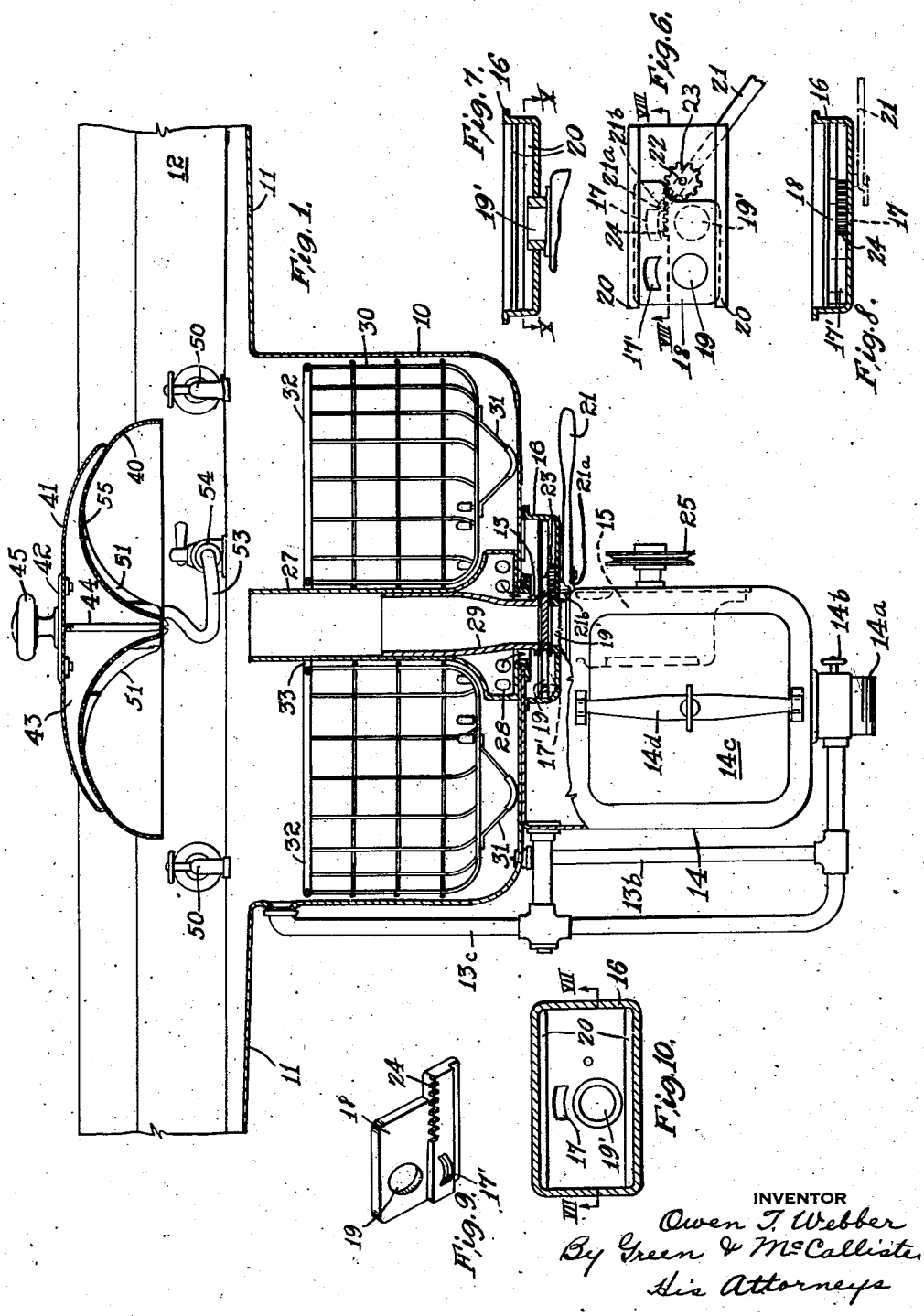
Oct. 22, 1940. O. T. WEBBER 2,218,942

SINK DISHWASHER

Filed May 23, 1938 3 Sheets-Sheet 1



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SINK DISHWASHER

