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(54) **DISHWASHER WITH SLIDING DISH RACK**

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(57) **ABSTRACT**

A domestic dishwasher includes a wire rack that does not include any rolling elements that would otherwise allow the rack to roll between an extended position and a retracted position. Instead of rolling elements, the rack includes sliding surfaces that slide along corresponding surfaces inside the dishwasher and/or on a dishwasher door. The rack may be a lowermost rack.

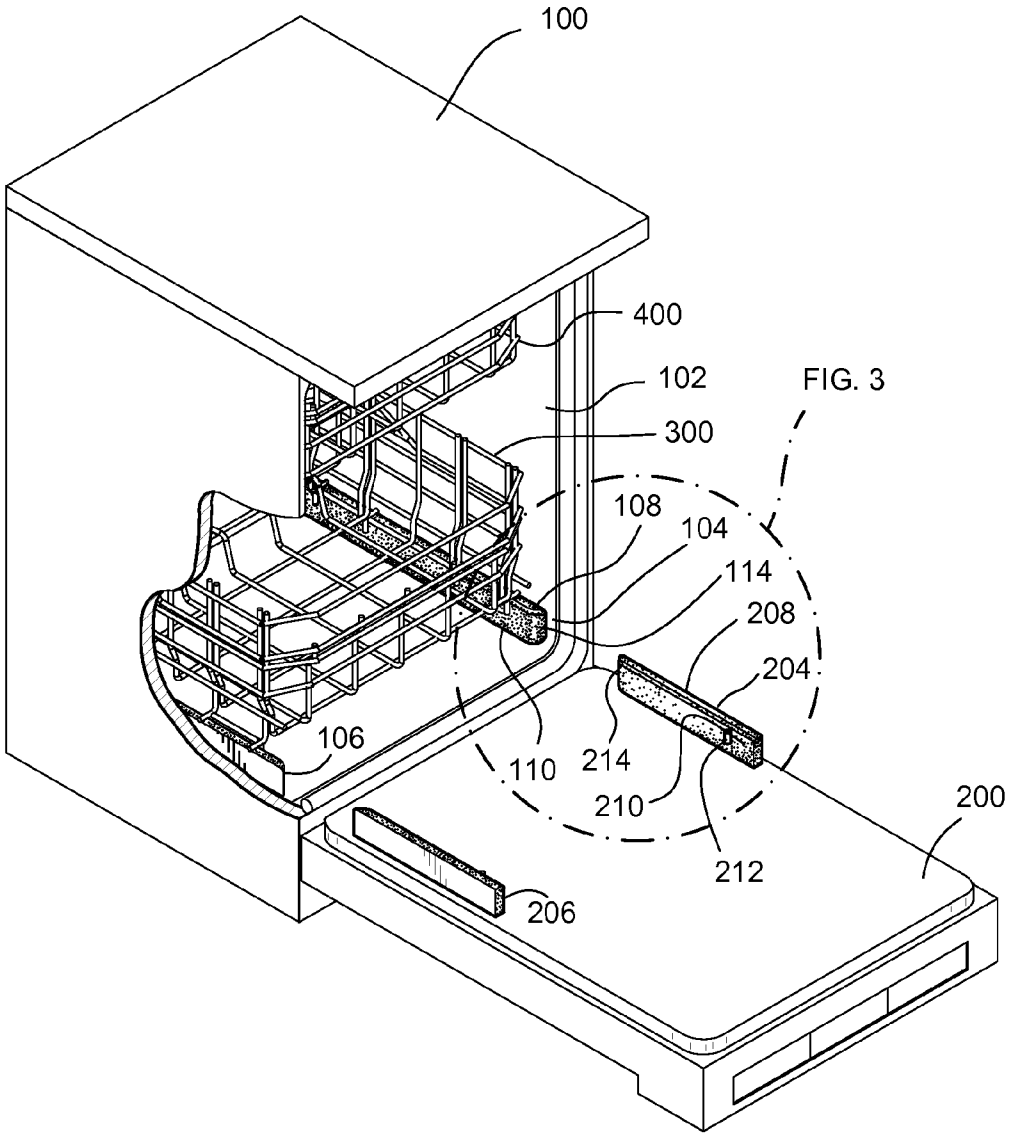

FIG. 3

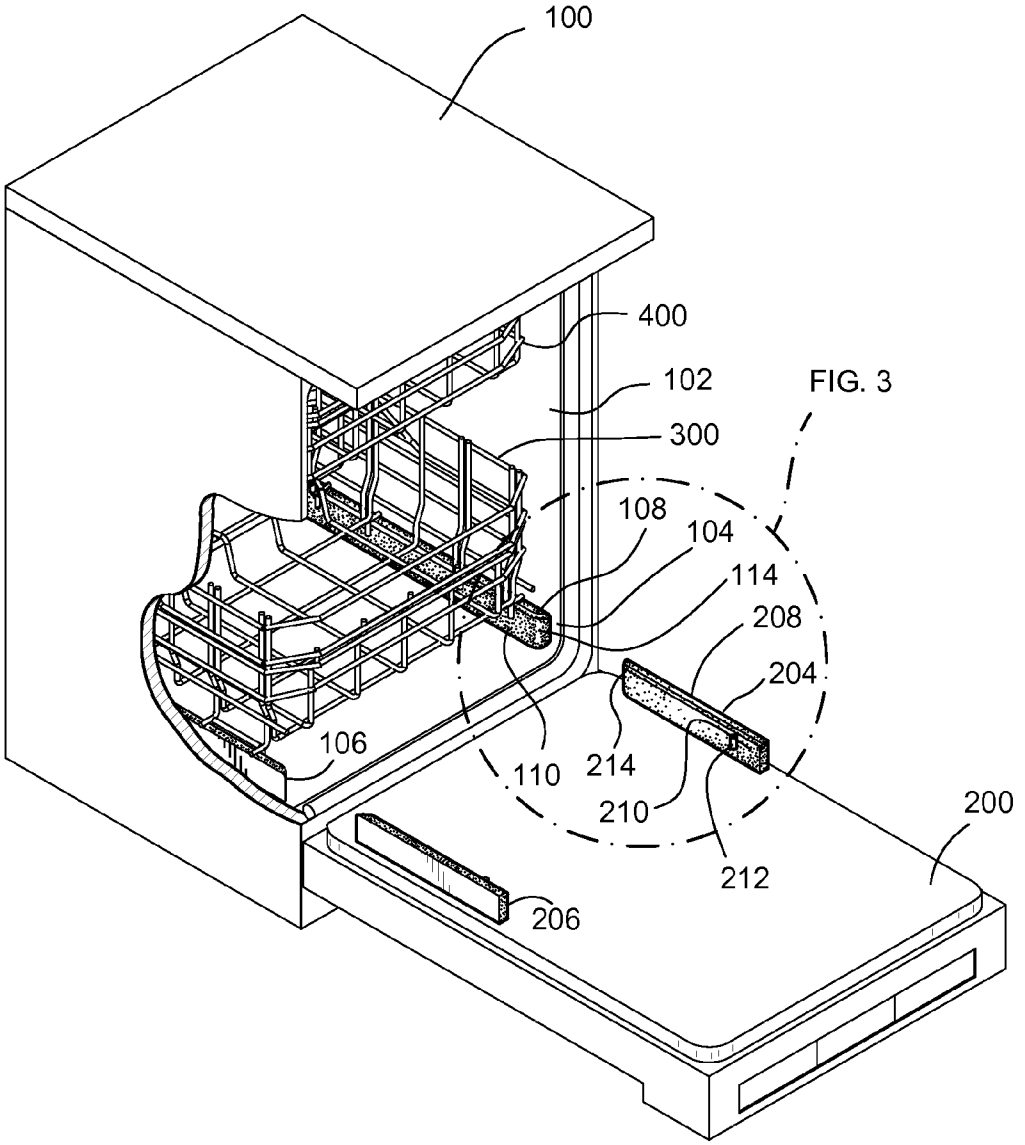
100
400
102
300
108
104
114
208
204
106
110
214
210
212
200
206
FIG. 3

