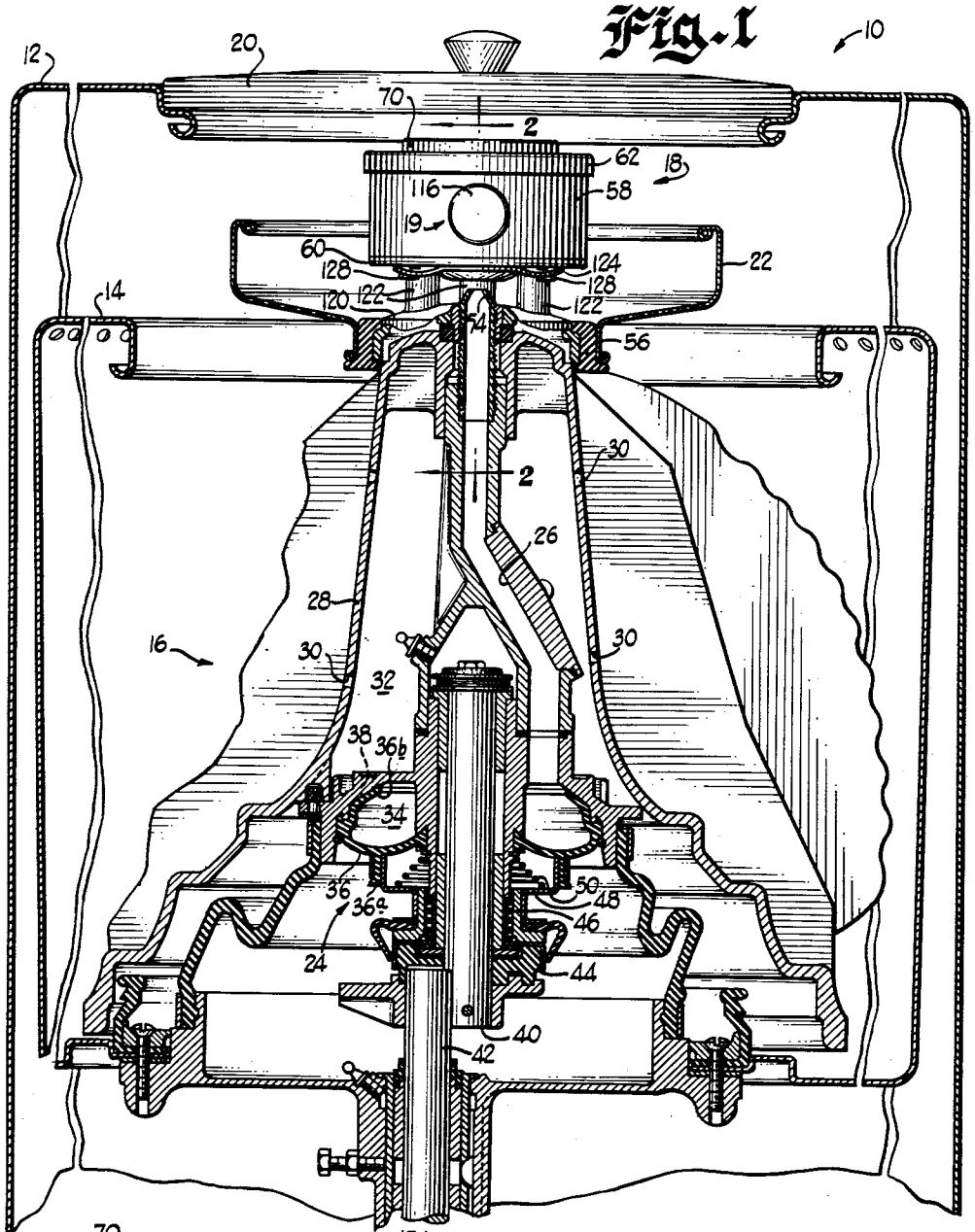
Nov. 28, 1961 H. W. ALTORFER 3,010,304

WASHING MACHINE WITH DISPENSING UNIT

Filed Sept. 26, 1958 2 Sheets-Sheet 1

Fig. 1



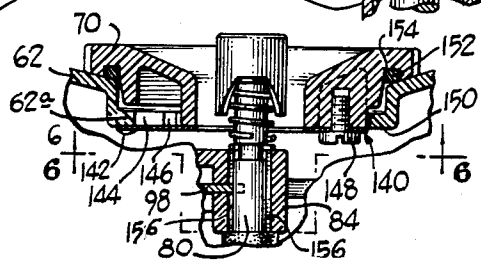


Fig. 5

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WASHING MACHINE WITH DISPENSING UNIT

