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WASHING MACHINE

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Fig-1

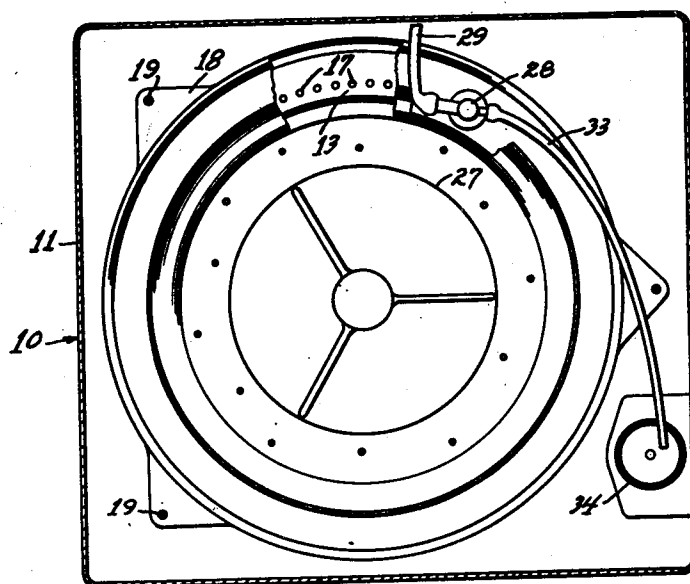
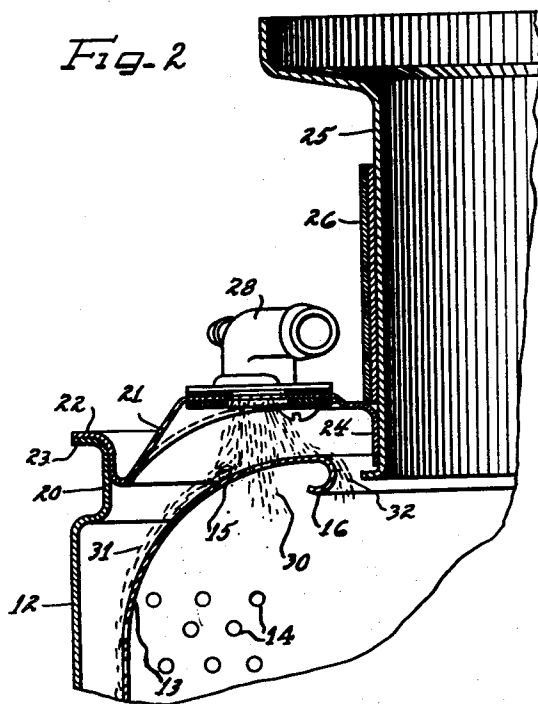


Fig-2



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WASHING MACHINE

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4 Claims. (Cl. 68—148)

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This invention relates to a washing machine, and more particularly to a means for introducing water into a tub and to other chambers or compartments of the machine.

In domestic or household washing machines, and particularly washing machines of the automatic type, trouble has been experienced from time to time in scum accumulating over the clothes containing baskets of the machine. Trouble has also been experienced in providing a suitable means for spraying the water over the clothes to obtain what is commonly termed in the trade as a "spray rinse."

One of the principal features and objects of the present invention is to provide a novel means for introducing water or other fluid into a washing machine of the type having a stationary tub and a rotatable perforated article-containing basket therein.

A further object of the present invention is to provide a novel fluid system including a novel means for introducing water into the tub of an automatic washing machine.

A further object of the present invention is to provide a novel means for cleaning out the float chamber of a washing machine at the same time that water is being introduced into the tub.

A still further object of the present invention is to provide a novel means for introducing water into a washing machine which includes a rotatable clothes container having an intumed upper flange provided with an annular series of holes therein, the water or other fluid being directed against this upper flange while the clothes container is being rotated.

A still further difficulty which has been experienced by the trade lies in the fact that a so-called "suds lock" frequently occurs between the basket and the tub of a washing machine. It has been found that the suds will frequently become so stiff that the basket never reaches full speed and therefore overheats the motor and fails to properly extract the water from the clothes or other articles in the basket.

One of the features and objects of the present invention is to provide novel means for eliminating this suds lock between the basket and the tub.

The novel features which we believe to be characteristic of our invention are set forth with particularity in the appended claims. Our invention itself, however, both as to its organization and manner of construction, together with further objects and advantages thereof, may best be understood by reference to the following description

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taken in connection with the accompanying drawing, in which:

Figure 1 is a diagrammatic plan view of a washing machine embodying the novel teachings and principles of the present invention, with the cover and top wall thereof removed; and

Figure 2 is an enlarged fragmentary vertical sectional view of the portion of the washing machine at the point where the water is being introduced into the tub and basket.

The embodiment of the invention illustrated in Figures 1 and 2 of the drawing is employed on a washing machine 10 which includes an outer casing or cabinet 11, a stationary tub 12 and a rotatable clothes or article container 13. This rotatable container 13 may be any of a wide variety of types which enables the centrifugal extraction of water or other fluid from the clothes carried in the container. In the particular form of the invention illustrated in the drawing the clothes container 13 is in the form of a perforated basket having a plurality of openings 14 in the side walls thereof. The top of the clothes container 13 is provided with an intumed flange 15 which terminates in a beaded edge 16. The flange portion 15 is provided with an annular series of holes 17.

The stationary tub 12 is mounted on a floating base 18 which is carried by a plurality of supporting arms 19 (shown in section only) from the casing 11.