FIG. 1

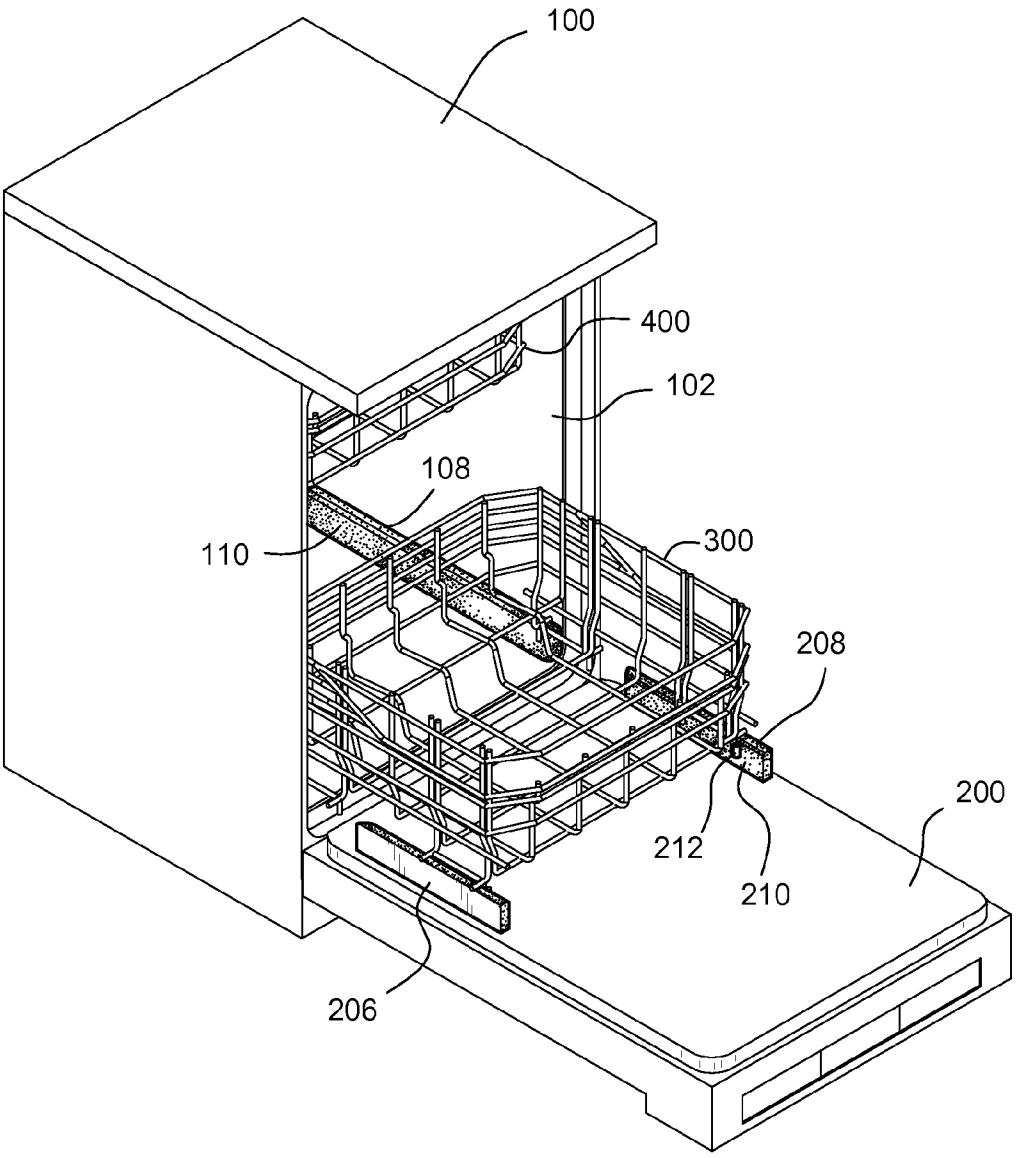

FIG. 2

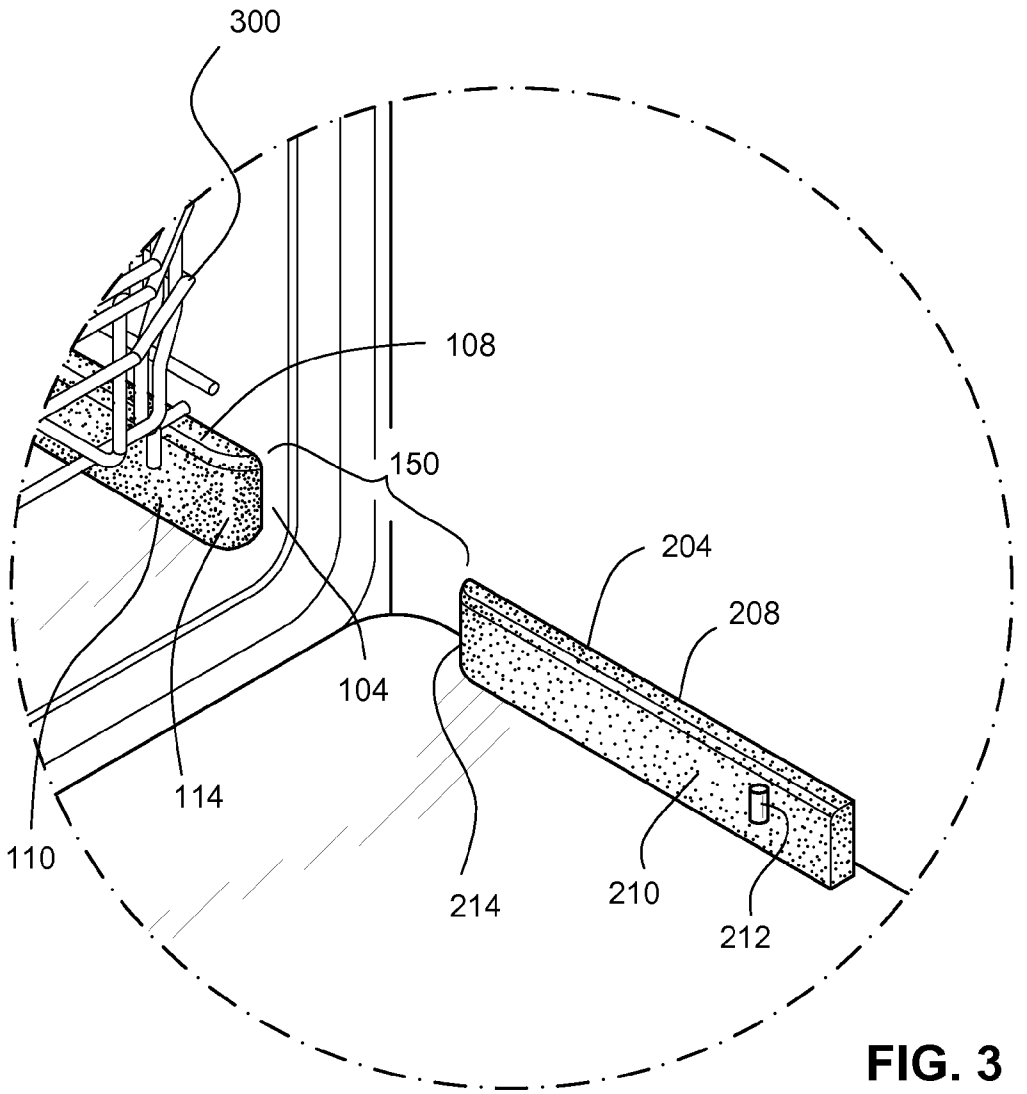

FIG. 3

