Sept. 7, 1965 V. A. BUTLER ETAL 3,204,831

LAUNDRY AGENT DISPENSING DEVICE

Filed April 4, 1963 3 Sheets-Sheet 1

FIG. 1

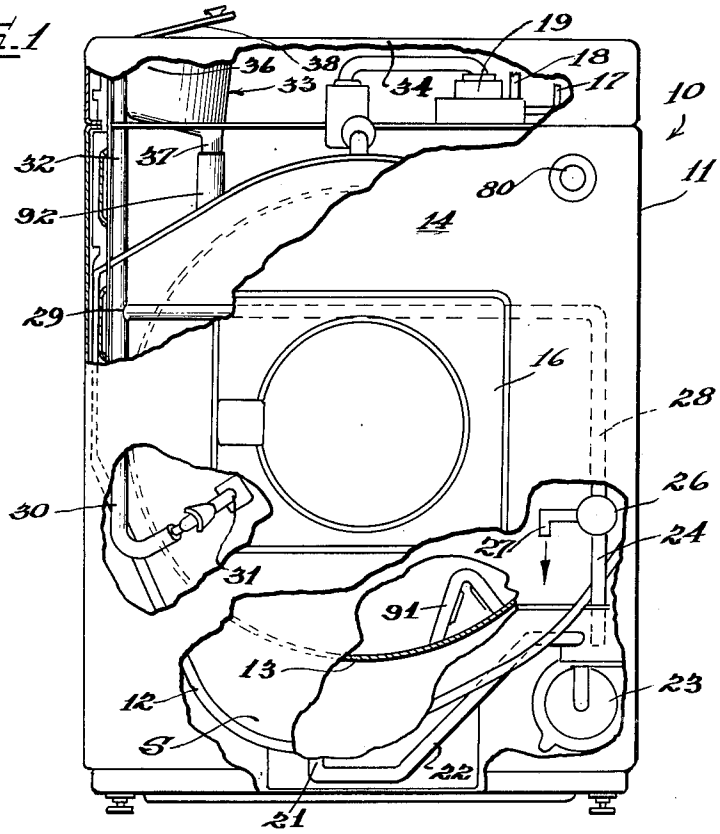
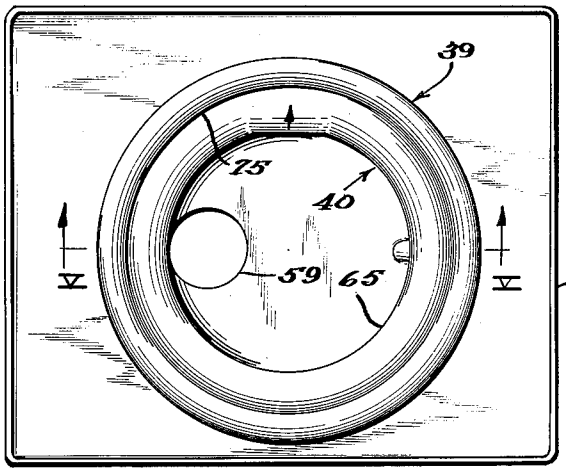


FIG. 2



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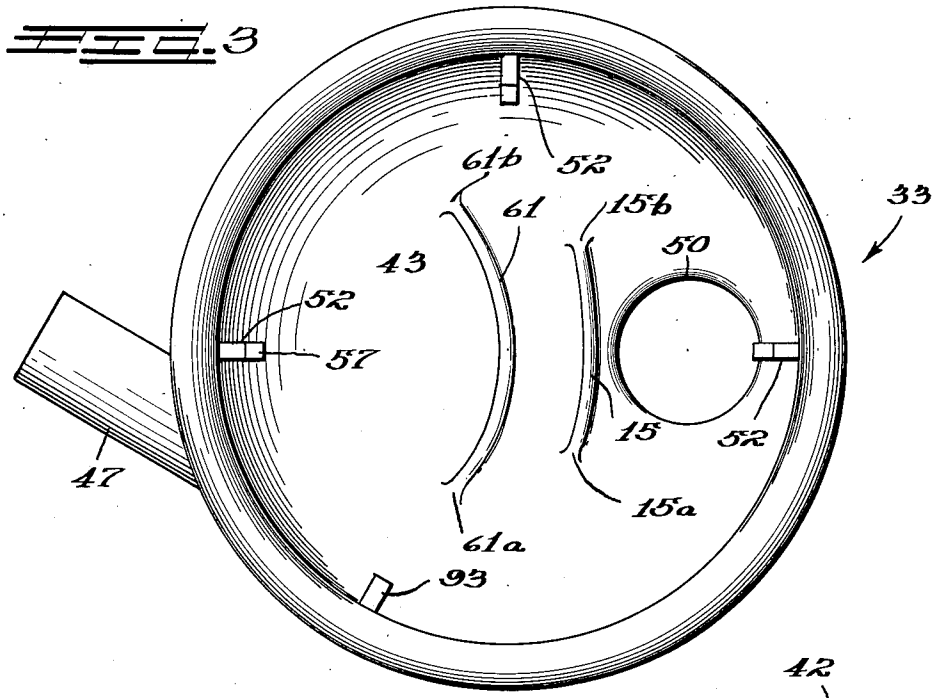
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LAUNDRY AGENT DISPENSING DEVICE

