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L. C. LOT ET AL
REVOLVING RINSE MECHANISM

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2 Sheets-Sheet 1

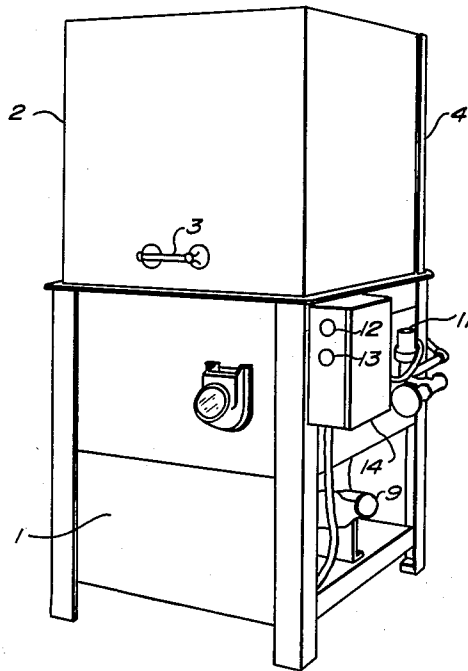


Fig. I

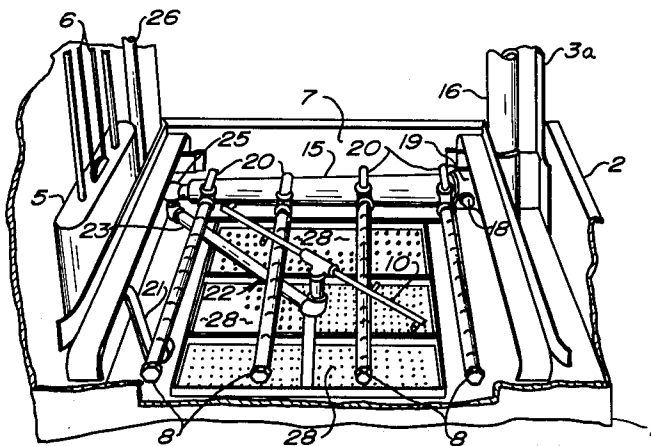


Fig. II

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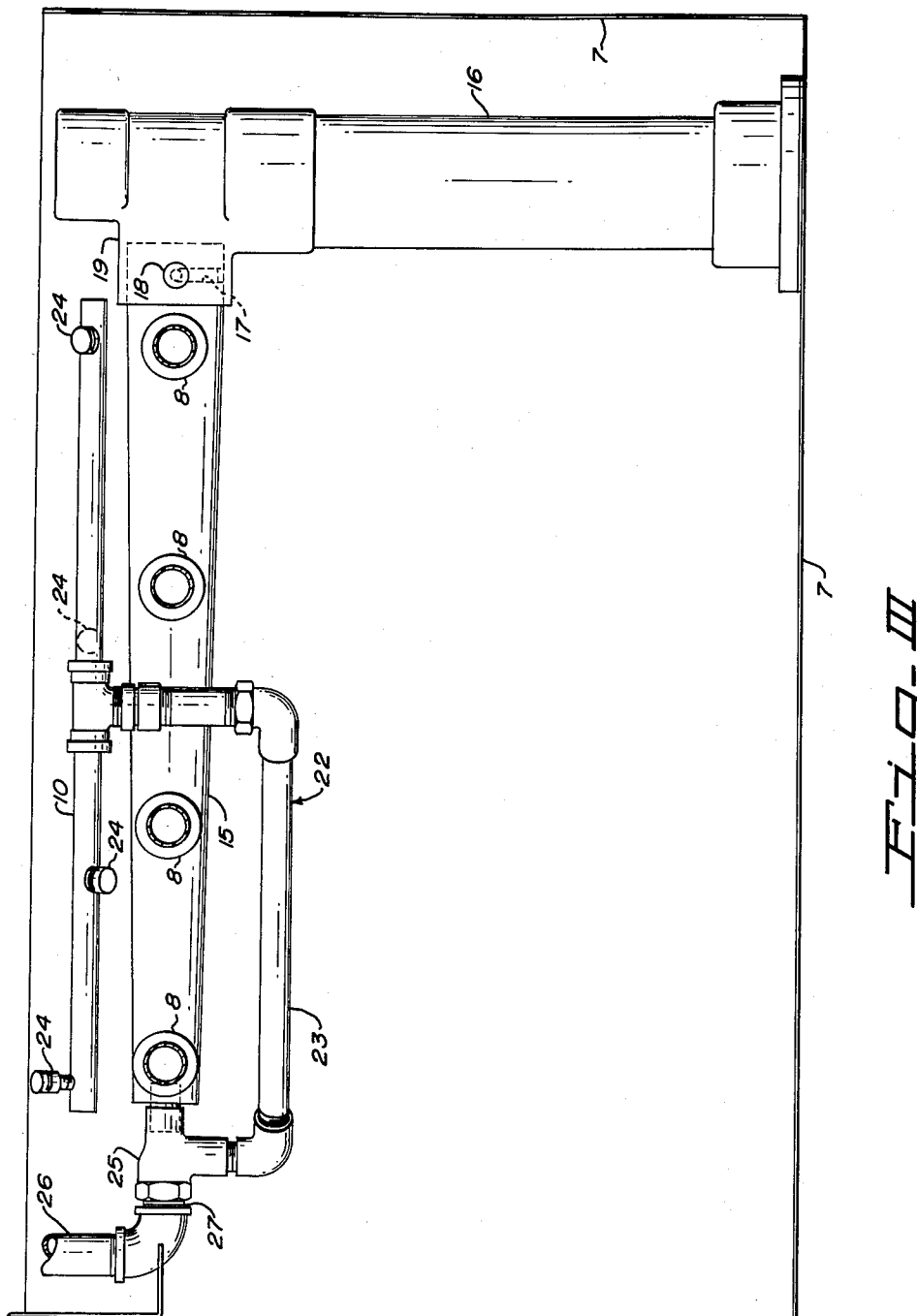
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REVOLVING RINSE MECHANISM