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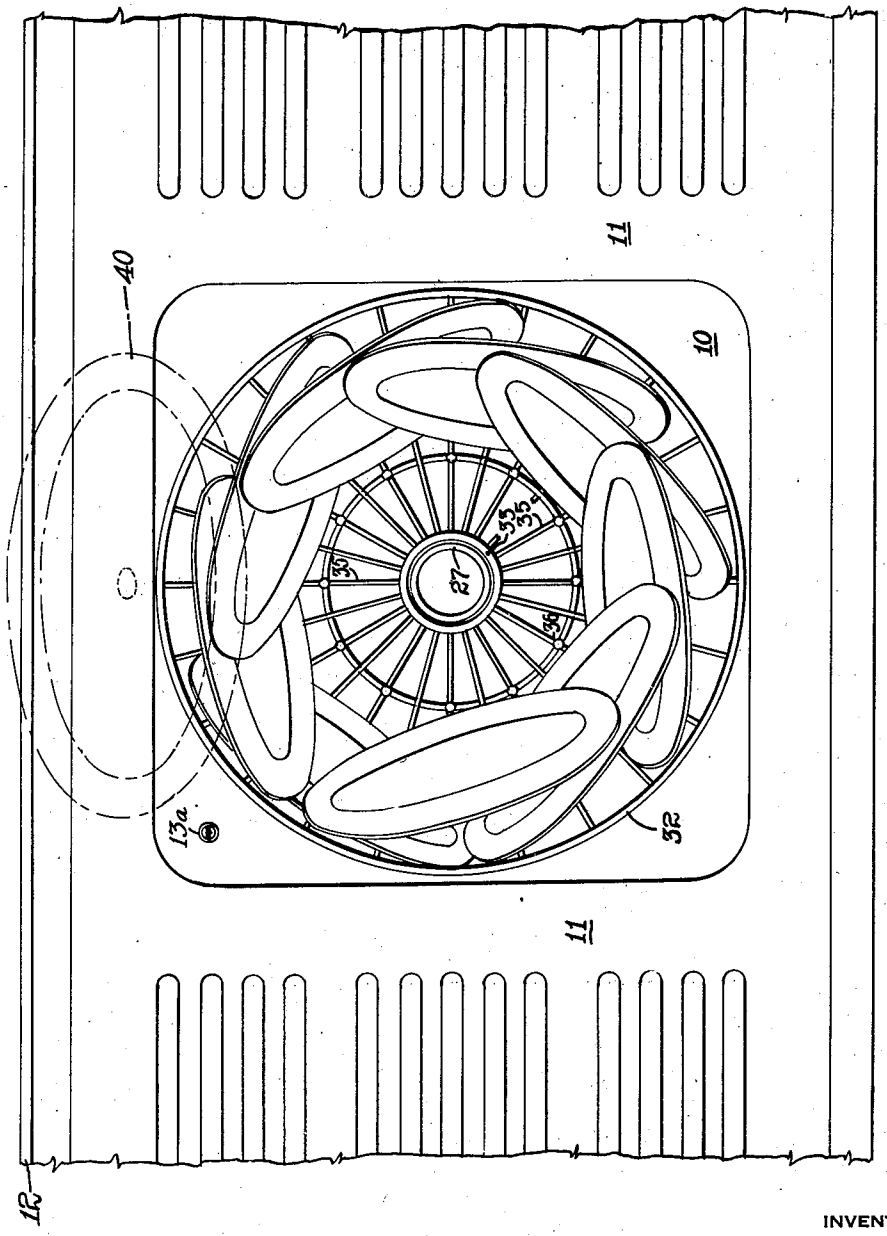


Fig. 2.

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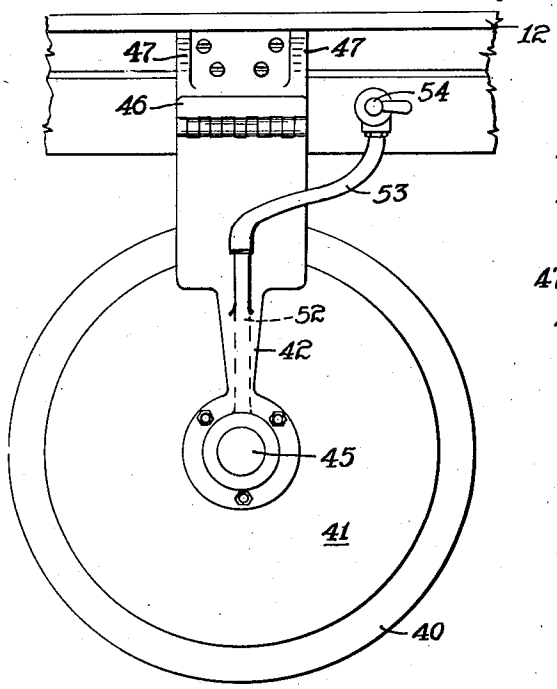


Fig. 3.

