

V. MONTALTO.  
 DISH WASHING MACHINE.  
 APPLICATION FILED APR. 24, 1918.

1,298,544.

Patented Mar. 25, 1919.

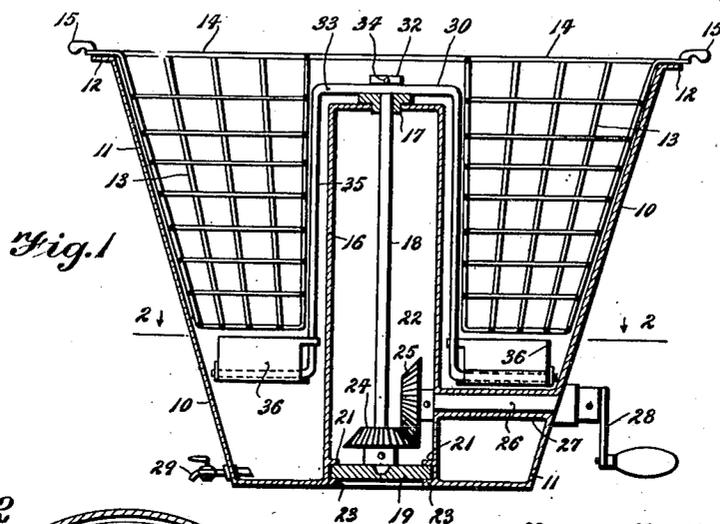


Fig. 1

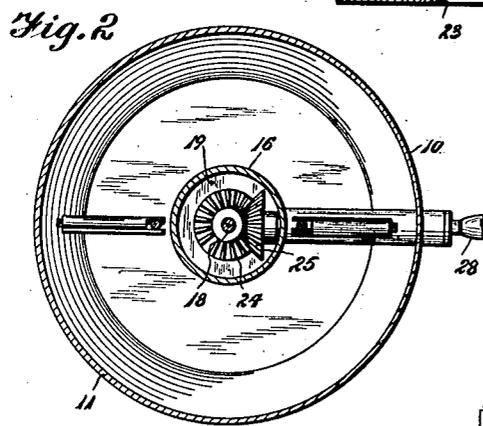


Fig. 2

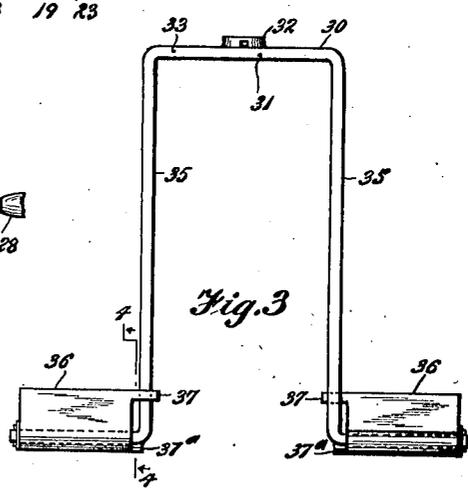


Fig. 3

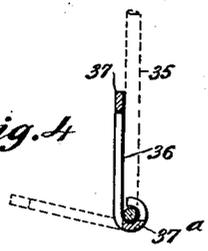


Fig. 4

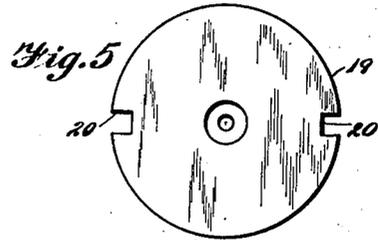


Fig. 5

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# UNITED STATES PATENT OFFICE.

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## DISH-WASHING MACHINE.

1,298,544.

Specification of Letters Patent.

Patented Mar. 25, 1919.

Application filed April 24, 1918. Serial No. 230,516.