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FIG. 3



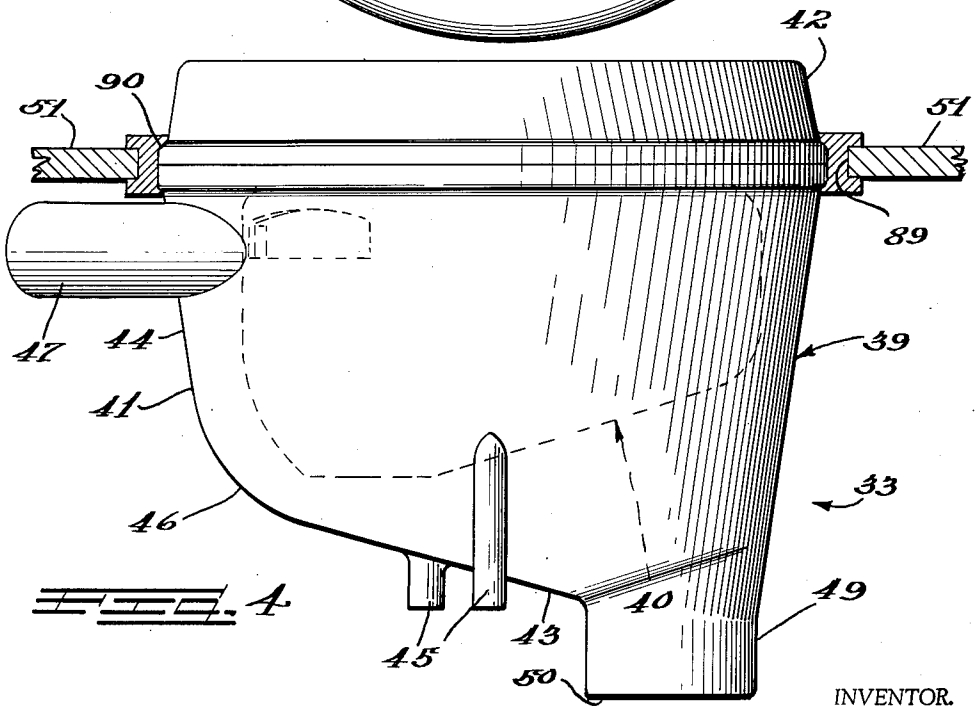


FIG. 4

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LAUNDRY AGENT DISPENSING DEVICE

