FILTER CLEANER FOR A DISHWASHING APPLIANCE

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ABSTRACT
A cleaner is provided for a filter of a dishwashing appliance. The filter cleaner rotates within the filter and uses nozzles to remove particulates on the filter surface. Energy from fluid flow caused by a pump is used to rotate the filter cleaner. The particulates removed from the filter are pumped away for disposal.
FILTER CLEANER FOR A DISHWASHING APPLIANCE

FIELD OF THE INVENTION

[0001] The subject matter of the present disclosure relates generally to cleaning of a fluid filter used in a dishwashing appliance.

BACKGROUND OF THE INVENTION

[0002] During wash and rinse cycles, dishwashers typically circulate a fluid through a wash chamber over articles such as pots, pans, silverware, and other cooking utensils. The fluid can be e.g., various combinations of water and detergent during the wash cycle or water (which may include additives) during the rinse cycle. Typically the fluid is recirculated during a given cycle using a pump. Fluid is collected at or near the bottom of the wash chamber and pumped back into the chamber through e.g., nozzles in the spray arms and other openings that direct the fluid against the articles to be cleaned or rinsed. Fluids used in e.g., the wash or rinse cycles may be heated. For example, hot water may be supplied to the dishwasher and/or the dishwasher may include one or more heat sources (e.g., electrically-resistant heating elements) for heating fluids used in wash or rinse cycles and for providing heat during a drying cycle.

[0003] Depending upon the level of soil upon the articles, fluids used during wash and rinse cycles will become contaminated with soils in the form of debris or particles that are carried with the fluid. To protect the pump and remove some of the particles before recirculating the fluid through the wash chamber, it is beneficial to filter the fluid so that relatively clean fluid is applied to the articles in the wash chamber and materials are removed or reduced from the fluid supplied to the pump.

[0004] For mechanical filtration, the selectivity of the filter to remove soil particles of different sizes is typically determined by providing fluid paths (such as pores or apertures) through a filter screen or filter media that are smaller than the particles for which filtration is desired. Particles having a dimension larger than the width of the fluid paths will be trapped or prevented from passing through the filter while particles smaller than the width of the fluid path will generally pass through. Some particle sizes and/or types may not be harmful to the pump or spray assemblies and, therefore, can be allowed to pass into the pump set.

[0005] Certain dishwashing appliances may be equipped with a fine filter i.e., a filter for removing relatively small particles from the wash or rinse fluids recirculated through the chamber of the dishwashing appliance. Unfortunately, the fine filter is subject to clogging during the cleaning process, which can substantially reduce the flow of fluid provided to the pump and/or reduce the amount of fluid that can be cleaned using the fine filter. It is undesirable to manually remove and clean or replace the filter during the cleaning process.

[0006] One approach to such problem is the use of a back flow of water through the filter to remove the particles. However, all or most of the resulting soiled water must then be drained out of the appliance, thereby causing the appliance to consume more water during the cleaning cycle. Another potential approach is the use of a flow of water at an angle to the filter surface to dislodge particles, but this approach also results in additional water consumption.

[0007] Accordingly, a dishwasher appliance having a filtering system that can clean particles clogging the filter would be useful. Such a filtering system that can clean particles clogging a filter that is used to remove fine particles from the wash and/or rinse fluids would be particularly beneficial.

BRIEF DESCRIPTION OF THE INVENTION

[0008] The present invention provides a cleaner for a filter of a dishwashing appliance. The filter cleaner rotates within the filter and uses nozzles to remove particulates on the filter surface. Energy from fluid flow caused by a pump is used to rotate the filter cleaner. The particulates removed from the filter are pumped away for disposal. Additional aspects and advantages of the invention will be set forth in part in the following description, or may be apparent from the description, or may be learned from the practice of the invention.

[0009] In one exemplary embodiment, the present invention provides a dishwashing appliance that includes a wash chamber and a filter for the receipt of fluid that has circulated through the wash chamber. The filter has a chamber defined by a cylindrically-shaped interior surface through which the fluid flows for filtering. A filter cleaner is provided that includes a base defining a fluid outlet for the fluid outlet from the chamber of the filter. A bearing is supported upon the base. A rotatable body is positioned within the chamber of the filter and is rotatably supported by the bearing. The rotatable body defines an interior channel for fluid flow that is in fluid communication with the fluid outlet of the base. A pair of arcuate-shaped arms are positioned on opposing sides of the rotatable body. Each arm has a nozzle positioned at a distal end of the arm and adjacent to the interior surface of the filter. The nozzle defines an inlet for the receipt of fluid and particles from the interior surface of the filter. Each arm defines a fluid pathway providing fluid communication between the inlet of the nozzle and the interior channel of the rotatable body.

