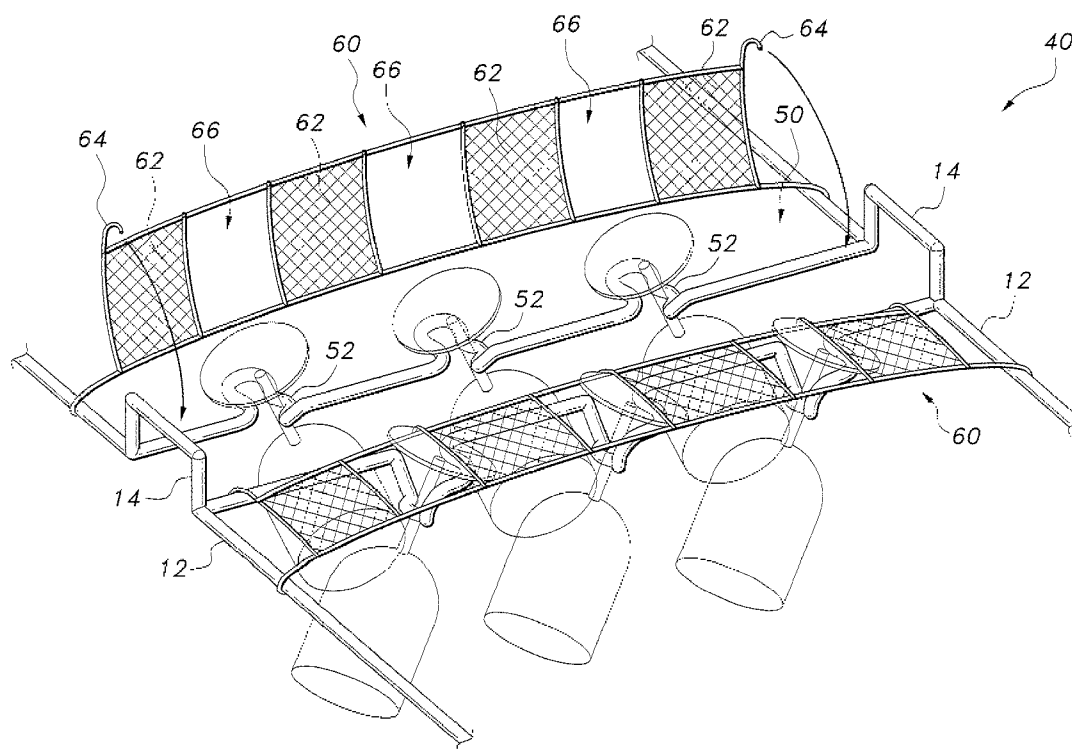


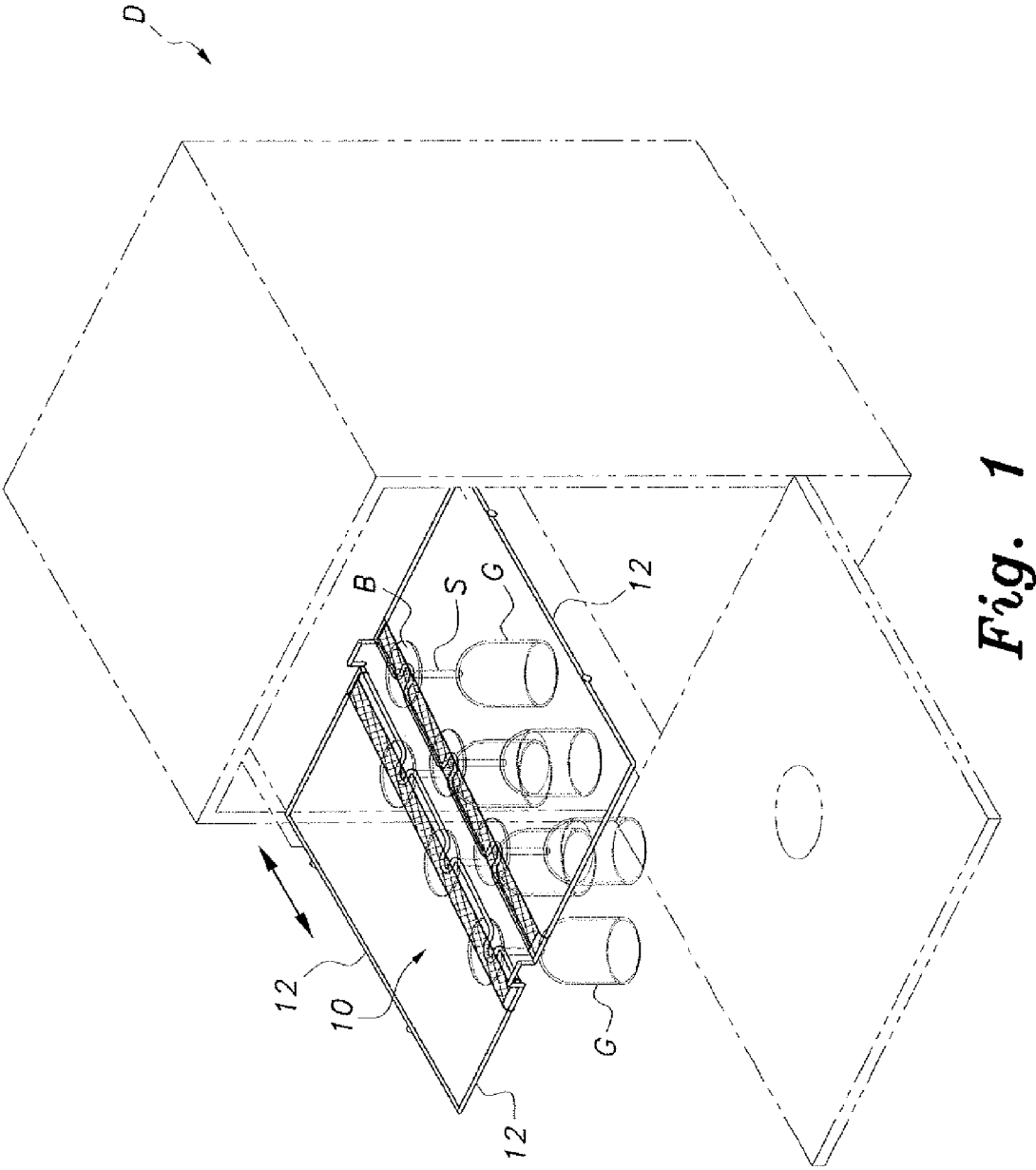


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(19) **United States**(12) **Patent Application Publication**
MCNAMARA(10) **Pub. No.: US 2012/0292273 A1**(43) **Pub. Date: Nov. 22, 2012**(54) **GLASSWARE RACK FOR DISH WASHING
MACHINES**(52) **U.S. Cl. 211/79; 211/71.01; 211/85.31**(76) **Inventor: ELAINE MCNAMARA, Belmont,
MA (US)**(21) **Appl. No.: 13/466,873**(22) **Filed: May 8, 2012****Related U.S. Application Data**(60) **Provisional application No. 61/487,479, filed on May
18, 2011.****Publication Classification**(51) **Int. Cl.**
A47L 15/50 (2006.01)(57) **ABSTRACT**

The glassware rack for dishwashing machines includes an outer frame adapted to be slidably mounted inside a dishwasher. A plurality of wire-frame, glassware mounting bars are disposed between two sides of the outer frame. Each glassware mounting bar includes spaced loops for mounting the stems of the glassware. A mesh cover is pivotally attached to each glassware mounting bar and locks onto the bar by a latching mechanism. The cover overlies the bases of the mounted glassware and prevents the same from undesirable movement during subsequent washing and cleaning cycles of the dishwasher. Alternatively, the bars may be configured to hold the glassware at an angle.