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FIG. 5

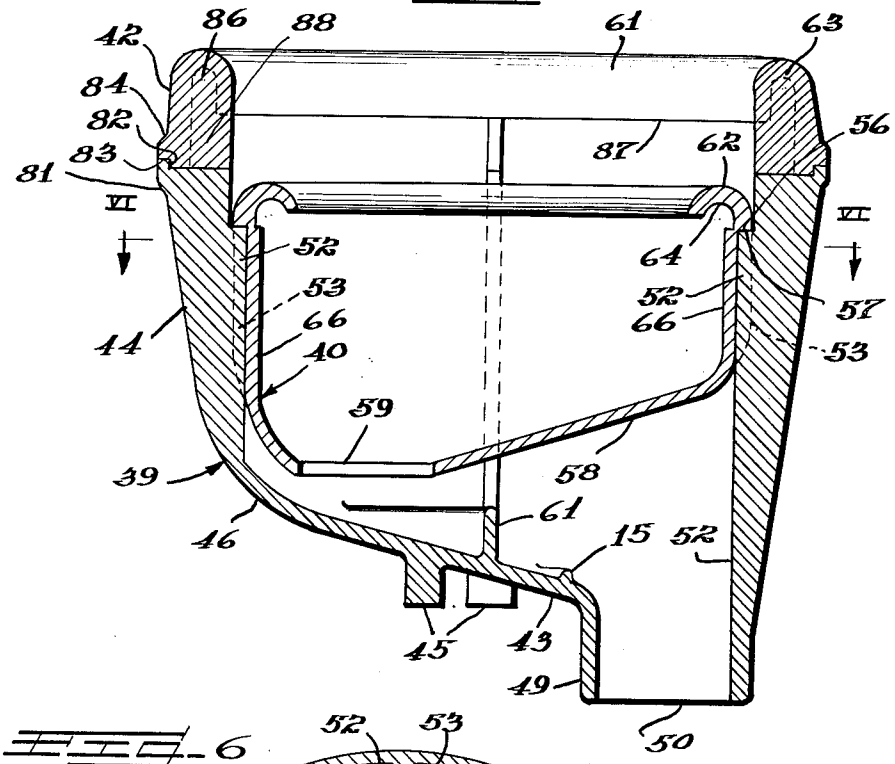
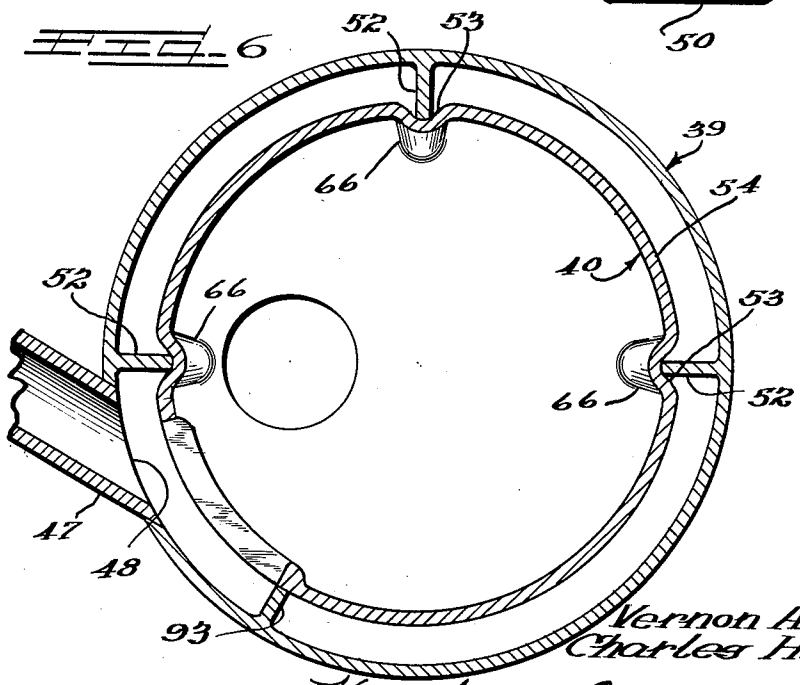


FIG. 6



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3,204,831

LAUNDRY AGENT DISPENSING DEVICE

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Filed Apr. 4, 1963, Ser. No. 270,654
16 Claims. (Cl. 222—193)

This invention relates to a dispenser apparatus and more particularly to a self-cleaning laundering agent dispenser particularly suited for application to a home appliance such as a laundry machine, dishwasher, or dry cleaner. The dispenser apparatus of the present invention is economical in manufacture, simple to use, easily accessible, dependable in operation and self-cleaning.

Although the present invention may have utility in many environments, it has particular utility when applied to a laundry machine of the horizontal axis type having an enclosure including a horizontal top panel. An opening is formed in the top panel above a treatment zone or top portion of the machine and a depending flange is formed integrally with the top panel surrounding the opening.

The flange forms a seat for a top portion of the dispenser such that the dispenser can be inserted downwardly through the opening formed in the top panel of the machine and will come to rest and seat upon the flange surrounding the opening. Inserted thusly, no portion of the dispenser protrudes above the top panel of the machine. A hinged access door can be provided in the top panel for covering the opening such that when the door is closed the top surface of the door is coplanar with the top surface of the top panel of the machine. Arranged in this manner, the dispenser apparatus will not interfere with laundry operations, can be inserted and removed easily and laundering agent can be added to the dispenser from the top of the machine. Further, the opening to the dispenser can be covered with the hinged door, thereby affording a flat work surface on the top of the machine and preventing undesirable material or solutions from being dropped inadvertently into the dispenser.

The dispenser apparatus of the present invention comprises essentially an outer portion or housing and an inner portion or cup residing within the outer portion. Rib members formed integrally with the inner wall of the housing support the cup such that there is generally a spaced relation between the housing and cup. An inlet is formed in a side wall of the housing to which is connected a recirculating liquid hose. The cup also has an opening in a side wall which is partially in registry with the inlet of the housing such that when the circulating hose is feeding washing liquid into the housing, part of this liquid will enter the cup and mix with the laundering agent that has been deposited therein. The laundering agent used herein is preferably of granular, powdered or pellet form and may be any additive such as detergent, bleach, rinse conditioner or any other additives that are frequently used in the laundering process. An outlet port in a bottom wall of the cup will allow the mixture of liquid and laundering agent to flow downwardly into the housing of the dispenser where this mixture becomes admixed with the washing liquid which enters the housing but does not enter the cup. An outlet in a bottom wall of the housing allows the entire mixture to flow downwardly into the treatment zone of the machine to aid in conditioning the clothes or other material in the treatment zone.