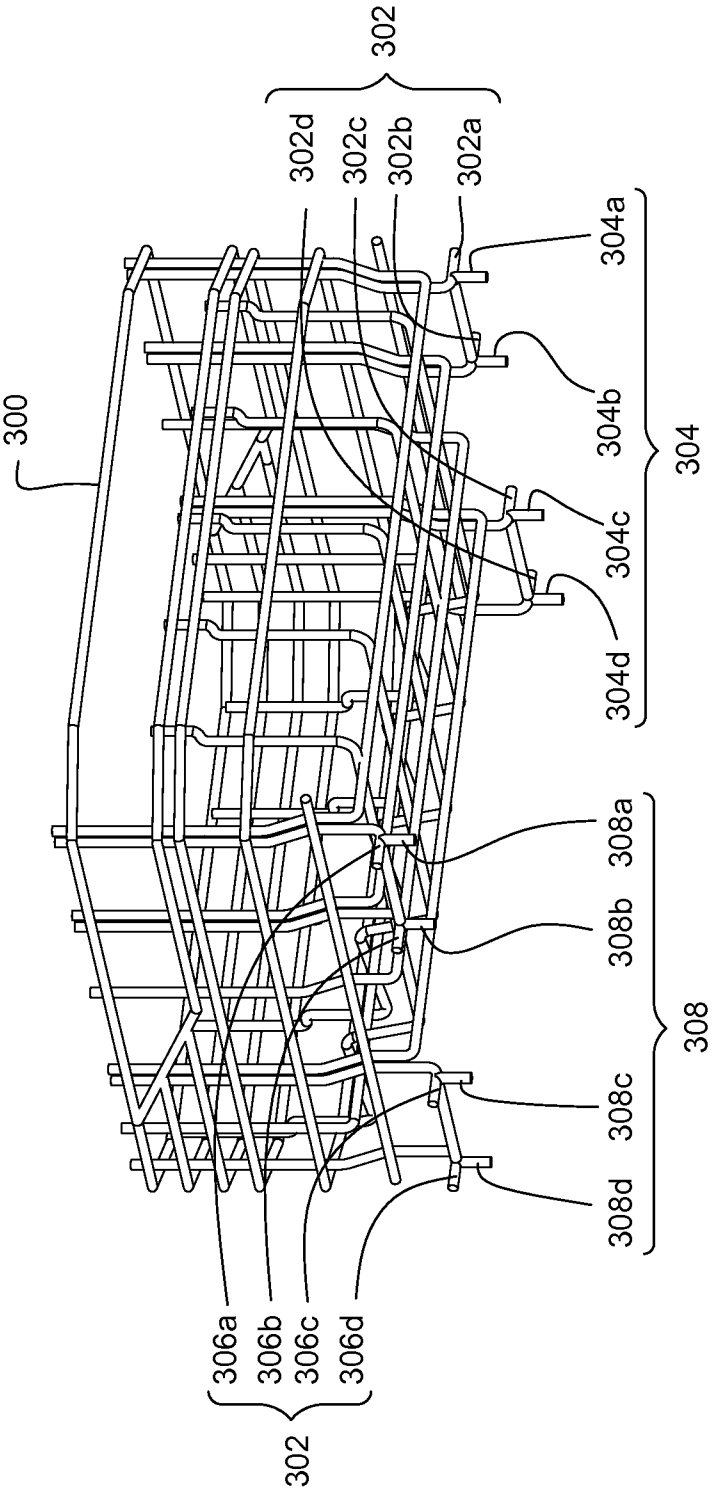
302
302d
302c
302b
302a
304a
304b
304c
304d
304
300
308a
308b
308c
308d
308
306a
306b
306c
306d
302