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Fig. 2

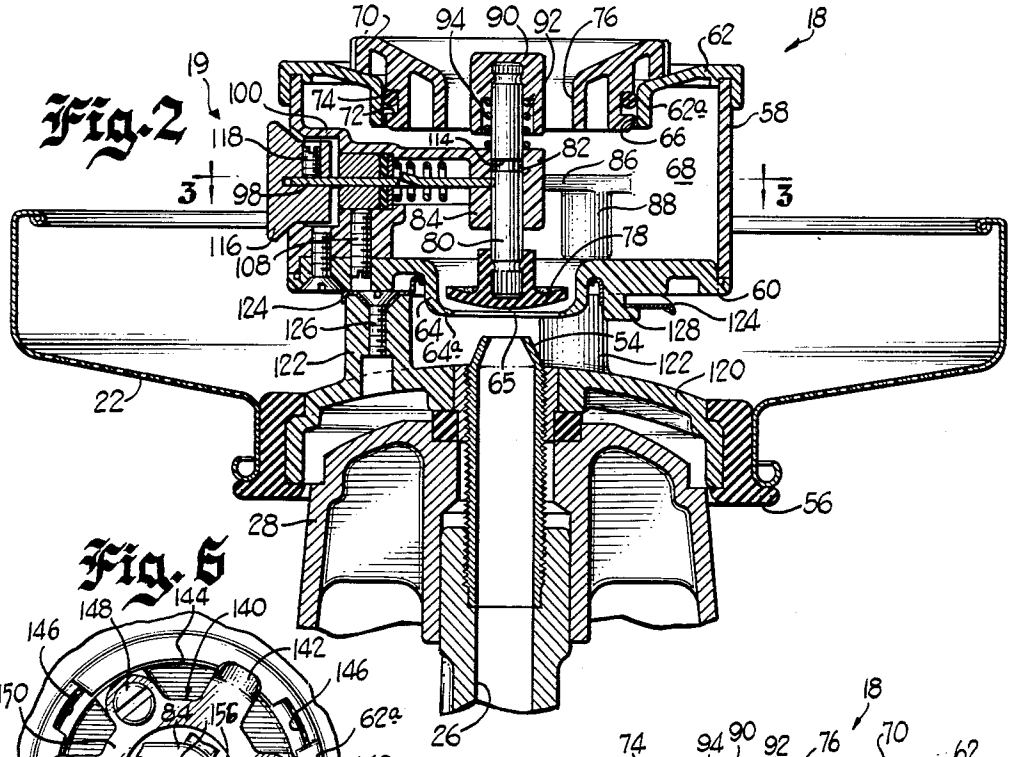
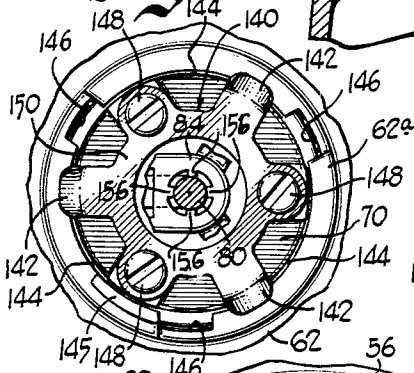
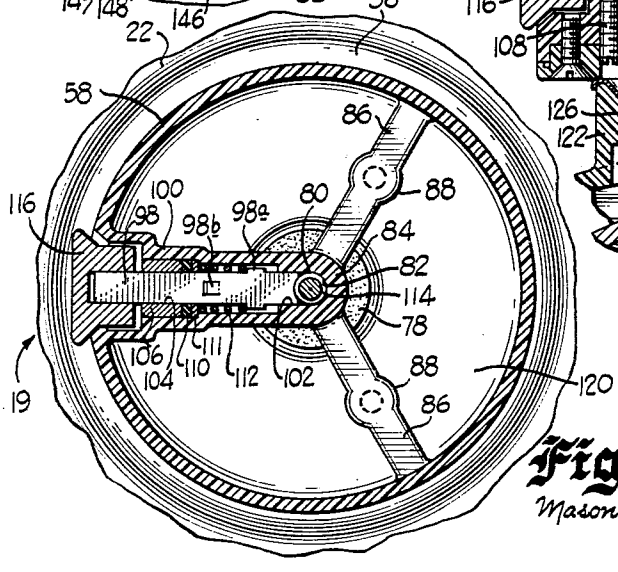


Fig. 6





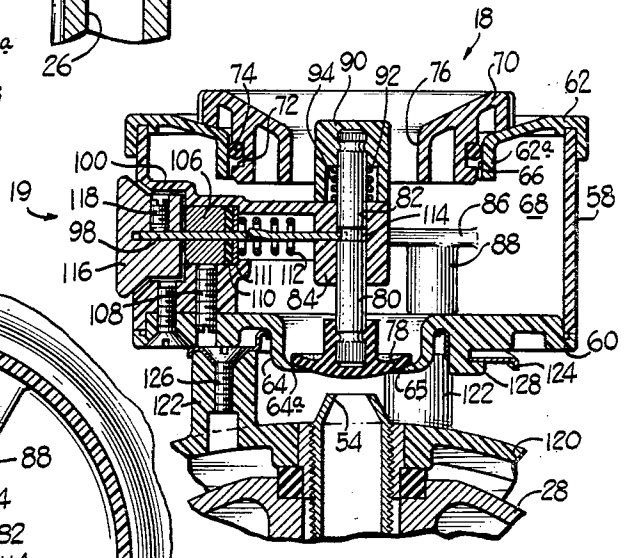


Fig. 4

Fig. 3

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3,010,304

WASHING MACHINE WITH DISPENSING UNIT

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Filed Sept. 26, 1958, Ser. No. 763,666
13 Claims. (Cl. 68—23)

This invention relates to a new and improved automatically operated washing machine and, more particularly, to such an apparatus including means for dispensing a conditioning agent during a selected portion of the operating cycle thereof.