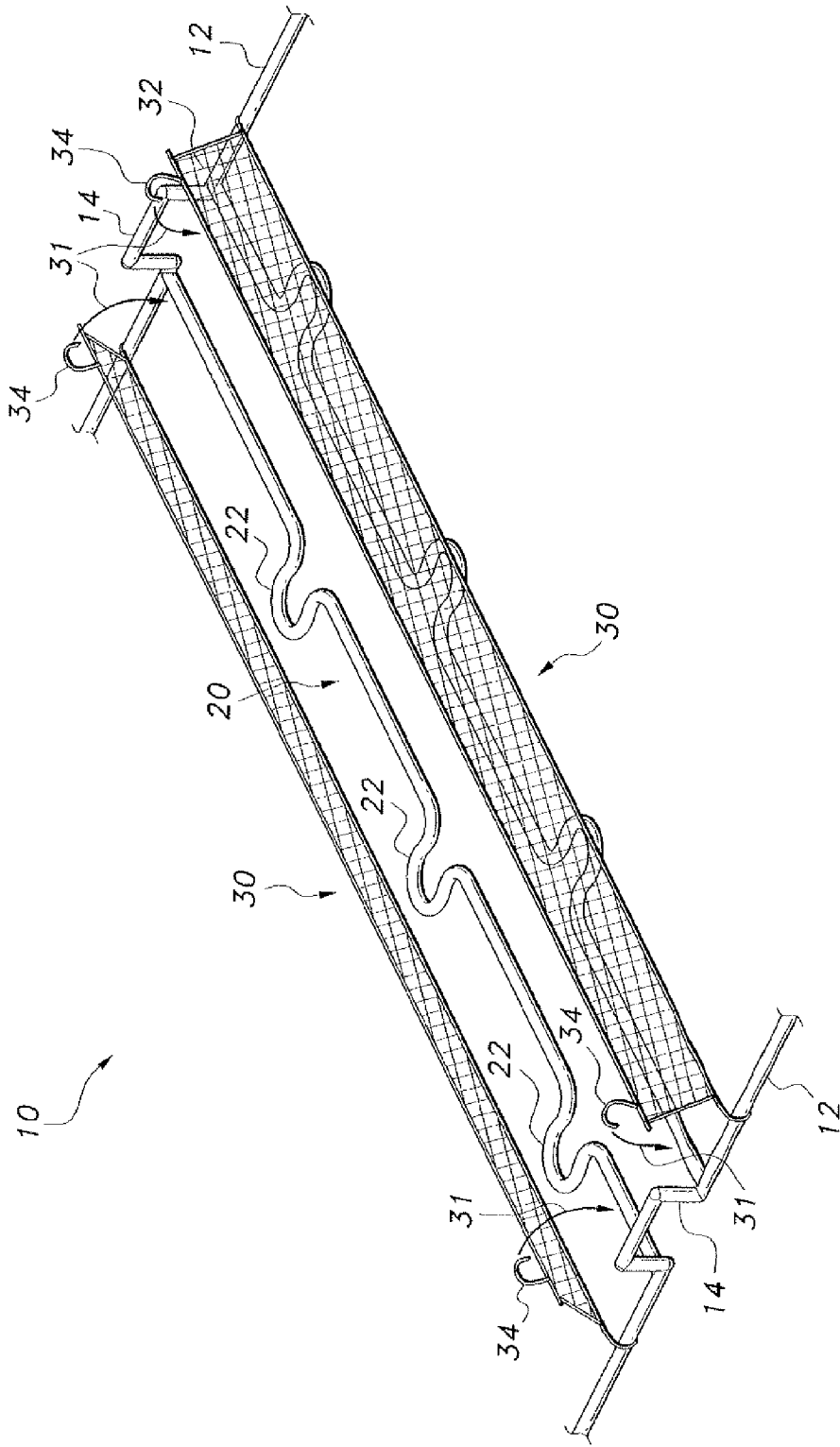


Fig. 2

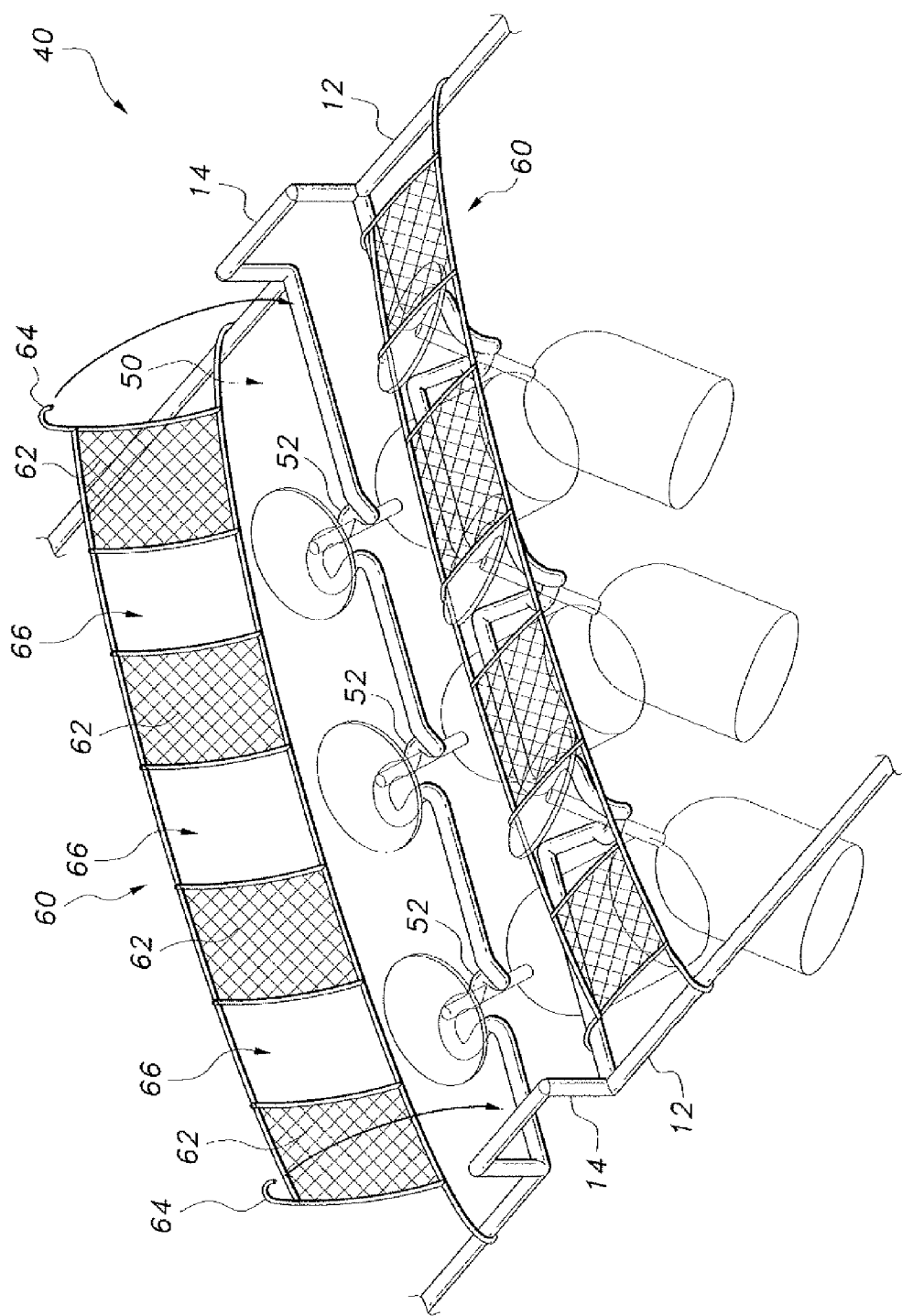


Fig. 3

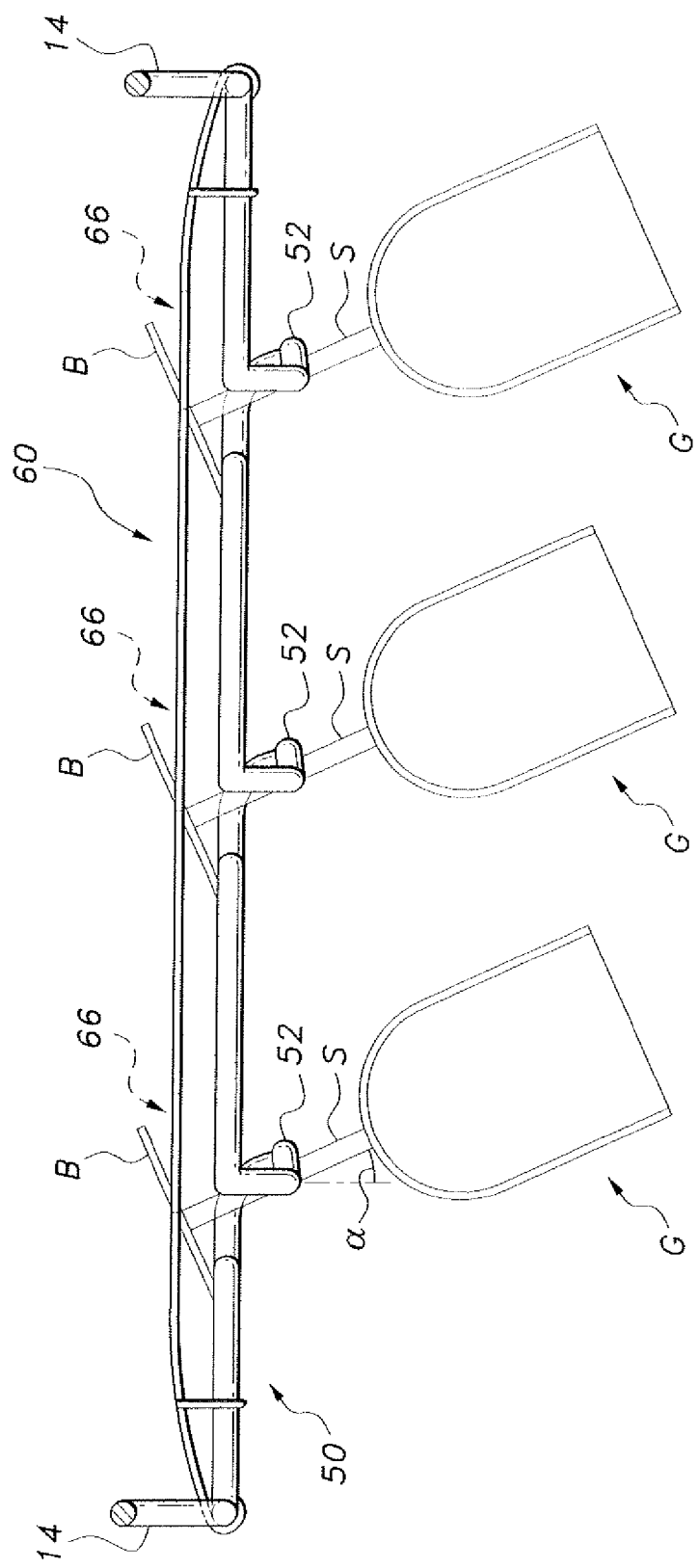


Fig. 4

