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Kristensson et al.(10) **Pub. No.: US 2009/0151758 A1**(43) **Pub. Date: Jun. 18, 2009**(54) **LOWER RACK FOR A DISHWASHER AND
ASSOCIATED APPARATUSES****Publication Classification**(51) **Int. Cl.***A47L 15/42*

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ABSTRACT

A lower rack for a dishwasher is provided, comprising a rack member movable into and out of the dishwasher along first and second tracks extending from the tub to an interior portion of the dishwasher door. The lower rack includes at least one rack roller mechanism on each laterally-opposed side portion of the rack member, for facilitating movement of the rack member with respect to the lower end of the tub and the interior portion of the open door. One of the rack roller mechanisms includes a leadingly-disposed stop portion, as the rack member is moved out of the lower end of the tub and along the interior portion of the open door for interacting with a stop feature of the corresponding one of the first and second tracks to limit egress of the rack member from the tub along the first and second tracks. Associated apparatuses are also provided.

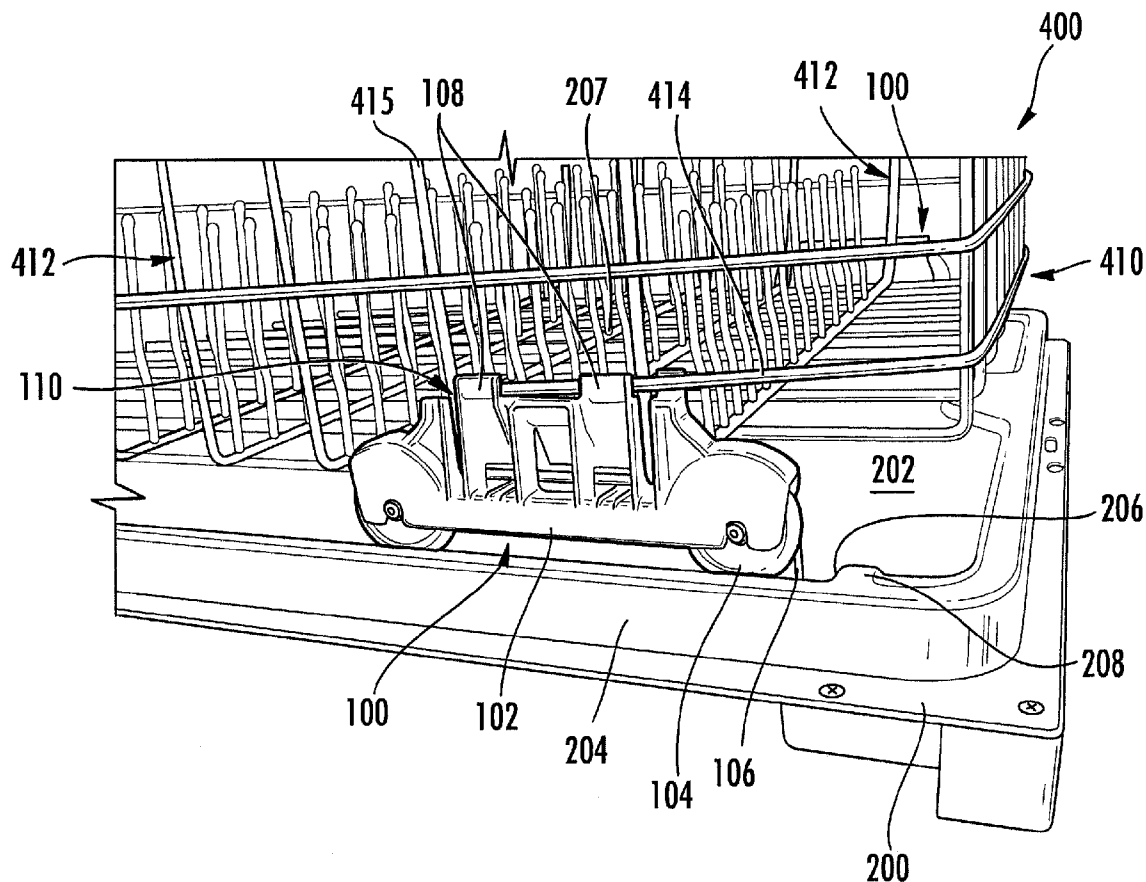
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FIG. 1

