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**Battu et al.**

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(54) **SYSTEMS FOR MOUNTING RACKS IN DISHWASHING APPLIANCES**

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***A47L 15/50*** (2006.01)

(52) **U.S. Cl.**
CPC ..... ***A47L 15/507*** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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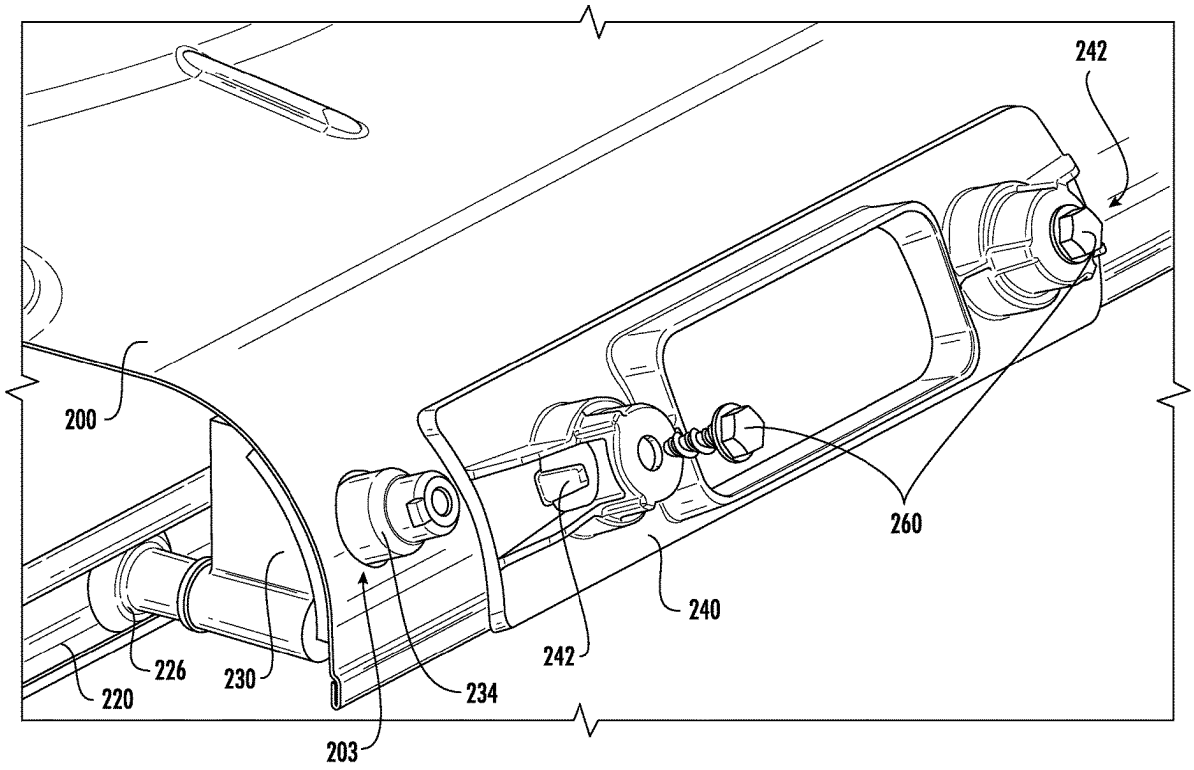
(57) **ABSTRACT**

A dishwasher appliance includes a tub defining a wash chamber, and a rack assembly. The rack assembly includes a bracket positioned within the wash chamber of the tub. The bracket includes a roller extending therefrom, and a pair of posts mounted to the bracket. The pair of posts extend through an outer surface of the tub, and a brace is positioned opposite the bracket on the outer surface of the tub. The brace includes a snap projection configured to engage the pair of posts such that the snap projection hinders the pair of posts from retracting through the outer surface of the tub. A pair of fasteners extend through the brace into the pair of posts, where the pair of fasteners secure the brace to the pair of posts.

