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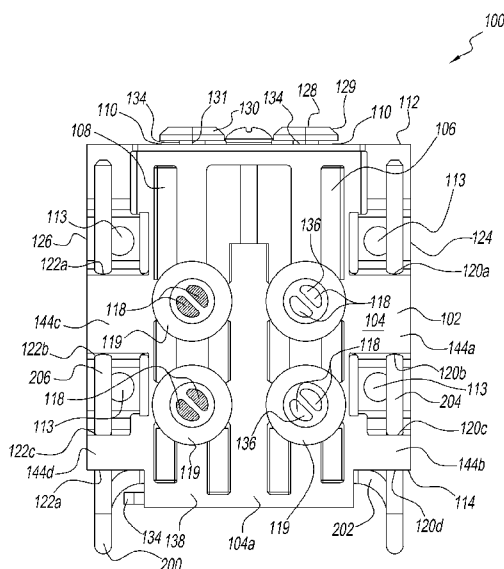


Fig. 3

(57) Abstract: A mounting assembly includes a beverage mounting assembly having a housing. The housing has a housing wall that surrounds a cavity. A valve body is connectable to the beverage mounting assembly. The valve body is connectable to the beverage mounting assembly via a clip. The clip is insertable into both the housing and the valve body to connect the valve body to the beverage mounting assembly. At least one actuator is disposed in the cavity of the housing. The actuator rotates from a closed position to an open position that actuates pressure to the valve body from a liquid source. The actuator is separate from the clip that connects the housing to the valve body.

A BEVERAGE VALVE ASSEMBLY MOUNTING ASSEMBLY

BACKGROUND

1. Field of the Disclosure

[0001] The present disclosure relates to a mounting assembly that connects a source of flavor ingredients and/or water, carbonated or still, to a valve body of a beverage valve assembly to provide greater clearance to a component of the mounting assembly that actuates pressure to the valve body from the source of flavor ingredients and/or water. In addition, the present disclosure relates to a mounting assembly that separates connection of the mounting assembly to a valve body of a beverage valve assembly and actuation of pressure to the valve body from a source of flavor ingredients and/or water, carbonated or still.

2. Description of the Related Art

[0002] Currently restaurants serve a variety of beverages such as carbonated drinks and non-carbonated drinks by use of beverage valve assemblies. The beverage valve assemblies, for example, a plurality of beverage valve assemblies 1100a, 1100b, 1100c and 1100d shown in FIG. 1, mix and dispense carbonated and non-carbonated beverages. Plurality of beverage valve assemblies 1100a, 1100b, 1100c and 1100d are similar to one another, and, accordingly, only one of the plurality of beverage valve assemblies 1100a is described herein. Beverage valve assembly 1100a has a cover 1102 that covers controls (not shown) and valves connected to a valve body (not shown) that control and mix flavor ingredients, for example, cola or lemonade, and carbonated water and/or still water to form a beverage. Cover 1102 protects internal valve assembly components such as solenoids, flow controls, electronics, and the like. Beverage valve assembly 1100a has a nozzle 1104 and lever 1106. A force is applied

to lever 1106 to move lever from front to back to actuate a control to mix flavor ingredients and carbonated water and/or still water to form the beverage and dispenses the beverage through nozzle 1104 into a container such as a cup as is known in the art. Beverage valve assembly 1100a has a beverage valve assembly housing 1108 having a dispenser wall connected to beverage valve assembly 1100a and a surface 1110 adjacent cover 1102 forming an upper space 1112 therebetween. Beverage valve assembly housing 1108 forms a lower space 1113 below nozzle 1104.

[0003] FIG. 2 is another exemplary embodiment of a plurality of beverage valve assemblies 1200a and 1200b. Beverage valve assemblies 1200a and 1200b are similar to beverage valve assembly 1100a, and, thus, similar features include the same reference numerals. Each of beverage valve assemblies 1200a and 1200b has beverage valve assembly housing 1108 having surface 1110 adjacent cover 1102 forming a space 1112a therebetween. Space 1112a has a decreasing size from between surface 1110 and cover 1102 at beverage valve assembly 1200b to between surface 1110 and cover 1102 at beverage valve assembly 1200a.

[0004] Spaces 1112 and 1112a are narrow making it difficult to connect and disconnect beverage valve assemblies 1100a, 1100b, 1100c, 1100d, 1200a and 1200b to carbonated and/or still water sources and flavor ingredient sources. Finger and hand clearance in spaces 1112 and 1112a cause frustration and delay for installers and service technicians because access to the upper-back region of the beverage valve assemblies through spaces 1112 and 1112a is required to install and remove the source of flavor ingredients and/or carbonated or still water for service.