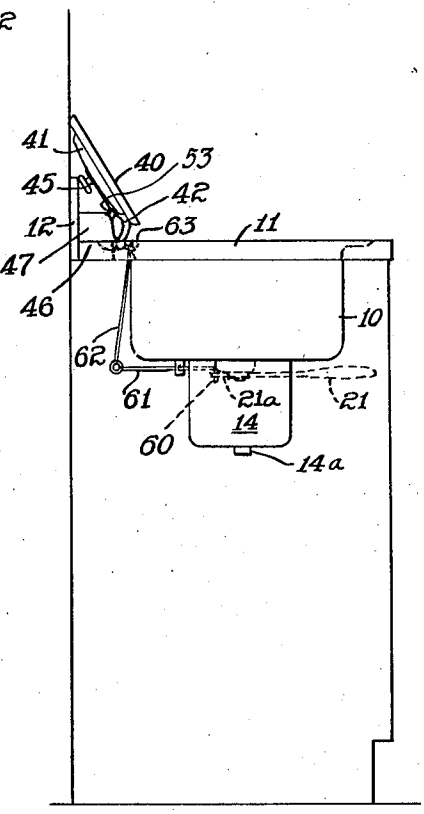


Fig. 5

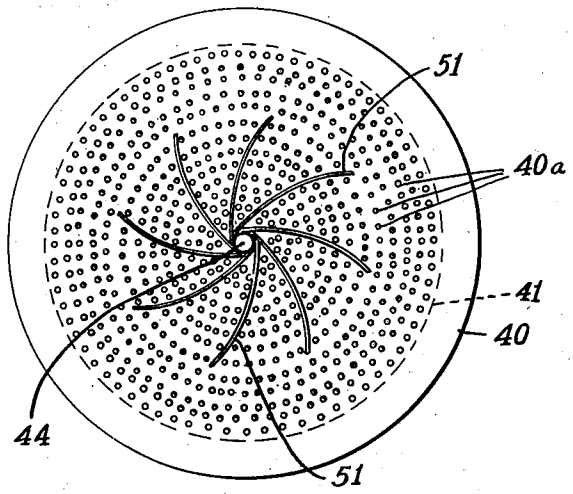


Fig. 4.

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Patented Oct. 22, 1940 2,218,942

UNITED STATES PATENT OFFICE

2,218,942

SINK DISHWASHER

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Application May 23, 1938, Serial No. 209,505

7 Claims. (Cl. 141—9)

This invention relates to apparatus for washing dishes, and more particularly to improvements in a combined sink and dishwasher.

One object of this invention is to provide means for converting an ordinary kitchen sink into a dishwasher. This object is attained by removably attaching to the bottom of the sink a stand pipe communicating with the outlet of the pump through which wash water withdrawn from the sink is forced and directed against a deflecting canopy which is attached to and overhangs the sink when the sink is being used as a dishwasher; the washing or scrubbing action being secured by so shaping the deflecting canopy that it imparts a substantially spiral motion to the wash water and directs the same onto the dishes within the sink.

Another object of this invention is to provide a water deflecting canopy adapted to be pivoted above a sink and which may be readily turned into a position overhanging the sink for the purpose of deflecting wash water, directed thereagainst, over the dishes placed in the sink bowl, the canopy being perforated and with the space immediately thereabove connected to a clear water supply whereby water from such supply may be sprayed over the washed dishes.

A further object is to provide means for converting an ordinary kitchen sink into a dishwasher, which is economical to manufacture, simple to assemble and operate and which will not interfere with the ordinary function of the sink, since all the dishwater parts may be either entirely removed from the sink or moved to an out-of-the-way position.