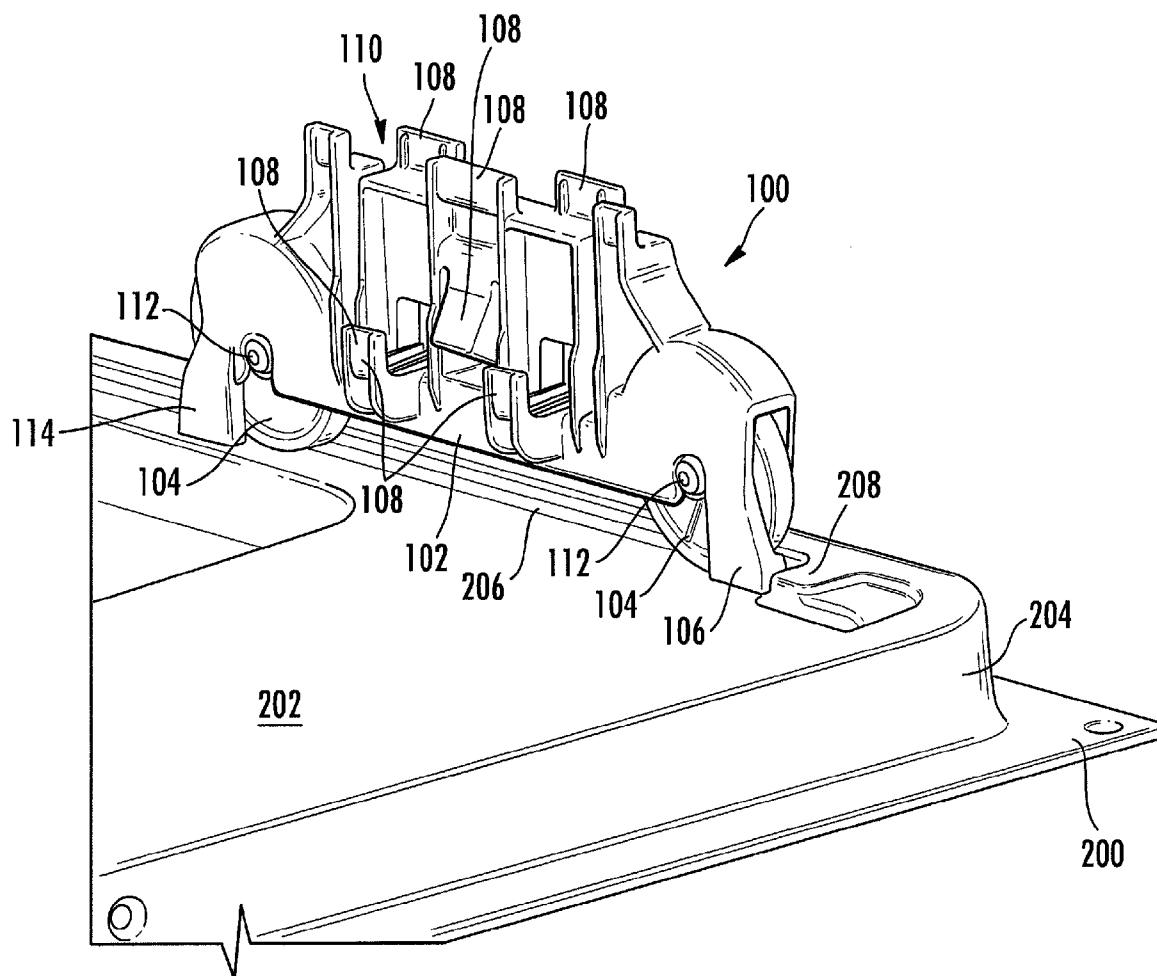


FIG. 2

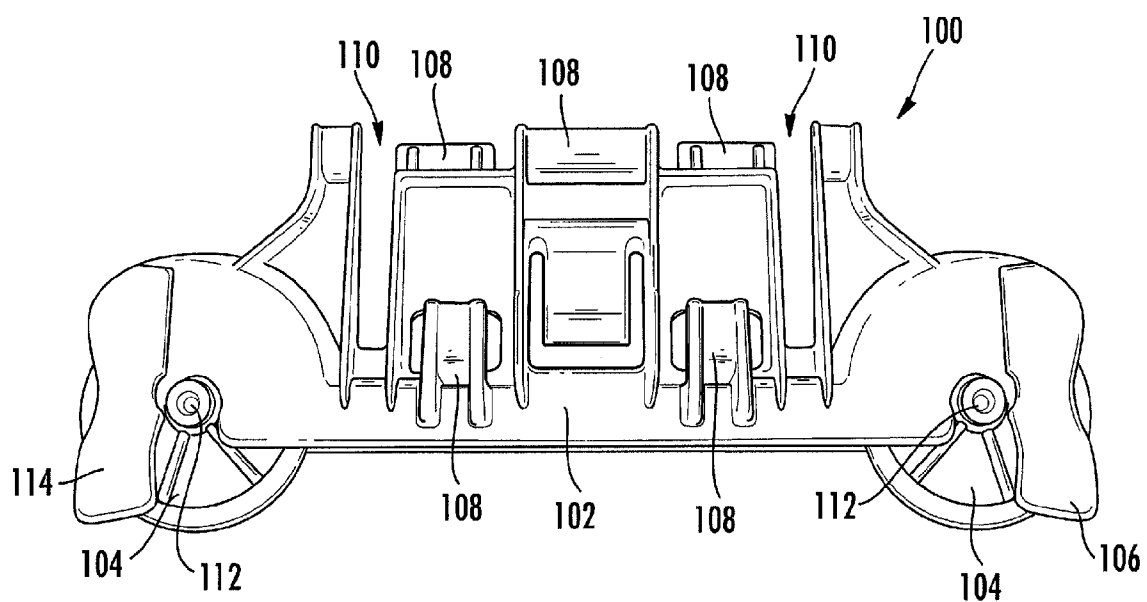


FIG. 3

LOWER RACK FOR A DISHWASHER AND ASSOCIATED APPARATUSES

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present disclosure relates to dishwashers and, more particularly, to a lower rack for a dishwasher and associated apparatuses.

[0003] 2. Description of Related Art

[0004] A dishwasher typically includes upper and lower dish racks for receiving the dishware to be washed. In front opening dishwashers, the door is generally hinged at the lower end thereof, and the racks are movable into and out of the tub to allow the dishware to be loaded. Typically, the lower rack includes wheels or rollers on either side that interact with a corresponding flange on either side of the tub, such that the lower rack can be moved (rolled) in and out of the tub when the door is open. Further, the door often includes flanges on either side, complementarily configured with respect to the flanges in the tub, that allow the lower rack to roll out of the tub and onto the door. In such instances, the lower rack rolled out of the tub is supported by the open door.

[0005] Both the tub flanges and the door flanges generally provide for or include side lips for preventing the lower rack from moving laterally from side to side (i.e., such that the lower rack does not slip off the side of the open door). In addition, the door flanges may, in some instances, also include a travel stop for preventing the lower rack from rolling off the end of the open door. Typically, the door flanges and the travel stops are molded or stamped into the inner liner of the door during the manufacturing process. However, one limitation of such a configuration is that the wheels or rollers associated with the rack may not necessarily be effectively restrained by the travel stops when the lower rack is rolled out of the tub. That is, the wheels of the lower rack may sometimes roll over or “jump” the travel stops and may undesirably result in the lower rack rolling off the end of the open door.

[0006] Thus, there exists a need for a lower rack for a dishwasher that is configured to prevent the lower rack from rolling off the end of an open dishwasher door.

BRIEF SUMMARY OF THE INVENTION

[0007] The above and other needs are met by the present disclosure which, in one embodiment, provides a lower rack for a dishwasher. More particularly, the lower rack comprises a rack member and a rack roller mechanism. The dishwasher is adapted to include a tub with a lower end and a door pivotable about the lower end of the tub to an open position. The lower end of the tub and an interior portion of the open door each have corresponding, laterally-opposed flanges, with each corresponding tub flange and door flange cooperating to define respective laterally-opposed first and second tracks. At least one of the laterally-opposed door flanges has a first stop feature associated therewith.

