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V. GEPHART

1,991,148

MIXING DEVICE

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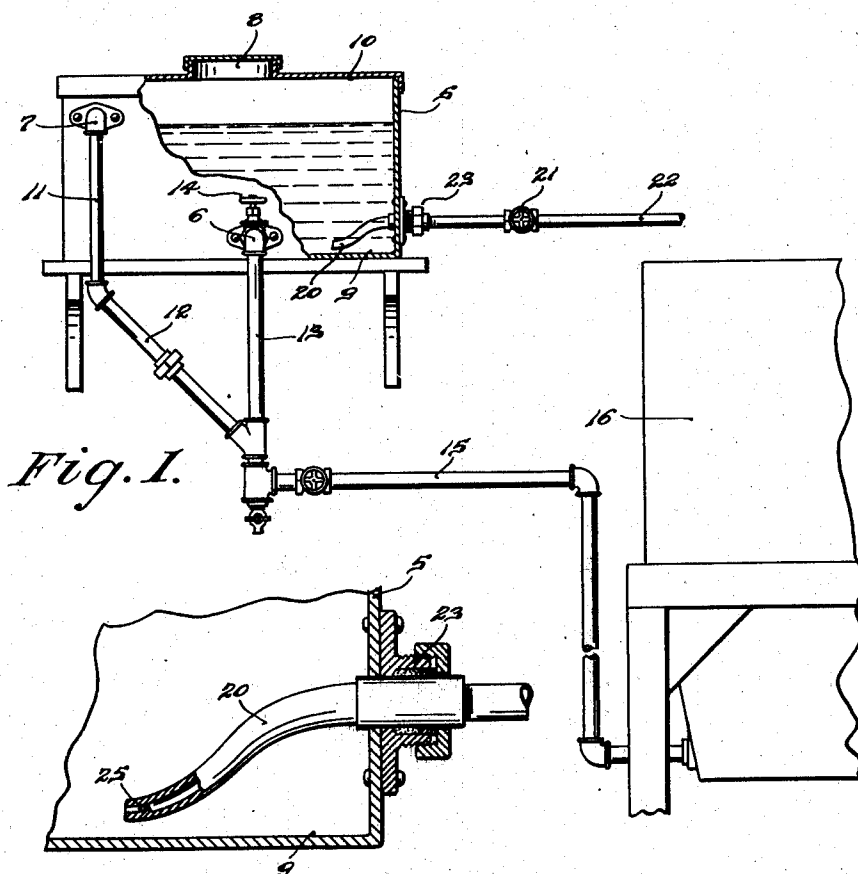


Fig. 2.

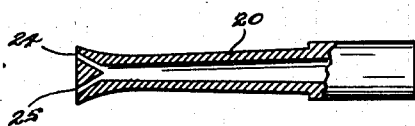


Fig. 3.

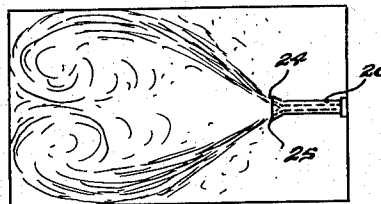


Fig. 4.

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MIXING DEVICE

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3 Claims. (Cl. 259—95)

This invention relates to mixing devices particularly adapted for dishwashing machines, and more particularly to devices of this character peculiarly conceived in a manner to dissolve a cleaning compound in water whereby the same may be admitted as a solution to the machine.

The object, generally stated, is the provision of novel means constituting a jet having improved capabilities affording a most efficient agitation of water and an introduced cleaning compound and wherein said agitation is effected in a communicating drum separable and auxiliary to the machine, proper.

A further and more particular objective resides in the adaptation of peculiar connections between said tank and the machine, advantageous in the provision of an indication to an operator of the completion of a mixing cycle, and to the end of affording an admission, by the operator, of a desired quantity of the water and the admixed compound to the washing machine.

Further and more particular objects and advantages, together with the foregoing, will appear throughout the course of the following detailed description, the invention consisting in the novel construction, adaptation, and combination of parts hereinafter described and set forth in the annexed claims.

In the accompanying drawing,—

Figure 1 is a view taken in longitudinal vertical section through apparatus embodying the present invention and indicating connections therebetween and a fragmentarily shown washing machine.

Fig. 2 is an enlarged detail side elevation of the nozzle shown in the preceding view.