Accordingly, it is an object of the present invention to provide a dispenser which is located so that it will not interfere with laundry operations, such as loading and unloading the machine, but is easily accessible from the top of the machine.

Another object of the invention is to provide a dispenser which can be inserted and removed easily and quickly, and will not protrude from the machine enclosure.

Another object of the invention is to provide a dispenser into which a complete laundering agent charge can be pre-charged but which will afford gradual and complete mixing of the laundering agent with the washing liquid.

Another object of the invention is to provide a dispenser which mixes the laundering agent and the washing liquid before the mixture enters the treatment zone.

Another object of the invention is to provide a dispenser which is self-cleaning and obviates the need for periodic manual cleaning by the machine operator.

Many other features, advantages and additional objects will become manifest to those versed in the art from the detailed description of the invention which follows.

On the drawings:

FIGURE 1 is a front view of a laundry machine incorporating a dispenser according to the present invention with part of the machine shown in section;

FIGURE 2 is a top plan view of the dispenser of the present invention;

FIGURE 3 is a top plan view of the outer portion of the dispenser of the present invention;

FIGURE 4 is a side view of the outer portion of the dispenser of the present invention;

FIGURE 5 is a vertical sectional view of the dispenser of the present invention taken along lines V—V of FIGURE 2; and

FIGURE 6 is a horizontal sectional view of the dispenser of the present invention taken along lines VI—VI of FIGURE 5.

As shown on the drawings:

Referring now to the drawings, in order to exemplify an illustrative operating environment, there is shown in FIGURE 1 a washing or laundry machine as designated by reference numeral **10**, which may provide for automatic washing, rinsing and extracting cycles. A cabinet **11** encloses the machine and housed within the cabinet is a tub **12** forming a treatment zone Z adapted to confine a quantity of water or laundry liquid therein. Rotatably journaled within the tub is a forminous receptacle or wash basket **13** with tumbling baffles **91** adapted to carry clothes or other material to be laundered. The basket **13** rotates on a horizontal axis which is perpendicular to a front panel **14** of the cabinet.

For the purpose of loading and unloading the machine a front panel **14** of the cabinet is provided with a closure door **16** which is hingedly mounted on the cabinet and which allows access to the inside of the basket **13**. Hydraulic circuitry is provided to admit hot and cold water to the treatment zone and to recirculate and discharge laundry liquid. This circuitry comprises hot and cold inlet pipes **17** and **18**, respectively, which connect to a source of hot and cold water. The inlet pipes **17** and **18** communicate with a temperature control valve **19** to which connects a discharge nozzle **20** for directing the flow of water into the tub or treatment zone Z.

The lowermost portion of the tub **12** is shaped to form a sump S having an outlet **21** opening into a conduit **22** which is connected to the suction side of a pump **23**. The discharge side of the pump is connected to a discharge pipe **24** leading to a two-way valve **26** which can be positioned to open to a drain pipe **27** or a recirculating conduit **28**. The conduit **28** has a T at **29** to which is connected a downwardly extending branch conduit **30** connected to a nozzle at **31** and an upwardly extending branch pipe **32**. The nozzle **31** is positioned to project a continuous stream of laundry liquid into the interior of the drum or receptacle **13**, thereby to wet the materials

being conditioned therein as a part of the washing or rinsing operation.

In accordance with the principles of the present invention a self-cleaning laundering agent dispenser **33** is mounted within the cabinet **11** under a top panel **34**. The upwardly extending branch pipe **32** connects to an inlet **36** of the dispenser **33**. An access door **38** is hingedly mounted on the top panel **34** and is arranged in registry with the dispenser **33**, thereby providing an access opening for depositing laundering agent material within the dispenser **33** and for moving removable components of the dispenser from the cabinet.

It will be understood that the laundry machine may be provided with a sequential controller **80** (FIGURE 1) for the automatic operation of the machine through a series of washing, rinsing and extracting cycles, or in the event the machine is a combination washer-dryer, through an additional drying cycle. Material to be laundered, such as clothing, is loaded into the basket **13** through the access door **16** and a charge of laundry additive is placed within the dispenser **33** through the access door **38**. The sequential controller then may be preset for selection of a desired program. During the cycle, hot and cold water will be charged into the machine through the temperature control valve **19** and will be circulated through the treatment zone Z via the nozzle **31**. The pump **23** will draw water which accumulates in the sump S and discharge it through the outlet **21** into the conduit **24**. At the beginning of a wash cycle, the two-way valve **26** will be positioned to close the drain conduit **27** and all the laundry liquid will therefore pass into the conduit **28** to the T **29**. The flow of liquid will divide at the T **29**, a portion being recirculated through the conduit **30** to the nozzle **31**. The remainder will flow into the upwardly extending branch conduit **32** and will enter the dispenser **33** at the inlet **36**. The liquid entering the dispenser at **36** becomes admixed with the laundry additive previously placed in the dispenser, and the mixture of water and additive will then flow from the dispenser at the outlet **37** (FIGURE 1), through conduit **92** into the treatment zone Z of the machine **10**.