[0008] The rack member has laterally-opposed side portions and is adapted to receive dishware therein. The rack member is further adapted to be movable into and out of a lower end of the tub and with respect to the interior portion of the open door. The rack roller mechanism operably engages each side portion of the rack member, and is configured to facilitate movement of the rack member with respect to the lower end of the tub and the interior portion of the open door. The rack roller mechanisms each comprise a carriage mem-

ber having a wheel element operably engaged therewith. The rack roller mechanisms are further adapted to operably engage the corresponding first and second tracks such that the corresponding wheel element rolls thereon. At least one of the rack roller mechanisms further comprises a first stop portion leadingly disposed with respect to the wheel element as the rack member is moved out of the lower end of the tub and along the interior portion of the open door, the first stop portion being adapted to interact with the first stop feature associated with the corresponding one of the first and second tracks so as to provide a first stop mechanism for limiting egress of the rack member from the tub along the first and second tracks.

[0009] Another advantageous aspect of the present invention comprises a washing appliance including a tub having a lower end with laterally-opposed flanges. The washing appliance further comprises a door pivotable about the lower end of the tub to an open position. An interior portion of the door has laterally-opposed flanges corresponding to the tub flanges, with each corresponding tub flange and door flange cooperating to define respective laterally-opposed first and second tracks. A first stop feature is associated with at least one of the laterally-opposed door flanges. A rack member has laterally-opposed side portions and is adapted to receive dishware therein. The rack member is movable into and out of a lower end of the tub and with respect to the interior portion of the open door.

[0010] A rack roller mechanism is operably engaged with each side portion of the rack member, and is configured to facilitate movement of the rack member with respect to the lower end of the tub and the interior portion of the open door. Each rack roller mechanism comprises a carriage member having a wheel element operably engaged therewith. The rack roller mechanisms are further configured to operably engage the corresponding first and second tracks such that the corresponding wheel element rolls thereon. At least one of the rack roller mechanisms further comprises a first stop portion leadingly disposed with respect to the wheel element as the rack member is moved out of the lower end of the tub and along the interior portion of the open door. The first stop portion is configured to interact with the first stop feature associated with the corresponding one of the first and second tracks so as to provide a first stop mechanism for limiting egress of the rack member from the tub along the first and second tracks.

[0011] Thus, the lower rack and appliance, as disclosed in conjunction with various embodiments of the present disclosure, provide many advantages that may include, but are not limited to, limiting egress of a lower rack of a dishwasher when the lower rack is pulled out of the dishwasher tub.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0012] Having thus described the disclosure in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

[0013] FIG. 1 illustrates a partial perspective view of a lower rack for a dishwasher according to another embodiment of the present disclosure;

[0014] FIG. 2 illustrates a perspective view of a carriage mechanism engaging a door of a dishwasher according to one embodiment of the present disclosure; and

[0015] FIG. 3 illustrates a side elevation view of a carriage mechanism according to one embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0016] The present disclosure now will be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the disclosure are shown. Indeed, this disclosure may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Like numbers refer to like elements throughout.

[0017] As illustrated in FIG. 1, a dishwasher appliance may comprise a lower rack, generally designated 400, further comprising a rack member 410 and at least one rack roller mechanism 100 engaged therewith. Rack member 410 may be formed of a plurality of intersecting wire members such as, for example, horizontal structural members 414 and vertical structural members 415, so as to define an open container having laterally-opposing side portions, generally designated 412. The open container is further configured to receive and support dishware therein and to allow dishwashing fluid to pass freely therethrough. As used herein, the term dishware is intended to encompass dishware, glassware, cookware, or any other kitchen utensils that may be disposed in a dishwasher appliance for washing, and the use of such a term herein is not intended to be limiting in this regard. Side portions 412 may comprise intersecting horizontal and vertical structural members 414, 415, wherein horizontal structural members 414 extend longitudinally along side portions 412 and engage vertical structural members 415, for example, by spot welds. Rack member 410 may be coated with a polymer or plastic material to prevent corrosion to the structural members thereof and also to prevent scratching of the dishware occupying lower rack 400. Lower rack 400 is disposed in the lower portion of a dishwasher tub and capable of moving into and out of the lower end of the dishwasher tub substantially perpendicularly (i.e., longitudinally) with respect to a substantially vertical front opening defined by the tub.

