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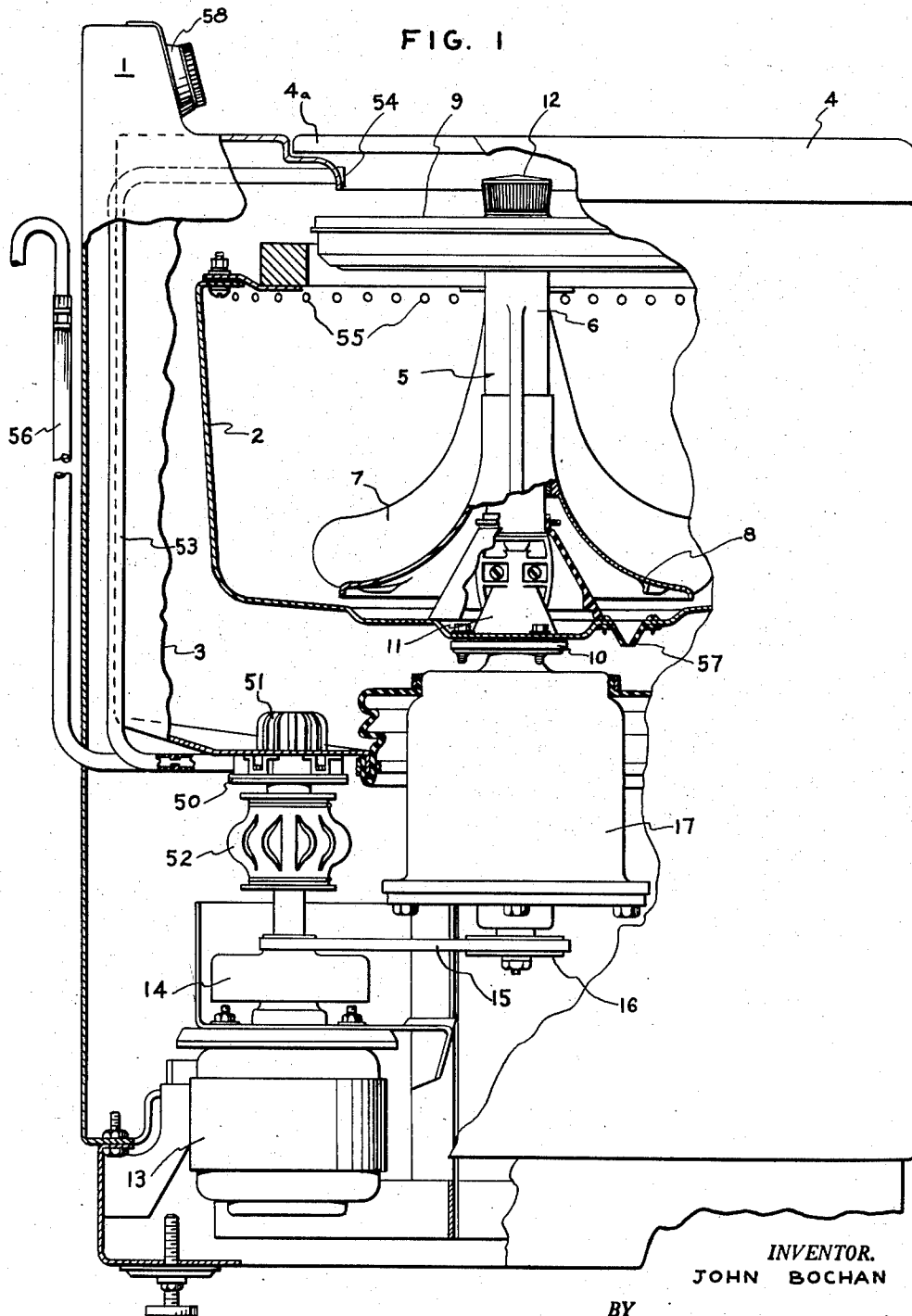
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2,792,701