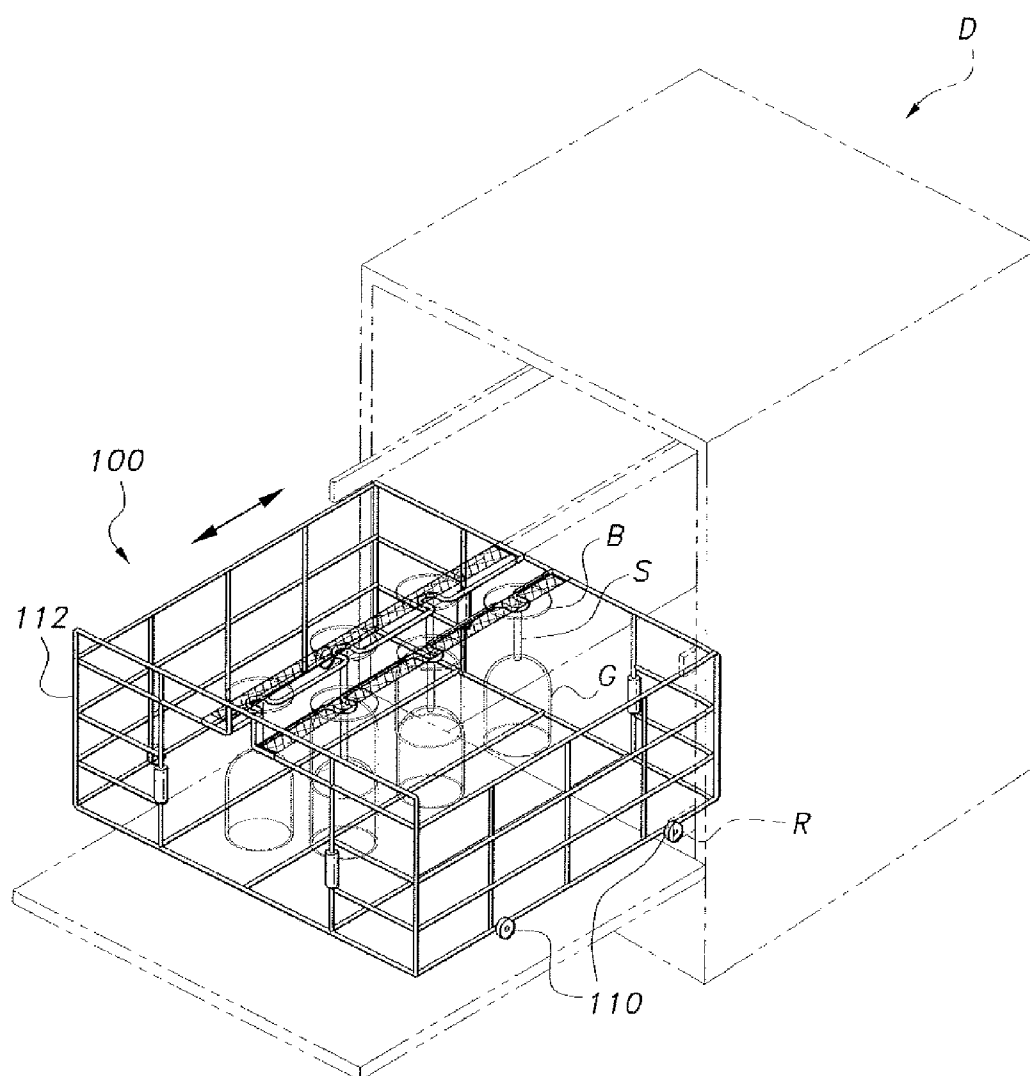


Fig. 5

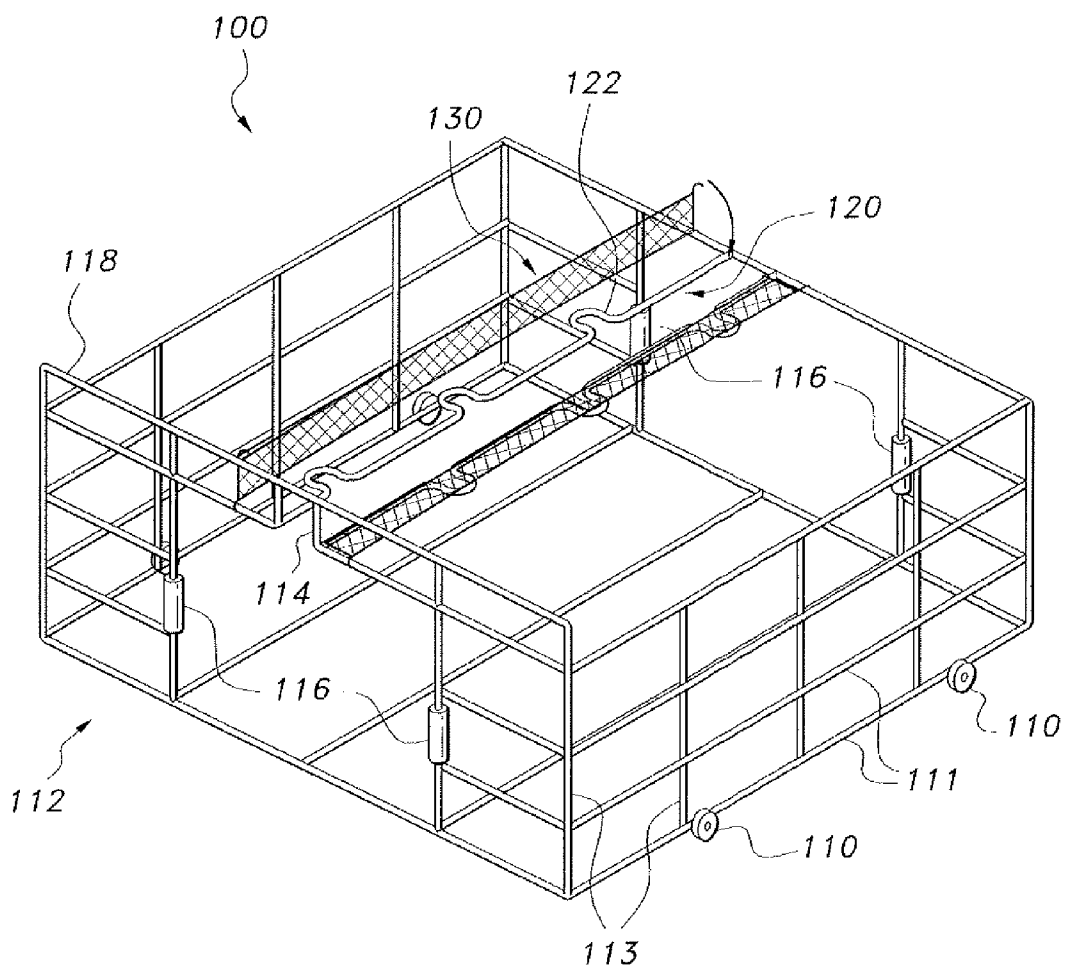


Fig. 6

GLASSWARE RACK FOR DISH WASHING MACHINES

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application Ser. No. 61/487,479, filed May 18, 2011.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to glassware racks and holders, and particularly to a glassware rack for dishwashing machines configured to securely hold the glassware and prevent damage throughout the washing process.