In automatically operated washing machines that are successively operable through wash, spin, and rinse cycles of operation, it is often desirable to add a conditioning agent, such as a water softening material, to the water which is supplied to a clothes containing tub following the completion of the spin operation and incident to the beginning of the first rinse operation. These conditioning agents can be manually added to the tub at the proper time in the operating cycle, but this obviates one of the advantages of an automatically operated washing machine. Further, it has been proposed to provide units operated by the centrifugal forces developed during the spin cycle of operation of the washing machine for adding the conditioning agent. However, these proposed devices are not capable of use with both liquid and powdered forms of conditioning agents and often do not completely discharge the conditioning agent. The incomplete discharge of the agent, not only clogs the dispensing unit, but also requires the use of a greater amount of the agent.

Accordingly, one object of the present invention is to provide a new and improved washing machine including means for automatically dispensing a conditioning agent.

Another object is to provide new and improved means for dispensing a conditioning agent into a washing apparatus.

Another object is to provide a washing machine including a rotating element on which a conditioning agent dispensing unit including new and improved centrifugally operated latching means is mounted.

Another object is to provide a washing apparatus including means for dispensing a conditioning agent and means for forcing a flow of liquid through the dispensing means to clean the dispensing means and to insure that all of the conditioning agent is fully discharged into the washing machine during its operation.

A further object of the present invention is the provision of a new and improved material dispensing device including a detachable apertured cap at its upper end, which cap can be detachad to facilitate insertion of material into the device and the aperture of which provides an exit of limited area for washing liquid, whereby better cleansing of the interior of the device is insured during flow of liquid through the device and whereby undesired wetting of the material is minimized prior to such flow of the liquid.

A still further object is to provide a washing machine including a movable dasher assembly carrying centrifugally controlled dispensing means and pump means for forcing a fluid through the dispensing means.

In accordance with these and many other objects, an embodiment of the present invention comprises an automatically controlled washing machine including a stationary tub in which is mounted a clothes receiving tub adapted to be rotated at high speed. A dasher assembly is mounted for orbital movement within the rotatable tub and includes a pump means that is operated during orbital movement of the dasher assembly to discharge a fluid through an upwardly extending passageway. A dispensing unit for receiving a conditioning agent in liquid or

powdered form is mounted on the upper end of the dasher assembly with a centrally located lower opening in the dispensing unit positioned in alignment with the discharge port of the pump passageway. The dispensing unit is provided with a resiliently biased valve or closure element that is manually displaced to and latched in a position closing the lower opening.

The unit includes also a detachable apertured cap which is detached to facilitate insertion of conditioning agent in liquid or powdered form. Thereafter the cap is again attached in place, where it may be held either frictionally or positively. The aperture in the cap is of limited area so that undesired wetting of the agent does not occur during washing and so that the liquid flowing through the unit at a later stage of operation is caused thoroughly to contact the contents of the unit and to cleanse it.

When a cycle of operation of the washing machine is initiated, the dasher assembly is moved orbitally relative to the rotatable tub which is held in a fixed position during this operation. At the completion of the wash cycle, the dasher assembly and the rotatable tub are moved at high speed during which a centrifugally controlled latch in the dispensing unit releases the valve or closure element so that the lower opening of the dispensing unit is opened. The conditioning agent is not discharged following the opening of the closure element and during the high speed rotation because centrifugal force displaces the agent outwardly away from the centrally disposed lower opening. However, during the deceleration of the rotatable tub and the dasher assembly at the completion of the spin cycle, a liquid conditioning agent flows out through the lower opening into the rotatable tub. This conditioning agent preferably comprises a water softener that is used to prevent the formation of scum on the clothes during the following rinse cycle.

If the conditioning agent is in a powdered form, this agent tends to become caked by the absorption of moisture (although the apertured cap minimizes this, as noted above) and thus does not fall out of the lower opening in the dispensing unit during the deceleration of the rotating tub at the completion of the spin cycle. However, when the rinse cycle is started so that the dasher assembly is moved orbitally and water is supplied to the tub, the pump operates to force the rinse water upwardly through the passageway and into the dispensing unit through the lower opening. This water dissolves the powdered conditioning agent, and the water bearing the dissolved conditioning agent is displaced outwardly through an upper opening in the dispensing unit so as to be discharged into the rotatable tub. Because of the forced supply of water into the dispensing unit at the completion of the spin cycle and at the beginning of the rinse cycle, all of the conditioning agent, whether in liquid or powdered form, is forced out of the dispensing unit. This not only cleans the dispensing unit but also insures that all of the conditioning agent is made available for use during the cycle of operation of the washing machine. Accordingly, the present invention provides new and improved means for automatically dispensing a conditioning agent, in either powdered or liquid form, into a washing machine at a selected point in the operating cycle thereof.