FIG. 4

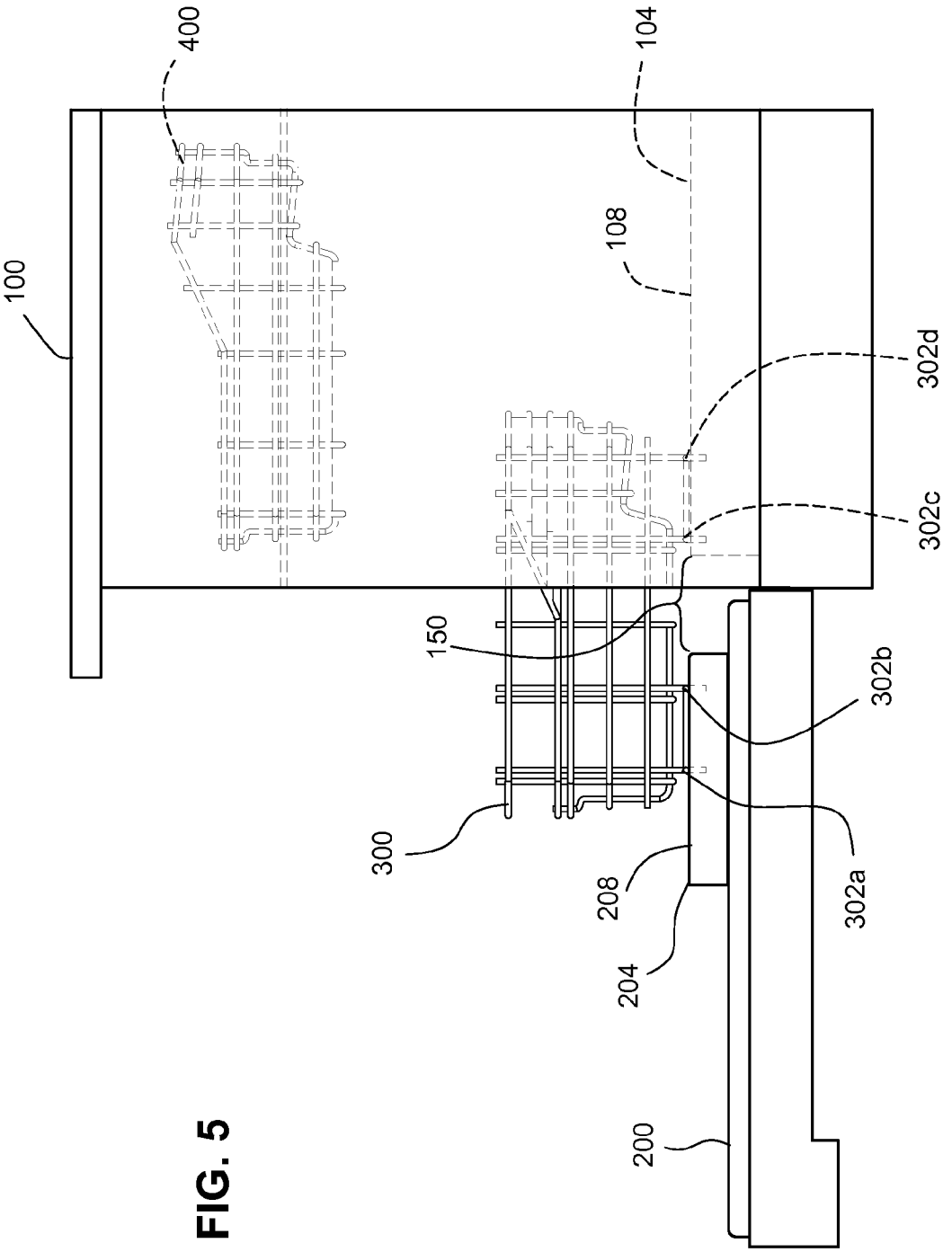

FIG. 5

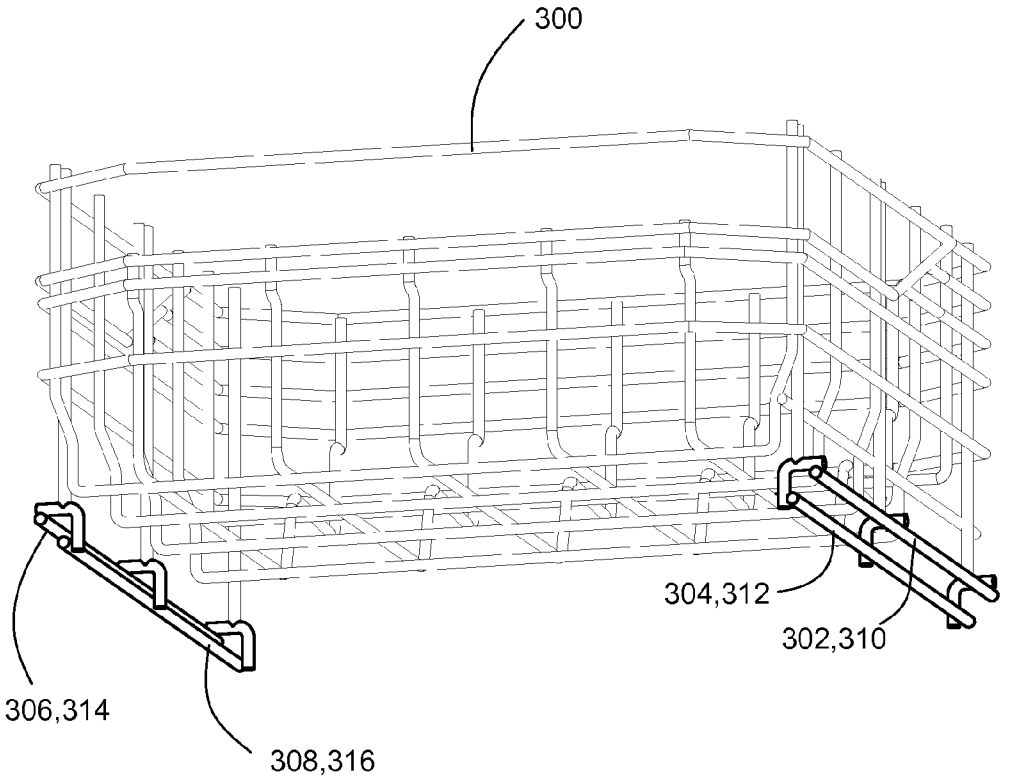

FIG. 6

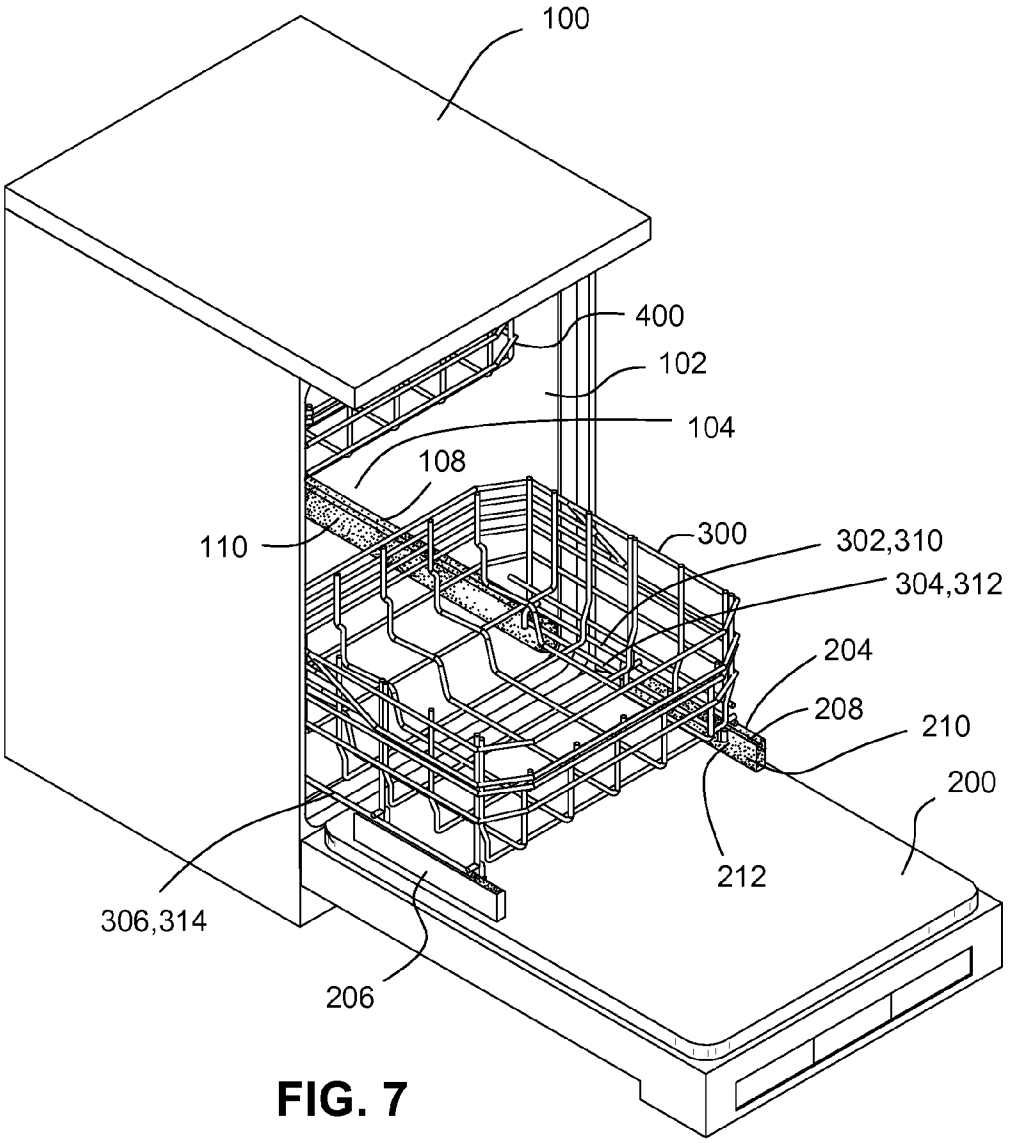
100
400
102
104
108
110
300
302,310
304,312
204
208
210
200
212
306,314
206

FIG. 7

DISHWASHER WITH SLIDING DISH RACK

FIELD OF THE TECHNOLOGY

[0001] The present technology relates to a domestic dishwasher. More particularly, the present technology relates to an enhancement for a dishwasher where a rack for dishes reduces cost and improves reliability of the rack.

BACKGROUND OF THE INVENTION

[0002] In the modern kitchen, one common appliance is the dishwasher, or in more specific terms, the automatic dishwasher. Most automatic dishwashers share certain basic components. There is a compartment in which the dishes or crockery are placed and enclosed for treatment or washing. Commonly, there is at least one rack to hold the items to be cleaned. A hinged door or sliding drawer is commonly used to enclose the compartment and its contents, and the door or drawer frequently includes a handle. There are commonly a number of nozzles for spraying water to facilitate the cleaning within the compartment and a basin that collects water sprayed from the nozzles. A drain is incorporated into the basin and the drain is connected to a hose to allow water to be removed from the dishwasher. Lastly, there is a dispenser for detergent to release detergent into the compartment during the treatment process and the detergent dispenser will have a cover to hold the detergent therein. Of course, it is to be understood that these components are common and basic, and that individual appliances will differ in the make-up of their components.

[0003] The rack may include wheels or rollers so that the rack can roll out of the compartment to facilitate insertion and removal of dishes from the dishwasher and/or the rack.

[0004] Including wheels and/or rollers on a dishwasher rack has shortcomings. For example, the wheels and/or rollers increase cost, at least because of additional parts and assembly time, which is undesirable. For example, in addition to wheels and/or rollers, bearings may be required along with the wheels and/or rollers. Bearings also increase cost. Also, the wheels and/or rollers, along with any associated bearings, can fail, which is also undesirable.

[0005] A need has developed to address one or more shortcomings of the prior art.

BRIEF SUMMARY OF THE INVENTION

[0006] The present technology addresses one or more the shortcomings of the prior art.

[0007] An aspect of the present technology includes a dishwasher with a rack that is slidable into and out of a compartment of the dishwasher without any rolling elements.