*To all whom it may concern:*

Be it known that I, VITO MONTALTO, a subject of the King of Italy, residing at 114 S. 8th street, Allentown, in the county of Lehigh and State of Pennsylvania, have invented new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

The invention relates to dish-washing machinery, and has for an object to provide a dish-washing machine for effectively washing or cleansing dishes of all kinds, the device being designed to produce a mechanism of extreme simplicity in construction and arrangement, which can be easily operated, consists of few parts, and in which the dishes will be safely disposed during the washing operation, and will be hygienically cleaned, without necessitating the emersion of the hands of the operator into the washing or cleaning fluid.

Among other features, the invention comprehends a dish-washing machine in which the dishes are arranged in a suitable holder or tray that can be disposed into the casing or body of the machine, whereby the dishes will be operated upon by a cleaning fluid, and after cleaning, the dishes can be separately removed, or the tray can be bodily removed and set aside to provide what may be termed a drip tray, so that the surplus fluid on the dishes can easily drip therefrom, and effect a quicker drying of the dishes.

Still further, the invention comprehends a machine in which the parts are so arranged to cooperate, that an effective washing of the dishes will be accomplished, and the various parts of the machine can be easily removed for the purpose of cleaning or repairing, without necessitating the use of skilled labor.

In the further disclosure of the invention, reference is to be had to the accompanying drawing, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a vertical sectional view taken through the dish-washing machine.

Fig. 2 is a horizontal sectional view taken on the line 2—2 in Fig. 1.

Fig. 3 is a detail elevation of the impeller.

Fig. 4 is a vertical sectional view taken through one of the wings of the impeller, and on the line 4—4 in Fig. 3, and

Fig. 5 is a plan view of the lower bearing. Referring more particularly to the views,

the dish-washing machine in its entirety is indicated by the numeral 10, and consists of a casing 11 of an inverted truncated form, the sides of which flare outwardly toward the top, with the upper end of the casing terminating in a peripheral rim 12, to permit of the ready disposition of a tray 13, made of suitable wire or the like, into the casing 11 with the peripheral flange 14 of the tray resting upon the rim 12, the tray furthermore being provided with suitable handles 15. The casing or as it may be better termed, the pan, has a circular central upstanding portion 16 of a cylindrical nature which forms an integral part of the pan, the latter being preferably stamped out of sheet metal or made in any other suitable manner, and journaled in the upper cross portion of the upstanding portion 16 at a point 17, is a vertically disposed shaft 18, the lower end of which is journaled in a disk 19, which is preferably provided with opposed cut-out portions 20. These cut-out portions pass over lugs 21 projecting into a compartment 22 formed by the upstanding cylindrical portion 16, and the disk is adapted to repose upon a lower rim or ledge 23, so that when the disk is dropped into place with the lugs extending into the cut-out portions 20, and then given a half turn, the disk will be locked in position to form an effective bearing and support for the shaft 18. A beveled wheel 24 is keyed to the lower part of the shaft 18, and meshes with a second beveled wheel 25 keyed to the inner end of a horizontally extending driven shaft 26, which is journaled in a collar 27 extending horizontally through the lower part of the pan, and which may be formed an integral part of the pan construction, the free end of the shaft 26 carrying a suitable crank 28. It will be apparent that rotation of the crank 28 will impart rotation to the shaft 26, and thus rotate the beveled wheel 25 which, meshing with the beveled wheel 24 will impart rotation to the shaft 18. For draining the pan 11 a suitable faucet or drip cock 29 is arranged near the bottom thereof, as will be clearly seen by referring to the views.

