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(54) **WASHING MACHINE DISPENSER CUP**

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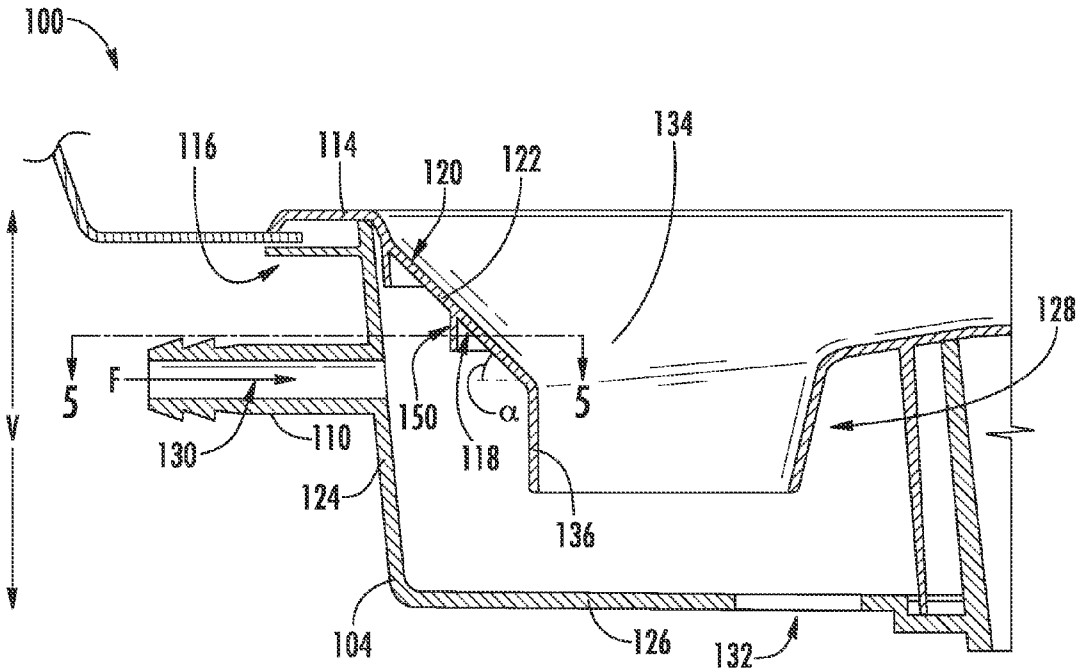
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(57) **ABSTRACT**

Dispenser cups for washing machine appliances are provided. A dispenser cup includes a container which includes a side wall and a bottom wall, the side wall having a top end. The container defines a compartment configured to receive a wash material. The dispenser cup further includes a wash liquid inlet positioned on the side wall of the container and in fluid communication with the compartment for providing a flow of wash liquid to the compartment. The dispenser cup further includes a deflector plate positioned at least partially within the compartment. The deflector plate is positioned such that wash liquid exhausted from the wash liquid inlet into the compartment contacts the deflector plate and is redirected towards the bottom wall of the container. The dispenser cup further includes a wall extending from the deflector plate within the compartment such that wash liquid redirected towards the top end contacts the wall.