Many other objects and advantages of the present invention will become apparent from the following detailed description when considered in conjunction with the drawings, wherein:

FIG. 1 is a fragmentary vertical sectional view of an automatically controlled washing machine embodying the present invention;

FIG. 2 is an enlarged vertical sectional view taken along line 2—2 in FIG. 1 assuming that the entire machine is shown therein;

FIG. 3 is a horizontal sectional view taken along line 3—3 in FIG. 2 again assuming that the entire construction is illustrated therein;

FIG. 4 is a sectional view similar to FIG. 2 illustrating the dispensing unit in a closed condition;

FIG. 5 is a fragmentary vertical sectional view along the lines of FIG. 2 illustrating a modified form of detachable apertured cap and mounting for the manually depressible valve or closure element; and

FIG. 6 is a fragmentary horizontal sectional view along the line 6—6 of FIG. 5.

Referring now more specifically to FIG. 1 of the drawings, therein is shown a washing machine, indicated generally as **10**, which embodies the present invention. The washing machine **10** includes an outer stationary receptacle or tub **12** within which is disposed a rotatable clothes receiving tub **14**. A dasher or washing assembly **16** is mounted within the rotatable tub **14** for orbital movement relative thereto. In order to provide means for dispensing a conditioning agent into the tub **14** at a selected position in the washing cycle of the machine **10**, a dispensing unit **18** is detachably mounted on the upper end of the dasher assembly **16**. The dispensing unit **18** can be filled with a liquid or powdered conditioning agent prior to the initiation of a cycle of operation of the machine **10** either by removing the unit **18** from the machine **10** through an opening normally closed by hinged cover **20** or by filling the dispensing unit **18** in its position mounted on the dasher assembly **16**. The conditioning agent supplied to the unit **18** preferably comprises a water softener which is useful in preventing the formation of scum during the rinse cycle.

When the machine **10** is placed in operation after supplying clothes washing fluid and a suitable amount of detergent to the rotatable tub **14**, the dasher assembly **16** is placed in orbital movement within the tub **14** which remains in a stationary position. The operation of the dasher assembly results in operation of fluid pump assembly **24** which effects flow of washing fluid onto filter element **22**. At the completion of the wash cycle, the tub **14** and the dasher assembly **16** are rotated at high speed to release a centrifugal latch assembly **19** (FIG. 2) included in the dispensing unit **18**. The release of the latch assembly **19** permits a closure element in the unit **18** to open a lower opening in this unit. Thus, when the tub **14** and the dasher assembly **16** are decelerated at the completion of the spin cycle and if the conditioning agent is in liquid form, this liquid agent, which is held in contact with the outer walls of the dispensing unit **18** during the spin cycle by centrifugal force, is discharged into the rotatable tub **14** through the screen or filter element **22** which is detachably mounted on the upper end of the dasher assembly **16**.

If the conditioning agent is in a powdered form, the agent tends to become caked by the absorption of moisture during the spin cycle and is also held in contact with the outer walls of the dispensing unit **18** to prevent its discharge during the spin cycle. At the completion of the spin cycle and at the initiation of the rinse cycle, water is supplied to the tub **14** and the dasher assembly **16** is moved orbitally relative to the tub **14** which is now retained in a stationary position. During this operation of the dasher assembly **16**, the pump assembly **24** is placed in operation to force the rinse water upwardly through a passageway **26** to be discharged at the upper end of the dasher assembly **16**. The fluid discharged from the upper end of the passageway **26** enters the dispensing unit **18** through the lower opening therein to dissolve the powdered conditioning agent contained therein. The fluid or water containing the dissolved conditioning agent is discharged through an upper opening in the dispensing unit **18** and passes through the filter assembly **22** into the tub **14**. The water provided by the operation of the pump assembly **24** cleans the interior of the dispensing unit **18** and insures the complete discharge of the agent to avoid the clogging of the unit **18** and the use of unnecessarily large amounts of the conditioning agent.

Referring now more specifically to the washing machine **10**, this machine preferably is of the type shown and described in detail in Patents Nos. 2,709,908, Altorfer, Jr., et al., and 2,715,330, Altorfer, Jr. As set forth therein, the tub **14** is held in a stationary position and the dasher assembly **16** is moved in an orbital path during the wash cycle. For centrifugal drying during the spin operation, the tub **14** and the dasher **16** are rotated at high speed. During the following rinse cycle or cycles, the tub **14** is again held in a stationary position and the dasher assembly **16** is moved in an orbital path within the tub **14**.

