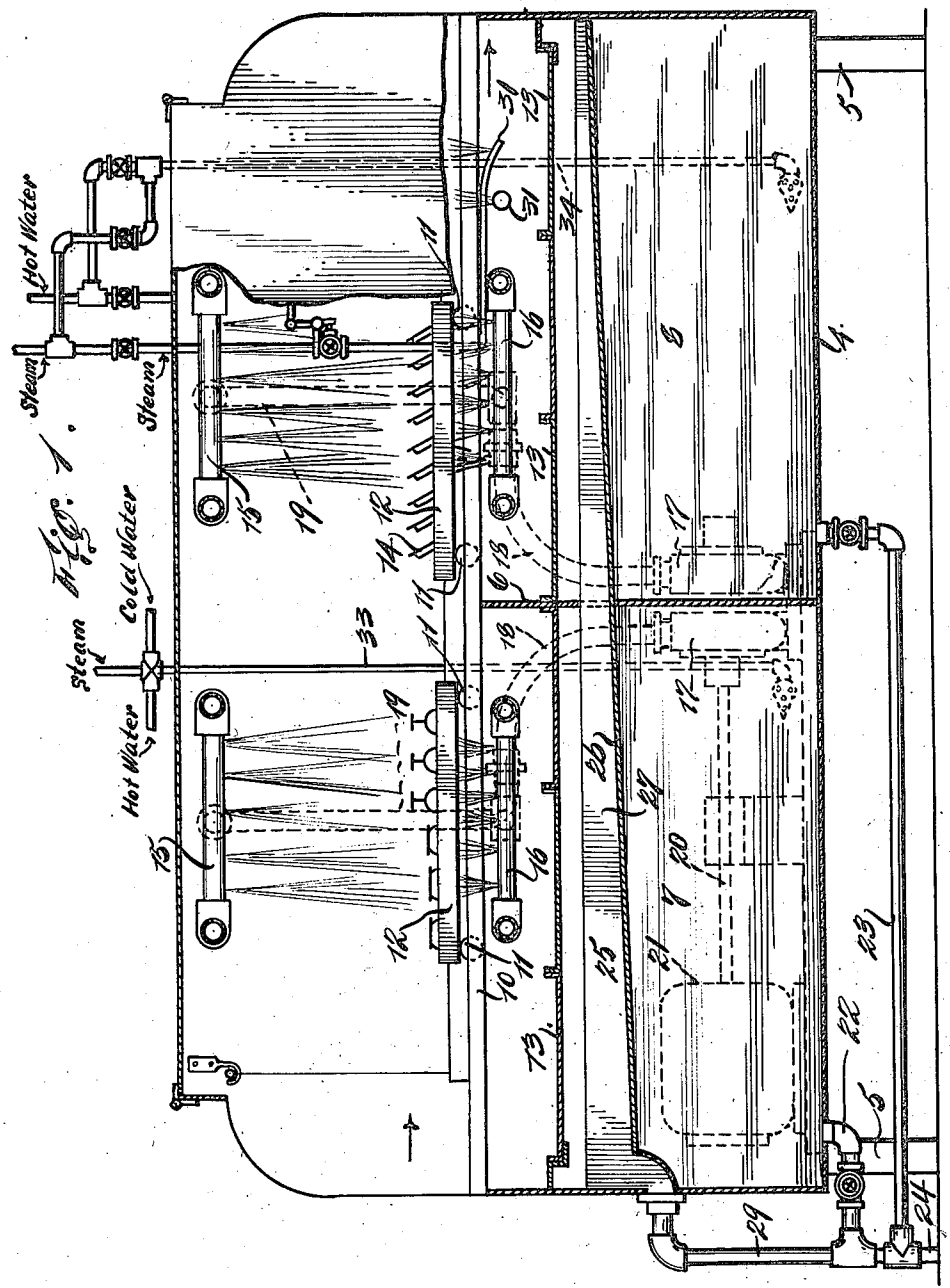
Sept. 16, 1924. 1,508,828

J. F. WHOLEY

WASHING MACHINE

Filed July 14, 1922 2 Sheets-Sheet 1



INVENTOR
John F. Wholey
BY Edwards & Kick
ATTORNEYS.