**18 Claims, 7 Drawing Sheets**



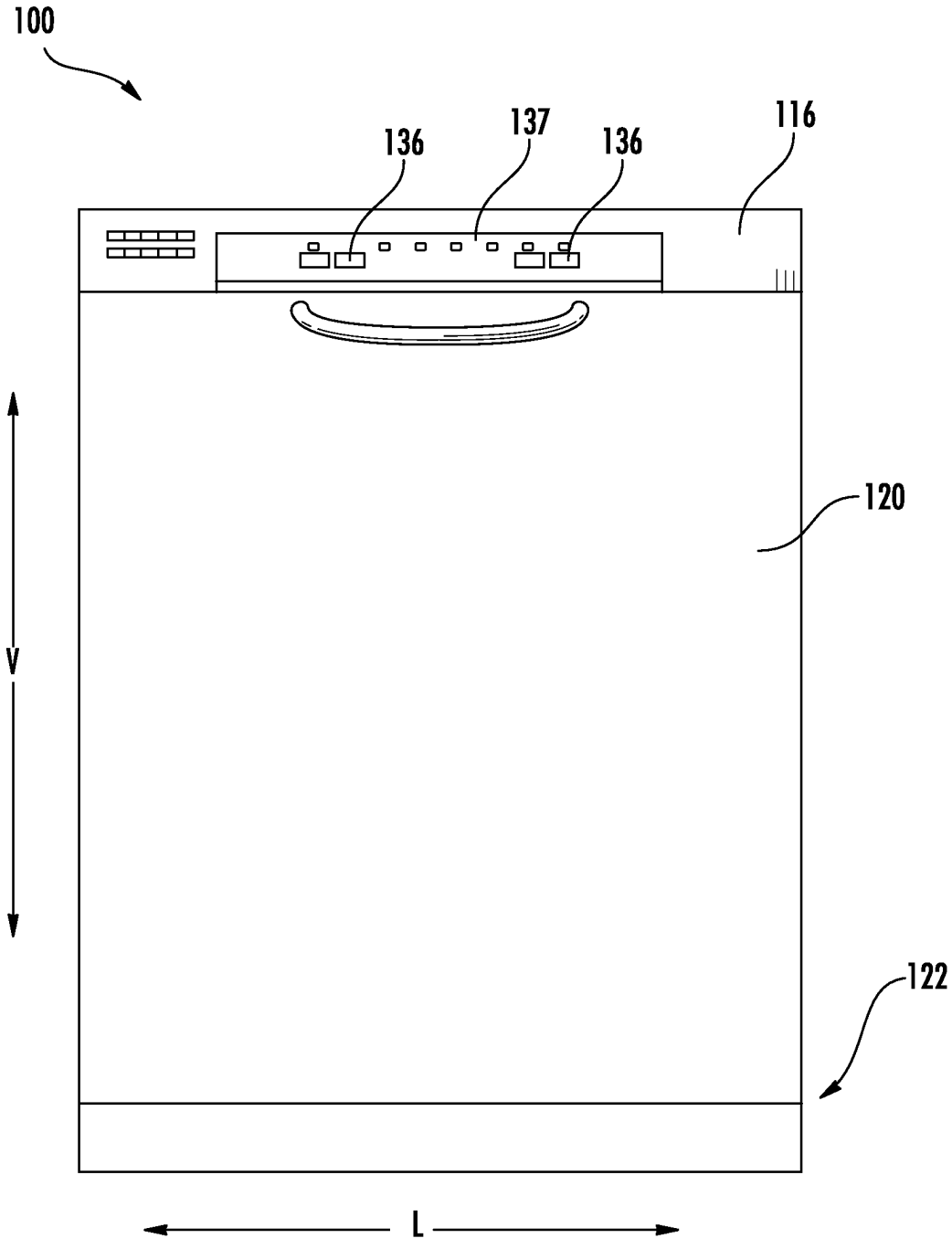



FIG. 1

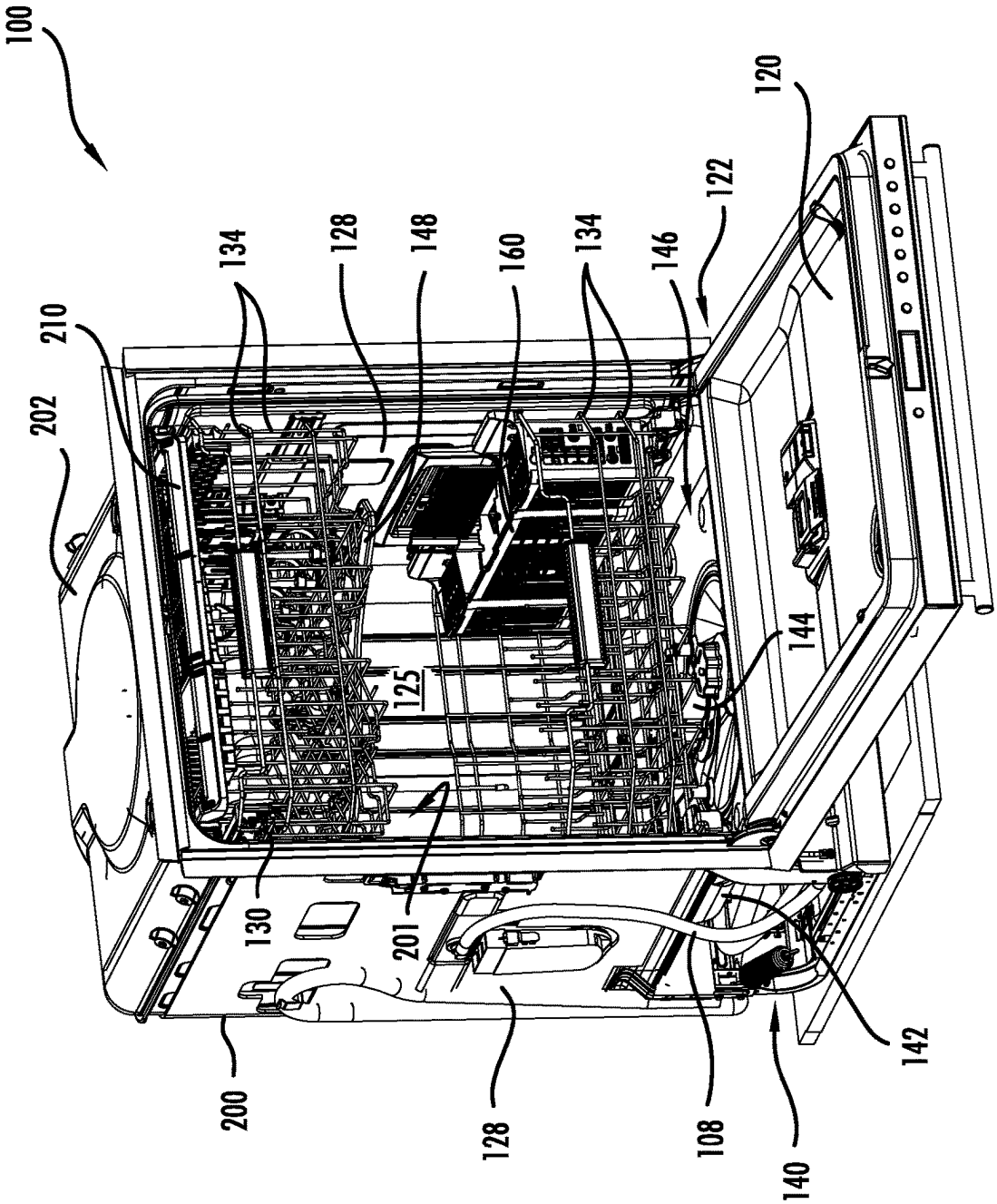

100
120
122
134
128
148
160
134
146
210
202
144
125
130
201
142
200
128
108
140

FIG. 2

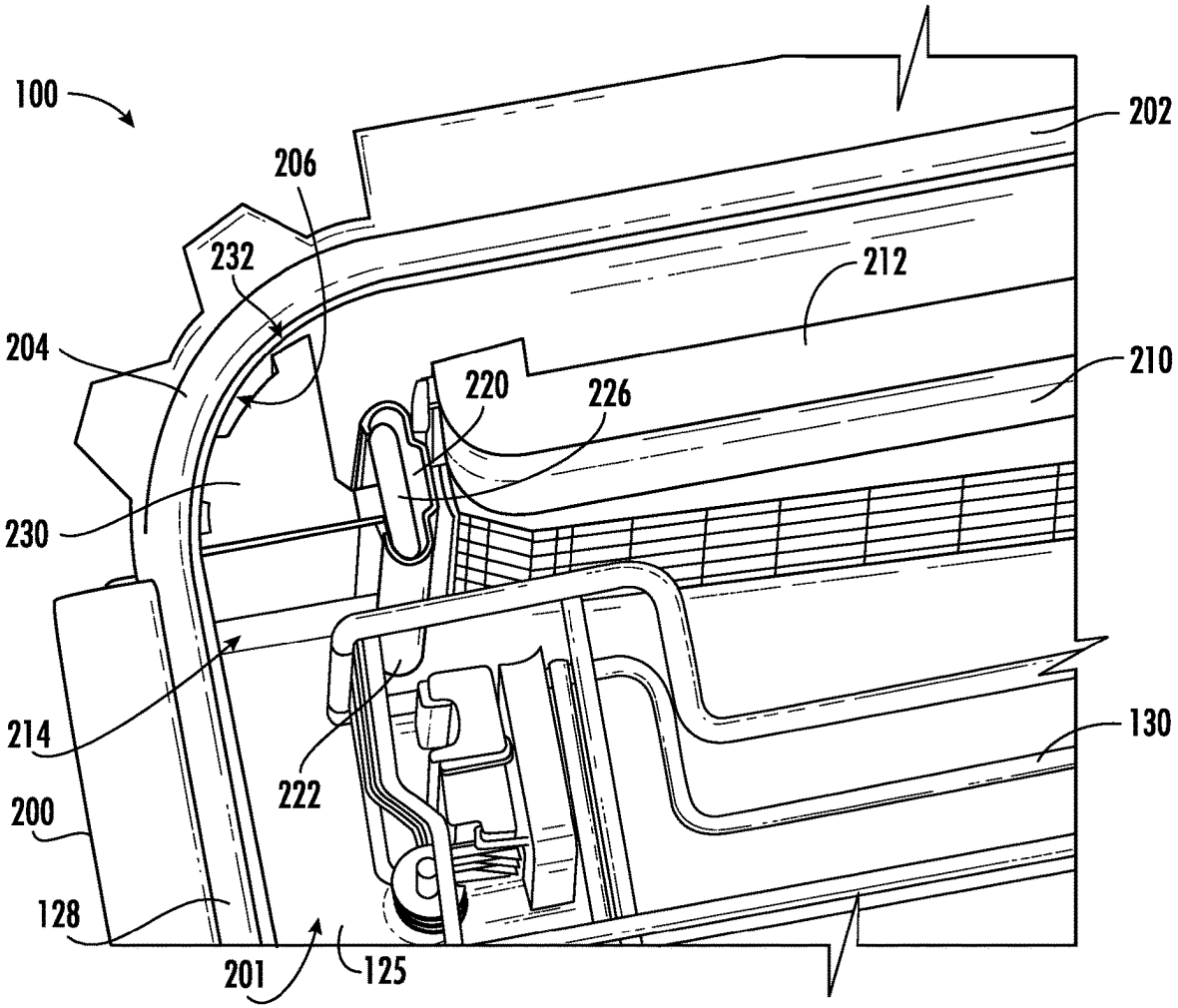

100
202
206
232
212
204
210
220
226
230
214
222
130
200
128
201
125
V
T
L

FIG. 3

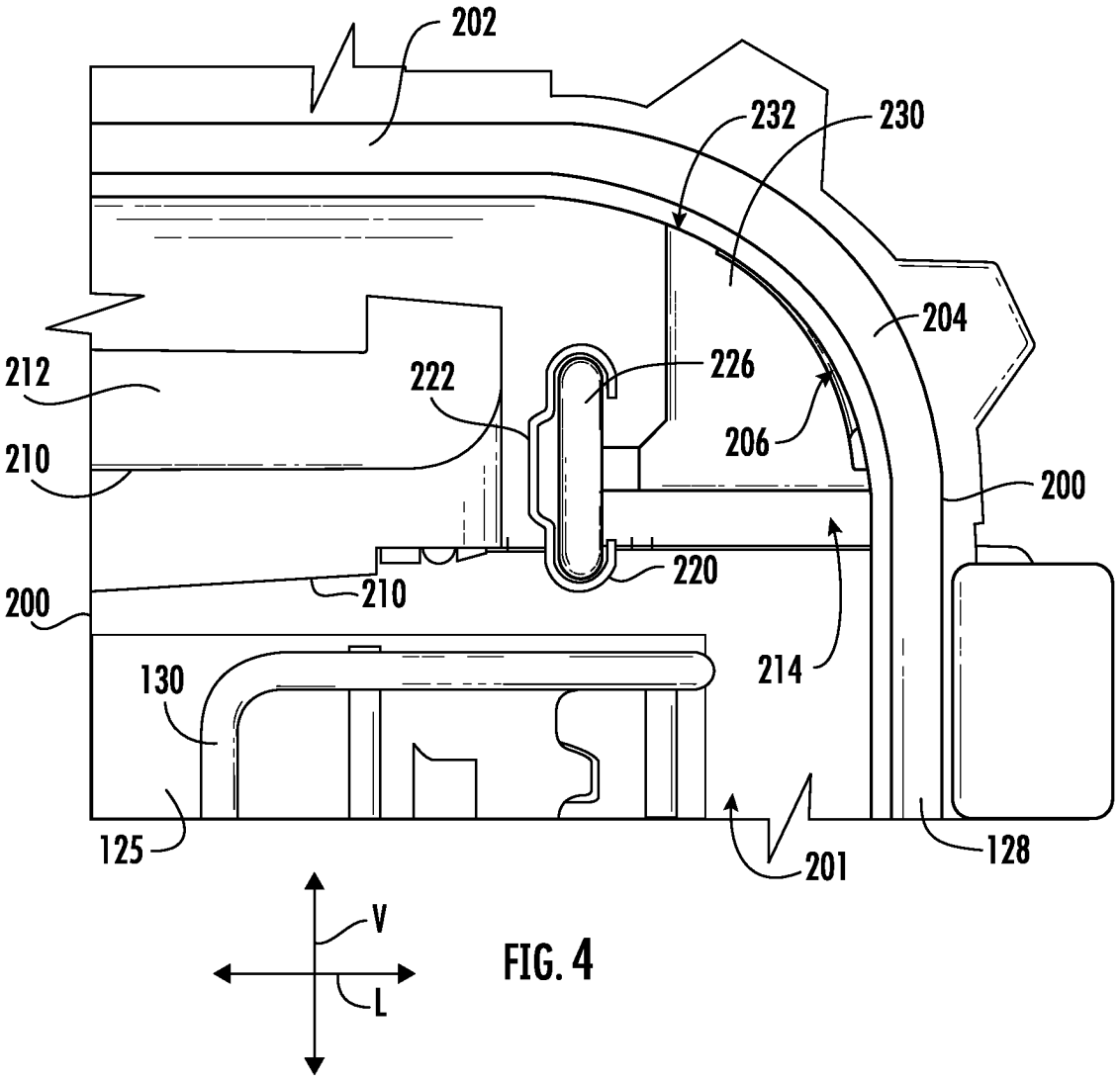

202
232
230
204
212
222
226
206
210
200
220
210
200
214
130
125
201
128
V
L

FIG. 4

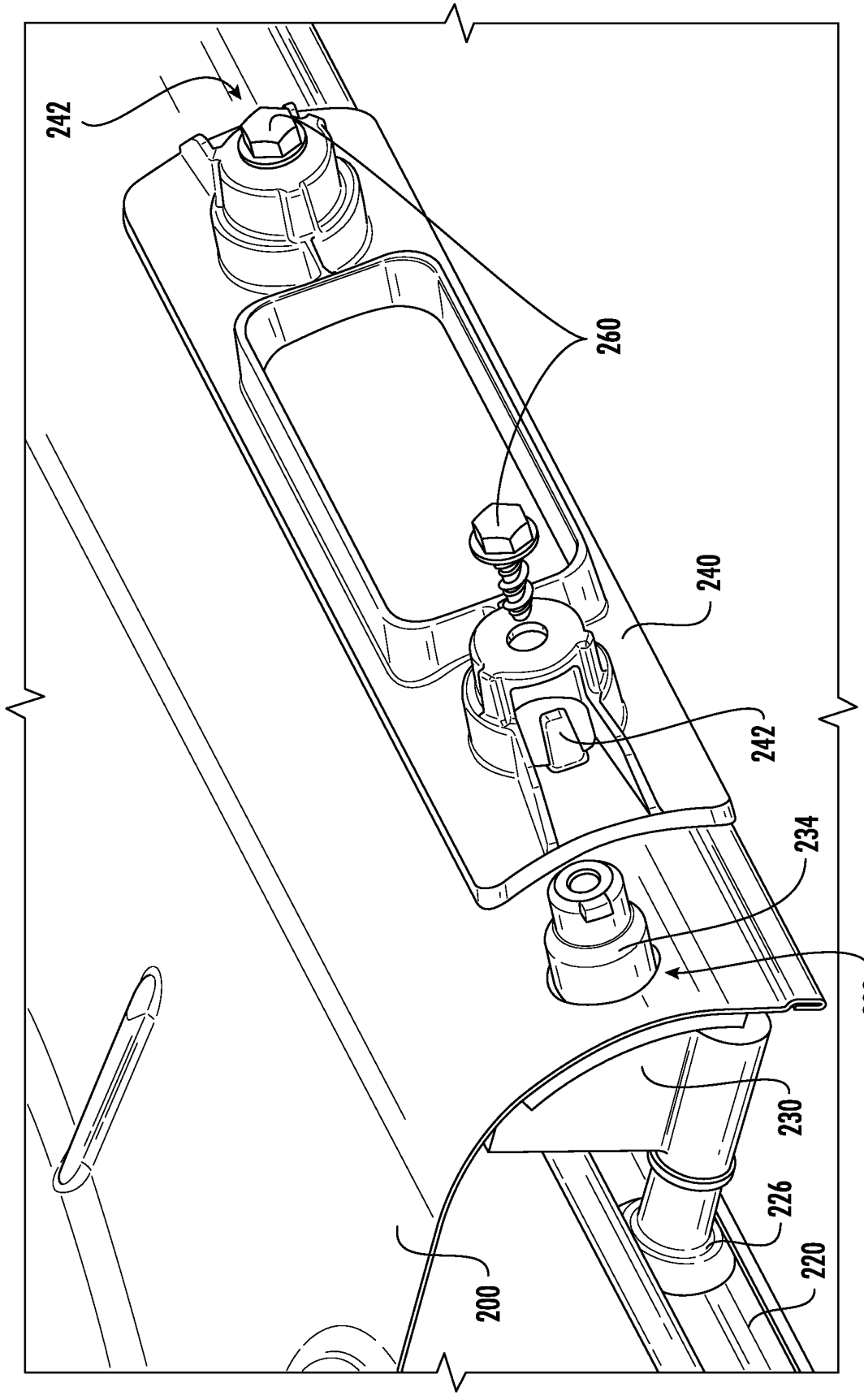



FIG. 5

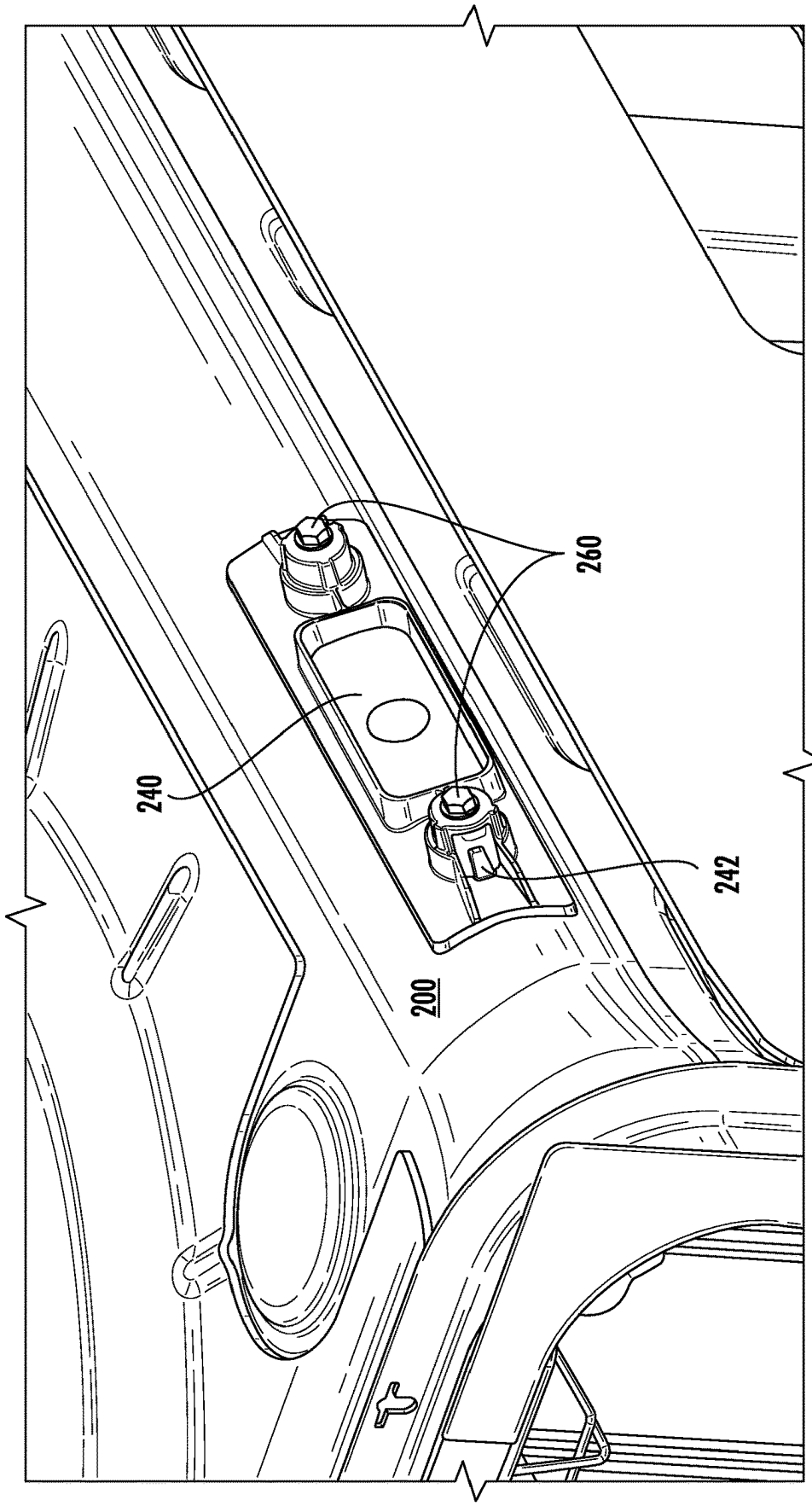



FIG. 6

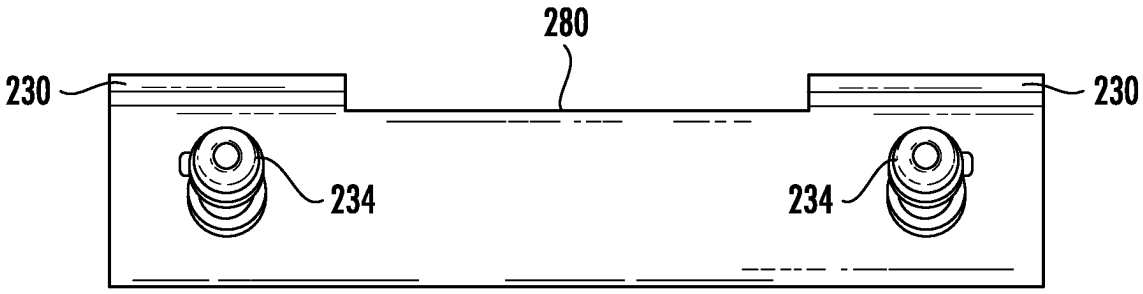



FIG. 7

# SYSTEMS FOR MOUNTING RACKS IN DISHWASHING APPLIANCES

## FIELD OF THE INVENTION

The present subject matter relates generally to systems for mounting racks in dishwashing appliances, particularly relating to the mounting of third racks in dishwasher appliances.

## BACKGROUND OF THE INVENTION

Dishwasher appliances generally include rack assemblies for positioning various articles for cleaning within a wash chamber. One or more devices, such as nozzles or spray assemblies, may be included at various locations relative