RINSING AGENT DISPENSER FOR CLOTHES WASHING MACHINES

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 2

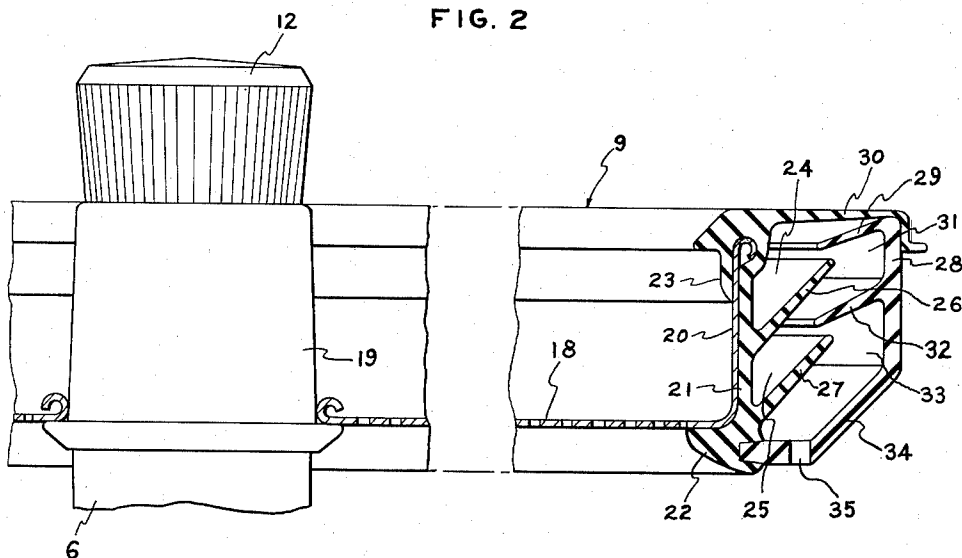
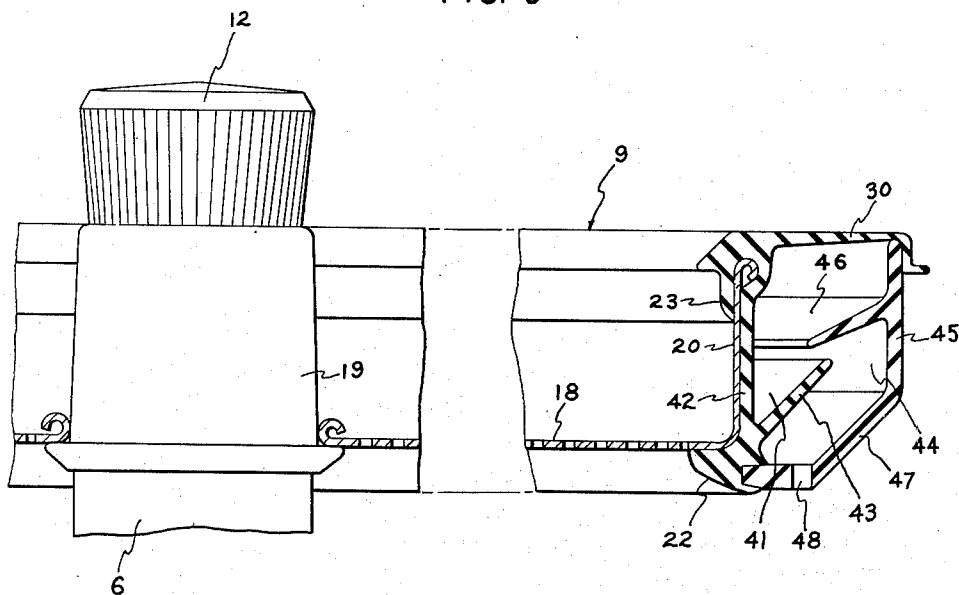


FIG. 3



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RINSING AGENT DISPENSER FOR CLOTHES WASHING MACHINES

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7 Claims. (Cl. 68—17)

My invention relates to automatic clothes washing machines and more particularly to such machines in which the clothes basket is rotated at high speed to extract the wash water from the clothes.

Automatic clothes washing machines customarily proceed through a sequence of operations in order to wash, rinse and dry the clothes. The sequence ordinarily includes a washing operation, a first extraction operation in which the wash water is removed from the clothes, a rinsing operation in which the clothes are rinsed in clean water, and a final extraction operation in which the rinse water is removed from the clothes. Depending upon the type of machine the action within any given operation may be slightly different, as for example, some machines include a two stage initial extraction operation in order to avoid suds locking of the basket, and other machines include a spray rinse during the rinsing operation in addition to the customary submersion rinse. But the general sequence of washing, extracting, rinsing and then extracting again is used almost in all automatic washing machines.