Fig. 3 is a plan view thereof, with parts in section; and

Fig. 4 is a diagrammatical view taken in plan to illustrate peculiar agitation of the discharged water.

Before proceeding with a detailed description of the particular embodiment herewith shown, it is to be noted that while auxiliary feeders have heretofore been used in isolated instances, such have not been generally accepted, due primarily to the fact that the compound introduced to the water settles out of solution with a resultant plugging of the outlet feed to the dish-washing machine. No satisfactory method having been conceived to afford an extensive agitation of the water in admixing the compound to produce an intimate solution, such prior tank feeders have been materially limited in their efficiency.

Attention being had to the drawing, the nu-

meral 5 represents a rectangular tank having a suitable inlet 8 for the introduction of the compound, and respective outlets 6, 7 disposed in proximity of the floor and ceiling, 9, 10, respectively. More particularly, outlet 6 constitutes what will hereinafter be termed the drainage outlet, 7 comprising an overflow having a pipe 11 interconnected through a by-pass 12 to the pipe lead 13 from a cock 14 of the drain 6. The discharge main 15, common to pipes 11, 13, communicates to the interior of the washing machine 16.

Coupled to project within the aforesaid tank 5 to a point relatively adjacent floor 9, I provide a nozzle 20, a suitable valve 21 therefor being adapted to control the discharge of hot water from a pressure supply pipe 22. 23 indicates a stuffing box.

Said nozzle, moreover, is conformed such as to present oppositionally directed constricted outlets 24, 25 converging rearwardly and upwardly to merge, one with the other, at a point removed, more especially as in conventional "Siamese" type couplings.

With particular attention being directed to Fig. 4, a discharge of diverging jets, responsive to contactual banking engagement to the oppositional side and end walls, attains a gyratory activity to effectively stir the constituent particles of the cleaning compound in attracting the same into a state of solution, or, assuming an admission of the compound in excess of a saturation point, a state of suspension due to the allocation of the nozzle discharge in affording excessive turbulence in proximity of the floor.

As the water level rises responsive to pressure admission, overflow pipe 11 drains through discharge main 15 to indicate a thorough admixture of the compound and water, a selected amount, such as desired, being subsequently withdrawn through drain cock 14.

The invention is believed clear from the foregoing, and while I have herein illustrated and particularly described a preferred embodiment now best seen to attain novel objectives contemplated, it is not my intention to confine myself particularly thereto except as by the scope of the hereto annexed claims.

What I claim is,—

1. The combination with the auxiliary mixing tank for a washing machine, said tank being adapted to dissolve a cleaning powder or the like in water to form a solution, of means for accelerating said dissolving action, said means comprising a pipe leading from a pressure source of water supply and projecting into the tank at

an elevation above the floor of the tank, said projecting end of the pipe within the tank being curved downwardly in the provision of a relative goose-neck with the terminal end of the same
5 presenting a horizontally directed Siamese-type discharge nozzle located in proximity of the floor of the tank, the companion outlets of said nozzle diverging outwardly with respect to one another to produce actively swirling eddies responsive to
10 the banking of the discharged streams against the inner walls of the tank, said goose-neck configuration of the pipe allowing free movement of the swirling eddies of water below the same to prevent settling of the cleaning compound rearwardly of the discharge nozzle.
15 2. The combination with the auxiliary mixing tank of a washing machine, said tank being adapted to dissolve a cleaning powder or the like in water to form a solution, of means for accelerating said dissolving action comprising a
20 water pipe from a pressure supply projecting into the tank at a point materially elevated above the floor of the tank, said projecting end of the pipe within the tank being curved to a relative goose-neck configuration with the terminal end of the
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same located in proximity of the floor of the tank and providing a discharge nozzle, said goose-neck configuration of the pipe allowing unrestricted movement of the water below the same to prevent settling of the cleaning compound rearwardly of the discharge nozzle. 5

3. In combination with the auxiliary mixing tank of a washing machine, said tank being adapted to dissolve a cleaning powder or the like in water to form a solution, means for accelerating said dissolving action comprising a
10 water pipe from a pressure supply projecting into the tank at a point materially elevated above the floor of the tank, said projecting end of the pipe within the tank being provided with a discharge nozzle adapted to project a stream of
15 water in a plane approximately parallel with the floor of the tank and said projecting end extending inwardly and then downwardly to locate the nozzle in proximity of the tank floor to allow unrestricted circulation of water rearwardly of the
20 nozzle in preventing settling of the cleaning compound behind the nozzle.

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