to the rack assemblies for purposes of delivering fluids as part of the cleaning process. During the cleaning cycle, the rack assemblies can support and position the articles while also having openings that allow fluid to pass through to the articles. Factors such as the velocity of the fluid, orientation of the fluid spray or stream relative to the articles, the shape and density of the articles in the rack assemblies, and others can impact the effectiveness of the cleaning cycle.

One or more rack assemblies may be used in dishwasher appliances for user convenience. Multiple rack assemblies on multiple levels within dishwasher appliances may allow users to place articles of differing heights and sizes in optimal positions to allow for proper cleaning of the articles. Some dishwasher appliances may include one or more baskets which may also be provided for holding articles, particularly smaller or for more narrow articles, such as silverware. Additionally, the user may have the option of, e.g., placing articles, such as silverware, within a basket on a lower rack assembly or placing the silverware directly (without the basket) onto an upper rack assembly specially configured for the receipt of such articles.

The positioning of articles within a dishwasher appliance can affect the fluid dynamics to which the articles are exposed during the cleaning process. For example, articles placed in a lower rack assembly may be subjected to different spray assemblies with different spray patterns, velocities, and spray duration than articles placed in a higher rack assembly. As dishwasher appliances have begun including more racks, space and positioning of dishwashing components, such as rack-mounting systems, inside of the dishwasher is important to ensure proper washing.

## BRIEF DESCRIPTION OF THE INVENTION

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 through practice of the invention.

In one example embodiment, a dishwasher appliance defines a vertical direction, a lateral direction, and a transverse direction. The vertical, lateral, and transverse directions are mutually perpendicular. The dishwasher appliance includes a tub defining a wash chamber, a wash conduit in the wash chamber, a first rack assembly slidably positioned within the wash chamber, and a first spray assembly positioned in the wash chamber, configured to direct wash fluids at the first rack assembly. The dishwasher appliance also includes a second rack assembly slidably positioned in the wash chamber above the first rack assembly, and a second spray assembly positioned in the wash chamber, configured to direct wash fluids at the second rack assembly. The dishwasher appliance further includes a third rack assembly slidably positioned in the wash chamber above the second rack assembly. The third rack assembly includes a bracket positioned within the wash chamber of the tub. The bracket includes a roller extending therefrom, and a pair of posts mounted to the bracket. The pair of posts extend through an outer surface of the tub, and a brace is positioned opposite the bracket on the outer surface of the tub. The brace includes a snap projection configured to engage the pair of posts such that the snap projection hinders the pair of posts from retracting through the outer surface of the tub. A pair of fasteners extend through the brace into the pair of posts, where the pair of fasteners secure the brace to the pair of posts.