[0008] Another aspect of the present technology includes a domestic dishwasher comprising a compartment including an opening adapted to facilitate insertion and removal of dishes; a door that closes the opening; a first rack for holding the dishes, the first rack being adapted to fit within the compartment in a retracted position when the door is closed, the first rack being movable from the retracted position to an extended position when the door is open, wherein when the door is in an open position, the first rack is slidable at least partially out of the compartment through the opening, and the first rack and the compartment do not include any rolling elements that would otherwise allow the first rack to roll between the extended position and the retracted position.

[0009] In examples, (a) the first rack is a lower-most rack in the compartment; (b) the door is hinged along a bottom side of the opening; (c) the dishwasher comprises a second rack for holding the dishes, the second rack being suspended above the first rack; (d) the first rack is slidable onto the door when the door is open; (e) the first rack includes a first sliding surface and the compartment includes a second sliding surface, and the first sliding surface and the second sliding surface are slidingly-engaged while the first rack is sliding out of the compartment; (f) the first sliding surface comprises a horizontal bar; (g) the horizontal bar is perpendicular to a side wall of the compartment; (h) the horizontal bar is parallel to a side wall of the compartment; (i) the second sliding surface is horizontal; (j) the door includes a third sliding surface that acts as an extension of the second sliding surface when the door is open; (k) the dishwasher comprises a gap between the second sliding surface and the third sliding surface when the door is fully open; (l) the first rack includes a third sliding surface and the compartment includes a fourth sliding surface, and the third sliding surface and the fourth sliding surface together prevent the first rack from moving beyond a predetermined limit in a first lateral direction but allow uninhibited movement in a direction opposite to the first lateral direction; (m) the first rack includes a fifth sliding surface and the compartment includes a sixth sliding surface, and the fifth sliding surface and the sixth sliding surface together prevent the first rack from moving beyond a second predetermined limit in the direction opposite to the first lateral direction and allow uninhibited movement in the first lateral direction; (n) the third sliding surface comprises a vertical bar; (o) the third sliding surface comprises a horizontal bar; (p) the fourth sliding surface is vertical; (q) the first sliding surface rests on the second sliding surface when the first rack is fully inserted into the compartment; (r) the first rack comprises a plurality of first sliding surfaces and the compartment comprises a plurality of second sliding surfaces; (s) the first rack comprises a plurality of first sliding surfaces and the compartment comprises two second sliding surfaces; (t) at least one of the first sliding surface and the second sliding surface includes a low friction coating or plating; (u) the door comprises a stop that limits travel of the first rack when the first rack slides out of the compartment and onto the door, and/or (v) the first rack is a wire rack.