[0018] The dishwasher appliance further includes a door 200 pivotable about the lower end of the tub, adjacent to the front opening, wherein a user may rotate the door 200 between a substantially vertical "closed" position (in which the door 200 covers the front opening) and a substantially horizontal "open" position, where the door 200 is generally parallel with a supporting floor surface (i.e. perpendicular to the front opening). The door 200 in the open position thus allows the lower rack 400 to be moved out of the tub so as to permit loading and unloading of dishware when the door 200 of the dishwasher appliance is in an "open" position. Generally, the lower rack 400 is at least partially supported by an interior portion 202 of the door 200 when the door 200 is in the open position, as shown in FIG. 2, wherein the interior portion 202 faces the interior of the tub when the door 200 is in the closed position. Door 200 may be hinged or otherwise engaged with the tub so as to be capable of pivoting about the lower end of the tub.

[0019] In some embodiments, the interior portion 202 of door 200 and the lower end of the tub may each define corresponding, laterally-opposed flanges. For example, door 200 may include door flanges 204 extending along opposing sides

thereof from the pivotably-engaged lower end of the door toward the top or distal portion of the door (away from the pivotably engaged lower end). The door flanges 204 may be configured in many different manners, as will be appreciated by one skilled in the art. However, regardless of configuration, the door flanges 204 are formed as generally planar strips extending substantially parallel to each other along the interior portion 202 of the door 200. The door flanges 204 may be engaged with, attached to or formed integrally with the interior portion 202 of the door 200. In one instance, the door flanges 204 are molded into the interior portion 202. Each door flanges 204 may also include a lateral flange engaged therewith and disposed between the particular door flange 204 and the corresponding side edge of the door 200, so as to laterally retain the lower rack 400 and prevent the lower rack 400 from being shifted laterally off either side edge of the door 200.

[0020] A corresponding pair of laterally spaced-apart flanges is disposed within the lower end of the tub. In one instance, the spaced-apart tub flanges are generally planar strips extending substantially parallel to each other along the lateral sides of the tub. The tub flanges may be engaged with, attached to or formed integrally with the tub. In one instance, the tub flanges are stamped into the tub when the tub is formed from a stainless steel material. The door 200 is engaged with the tub such that each tub flange and corresponding door flange 204 cooperate to define respective laterally-opposed first and second tracks for accommodating the lower rack 400. FIG. 2 shows one such example of the cooperation between a tub flange and a corresponding door flange 204 to form first track 206.

[0021] The lower rack 400 may further comprise a rack member 410 having at least one rack roller mechanism, generally designated 100, engaged with each of the laterally-opposing side portions. In one aspect, rack roller mechanism 100 is particularly configured to cooperate with at least one substantially horizontally-disposed structural member of the rack member and/or at least one substantially vertically-disposed structural member of the rack member 410 to form the lower rack 400, though other configurations involving additional horizontal and vertical structural members, or otherwise angled structural members, are considered to be within the spirit and scope of the embodiments of the present invention.

[0022] As illustrated in FIG. 3, the lower rack 400 may comprise rack roller mechanism 100 operably engaged with the rack member. Though only one rack roller mechanism 100 is shown in engagement with the rack member 410, one skilled in the art will appreciate that each side portion of the rack member 410 may have more than one such rack roller mechanism engaged therewith, for example, to promote and facilitate stability of the lower rack 400. The lower rack 400, in turn, is disposed within the lower end of the tub of the dishwasher appliance. When the door 200 of the dishwasher is in the open position, rack roller mechanism 100 facilitates movement of the rack member 410 in and out of the dishwasher tub so as to facilitate access to the space within the lower rack for loading and unloading dishware. That is, the rack member 410 is capable of moving in and out of the tub, when the door 200 is in the open position, such that the rack member 410 travels from the tub and along an interior portion 202 of the door 200. Accordingly, rack roller mechanism 100 facilitates lateral transport of the rack member 410 from a position within the tub to a position whereby at least a portion

of the rack member **410** is supported by the interior portion **202** of the open door **200**. In one aspect, the present disclosure is directed to an apparatus for limiting egress of the lower rack **400** from the tub and along the interior portion **202** of the door **200**. In this manner, the lower rack **400** may be prevented from rolling off the free end of the door **200**.