Sept. 16, 1924. 1,508,828

J. F. WHOLEY

WASHING MACHINE

Filed July 14, 1922 2 Sheets-Sheet 2

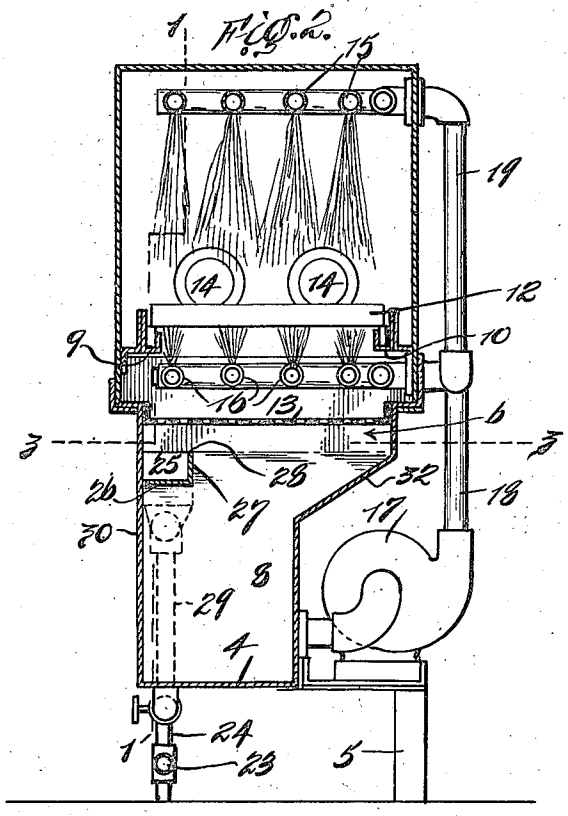


Fig. 2.

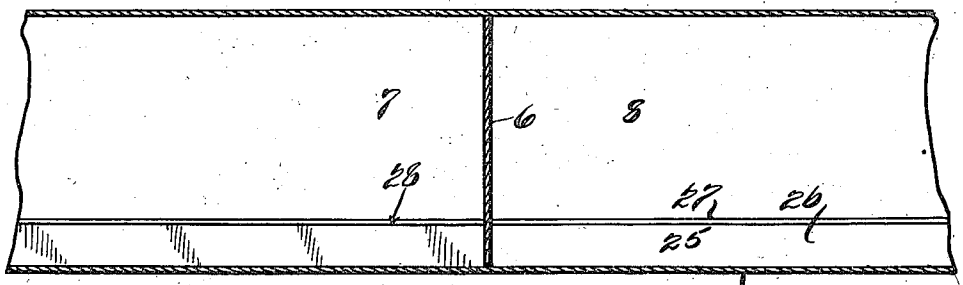


Fig. 3.

INVENTOR
John F. Wholey
BY Edmonds & Keck
ATTORNEYS.

Patented Sept. 16, 1924. 1,508,828

UNITED STATES PATENT OFFICE.

JOHN F. WHOLEY, OF NEW YORK, N. Y., ASSIGNOR TO FASPRAY CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

WASHING MACHINE.

Application filed July 14, 1922. Serial No. 574,865.

To all whom it may concern:

Be it known that I, JOHN F. WHOLEY, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Washing Machines, of which the following is a specification, reference being made to the accompanying drawings, forming a part thereof.

My invention relates more particularly to improvements in dish-washing machines in which crockery, glassware and the like are thoroughly and rapidly cleansed in large quantities, such machines being used particularly in hotels and restaurants.

The objects of my invention are, among other things, to provide a washing machine of this type whereby the cleansing of the dishes may be readily and rapidly effected, followed by a complete rinsing in a separate compartment without any splashing or overflow of either the separate washing or rinsing waters from their respective compartments which should be maintained at relatively different temperatures for the most efficient operation.

My invention further provides means for the automatic removal of the floating scum or grease on the surface of the water in the separate compartments without materially weakening the water in the washing compartment which usually contains a fat or grease solvent, soap solution or water softening ingredient to facilitate the initial dish-washing, it being very advantageous to maintain the strength of the soap solution substantially uniform in the washing compartment and at a temperature much lower than in the rinsing compartment. A further object is to provide in the separate compartments means whereby cross currents of the surface waters may be automatically set up by the spray manifolds of each compartment to carry the floating scum or grease toward the common overflow trough provided for removing such floating matter from the several compartments, preferably arranged along one side of the machine; there is also a more or less constant overflow in the rinsing compartment because of the final hot water spray with which my machine is equipped which overflow provides a continuous stream of water in the overflow trough flowing by the washing compartment toward the sewer.

