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J. BARSKY

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DETERGENT DISPENSER FOR WASHING MACHINES

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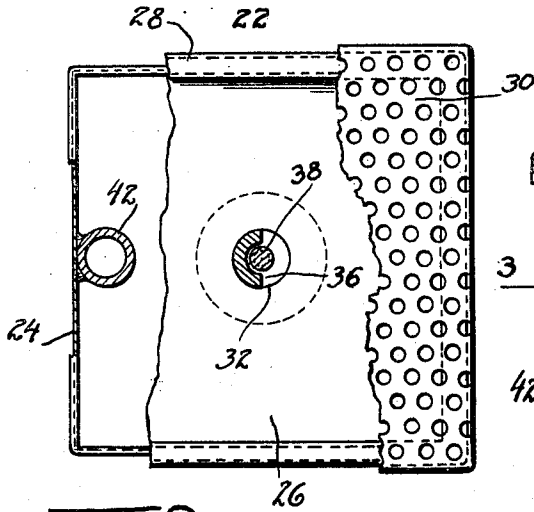


Fig. 3

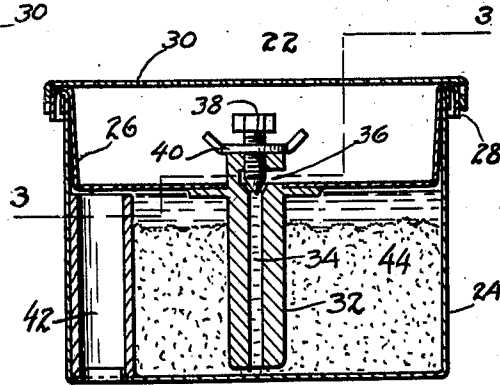


Fig. 2

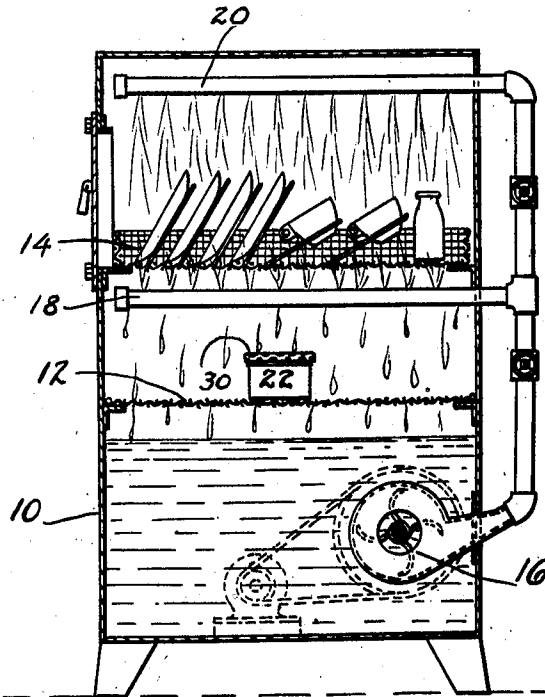


Fig. 1

INVENTOR.

Julius Barsky

BY

Parker & Burton

ATTORNEYS.

UNITED STATES PATENT OFFICE

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DETERGENT DISPENSER FOR WASHING MACHINES

Julius Barsky, Chicago, Ill., assignor to The J. B. Ford Company, Wyandotte, Mich., a corporation of Michigan

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5 Claims. (Cl. 141-9)

My invention relates to improvements in detergent dispensers for washing machines. It relates to that type of detergent dispenser which comprises a container for detergent which is so constructed that when arranged within the shower or falling stream of water in the washing machine the device functions to deliver a charge of detergent to the wash water during the operation of the machine.

My improved device is so constructed that it not only functions continuously during the functioning of the machine but it operates to discharge a constant quantity of detergent during the time the machine is functioning.

A meritorious feature of my invention is that through the use of it one is able to charge the dispenser with a limited quantity of detergent and this detergent material will be delivered at a uniform rate to the wash water in the machine regardless of the character of functioning of the machine and so long as the machine continues to function.

Another advantage is that the detergent container is constantly charged with a supply of water and detergent which will maintain a uniform functioning thereof regardless of fluctuations in the functioning of the machine. Furthermore, it is possible to charge the container before the machine begins to function so that a limited amount of detergent may be delivered to the wash water in the machine before the functioning of the machine begins, and this functioning of the dispensing device will be continued by virtue of the functioning of the machine.

Other advantages and meritorious features of my invention will more fully appear from the following description, appended claims, and accompanying drawing wherein

Fig. 1 is a sectional view through any conventional type of washing machine showing my dispenser in place therein,

Fig. 2 is a cross sectional view through the dispensing device itself, and

Fig. 3 is a view taken on line 3-3 of Fig. 2.