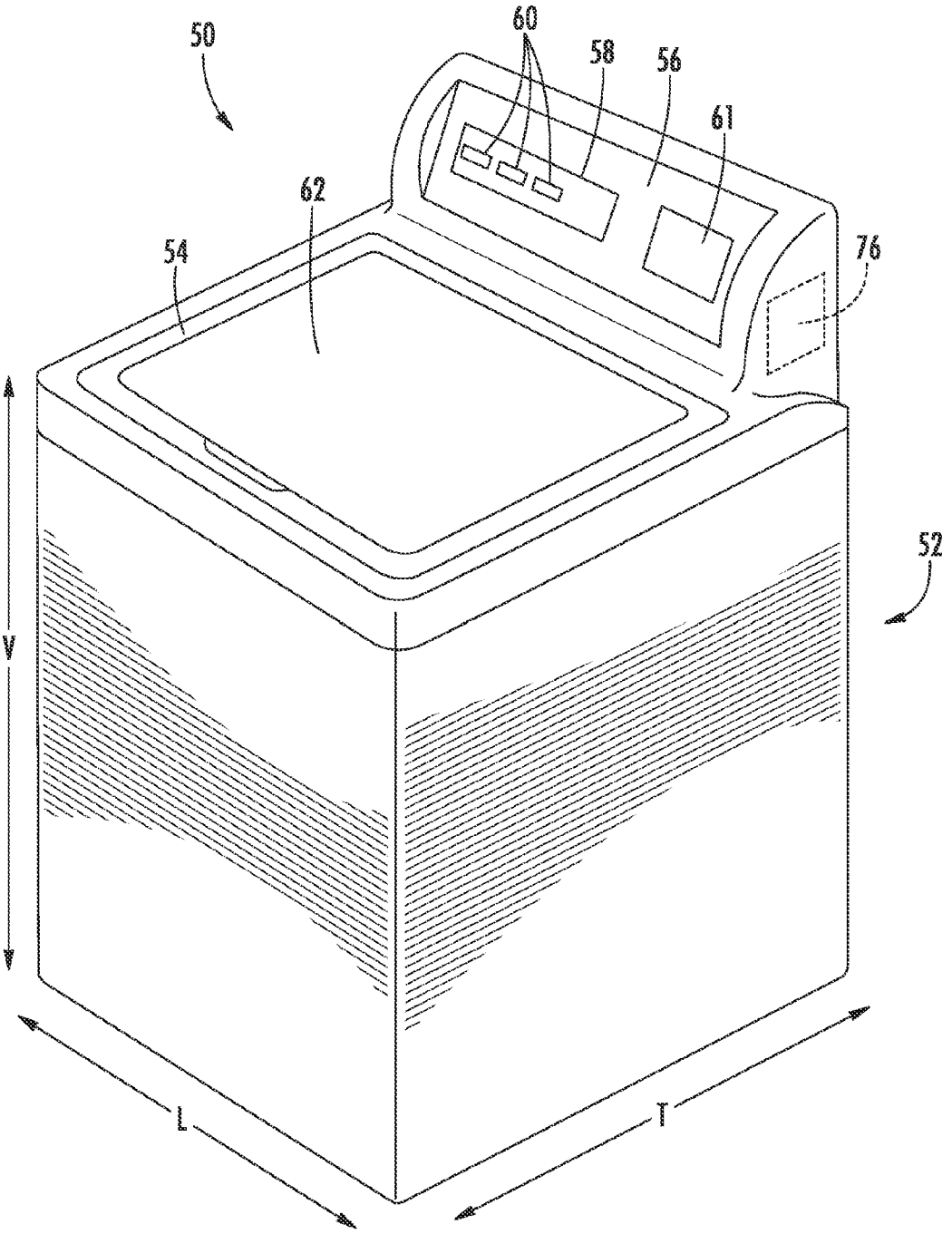


FIG. 1

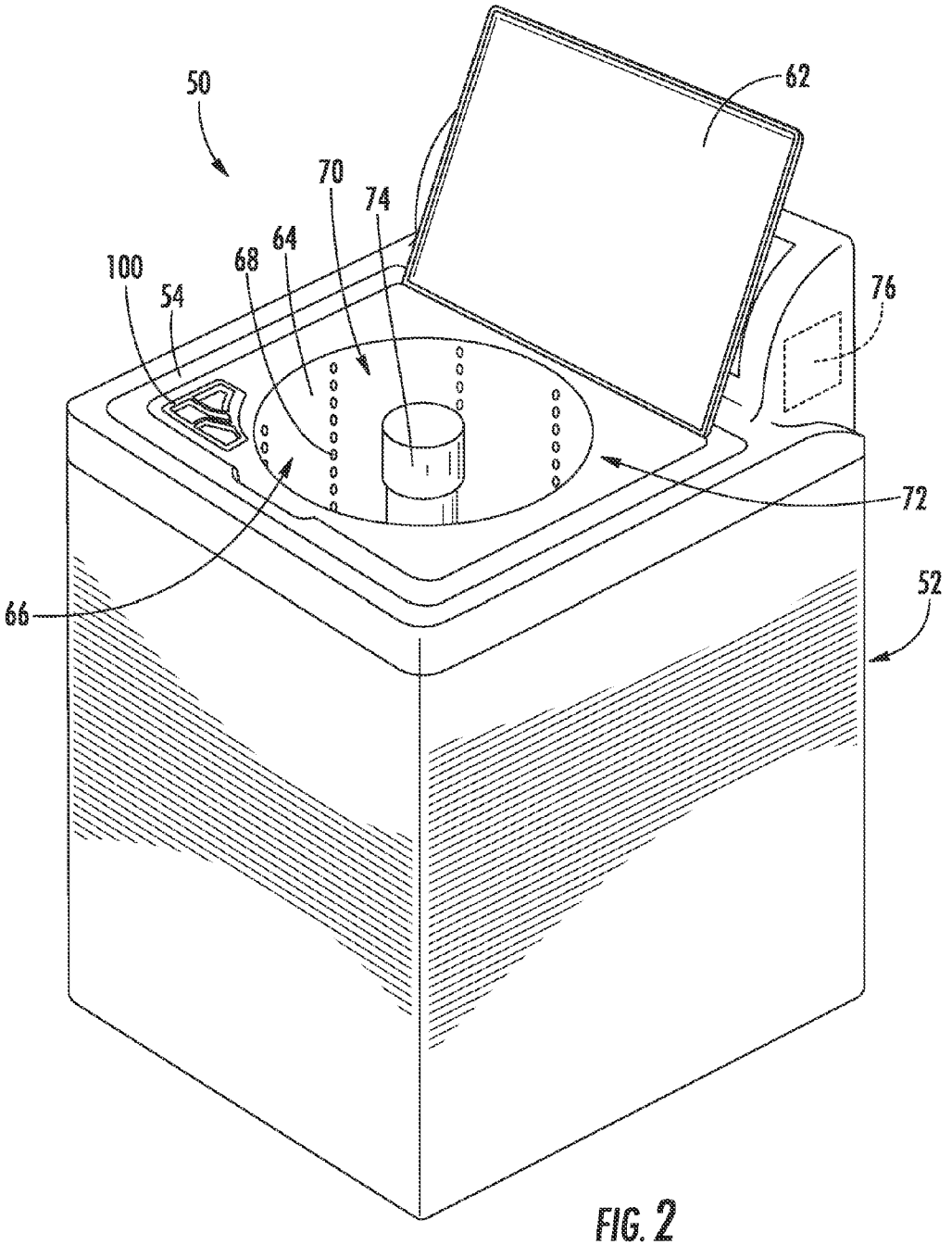


FIG. 2

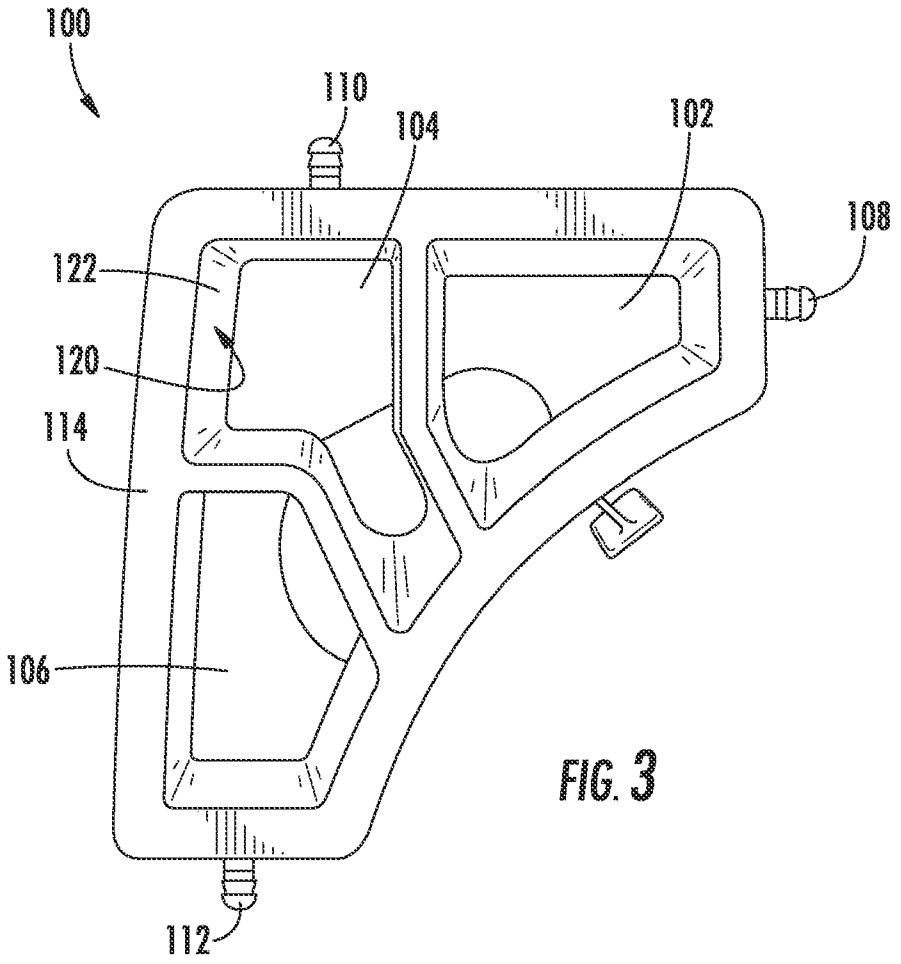


FIG. 3

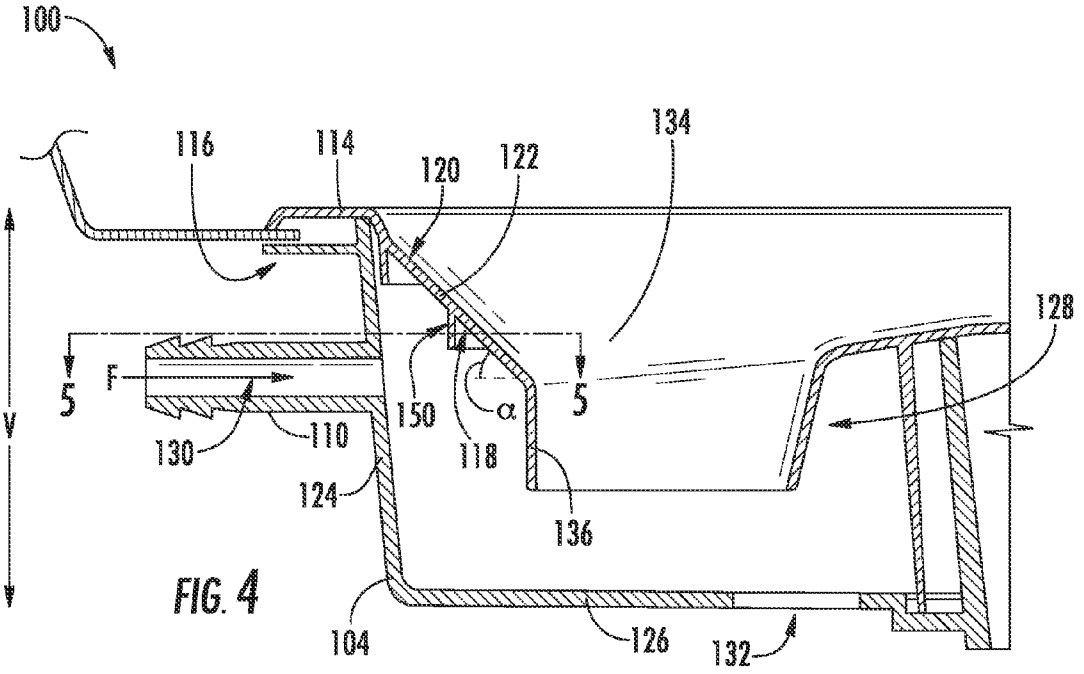

100
116
114
120
122
134
128
F
5
5
V
150
α
130
110
118
124
136
104
126
132

FIG. 4

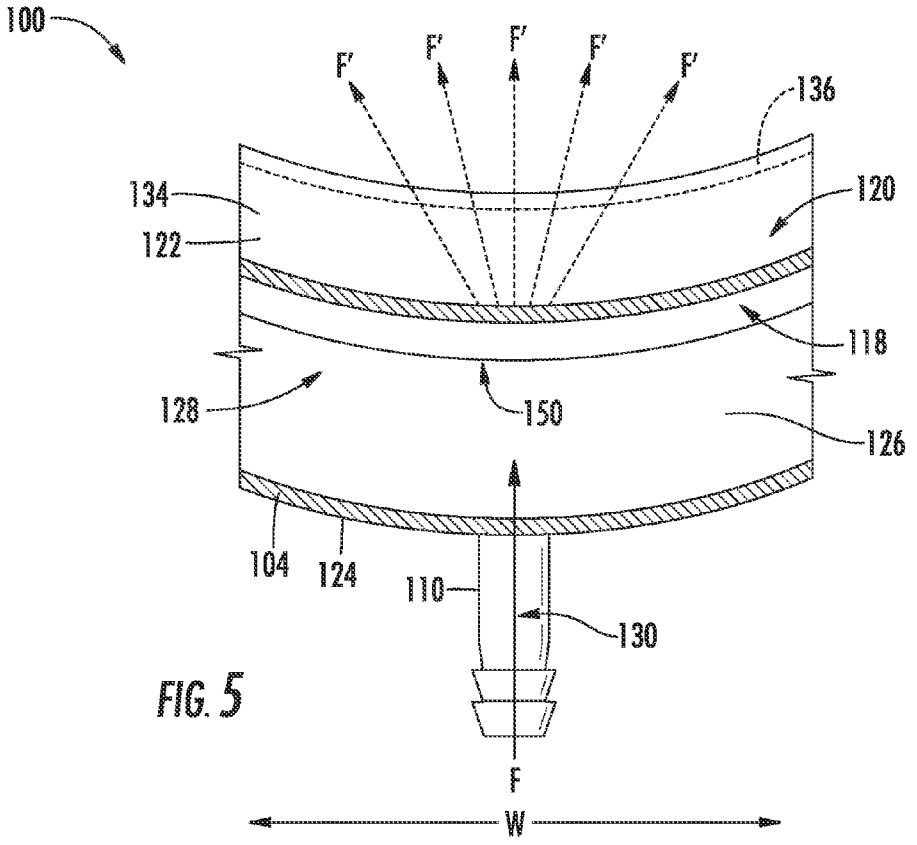

100
F'
F'
F'
F'
F'
136
134
120
122
118
128
150
126
104
124
110
130
F
W

FIG. 5

WASHING MACHINE DISPENSER CUP

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to a washing machine appliance, or more particularly, to a dispenser cup for a washing machine appliance.

BACKGROUND OF THE INVENTION

[0002] Washing machine appliances generally include a tub with a drum rotatably mounted therein. The tub defines a wash chamber for receipt of articles for washing. During operation of such washing machine appliances, a wash liquid is directed into the tub and onto articles within the wash chamber of the drum. The drum can rotate at various speeds to agitate articles within the wash chamber in the wash fluid, wring wash fluid from articles within the wash chamber, etc.

[0003] During operation of certain washing machine appliances, a volume of wash liquid is directed into the tub in order to wash and/or rinse articles within the wash chamber of the drum. The volume of wash liquid can vary depending upon a variety of factors. For example, large loads may require a large volume of wash liquid, relative to small loads that may require a small volume of wash liquid. Likewise, loads containing absorptive fabrics, such as cotton, may require a large volume of water relative to similarly sized loads containing certain synthetic fabrics, such as polyester or nylon.

[0004] One or more fluid additives may be added to the wash liquid to enhance the cleaning or other properties of the wash liquid. The fluid additives may be in powder or concentrated liquid form, and are generally added to a dispenser cup of the washing machine appliance by, e.g., a user of the washing machine appliance. A portion of the wash liquid to be added to the tub may be directed into the dispenser cup to transport the fluid additive to the tub. However, such wash liquid is generally provided as a concentrated flow from an