Referring to FIGURES 2–6 the dispenser assembly of the present invention consists generally of an outer housing **39** and an inner housing **40**.

The housings **39** and **40** constitute inner and outer nested parts which are both generally cup-shaped in configuration and which are provided with side walls and bottom walls. Moreover, the inner housing **40** is adapted to be removable and portable, while the outer housing **39** is adapted to be permanently mounted in the machine **10**. Thus the inner housing **40** is slidably removable from the outer housing **39** by lifting it upwardly out of the housing **39** through the access door **38**.

The dispenser outer housing **39** comprises a body portion **41** having side walls **44** which are generally vertically upright, there being a radially outwardly projecting boss **81** notched on its upper surface as at **82**, thereby to form a mating recess in which is received a correspondingly notched surface **83** of a boss **84** formed on an upper rim member **86** which forms a collar **42** surrounding the upper portion of the housing **39**. The outer peripheral surface of the body portion **41** and the collar **42** tapers inwardly away from the boss **84**.

The collar **42** has an upper lip forming a throat **61** having a curvate surface and prescribed by a reversely turned flange **87**. The flange **87** is integrated with the collar **42** by means of four spaced ribs **88**. The rim member **86** and the body portion **41** are secured together in firm assembly by suitable means, for example, by utilizing an epoxy resin between the mated notched surfaces **82** and **83**.

The dispenser **33** may be mounted in the machine **10** by locating the same in an opening **89** formed in a bracket or in an upper wall **51** of the machine casing, for example, by means of a mounting gasket shown at **90**.

To additionally support the outer housing **39** in the machine **10**, outwardly projecting bosses are formed as at **45** for engaging against adjoining support surfaces provided in the machine **10**. A transition portion **46** of the body portion **41** is arcuately shaped to form a generally curved sloping surface between the side wall **44** and a sloping bottom wall **43**.

In order to introduce washing liquid into the dispenser housing from the branch pipe **32** a nipple **47** extends laterally outwardly from the side wall **44** and connects to the end of the branch pipe **32**. From the plan view of FIGURE 6 it will be noted the nipple **47** connects to the side wall **44** at an opening **48** formed in the side wall and is generally tangentially disposed to the side walls of the housing parts. Liquid being introduced into the dispenser **33** from the nipple **47** will thereby be directed substantially around the inner periphery of the side wall **44**.

To allow for drainage of the mixture of laundry additive and liquid from the dispenser the bottom wall **43** assumes a generally sloping configuration toward a nozzle or spout **49** which extends downwardly from the bottom wall **43** at one side thereof. The bottom portion of the nozzle **49** forms a substantially circular port or outlet opening **50** positioned within the laundry machine above the tub **12**, such that liquid entering the dispenser through the nipple **47** and mixing with the laundry additive contained within the dispenser will drain downwardly through the nozzle **49** into the tub.

To create turbulence within the liquid stream as it enters the dispenser through the nipple **47**, and to support and carry the inner housing **40** with the walls in spaced apart relation, the inside surface of the side wall **44** has formed thereon a plurality of vertical rib members **52** disposed in spaced relation around the inner periphery of the side wall **44** and extending inwardly from the side wall. Thus, the ribs **52** provide an annular swirl chamber between the housings. Additionally, the ribs **52** impede the flow of liquid and provide a thorough mixture of the liquid and laundry additive before the mixture drains from the nozzle **49**.

The inner housing **40** has vertical side walls **54** terminating at an upper reversely turned curved lip forming a throat **62**. The inner housing **40** further includes a lower wall **58** which slopes angularly downwardly towards an outlet opening **59** disposed at one side of the inner housing **40** in offset relation to the center axis thereof. Since the outlet **50** of the outer housing is similarly offset, the inner and outer housings **40** and **39** can be nested with the respective outlets **59** and **50** aligned on opposite sides of the dispenser axis, thereby to prevent additives from running out of the dispenser **33** until such time as a carrier stream of liquid is directed into the inlet **47**.

In order to further provide for gradual and thorough mixing of the additive and the liquid the charge is actually deposited in the inner housing **40** of the dispenser which resides within the outer housing **39**.