[0004] 2. Description of the Related Art

[0005] Connoisseurs of fine wines and other spirits often collect fine glassware to complement the beverage. The variety of glassware available to the connoisseur can range widely in styles, shapes, stem lengths and price. In a fine restaurant, a sommelier would often serve wine in a specific wine glass or stemware that is designed to extract the best essence and bouquet for enjoyment by the diners and complementary with the food. Such an experience can be reproduced at home with the appropriate glassware. However, some care must be exercised when handling and cleaning the stemware or glassware due to their delicate nature. This is especially evident with the more expensive crystal glassware because accidental breakage of such glassware can be a significant financial and/or sentimental loss.

[0006] In most households, the user typically employs a dishwasher to clean the glassware since the dishwasher is a very convenient appliance for such tasks. Unfortunately, most dishwashers do not have a rack that can safely hold the glassware in a manner that will prevent damage while maintaining satisfactory cleaning of the glassware. The standard racks in most dishwashers are usually not specifically designed to stably hold stemware. Instead, they are designed to be generic and capable of holding glassware of various types, e.g., mugs, tumblers, etc. Of course, hand washing the glassware is another method of cleaning, but that can be a time consuming chore. Moreover, there is a greater chance that the glassware may accidentally slip from one's hands and break during the process of washing if one is not careful. Due to the above, it would be a benefit in the art of glassware care to provide a dishwashing rack capable of holding stemmed glassware in a manner that substantially reduces risks or prevents breakage during the washing process.

[0007] Thus, a glassware rack for dishwashing machines solving the aforementioned problems is desired.

SUMMARY OF THE INVENTION

[0008] The glassware rack for dishwashing machines includes an outer frame adapted to be slidably mounted inside a dishwasher. A plurality of wire-frame glassware mounting bars are disposed between two sides of the outer frame. Each glassware mounting bar includes spaced loops for mounting the stems of the glassware. A mesh cover is pivotally attached to each glassware mounting bar and locks onto the bar by a latching mechanism. The cover overlies the bases of the mounted glassware and prevents the glassware from undesirable movement during subsequent washing and cleaning

cycles of the dishwasher. Alternatively, the bars may be configured to hold the glassware at an angle.

[0009] These and other features of the present invention will become readily apparent upon further review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is an environmental, perspective view of a glassware rack for dishwashing machines according to the present invention.

[0011] FIG. 2 is a perspective view of the glassware rack of FIG. 1.

[0012] FIG. 3 is an environmental perspective view of an alternative glassware rack for dishwashing machines according to the present invention.

[0013] FIG. 4 is an environmental side view of the glassware rack of FIG. 3.

[0014] FIG. 5 is an environmental perspective view of an alternative embodiment of a glassware rack for dishwashing machines according to the present invention.

[0015] FIG. 6 is a perspective view of the glassware rack shown in FIG. 5.

[0016] Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] The present invention relates to a glassware rack for dishwashing machines, a first embodiment of which is generally referred to in the drawings by reference number 10, that is configured to hold stemmed glassware in a secure and stable manner in order to prevent inadvertent breakage thereof. As shown in FIGS. 1 and 2, the glassware rack 10 includes an outer frame 12 enclosing a plurality of elongate, glassware mounting beams or bars 20. The outer frame 12 is preferably square or rectangular, and is dimensioned and configured to fit inside the dishwasher. The outer frame 12 may be formed with covered or coated wire (e.g., vinyl or other polymer coatings) that is lightweight yet sturdy for extensive use. However, other materials such as sturdy plastic, steel, wood, and composites may be used as alternatives. The outer frame 12 is adapted to be slidably mounted in one of the pairs of mounting rails inside a dishwasher D via a slider mechanism similar to those on a typical dishwasher rack. Thus, the glassware rack 10 can be preinstalled in a typical dishwasher or an accessory rack, replacing an existing one.

[0018] The plurality of glassware mounting bars 20 span between two sides, i.e., front and back sides, of the outer frame 12. Each mounting bar 20 is preferably made from an elongate, covered or coated wire having a plurality of spaced loops or notches 22 formed thereon. Each loop 22 is configured to permit the stem S of a glass G to be placed and held therein. The loop 22 holds the glass G in a hanging position and supports the glass G on one side of the base B of the glass G. The spacing between adjacent loops 22 on the mounting bar 20 should be wide enough to accommodate stemmed glasses G of various sizes without danger of the glasses G breaking against each other or preventing the desired cleaning action of the water in the dishwasher D.

[0019] To prevent undesirable breakage, the glassware rack 10 includes a cover 30 for each mounting bar 20. Each cover 30 is pivotally attached to the front and back sides of the outer

frame 12. In operation, the cover 30 overlies the bottom side of the glass base B and is secured in place by a latching mechanism 34, e.g., hooks extending from opposite ends of the cover 30 that engage the mounting bar 20. In this manner, the glass bases B of the row of mounted glasses G are stably supported between the respective loops 22 and the cover 30. Thus, any jostling that occurs during handling of the glasses G on the glassware rack 10 will be minimized.