In another example embodiment, a dishwasher appliance includes a tub defining a wash chamber, and a rack assembly. The rack assembly includes a bracket positioned within the wash chamber of the tub. The bracket includes a roller extending therefrom, and a pair of posts mounted to the bracket. The pair of posts extend through an outer surface of the tub, and a brace is positioned opposite the bracket on the outer surface of the tub. The brace includes a snap projection configured to engage the pair of posts such that the snap projection hinders the pair of posts from retracting through the outer surface of the tub. A pair of fasteners extend through the brace into the pair of posts, where the pair of fasteners secure the brace to the pair of posts.

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

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.

FIG. **1** provides a front, elevation view of a dishwasher appliance according to an example embodiment of the present subject matter.

FIG. **2** provides a perspective view of the example dishwasher appliance of FIG. **1** with a door of the example dishwasher appliance shown in an open position to reveal a wash chamber of the example dishwasher appliance.

FIG. **3** provides a partial, front perspective view of a tub and a rack assembly of the example dishwasher appliance of FIG. **1**.

FIG. **4** provides a partial, front elevation view of the tub and rack assembly of the example dishwasher appliance of FIG. **1**.

FIG. **5** provides an exploded perspective view of a brace **240** of the rack assembly of the example dishwasher appliance of FIG. **1**.

FIG. **6** provides an assembled perspective view of the brace of FIG. **5**.

FIG. **7** provides a perspective view of an example bracket of the rack assembly of FIG. **5**.

Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

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.

FIG. **1** provides a front, elevation view of a dishwasher appliance **100** according to an example embodiment of the present subject matter. FIG. **2** provides a perspective view of dishwasher appliance **100** with a door **120** of dishwasher appliance **100** shown in an open position to reveal a wash chamber or compartment **201** of dishwasher appliance **100**. Dishwasher appliance **100** defines a vertical direction V, a lateral direction L, and a transverse direction T. Vertical direction V, lateral direction L, and transverse direction T are mutually perpendicular and form an orthogonal direction system.

Dishwasher appliance **100** includes a tub **200** that defines wash chamber **201**. Tub **200** has a pair of side walls **128**, a back wall **125**, and a top wall **202** that assist with defining wash chamber **201**. Side walls **128** are spaced apart from each other, e.g., along the lateral direction L. Back wall **125** and top wall **202** extend between and connect side walls **128**, e.g., along the lateral direction L. Tub **200** also includes door **120** hinged at its bottom **122** for movement between a normally closed configuration (shown in FIG. **1**) in which wash chamber **201** is sealed shut, e.g., for washing operation, and an open configuration (shown in FIGS. **2** and **3**) for loading and unloading of articles from dishwasher appliance **100**.

Turning to FIG. **2**, tub side walls **128** accommodate middle and lower rack assemblies **130** and **132**. Each of the middle and lower racks assemblies **130** and **132** is fabricated from lattice structures that include a plurality of wires or elongated members **134**. Dishwasher appliance **100** also includes an upper rack assembly **210** positioned above middle and lower racks assemblies **130** and **132**, e.g., along the vertical direction V, at a top portion of wash chamber **201**. Each rack assembly **130**, **132** and **210** is adapted for movement between an extended loading position (not shown) in which the rack assembly is substantially positioned outside the wash chamber **201**, and a retracted position (shown in FIGS. **1** and **2**) in which the rack assembly is located inside the wash chamber **201**.

Dishwasher appliance **100** includes a lower spray assembly **144** that is mounted within a lower region **146** of the wash chamber **201** and above a tub sump portion **142** so as to be in relatively close proximity to the lower rack assembly **132**. A mid-level spray assembly **148** is located in an upper region of the wash chamber **201** and may be located in close proximity to middle rack assembly **130**. Additionally, an upper spray assembly (not shown) may be located above the upper rack assembly **210** and mounted to top wall **202** of tub **200**.

The lower and mid-level spray assemblies **144** and **148** and the upper spray assembly are fed by a pump (not shown) for circulating water and wash fluid (e.g., detergent, water, and/or rinse aid) in the tub **200**. The pump is located in a machinery compartment **140** located below the bottom sump portion **142** of the tub **200**, as generally recognized in the art. A conduit or circulation piping **108** directs water and/or wash fluid from the pump to lower spray assembly **144** and mid-level spray assembly **148**.

Each spray assembly includes an arrangement of discharge ports or orifices for directing wash fluid onto dishes or other articles located in the middle and lower rack assemblies **130**, **132**, silverware basket **160** and upper rack assembly **210**. Lower spray assembly **144** is rotatably mounted in wash chamber **201**. Accordingly, the arrangement of the discharge ports on lower spray assembly **144** may provide a rotational force by virtue of washing fluid flowing through the discharge ports. The resultant rotation of the lower spray assembly **144** can provide coverage of dishes and other dishwasher contents with a washing spray.

The dishwasher appliance **100** is further equipped with a controller **137** to regulate operation of the dishwasher appliance **100**. Controller **137** may include a memory and microprocessor, such as a general or special purpose microprocessor operable to execute programming instructions or micro-control code associated with a cleaning cycle. The memory may represent random access memory such as DRAM, or read only memory such as ROM or FLASH. Alternatively, controller **137** may be constructed without using a microprocessor, e.g., using a combination of discrete analog and/or digital logic circuitry (such as switches, amplifiers, integrators, comparators, flip-flops, AND gates, and the like) to perform control functionality instead of relying upon software.

Controller **137** may be positioned in a variety of locations throughout dishwasher appliance **100**. In the illustrated example embodiment, controller **137** is located within a control panel **116** of door **120**. In alternative example embodiments, controller **116** may be positioned beneath tub **200** or at any other suitable location on dishwasher appliance **100**. Typically, controller **137** includes a user interface panel **136** through which a user may select various operational features and modes and monitor progress of the dishwasher appliance **100**. In one example embodiment, user interface **136** represents a general purpose I/O ("GPIO") device or functional block. In another example embodiment, user interface **136** includes 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. User interface **136** may include a display component, such as a digital or analog display device designed to provide operational feedback to a user.

It should be appreciated that the present subject matter is not limited to any particular style, model, or other configuration of dishwasher appliance and that dishwasher appliance **100** depicted in FIGS. **1** and **2** is provided for illustrative purposes only. For example, the present subject matter may be used in dishwasher appliances having other rack configurations or spray assembly arrangements.