[0010] In another exemplary embodiment, the present invention provides a dishwashing appliance having a wash chamber and a filter for the receipt of fluid that has circulated through the wash chamber. The filter has a chamber defined by a cylindrically-shaped interior surface through which the fluid flows for filtering. A filter cleaner is provided that has a base defining a fluid outlet for the fluid outlet from the chamber of the filter. A bearing is supported upon the base. A rotatable body is positioned within the chamber of the filter and is rotatably supported by the bearing. The rotatable body defines an interior channel for fluid flow that is in fluid communication with the fluid outlet of the base. At least one arm is positioned on the rotatable body. The arm has at least one nozzle positioned along the arm and adjacent to the interior surface of the filter, a bottom surface of the sump, or both. The nozzle defines an inlet for the receipt of fluid and particles from the interior surface of the filter. The at least one arm defines a fluid pathway providing fluid communication between the inlet of the nozzle and the interior channel of the rotatable body.

[0011] These and other features, aspects, and advantages of the present invention 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 invention and, together with the description, serve to explain the principles of the invention.
BRIEF DESCRIPTION OF THE DRAWINGS

[0012] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to the appended figures, in which:

[0013] FIG. 1 illustrates a front view of an exemplary embodiment of a dishwashing appliance.

[0014] FIG. 2 provides a side, cross-sectional view of the exemplary dishwashing appliance of FIG. 1.

[0015] FIG. 3 is a front view inside the wash chamber of the exemplary dishwashing appliance of FIGS. 1 and 2. A grate or coarse filter has been removed for purposes of additional clarity.

[0016] FIG. 4 is an exploded view of an exemplary filter assembly, filter cleaner, and sump portion of a dishwashing appliance.

[0017] A cross-sectional view of an exemplary filter and filter cleaner is provided in FIG. 5.

[0018] FIG. 6 is a perspective view of an exemplary embodiment of a filter cleaner of the present invention.

[0019] FIGS. 7 and 8 are side, partial cross-sectional views of the exemplary filter cleaner of FIG. 5.

[0020] FIG. 9 illustrates a perspective view of an exemplary bearing as may be used with the present invention.

[0021] FIG. 10 is a top view of an exemplary filter cleaner and filter—with a top portion of the filter removed for additional clarity.

[0022] A cross-sectional view of an arm of an exemplary filter cleaner is provided in FIG. 11.

[0023] FIG. 12 illustrates a cross-sectional view of another exemplary embodiment of a filter and filter cleaner.

DETAILED DESCRIPTION OF THE INVENTION

[0024] 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.

[0025] As used herein, the term “article” may refer to, but need not be limited to, dishes, pots, pans, silverware, and other cooking utensils and items that can be cleaned in a dishwashing appliance. The term “wash cycle” is intended to refer to one or more periods of time during the cleaning process where a dishwashing appliance operates while containing articles to be washed and uses a detergent and water, preferably with agitation, to e.g., remove soil particles including food and other undesirable elements from the articles. The term “rinse cycle” is intended to refer to one or more periods of time during the cleaning process in which the dishwashing appliance operates to remove residual soil, detergents, and other undesirable elements that were retained by the articles after completion of the wash cycle. The term “drying cycle” is intended to refer to one or more periods of time in which the dishwashing appliance is operated to dry the articles by removing fluids from the wash chamber. The term “fluid” refers to a liquid used for washing and/or rinsing the articles and is typically made up of water that may include additives such as e.g., detergent or other treatments. As used herein, “fluidly connected” or “in fluid communication with” and the like means that fluid can flow between the identified elements that may be directly connected or may be connected through other components to allow fluid to flow therethrough.

[0026] FIGS. 1 and 2 depict an exemplary domestic dishwasher 100 that may be configured in accordance with aspects of the present disclosure. For the particular embodiment of FIGS. 1 and 2, the dishwasher 100 includes a cabinet 102 having a tub 104 therein that defines a wash chamber 106. The tub 104 includes a front opening (not shown) and a door 120 hinged at its bottom 122 for movement between a normally closed vertical position (shown in FIGS. 1 and 2), wherein the wash chamber 106 is sealed shut for washing operations, and a horizontal open position for loading and unloading of articles from the dishwasher. Latch 156 is used to lock and unlock door 120 for access to wash chamber 106.