[0020] As shown in FIGS. 1 and 2, each cover 30 includes an elongate, rectangular wire frame supporting a porous mesh 32. The mesh 32 may be made from plastic, steel, composites, or any flexible sheet with holes. In addition to providing support, the holes in the mesh 32 permit the water circulating inside the dishwasher to reach and clean the base of the glass G. In the preferred embodiment, the cover 30 exhibits some flex in order to conform to and accommodate the shape of the glass base B as the cover 30 presses against the base B. During operation, the cover 30 is pivoted in the direction indicated by arrow 31, and the latching mechanism 34, in the form of a hook, is latched onto the mounting bar 20. Other fasteners, such as hook loop fasteners or snap fit fasteners, may be used in lieu of hooks.

[0021] The arrangement of the mounting bars 20 is configured to provide easy and quick access to the loops 22. Initially, it is noted that while only a pair of mounting bars 20 are shown in the drawings, it is to be understood that the glassware rack 10 includes a plurality of mounting bars 20 along the width thereof. To facilitate quick mounting of the glasses G, the loops 22 in each adjacent bar are staggered, and the openings of the loops 22 face each other. In this manner, the user can utilize the space between adjacent mounting bars 20 to quickly and easily mount the glasses G onto the respective loops 22. To further ease access, the front and/or back sides of the outer frame 12 may include an access bridge or loop 14 between adjacent mounting bars. The access bridge 14 provides space for the user to thread the glass base B towards the loops 22.

[0022] An alternative embodiment of a glassware rack for dishwashing machines is shown in FIGS. 3 and 4. In this embodiment, the glassware rack, generally referred to in the drawings by reference number 40, is configured to hold the glasses G at a predetermined angle α . The angle α is about 5 to 10 degrees from vertical. The angular disposition of the mounted glasses G provides enhanced cleaning because the streams of water inside the dishwasher D can reach more surfaces of the glasses G. Moreover, the angled glasses G will dry with minimal to no soap spots thereon.

[0023] As shown, the glassware rack 40 includes an outer frame 12 enclosing a plurality of elongate, glassware mounting beams or bars 50 and a cover 60 for each of the mounting bars 50. The glassware rack 40 is made and functions substantially the same as the previously described glassware rack 10, with the exception of the mounting bar 50 and the cover 60 that facilitate disposing the glasses G at the angle α .

[0024] Each mounting bar 50 includes a plurality of spaced mounting loops or notches 52 formed thereon. Each loop 52 is configured to hold the stem S and glass base B at the angle α . In this example, the loop 52 may be formed by twisting the loop so that one leg of the loop has a portion that extends downward to form a small, shallow notch or loop coplanar to the loop 52 that retains the base B of the glass G, the smaller notch being dimensioned and configured to support the stem S of the glass G.

[0025] The cover 60 is configured to ensure that the glasses G are held in the angled position. The cover 60 is a wireframe having spaced porous meshes 62 defining gaps or spaces 66 therebetween. When held at an angle, the bases B of the glasses G will correspondingly extend at an angle from the horizontal. The gaps 66 permits a portion of the base B to extend past the cover 60 while the meshes 62 press against the remaining portion to insure the glasses G are maintained at the desired angle α . A latching mechanism 64 secures the cover 60 against the mounting bar 50.

[0026] Another alternative embodiment of the glassware rack 100 is shown in FIGS. 5 and 6. In this embodiment, the glassware rack 100 includes convenience features for washing glasses G on the bottom shelf of the typical dishwasher. As shown, the glassware rack 100 includes a box-shaped frame 112 supporting a plurality of elongate, glassware mounting beams or bars 120 attached to the top of the box frame 112. A cover 130 for each of the mounting bars 120 is pivotally connected to the box frame 112. The mounting bar 120 and the cover 130 may be of similar construction to the mounting bars 20, 50 and covers 30, 60 described previously. The box shape of the frame 112 places the mounting bars 120 at an elevation above the floor of the dishwasher D so that the glasses G may hang without interfering with the operation of the dishwasher D. A plurality of horizontal wires, bars or beams 111 and a plurality of vertical wires, bars or beams 113 form the box frame 112. The cross-hatch configuration of the horizontal bars 111 and the vertical bars 113 provide structural stability. The box frame 112 may also be formed with different wireframe construction patterns, such as diagonal bars defining a diamond pattern. Moreover, perforated panels may be used to form the box frame 112, so long as the perforations do not compromise the cleaning operation of the dishwasher.

[0027] To ease handling of the glassware rack 100, the box frame 112 includes a pair of rollers or wheels 110 on either side of the box frame 112 and a handle 118 at the front. The rollers 110 are adapted to ride on or in the rails R of the dishwasher D. The handle 118 extends above the top of the box frame 112 to dispose the handle at a more comfortable elevation for the user to push or pull the glassware rack 100 in and out of the dishwasher 100 along the rails R or guide tracks. As an alternative, the box frame 112 may be collapsible to provide additional storage and handling options.

[0028] In all other aspects, the glassware rack 100 functions substantially the same as the previously described glassware rack 10, 40. The spacing between adjacent mounting bars 120 and the access bridge 114 provide different options for mounting the glasses G. In addition, resilient bumpers 116 may be disposed on select vertical or horizontal bars on the box frame 112. The bumpers 116 cushion the glassware rack 100 inside the dishwasher and add another layer of protection that prevents jarring the glasses G mounted thereon.