FIG. **3** provides a partial, front perspective view of tub **200** and upper rack assembly **210** of dishwasher appliance **100**. FIG. **4** provides a partial, front elevation view of tub **200** and rack assembly **210** of dishwasher appliance **100**. As discussed in greater detail below, rack assembly **210** includes features for assisting with mounting rack assembly **210** to tub **200** within wash chamber **201** of tub **200**. In addition, it should be understood that, while described in greater detail below in the context of dishwasher appliance **100**, tub **200** and/or rack assembly **210** may be used in any other suitable dishwasher appliance, in alternative example embodiments.

As may be seen in FIGS. **3** and **4**, tub **200** defines wash chamber **201** and includes a top wall **202** and transition

portions **204**. Transition portions **204** correspond to portions of tub **200** that extend between top wall **202** and other portions of tub **200**, such as side walls **128** and/or back wall **125**, e.g., along the vertical direction V. Transition portions **204** include curved inner surfaces **206**. In certain example embodiments, tub **200** is constructed of or with a molded material, such as plastic, or a stamped material, such as stainless steel. Thus, top wall **202** and transition portions **204** may be integrally formed of a single piece of molded plastic or stamped metal.

Rack assembly **210** includes silverware baskets **212** and mounting assembly **214**. Silverware baskets **212** are configured for receiving and supporting silverware therein during operation of an associated dishwasher appliance. Mounting assembly **214** assists with mounting silverware baskets **212** to tub **200**. Thus, mounting assembly **214** can assist with supporting silverware baskets **212** within wash chamber **201** of tub **200**. As may be seen in FIGS. **3** and **4**, mounting assembly **214** includes a slide rail **220** and at least one bracket **230**. Brackets **230** are mounted to tub **200** and are positioned within wash chamber **201** of tub **200**. Slide rail **220** is also positioned within wash chamber **201** of tub **200**. In particular, slide rail **220** is slidably mounted to brackets **230** within wash chamber **201** of tub **200**, as discussed in greater detail below.

As discussed above, tub **200** defines curved inner surface **206**. As may be seen in FIGS. **3** and **4**, brackets **230** may be positioned in wash chamber **201** at or on curved inner surface **206** of tub **200**. In particular, brackets **230** define a curved outer surface **232**. Curved outer surface **232** of brackets **230** are complementary to curved inner surface **206** of tub **200**. In particular, a shape or profile of curved outer surface **232** of brackets **230** can substantially match or fit curved inner surface **206** of tub **200**, e.g., in a plane that is perpendicular to the transverse direction T. Curved outer surface **232** of brackets **230** may be positioned on or at curved inner surface **206** of tub **200**.

Slide rail **220** is positioned within wash chamber **201** of tub **200** and is mounted or positioned on a roller **226** of brackets **230**. Roller **226** is moveable or slidable within slide rail **220**, e.g., along the transverse direction T. However, roller **226** may hinder or prevent movement of slide rail **220** along other directions, such as the vertical direction V and/or the lateral direction L. Thus, roller **226** may permit movement of slide rail **220** along only the transverse direction T when roller **226** of brackets **230** is received within slide rail **220**. Rack assembly **210** also includes a seal or gasket (not shown). The gasket is positioned at or on curved outer surface **232** of bracket **230**. The gasket assists with hindering or preventing leaks or liquid flow out of wash chamber **201** of tub **200**.

As may be seen in FIGS. **3** and **4**, slide rail **220** may include a C-shaped channel **222** positioned on rollers **226**. Thus, roller **226** may be received within C-shaped channel **222**. Rack assembly **210** also includes a frame **228** (e.g., formed of bent metal wire). Frame **228** supports silverware baskets **212**, e.g., and is positioned below silverware baskets **212** along the vertical direction V. Thus, silverware baskets **212** may rest on and/or be mounted to frame **228**.

FIG. **5** provides an exploded perspective view of a brace **240** of rack assembly **210**. FIG. **6** provides an assembled perspective view of brace **240** of rack assembly **210**. Brackets **230** also include various features for assisting with mounting brackets **230** to tub **200**, e.g., easily and/or quickly. In particular, a pair of projection or post **234** is mounted to each bracket **230**. As an example, posts **234** may be integrally mounted to brackets **230** such that posts **234** and brackets **230** are constructed from a single, continuous piece of material, such as molded plastic. Posts **234** extend from brackets **230** through the tub **200**. A brace **240** is snapped onto posts **234**. e.g., outside of wash chamber **201** of tub **200**. Thus, brace **240** is not disposed within wash chamber **201** of tub **200**. Brace **240** may extend between the pair of posts **234** along the outer surface of the tub. A snap projection **242** may engage with post **234** within brace **240** preventing or hindering posts **234** from moving back though holes **203** into wash chamber **201** of tub **200**. In some example embodiments, brace **240** may include a pair of snap projections **242** configured to engage the pair of posts **234** such that each of the snap projections **242** hinders the pair of posts **234** from retracting through the curved inner surface **206** of tub **200**. Further, fasteners **260** also extend into post **234**, e.g., outside of wash chamber **201** of tub **200**. Thus, fasteners **260** are also not disposed within wash chamber **201** of tub **200**. Fasteners **260** may be threaded or mounted onto post **234**. In particular, screw threads of fasteners **260** may engage or mesh with posts **234**.

Mounting of rack assembly **210** to tub **200** is discussed in greater detail below with reference to FIGS. **3** and **4**. To mount rack assembly **210** to tub **200**, an assembler can mount slide rail **220** to brackets **230**, e.g., such that slide rail **220** is received on rollers **226**. The assembler can then position brackets **230** (with slide rail **220** mounted thereto) within wash chamber **201** of tub **200**. In addition, the assembler can direct or insert posts **234** through holes defined by tub **200**, e.g., until curved outer surfaces **232** of brackets **230** are disposed on or at curved inner surface **206** of tub **200** and posts **234** are positioned or disposed outside of wash chamber **201** of tub **200**. With posts **234** so positioned, the assembler can hold or support brackets **230** and slide rail **220** within wash chamber **201** of tub **200** and snap brace **240** onto posts **234**. In particular, the assembler can snap the snap projection **242** onto the post **234**. With brace **240** so positioned, brace **240** supports brackets **230** and slide rail **220** within wash chamber **201** of tub **200** by preventing or hindering posts **234** from moving back though holes **203** into wash chamber **201** of tub **200**. Thus, the assembler can let go of and stop supporting brackets **230** and slide rail **220** within wash chamber **201** of tub **200** due to brace **240** supporting such components.