These and other objects which will hereinafter be made apparent to those skilled in this particular art are accomplished by means of this invention, one embodiment of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical section taken on a longitudinal plane through the center of a sink having apparatus associated therewith for converting the sink into a dishwasher in accordance with my invention.

Fig. 2 is a top plan view of the sink shown in Fig. 1 with the deflector in its upper position and showing the method of arranging the dishes in the basket;

Fig. 3 is a top plan view of the deflector;

Fig. 4 is a bottom view of the deflector shown in Fig. 3;

Fig. 5 is a reduced view in side elevation of the sink with a deflector in the position it occupies when the sink is being used in the ordinary manner; and

Fig. 6 is a detailed view showing the valve for the pump outlet and the operating mechanism therefor.

Fig. 7 is a sectional view taken on line VII—VII of Fig. 10;

Fig. 8 is a sectional view taken on line VIII—VIII of Fig. 6;

Fig. 9 is a perspective view of the valve member shown in Fig. 6; and

Fig. 10 is a sectional view taken on line X—X of Fig. 7.

Referring to the drawings in detail, 10 represents the bowl of a kitchen sink fabricated from sheet metal which is preferably of a non-corrosive tube such as stainless steel. The sink has a drainboard 11 on each side thereof and a riser or splash back 12 at the rear and which extends the full length of the sink. The sink bowl 10 is of the usual standard depth and is provided with the usual centrally located drain 13 in the bottom opening thereof.

To adapt a sink of this general character for use as a mechanical dishwasher, I secure to the bottom of the sink bowl a tank 14 having a centrifugal pump 15 mounted therein. The inlet side of the pump is in open communication with the tank 14 and the outlet side thereof is connected to a housing 16 which is secured to the bottom of the sink below opening 13. The housing 16 has a port 17 for connecting the housing with the tank 14 and communication between the housing and the tank is controlled by a slide valve 18 having a port 17' therein movable into and out of registry with the port 17 between housing 16 and the tank. The bottom of the tank 14 is also connnected to a suitable drain 14a having a valve 14b therein for closing the drain when dishes are to be washed and the tank is to be filled with water. Communication between the outlet of the pump and the housing 16 is also controlled by the slide valve 18 which has an opening 19 therein movable into and out of registry with the outlet 19' of the pump. Valve 18 is slidably mounted in spaced guides 20 secured in position within the housing 16, and said valve is moved back and forth by an operating handle or lever 21. This lever is attached to a stub shaft 22 extending through the bottom of the housing and which is provided with a pinion 23 which meshes with rack teeth 24 formed on slide valve 18. The shaft of pump 15 has a pulley 25 secured thereto and which

is driven from a suitable motor, such as an electric source of power (not shown).

A tube or standpipe 27 is removably mounted in the opening 13 of the sink bowl 10 in any suitable manner. The lower end of the tube or standpipe 27 is flared outwardly and is provided with perforations 28 which permit water to flow from the sink bowl to the housing 16. Attached to the inner wall of the standpipe 27 is a tube 29 of smaller diameter than the diameter of the opening 13, and which is spaced from the flared portion of the standpipe and is of such a length that when the standpipe is positioned in the opening 13 the lower end of the tube 29 seats on the top of the slide valve 18.

An openwork or wire basket 30 surrounds the standpipe 27 and is provided with rubber covered legs 31 which support the basket in spaced relation above the bottom of the sink bowl 10. The top of the basket 30 is formed of two concentric rings 32—33 which are covered with a suitable material to prevent and reduce breakage of the dishes placed therein. The inner ring 33 is of somewhat larger diameter than the standpipe 27 so that it is free to slide thereover. The bottom wires 35 of the basket extend radially and each is provided with an upstanding lug 36 covered with rubber or some other soft material. These lugs act as stops or bumpers and permit larger dishes, such as plates, to be arranged in the basket in a manner so that the dishes simulate the chords of a circle.

Overhanging the sink bowl is a water deflecting device comprising an annular deflector 40 having both its center and its edge pressed downwardly and partially covered by an annular plate-like member 41 of substantially less diameter than the diameter of the deflector 41. Member 41 is bolted to an arm 42. The member 41 is of substantially concave shape and a space 43 is provided between the deflector 40 and the plate 41, the purpose of which will hereinafter be described. Deflector 40 is held in engagement with the plate 41 by a bolt 44 which extends through an opening in the depressed central portion of the deflector and is threaded into an insulated handle or knob 45 on the top of the arm 42. The rear end of the arm 42 is hinged to a bracket 46 secured to the back rim or fillet of the sink and the hinge is so constructed that the water deflecting member 40 may be turned from a substantially horizontal position where it overhangs the sink bowl to a substantially upright position with the arm 42 resting against stops 47 on the bracket 46 (Fig. 5).