The cup **40** is mounted within the housing by utilizing a plurality of vertically extending grooves **53** formed in the outer surface of the side wall **54** of the cup **40**. The grooves **53** are arranged in alignment with the ribs **52** of the housing **39** and are suitably formed to allow for sliding engagement therewith. At the upper extremity of each of the grooves **53** the side wall **54** has formed a flat surface or shoulder **56** forming an abutment to engage a complementarily formed shoulder **57** on each rib **52**. Thus, the cup **40** can be inserted downwardly into the housing **39** by properly aligning grooves **53** of the side wall **54** of the cup with the rib members **52** of the housing and moving the cup downwardly into the housing until the flat surfaces **56** at the upper extremity of the grooves **53** engage the shoulders **57** of the ribs **52**. The grooves **53** and rib members **52** are located in position opening **59** offset 180° with opening **50** when inner housing **40** is properly installed.

A baffle member 93 is located on the inner wall of outer housing 39 near inlet 47 to direct part of the entering stream of liquid towards the bottom wall thereby accomplishing a thorough washing action of the outer housing.

In its installed position, a downwardly sloping bottom wall 58 of the cup 40 is in spaced relation with the bottom wall 43 of the housing 39 and is arranged to slope in a direction opposite the slope of the bottom wall of the housing.

Disposed intermediate outlet openings 50 and 59 and projecting upwardly from the bottom wall 43 of the outer housing 39 are two baffles 15 and 61. When additive is charged into the inner housing 40, it will tend to run out of the opening 59 and onto the sloping wall 43. Thus, the baffles 15 and 61 prevent the additive from discharging gravitationally into the nozzle 49. The baffles 15 and 61 are shown in FIGURE 3 as having opposite extremities 15*a* and 15*b*, 61*a* and 61*b* respectively disposed on opposite sides of the opening 59 and curve arcuately therebetween with depths shown in FIGURE 5 sufficient to deter premature gravitational discharge of the additive, but without interfering with the purging of the dispenser under the influence of a carrier stream.

To provide for introduction of a carrier stream of liquid into the interior of the cup 40 a portion of the cup side wall 54 has formed therein an aperture or inlet opening 60 which is in partial registry with the opening 48 of the side wall of the housing. The alignment of the aperture 60 and the opening 48 is arranged so that a portion of the liquid entering the dispenser 33 through the nipple 47 will be diverted into the interior of the inside housing 40 to mix with an additive charge deposited therein, and the remainder of the liquid will flow between the side wall 54 of the inner housing 39 and the side wall 44 of the outer housing 39. It will be understood that the liquid entering the inner housing 40 through the aperture 60 will be directed along the inside periphery of the cup side wall 54 and will develop a swirling motion as it mixes with the additive deposited on the bottom wall 58. The mixture of additive and liquid will be discharged from the opening 59 into the bottom wall of the cup into the outer portion or housing 39 of the dispenser. As the mixture of additive and liquid flows from the cup through the opening 59 it will become admixed with that portion of the liquid which enters the opening 48 and flows directly into the outer housing 39. Moreover, as the carrier stream enters the outer housing 39, the additive subjacent the opening 59 will be washed away, thereby facilitating discharge of the cup contents through the opening 59 into the outer housing 39.

The flange 87 forms a shroud which will entrap any liquid circulating between the side wall of the housing and the cup and prevent splashing upwardly out of the dispenser 33. Instead, any such liquid impinging upon the inside wall 63 of the shroud 61 will be directed downwardly in the space between the side walls of the housing and the cup to the bottom wall of the dispenser and will thereafter flow through the nozzle 49. The lip 62 likewise functions as a shroud to entrap any liquid within the cup which may splash or swirl upwardly along the side wall 54 thereof and will redirect this liquid downwardly into the cup to flow through the opening 59.

Since the recesses 53 are formed as embossments in the side wall 54, the inner surface of the wall 54 has vertical rib members 66 which have the effect of creating turbulence within the cup 40 to provide for thorough mixing between the liquid carrier entering through the aperture 60 and the additive charge deposited within the cup, and also assist in effecting complete self-cleaning of the cup. Thus, as liquid enters the cup through aperture 60 it will assume an essentially peripheral flow around the inside of the cup side wall 54. Impingement with the ribs 66 will have a dampening effect on the flow stream of the liquid. This effect will cause reduction in velocity to

a portion of the liquid which will then flow downwardly to the bottom wall 58.

There has been provided a dispenser assembly which is exceptionally simple in construction, provides for thorough mixing of additive and liquid before the mixture enters the treatment zone or tub of the machine, is easily charged with additive, does not interfere with the loading and unloading operations of the machine, and is securely maintained in position without any tendency to dislodge during operation of the machine.