[0005] Accordingly, there is a need for a method and apparatus that connects a valve body of a beverage valve assembly to a water source, carbonated and/or still, and/or flavor ingredient source with a component at a lower portion of the apparatus that actuates pressure to the valve body from the water source and/or flavor ingredient source. There is a further need for a method and apparatus to connect and disconnect a valve body of a beverage valve assembly to a water source, carbonated and/or still,

and/or flavor ingredient source and separately actuate pressure to the valve body from the water source and/or flavor ingredient source.

SUMMARY OF THE DISCLOSURE

[0006] There is provided a mounting assembly that includes a beverage mounting assembly having a housing. The housing has a housing wall that surrounds a cavity. A valve body is connectable to the beverage mounting assembly. The valve body is connectable to the beverage mounting assembly via a clip. The clip is insertable into both the housing and the valve body to connect the valve body to the beverage mounting assembly. At least one actuator is disposed in the cavity of the housing. The actuator rotates from a closed position to an open position that actuates pressure to the valve body from a liquid source. The actuator is separate from the clip that connects the housing to the valve body.

[0007] There is also provided a mounting assembly that includes a housing having a top portion opposite a bottom portion, a front portion opposite a rear portion, and two opposite side portions. The front portion of the housing is connectable to a valve body of a beverage valve assembly. The housing has at least one actuator on the bottom portion that actuates pressure to the valve body from a liquid source.

[0008] There is additionally provided a mounting assembly that includes a housing that is connectable to a valve body. The housing has a housing wall that surrounds a cavity. The housing wall has at least two openings therethrough that are aligned to provide access through the cavity. At least one actuator has an aperture therethrough and rotates in the cavity. The actuator rotates from a closed position covering the two openings to an open position that aligns the two openings with the aperture uncovering the two openings to actuate pressure to the valve body from a liquid source.

[0009] The above-described and other features and advantages of the present disclosure will be appreciated and understood by those skilled in the art from the following detailed description, drawings, and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a front view of an exemplary embodiment of a beverage dispenser of the prior art.

[0011] FIG. 2 is a front view of another exemplary embodiment of a beverage dispenser of the prior art.

[0012] FIG. 3 is a front view of an exemplary embodiment of a mounting assembly of the present disclosure.

[0013] FIG. 4 is front perspective cross-sectional view of the mounting assembly of FIG. 3.

[0014] FIG. 5 is an enlarged partial rear side perspective view of the mounting assembly of FIG. 3.

[0015] FIG. 6 is an enlarged partial side view of the mounting assembly of FIG. 3.

[0016] FIG. 7 is a front side perspective view of the mounting assembly of FIG. 3 connected to a valve body of the present disclosure.

[0017] FIG. 8 is an enlarged partial bottom side perspective view of the mounting assembly of FIG. 3 connected to the valve body FIG. 7.

[0018] FIG. 9 is an enlarged partial top side perspective view of the mounting assembly of FIG. 3 and the valve body of FIG. 7.

[0019] FIG. 10 is a top view of the mounting assembly of FIG. 3 that is connected to the beverage dispenser and the valve body of FIG. 7.

[0020] FIG. 11 is exploded front side perspective view of the mounting assembly of FIG. 3, valve body of FIG. 7 and a portion of a beverage dispenser.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0021] FIG. 3 shows an exemplary embodiment of a mounting assembly 100 according to the present disclosure. Mounting assembly 100 has a housing 102. Housing 102 has housing wall 104. Housing wall 104 has a plurality of wall openings 113 adjacent a perimeter of mounting assembly 100. Wall openings 113 are sized so that fasteners, for example, screws, can pass through each of wall openings 113 to connect mounting assembly 100 to the beverage dispenser.

[0022] Housing wall 104 forms conduits 106 and 108. Conduits 106 and 108 each have an opening 110 at a top portion 112 of housing 102 and, as shown in FIG. 4, an opening 116 at a bottom portion 114 of housing 102. As shown in FIG. 4, a cavity 117 extends from opening 110 to opening 116.

[0023] As shown in FIG. 3, each of conduits 106 and 108 has a plurality of holes 118. Each of plurality of holes 118 may be a single hole or more than one hole. Plurality of holes 118 are each show as two holes in FIG. 3 separated by a partition that is positioned on a 45 degree angle or diagonally between the two holes. Plurality of holes 118 are through a front portion 104a of housing wall 104 and, as shown in FIG. 5, through a rear portion 104b of housing wall 104 so that the plurality of holes are aligned to form openings through conduits 106 and 108. As shown in FIG. 3, each of said plurality of holes 118 is surrounded by a sleeve 119 that protrudes away from each of the pair of holes 118. Sleeve 119 is a cylindrical tubular shape.

