap more advantageously located in other and less conspicuous positions than as shown, but I have so disclosed these elements in this manner because of the advantages derived

through such a somewhat diagrammatic arrangement. A feature also subject to modification is the manner in which hot, cold or tempered water may be fed to the washer. Although I have shown such an arrangement whereby this may be accomplished, any other means may be taken to bring about the feeding of hot, cold or tempered water in the desired amounts to the washer. There has been but one spray pipe disclosed, and its direction of water projection has been shown as toward the oncoming dishes in the operation of dish basket rotation, but it is as convenient to locate this pipe in any other position within the tub or to provide for any other agency performing the same functions within the tub.

In using the washer the first operation will be to fill the tub properly with dishes to be cleaned. This having been done, the next step is to close valve 36. Following this, valve 27 is opened and the desired temperature of water is allowed to flow through pipe 16 upon opening valve 22 to the desired amount. This causes such a discharge from pipe 16 as to propel the turbine by impinging against its vanes 13, thus rotating the basket of dishes. The discharge from the turbine, because of valve 36 having been closed, is forced to pass through pipes 17 and 28 and to be projected onto the dishes in the basket which has by this time started to rotate. Perhaps the user has a desire to use a cleansing agency in the water. This may be done by sifting soap powder or flakes over the dishes in the tub and allowing the resultant agitation of the rotating basket to form the necessary suds. Because no escape of water from the tub is permitted at this time, the tub gradually fills until it overflows through pipe 33 and shell 32 into trap 34. This may be continued, with the basket and its load under rotation the entire time and completely submerged, until it has been thought sufficient to loosen the dirt adhering to the dishes.

The valve 36 is now opened and the dirty water allowed to drain away, the turbine being operated the entire time. Of course the water from the turbine has two exits at this time. One of these is through ports 21 while the other is through spray pipe 28. As a result the basket is rotated while the spray causes the dishes to be rinsed. The rinse water is carried away through the drain 20 as fast as it is delivered. Thus, when the dishes are thoroughly rinsed, the valve 27 is closed and the turbine is allowed to operate to rotate the basket. This, due to centrifugal force causes the loose water on the dishes to be thrown therefrom while the remaining heat which was created by the use of hot rinse water, quickly dries the remaining moisture from the dishes. Closing of valve 22 then stops the basket rotation so that the dishes may be removed. Removal of basket 7 will permit of its being thoroughly cleaned and also allow the turbine disc to be lifted for cleaning.

Having thus described my invention what I claim is:

1. A dish washer comprising a tub, a dish receptacle of open construction mounted for rotation in the tub, a water motor to rotate the receptacle, a drain for the tub and motor, a spray device to project water onto the dishes in the rotating receptacle, and manually controlled means functioning the delivery of motor discharge water directly to said device or drain.

2. A dish washer comprising a tub, a rotatable dish receptacle within the tub, a water motor to drive the receptacle, a drain communicating with the tub and motor, a spray pipe to project water onto the dishes in the receptacle, and manually controlled means directing the discharge of water from said motor directly to said drain or indirectly through said pipe and tub to said drain.

3. A dish washer comprising a tub, a dish receptacle of open construction mounted for rotation in the tub, a water motor to rotate the receptacle, a drain for the tub and motor, a spray device to project water onto the dishes in the rotating receptacle, means functioning the delivery of motor discharge water directly to said device or drain, and a valve opening or closing the drain during operation of the spray device to permit filling or emptying of the tub during rotation of the receptacle.

4. A dish washer comprising a tub, a rotatable dish receptacle within the tub, a water motor to drive the receptacle, a drain communicating with the tub and the motor, a spray pipe to project water onto the dishes in the receptacle, manually controlled means directing the discharge of water from said motor directly to said drain or indirectly thereto through said pipe and tub to said drain, and a valve opening or closing the drain during operation of the spray device to permit filling or emptying of the tub during rotation of the receptacle.

In testimony whereof I have hereunto affixed my signature.

THOMAS G. MELISH.