inlet in one area of the dispenser cup, and thus does not reach all of the fluid additive(s) in the dispenser cup. Further, such flows may cause unwanted turbulence in the dispenser cup, causing certain wash materials, e.g., wash detergent, to foam up and leave unwanted residue in the dispenser cup. Thus, residue of the fluid additive(s) may remain within the container. Additionally, in some cases, wash liquid flowed into a dispenser cup may splash or otherwise be directed towards connection points between components of the dispenser cup. This wash liquid may leak through the connection points, wasting wash liquid and potentially causing moisture damage to the washing machine appliance and surrounding area.

[0005] Accordingly, improved dispenser cups for washing machine appliances are desired. For example, a dispenser cup that can redirect a flow of water or other wash liquid to more fully cover an area of the dispenser cup and reduce an amount of fluid additive residue in the dispenser cup would be useful. Further, a dispenser cup that can provide such redirection advantages while reducing leakage concerns would be advantageous.

BRIEF DESCRIPTION OF THE INVENTION

[0006] Aspects and advantages of the invention are set forth below in the following description, or may be obvious from the description, or may be learned through practice of the invention.

[0007] In accordance with one embodiment of the present disclosure, a dispenser cup for a washing machine appliance is provided. The dispenser cup includes a container which includes a side wall and a bottom wall, the side wall having a top end. The container defines a compartment configured to receive a wash material. The dispenser cup further includes a wash liquid inlet positioned on the side wall of the container and in fluid communication with the compartment for providing a flow of wash liquid to the compartment. The dispenser cup further includes a deflector plate positioned at least partially within the compartment. The deflector plate is positioned such that wash liquid exhausted from the wash liquid inlet into the compartment contacts the deflector plate and is redirected towards the bottom wall of the container. The dispenser cup further includes a wall extending from the deflector plate within the compartment such that wash liquid redirected towards the top end contacts the wall.