The dasher or washing assembly **16** together with the pump means **24** included therein and the filter or strainer assembly **22** mounted thereon preferably are of the type shown and described in detail in the copending application of Henry W. Altorfer, Serial No. 602,812, filed August 8, 1956, now Patent No. 2,909,051 of Oct. 20, 1959, which application is assigned to the same assignee as the present application. As illustrated therein, the dasher assembly **16** includes a housing **28** having a plurality of apertures **30** through which fluid or water from the tub **14** passes into a chamber **32** formed by the housing **28**. The fluid in the chamber **32** is drawn into a variable volume pump chamber **34** defined in part by a resilient diaphragm **36**, which forms a part of the pump **24**, through a plurality of openings **38**.

To provide means for shifting the diaphragm **36** and operating the pump **24** during orbital movement of the dasher assembly **16**, a crank arm **40** is provided which is eccentrically secured to a rotating drive shaft **42**. A first cam **44**, which is secured to the crank arm **40**, engages a second cam member **46**, which is rotatable relative to the crank arm **40**. A cup element **48** secured to an annular depending portion **36***a* of the flexible diaphragm **36** is biased downwardly by a compression spring **50** interposed between a portion of the assembly **16** and the cup **48** to force the second cam member **46** into engagement with the first cam member **44**. Accordingly, when the drive shaft **42** is rotated to turn the crank arm **40** and the cam **44** connected thereto, the cam member **46** is reciprocated relative to the axis of the crank arm **40** to similarly reciprocate the flexible diaphragm **36**, thereby changing the volume of the chamber **34**. When the volume of the chamber **34** is increased by moving the diaphragm **36** downwardly (FIG. 1), an upper flap portion **36***b* moves out of engagement with the inner ends of tthe passageways **38** so that the fluid within the chamber **32** is drawn into the chamber **34**. Conversely, when the flexible diaphragm **36** is moved upwardly to reduce the volume of the chamber **34**, the flap **36***b* closes the openings **38** and the entrapped fluid is forced outwardly through the passageway **26** and a tapered nozzle **54** that is mounted on the upper end of the housing **28**. This discharged fluid is either deflected by the dispensing unit **18** to impinge on the strainer assembly **22**, which is mounted on a resilient gasket **56** carried on the upper end of the housing **28**, or passes through the dispensing unit **18** so that the conditioning agent therein is discharged into the tub **14**.

Referring now more specifically to the dispensing unit **18**, this unit comprises a hollow container or housing defined by a circular side wall **58** which is secured at its lower end to a base plate **60** and at its upper end to a top plate **62**. The lower plate **60** is provided with a centrally disposed and outwardly extending bossed or tubular portion **64** terminating in an inwardly directed flange **64***a* which forms a valve seat and defines a lower opening **65**. The upper plate **62** is provided with a centrally disposed and inwardly extending bossed or tubular portion **62***a* providing an enlarged upper opening **66** for introducing a liquid or powdered conditioning agent into a chamber or cavity **68** defined by the top and bottom plates **60** and **62** and the side wall **58**. The opening **66** is partially closed by a detachable cap **70** hav-

ing an annular recess **72** in which is disposed a resilient O-ring **74**, which serves as a seal frictionally to hold the cap in place when liquid is forced upwardly through the unit. The cap **70** is provided with a centrally disposed and outwardly flared relatively small or restricted opening **76** for discharging the fluid injected into the cavity **68** by the pumping means **24**.

To provide means for closing the lower opening **65**, a resilient valve or closure element **78** is provided which is secured to one end of a shaft **80**. The shaft **80** is slidably mounted within an opening **82** formed in a centrally disposed hub **84** which comprises a part of a spider arrangement formed integral with the side wall **58** of the dispensing unit **18**. The spider arrangement, in addition to the centrally disposed hub **84**, includes a pair of radially extending arms **86** (FIG. 3) having depending portions **88** which are secured to the lower plate **60**. To provide means for manually shifting the valve element **78** to a closed position in which it engages the tapered portion **64***a*, the upper end of the shaft **80** is provided with a knob **90** which serves further to restrict the effective size of opening **76**, thereby to insure effective circulation of liquid within the unit. A compression spring **92** interposed between the upper surface of the hub **84** and a recess **94** formed in the knob **90** normally biases the valve element **78** to the open position illustrated in FIG. 2. Because of the tapered nozzle **54** and the greater diameter of the closure element **78**, the conditioning agent in the unit **18** cannot be discharged into the passageway **26**. Further, since the opening **65** is closed by the element **78** during the wash cycle, the convex lower surface of the element **78** serves to uniformly distribute or deflect the water discharged from the nozzle **54** into the filter means **22** during the wash cycle.