When the sink is to be used as a dishwasher the valve 14b is closed and the standpipe 27 is secured within opening 13. The basket 30 is then placed in position where it surrounds standpipe 27 and is loaded with soiled dishes. Water is introduced into the sink through the faucets 50, one of which is connected to the hot water supply and the other to the cold water supply. The water passes through the perforations 28 in the flared portion of standpipe 27, into housing 16. After sufficient washing water has been introduced into the sink bowl to fill tank 14, (the sink proper being empty of water during the dishwashing operation), sufficient soap is added to produce a thick suds. The deflector 40 is turned to a substantially horizontal position overhanging the sink. This movement of the deflector releases the operating handle 21 (as will be hereinafter described) and permits the valve member 18 to be moved so as to position its opening 19 over the outlet of the pump 15 and brings its opening 17' into registry with the port 17 in the housing 16 which permits the water in the sink to pass into the tank. The pump 15 is then started and wash water is forced upwardly through the tube 29 and standpipe 27 and directed against the deflector 40. The course of the water striking the deflector 40 is changed thereby and directed over the dishes in the basket 30. The washing water after leaving the dishes flows back into the tank 14 where it is again picked up by the pump and forced against the deflector 40.

In order to secure the desired washing or scrubbing action, a series of spirally arranged and tapered vanes 51 are provided on the bottom of the deflector 40 which impart a twist or spiral motion to the water so that it strikes the dishes in the basket at the proper desired angle.

In order to rinse the dishes after being subjected to the washing action, clear water is introduced into the chamber 43 between the plate 41 and the deflector 40 and sprayed over the dishes in the basket 30 through perforations 40a in the deflector plate 40. Water is delivered to the chamber 43 through a pipe 52 formed integrally with the arm 42 which opens, at one end, into the chamber 43 and is connected at the other end to a flexible tube 53 leading to faucet 54 connected to a suitable source of clear water. Thus, the perforated deflector plate 40 acts as a spray head for directing the clear water in the chamber 43 over the dishes in the basket. After the dishes have been washed and rinsed, the valve 14b is opened and the wash water is drained from the tank and discharged through the drain pipe 14a.

After the dishes have been washed, the deflector 40 is raised from its horizontal position to a substantially upright position and the basket 30 containing the clean dishes is lifted out of the sink bowl after which the standpipe 27 is removed, and the valve 18 is closed, thus making the sink available for use in the ordinary manner. The closing of valve member 18 covers the port between the housing and tank and the outlet of the pump and prevents food particles and the like from passing into the tank and pump and thus clogging the pump. Such food particles as may get into the tank during the dishwashing process may be prevented from entering the inlet side of the pump by covering the same with a wire mesh screen of suitable size (none shown) and in order that the food particles, etc., collected in the tank 14 may be readily removed and the tank cleaned, one side of the tank is provided with a removable cover 14c which is held in place on the tank by a locking device 14d.

When the sink is being used in the ordinary manner and valve 18 is closed, water therein may be discharged through a suitable outlet opening 13a formed in one corner of the sink. This outlet orifice is connected to a drain pipe 13b which connects it with the overflow pipe 13c for the tank 14 and sink 10 and which leads to the drain pipe 14a. Opening 13a is of ordinary construction, as shown, and is closed by the usual rubber valve plug when the sink is being used as a dishwasher.

In order that the valve 18 may be locked against accidental displacement when the deflector 40 is in its raised position, I provide an extension 21a on the lever or operating handle 21 which has an opening 21b therein for receiving the down-

wardly projecting portion 60 of an L-shaped rod 61 which is pivoted on the bottom of the sink. The outer end of the rod 61 is hinged to one end of a rod 62 having its other end hinged to a projection 63 on the arm 42 and extending at right angles to that arm. From this construction, it is apparent that when the deflector 40 is turned to an upright position as shown in Fig. 5 the rod 62 is raised, thus turning the rod 61 about its pivot and moving the portion 60 downwardly into the opening 21b of the operating handle 21.