[0010] Another aspect of the present technology includes a domestic dishwasher comprising a compartment including an opening adapted to facilitate insertion and removal of the dishes and including a first load bearing surface that is fixed with respect to the compartment; a door that closes the opening, the door being hinged along a bottom side of the opening and the door including a second load bearing surface that is fixed with respect to the door; a first rack for holding the dishes, the first rack including a third load bearing surface that is fixed with respect to the first rack; and a second rack for holding the dishes, the second rack being suspended above the first rack, wherein the first rack is slidable between a first position within the compartment and a second position at least partially external to the compartment, the first load bearing surface and the third load bearing surface contact one another and slide with respect to one another during a transition from the first position to the second position, and the second load bearing surface and the third load bearing surface contact one another and are slidable with respect to one another when the door is open and the first rack is in the second position.

[0011] In examples, (a) the third load bearing surface transitions from contacting the first load bearing surface to contacting the second load bearing surface during a transition from the first position to the second position; (b) the third load bearing surface contacts both the first load bearing surface and the second load bearing surface simultaneously at an intermediate position during the transition from the first position to the second position; (c) the third load bearing surface contacts neither the first load bearing surface nor the second load bearing surface at an intermediate position during the transition from the first position to the second position; (d) the first rack is disposed at least partially on the door in the second position; (e) at least one of the third load bearing surface or the combination of the first load bearing surface and the second load bearing surface include a low friction coating or plating; (f) the first load bearing surface and the second load bearing surface are substantially planar and the third load bearing surface is part of a bar; (g) a length of the bar is disposed parallel to a direction that the first rack slides out of the compartment; (h) a length of the bar is disposed perpendicular to a direction that the first rack slides out of the compartment; (i) a length of the bar is disposed transverse to a direction that the first rack slides out of the compartment; and/or (j) the bar is substantially cylindrical.

[0012] Other aspects, features, and advantages of this technology will become apparent from the following detailed description when taken in conjunction with the accompanying drawings, which are a part of this disclosure and which illustrate, by way of example, principles of this technology.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** is a perspective view of a dishwasher;

[0014] FIG. **2** is a perspective view of a dishwasher;

[0015] FIG. **3** is an enlarged view of a portion of FIG. **1**;

[0016] FIG. **4** is a perspective view of a rack;

[0017] FIG. **5** is a side view of a dishwasher;

[0018] FIG. **6** is a perspective view of a rack; and

[0019] FIG. **7** is a perspective view of a dishwasher.

DETAILED DESCRIPTION

[0020] The following description is provided in relation to several examples which may share common characteristics and features. It is to be understood that one or more features of any one example may be combinable with one or more features of the other examples. In addition, any single feature or combination of features in any of the examples may constitute additional examples.

[0021] Throughout this disclosure, terms such as first, second, third, etc. are used. However, these terms are not intended to be limiting or indicative of a specific order, but instead are used to distinguish similarly described features from one another.

[0022] FIG. **1** shows a perspective view of a dishwasher **100**, e.g., a domestic dishwasher, in an open condition with a portion of a wall broken out so that interior aspects of the dishwasher are visible. The dishwasher **100** includes a compartment **102** internal to the dishwasher **100**. The compartment **102** includes an opening that is closable by a door **200**. Although door is used throughout this description, any suitable closure, such as a drawer, may also be used. As illustrated, a first rack **300** and a second rack **400** are internal to the compartment **102**, with the second rack **400** being suspended over the first rack **300**. Both the first rack **300** and the second rack **400** are illustrated as metal wire racks and may be coated with a protective layer to protect the metal wire from degradation over the life of the dishwasher **100**.

[0023] Domestic dishwashers differ from commercial dishwashers in several respects. For example, domestic dishwashers may have much longer cycle times than commercial dishwashers, e.g., around 75-150 minutes versus around 1-4 minutes, respectively, for a typical washing operation. Domestic dishwashers are often designed to be installed under a counter top and blend in with or accentuate the kitchen decor, whereas commercial dishwashers are typically free standing metal units without regard to the surrounding decor.

[0024] In the illustrated examples, the compartment **102** includes two sliding members, a first sliding member **104** and a second sliding member **106**, although a single sliding member or more than two sliding members are contemplated. FIG. **3** illustrates part of the first sliding member **104** enlarged for clarity. In the illustrated examples, the first sliding member **104** and the second sliding member **106** are substantially mirror images of one another. Thus, although only the first sliding member **104** is further described hereinafter, the description of the first sliding member **104** is also applicable to the second sliding member **106** except as explicitly noted herein.

[0025] The first sliding member **104** includes an upper sliding surface **108** and a side sliding surface **110**. In an example, the upper sliding surface **108** is substantially horizontal. Substantially horizontal encompasses at least a surface that is perfectly horizontal as well as a surface that includes some imperfections such as waviness and includes tolerances due to manufacturing and measuring process limitations. Substantially horizontal also encompasses a surface with a slight angle, for example, from 0-5° or about 1°. The angle can be from front to back, back to front or side to side. In an example, the angle is from side to side and facilitates the drainage of water off of the upper sliding surface **108**.

[0026] In an example, the side sliding surface **110** is substantially vertical. Substantially vertical encompasses at least a surface that is perfectly vertical as well as a surface that includes some imperfections such as waviness and includes tolerances (+/− up to about 1°-10° or more) due to manufacturing and measuring process limitations.

[0027] The door **200** includes a first door sliding member **204** and a second door sliding member **206**. As illustrated, the door is hinged along a bottom edge of the door **200** so that the door **200** swings open to a substantially horizontal position. Although two door sliding members are illustrated, more or less are contemplated. In the illustrated examples, the number of door sliding members corresponds to the number of sliding members in the compartment **102**. By having the same number of door sliding members as sliding members in the compartment **102**, the first rack **300** (discussed in detail below), can readily slide from the compartment **102** to the door **200**.

[0028] FIG. **3** illustrates the first door sliding member **204** enlarged for clarity. The first door sliding member **204** and the second door sliding member **206** are illustrated generally in the form of rectangular prisms. However, this shape is chosen for ease of illustration. Other shapes are also contemplated. For example, the door sliding members could be formed as part of other functional or non-functional surfaces of the door **200**.

[0029] As illustrated, the first door sliding member **204** and the second door sliding member **206** are substantially mirror

images of one another. Thus, although only the first door sliding member **204** is further described hereinafter, the description of the first door sliding member **204** is also applicable to the second door sliding member **206** except as explicitly noted herein.

[0030] The first door sliding member **204** includes an upper sliding surface **208** and a side sliding surface **210**. In an example, the upper sliding surface **208** is substantially horizontal when the door **200** is open. In another example when the door is open, the upper sliding surface **208** may be angled so that a portion of the upper sliding surface **208** nearest the compartment **102** is lower than a portion of the upper sliding surface **208** that is further away from the compartment **102** so that the first rack **300** has a tendency to slide into the compartment **102**.