The centrifugally controlled latch assembly **19** is effective to hold the valve element **78** in a position closing the lower opening **65** until the spin cycle of the washing machine **10** is reached. At this time, the latch assembly **19** is operated by centrifugal force to release the valve element **78** so that the conditioning agent contained in the dispensing unit **18** can be discharged to the tub **14**. The latching or control assembly **19** includes a flat latch element **98** which is slidably mounted within a hollow radially extending arm **100** of the spider arrangement. The inner end of the latching element **98** is slidably mounted in an opening **102** which extends into the opening **82**, and an intermediate portion of the latching element **98** is slidably mounted within an opening **104** in an element **106**. The element **106** is secured within an opening in the hollow arm **100** by a set screw **108** (FIGS. 2 and 4). A resilient sealing washer **110** and a stop plate **111** (FIG. 3) are interposed between the element **106** and a shouldered portion of the opening in the hollow arm **100**. The inner end of the latching element **98** is biased inwardly toward the opening **82** by a compression spring **112** which is interposed between a pair of lugs **98***a* formed on the latching element **98** and the stop plate **111**. Thus, when the knob **90** is manually depressed to move the valve element **78** into seating engagement with the flange **64***a* so as to close the lower opening **65**, the inner end of the latching element **98** is biased into engagement with the shaft **80** and moves into engagement with a notched portion **114** thereon. This secures the valve or closure element **78** in a position closing the opening **65** as illustrated in FIG. 4 of the drawings.

To provide means for releasing the shaft **80** and the valve or closure element **78** during the spin cycle of the washing machine **10**, a weight **116** is secured to the outer end of the latch element **98** by a set screw **118**. Thus, when the tub **14** and the dasher assembly **16** are rotated at high speed during the spin cycle, the centrifugal force developed by rotating the weight **116** overcomes the resilient force of the compression spring **112**. This causes the latch element **98** to move to the left (FIG. 2) so that the inner end of the latch **98** moves out of the notch **114**. The compression spring **92** then moves the shaft **80** upwardly to the position illustrated in FIG. 2 in which thte valve or closure element **78** is moved out of engagement with the flange **64***a*. A struck-out portion or lug **98***b* formed integral with the latch element **98** engages the stop plate **111** to limit outward movement of the latch element **98** during the spin cycle.

To provide means for detachably mounting the dispensing unit **18** on the upper end of the housing **28**, a cap element **120** is mounted on the upper end of the housing **28** and is provided with a plurality of upstanding posts **122**. An annular ring **124**, which is secured to the posts **122** by a plurality of machine screws **126**, includes a plurality of inclined slots having enlarged end portions. The lower plate **60** is provided with a plurality of depending and generally hook shaped lugs **128** which are inserted in the enlarged portions of the slots formed in the ring **124**, and the dispensing unit **18** is then rotated so that the lugs **128** move into interlocking engagement with the ring **124**. Thus, the dispensing unit **18** can be detached from the dasher assembly **16** and removed from the washing machine **10** through the opening normally closed by the cover **20**.

Referring now more specifically to the operation of the washing machine **10**, the cover **20** is opened and clothes and a suitable amount of detergent are disposed within the rotatable tub **14**. The cover **70** is then removed from the dispensing unit **18**, and the knob **90** is manually depressed so that the resilient valve or closure element **78** moves into seating engagement with the flange **64***a* to close the lower opening **65**, although it should be noted the knob **90** can be depressed prior to removal of the cover. In this position, the notched portion **114** on the shaft **80** is aligned with the latching element **98** so that the compression spring **112** moves the latching element **98** into the notched portion **114** to hold the valve or closure element **78** in engagement with the flanged portion **64***a*. A suitable amount of a conditioning agent, in either liquid or powdered form, is introduced into the cavity **68** of the dispensing unit **18**, and the cover **70** is replaced.

When the automatic cycling control for the washing machine **10** is started to place this machine in operation, the interior of the tub **14** is filled with water and the dasher assembly **16** is driven in an orbital path relative to the rotatable tub **14** which is now held in a stationary position. During the washing operation, the pump assembly **24** is operated to discharge water through the passageway **26** and the nozzle **54**. This water impinges on the convex lower surface of the valve element **78** and is deflected outwardly into the strainer or filter assembly **22** to remove any lint or other particles from the fluid. The cap **70** with its restricted opening **76** minimizes possible undesirable wetting of powder in the dispensing unit. However, the orbital movement of the dasher assembly **16** does not produce sufficient centrifugal force to release the latch assembly **19**.

At the completion of the washing operation, the spin cycle is started during which the washing water or fluid is discharged from the rotatable tub **14** and the rotatable tub **14** and the dasher assembly **16** are rotated at relatively high speeds. This high speed rotation of the tub **14** and the dasher assembly **16** actuates the centrifugally controlled latch assembly **19** to release the closure or valve for the lower opening **65** in the dispensing unit **18**. More specifically, when the speed of rotation becomes great enough, the outwardly directed centrifugal force due to the mass of the weight **116** exceeds the force provided by the compression spring **112** so that the latch element **98** moves outwardly until the stop **98***b* engages the plate **111**. In so moving, the end of the latch element **98** moves out of the notch **114** so that the compression spring **92** displaces the shaft **80** and resilient valve element **78** upwardly to the position shown

in FIG. 2 of the drawings. However, this opening of the main valve element **78**, which occurs during the high speed rotation of the tub **14** during the spin cycle, does not result in the immediate discharge of a substantial portion of the conditioning agent contained within the chamber **68**.