In the figures of the drawing a washing machine of any well known type is indicated in Fig. 1 as having a vat 10 within which the wash water is contained. A screen 12 superimposes the vat to collect foul material and prevent it from falling into the wash water. Screen trays or supports 14 are provided to carry the articles to be washed, such as the dishes shown in the illustration. Suitable pumping mechanism 16 is employed which delivers the wash water through the spray pipes 18 and 20 which function to direct

a spray of water upwardly and downwardly, respectively, upon the dishes carried by the tray or rack 14. This view might be considered as showing the washing end of a large dish washing machine which also includes suitable rinsing chambers and apparatus not here shown.

In order to supply the wash water with the required quantity of cleansing or detergent material I provide the detergent dispenser indicated generally as 22. This dispenser is shown more in detail in Figs. 2 and 3. It comprises a container portion 24. This container has a normally open top. A water collecting pan or cover 26 is provided. This cover has a flange 28 that seats over the top edge of the container so that the pan portion of the cover hangs down into the container as shown in Fig. 2. A screen or strainer 30 is provided which surmounts the cover 26 engaging over the flange 28 thereof and serves to prevent certain of the foul material in the wash water from falling into the pan and clogging the discharge vent thereof.

The pan is provided with a water discharge pipe 32 that depends into the container and terminates at a point in proximity to the bottom of the container as shown in Fig. 2. This discharge pipe also extends upwardly above the bottom of the pan and is provided with a water passageway 34 extending therethrough and terminating in the pan in a side opening 36 adjacent to the bottom of the pan. A needle valve 38 extends downwardly through the end of the pipe 32 and is adjustable to control the amount of water permitted to discharge through the pipe 32. 40 indicates a thumb lock nut.

The container itself is provided with a discharge outlet for detergent in the form of a tubular portion 42 that forms an extension of the bottom of the container and terminates in proximity to the bottom of the pan 26 as indicated in Fig. 2. The container is filled with detergent 44 to about the line indicated in Fig. 2.

In the operation of the device the dispenser is positioned within the washing machine so as to be within the shower of water discharged by the machine and this water collects in the pan 26. The valve 38 is so regulated that a very small amount of water will be permitted to flow through the drain pipe 32 into the container. The amount of water permitted to flow through will, of course, depend upon the size of the washing machine, the amount of water, and the requirements for the particular washing operation, but it may be adjusted to meet any need.

The water which is discharged through pipe

32 enters the container in proximity to the bottom and seeps up through the detergent material. This liquid carrying detergent and solution rises in the lower part of the container until it overflows into the outlet pipe 42 and passes therefrom into the washing machine vat as indicated in Fig. 1. It will be apparent that once the detergent begins to function it will continue to function so long as water is being discharged into the pan 26 and at a rate determined by the controlled flow of water from such pan into the container. It is likewise apparent that this pan may be charged with water when the dispenser is positioned in the washing machine so that a flow may begin prior to the commencement of the operation of washing.

I claim:

1. A detergent dispenser for washing machines comprising an open top container for detergent, a removable pan shaped cover closing the top of the container provided with a tubular discharge outlet depending into the container and terminating in proximity to the bottom thereof, and a removable strainer superimposing said pan shaped cover, said container provided with a discharge outlet for detergent.

2. A detergent dispenser for washing machines comprising an open top container for detergent, a pan shaped water collecting cover having a flange removably seated upon the edge of the top of the container with the pan shaped portion of the cover depending into the container, said cover provided with a tubular discharge outlet depending into the container and provided with valve control means to regulate the amount of water discharged therethrough, said container provided with a discharge outlet for detergent through the wall of the container which discharge outlet opens into the container at a point in proximity to the bottom of the pan shaped water collecting cover.

3. A detergent dispenser for washing machines comprising a container for detergent, a water collecting pan removably supported within the top of the container to collect the water showered thereon and provided with a water discharge pipe extending into the container and terminating in proximity to the bottom thereof, said discharge pipe projecting above the bottom of the pan and having an opening on one side adjacent to the bottom of the pan, a needle valve disposed in the top of the discharge pipe and adjustable to regulate the flow of water therethrough, said container provided with a discharge outlet through its bottom which terminates within the container in a standpipe that extends upwardly into the container and terminates therein in proximity to the bottom of the pan.

4. A detergent dispenser for washing machines comprising a container for detergent material, a water collecting pan removably supported within the top of said container, said pan being provided with water discharge means terminating adjacent the bottom of the container, and an outlet conduit extending from a point within the container adjacent the bottom of the removable pan to the bottom of said container and opening to the exterior thereof through said bottom.

5. A detergent dispenser for washing machines comprising a container for detergent material, a water collecting pan removably supported within the top of said container, said pan provided with a water discharge conduit leading therefrom into the container to a point adjacent to the bottom of the container to discharge water thereinto from the pan, means operable to regulate the discharge of water through said conduit into the container, the bottom of said container being provided with an overflow conduit extending upwardly into the container and terminating adjacent to the bottom of the pan.

JULIUS BARSKY.

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