Further, the swirling and turbulent flow of the recirculated liquid both within the cup and the housing provides for positive self-cleaning of the dispenser without requiring additional fresh water. The cup can be removed from the housing of the dispenser for easy manual cleaning of the dispenser should any foreign particles become entrapped therein.

Although various minor modifications might be apparent to those skilled in the art, it is to be understood that we wish to embody within the scope of the patent warranted herein all such embodiments as reasonably and properly come within the scope of our contribution to the art.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A dispenser comprising inner and outer cup-shaped housings nested together, said housings being spaced from each other and having spaced apart upright side walls and oppositely sloping spaced apart lower walls to form a swirl chamber between the housings and non-registering oultet openings at the lower end of each corresponding lower wall, and means for injecting a carrier stream of liquid into said swirl chamber, whereby additive charged into said inner housing will be washed into the outlet opening of the outer housing for discharge to a point of utilization.

2. A dispenser as defined in claim 1, said housings having generally upstanding side walls and said lower walls sloping generally downwardly, said means for injecting a carrier stream of liquid into said swirl chamber comprising a tubular inlet disposed generally tangentially with respect to said outer housing, thereby to swirl the carrier stream through the swirl chamber between said housings.

3. A dispenser as defined in claim 2, said inner housing having an opening in its side wall at least partially registering with said tubular inlet to receive a portion of the liquid carrier stream, thereby rendering the dispenser self-cleaning.

4. A dispenser as defined in claim 1, said inner and outer housings having mating ribs and recesses to retain said housings in spaced nested assembly, thereby to form an annular chamber surrounding the inner housing.

5. A dispenser comprising a cup-shaped housing having an upstanding side wall with an inlet, an upper portion forming a first opening, and a lower wall with an outlet, a connector nipple connected to said inlet in said side wall of said housing for introducing liquid into said dispenser, and a cup carried within said housing for holding a charge of additive therein, said cup having an upper portion with an opening in register with said first opening, a lower portion with an outlet and an imperforate side wall with an aperture partially in register with said inlet of said side wall of said housing, whereby a portion of said liquid introduced into said dispenser through said connector nipple will mix with said additive in said cup and all of the liquid and said additive will be discharged from the outlet of said housing.

6. An additive dispenser for a washing machine comprising a dispenser housing having a bottom wall with an outlet formed therein, said bottom wall sloping toward said outlet, an upstanding wall extending upwardly from said bottom wall and forming a supply opening at the top thereof, said wall forming liquid inlet opening intermediate said supply opening and said bottom wall through which a carrier stream may be directed, and a

cup constituted of fluid-impervious material for holding a charge of additive carried within said housing, said cup having a bottom wall in spaced relation to said bottom wall of said housing and having an outlet formed therein, said bottom wall of said cup sloping toward said outlet of said cup in a plane generally transversely of said slope of said bottom wall of said housing, an upstanding wall extending upwardly from said bottom wall of said cup and forming a supply opening at the top thereof, said supply opening of said cup being in register with said supply opening of said housing, said wall of said cup having an aperture in partial register with said inlet opening in said wall of said housing whereby a portion of the liquid will enter said cup and flow from said cup to said outlet of said housing.

7. An additive dispenser for a washing machine comprising a dispenser housing having a sloping bottom wall and an upstanding side wall extending upwardly from said bottom wall and having a top portion, an annular collar affixed to said top portion and having an inwardly curved shroud forming a supply opening, and a cup removably positioned within said housing having a sloping bottom wall and an upstanding side wall extending upwardly from said bottom wall and having a top portion, said upstanding wall of said cup having a top portion forming an inwardly curved shroud, and means to inject a liquid carrier stream tangentially through the side walls to wash a charge of additive out of said cup.

8. An additive dispenser for a washing machine comprising a dispenser housing having a sloping bottom wall and an upstanding wall extending upwardly from said bottom wall and having a top portion, an annular collar affixed to said top portion and having an inwardly curved shroud forming a supply opening and a splash deflector, said bottom wall having a spout depending therefrom, said upstanding wall having a liquid inlet opening below said collar through which a carrier stream may be directed, and a cup removably positioned within said housing having a sloping bottom wall and an upstanding wall extending upwardly from said bottom wall and having a top portion, said upstanding wall of said cup having a top portion forming an inwardly curved shroud, said shroud of said cup forming a supply opening in register with said supply opening of said housing, and said upstanding wall of said cup having an aperture formed therein in partial register with said liquid inlet opening of said upstanding wall of said housing, whereby the carrier stream will clean the interior of the cup during the dispensing of additive from said cup.