If the conditioning agent is a liquid, the centrifugal force produced by the rotation of the dasher assembly **16** and the dispensing unit **18** forces the liquid conditioning agent outwardly against the side wall **58** of the unit **18**. Thus, only a small portion of liquid conditioning agent can be discharged through the lower opening **65** during the high speed rotation. If a powdered conditioning agent is supplied to the cavity **68**, this powder, which is hydroscopic in nature, may absorb enough moisture from the atmosphere within the washer **10** to become slightly caked, although this is minimized by the cap construction. The powder, some or all of which may be in caked form, is also forced outwardly against the side wall **58** by centrifugal force and is not discharged around the edges of the valve element **78** and through the opening **65**.

However, when the tub **14** and the dasher assembly **16** are decelerated at the conclusion of the spin cycle, the centrifugal force tending to hold a liquid conditioning agent against the wall **58** becomes less and drops of the conditioning liquid begin to flow down through the bossed portion **64** around the flange **64***a* and outwardly through the opening **65**. Due to the continuing rotation of the unit **18** during deceleration, the liquid conditioning agent discharged through the opening **65** is uniformly distributed around the filter **22** and thus drops into the tube **14** in a uniformly distributed manner. At the conclusion of the spinning operation and when the tub **14** and the dasher **16** assembly again become stationary, all of the liquid conditioning agent has been discharged from the chamber **68** except for droplets which are retained in the various interstices within this chamber.

At the conclusion of the spin cycle, the first rinse cycle is initiated during which water is again supplied to the interior of the tub **14** and the dasher assembly **16** moves in an orbital path relative to the stationary tub **14**. As described above, this causes the operation of the pump means **24** so that a continuous stream of water is pumped outwardly from the chamber **34** through the passageway **26** and the nozzle **54**. This stream of fluid or water impinges on the open valve element **78** and passes into the chamber **68** of the dispensing unit **18**. In the event that a liquid conditioning agent has been used, the stream of fluid serves to flush the remaining globules or drops of the liquid conditioning agent from the chamber **68**, and the water together with the conditioning agent flows outwardly through the opening **76** in the cover **70** to be discharged through the filter **22** into the interior of the tub **14**. In the event that the valve element **78** has not moved to a fully open position, the force of the stream of water discharged by the nozzle **54** serves to further elevate this valve element and thus more fully opens the lower opening **65**.

In the event that a powdered conditioning agent is used, the stream of water entering the chamber **68** through the lower opening **65** dissolves the powdered conditioning agent, and the water together with the dissolved conditioning agent flows upwardly and outwardly through the flared but restricted opening **76** in the cap **70** to be discharged to the filter or strainer assembly **22**. Thus, the water with the dissolved conditioning agent is distributed throughout the interior of the rotatable tub **14** as in the instance where a liquid conditioning agent is used. The forced supply of water or fluid to and restricted exit from the chamber **68** of the dispensing unit **18** causes the complete removal of the conditioning agent and cleans the dispensing unit **18** so that the operation thereof is not adversely affected by an accumulation of the conditioning agent therein.

Instead of relying on frictional holding of cap **70**, the latter may be positively but detachably held in place. A construction of this character is shown in FIGS. 5 and 6, to which reference will now be had and in which parts corresponding to the previously described construction are indicated by the reference characters. The main difference is that the cap is held in place by bayonet type holding means comprising a first element **140** with angularly spaced resilient locking projections or tongues **142** engageable with the undersides of inwardly extending projections **144** at the bottom of bossed or tubular portion **62***a*. One of the projections **144** may have a stop **145** dependent therefrom and engageable by a tongue **142** to limit rotary movement of the cap. The projections **144** are separated by slots **146** whereby the tongues can be inserted below the bosses after which, upon rotation of the cap, the tongues **142** resiliently but positively hold the cap in place. Element **140** may be suitably secured to the underside of cap **70** as by screws **148** passing through the hub portion **150** of the element.

Sealing against the escape of fluid around the outer periphery of cap **70** is provided by a sealing ring **152** mounted in a channel **154** at the under side of the outer region of the cap and bearing against wall **62**.

In order to minimize possible sticking of the valve element **78** as by corrosion or adhesion caused by the conditioning material, the area of contact between the shaft **80** and hub **84** may be decreased by cutting away parts of the latter thereby to provide angularly spaced vertical guide surfaces **156**. This construction also provides a path for passage of liquid along the shaft to cleanse it and its supporting means.

The operation of the modified arrangement is substantially the same as that of the first and description thereof will not be repeated here.

Although the present invention has been described with reference to a particular embodiment thereof, it should be understood that those skilled in the art may make many other modifications and embodiments thereof which will fall within the spirit and scope of the principles of this invention.

What is claimed and desired to be secured by Letters Patent of the United States is:

1. A dispensing unit for a washing apparatus including a rotating element comprising a housing mounted on said element, said housing providing a cavity for receiving a conditioning agent, said housing also including both a lower opening disposed adjacent said element and an axially aligned upper opening spaced from said element, said upper and lower openings being in communication with said cavity; closure means carried on said housing and axially movable toward and away from said lower opening to open and close said lower opening; means connected to said closure means for biasing said closure means toward a position in which said lower opening is opened; and a centrifugally operated latch means to detachably secure said closure means in a position closing said lower opening.