[0027] Upper and lower guide rails 124, 126 are mounted on tub side walls 128 and accommodate roller-equipped rack assemblies 130 and 132. Each of the rack assemblies 130, 132 is fabricated into lattice structures including a plurality of elongated members 134 (for clarity of illustration, not all elongated members making up assemblies 130 and 132 are shown in FIG. 2). Each rack 130, 132 is adapted for movement between an extended loading position (not shown), in which the rack is substantially positioned outside the wash chamber 106, and a retracted position (shown in FIGS. 1 and 2), in which the rack is located inside the wash chamber 106. This rack movement is facilitated by rollers 135 and 139, for example, mounted onto racks 130 and 132, respectively. A silverware basket (not shown) may be removably attached to rack assembly 132 for placement of silverware, utensils, and the like, that are otherwise too small to be accommodated by the racks 130, 132.

[0028] The dishwasher 100 further includes a lower spray-arm assembly 144 that is rotatably mounted within a lower region 146 of the wash chamber 106 and above a tub sump portion 142 so as to rotate in relatively close proximity to rack assembly 132. A mid-level spray-arm assembly 148 is located in an upper region of the wash chamber 106 and may be located in close proximity to upper rack 130. Additionally, an upper spray assembly 150 may be located above the upper rack 130.

[0029] The lower and mid-level spray-arm assemblies 144, 148 and the upper spray assembly 150 are part of a fluid circulation assembly 152 for circulating water and dishwashing fluid in the tub 104. The fluid circulation assembly 152 also includes a recirculation pump 154 positioned in a machinery compartment 140 located below the tub sump portion 142 (i.e., bottom wall) of the tub 104, as generally recognized in the art. Pump 154 receives fluid from sump 142 to provide a flow to assembly 152 or optionally a switching valve or diverter (not shown) may be used to select flow. A heating element 170 can be used to provide heat during e.g., a drying cycle.

[0030] Each spray-arm assembly 144, 148 includes an arrangement of discharge ports or orifices for directing washing fluid received from pump 154 onto dishes or other articles located in rack assemblies 130 and 132. The arrangement of the discharge ports in spray-arm assemblies 144, 148 provides a rotational force by virtue of washing fluid flowing through the discharge ports. The resultant rotation of the
spray-arm assemblies 144, 148 and the operation of spray assembly 150 using fluid from pump 154 provides coverage of dishes and other dishwasher contents with a washing spray. Other configurations of spray assemblies may be used as well.

[0031] The dishwasher 100 is further equipped with a controller 137 to regulate operation of the dishwasher 100. The controller may include one or more memory devices and one or more microprocessors, such as general or special purpose microprocessors 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.

[0032] The controller 137 may be positioned in a variety of locations throughout dishwasher 100. In the illustrated embodiment, the controller 137 may be located within a control panel area 121 of door 120 as shown in FIGS. 1 and 2. In such an embodiment, input/output ("I/O") signals may be routed between the control system and various operational components of dishwasher 100 along wiring harnesses that may be routed through the bottom 122 of door 120. Typically, the controller 137 includes a user interface panel/controls 136 through which a user may select various operational features and modes and monitor progress of the dishwasher 100. In one embodiment, the user interface 136 may represent a general purpose I/O ("GPIO") device or functional block. In one embodiment, the user interface 136 may include input components, such as one or more of a variety of electrical, mechanical or electro-mechanical input devices including rotary dials, push buttons, and touch pads. The user interface 136 may include a display component, such as a digital or analog display device designed to provide operational feedback to a user. The user interface 136 may be in communication with the controller 137 via one or more signal lines or shared communication busses.

[0033] It should be appreciated that the invention is not limited to any particular style, model, or configuration of dishwasher. The exemplary embodiment depicted in FIGS. 1 and 2 is for illustrative purposes only. For example, different locations may be provided for user interface 136, different configurations may be provided for tanks 130, 132, and other differences may be applied as well.

[0034] Referring now to FIGS. 2, 3, and 4, an exemplary filter system 200 is located in sump portion 142 and provides filtered fluid to pump inlet 162. Filter system 200 includes a filter or filter cartridge 206 positioned in a cylindrically-shaped receptacle 230 formed in sump portion 142. For this exemplary embodiment, filter 206 is a fine filter that is removably received in receptacle 230 through an opening 204 formed in sump portion 142. A handle 208 on filter top 288 allows a user to grasp filter 206 for removal. A drain pump 232 provides for removing waste water from receptacle 230 for delivery to a drain 224. Sump portion 142 includes a recessed portion 226 over which a grate or coarse filter 210 is removably received.