In order to obtain the most desirable results from these machines it has been found advantageous that a treating agent be added to the rinse water during the rinsing operation. Various treating agents such as water softeners and fabric softeners, hereinafter referred to generally as rinsing or rinse agents, may be added to the rinse water to produce different results. If a water softener is added, a better rinsing action is obtained leaving less detergent in the clothes. The water softener removes mineral constituents in the rinse water which would otherwise react with part of the detergent and retain it in the clothes. As a result less graying and/or yellowing of the clothes occurs. If a fabric softener is added to the rinse water, a softer feeling is imparted to the clothes, the fabric softeners leaving a film on the clothes which creates this result. The fabric softeners also result in less wrinkling of the clothes and in their being easier to iron. Further, they tend to prevent electrostatic charges from being formed on synthetic fabrics.

In an automatic washing machine it is of course desirable that the rinsing agent be added automatically, that is, that the rinsing agent be introduced into the clothes basket at the proper time during the washing operation without the operator having to do anything; and accordingly it is an object of my invention to provide a new and improved rinse agent dispenser for use in an automatic washing machine, which may be filled before the machine is set in operation and which will then introduce the rinsing agent automatically into the clothes basket at the start of the rinsing operation.

Another object of my invention is to provide a dispenser of the above type which is extremely simple in construction and operation and which depends solely upon the rotation of the machine components during the first extraction operation to pass the liquid into the clothes basket at the start of the rinsing operation.

In carrying out my invention in one form thereof, I

provide a washing machine which is adapted to proceed through a sequence of operations including a washing operation, a first centrifugal extraction operation, a rinsing operation and a second centrifugal extraction operation. The machine includes a rotatable clothes basket and an agitator disposed within the clothes basket, and drive means are provided for driving both the agitator and the clothes basket. The agitator is driven alone for washing and rinsing the clothes, and the clothes basket is rotated at a high speed to extract liquid from the clothes by centrifugal extraction, the agitator rotating with the basket during the extraction operation. By my invention I provide within this machine a rinse agent dispenser which may be filled before the machine is placed in operation and which then automatically introduces the rinse agent into the clothes basket when the rinsing operation is reached. This dispenser is adapted for mounting on the agitator of the machine and it includes a central receptacle section and an outer compartment which opens toward the receptacle section. The rinsing agent is introduced into the receptacle section prior to the operation of the machine and during the washing operation it remains in the receptacle section. During the subsequent centrifugal extraction operation the rinsing agent is then thrown out of the receptacle section as a result of the centrifugal action created by the high speed rotation of the agitator, and as it leaves the receptacle section it is caught by the outer compartment of the dispenser and held therein so long as the agitator continues to rotate. At the close of the extraction operation when the rotation of the agitator ceases, the rinsing agent then flows from the outer compartment of the dispenser into the clothes basket to treat the rinse water during the subsequent rinsing operation. If more than a single stage extraction operation is employed, the dispenser includes one or more additional receptacle sections and outer compartments through which the rinsing agent progresses sequentially in order to be introduced ultimately into the clothes basket when the rinsing operation is reached.

The subject matter which I regard as my invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. My invention, however, both as to organization and method of operation, together with further objects and advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a side elevational view of a clothes washing machine including one embodiment of my new and improved rinse agent dispenser, the view being partially broken away and partially in section in order to show details;

Fig. 2 is a cross sectional view of the rinse agent dispenser included in the machine of Fig. 1; and

Fig. 3 is a cross sectional view of an alternate form of my new and improved rinse agent dispenser.

Referring now to Fig. 1 I have shown therein an agitator type clothes washing machine 1. The machine 1 includes a clothes basket 2 which is disposed within an outer imperforate tub or casing 3. The tub 3 is in turn mounted within an appearance cabinet 4 which includes a hinged cover 4a for providing access to the clothes basket. At the center of the basket 2 there is positioned a vertical axis agitator 5 which includes a center post 6 and a plurality of radially extending vanes 7. The agitator is further provided with an outwardly and downwardly flared skirt 8 to which the vanes 7 are joined at their lower ends. Adjacent the top of the agitator center post there is mounted a rinse agent dispenser 9 embodying my invention in one form thereof. As will be explained hereinafter in detail the dispenser 9 is so con-

structed and arranged that after being filled with rinse agent prior to the initiation of the machine operation, it is then effective to discharge the rinse agent into the basket at the start of the rinsing operation. The dispenser 9 is particularly adapted for use with a rinse agent solution, i. e. a rinse agent in liquid form.