[0031] In an example, the side sliding surface **210** is substantially vertical. As illustrated, the side sliding surface **210** includes a stop **212** that limits travel of the first rack **300** as it slides on the door sliding member **204**. The stop **212** is illustrated as a protrusion on the side sliding surface **210** but could also take other forms and locations that limit the travel of the first rack **300**. For example, the stop **212** could be located on the upper sliding surface **208**. The stop **212** could also take the form of a depression, or multiple depressions, instead of a protrusion. For example, if the stop **212** is located on the upper sliding surface **208**, a portion of the first rack **300** could mate with a depression such that the weight of the first rack **300** would tend to prevent movement of the first rack **300**.

[0032] As best seen in FIG. **3**, when the door **200** is open, a gap **150** is present between the first sliding member **104** and the first door sliding member **204**. The size or distance of the gap **150** can be determined based upon eliminating interference when the door **200** is closed and minimizing the size or distance to allow smooth transition of the first rack **300** from the first sliding member **104** to the first door sliding member **204**. Thus, the first door sliding member **204** can act as an extension of the first sliding member **104** when the door **200** is open.

[0033] The first rack **300** is illustrated in FIG. **1** in a retracted position and in FIG. **2** in an extended position. FIG. **4** illustrates the first rack **300** in isolation. As is evident, the first rack **300** does not include any wheels, rollers, or other rolling elements that would allow the first rack **300** to roll between the extended position and the retracted position. Instead, the first rack **300** is adapted to slide on the first and second sliding members **104**, **106** and the first and second door sliding members **204**, **206**.

[0034] In an example best seen in FIG. **4**, the first rack **300** includes a first sliding surface **302** illustrated as four horizontal bars **302***a*, **302***b*, **302***c*, **302***d* that are substantially perpendicular to a side wall of the compartment **102**. Alternatively, each of the four horizontal bars **302***a*, **302***b*, **302***c*, **302***d* can individually be considered a sliding surface. Similarly, the first rack **300** includes a second sliding surface **306** illustrated as four horizontal bars **306***a*, **306***b*, **306***c*, **306***d*. Although four bars are illustrated throughout the figures, more or less are contemplated as would be dictated by the needs of a given rack.

[0035] The first rack **300** is also illustrated as including a third sliding surface **304** illustrated as four substantially vertical bars **304***a*, **304***b*, **304***c*, **304***d*. Alternatively, each of the four vertical bars **304***a*, **304***b*, **304***c*, **304***d* can individually be considered a sliding surface. Similarly, the first rack **300** includes a fourth sliding surface **308** illustrated as four vertical bars **308***a*, **308***b*, **308***c*, **308***d*. Although four bars are illustrated throughout the figures, more or less are contemplated as would be dictated by the needs of a given rack.

[0036] As can be appreciated by at least FIG. **3**, when the third sliding surface **304** contacts the side sliding surface **110**, the third sliding surface **304** will limit travel of the first rack **300** as the first rack **300** moves toward a wall of the compartment **102** that is nearest the third sliding surface **304** but will allow uninhibited movement in an opposite direction. Similarly, the fourth sliding surface **308** will limit travel of the first rack **300** in the opposite direction. Thus, the combination of the third and fourth sliding surfaces **304**, **308** restrict movement of the first rack **300** in lateral directions while allowing the first rack **300** to move into and out of the compartment **102**. For example, the first rack **300** may have a retracted position where the first rack **300** is centered within the compartment **102**. If a clearance is provided between the third sliding surface **304** and the side sliding surface **110** when the first rack **300** is centered, then the combination of the third and fourth sliding surfaces **304**, **308** along with the side sliding surfaces **110** define a range or predetermined limit of lateral motion of the first rack **300**. The range of lateral motion may be about 1 mm in either direction or 2 mm total range. In another example, one or more lateral surface of the horizontal bars **302***a*, **302***b*, **302***c*, **302***d* could provide similar restriction to lateral movement.

[0037] Regardless of the way in which lateral movement is restricted, the first rack **300** can be provided with clearance between outer-most lateral portions of the first rack **300** and inner walls of the compartment **102**. In an example, the clearance is such that when the first rack **300** is at either end of the predetermined limit of lateral motion, the outer-most lateral portions of the first rack **300** will not touch the inner walls of the compartment **102**. For example, the first rack **300** may be provided with **2** mm clearance on both lateral sides of the first rack **300** when the first rack **300** is centered.

[0038] FIG. **5** illustrates the dishwasher **100** from the side with the first rack **300** in a partially extended position. Two of the horizontal bars **302***a*, **302***b* are illustrated as being disposed on the upper sliding surface **208** and two of the horizontal bars **302***c*, **302***d* are illustrated as being disposed on the upper sliding surface **108**. Thus, as the first rack **300** slides out of the compartment **102**, the horizontal bar **302***a* transitions from the upper sliding surface **108** to the gap **150** and then to the upper sliding surface **208**. One or all other horizontal bars **302***b*, **302***c*, **302***d* may have a similar transition as the first rack **300** slides out of the compartment **102**. Conversely, at least one horizontal bar, such as horizontal bar **302***d*, may remain in contact with the upper sliding surface **108** even when the first rack **300** is at an outermost position.

[0039] As illustrated throughout the figures, when the rack is not loaded with dishes, only the weight of the first rack **300** keeps the first rack **300** in contact with one or both of the upper sliding surfaces **108**, **208**. Thus, the first rack **300** could be picked up and removed from the dishwasher **100**. In an un-illustrated example, the upper sliding surfaces **108**, **208** could be in the form of grooves that restrain the first rack **300** from moving upwards.

[0040] FIGS. **6** and **7** illustrate another example of the present technology. FIGS. **6** and **7** are substantially the same as the FIGS. **2** and **4** except that first sliding surface **302** is composed of a single horizontal bar **310** that has a length parallel to a sliding direction of the first rack **300**. Similarly, the second sliding surface **306**, third sliding surface **304** and

fourth sliding surface **308** are composed of horizontal bars **314**, **312**, and **316**, respectively. Including such horizontal bars instead of the shorter bars of FIGS. **1-5** may be advantageous in guiding the first rack **300** as the first rack **300** transitions from the first sliding member **104** to the first door sliding member **204**. For example, one or more of the horizontal bars **310**, **312**, **314**, **316** may be long enough to span the gap **150** and simultaneously contact surfaces on both sides of the gap **150**.

[0041] The first sliding member **104** and first door sliding member **204** may include geometry to aid in the transition of the first rack **300**, illustrated as rounded corners **114**, **214**. The rounded corners **114**, **214** are illustrated as vertically rounded surfaces, but may be equally applicable to horizontal surfaces as well. With such rounded surfaces, the first rack **300** may be guided into position if misaligned during a sliding operation.