With these and other objects in view, the invention comprises the construction and arrangement of parts herein shown and hereafter to be described and then set forth in the appended claims.

The accompanying drawings show these improvements in a preferred two compartment machine, serving to explain the invention, which is not to be restricted, however, to a machine having any particular number of compartments, since the invention is manifestly equally applicable to a machine provided with any number of adjoining tanks or compartments for successive washing and rinsing waters for the dishes.

In the drawings, Figure 1 is a vertical longitudinal section taken on the line 1—1 of Figure 2 looking toward the right;

Figure 2 is a cross-sectional elevation with certain parts omitted; and

Figure 3 is a sectional plan view taken on the line 3—3 of Figure 2.

Similar numerals refer to similar parts throughout the several figures.

Referring to the embodiment shown in Figure 1 the casing 4 is supported on the standards 5, the base or lower portion of the casing 4 being divided by the partition 6 to form the washing compartment or tank 7 and the rinsing compartment or tank 8 which are entirely separate from each other. Above the tanks 7 and 8 and extending longitudinally through the casing 4 are two tracks 9 and 10 having spaced-apart rollers 11 upon which the dish-racks 12 are advanced through the machine from left to right as indicated by the arrows in Figure 1. Beneath the tracks 9 and 10 and extending across the machine over the tanks 7 and 8 are arranged the removable strainer pans 13 to catch refuse material from the dishes 14 placed in the racks 12 when such material is removed by the spray manifolds 15 and 16 for each tank. The manifolds 15 are located above the dishes to spray the water down on the dishes while the lower manifolds 16 are below the tracks 9 and 10 to force the water sprays upwardly to the dishes 14, all as shown in Figure 1. Water is drawn from the tanks 7 and 8 by the two rotary pumps 17 which force the water under pressure to the manifolds 15 and 16 through the connecting pipes 18 and 19; the pumps 17 are mounted in tandem as shown in Figure 1 and are operated by the line shaft 20

driven by the electric motor 21. Such spray manifolds 15 and 16 deluge the dishes 14 as they pass over the respective tanks 7 and 8, the pumps 17 drawing the water from each tank and delivering same under pressure to the two sets of manifolds 15 and 16 as shown, with the water falling back to the respective tank or compartment through the strainer pans 13. The tank 7 has the valved drain pipe 22 and the tank 8 has a similar valved drain pipe 23, both emptying into the sewer pipe 24. Since these are common forms of construction in dish-washing machines and do not in themselves constitute any part of my invention, they need not be further described in detail.

Extending along one side of both tanks 7 and 8 and through the partition 6 is the overflow trough 25 consisting of the bottom plate 26 inclined from right to left in Figure 1 and the vertical side-plate 27 over the top edge 28 of which the surplus water from the two tanks or compartments 7 and 8 flows in the common trough 25 which leads to the upright drain pipe 29 located at the entrance end of the casing 4, and is connected with the sewer pipe 24. The inclination of the plate 26 allows all water in the trough 25 to flow freely toward the drain pipe 29, the trough 25 being secured to the front side-plate 30 of the casing 4 (Fig. 2) by any suitable means; such overflow of surface water from the two tanks 7 and 8 carries all floating scum or grease over the edge 28 and into the trough 25, the final hot water sprays 31 in the rinsing tank 8 supplying sufficient additional water to the tank 8 to maintain a more or less constant overflow from this tank into the trough 25 which thereby contains a stream of water constantly flowing by the wash tank 7 which usually has the greater amount of floating scum and other impurities. This arrangement effectually prevents the trough 25 from being clogged with scum or grease from the tank 7 because of lack of running water to carry same to the drain pipe 29.

A further novel improvement in my machine is shown more particularly in Figure 2 by forming the compartments or tanks 7 and 8 with the sloping or inclined bottoms 32 opposite to the trough 25 which bottoms 32 extend into the tanks well within the zones of the sprays from the manifolds 15 and 16 with the result that the falling water passing through the strainer pans 13 on the right or back side of the machine falls into the shallow portion of the tanks 7 and 8 formed above the inclined bottoms 32 extending along the entire length of the tanks, and, when the water in the compartments reaches the level of the edge 28 of the overflow trough 25, automatically sets up cross currents of the surface water in each tank from back to front to carry forwardly to the trough 25 the floating scum or grease which would otherwise be partially shut off from such overflow trough by the curtain of water constantly falling from the spray manifolds 15 and 16 when the machine is in operation. By my improved construction in providing this inclined bottom plate 32 extending inwardly beneath the falling sprays along the rear portions of the compartments or tanks 7 and 8, a movement of the surface water in each tank is automatically set up toward the trough 25 to carry off all floating impurities in each tank not only in each side of the spray manifolds but also beneath the same, when the water in the compartments reaches the level of the edge 28 of the overflow trough 25.