[0024] Housing wall 104 forms a first loop 144a and a second loop 144b on side 124 and a third loop 144c and a fourth loop 144d on side 126 of housing 102. Loops 144a, 144b, 144c, 144d are tubular in shape. First loop 144a has openings 120a, 120b, second loop 144b has openings 120c, 120d, third loop 144c has openings 122a, 122b, and fourth loop 144d has openings 122c, 122d through housing wall 104.

[0025] Mounting assembly 100 has spindles 128 and 130. Spindle 128 has a spindle body 129 and spindle 130 has a spindle body 131. Spindle body 129 is removably connectable to housing 102 in conduit 106 and the spindle body 131 is removably connectable to housing 102 in conduit 108. As shown in FIG. 4, each of spindle bodies 129 and 130 have a plurality of apertures 136 therethrough so that spindles 128 and 130 are rotatable in conduits 106 and 108 from a closed position covering plurality of openings 118 to an open position that aligns apertures 136 and pair of holes 118 uncovering the pair of holes 118. As shown in FIG. 3, spindle 128 is shown in the open position and spindle 130 is shown in the closed position.

[0026] A clip 200 is removably connectable to housing 102 to removably connect a valve body 400 to mounting assembly 100. Clip 200 has a middle portion 202, a first side portion 204 and a second side portion 206. In a connected position, first side portion 204 is threaded through openings 120a, 120b of first loop 144a and openings 120c, 120d of second loop 144b. Second side portion 206 is threaded through openings 122a, 122b of third loop 144c and openings 122c, 122d of fourth loop 144d.

[0027] Referring to FIG. 4, spindles 128 and 130 are cylindrical shaped. Spindles 128 and 130 may each have ribs 140. Ribs 140 are bearing surfaces of spindles 128 and 130 that contact housing wall 104 surrounding cavities 117 of conduits 106 and 108. Ribs 140 facilitate smooth rotation. Spindles 128 and 130 are connected to a sealing material 142 that surrounds apertures 136. Sealing material 142 is flexible so that sealing material 142 is compressed within conduits 106 and 108 and abuts housing wall 104 surrounding cavities of conduits 106 and 108 providing a seal therebetween. Sealing material 142 covers holes 118 in the closed position sealing conduits 106 and

108. Plurality of holes 118 having two holes separated by the partition that is positioned on a 45 degree angle or diagonally between the two holes facilitates insertion of spindle 128 into conduit 106 and insertion of spindle 130 into conduit 108 without damaging sealing material 142.

[0028] Spindle bodies 129 and 130 each have a protrusion 132 and a slot 134. Protrusions 132 extend substantially perpendicular to the spindle bodies 129 and 130. Each of slots 134 is a depression in one of spindle bodies 129 and 130. Protrusion 132 and slots 134 are outside of conduits 106 and 108 when spindle bodies 129 and 130 are in conduits 106 and 108, respectively. Spindles 128 and 130 are in the closed position in FIG. 4.

[0029] Housing 102 is connected to a plate 300. Plate 300 is connected to housing 102, for example, by bolts 302. Plate 300 has holes 304. Spindles 128 and 130 pass through holes 304 so that plate 300 fits in slots 134.

[0030] Referring to FIG. 5, housing wall 104 has a wall 138 that extends adjacent to protrusions 132 of each of spindles 128 and 130 when spindle 128 is within conduit 106 and spindle 130 is within conduit 108. Protrusion 132 of spindle 128 is positioned adjacent side 124 in the closed position and protrusion 132 of spindle 130 is positioned adjacent side 126 in the closed position. Protrusion 132 of spindle 128 is rotated about 90 degrees away from wall 138 from the closed position to the open position and protrusion 132 of spindle 130 is rotated about 90 degrees away from wall 138 from the closed position to the open position.

[0031] Each of the pair of plurality of holes 118 that are aligned to form an opening through one of conduits 106 and 108 connects to tubing that connects to a source of liquid. The liquid, for example, is carbonated water, still water, or flavor ingredients. Each of the pair of plurality of holes 118 are surrounded by a connector wall 121 on rear portion 104b of housing 102. Connector wall 121 connects to the tubing that connects to a source of liquid.

[0032] Referring to FIG. 6, wall 138 is sized to extend beyond and cover protrusions 132.

[0033] Referring to FIGS. 7-9, valve body 400 is connectable to mounting assembly 100. Valve body 400 has a connecting portion 408. Connecting portion 408 has a first connecting protrusion 410a and a second connecting protrusion 410b on a first side and a third connecting protrusion 410c and a forth connecting protrusion 410d on a second side that is opposite to the first side. First loop 144a has a complimentary shape to first connecting protrusion 410a and second connecting protrusion 410b to fit therebetween so that openings 120a, 120b align with both an opening 412a through first connecting protrusion 410a and an opening (not shown) through second connecting protrusion 410b. Second connecting protrusion 410b has a complimentary shape to fit between first loop 144a and second loop 144b so that openings 120c, 120d align with the opening through second connecting protrusion 410b. Third loop 144c has a complimentary shape to third connecting protrusion 410c and forth connecting protrusion 410d to fit therebetween so that openings 122a, 122b align with both an opening 412c through third connecting protrusion 410c and an opening (not shown) through forth connecting protrusion 410d. Forth connecting protrusion 410d has a complimentary shape to fit between third loop 144c and fourth loop 144d so that openings 122c, 122d align with the opening through forth connecting protrusion 410d.