Both the clothes basket 2 and the agitator 5 are rotatably mounted. The basket is mounted on a flange 10 of a rotatable hub 11 and the agitator 5 is mounted on a shaft (not shown) which extends upwardly through the hub 11 and the center post 6. The agitator is secured to the shaft by means of an internally threaded nut or cap 12 at the top of the center post. During the cycle of operation of the machine 1, the agitator is first oscillated back and forth within the basket 2 to wash the clothes therein. Then, after a predetermined period of this washing action, the basket 2 is rotated at high speed to extract centrifugally the washing liquid and discharge it into the outer tub 3. Following this extraction operation a supply of clean liquid is introduced into the wash basket for rinsing the clothes and the agitator is again oscillated. Finally, the basket is once more rotated at high speed to extract the rinse water and discharge it into the outer tub. Preferably the first extraction operation following the washing operation is divided into two separate stages of basket rotation separated by a pause during which the basket does not rotate. The provision of the pause, it has been found, aids greatly in avoiding suds locking of the basket.

The basket 2 and agitator 5 may be driven by any suitable means as the drive means form no part of the present invention. However, by way of example I have shown them as driven from a reversible motor 13. The motor 13 drives the basket and the agitator through a drive including a clutch 14 which is mounted on the motor shaft. The clutch 14 allows the motor to start without load and then pick up the load as it comes up to speed. The clutch is connected by a suitable belt 15 to the input pulley 16 of a transmission assembly 17, and it is effective to drive the pulley 16 in both directions of motor rotation. Thus depending upon the direction of motor rotation the input pulley 16 of the transmission is driven in opposite directions.

The transmission 17 is so arranged that it supports and drives both the agitator drive shaft and the basket mounting hub 11. When the pulley 16 is driven in one direction by the clutch 14, the transmission causes the agitator 5 to oscillate within the basket 2. Conversely when the pulley 16 is driven in the opposite direction, the transmission drives the wash basket 2 and the agitator 5 together at high speed for centrifugal extraction. Thus, the operation carried out, i. e., agitation or centrifugal extraction, is controlled by the direction of rotation of the drive motor, agitation occurring when the motor turns in one direction and centrifugal extraction occurring when it turns in the other direction. Although the drive mechanism forms no part of the invention reference is made to the copending application of James R. Hubbard et al., S. N. 420,594 filed April 2, 1954, and assigned to the same assignee as the present invention. That application discloses in detail the structural characteristics of a transmission assembly suitable for use in the illustrated machine.

Since the rinse agent dispenser 9 is mounted on the agitator 5, it of course oscillates with the agitator during the washing and rinsing operations and rotates at high speed with the agitator during centrifugal extraction operations. Referring now to Fig. 2 it will be seen that the dispenser 9 is mounted on the agitator center post 6 by means of a cup shaped filter 18. This filter 18 serves as a lint filter in a recirculation system included in the machine 1 and its operation and that of the recirculation system as a whole will be explained hereinafter. The filter 18 is removably mounted on the center post by means of a flanged sleeve 19 formed of hard rubber which

is fixedly attached to the center post. The filter 18 includes a central aperture and it may be slipped onto and off of the center post by the operator. The rinse agent dispenser 9, which comprises a one piece annular member formed of any suitable material, for example rubber, is held by the outer vertical wall 20 of the filter. The dispenser includes an inner vertical wall 21 which runs along the outside of the filter wall 20, and this wall 21 is provided with a flange 22 which fits beneath the outer portion of the bottom wall of the filter and a tab 23 which fits over the upper rim of the filter. The wall 21, the flange 22 and the tab 23 are all formed of relatively stiff material, for example hard rubber in the illustrated dispenser, whereby when the dispenser is fitted onto the filter in the manner shown it is held securely thereon.