[0035] Filtering system 200 removes soiled particles from the fluid that is recirculated through the wash chamber 106 during operation of dishwasher 100. After the fluid is filtered by passing through filter 210 (e.g., a coarse filter—also referred to as a first filter) or filter cartridge 206 (e.g., a fine filter—also referred to as a second filter), the filtered fluid is fed to the inlet 162 of pump 154 for return to the wash chamber 106 by way of fluid circulation assembly 152. After being sprayed onto articles in the dishwashing appliance using one or more of spray elements 144, 148, and 150, the fluid eventually flows to sump portion 142 and is filtered again.

[0036] More particularly, based on the shape of sump portion 142 (see FIG. 2), fluid flows down along vertical direction V to filtering system 200. Referring now to FIGS. 4 and 5, openings 292 in the top 288 of filter 206 provide a fluid inlet to allow fluid FF to flow into a chamber 220 defined by a cylindrically-shaped interior surface 222 of filter 206. Fluid FF is fluid that flows over the top of the coarse filter 210 without passing through its openings 228 for coarse filtration. From internal chamber 220, fluid FF can flow through one of the plurality of filter media 214, 216, or 218 (FIG. 4) forming cylindrically-shaped interior surface 222, whereby particulates P are removed from fluid FF.

[0037] After passing through the filter media, fluid FF combines with fluid CF that has been filtered by coarse filter 210 by passing through openings 228 therein. The combined flow of filtered fluid F exits receptacle 230 to pump inlet 162 to be returned to the wash chamber 106 by pump 154 for recirculation as previously described. Accordingly, filtering system 200 acts to clean soil particles from the fluid so as to e.g., protect pump 154 and/or the spray assemblies from clogging as the fluid is recirculated during the cleaning process of the dishwashing appliance 100 such as e.g., a wash or rinse cycle of appliance 100. The filtering system can also assist in providing a fluid with less particles present during the cleaning process.

[0038] As fluid passes through the media 214, 216, and 218 of filter 206, particles P collect on the cylindrically-shaped interior surface 222 of filter 206 and deleteriously affect the filtration efficiency by blocking the filter media 214, 216, and 218. Drain pump 232 is in fluid communication with chamber 220 of filter 206 and can be activated to move some of the particles P to drain. However, without further action, some particles P will remain lodged in the filter media on interior surface 222.

[0039] Accordingly, a filter cleaner 250 is provided to remove particles P from interior surface 222. As shown in FIGS. 5, 6, 7, and 8, filter cleaner 250 includes a base 252 defining a fluid outlet 254 for the flow PF of particles and fluid from the chamber 220 of filter 206—i.e., fluid outlet 254 is in fluid communication with chamber 220. A bearing 256 is supported on base 252 and can be formed as a separate component therefrom for ease of assembly.

[0040] A rotatable body 258 is positioned on bearing 256 and is located within chamber 220 of filter 206. Rotatable body 258 is rotatably supported by bearing 256 and, more particularly, can rotate (arrows R in FIG. 5) and/or pivot (arrows X in FIG. 8) relative to bearing 256. Rotatable body 258 defines an interior channel 260 for the flow PF of fluid containing particles from interior surface 222 and/or chamber 220. Interior channel 260 is in fluid communication with fluid outlet 254.

[0041] A pair of arcuate-shaped arms 262 are positioned on opposing sides or in an opposing manner onto rotatable body 258. Each arm 262 has a nozzle 264 positioned at a distal end 294 that is positioned away from rotatable body 258. Each nozzle 264 defines an inlet 266 for the receipt of fluid containing particles P from interior surface 222 and/or chamber 220 of filter 206. Each arm 262 defines a fluid pathway 268...
(FIGS. 7 and 8) between inlet 266 and the interior channel 260 of rotatable body 258, placing the two in fluid communication with each other.

[0042] The activation of drain pump 232 causes a flow PF of fluid containing particulates P to be drawn into inlets 266 of nozzles 264 substantially from interior surface 222 and some from chamber 220. The flow PF travels through each arm 262 and into rotatable body 258. A sufficient level of flow PF (created by drain pump 232) along with the arcuate shape of arms 262 causes rotatable body 258 and arms 262 to rotate in the direction of arrows R. Nozzles 264 are thereby caused to travel over the interior surface 222 of filter 206 in a sweeping manner to suck or pull particulates P from interior surface 222 thereby cleaning filter 206. Nozzles 264 each extend longitudinally (direction L) along interior surface 222 of filter 206. The flow PF travels through the fluid outlet 254 in base 252 and through drain pump 232 for delivery to drain 224. For example, controller 137 can activate pump 232 at appropriate times during the cleaning process (e.g., at the end of a wash cycle) to clean filter 206.