[0023] As shown in FIG. 3, according to some embodiments, rack roller mechanism **100** may generally comprise a carriage member **102**, at least one wheel **104**, and a first stop portion **106**. Carriage member **102** is configured to operably engage the rack member **410** so as to provide support therefor. For example, carriage member **102** may comprise spaced-apart opposing tab portions **108** configured to receive at least one substantially horizontal structural member of the rack member **410** so as to provide an attachment mechanism therebetween such as, for example, a snap, interference, friction, or other appropriate fit for maintaining the relationship therebetween. Although, one skilled in the art will appreciate that tab portions **108** may also be configured to receive vertical or angled structural members of the rack member **410** for providing the attachment mechanism thereto. Also, other embodiments may include attachment mechanisms other than tab portions **108** for providing the necessary engagement between rack roller mechanism **100** and the rack member **410**. In addition, according to some embodiments, carriage member **102** may define a recess, generally designated **110**, for receiving vertical structural members of the rack member **410** so as to facilitate engagement between the horizontal structural members and carriage member **102**. Accordingly, the carriage member **102** operably engaged with the rack member **410** facilitates movement of the lower rack **400** into and out of the tub of the dishwasher appliance.

[0024] At least one wheel **104** operably engages carriage member **102** to facilitate movement thereof and consequently also facilitates movement of the lower rack **400**. Wheel **104** may, for instance, rotatably mounted to carriage member **102** in any suitable manner such as, for example, by a pin or axle extending centrally through wheel **104** and carriage member **102**. In some embodiments, rack roller mechanism **100** may comprise a serially-disposed pair of wheels **104** such that carriage member **102** is supported underneath both ends thereof to provide, for example, increased lateral balance or stability of the lower rack. Wheels **104** may be comprised of a plastic material or any other suitable material capable of withstanding repetitive exposure to, for instance, heat, water, and or dishwasher fluids.

[0025] According to one advantageous aspect, rack roller mechanism **100** further comprises a first stop portion **106** operably engaged with carriage member **102** and leadingly disposed with respect to the at least one wheel **104** as the rack member is moved out of the lower end of the tub and along the interior portion **202** of the open door **200**. That is, one rack roller mechanism **100** may be engaged with the rack member **410** such that the first stop portion **106** of the rack roller mechanism **100** is engaged with carriage member **102** so as to be disposed between the wheel **104** and the top or distal portion of the interior portion of the substantially horizontally-disposed open door. First stop portion **106** is further configured to engage a first stop feature **208** of the interior portion **202** of the door **200** as the rack member **410** is moved out of the tub, thereby preventing wheel **104** from engaging the first stop feature **208**. The first stop feature **208** may be, for example, engaged with, defined by, or otherwise associated with the interior portion **202** of the door **200** and toward the

top or distal portion of the open door, in some instances along one of the opposed tracks **206** or door flanges **204**. That is, stop feature **208** may be disposed along first track **206** proximate the top of door **200** in the form of, for example, a substantially vertical wall or other suitable flat surface or configuration capable of cooperating with the first stop portion **106** for preventing further substantially horizontal movement of the lower rack **400** toward the top of the door **200**. Stop feature **208** may be, for example, an extension of flange **204** defined by interior portion **202** of door **200**, whereby such a flange is integral with stop feature **208**. In other embodiments, stop feature **208** may be attached to interior portion **202** of the door **200** such as, for example, by fasteners (e.g., rivets, bolts, etc.). In some instances, the first stop feature **208** may further be configured to cooperate with the first stop portion **106** to also minimize or prevent any substantially vertical movement of the lower rack **400** as the components engage (i.e., to prevent the lower rack **400** from “jumping” over the first stop feature **208**). Accordingly, first stop portion **106** interacts with the first stop feature **208** so as to provide a first stop mechanism for limiting egress of the rack member **410** from the tub, since the wheels **104** cannot roll over stop feature **208**, thereby preventing the lower rack **400** from rolling off the top or distal portion of the open door **200**, as disclosed herein.

[0026] In some embodiments, rack roller mechanism **100** may also include second stop portion **114** associated with carriage member **102** opposite to the first stop portion **106**, and configured similarly to the first stop portion **106**. Likewise, the second stop portion **114** is engaged with the carriage member **102** and is leadingly disposed with respect to the at least one wheel **104** as the rack member **410** is moved into the lower end of the tub. In such instances, a corresponding second stop feature may be, for example, engaged with, defined by, or otherwise associated with the interior surface of the tub toward the rear or distal portion of the tub (i.e., away from the door **200**), in some instances along one of the opposed tracks or tub flanges. Accordingly, second stop portion **114** is configured to interact with the second stop feature so as to provide a second stop mechanism for limiting ingress of the rack member **410** into the tub. For example, the second stop mechanism may be configured to prevent the lower rack **410** from contacting the rear wall of the tub, when the lower rack **400** is directed into the tub in order to close the door **200**. Of course, rack roller mechanism **100** having a second stop portion **114** functioning in the disclosed manner, may not be the same rack roller mechanism **100** disclosed with respect to the first stop portion **106**, previously discussed, since each side of the rack member **410** may include more than one rack roller mechanisms **100**. However, for example, for ease of assembly and reduction of parts inventory, each such rack roller mechanism may be configured to include both a first and a second stop portion **104**, **114** where necessary or desirable.