Disposed in the pan to rotate therein is an impeller 30, consisting in detail of an inverted U-shaped yoke 31 having a central bearing 32 and opposed extending horizontal arms 33, with the bearing 32 arranged to have the shaft 18 pass therethrough, a screw 34 being arranged to pass through the bear-

ing to engage the shaft and rigidly key or hold the impeller yoke to the upper extended end of the shaft. The side arms or portions 35 of the yoke, of course, clear the upstanding portion 16 of the pan, and extend down the sides thereof at the points where the arms 33 are formed, and mounted to swing loosely on the arms 33 are wings 36, said wings of course being disposed below the lowermost portion of the tray 13, when the tray is in position, as will be seen by referring to Fig. 1. Each wing is formed of a single piece of sheet metal having its lower end curled around to loosely encircle the arm, and the wing furthermore, has a projection or lip 37 which extends inwardly beyond the sides or vertical portions 35 of the yoke, a second supplementary projection or lip 37<sup>a</sup> being formed on each wing to limit the downward swinging movement thereof, by having the supplementary lip engage the side arm of the yoke.

Now it will be seen that when the device is arranged as shown in Fig. 1, and it is desired to wash a quantity of dishes, the tray 13 is disposed in the machine, either before or after the cleaning fluid has been poured into the pan, and which cleaning fluid may consist of hot water, or water and some kind of cleaning compound. The dishes may be placed in the tray prior to placing the tray in the pan, or the dishes can separately be disposed in the tray after it has been placed in the pan. It will now be seen that when rotation is imparted to the shaft 18 through the medium of the crank mechanism described, the yoke 31 will be rotated around the cylindrical upstanding portion of the pan, and by having the projecting lips 37 adapted to bear against opposed portions of the side arms 35 of the yoke, the wings will be held in an upstanding position to act upon the fluid in the pan and impel the same around in the pan, so that the fluid will be driven against and around the dishes in the tray, thus washing the foreign substances therefrom. It will be seen that by rapidly operating the device, an effective current will be maintained in the pan to force the cleaning fluid forcibly against the faces of the dishes to remove the foreign substances, and that the entire operation can be accomplished without necessitating the emersion of the hands of the operator into the pan or the cleaning fluid. The tray can now be bodily removed with the dishes and set aside to allow the surplus cleaning fluid on the dishes to drip therefrom, or the dishes can be separately removed, if desired, and after this has been accomplished, the cleaning fluid and the foreign matter in the pan can be easily drained therefrom through the cock 29.

It will be particularly noted that in the operation of the device when rotation is imparted to the yoke, the wings will be in an upstanding position, with the lips 37 abutting against the sides of the yoke so as to hold the wings upwardly, and thus the fluid in the pan will be impelled around the wings and create a strong current against the faces of the dishes, and should the speed of the current become greater than the rotation of the yoke, the wings will of course swing downwardly and will be limited in their downward movement by the supplementary lips 37<sup>a</sup>, so that at the moment the speed of rotation of the water in the pan becomes less than the speed of rotation of the yoke or impeller, the wings will be immediately raised again by the action of the water or fluid and reassume their vertical positions.

It will be seen that the various parts of my device are simple in construction, and that the entire device consists of few parts that are so arranged that the device can be practically taken apart in a very short space of time for the purpose of cleaning, or for purposes of repair.

Although I have shown a particular form of my invention in the drawings, and described a specific form of device in the specification, it will be understood that I do not limit myself to the precise construction shown, and that various slight changes may be made from the construction shown without departing from the spirit of the invention, the scope of which is defined in the appended claims.

I claim:

1. A washing machine comprising a receptacle, an agitator therein, wings pivoted on the agitator and a stop for holding the wings vertically and at right angles to the current set up by the agitator when the current is slower than the movement of the agitator, and for permitting the wings to assume a horizontal position when the current is more rapid than the rotation of the agitator.

2. A washing machine comprising a receptacle, an agitator therein consisting of a yoke member of U shape having its free ends bent at right angles, wings of flat shape having their lower edges pivoted on said bent ends, a projection on one end of each wing adapted to contact with a part of the yoke member to hold the wing in a vertical position when the rotary movement of the agitator is more rapid than the current set up thereby, said wing assuming a horizontal position when the current becomes faster than the movement of the agitator and means for actuating the agitator.

In testimony whereof I affix my signature.

VITO MONTALTO.