The top portion of the side wall of the tube 12 is bent so that in cross section it forms an outwardly facing channel portion 20. Welded or otherwise suitably secured to this marginal portion 20 is an intumed flange plate 21 which is welded or otherwise suitably secured by a mating flange portion 22 to the top lip 23 of the marginal portion 20 of the tub 12. The flange plate 21 is provided at its radially inner edge with a down-turned flange portion 24 in which is disposed a collar part 25. The collar part 25 is welded or otherwise suitably secured to the down-turned lip 24. Surrounding the collar part 25 is a weight ring 26 which tends to stabilize vibratory movement of the tub 20 when the clothes container 13 is being rotated. The means for rotating the clothes container 13 forms no part of the present invention and is not illustrated herein. It is to be understood, however, that when it is desired to extract water from the clothes or other articles within the container 13, the container 13 is rotated at high speed after the water has been withdrawn from the tub 12. Any conventional sort of washing machine agitator may be

employed, such as the agitator 27, which is shown in Figure 1 of the drawing. This agitator forms no part of the present invention, and for the purposes of understanding this invention it is sufficient to state that it is oscillated back and forth about a vertical axis, while the tub is substantially full of water.

In order to introduce a spray rinse into the basket 13 for the clothes or other articles being washed, and also in order to eliminate any suds lock between the basket 13 and the tub 12, water is introduced through a water supply fitting 28 which is mounted on the flange plate 21 directly over the line of holes 17 in the rotating basket flange 15. The water is supplied to this fitting 28 through a hose 29. The fitting opens directly downwardly so that as the water flows through the fitting 28 it falls on the convexly curved inwardly extending flange portion 15 of the basket 13. Due to the fact that the basket is rotated during the time that the water is introduced, a portion of the water passes through the holes 17 and is atomized or broken up into a fine spray due to the rotation of the basket. This fine spray is designated by the reference character 30 in Figure 2 of the drawing.

Another portion of the stream of water which is flowing against the rotating basket 13 splashes down over the side as at 31. Due to the high speed of rotation of the basket 13 this water is thrown around by the basket 13 and thus breaks up any suds lock (accumulation of suds) between the basket 13 and the tub 12. The suds, of course, is carried away at the bottom of the tub through the usual drain.

A third portion of the water striking the top of the flange 15 splashes inwardly over the beaded edge 16 as at 32. This keeps the entire upper part of the basket free of an accumulation of suds, calcium deposits and other foreign material, and also serves to further form a spray rinse for the clothes or other articles in the basket 13.

It has also been found to be desirable to provide a bleeder hose 33 which is connected to the fitting 28 and extends to a position at the top of the float chamber 34. Thus, whenever water is being introduced into the tub 12 for the spray rinse, a small amount of water is also introduced into the float chamber 34 for the purpose of cleaning the walls of the float chamber and the float itself. This prevents an accumulation of calcium deposits and other foreign material within the float chamber.

While we have shown a particular embodiment of our invention, and described a particular method of operation, it will, of course, be understood that we do not wish to be limited thereto, since many modifications may be made, and we, therefore, contemplate by the appended claims, to cover all such modifications as fall within the true spirit and scope of our invention.

We claim as our invention:

1. A washing machine comprising a substantially stationary fluid containing tub, an article containing basket mounted for rotation within said tub, said basket having its upper marginal edge returned to provide a flange, said flange having an annular series of perforations therein, a fluid nozzle mounted on said machine above the path of movement of said perforations, means for supplying fluid to said nozzle while said basket is rotating, said nozzle being so arranged

that fluid admitted through said nozzle is broken up by said openings as it splashes therethrough into a fine spray, and also arranged so that a portion of said fluid also splashes down over the outer walls of said basket into the region between said basket and said tub.

2. A washing machine comprising a substantially stationary fluid containing tub, an article containing basket mounted for rotation about substantially a vertical axis within said tub, said basket having its upper marginal portion turned inwardly to provide an inclined upper surface, said flange having an annular series of perforations therein, means mounted on said machine above the path of movement of said perforations for supplying fluid to the inclined upper surface of said flange while said basket is being rotated, said means being so arranged that a part of said fluid splashes through said perforations, another part of said fluid splashes down into the region between said basket and said tub, and a third part of said fluid splashes over the inner edge of said flange into the center portion of said basket.

3. A washing machine comprising a substantially stationary fluid containing tub, an article containing basket mounted for rotation within said tub, said basket having its upper marginal portion convexly curved inwardly, an annular series of perforations in said convexly curved marginal portion, a fluid pipe fitting mounted on said machine above said perforations, means for supplying fluid to said pipe fitting while said basket is being rotated, said fitting being so arranged that a portion of said fluid passes through said perforations and is broken up into a fine spray and another portion of said fluid splashes over the outer surface of said basket into the region between said basket and said tub, and removes any suds lock in that region.

4. A washing machine comprising a substantially stationary fluid-containing tub, an article-containing basket mounted for rotation within said tub, said basket having its upper marginal portion convexly curved inwardly, an annular series of perforations in said convexly curved marginal portion, a liquid-supply fitting having a nozzle-end mounted above said perforations directing a stream of fluid downwardly on said marginal portion while said basket is being rotated, said fitting being so arranged that the stream directed from said nozzle-end has a portion passing through said perforations and broken up into fine spray, another portion splashing down into the region between said basket and said tub, and a third portion splashing over the inner edge of said marginal portion into the center portion of said basket.

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