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5 Claims. (Cl. 134—99)

This invention relates to dishwashing machines, and in particular to an improved tiltable wash and rinse assembly for such machines.

Heretofore, the lower wash manifolds in dishwashing machines have been tiltable supported so as to facilitate the removal of scrap screens located below the manifolds. However, the lower rinse assemblies which are often of the revolving type have not been so tiltable supported. The combination of a tiltable wash manifold and a non-tiltable revolving rinse assembly has been unsatisfactory in several ways. The non-tiltable revolving rinse assembly gets in the way when refuse loaded scrap screens, which are located below the rinse assembly, are removed from the dishwashing machine. Furthermore, when the wash manifold is tilted, there is danger that it will slip and fall upon and damage the non-tiltable revolving rinse assembly.

The object of this invention is to provide, in a dishwashing machine, a wash assembly and a revolving rinse assembly which assemblies may be tilted as a unit whereby scrap screens may be easily removed from the machine and whereby there is no independent tilting movement of either assembly.

More specifically the object of this invention is to provide a fitting rotatably mounted in a dishwashing machine compartment upon which fitting is fixed both a wash assembly having a horizontal axis of rotation and a revolving rinse assembly, whereby both the wash assembly and the revolving rinse assembly may be tilted about said horizontal axis.

More specific objects and advantages are apparent from the following description of a specific embodiment of the invention.

According to the invention, improved wash and rinse assemblies are provided for a dishwashing machine. The wash and rinse assemblies comprise a rotatable wash manifold having a closed outer end, at least one spray tube carried by the wash manifold and extending transverse to the axis of rotation of the wash manifold, a fitting fixed to the outer end of the wash manifold, and a revolving rinse assembly fixed to the fitting.

The invention may be more readily understood from the following detailed description of a specific embodiment in which description reference is made to the accompanying drawings.

In the drawings:

Figure I is a perspective view of a dishwashing machine embodying the invention.

Figure II is a perspective view of the interior of the dishwashing machine shown in Figure I with portions broken away to show the improved wash and rinse assemblies.

Figure III is an end elevational view of the wash and rinse assemblies.

These specific figures are intended merely to illustrate the invention but not necessarily to limit its scope.

A dishwashing machine embodying the invention includes a frame 1 having a washing space enclosed by a

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vertically movable three-sided door 2. The door 2 is raised or lowered by an operator grasping a handle 3 and sliding the door up or down. The door has its two forward corners guided by posts 3a and its two rearward vertical edges guided in channels 4. A counterweight 5 is operatively connected to the door 2 by means of a pulley system 6 to facilitate raising and lowering the door.

The frame 1 encloses a tank or washing compartment 7 containing washing solution which is sprayed onto dishes placed in the wash space above the washing compartment 7 through slotted spray tubes 8. The washing solution from the compartment 7 returns to a pump 9 which forces the washing solution through the spray tubes. A plurality of the spray tubes 8 are provided at both the bottom and the top of the washing space.

Additional spray tubes 10 of the revolving type are provided above and below the washing space to supply hot rinse liquid from a fresh water supply directly onto the dishes for rinsing and sterilizing the dishes. Control of the rinsing operation is accomplished by an electrically-operated solenoid valve 11.

Operation of the washing and rinsing devices is effected by pushing a wash button 12 and a rinse button 13 mounted on a control box 14 located at the right side of the frame 1.

The present invention consists in providing improved wash and rinse assemblies for the dishwashing machine, the rinse assembly being of the revolving type. The wash assembly includes a wash manifold 15 having a closed end and an open end rotatably connected to a washing solution supply pipe 16 at one side of the compartment 7 whereby the wash manifold is tiltable about a horizontal axis. The wash manifold 15 is connected to the pipe 16 by means of a groove 17 cut in the wash manifold near its open end and a cooperating shoulder bolt 18 threaded through a boss 19 of the pipe 16. The end of the bolt 18 which cooperates with the groove 17 both retains the wash manifold 15 in the pipe 16 and limits its rotary travel when the wash manifold is turned until an end of the groove 17 contacts the bolt 18. The washing solution supply pipe 16 conveys washing solution from the pump 9 to the open end of the wash manifold 15. The spray tubes 8 are attached to the wash manifold 15, are positioned transversely thereto, and communicate therewith. The tubes 8 are locked in place in the manifold 15 by means of springs 20 which urge locking pins into engagement with a hole in the open end of each spray tube 8. A cradle 21, at one side of the compartment 7, is provided for one of the spray tubes 8 to help support the wash assembly.