[0042] In an example of the present technology, one or more of the sliding members **104**, **106**, the door sliding members **204**, **206** and the sliding surfaces **302**, **304**, **306**, **308** may include a low friction surface or coating to improve the ability of the surfaces to slide past one another. The particular low friction surface or coating should be chosen with the environmental conditions internal to a dishwasher in mind, but otherwise can be chosen from any number of lower friction surfaces or coatings. For example, food grade Delrin® (polyoxymethylene) or Teflon® (polytetrafluoroethylene) may provide a suitable low friction surface or coating. The surface or coating can be applied to the entire first rack **300** and/or compartment **102** and/or door **200**. Alternatively, the low friction surface or coating can be selectively applied to appropriate sliding surfaces. One way to achieve selective application would be the application of low friction caps, e.g., on the ends, of the one or more of the horizontal bars **302***a*, **302***b*, **302***c*, **302***d*, **306***a*, **306***b*, **306***c*, **306***d* and/or vertical bars **304***a*, **304***b*, **304***c*, **304***d*, **308***a*, **308***b*, **308***c*, **308***d*.

[0043] While the present technology has been described in connection with several practical examples, it is to be understood that the technology is not to be limited to the disclosed examples, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the technology.

What is claimed is:

1. A domestic dishwasher comprising:

a compartment including an opening adapted to facilitate insertion and removal of dishes;

a door that closes the opening;

a first rack for holding the dishes, the first rack being adapted to fit within the compartment in a retracted position when the door is closed, the first rack being movable from the retracted position to an extended position when the door is open, wherein

when the door is in an open position, the first rack is slidable at least partially out of the compartment through the opening, and

the first rack and the compartment do not include any rolling elements that would otherwise allow the first rack to roll between the extended position and the retracted position.

2. The domestic dishwasher according to claim **1**, wherein the first rack is a lower-most rack in the compartment.

3. The domestic dishwasher according to claim **1**, wherein the door is hinged along a bottom side of the opening.

4. The domestic dishwasher according to claim **1**, further comprising a second rack for holding the dishes, the second rack being suspended above the first rack.

5. The domestic dishwasher according to claim **1**, wherein the first rack is slidable onto the door when the door is open.

6. The domestic dishwasher according to claim **1**, wherein the first rack includes a first sliding surface and the compartment includes a second sliding surface, and the first sliding surface and the second sliding surface are slidingly-engaged while the first rack is sliding out of the compartment.

7. The domestic dishwasher according to claim **6**, wherein the first sliding surface comprises a horizontal bar.

8. The domestic dishwasher according to claim **7**, wherein the horizontal bar is perpendicular to a side wall of the compartment.

9. The domestic dishwasher according to claim **7**, wherein the horizontal bar is parallel to a side wall of the compartment.

10. The domestic dishwasher according to claim **6**, wherein the second sliding surface is horizontal.

11. The domestic dishwasher according to claim **6**, wherein the door includes a third sliding surface that acts as an extension of the second sliding surface when the door is open.

12. The domestic dishwasher according to claim **11**, further comprising a gap between the second sliding surface and the third sliding surface when the door is fully open.

13. The domestic dishwasher according to claim **6**, wherein the first rack includes a third sliding surface and the compartment includes a fourth sliding surface, and the third sliding surface and the fourth sliding surface together prevent the first rack from moving beyond a predetermined limit in a first lateral direction but allow uninhibited movement in a direction opposite to the first lateral direction.

14. The domestic dishwasher according to claim **13**, wherein the first rack includes a fifth sliding surface and the compartment includes a sixth sliding surface, and the fifth sliding surface and the sixth sliding surface together prevent the first rack from moving beyond a second predetermined limit in the direction opposite to the first lateral direction and allow uninhibited movement in the first lateral direction.

15. The domestic dishwasher according to claim **13**, wherein the third sliding surface comprises a vertical bar.

16. The domestic dishwasher according to claim **13**, wherein the third sliding surface comprises a horizontal bar.

17. The domestic dishwasher according to claim **13**, wherein the fourth sliding surface is vertical.

18. The domestic dishwasher according to claim **6**, wherein the first sliding surface rests on the second sliding surface when the first rack is fully inserted into the compartment.

19. The domestic dishwasher according to claim **6**, wherein the first rack comprises a plurality of first sliding surfaces and the compartment comprises a plurality of second sliding surfaces.

20. The domestic dishwasher according to claim **6**, wherein the first rack comprises a plurality of first sliding surfaces and the compartment comprises two second sliding surfaces.

21. The domestic dishwasher according to claim **6**, wherein at least one of the first sliding surface and the second sliding surface includes a low friction coating or plating.

22. The domestic dishwasher according to claim **1**, wherein the door comprises a stop that limits travel of the first rack when the first rack slides out of the compartment and onto the door.

23. The domestic dishwasher according to claim **1**, wherein the first rack is a wire rack.

24. A domestic dishwasher comprising:

a compartment including an opening adapted to facilitate insertion and removal of dishes and including a first load bearing surface that is fixed with respect to the compartment;

a door that closes the opening, the door being hinged along a bottom side of the opening and the door including a second load bearing surface that is fixed with respect to the door;

a first rack for holding the dishes, the first rack including a third load bearing surface that is fixed with respect to the first rack; and

a second rack for holding the dishes, the second rack being suspended above the first rack, wherein

the first rack is slidable between a first position within the compartment and a second position at least partially external to the compartment,

the first load bearing surface and the third load bearing surface contact one another and slide with respect to one another during a transition from the first position to the second position, and

the second load bearing surface and the third load bearing surface contact one another and are slidable with respect to one another when the door is open and the first rack is in the second position.

25. The domestic dishwasher according to claim **24**, wherein the third load bearing surface transitions from contacting the first load bearing surface to contacting the second load bearing surface during a transition from the first position to the second position.

26. The domestic dishwasher according to claim **24**, wherein the third load bearing surface contacts both the first load bearing surface and the second load bearing surface simultaneously at an intermediate position during the transition from the first position to the second position.

27. The domestic dishwasher according to claim **24**, wherein the third load bearing surface contacts neither the first load bearing surface nor the second load bearing surface at an intermediate position during the transition from the first position to the second position.

28. The domestic dishwasher according to claim **24**, wherein the first rack is disposed at least partially on the door in the second position.

29. The domestic dishwasher according to claim **24**, wherein at least one of the third load bearing surface or the combination of the first load bearing surface and the second load bearing surface include a low friction coating or plating.

30. The domestic dishwasher according to claim **24**, wherein the first load bearing surface and the second load bearing surface are substantially planar and the third load bearing surface is part of a bar.

31. The domestic dishwasher according to claim **30**, wherein a length of the bar is disposed parallel to a direction that the first rack slides out of the compartment.

32. The domestic dishwasher according to claim **30**, wherein a length of the bar is disposed perpendicular to a direction that the first rack slides out of the compartment.

33. The domestic dishwasher according to claim **30**, wherein a length of the bar is disposed transverse to a direction that the first rack slides out of the compartment.

34. The domestic dishwasher according to claim **24**, wherein the bar is substantially cylindrical.

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