[0027] Rack roller mechanism **100** may be further configured to operably engage the first and second tracks (i.e., first track **206**). For instance, in some embodiments, wheels **104** engage first track **206** and interact therewith to facilitate movement of the lower rack **400** in and out of the tub, along the tub flanges and along the door flanges **204**. That is, in order to facilitate movement of lower rack **400** with respect to the lower end of the tub and the interior portion **202** of the door **200**, wheels **104** of rack roller mechanism **100** interact with and roll along first track **206** on one side of the rack

member **410**, while wheels **104** of another rack roller mechanism **100** engaged with the other side of the rack member **410** correspondingly interact with and roll along a second track **207**. In such instances, a user may exert a force to push or pull rack member **410** in order to move lower rack **400** in and out of the tub. Tracks **206**, **207** may be defined by flange **204**, wherein flange **204** may also extend perpendicularly to tracks **206**, **207** to form a lip structure for preventing wheels **104** from shifting laterally with respect to the side edges of door **200**.

[0028] In engaging one or more rack roller mechanisms **100** with the rack member **410**, horizontal structural members **414** may be inserted between the spaced-apart, opposing tab portions **108** of carriage member **102** such that carriage member **102** is substantially parallel with side portion **412**. Further, vertical structural members **415** may extend into recess **110** to allow tab portions **108** to engage horizontal structural members **414**. Accordingly, rack member **410** may be elevated and balanced above interior portion **202** of door **200** by a pair of opposing rack roller mechanisms **100** engaging first and second tracks **206**, **207**, respectively. As such, rack member **410** may move in and out of the tub without interference from structural projections that may extend vertically from the bottom of the tub or interior portion **202** of door **200**. In one embodiment, four rack roller mechanisms **100**, as disclosed herein, may be utilized such that there are two rack roller mechanisms **100** engaging each side portion **412** and engaging the respective track **206**, **207** to provide stability to lower rack **400** as it moves in and out of the tub.

[0029] To this end, according to some embodiments, only one of rack roller mechanisms **100** need include stop portion **106** to limit egress of lower rack **400**. However, in other embodiments, both rack roller mechanisms **100** engaging first track **206** and second track **207**, respectively, may include stop portion **106** so as to provide a dual stop mechanism for limiting egress of lower rack **400** by interacting with corresponding stop features **208** associated with each of the first and second tracks **206**, **207** proximate the top of door **200**. Such embodiments may prevent rack roller mechanism **100** from derailing its respective track due to a torsional force (i.e., where the user pulls on the side portion not having the stop portion, thereby causing the lower rack to twist when the stop portion engages the stop feature on the opposing side).

[0030] Many modifications and other embodiments of the inventions set forth herein will come to mind to one skilled in the art to which these inventions pertain having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the inventions are not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

That which is claimed:

1. A lower rack for a dishwasher, the dishwasher being adapted to include a tub with a lower end and a door pivotable about the lower end of the tub to an open position, the lower end of the tub and an interior portion of the open door each having corresponding, laterally-opposed flanges, each corresponding tub flange and door flange cooperating to define respective laterally-opposed first and second tracks, and at least one of the laterally-opposed door flanges having a first stop feature associated therewith, the lower rack comprising:

a rack member having laterally-opposed side portions and adapted to receive dishware therein, the rack member being further adapted to be movable into and out of a lower end of the tub and with respect to the interior portion of the open door; and

a rack roller mechanism operably engaged with each side portion of the rack member, and configured to facilitate movement of the rack member with respect to the lower end of the tub and the interior portion of the open door, each rack roller mechanism comprising a carriage member having a wheel element operably engaged therewith, the rack roller mechanisms being further adapted to operably engage the corresponding first and second tracks such that the corresponding wheel element rolls thereon, at least one of the rack roller mechanisms further comprising a first stop portion leadingly disposed with respect to the wheel element as the rack member is moved out of the lower end of the tub and along the interior portion of the open door, the first stop portion being adapted to interact with the first stop feature associated with the corresponding one of the first and second tracks so as to provide a first stop mechanism for limiting egress of the rack member from the tub along the first and second tracks.