With brace **240** supporting brackets **230** and slide rail **220** within wash chamber **201** of tub **200**, the assembler fixes a pair of fasteners **260** to the pair of posts **234** through brace **240**. The pair of fasteners **260** may include at least one of screws or bolts. In particular, the assembler can rotate or turn fasteners **260** with a tool or drill in order to thread fasteners **260** into posts **234** with the drill. The assembler can tighten fasteners **260** against brace **240** and/or fix fasteners **260** to posts **234** such that brackets **230** are drawn towards tub **200** within wash chamber **201** of tub **200**. By drawing brackets **230** towards tub **200**, the gasket is compressed between tub **200** and brackets **230**, e.g., between curved outer surfaces **232** of brackets **230** and curved inner surface **206** of tub **200**. By extending between tub **200** and brackets **230**, the gasket can assist with limiting or preventing leaks or liquid flow through or out of the holes in tub **200**.

As may be seen in FIG. **7**, a connecting rail **280** may extend between and connect brackets **230** such that brackets **230** are coupled together with connecting rail **280**. Connecting rail **280** may be integrally formed with brackets **230**. Thus, brackets **230** and connecting rail **280** may be constructed from a single, continuous piece of material, such as molded plastic. As another example, brackets **230**, posts **234**

and connecting rail **280** may be constructed from a single, continuous piece of material, such as molded plastic.

Mounting assembly **214** may advantageously assist with mounting slide rail **220** to tub **200** within wash chamber **201** of tub **200**, e.g., without welding and/or tox. Mounting assembly **214** may also permit a single installer or assembler to mount slide rail **220** to tub **200** within wash chamber **201** of tub **200**. Slide rail **220** may be substantially level when mounted to tub **200**.

As may be seen from the above, a single piece brace with snap projections eliminates the need for individual components of traditional sleeve tub mount systems. The operator traditionally would install two sleeve tub mounts and two brace tub mounts to the exterior of the dishwasher. The assembler would then be able to use two unique screws for the final install. Additionally, this would be repeated for the opposite side tub mount. The single piece brace advantageously reduces the number of parts and decreases the complexity of assembly compared to the traditional methods.

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 languages of the claims.

What is claimed is:

**1**. A dishwasher appliance defining a vertical direction, a lateral direction, and a transverse direction, the vertical, lateral, and transverse directions being mutually perpendicular, the dishwasher appliance comprising:

a tub defining a wash chamber;

a wash conduit in the wash chamber;

a first rack assembly slidably positioned within the wash chamber;

a first spray assembly positioned in the wash chamber and configured to direct wash fluids at the first rack assembly;

a second rack assembly slidably positioned in the wash chamber above the first rack assembly;

a second spray assembly positioned in the wash chamber and configured to direct wash fluids at the second rack assembly;

a third rack assembly slidably positioned in the wash chamber above the second rack assembly, the third rack assembly comprising;

a bracket positioned within the wash chamber of the tub, the bracket comprising a roller extending therefrom;

a pair of posts mounted to the bracket, the pair of posts extending through an outer surface of the tub;

a brace positioned opposite the bracket on the outer surface of the tub, the brace comprising a snap projection configured to engage the pair of posts such that the snap projection hinders the pair of posts from retracting through the outer surface of the tub; and

a pair of fasteners extending through the brace into the pair of posts, the pair of fasteners securing the brace to the pair of posts.

**2**. The dishwasher appliance of claim **1**, wherein a top portion of the tub defines a curved inner surface, the bracket defining a curved outer surface that is complementary to the curved inner surface of the tub, the bracket positioned within the wash chamber such that the curved outer surface of the bracket is positioned at the curved inner surface of the tub.

**3**. The dishwasher appliance of claim **1**, further comprising a slide rail positioned within the wash chamber and mounted on the roller of the bracket.

**4**. The dishwasher appliance of claim **3**, wherein the slide rail comprises a C-shaped channel received on the roller of the bracket such that the C-shaped channel is slidable on the roller of the bracket.

**5**. The dishwasher appliance of claim **1**, wherein the bracket and the post are integrally formed of a continuous piece of plastic.

**6**. The dishwasher appliance of claim **1**, wherein the brace extends between the pair of posts along the outer surface of the tub.

**7**. The dishwasher appliance of claim **6**, wherein the brace comprises a pair of snap projections configured to engage the pair of posts such that each of the snap projections hinders the pair of posts from retracting through the outer surface of the tub.

**8**. The dishwasher appliance of claim **1**, wherein the pair of fasteners comprises at least one of screws or bolts.

**9**. The dishwasher appliance of claim **1**, wherein the pair of fasteners engaging with the pair of posts restricts movement of the bracket inside the wash chamber.

**10**. A dishwasher appliance comprising:

a tub defining a wash chamber; and

a rack assembly, comprising;

a bracket positioned within the wash chamber of the tub, the bracket comprising a roller extending therefrom;

a pair of posts mounted to the bracket, the pair of posts extending through an outer surface of the tub;

a brace positioned opposite the bracket on the outer surface of the tub, the brace comprising a snap projection configured to engage the pair of posts such that the snap projection hinders the pair of posts from retracting through the outer surface of the tub; and

a pair of fasteners extending through the brace into the pair of posts, the pair of fasteners securing the brace to the pair of posts.

**11**. The dishwasher appliance of claim **10**, wherein a top portion of the tub defines a curved inner surface, the bracket defining a curved outer surface that is complementary to the curved inner surface of the tub, the bracket positioned within the wash chamber such that the curved outer surface of the bracket is positioned at the curved inner surface of the tub.

**12**. The dishwasher appliance of claim **10**, further comprising a slide rail positioned within the wash chamber and mounted on the roller of the bracket.

**13**. The dishwasher appliance of claim **12**, wherein the slide rail comprises a C-shaped channel received on the roller of the bracket such that the C-shaped channel is slidable on the roller of the bracket.

**14**. The dishwasher appliance of claim **10**, wherein the bracket and the post are integrally formed of a continuous piece of plastic.

**15**. The dishwasher appliance of claim **10**, wherein the brace extends between the pair of posts along the outer surface of the tub.

**16**. The dishwasher appliance of claim **15**, wherein the brace comprises a pair of snap projections configured to

engage the pair of posts such that each of the snap projections hinders the pair of posts from retracting through the outer surface of the tub.

**17**. The dishwasher appliance of claim **10**, wherein the pair of fasteners comprises at least one of screws or bolts.

**18**. The dishwasher appliance of claim **10**, wherein the pair of fasteners engaging with the pair of posts restricts movement of the bracket inside the wash chamber.

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