[0029] It is to be understood that the glassware rack 10, 40, 100 encompasses a variety of alternatives. For example, the glassware rack 10, 40, 100 may include a variety of shapes apart from the straight beams shown in the drawings. Similarly, the box frame 112 includes any box-like shape that can support the mounting bar 120, the cover 130 and the glasses G. Moreover, the glassware rack 10, 40, 100 may be used to store glassware in various environs including cabinets or as part of a bar layout. The wireframe, glassware mounting bar 20, 50 may also be made with other materials, such as plastic, metal, wood, and/or composites. Existing racks can also be

retrofitted with or include the configuration of, inter alia, the loops 22, 52 and the cover 30, 60 to securely store and hold glassware. Furthermore, the glassware rack 10, 40, 100 may include various forms of indicia and color.

[0030] It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

1. A glassware rack for dishwashing machines, comprising:

- an outer frame adapted to be slidably mounted in a dishwasher, the outer frame having a front, a back and lateral sides;
- a plurality of parallel mounting bars extending between the front and back sides of the outer frame;
- a plurality of mounting loops formed on each of the mounting bars, each of the mounting loops being adapted to hold a stem and base of glassware in a downward, hanging position;
- at least one cover pivotally attached to the outer frame, the at least one cover pivoting between an open position permitting access to the mounting loops and a closed position overlying the mounting loops; and
- a latching mechanism extending from the at least one cover for latching the at least one cover to the mounting bar; wherein the at least one cover is adapted for pressing the base of the glassware against the mounting bar to thereby prevent movement of and resulting damage to the glassware during handling and cleaning.

2. The glassware rack for dish washing machines according to claim 1, wherein said plurality of parallel mounting bars comprises at least one pair of adjacent mounting bars, each of said plurality of mounting loops on one of the mounting bars of said at least one pair of mounting bars having an opening for insertion of glassware facing in one direction, and each of said plurality of mounting loops on the other of the mounting bars of said at least one pair of mounting bars having an opening facing an opposite direction, the plurality of mounting loops on said mounting bars being staggered.

3. The glassware rack for dish washing machines according to claim 1, wherein each said mounting bar comprises an elongate wire having said plurality of mounting loops formed thereon, said mounting loops being spaced along said mounting bar to safely accommodate glassware of varying sizes.

4. The glassware rack for dish washing machines according to claim 3, wherein said elongate wire is covered with material for protection from wear and environment.

5. The glassware rack for dish washing machines according to claim 3, wherein each said at least one cover comprises an elongate, rectangular wire frame and a flexible, porous mesh supported on the wire frame, said porous mesh resiliently pressing the base of the glassware against said mounting bar and permitting passage of washing liquid during a dishwashing cycle.

6. The glassware rack for dish washing machines according to claim 3, wherein each said plurality of mounting loops on each mounting bar is disposed at an angle with respect to the horizontal in order to mount said glassware at said angle.

7. The glassware rack for dish washing machines according to claim 6, wherein said angle is about 5-10 degrees from vertical.

8. The glassware rack for dish washing machines according to claim 6, wherein each said at least one cover comprises

an elongate, wire frame and a plurality of spaced flexible, porous meshes supported thereon, the spacing between adjacent porous meshes defining a gap adapted for passage of a portion of the base of the glassware hanging on said mounting bar, the remainder of the base of the glassware being covered and pressed by an adjacent porous mesh when said at least one cover is in the closed position.

9. The glassware rack for dish washing machines according to claim 1, further comprising at least one access bridge extending between an adjacent pair of said mounting bars, the at least one access bridge permitting glassware to be threaded through towards a user-selected one of said mounting loops.

10. The glassware rack for dish washing machines according to claim 1, wherein said outer frame comprises;

- a box frame having a top;
- a handle disposed on the front of the box frame, the handle extending above the top of the box frame; and
- at least one roller connected to each of the lateral sides of the box frame, the at least one roller being adapted to ride along bottom rails of a dishwashing machine.

11. The glassware rack for dish washing machines according to claim 10, further comprising at least one resilient bumper attached to the front and the back of said box frame.

12. The glassware rack for dish washing machines according to claim 10, wherein said box frame is a covered wire frame.

13. A glassware rack for dishwashing machines, comprising:

- a box frame adapted for slidable mounting in a bottom shelf of a dishwasher, the box frame having a front, a back, a top, and lateral sides;
- a plurality of parallel mounting bars extending between the front side and the back side of the box frame;
- a plurality of mounting loops formed on each of the mounting bars, each of the mounting loops being adapted to hold a stem and base of glassware;
- at least one cover pivotally attached to the box frame, the at least one cover pivoting between an open position permitting access to the mounting loops and a closed position overlying the mounting loops;
- a latching mechanism extending from the at least one cover for latching the at least one cover to the mounting bar;
- a handle disposed on the front of the box frame, the handle extending above the top of the box frame; and
- at least one roller connected to each of the lateral sides of the box frame, the at least one roller being adapted to ride along bottom rails of the dishwasher;
- wherein the at least one cover is adapted for pressing the base of the glassware against the mounting bar to thereby prevent movement of and resulting damage to the glassware during handling and cleaning.

14. The glassware rack for dish washing machines according to claim 13, further comprising at least one resilient bumper attached to the front and the back of said box frame.

15. The glassware rack for dish washing machines according to claim 13, wherein said box frame is a covered wire frame.