2. A lower rack according to claim 1, wherein the first stop portion is configured to extend from the carriage member, between the wheel element and the first stop feature, to prevent the wheel element from contacting the first stop feature.

3. A lower rack according to claim 1, wherein the first stop portion is configured to interact with the first stop feature to prevent further substantially horizontal movement of the rack member out of the lower end of the tub.

4. A lower rack according to claim 1, wherein the first stop portion is configured to interact with the first stop feature to minimize substantially vertical movement of the rack member with respect to the interior portion of the open door.

5. A lower rack according to claim 1, wherein each side portion of the rack member includes at least one rack roller mechanism having a first stop portion leadingly disposed with respect to the wheel element and configured to interact with a corresponding first stop feature associated with each of the first and second tracks.

6. A lower rack according to claim 1, wherein each rack roller mechanism further comprises a pair of spaced-apart wheel elements rotatably engaged with the carriage member.

7. A lower rack according to claim 1, wherein at least one of the rack roller mechanisms further comprises a second stop portion leadingly disposed with respect to the wheel element as the rack member is moved into the lower end of the tub, the second stop portion being adapted to interact with a second stop feature associated with the corresponding one of the first and second tracks so as to provide a second stop mechanism for limiting ingress of the rack member into the lower end of the tub along the first and second tracks.

8. A washing appliance comprising:

a tub having a lower end with laterally-opposed flanges; a door pivotable about the lower end of the tub to an open position, an interior portion of the open door having laterally-opposed flanges corresponding to the tub flanges, each corresponding tub flange and door flange cooperating to define respective laterally-opposed first and second tracks;

a first stop feature associated with at least one of the laterally-opposed door flanges;

a rack member having laterally-opposed side portions and adapted to receive dishware therein, the rack member further being movable into and out of a lower end of the tub and with respect to the interior portion of the open door; and

a rack roller mechanism operably engaged with each side portion of the rack member, and configured to facilitate movement of the rack member with respect to the lower end of the tub and the interior portion of the open door, each rack roller mechanism comprising a carriage member having a wheel element operably engaged therewith, the rack roller mechanisms being further configured to operably engage the corresponding first and second tracks such that the corresponding wheel element rolls thereon, at least one of the rack roller mechanisms further comprising a first stop portion leadingly disposed with respect to the wheel element as the rack member is moved out of the lower end of the tub and along the interior portion of the open door, the first stop portion being configured to interact with the first stop feature associated with the corresponding one of the first and second tracks so as to provide a first stop mechanism for limiting egress of the rack member from the tub along the first and second tracks.

9. A washing appliance according to claim 8, wherein the first stop portion is configured to extend from the carriage member, between the wheel element and the first stop feature, to prevent the wheel element from contacting the first stop feature.

10. A washing appliance according to claim 8, wherein the first stop portion is configured to interact with the first stop

feature to prevent further substantially horizontal movement of the rack member out of the lower end of the tub.

11. A washing appliance according to claim 8, wherein the first stop portion is configured to interact with the first stop feature to minimize substantially vertical movement of the rack member with respect to the interior portion of the open door.

12. A washing appliance according to claim 8, wherein each side portion of the rack member includes at least one rack roller mechanism having a first stop portion leadingly disposed with respect to the wheel element and configured to interact with a corresponding first stop feature associated with each of the first and second tracks.

13. A washing appliance according to claim 8, wherein each rack roller mechanism further comprises a pair of spaced-apart wheel elements rotatably engaged with the carriage member.

14. A washing appliance according to claim 8, wherein at least one of the rack roller mechanisms further comprises a second stop portion leadingly disposed with respect to the wheel element as the rack member is moved into the lower end of the tub.

15. A washing appliance according to claim 14, wherein the second stop portion is configured to interact with a second stop feature associated with the corresponding one of the first and second tracks so as to provide a second stop mechanism for limiting ingress of the rack member into the lower end of the tub along the first and second tracks.

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