The dispenser 9 includes two inner or central receptacle sections 24 and 25, the section 24 being positioned directly above the section 25. Both of these receptacle sections comprise an annular trough, the upper section 24 being formed between the receptacle wall 21 and an annular flange 26 which juts upwardly and outwardly from it, and the lower section 25 being formed between the lower portion of the wall 21 and a lower flange 27 similar to the flange 26. The upper receptacle section 24 comprises the container means whereby the rinsing agent solution is accommodated when it is originally poured into the dispenser 9. As shown, the outer wall 28 of the dispenser includes a downwardly slanted, relatively rigid shelf 29 adjacent its upper end, and the inner wall 21 includes a cover piece 30 which overlies both the receptacle section 24 and the shelf 29. The cover piece 30 is formed of a pliable or flexible material, for example soft rubber, so that it may be lifted upwardly, and when it is lifted upwardly rinsing agent may be poured into the dispenser. The agent as it is poured into the top of the dispenser is guided by the shelf 29 into the upper receptacle section or trough 24. Since the shelf 29 does not completely cover the section 24 but rather only slightly overlaps the flange 26, the operator can see into the dispenser so as to stop adding rinse agent once the section 24 is substantially filled.

After the rinse agent has been placed in the receptacle section 24 and the machine placed in operation, the first operation to take place is the washing operation during which the agitator 5 oscillates back and forth. During this oscillating motion of the agitator the rinsing agent remains within the receptacle section 24. With the agitator moving back and forth at a slow speed there is not enough centrifugal force set up to cause the liquid to be thrown out of the section 24. When however the machine goes into the first stage of the centrifugal operation, at that time the agitator is rotated at high speed. The centrifugal force set up by this high speed rotation causes the rinsing agent to be thrown radially outward from the section 24. As it leaves the section 24 over the upper edge of the flange 26, the rinse agent passes into a compartment 31 of the dispenser which lies radially outward of the receptacle section 24. This compartment 31, which opens toward the receptacle section 24, is formed by the shelf 29, the outer wall 28 of the receptacle and a second shelf 32 positioned below the shelf 29. The shelves 29 and 32 extend completely around the dispenser so that the compartment 31 is thereby annular in shape with a generally U-shaped cross section as shown. The centrifugal force created by the rotation of the dispenser retains the rinsing liquid in the compartment 31 so long as the rotation of the agitator continues. However when the pause between the two stages of the first extraction operation is reached, at that time the agitator stops rotating. There is then no longer any centrifugal force to retain the rinsing agent within the compartment 31 and it runs down the top of the shelf 32 and falls into the lower receptacle section 25 of the dispenser. As shown the inner edge of the shelf 32 overlies the outer edge of the flange 27 to insure that all the rinsing agent

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is passed into the section 25 when the pause is reached and the agitator stops rotating.

After the pause the machine then proceeds into the second extraction stage of the first extraction operation during which the agitator is again rotated at high speed. At that time the rinse agent solution is thrown out of the receptacle section 25 by centrifugal force into a second outer compartment 33 of the dispenser. This second outer compartment 33 is formed by the shelf 32, the lower portion of the outer wall 28 and a bottom inwardly extending portion or shelf 34 of the outer wall, and like the upper compartment 31 it is annular and generally U-shaped in cross section. As shown, it opens toward the receptacle section 25 to receive the rinsing agent from it. The rinsing agent solution remains in the compartment 33 against its outer wall so long as the rotation of the agitator continues, the rinsing agent of course being held there by centrifugal force. However once the rotation of the agitator ceases at the end of the second extraction state, at that time the liquid runs down the shelf 34 to the bottom of the dispenser.

From the bottom of the dispenser the agent is then discharged into the basket through outlet means comprising a plurality of apertures 35 through the bottom wall of the dispenser. The apertures 35 are positioned well inwardly of the outer wall of the dispenser to prevent any loss of the rinsing agent during the extraction period, but once the extraction operation is terminated and the rinsing agent flows down to them, they pass it freely into the clothes basket 2. Since the washing machine proceeds into the rinsing operation immediately after the second stage of the centrifugal extraction operation, the rinsing agent is thus added to the rinse water introduced into the basket 2 for rinsing the clothes. As a result, depending upon the type of rinsing agent used, the clothes are more thoroughly rinsed and/or are caused to be softer than they would if no rinsing agent were added.

From the above it will be seen that my new and improved rinse agent dispenser acts completely automatically. When rinse agent is introduced into it before the washing operation is initiated, it is held in the dispenser until the beginning of the rinsing operation and then introduced automatically into the clothes basket. The dispenser itself is of course very simple and may be added to the washing machine at a very low cost since it involves no moving parts whatsoever. Further, due to this lack of moving parts it is absolutely fool proof in operation and will last indefinitely. The dispenser may be simply and easily cleaned at any time merely by flushing it out with clean water.