The revolving rinse assembly 22 includes a rigid pipe structure 23 carrying the revolving spray tube 10 and spray nozzles 24 fixed thereto which structure 23 has an open end connected to a T or fitting 25. The fitting 25 is rotatably connected to a rinse water supply pipe 26 to rotate on the same horizontal axis as the wash manifold 15, turns on threads 27 of the pipe 26, and provides communication between the pipe 26 and the revolving rinse assembly 22. The fitting 25 is fixed to the closed end of the rotatable wash manifold 15 and, when the wash manifold 15 and its spray tubes 8 are tilted upwardly about its horizontal axis of rotation, the fitting 25 is turned on the threads 27 to tilt the revolving rinse assembly 22 as a unit with the wash manifold 15 about said horizontal axis. The force of the rinse liquid spraying out of the nozzles 24 causes the spray tube 10 to turn automatically.

During the washing operation, refuse is cleaned from the dishes and is collected and retained in scrap screens or perforated trays 28 located in the washing compartment 7 below the wash and rinse assemblies. The scrap

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screens 28 must be taken from the dishwashing machine quite often to be emptied and cleaned and one of the advantages of the present wash assembly and revolving rinse assembly is that the assemblies may be both tilted as a unit out of the way permitting the scrap screens 28 to be easily lifted from the compartment 7. Another advantage of this unit tilting arrangement is that neither assembly can slip and fall upon and damage the other, as is possible when one of the assemblies is capable of independent tilting movement. Furthermore, these improvements are possible without detracting from the high operating efficiency of the wash assembly and the revolving rinse assembly.

Various modifications and changes in the details of construction may be made without departing from the spirit and scope of the invention.

Having described the invention, we claim:

1. In a dishwashing machine, in combination, a washing compartment, a washing solution supply pipe at one side of the compartment, a rinse water supply pipe at the other side of the compartment, a fitting rotatably connected to said rinse water supply pipe, a wash assembly including a wash manifold having an open end for the entrance of washing solution rotatably connected to said washing solution supply pipe and a closed end fixed to said rotatable fitting, there being only a single passage within the manifold, and a revolving rinse assembly fixed to said rotatable fitting, said rotatable fitting providing communication between said rinse water supply pipe and said revolving rinse assembly, whereby both said revolving rinse assembly and said wash assembly may be tilted as a unit about an axis of rotation transverse to said supply pipes.

2. In a dishwashing machine, in combination, a washing compartment, a wash manifold rotatably mounted in the compartment and having a closed outer end, there being only a single passage within the manifold, a plurality of spray tubes attached to the wash manifold and communicating with the single passage therein, means for supplying washing solution to the wash manifold, a fitting mounted in the compartment to rotate on the same axis as the wash manifold and fixed to the closed outer end of the wash manifold, a revolving rinse assembly fixed to the fitting, and means for supplying rinsing liquid to the fitting, the fitting communicating with the revolving rinse assembly, whereby both the revolving rinse assembly and the wash manifold and the spray tubes attached thereto may be tilted as a unit about a horizontal axis.

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3. In a dishwashing machine, in combination, a washing solution compartment, a fitting rotatably mounted in the compartment, means for supplying rinsing liquid to the fitting, a wash manifold having a closed outer end fixed to the rotatable fitting and having a horizontal axis of rotation, there being only a single passage within the manifold, at least one slotted spray tube attached to the wash manifold and communicating with the single passage therein, means for supplying washing solution to the wash manifold, and a revolving rinse assembly carried by the rotatable fitting, the rotatable fitting providing a passage between the means for supplying rinsing liquid and the revolving rinse assembly, whereby the revolving rinse assembly and the wash manifold may be tilted as a unit about said horizontal axis of rotation.

4. A wash and rinse assembly for a dishwashing machine comprising a rotatable wash manifold having a closed outer end, there being only a single passage within the manifold, at least one spray tube carried by the wash manifold and communicating with the single passage therein and extending transverse to the axis of rotation of the wash manifold, a rotatable fitting fixed to the closed outer end of the wash manifold, and a revolving rinse assembly fixed to the fitting.

5. In a dishwashing machine, in combination, a rotatable wash manifold having a closed outer end, there being only a single passage within the manifold, at least one wash tube carried by the wash manifold and communicating with the single passage therein and extending transverse to the axis of rotation of the wash manifold, a rotatable T fixed to the closed outer end of the wash manifold, a revolving rinse assembly fixed to the T and communicating therewith, means for supplying washing solution to the wash manifold, and means for supplying rinsing liquid to the T.

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