[0008] In accordance with another embodiment of the present disclosure, a washing machine appliance is provided. The washing machine appliance includes a wash tub, a wash drum rotatably positioned in the wash tub, and a dispenser cup configured to provide a mixture of wash material and wash liquid to at least one of the wash tub or the wash drum. The dispenser cup includes a container which includes a side wall and a bottom wall, the side wall having a top end. The container defines a compartment configured to receive a wash material. The dispenser cup further includes a wash liquid inlet positioned on the side wall of the container and in fluid communication with the compartment for providing a flow of wash liquid to the compartment. The dispenser cup further includes a deflector plate positioned at least partially within the compartment. The deflector plate is positioned such that wash liquid exhausted from the wash liquid inlet into the compartment contacts the deflector plate and is redirected towards the bottom wall of the container. The dispenser cup further includes a wall extending from the deflector plate within the compartment such that wash liquid redirected towards the top end contacts the wall.

[0009] These and other features, aspects and advantages of the present disclosure will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the disclosure and, together with the description, serve to explain the principles of the disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A full and enabling disclosure of the present invention, including the best mode thereof to one skilled in the art, is set forth more particularly in the remainder of the specification, including reference to the accompanying figures, in which:

[0011] FIG. **1** provides a front perspective view of a washing machine appliance according to an exemplary embodiment of the present subject matter, with a lid in a closed position.

[0012] FIG. **2** provides a front perspective view of the exemplary washing machine appliance of FIG. **1** with the lid in an open position.