Referring now to Fig. 3 I have shown therein a second embodiment of my rinse agent dispenser. This dispenser 40 is designed for use with a machine wherein the extraction operation following the washing operation is only of a single stage. In other words the dispenser is intended for use with a machine wherein the basket and agitator spin constantly during the first extraction operation with no pause whatsoever. This dispenser 40 like the dispenser 9 comprises a one piece annular member formed of any suitable material, for example rubber, and is shown as mounted on the center post 6 of the agitator 5 by means of the filter 18. It is secured to the outer side wall 20 of the filter in the same manner as the dispenser 9 by means of an upper flap 23 and a lower flange 22, and it likewise includes a flexible cover 30 through which rinsing agent solution may be poured into the dispenser. The dispenser 40 however differs from the dispenser 9 in that it includes only a single receptacle section and a single outer compartment. Thus the dispenser 40 includes an inner receptacle section or trough 41 which is formed by the inner wall 42 of the dispenser and an upwardly and outwardly extending flange 43 on that wall, and a single outer compartment 44 which is formed by the outer wall 45 of the dispenser and upper and lower shelves 46 and 47 of

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the outer wall. The annular outer compartment 45, as shown, is generally U-shaped and opens toward the receptacle section 41.

Rinsing agent solution is introduced into the dispenser 40 by lifting the cover 30 and pouring it into the top of the dispenser. The shelf 46 overlaps the outer edge of the flange 43 slightly and thereby guides the rinsing agent into the receptacle section 41 wherein it is retained during the washing operation of the machine. The slow speed oscillation of the agitator during the washing operation does not cause the liquid to be thrown centrifugally out of the receptacle section 41. However, when the machine proceeds into its first centrifugal extraction operation at that time the rinsing agent is thrown outwardly by centrifugal force into the compartment 44, and it is retained against the outer wall of the compartment 44 so long as the agitator continues to rotate. When the extraction operation is completed, the rinsing agent solution then runs down the lower shelf 47 to the bottom of the receptacle and is discharged from there into the clothes basket through the outlet openings 48. The openings 48 as shown, are positioned well inwardly of the outer wall 45 to prevent any loss of rinsing agent so long as the extraction operation continues. Since the rinsing operation follows immediately after the first centrifugal extraction operation, the rinsing agent is thus introduced into the basket at the start of the rinsing operation. From this it will be seen that the embodiment of my invention shown in Fig. 3 operates on exactly the same principle as the embodiment of Fig. 2 except that only one receptacle section and one outer compartment are needed since there is only one continuous rotation of the agitator during the first extraction operation rather than two rotations separated by a pause.

My invention is of course not limited to an arrangement wherein my new and improved dispenser is mounted on a recirculation filter such as the filter 18. It will be obvious that the dispenser might be mounted directly on the agitator post rather than through the medium of the filter 18. The outer edge of the agitator mounted filter merely comprises a convenient place to mount the dispenser when the washing machine is provided with a recirculation system including such a filter.

As mentioned above the illustrated filter 18 comprises the lint removing means of a recirculation system included within the machine 1. Although this recirculation system forms no part of my present invention, it will now be described in order to complete the description of the machine 1. The recirculation system is included within the machine 1 primarily in order to clean and filter the wash water during the washing operation, but it also produces the same action during the rinsing operation. The recirculation system constantly circulates washing liquid from the tub 3 into the basket 2 throughout both those operations. For that purpose it includes a pump 50 which is secured to the bottom wall of the tub 3 and which withdraws washing liquid from the tub through a suitable baffle assembly 51. The pump 50 is driven by the motor 12 through a flexible coupling 52 between the motor shaft and the pump shaft, and during the washing and rinsing operations it discharges into a hose or conduit 53 which leads to a nozzle 54 mounted above the filter 18. The nozzle 54 discharges the washing or rinsing liquid into the filter and from the filter the liquid drains back into the basket 2. The filter 18 is effective to remove any lint contained in the liquid and thereby only clean filtered liquid is returned to the basket.