[0043] Rather than being pulled into nozzles 264, some particles P may fall along the vertical direction V towards filter bottom 290 (FIG. 4) and base 252. To allow these particles to also be evacuated from chamber 220, a recess 285 formed by interior wall 284 of base 252 and rotatable body 258 define a small gap 270 separating base 252 and rotatable body 258 near its bottom portion 276. Accordingly, some particles can pass through gap 270. Further, because rotatable body 258 is pivotable relative to base 252 (FIG. 8), such movement can increase the size of gap 270 to a larger gap 272 to allow larger particles to pass.

[0044] As shown in FIGS. 7, 8, and 9, for this exemplary embodiment, bearing 256 includes a bearing support 278 positioned over the fluid outlet 254 of base 252. Bearing support 278 defines one or more openings 282 for the passage of flow PF from channel 260 of rotatable body 258. A bearing shaft 280 extends longitudinally (arrows L) along vertical direction V towards a seat 296 defined at a top portion 274 of rotatable body 258 within channel 260. There, a distal end 281 of bearing shaft 280 (FIG. 9) of bearing 256 is received into seat 296 while body 258 remains rotatable and pivotable.

[0045] Referring now to FIGS. 5 and 10, the cylindrically-shaped interior surface 222 of filter 206 defines an interior diameter ID. For this exemplary embodiment, the overall width W, along the same direction as interior diameter ID, of rotatable body 258 and arcuate-shaped arms 262 is less than interior diameter ID so as to define a small gap 298 between each nozzle 264 and interior surface 222, which allows rotation of arms 262 and body 258 even when a build-up of particles P along interior surface 222 is present. In one exemplary embodiment, gap 298 may be about 0.1 inches or less. Other sizes for gap 298 may be used as well.

[0046] FIG. 11 provides a cross-sectional view of an arm 262. To reduce drag on arms 262 during rotation, each arm 262 can be provided with a cross-sectional shape conducive to the movement of arm 262 through fluid in chamber 220. For the exemplary arm of FIG. 11, the cross-sectional shape along a plane that is perpendicular to the flow of fluid PF is substantially tear-drop as shown. Other shapes may be used as well. In addition, as previously stated, arm 262 defines a fluid pathway 268. To promote rotation of arms 262 and body 258, arm 262 tapers along a direction Z from the rotatable body 258 towards nozzle 264.

[0047] Each fluid pathway 268 has a fluid inlet 300 and a fluid outlet 302 defined by arm 262, as seen in FIGS. 10 and 11. To promote the rotation of arms 262 and body 258 during operation of drain pump 232, the relative angle β of channel inlet 300 and to channel outlet 302 can be manipulated. In one exemplary embodiment, the relative angle β is about 90 degrees. Other angles may be used as well.

[0048] A variety of configurations and features can be used with nozzles 264 to promote effective cleaning of filter 206. For example, in the embodiments shown in FIGS. 5 and 12, the length of nozzles 264 along vertical direction V is less than the height H of the interior surface 222 along vertical direction V. In other exemplary embodiments of the invention, the length of nozzles 264 can be increased so that nozzles 264 extend longitudinally over the entire interior surface 222. Also, nozzles 264 are shown as semi-cylinders. However, other shapes may be used.

[0049] In addition, nozzles 264 can be equipped with features for scraping or wiping interior surface 222. In the exemplary embodiment shown in FIG. 12, nozzles 264 include a wiping element or brush 286 for cleaning surface 222. Other features may be used as well.

[0050] The exemplary embodiment described above utilized cleaning of a removable fine filter. Using the teachings disclosed herein, one of skill in the art will understand that the present invention may also be used with a fixed or non-removable filter as well. Additionally, straight arms instead of arcuate arms may also be used. In such case, the straight arms could be positioned e.g., onto the rotatable body at an angle to provide for rotation or could otherwise be configured in a manner causing rotation. Also, a single arm could also be used provided a counterweight is positioned in an opposing manner on the rotatable body.