[0013] FIG. **3** provides a top view of a dispenser cup according to an exemplary embodiment of the present subject matter.

[0014] FIG. **4** provides a side cross-sectional view of the exemplary dispenser cup of FIG. **3**.

[0015] FIG. **5** provides a top cross-sectional view of the exemplary dispenser cup of FIG. **4** along line **5-5** in FIG. **4**.

DETAILED DESCRIPTION OF THE INVENTION

[0016] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0017] FIG. **1** is a perspective view of a washing machine appliance **50** according to an exemplary embodiment of the present subject matter. The exemplary washing machine appliance defines a vertical direction V, a lateral direction L, and a transverse direction T, each orthogonal to one another. Additionally, as may be seen in FIG. **1**, the washing machine appliance **50** includes a cabinet **52** and a cover **54**. A backsplash **56** extends from cover **54**, and a control panel **58** including a plurality of input selectors **60** is coupled to backsplash **56**. The control panel **58** and input selectors **60** collectively form a user interface input for operator selection of machine cycles and features. In one exemplary embodiment, a display **61** indicates selected features, a countdown timer, and/or other items of interest to machine users. A lid **62** is mounted to cover **54** and is rotatable between an open position facilitating access to a wash drum **64** located within cabinet **52** (see FIG. **2**) and a closed position forming an enclosure over wash drum **64** (see FIG. **1**).

[0018] Referring now to FIG. **2**, a perspective view of the exemplary washing machine appliance **50** in the open position is provided. As may be seen in FIG. **2**, the wash drum **64** includes a side wall **66** with a plurality of perforations **68**. The wash drum **64** is rotatably mounted within a wash tub (not shown), and the plurality of perforations **68** in the side wall **66** of the wash drum **64** facilitate fluid communication between an interior of wash drum **64** and wash tub. In particular, the wash drum **64** for the exemplary embodiment depicted is rotatable about the vertical direction V. Thus, washing machine appliance **50** is generally referred to as a vertical axis washing machine appliance. The wash drum **64** further defines a wash chamber **70** for receipt of articles for washing and extends vertically between a bottom portion (not shown) and a top portion **72**.

[0019] As will be explained in greater detail below, with reference to FIGS. **3** through **5**, the washing machine appliance **50** further includes a dispenser cup **100** positioned adjacent to the top end **72** of the wash chamber **70**, underneath the lid **62**. The exemplary dispenser cup **100** depicted includes three compartments and is configured to receive a wash material, such as a fluid additive, to impart cleaning or other desired properties to the wash liquid. In certain embodiments, the wash material may include a wash detergent, a bleach, a fabric softener, or a combination thereof, which may be provided by a user of the washing machine appliance **50** prior to starting a certain wash cycle, or subsequent to starting a certain wash cycle. The wash liquid may be provided to the dispenser cup **100** such that a wash liquid and wash material mixture is formed and provided to one or both of the wash tub and the wash drum **64**.

[0020] It should be appreciated, however, that the dispenser cup **100** depicted in FIG. **2** is by way of example only. In other exemplary embodiments, the dispenser cup **100** may be positioned at any other suitable location on or within the washing machine appliance **50**. For example, in other exemplary embodiments, the washing machine appliance **50** may be a horizontal axis washing machine appliance, and the dispenser cup **100** may be positioned in a dedicated compartment at a top of the washing machine appliance **50**. Additionally, or alternatively, the dispenser cup **100** may be slidably received in a dedicated compartment accessible from, e.g., a front of the washing machine appliance **50**. Other embodiments of the washing machine appliance **50** may further include any other suitable location for the dispenser cup **100**.

[0021] Referring still to FIG. **2**, an agitation element **74**, shown as an impeller in FIG. **2**, is disposed in wash drum **64** to impart an oscillatory motion to articles and liquid in the wash chamber **70** of the wash drum **64**. In various exemplary embodiments, agitation element **74** includes a single action element (i.e., oscillatory only), double action (oscillatory movement at one end, single direction rotation at the other end) or triple action (oscillatory movement plus single direction rotation at one end, singe direction rotation at the other end). As illustrated in FIG. **2**, the agitation element **74** is oriented to rotate about the vertical direction V. The washing machine appliance **50** may also include a brake assembly (also not shown) selectively applied or released for respectively maintaining wash drum **64** in a stationary position within wash tub or for allowing wash drum **64** to spin within wash tub.

[0022] Operation of washing machine appliance **50** may be controlled by a processing device or controller **76** (shown in phantom in FIGS. **1** and **2**) that is operatively coupled to the user input selectors **60** and display **61** located on the washing machine backsplash **56** for user manipulation to select washing machine cycles and features. In response to user manipulation of the input selectors **60**, controller **76** may operate the various components of washing machine appliance **50** to execute selected wash cycles and features.

[0023] The controller **76** may include a memory and microprocessor, such as a general or special purpose microprocessor operable to execute programming instructions or micro-control code associated with a cleaning cycle. The memory may represent random access memory such as DRAM, or read only memory such as ROM or FLASH. In one embodiment, the processor executes programming instructions stored in memory. The memory may be a separate component from the processor or may be included onboard within the processor. Alternatively, controller **76** may be constructed without using a microprocessor, e.g., using a combination of discrete analog and/or digital logic circuitry (such as switches, amplifiers, integrators, comparators, flip-flops, AND gates, and the like) to perform control functionality instead of relying upon software. The control panel **58** and other components of washing machine appliance **50** may be in communication with controller **76** via one or more signal lines or shared communication busses.

[0024] In an illustrative embodiment, laundry items are loaded into wash chamber **70** of the wash drum **64**, and a washing cycle is initiated through user manipulation of control input selectors **60**. The user may add one or more wash materials to the dispenser cup **100**, and the wash drum **64** may be filled with a wash liquid, such as water, and mixed with, e.g., detergent or other wash materials from the dispenser cup **100**, to form a wash liquid mixture. A flow of wash liquid into wash drum **64** may be initiated by a valve and spout (not shown), and the wash drum **64** can be filled to the appropriate level for the amount of articles being washed. Once wash drum **64** is properly filled with the wash liquid mixture, the contents of the wash drum **64** may be agitated with the agitation element **74** for cleaning of laundry items in the wash chamber **70**. More specifically, the agitation element **70** may be moved back and forth in an oscillatory motion.