Means are also provided to supply hot and cold water as well as steam to the compartments or tanks either for purging the tank or for regulating the temperature thereof. Such means may be widely varied; in the embodiment shown the feed-pipe 33 emptying into the washing compartment 7 has a three-way connection with hot water, cold water and steam supply, while the feed-pipe 34 for the rinsing compartment 8 is suitably connected by valved pipes with separate hot water and steam connections to initially heat the final spray rinse water which is thereafter maintained at a temperature in the neighborhood of 200 degrees Fahrenheit by the sprays 31 so as to enable the dishes to dry quickly after passing from the machine. The cold water connection for the washing compartment 7 is advantageous to enable the attendant to reduce the temperature of the wash water to about 160 degrees Fahrenheit as most soap solutions and washing compounds disintegrate and lose their effectiveness when placed in water heated to a temperature over 160 degrees Fahrenheit, and the water in the wash tank 7 is likely to rise above this critical temperature because of its proximity to the hot rinsing tank 8 in which the water is desirably raised to a much higher temperature.

In operation, the attendant places the dirty dishes and glasses 14 in the racks 12 which travel as shown by the arrows along the tracks 9 and 10 after being introduced at the left end of the machine (Fig. 1). The successive racks are allowed to stand for short intervals between the spray manifolds 15 and 16 in each compartment, and such dishes are finally subjected to the hot water spray from the sprays 31. While this cleansing and rinsing operation is taking place the floating scum and grease in each compartment or tank 7 and 8 is carried over the top edge 28 of the trough 25, the additional water from the sprays 31 being sufficient to cause a constant overflow in tank 8 while the attendant from time to time adds either hot or cold water to the tank 7 through

the feed-pipe 33 to supply the required surplus to cause a slight over flow in the washing tank 7 sufficient to carry the floating impurities over the top edge 28, the force of the falling sprays from the manifolds 15 and 16 in each tank in conjunction with the inclined bottoms 32 creating cross currents of surface water moving toward the trough 25 through the curtain of water from the manifolds. The constant stream of overflow water starting from the rinsing compartment 8 effectually clears the trough 25 throughout its length, and the refuse scum and grease are carried off through the drain-pipe 29 to the sewer 24.

While the construction herein shown and described embodies the invention in its preferred form, it will be understood that changes and variations may be made in the various parts without departing from the principles and scope of the invention.

I claim as my invention:

1. In a washing machine, a casing having a plurality of separated compartments at its base, and an overflow drainage means extending along the same side of the compartments and common to said compartments with its bottom inclined relatively to the overflow edge of said drainage means.

2. In a washing machine, a casing having a plurality of separated compartments at its base, and an elongated overflow trough extending along the same side of the compartments and common to said compartments with its bottom inclined relatively to the overflow edge of said trough.

3. In a washing machine, a washing compartment, a rinsing compartment, separate from each other, and an overflow drainage means common to both compartments and inclined from the rinsing compartment to the washing compartment.

4. In a washing machine, a washing compartment, a rinsing compartment, separate from each other, and an elongated overflow trough extending along one side of both compartments longitudinally of the machine with its bottom inclined from the rinsing compartment to the washing compartment.

5. In a washing machine, a washing compartment, a rinsing compartment, separate from each other, and an overflow drainage means extending along one side of the compartments with its bottom inclined relatively to the overflow edge of said drainage means.

6. In a washing machine, a washing compartment, a rinsing compartment, separate from each other, an elongated overflow trough extending along the same side of both compartments, water sprays above each compartment, and extending from the side of the compartments opposite the trough a downwardly inclined plate projecting inwardly beneath said water sprays.

7. In a washing machine, a washing compartment, a rinsing compartment, separate from each other, an elongated overflow trough with an inclined bottom extending longitudinally of the machine along the same side of both compartments, separate water sprays above each compartment, and extending from the same side of the compartments opposite the trough a downwardly inclined bottom plate projecting inwardly beneath said water sprays.

JOHN F. WHOLEY.