[0051] 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 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 is:

1. A dishwashing appliance, comprising:
a wash chamber;
a filter for the receipt of fluid that has circulated through the wash chamber, the filter having a chamber defined by a cylindrically-shaped interior surface through which the fluid flows for filtering;
a filter cleaner, comprising
a base defining a fluid outlet for the flow of fluid from the chamber of the filter;
a bearing supported upon the base;
a rotatable body positioned within the chamber of the filter and rotatably supported by the bearing, the rotatable body defining an interior channel for fluid flow that is in fluid communication with the fluid outlet of the base; and
a pair of arcuate-shaped arms positioned on opposing sides of the rotatable body, each arm having a nozzle positioned at a distal end of the arm and adjacent to the
interior surface of the filter, the nozzle defining an inlet for the receipt of fluid and particles from the interior surface of the filter, each arm defining a fluid pathway providing fluid communication between the inlet of the nozzle and the interior channel of the rotatable body.

2. The dishwashing appliance of claim 1, wherein the base and the rotatable body define a circular gap separating the base and the rotatable body, the gap positioned upstream of the fluid outlet of the base.

3. The dishwashing appliance of claim 1, wherein the fluid inlet of each nozzle extends longitudinally along the interior surface of the filter.

4. The dishwashing appliance of claim 1, wherein the rotatable body is pivotable relative to the bearing.

5. The dishwashing appliance of claim 1, wherein the rotatable body defines a seat into which the bearing is removably received.

6. The dishwashing appliance of claim 1, wherein the rotatable body defines a top portion and a bottom portion along a vertical direction, and wherein a seat is positioned in the top portion.

7. The dishwashing appliance of claim 6, wherein the bearing comprises
   a bearing support positioned over the fluid outlet of the base and defining one or more openings for the flow of fluid; and
   a bearing shaft extending longitudinally towards the seat and having a distal end received in the seat of the rotatable body.

8. The dishwashing appliance of claim 1, wherein the interior surface of the filter defines an interior diameter, and wherein the overall width of the rotatable body and the pair of arcuate-shaped arms is less than the interior diameter of the filter so as to define a gap between each nozzle and the interior surface of the filter.

9. The dishwashing appliance of claim 1, wherein the fluid pathway of each arm tapers along a direction from the rotatable body to the nozzle.

10. The dishwashing appliance of claim 1, wherein each arm has a cross-sectional shape within a plane that is perpendicular to the flow of fluid along the fluid pathway, and wherein the cross-sectional shape is substantially tear-drop.

11. The dishwashing appliance of claim 1, further comprising a drain pump in fluid communication with the fluid outlet of the base and configured to pull fluid through the fluid outlet so as to cause the rotatable body and arms to rotate.

12. The dishwashing appliance of claim 1, wherein the inlets of the nozzles are oriented so as to cause the rotatable body to rotate as fluid is drawn through the fluid outlet of the base.

13. The dishwashing appliance of claim 1, further comprising a wiping element positioned at the inlet to each nozzle and extending between the nozzle and the interior surface of the filter so as to wipe particles from the interior surface as the rotatable body is caused to rotate.

14. The dishwashing appliance of claim 1, wherein the wash chamber includes a sump portion defining a receptacle into which the filter and filter cleaner are removably received.

15. The dishwashing appliance of claim 1, wherein the filter has a filter top and a filter bottom relative to a vertical direction, and wherein the filter top defines a fluid inlet for the receipt of fluid into the chamber.

16. The dishwashing appliance of claim 1, wherein the wash chamber comprises a sump portion defining a receptacle into which the filter is received.

17. The dishwashing appliance of claim 1, wherein the wash chamber comprises a sump portion having a grate.

18. The dishwashing appliance of claim 1, wherein the filter comprises a plurality of filter media.

19. A dishwashing appliance, comprising:
   a wash chamber;
   a filter for the receipt of fluid that has circulated through the wash chamber, the filter having a chamber defined by a cylindrically-shaped interior surface through which the fluid flows for filtering;
   a filter cleaner, comprising
   a base defining a fluid outlet for the flow of fluid from the chamber of the filter;
   a bearing supported upon the base;
   a rotatable body positioned within the chamber of the filter and rotatably supported by the bearing, the rotatable body defining an interior channel for fluid flow that is in fluid communication with the fluid outlet of the base; and
   at least one arm positioned on the rotatable body, the arm having at least one nozzle positioned along the arm and adjacent to the interior surface of the filter, a bottom surface of the sump, or both;
   the nozzle defining an inlet for the receipt of fluid and particles from the interior surface of the filter, the at least one arm defines a fluid pathway providing fluid communication between the inlet of the nozzle and the interior channel of the rotatable body.

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