From the foregoing description of my invention, it is apparent that I have provided a sink which, if desired, may be readily converted into a mechanical dishwasher that is extremely simple to assemble and easy to operate, has few parts to get out of order, and since the operating lever 21 is locked in the position closing the valve 18 when the deflector 40 is raised, is positive in operation and will not deliver water if the motor should be accidentally turned on when the deflector is raised.

While I have described one embodiment of my invention, it is apparent from the foregoing description that certain changes, modifications, additions, omissions and subtractions may be made therein without departing from the spirit of my invention or the scope of the appended claims.

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

1. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member removably positioned in said opening, a dish-supporting basket surrounding said tubular member, means for introducing wash water into said sink, means for withdrawing wash water from said sink and for forcing the same through said tubular member, a generally concave deflector pivoted to said sink and against which the water passing through said member impinges for directing the water over the dishes in said basket, and means on said deflector for imparting a twist to the water impinging thereagainst.

2. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member removably positioned in said opening, a dish-supporting basket surrounding said tubular member, means for introducing wash water into said sink, means for withdrawing wash water from said sink and for forcing the same through said tubular member, a generally concave perforated deflector head pivoted to said sink and against which the water passing through said member impinges, for directing the water over the dishes in said basket, and means for delivering clear water through said perforated deflector to spray rinse water over the dishes in said basket.

3. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member removably positioned in said opening, a dish-supporting basket surrounding said tubular member, a tank communicating with said sink and having a drain leading therefrom, a valve in said drain, a pump having its inlet side opening into said tank and its outlet side communicating with said tubular member, means for driving said pump to force water from said tank through said member, a generally concave deflector pivoted to and overhanging said sink and against which the water passing through said member impinges for directing such water over the dishes in said basket, and spirally extending vanes on said deflector for imparting a twist to the water striking such deflector.

4. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member removably positioned in said opening, a dish-supporting basket surrounding said tubular member, a tank communicating with said sink and having a drain leading therefrom, a valve in said drain, a pump having its inlet side opening into said tank and its outlet side communicating with said tubular member, means for driving said pump to force water from said tank through said member, a generally concave perforated deflector pivoted to and overhanging said sink and against which the water passing through said member impinges, for directing the water over the dishes in said basket, means on said deflector for imparting a twist to the water impinging thereagainst, and means for delivering clear water through said perforated deflector to rinse the dishes in said basket.

5. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member having an outwardly flared perforated bottom removably positioned in said opening, an inner tube secured to said member and spaced from the flared bottom thereof, a tank communicating with the flared bottom of said member, a pump having its inlet opening into said tank and its outlet communicating with said inner tube for withdrawing water from said tank and forcing the same upwardly through said inner tube and said member, and a deflector overhanging said sink for directing the water issuing from said member over said sink.

6. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member having an outwardly flared perforated bottom removably positioned in said opening, an inner tube secured to said member and spaced from the flared bottom thereof, a tank communicating with the flared bottom of said member, a pump having its inlet opening into said tank and its outlet communicating with said inner tube for withdrawing water from said tank and forcing the same upwardly through said inner tube and said member, a deflector overhanging said sink for directing the water issuing from said member over said sink, and means on said deflector for imparting a twist to the water delivered thereagainst.

7. Apparatus for washing dishes, comprising a sink having an opening in the bottom thereof, a tubular member removably positioned in said opening, a dish-supporting basket surrounding said tubular member, a tank communicating with said sink and having a drain leading therefrom, a valve in said drain, a pump having its inlet side opening into said tank and its outlet side communicating with said tubular member, means for driving said pump to force water from said tank through said member, a generally concave perforated deflector pivoted to and overhanging said sink and against which the water passing through said member impinges for directing the water over the dishes in said basket, and means for delivering clear water through said perforated deflector to rinse the dishes in said basket.

OWEN T. WEBBER.

CERTIFICATE OF CORRECTION.

Patent No. 2,218,942. October 22, 1940.

OWEN T. WEBBER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, first column, line 1, for the word "motor" read --source of power--; line 2, for "source of power" read --motor--; and second column, line 2, for "brings" read --bring--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 19th day of November, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.