The liquid flowing into the basket from the filter 18 causes a continuous overflowing from the basket through overflow apertures 55 provided adjacent the upper edge of the basket side wall. The liquid overflowing through these apertures 55 falls into the tub whereby there is provided a continuous supply of liquid for the pump 50 and thus a continuous flow of liquid through the recircu-

lation system throughout the washing and rinsing operations. The liquid overflowing through the apertures 55 tends to carry with it lint removed from the clothes as a result of the washing operation. A portion of this lint then passes through the pump 50 and hose 53 and as mentioned above, is removed from the recirculation flow by means of the filter 18.

Any suitable pump may be used to create this recirculation flow during the washing and rinsing operations. However, in the machine 1 I have shown a direction responsive pump which discharges into one or two outlets depending upon the direction of pump rotation. A directional pump of this sort is described in detail and claimed in my copending applications S. N. 468,460 filed November 12, 1954, and assigned to the same assignee as the present invention. As mentioned above during the washing and rinsing operations this pump discharges through its one outlet into the conduit 53 for returning the liquid to the basket 2. However, during the extraction operations the pump discharges into its other outlet which is connected to a hose 56. This hose 56 is adapted to be connected or disposed for discharge to a stationary tub or drain line and thereby the tub 3 is drained by the pump 50 during the extraction operations. Thus, in brief, due to the change in direction of rotation of the pump 50, the washing liquid is continuously recirculated through the hose 53 during the washing and rinsing operations and is discharged to the drain through the hose 56 during the extraction operations.

Besides flushing lint from the wash basket 2, the illustrated recirculation system is also effective to remove insoluble soil particles from the basket. During the operation of the agitator the insoluble soil particles removed from the clothes tend to sink to the bottom of the basket and then move into the quiescent zone existing under the skirt 8 of the agitator. In order to remove the soil particles from that region beneath the agitator skirt there is provided a nozzle 57 in the bottom wall of the basket. A controlled flow of liquid is discharged from the basket into the outer tub through this nozzle 57 and this flow carries with it the insoluble soil particles.

Since the valve means for introducing the wash and rinse water into the wash basket 2 form no part of the present invention, I have not shown them herein. However, it will be understood that any suitable electrically controlled valve means may be used, for example solenoid operated valves. These valve means like the other electrical components of the machine including the motor 13 are under the control of a suitable timer operated sequence mechanism, such as the mechanism 58, throughout the operation of the machine. As shown, the timer mechanism 58 is preferably mounted on the back-splasher of the machine for easy access by the operator.

Summing up, it will be seen that by my invention I have provided a new and improved rinse agent dispenser particularly suited for use with automatic washing machines. This rinse agent dispenser may be filled before the machine is put in operation and then automatically discharges the rinsing agent into the wash basket at the start of the rinsing operation. Since the dispenser includes no moving parts of its own, it is extremely inexpensive to produce and assemble on the machine. Further, since it depends upon the basic operation of the machine itself, that is the oscillation of the agitator during the washing operation and its rotation during the first centrifugal extraction operation, the rinse agent dispenser is substantially fool proof in operation. So long as the washing machine is operating satisfactorily as a whole, the rinse agent dispenser will operate properly.

While in accordance with the patent statutes I have described what at present are considered to be the preferred embodiments of my invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and therefore, it is aimed in the appended

claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a washing machine adapted to proceed through a sequence of operations including a washing operation, a first centrifugal extraction operation, a rinsing operation and a second centrifugal extraction operation, a rotatable clothes basket, an agitator disposed within said clothes basket, drive means for driving said agitator for washing clothes and for rotating said basket to extract liquid centrifugally from said clothes, said agitator rotating with said basket during the rotation thereof, and a rinse agent dispenser mounted on said agitator for discharging a rinse agent into said basket after said first extraction operation to treat the liquid in said basket during said rinsing operation, said dispenser including a receptacle section for accommodating said rinse agent during said washing operation, and means including a compartment disposed outwardly of said receptacle section and opening toward said section for receiving and retaining said rinse agent upon the rotation of said agitator during said first extraction operation, and for discharging the rinse agent into said basket at the close of said first extraction operation.