2. The dispensing unit set forth in claim 1 in which said latch means includes a latch element movable generally transverse to the direction of movement of said closure means, and means for biasing said latch element toward said closure means.

3. A washing apparatus including a moving washing assembly having an upwardly directed passageway, comprising pump means for discharging fluid through said passageway, a container for receiving a conditioning agent mounted on said assembly and including an opening aligned with said passageway, said container being mounted for rotation by said washing assembly, closure means carried on said container and normally closing said opening, and centrifugally operated means for opening said closure means to permit said conditioning agent to be discharged from said container.

4. The washing apparatus set forth in claim 3 in which

said closure means includes a closure element movable toward and away from said passageway in alignment therewith to prevent said conditioning agent from entering said passageway.

5. A washing apparatus comprising a dasher assembly including an outlet passageway, pump means for discharging a fluid through said passageway, a container of greater cross sectional area than said passageway for receiving a conditioning agent and having an opening, means mounting said container on said assembly with said opening in alignment with said passageway, and closure means normally closing said opening and operable to open said opening so that fluid discharged from said passageway enters said container.

6. The washing apparatus set forth in claim 5 in which said container includes an aperture spaced from said opening for discharging said conditioning agent and the fluid admitted through said opening.

7. A washing apparatus successively operable through wash, spin and rinse cycles and including a washing assembly rotated at high speeds during said spin cycle; comprising a container mounted on the washing assembly and adapted to receive a conditioning agent, said container having an opening; a closure element normally closing said opening; means responsive to centrifugal forces developed by rotation of said washing assembly during said spin cycle for displacing said closure element to open said opening; and pump means operated during said rinse cycle for discharging fluid through said opening into said container.

8. A washing apparatus operable through wash, spin and rinse cycles comprising a tub; a dasher assembly disposed within and movable relative to said tub, said dasher assembly including a passageway; a container mounted on said dasher assembly and adapted to receive a conditioning agent, said container having an opening positioned adjacent said passageway; a closure element normally closing said opening; means for rotating said tub and dasher assembly during said spin cycle; means responsive to rotation of said dasher assembly during said spin cycle for displacing said closure element to open said opening; and pump means connected to said passageway and operated during said rinse cycle for forcing fluid through said passageway and said opening into said container.

9. In a washing machine successively operable through wash, spin and rinse cycles, a washing assembly including means defining a passageway, a container for receiving a conditioning agent and including an opening disposed adjacent said passageway, an element normally closing said opening and extending generally transverse to said passageway, filter means mounted adjacent said container, pump means operable during said wash cycle to discharge a fluid through said passageway so that said fluid impinges on said element and is deflected transversely into said filter means, means operable during said spin cycle for displacing said element to open said opening, and means for operating said pump means during said rinse cycle so that fluid discharged from said passageway enters said container through said opening.

10. A dispensing unit for a washing apparatus including a rotatable housing, said housing providing a cavity for receiving a conditioning agent, said housing also providing both a lower opening and an axially aligned and relatively large upper opening spaced from the lower opening, said upper and lower openings being in communication with said cavity, centrifugally operable closure means for the lower opening carried on said housing and axially movable toward and away from said lower opening to open and close it, and a detachable cap for the upper opening having an exit providing a restricted outlet for liquid from the cavity.

11. A dispensing unit for a washing apparatus including a rotatable housing, said housing providing a cavity for receiving a conditioning agent, said housing also providing both a lower opening and an axially aligned and relatively large upper opening spaced from the lower opening, said upper and lower openings being in communication with said cavity, centrifugally operable closure means for the lower opening carried on said housing and axially movable toward and away from said lower opening to open and close it, a detachable cap for the upper opening having an exit providing a restricted outlet for liquid from the cavity, and said cap having frictional means detachably holding it on the housing.

12. A dispensing unit for a washing apparatus including a rotatable housing, said housing providing a cavity for receiving a conditioning agent, said housing also providing both a lower opening and an axially aligned and relatively large upper opening spaced from the lower opening, said upper and lower openings being in communication with said cavity, centrifugally operable closure means for the lower opening carried on said housing and axially movable toward and away from said lower opening to open and close it, a cap for the upper opening having an exit providing a restricted outlet for liquid from the cavity, and said cap and housing having cooperating bayonet type holding means detachably securing the cap to the housing.

13. A dispensing unit for a washing apparatus including a rotatable housing, said housing providing a cavity for receiving a conditioning agent, said housing also providing both a lower opening and an axially aligned and relatively large upper opening spaced from the lower opening, said upper and lower openings being in communication with said cavity, centrifugally operable closure means for the lower opening and axially movable toward and away from said lower opening to open and close it, said housing having a plurality of angularly spaced apart supporting means and said closure means including a shaft slidably mounted by said supporting means, and a detachable cap for the upper opening having an exit providing a restricted outlet for liquid from the cavity.

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