[0025] After the agitation phase of the wash cycle is completed, the wash drum **64** and wash tub may be drained. Laundry articles can then be rinsed by again adding fluid to wash tub drum **64** and, depending on the particulars of the cleaning cycle selected by a user, the agitation element **74** may again provide agitation within wash drum **64**. One or more spin cycles may also be used. In particular, a spin cycle may be applied after the wash cycle and/or after the rinse cycle in order to wring wash fluid from the articles being washed. During a spin cycle, the wash drum **64** may be rotated at relatively high speeds.

[0026] It should be appreciated, however, that while described in the context of a specific embodiment of the washing machine appliance **50**, using the teachings disclosed herein it will be understood that washing machine appliance **50** is provided by way of example only. Other washing machine appliances having different configurations (such as horizontal-axis washing machine appliances), different appearances, and/or different features may also be utilized with the present subject matter as well.

[0027] Referring now to FIG. **3**, a top view of one exemplary embodiment of a dispenser cup **100** is provided. As shown, the dispenser cup **100** includes a container for receipt of a wash material. More particularly, the exemplary embodiment depicted includes a first container **102**, a second container **104**, and a third container **106**. Each container **102**, **104**, **106** may be configured for receipt of a wash material. More particularly, each container **102**, **104**, **106** may be configured to receive any suitable wash material, and one or more of the containers **102**, **104**, **106** may be dedicated to a specific wash material. For example, the first container **102** may be configured to receive wash detergent, the second container **104** may be configured to receive bleach, and the third container **106** may be configured to receive fabric softener.

[0028] Further, each container **102**, **104**, **106** is provided with a wash liquid inlet. For example, the first container **102** is in fluid communication with a first wash liquid inlet **108**, the second container **104** is in fluid communication with a second wash liquid inlet **110**, and the third container **106** is in fluid communication with a third wash liquid inlet **112**. The washing machine appliance **50** may provide a flow of wash liquid to each of the containers **102**, **104**, **106** via the respective wash liquid inlets **108**, **110**, **112** simultaneously at the start of a wash cycle, or alternatively the washing machine appliance **50** may be configured to provide a flow of wash liquid to each of the containers **102**, **104**, **106** sequentially and/or at predetermined time intervals through a wash cycle.

[0029] Referring still to FIG. **3**, a cover **114** is positioned over a top portion **116** (see FIG. **4**) of each of the three containers **102**, **104**, **106**. As will be discussed below, the cover **114** includes an inside surface **118** (FIG. **4**) and an outside surface **120**, and also includes a tapered portion **122** that extends around a perimeter of each of the three respective containers **102**, **104**, **106**. The outside surface **120** may direct the wash material, such as a fluid additive, towards a center of the respective containers **102**, **104**, **106** and the inside surface may be configured to interact with a flow of wash liquid from one or more of the wash liquid inlets **108**, **110**, **112**, as is discussed below.

[0030] Referring now to FIG. **4**, a cross-sectional side view of the second container **104** of the dispenser cup **100** is provided. As shown in FIG. **4**, the container **104** has a sidewall **124** and a bottom wall **126**, and defines a compartment **128** configured to receive the wash material. The sidewall **124** extends between a top end **116** of the sidewall **124** and container **104** and the bottom wall **126**. For the embodiment depicted, the sidewall **124** extends substantially along the vertical direction V and the bottom wall **126** extends inwardly from the sidewall **124**. More particularly, for the embodiment depicted, the bottom wall **126** is approximately perpendicular to the sidewall **124**. It should be appreciated that as used herein, terms of approximation, such as "substantially" and "approximately," refer to being within a 10% margin of error. Accordingly, bottom wall **126** can be horizontal or can slope, such as downwards towards an outlet **132** (discussed herein) to facilitate drainage.

[0031] Referring still to FIG. **4**, the dispenser cup **100** includes the wash liquid inlet **110** positioned on the sidewall **124** of the container **104** and in fluid communication with the compartment **128**. The wash liquid inlet **110** is configured to provide a flow of wash liquid to the compartment **128**, and accordingly the wash liquid inlet defines a flow direction F moving inwardly from the side wall **124** of the compartment **128**. More particularly, for the embodiment depicted, the flow direction F is approximately perpendicular to the sidewall **124** of the container **104** and the wash liquid inlet **110** defines a channel **130** (which may for example be cylindrical) leading to the compartment **128**. Accordingly, the wash liquid inlet **110** may provide the flow of wash liquid into the compartment **128** of the container **104** at a predefined pressure. The wash liquid inlet **110** may be fluidly connected to a water source such as a supply pipe, or the spout discussed above with reference to FIG. **2**, to provide such a flow of wash liquid.

[0032] Moreover, for the exemplary embodiment depicted, the wash liquid inlet **104** is made integrally with the side wall **124** of the container **104**. For example, the wash liquid inlet **110** may be made of the same material as the side wall **124** of the container **104**, with no seams or junctions defined between the two components. Such a configuration may result by molding the side wall **124** of the container **104** and the wash liquid inlet **110** simultaneously together (e.g., in a single, continuous mold), and may prevent any leaks between the two parts.

[0033] The dispenser cup **100** depicted further includes an outlet **132** defined in the bottom wall **126** of the container **104** for receiving a mixture of wash liquid and wash material. The outlet **132** may be in fluid communication with

the wash tub and/or the wash drum **64** (FIG. **2**) to provide the wash liquid and wash material mixture thereto. The outlet **132** may be positioned proximate to a side wall of the container **104** opposite the side wall **124** on which the wash liquid inlet **110** is positioned. However, in other exemplary embodiments, the outlet **132** may instead be positioned proximate the side wall **124** on which the wash liquid inlet **110** is positioned, or proximate to a center of the bottom wall **126**. In certain exemplary embodiments, the outlet **132** may be configured as a siphon to more effectively transport the mixture of wash liquid and wash material to the wash tub and/or wash drum **64**.