9. An additive dispenser for a washing machine comprising a dispenser housing having a substantially cylindrical side wall, a sloping bottom wall and an outlet opening, a cup removably positioned within said housing in spaced relation thereto to form a swirl chamber therebetween and having a sloping bottom wall forming an outlet opening, said bottom wall of said cup sloping in a direction generally transversely of said slope of said bottom wall of said housing, said outlet openings of said housing and said cup being in axially and radially displaced position relative to each other, and means directing a carrier stream initially into said swirl chamber, thereby to wash the additive charged into said cup out of the housing outlet.

10. An additive dispenser for a washing machine comprising a dispenser housing having a continuous side wall and a bottom wall, at least one ridge extending upwardly from said bottom wall, said bottom wall forming an opening on one side of said ridge, a cup removably positioned within said housing, said cup having a side wall disposed in spaced relation to the side wall of said housing to form a swirl chamber therebetween and having a bottom wall forming an opening on the other side of said ridge, whereby the contents of said cup will not be discharged gravitationally, and means for injecting a carrier stream of liquid initially into said swirl chamber, thereby to discharge the contents of said dispenser.

11. An additive dispenser for a washing machine comprising a dispenser housing having a substantially cylindrical side wall and a sloping bottom wall, and bottom wall having an outlet formed therein, a plurality of rib members arranged in spaced relation around the inner periphery of said side wall and fixedly connected thereto and extending inwardly therefrom, said rib members forming shoulders at the top portions thereof, and a cup removably positioned within said housing and having a side wall and a sloping bottom wall, said bottom wall of said cup having an outlet formed therein, said side wall of said cup having a plurality of grooves arranged in spaced relation around the outer periphery thereof and shaped complementarily to said rib members of said housing, said side wall of said cup forming a flat surface at a top portion of each of said grooves and adapted to engage in abutting relation said shoulders formed by said rib members, and means to direct a liquid carrier stream into said housing, thereby to wash the contents of said cup into the washing machine.

12. An additive dispenser for a washing machine comprising a dispenser housing having a substantially cylindrical side wall and a sloping bottom wall, said bottom wall having at least one arcuately shaped ridge extending upwardly therefrom, said bottom wall having an outlet opening on one side of said ridge and being angularly inclined to slope toward said outlet opening, said side wall having an inlet opening formed therein for introducing liquid into said dispenser, a plurality of rib members arranged in spaced relation around the inner periphery of said side wall and extending inwardly therefrom, said rib members forming shoulders at the top portions thereof, a cup for holding a charge of additive removably positioned within said housing and insertable therein through the top of said housing, said cup having a substantially cylindrical said wall and a sloping bottom wall, said side wall of said cup having a plurality of grooves arranged in spaced relation around the outer periphery thereof and shaped complementarily to said rib members of said housing for mated relation therewith, said side wall of said cup forming a flat surface at a top portion of each of said grooves and adapted to engage in abutting relation said shoulders formed by said rib members of said housing, said side wall of said cup forming a plurality of rib members arranged around the inner periphery of said cup and space opposite said grooves, said side wall of said cup having an aperture formed therein in partial registry with said inlet opening of said housing for introducing liquid into said cup, and said bottom wall of said cup having an outlet opening formed therein on the other side of said ridge and being angularly inclined to slope toward said outlet opening of said cup.

13. A laundry machine comprising, means forming a treatment zone, liquid conduit means for controlling the flow of laundry liquid into said treatment zone, and an additive dispenser in said machine comprising, a housing comprising an upstanding side wall and having an outlet formed in the bottom thereof discharging into said treatment zone, and a cup inserted into said housing for receiving a charge of additive, said cup comprising an upstanding side wall disposed in spaced relation to the side wall of said housing to form a swirl chamber therebetween in communication with said inlet for receiving a stream of laundry liquid and having an outlet in the bottom thereof offset out of register with said housing outlet, said side wall of said housing having means directing the laundry liquid initially into said swirl chamber, whereby the contents of said cup will not be discharged gravitationally but will wash out when laundry liquid is directed through said dispenser.

14. A laundry machine as defined in claim 13 and a sequential controller for automatically regulating the

machine through a programmed sequence of periods including a washing period, and a pump for driving a stream of laundry liquid through said conduit means during said washing period and being controlled by said sequential controller, whereby the additive will be added when the pump operates.

15. The dispenser as defined in claim 1 wherein said housings are cylindrically shaped and wherein said outlet openings in said lower walls are axially and radially displaced relative to each other.

16. The dispenser as defined in claim 1 and including at least one upstanding baffle formed in said lower wall of said outer housing and disposed axially between said non-registering outlet openings, thereby to prevent premature gravitational discharge of the additive.

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HADD S. LANE, RAPHAEL M. LUPO, *Examiners.*