2. In a washing machine adapted to proceed through a sequence of operations including a washing operation, a first centrifugal extraction operation, a rinsing operation and a second centrifugal extraction operation, a rotatable clothes basket, an agitator disposed within said clothes basket, drive means for oscillating said agitator for washing clothes and for rotating said basket to extract liquid centrifugally from said clothes, said agitator rotating with said basket during the rotation thereof, and a rinse agent dispenser mounted on said agitator for discharging a rinse agent into said basket after the first extraction operation to treat the liquid in said basket during said rinsing operation, said dispenser including a receptacle section for accommodating said rinse agent during the oscillation of said agitator during said washing operation, a compartment generally U-shaped in cross section disposed outward of said receptacle section and opening toward said receptacle section for receiving and holding said rinsing agent upon the rotation of said agitator during said first extraction operation, and outlet means for discharging said rinse agent from said compartment into said basket upon the termination of the agitator rotation at the end of said first extraction operation.

3. In a washing machine adapted to proceed through a sequence of operations including a washing operation, a first centrifugal extraction operation including two extraction stages interrupted by a pause, a rinsing operation and a second centrifugal extraction operation, a rotatable clothes basket, an agitator disposed within said clothes basket, drive means for oscillating said agitator for washing clothes and for rotating said basket to extract liquid centrifugally from said clothes, said agitator rotating with said basket during the rotation thereof, and a rinse agent dispenser mounted on said agitator for discharging a rinse agent into said basket after said first extraction operation to treat the liquid in said basket during said rinsing operation, said dispenser including a first receptacle section for accommodating said rinse agent during the oscillation of said agitator during said washing operation, a first compartment generally U-shaped in cross section disposed outward of said first receptacle section and opening toward said first receptacle section for receiving and holding said rinse agent during the first stage of said first centrifugal extraction operation, a second receptacle section located below said first receptacle section and inwardly of said first compartment for receiving said rinsing agent from said first compartment during said pause between the first and second extraction stages of said first extraction operation, a second compartment generally U-shaped in cross section dis-

posed outwardly of said second receptacle section for receiving and holding said rinsing agent upon the rotation of said agitator during said second stage of said first centrifugal extraction operation, and outlet means for discharging said rinsing agent from said second compartment into said basket upon the completion of said second stage.

4. For use in a washing machine having a rotatable clothes basket and an agitator disposed within said basket, a liquid treating agent dispenser adapted for mounting on said agitator and comprising an inner liquid containing receptacle section having an upwardly inclined outer edge, a compartment generally U-shaped in cross section disposed outward of said receptacle section and opening toward said section for catching liquid centrifugally discharged over said edge during the rotation of said agitator, and outlet means opening from said compartment inwardly of its outer wall for discharging said liquid collected in said compartment out of said dispenser upon the stopping of the rotation of said agitator.

5. For use in a washing machine having a rotatable clothes basket and an agitator disposed within said clothes basket, a liquid treating agent dispenser adapted for mounting on said agitator and comprising an inner liquid containing receptacle section having an upwardly inclined outer edge, a first compartment generally U-shaped in cross section disposed outward of said receptacle section and opening toward said section for catching liquid centrifugally discharged from said section over said edge during rotation of said agitator, a second receptacle section disposed beneath said first receptacle section for receiving and holding said liquid from said first compartment when said agitator stops rotating, and a second compartment generally U-shaped in cross section disposed outwardly of said second receptacle section and opening toward said section for catching liquid centrifugally

discharged from said second receptacle section during a subsequent rotation of said agitator, and outlet means opening from said second compartment inwardly of its outer wall for discharging said liquid collected in said second compartment out of said dispenser upon the next cessation of agitator rotation.

6. For use in a clothes washing machine having a rotatable clothes basket and an agitator mounted within said basket, a liquid treating agent dispenser adapted for mounting on said agitator and comprising an inner liquid containing receptacle section having an upwardly inclined outer edge, an outer compartment generally U-shaped in cross section arranged to receive and hold any liquid centrifugally discharged from said receptacle section over said edge during rotation of said agitator, and means for discharging said liquid from said compartment only upon the cessation of agitator rotation.

7. In a clothes washing machine adapted to proceed through a sequence of operations including a washing operation, an extraction operation, and a rinsing operation, a member which rotates at high speed during said extraction operation, and a dispenser mounted on said member for discharging a rinsing agent into said machine after said extraction operation to treat the liquid in said machine during said rinsing operation, said dispenser including a receptacle section for accommodating said rinsing agent during said washing operation and means including a compartment disposed outwardly of said receptacle section and opening toward said section for receiving and retaining said rinsing agent upon the rotation of said member during said extraction operation and for discharging said rinsing agent into said machine at the close of said extraction operation.

No references cited.