[0034] Referring still to FIG. **4**, the dispenser cup **100** further includes a means for redirecting wash liquid exhausted from the wash liquid inlet **110** towards the bottom wall **126** and/or side wall **124** of the container **104**. The means is positioned at least partially within the compartment **128** defined by the container **104**. For the exemplary embodiment depicted, the means for redirecting wash liquid exhausted from the wash liquid inlet **110** towards the bottom wall **126** and/or side wall **124** of the container **104** includes the cover **114** attached to the container **104** at the top end **116** of the container **104**. More particularly, the means includes a deflector plate **134** of the cover **114** positioned at least partially within the compartment **128** of the container **104**. The deflector plate **134** may be positioned adjacent to the wash liquid inlet **110** such that a flow of wash liquid from the wash liquid inlet **110** contacts the deflector plate **134** and is redirected towards the bottom wall **126** and/or side wall **124** of the container **110** when such a flow is provided.

[0035] Moreover, the deflector plate **134** includes the tapered portion **122** and may further include a rim **136** extending downwardly from the tapered portion **122**, such as along the vertical direction V. The tapered portion **122** is positioned such that wash liquid exhausted from the wash liquid inlet **110** contacts the tapered portion **122** when such a flow of wash liquid is provided by the wash liquid inlet **110**. The tapered portion **122** slants away from the side wall **124** of the compartment as it extends downwardly. Accordingly, the tapered portion **122** defines an angle, a, relative to the flow direction F, which for the embodiment depicted in FIG. **4** is an acute angle. More particularly, for the exemplary embodiment depicted, the angle α is approximately forty-five (45) degrees. However, in other exemplary embodiments, the angle a may instead be between fifteen (15) and seventy-five (75) degrees, between thirty (30) and sixty (60) degrees, or any other suitable angle.

[0036] Referring now also to FIG. **5**, a cross-sectional top view of the dispenser cup **100** is provided along Line **5-5** in FIG. **4**. As depicted, the deflector plate **100** defines a convex shape relative to the flow direction F of the wash liquid. More specifically, the deflector plate **100** defines a convex shape relative to the flow direction F of the wash liquid in a plane perpendicular to the vertical direction (such as in the plane depicted in FIG. **5**). For the embodiment depicted, both the tapered portion **122** and the rim **136** of the deflector plate **134** define a convex shape. Moreover, as may be seen in FIG. **5**, the rim **136** defines a shape in the plane of FIG. **5** (perpendicular to the vertical direction V) that is complementary and corresponds to the shape of the sidewall **124** of the container **104** proximate the wash liquid inlet **110**. Accordingly, for the exemplary embodiment depicted the sidewall **124** of the container **104** defines a convex shape that is substantially the same as the convex shape of the rim **136** proximate the wash liquid inlet **110**.

[0037] Referring now to both FIGS. **4** and **5**, the deflector plate **100** is configured to redirect the flow of wash liquid from the wash liquid inlet **110** toward the bottom wall **126** and/or side wall **124** of the container **104**. More particularly, the deflector plate **134** is configured to spread the cylindrical flow of wash liquid in a widthwise direction W of the bottom wall **126** of the container **104**, as is indicated by the redirected flow lines F' depicted in phantom in FIG. **5**. In certain exemplary embodiments, the deflector plate **134** may spread the flow of wash liquid across an entire width of the bottom wall **126** of the container **104**, although in other exemplary embodiments, the deflector plate **134** may instead be configured to spread the flow of wash liquid across a portion of the bottom wall **126** of the container **104**. Regardless, the deflector plate **134** is configured to spread the flow of wash liquid from the wash liquid inlet **110** in a flat flow pattern, or alternatively, in a concave flow pattern, or a convex flow pattern. More particularly, flow from the wash liquid inlet **110** may contact the deflector plate **134** and substantially take the shape of the deflector plate **134** and rim **136** as the flow spreads out across the deflector plate **134** and rim **136** and moves downwardly along the deflector plate **134** and rim **136**. Accordingly, by the time the flow of wash liquid reaches the bottom wall **126**, the flow may define a shape that corresponds substantially to a shape of the inside surface **118** of the deflector plate **134** and rim **136** (e.g., flat, concave, or convex). The pressure of the cylindrical flow of wash liquid from the inlet **110** may be reduced to minimize an amount of turbulence generated with the wash material positioned in the container **104**.

[0038] Referring still to FIGS. **4** and **5**, a wall **150** may extend from the deflector plate **134** into the compartment **126**. In some cases, wash liquid exhausted from the inlet **110** into the compartment **126** may, due for example to contact with the deflector plate **134**, be redirected towards the top end **116**. This wash liquid could potentially leak from the compartment **126** between the container **104** and cover **114**, such as at the top end **116**. Wall **150** may reduce or prevent such wash liquid from reaching the top end **116**. In particular, the wall **150** may be positioned such that wash liquid redirected towards the top end **116** contacts the wall **150**. The wall **150** may redirect this wash liquid towards the bottom wall **126**, thus reducing or preventing leakage from the dispenser cup **100**.

[0039] Wall **150** may be disposed between the top end **116** and the bottom wall **126** along the vertical direction. In exemplary embodiments, wall **150** may extend from the tapered portion **122**. Wall **150** may be disposed above the inlet **110** along the vertical direction V, such that wash liquid exhausted from the inlet **110** contacts the deflector plate **134**, such as the tapered portion **122** thereof, without being blocked from such contact by the wall **150**. In other words, the wall **150** may be out of a line-of-sight of the wash liquid exhausted from the inlet **110** along flow direction F.

[0040] In exemplary embodiments, the wall **150** may extend from the deflector plate **134**, such as from the tapered portion **122** thereof, along the vertical direction V. For example, the wall **150** may be substantially parallel to the side wall **124**. Alternatively, wall **150** may extend from the deflector plate **134** at an angle to the vertical direction V.

[0041] In exemplary embodiments, the wall **150** is made integrally with the deflector plate **134**. For example, the wall

150 may be made of the same material as the deflector plate 134, with no seams or junctions defined between the two components. Such a configuration may result by molding the deflector plate 134 and the wall 150 simultaneously together (e.g., in a single, continuous mold), and may prevent any leaks between the two parts.

[0042] Accordingly, a dispenser cup 100 including the deflector plate 134 described above with reference to FIGS. 3 through 5 may leave less residue from the wash material over a plurality of wash cycles in the container 104 of the dispenser cup 100. More particularly, a dispenser cup 100 in accordance with the present disclosure may more effectively clean the bottom wall 126 of the container 104 during or after each wash cycle by redirecting the wash fluid flow from the wash fluid inlet 110 towards and/or across a width of the bottom wall 126 of the container 104, enabling a lower pressure fluid flow to clean the bottom wall 126 of the container without generating unwanted turbulence. Further, use of a wall 150 in accordance with the present disclosure may reduce or prevent leakage from the dispenser cup 100 during operation.

[0043] It should be appreciated that the dispenser cup 100 described above with reference to FIGS. 3 through 5 is by way of example only and in other exemplary embodiments, the dispenser cup 100 may have any other suitable configuration. For example, in other exemplary embodiments the dispenser cup 100 may define any suitable number of containers, such as two or four containers, and may include any suitable design for the cover 114. For example, the cover 114 may not define a tapered portion 122 that extends around a perimeter of each of the respective containers, and instead the tapered portion 122 may only extend around a portion of a perimeter of the respective containers proximate to the wash liquid inlet of the respective containers. Moreover, in still other exemplary embodiments the cover 114, including the tapered portion 122 and/or the rim 136 may define any other suitable shape for redirecting the flow of wash liquid from the wash liquid inlet towards the bottom wall of the containers. For example, in other embodiments, the deflector plate 134 and/or rim 136 may define a flat shape relative to the flow direction F, or alternatively may define a concave shape relative to the flow direction F.

[0044] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other and examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal language of the claims.

What is claimed:

1. A dispenser cup for a washing machine appliance, the dispenser cup comprising:

a container comprising a side wall and a bottom wall, the side wall having a top end, the container defining a compartment configured to receive a wash material;

a wash liquid inlet positioned on the side wall of the container and in fluid communication with the compartment for providing a flow of wash liquid to the compartment;

a deflector plate positioned at least partially within the compartment, the deflector plate positioned such that wash liquid exhausted from the wash liquid inlet into the compartment contacts the deflector plate and is redirected towards the bottom wall of the container; and

a wall extending from the deflector plate within the compartment such that wash liquid redirected towards the top end contacts the wall.

2. The dispenser cup of claim 1, wherein the wall is disposed between the top end and the bottom wall along the vertical direction.

3. The dispenser cup of claim 1, wherein the wall extends from the deflector plate along a vertical direction.

4. The dispenser cup of claim 1, wherein the wall is made integrally with the deflector plate.

5. The dispenser cup of claim 1, wherein the wash liquid inlet defines a flow direction and wherein the deflector plate defines a convex shape relative to the flow direction.

6. The dispenser cup of claim 1, wherein the deflector plate is configured to spread wash liquid across a width of the bottom wall of the container.

7. The dispenser cup of claim 1, wherein the deflector plate comprises a tapered portion and is positioned such that wash liquid from the wash liquid inlet contacts the tapered portion when the wash liquid is exhausted from the wash liquid inlet.

8. The dispenser cup of claim 7, wherein the wash liquid inlet defines a flow direction and wherein the tapered portion defines an acute angle relative to the flow direction.

9. The dispenser cup of claim 7, wherein the deflector plate further comprises a rim extending downwardly from the tapered portion.

10. The dispenser cup of claim 7, wherein the wall extends from the tapered portion.

11. The dispenser cup of claim 1, wherein the wash liquid inlet is made integrally with the container.

12. The dispenser cup of claim 1, further comprising an outlet defined in the bottom wall of the container for receiving wash liquid and wash material.

13. The dispenser cup of claim 1, wherein the deflector plate is attached to the container at the top end of the container.

14. The dispenser cup of claim 1, wherein the side wall extends substantially along a vertical direction, and wherein the bottom wall extends approximately perpendicularly from the side wall.

15. The dispenser cup of claim 1, wherein the wash liquid inlet defines a flow direction that is approximately perpendicular to the side wall of the container.

16. A washing machine appliance comprising:

a wash tub;

a wash drum rotatably positioned in the wash tub; and

a dispenser cup configured to provide a mixture of wash material and wash liquid to at least one of the wash tub or the wash drum, the dispenser cup comprising:

a container comprising a side wall and a bottom wall, the side wall having a top end, the container defining a compartment configured to receive the wash material;

a wash liquid inlet positioned on the side wall of the container and in fluid communication with the compartment for providing a flow of wash liquid to the compartment;

a deflector plate positioned at least partially within the compartment, the deflector plate positioned such that wash liquid exhausted from the wash liquid inlet into the compartment contacts the deflector plate and is redirected towards the bottom wall of the container; and

a wall extending from the deflector plate within the compartment such that wash liquid redirected towards the top end contacts the wall.

17. The washing machine appliance of claim **16**, wherein the wall is disposed between the top end and the bottom wall along the vertical direction.

18. The washing machine appliance of claim **16**, wherein the wall extends from the deflector plate along a vertical direction.

19. The washing machine appliance of claim **16**, wherein the deflector plate comprises a tapered portion and is positioned such that wash liquid from the wash liquid inlet contacts the tapered portion when the wash liquid is exhausted from the wash liquid inlet.

20. The washing machine appliance of claim **19**, wherein the wall extends from the tapered portion.

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