[0034] Valve body 400 is connected to mounting assembly 100 in a connected position. Clip 200 and plate 300 connect valve body 400 to mounting assembly 100. Plate 300 abuts valve body 400 in the connected position. First side portion 204 of clip 200 passes through openings 120c, 120d of second loop 144b, the opening through second connecting protrusion 410b, openings 120a, 120b of first loop 144a, and opening 412a of first connecting protrusion 410a in the connected position. Second side portion 206 of clip 200 passes through openings 122c, 122d of fourth loop 144d, the opening through forth connecting protrusion 410d, openings 122a, 122b of third loop 144c, and opening 412c through third connecting protrusion 410c in the connected position.

[0035] Referring to FIG. 7, middle portion 202 of clip 200 is adjacent bottom portion 114 of housing 102 in the connected position. When spindles 128, 130 are in the open position, protrusions 132 are positioned over middle portion 202 of clip 200 so that middle portion 202 is between housing 102 and protrusions 132 to maintain clip 200 in the connected position. Middle portion 202 connects to each of first side portion 204 and second side portion 206 by a curved portion 208 that extends below middle portion 202 in the connected position. Curved portions 208 allow grasping by a hand of a user. Alternatively, as shown in FIG. 8, middle portion 202 of clip 200 is adjacent valve body 400 in the connected position so that curved portions 208 and middle portion 202 of clip allow grasping by a hand of a user.

[0036] Referring to FIG. 10, mounting assembly 100 is connectable to dispenser wall 1117. Dispenser wall 1117 may have openings (not shown) that align with wall openings 113. Mounting assembly 100 is connectable to dispenser wall 1117, for example, by screws 1400 that pass through wall openings 113 and openings of dispenser wall 1117 and mate with nuts to secure mounting assembly 100 to dispenser wall 1117. Valve body 400 connects to a bottom plate 1114 that connects to nozzle 1104 and lever 1106.

[0037] Referring to FIGS. 7, 9 and 10, valve body 400 has a plurality of conduits 402. Each of conduits 402 is connected to one of plurality of holes 118 of mounting assembly 100 on a first end. Conduits 402 funnel liquid into a diffuser 1120 and/or nozzle 1104 prior to the exit of liquid out of nozzle 1104. Valve body 400 has four conduits 402. Each of four conduits 402 has one of flow control assemblies 404 and one of solenoids 406 for controlling flow of liquid therethrough. Each of flow control assemblies 404 is a metering device which, through a user set spring compression, allows fluid to flow at a given flow rate based on viscosity, pressure and spring setting. Solenoids 406 are electrically actuated members that drive a normally closed plunger/seal assembly to an open position allowing fluid to progress through its respective conduit. When current flows to the coil on each of solenoids 406, the

current creates a magnetic field which acts to pull the plunger assembly up off of its seat.

[0038] Referring to FIG. 11, beverage valve assembly 1100a has an electronic module 1116 and a keypad 1118. Electronic module 1116 controls flow control assemblies 404 and solenoids 406 to dispense a beverage as is known in the art. Electronic module 1116 controls dispense of the beverage based on user input through keypad 1118 and actuation via lever 1106. Nozzle 1104 may have a diffuser 1120 to control flow of liquid therethrough. Electronic module 1116, keypad 1118, lever 1106 and nozzle 1104 all connect to bottom plate 1114 that connects to valve body 400. Valve body 400 connects to mounting assembly 100, flow control assemblies 404 and solenoids 406 and is covered by cover 1102 that connects to bottom plate 1114.

[0039] Mounting assembly 100 may be made of material, for example, metal and/or plastic.

[0040] In use, as shown in FIGS. 7 and 10, housing 102 of mounting assembly 100 is connected to a beverage valve assembly, for example, by screws that pass through wall openings 113 and the openings of dispenser wall 1117 and mate with nuts to secure mounting assembly 100 to dispenser wall 1117.

[0041] Spindle 128 is inserted into conduit 106 and spindle 130 inserted into conduit 108 by accessing openings 116 at bottom portion 114 of housing 102 from lower space 1113. Spindle 128 is inserted into conduit 106 and spindle 130 inserted into conduit 108 so that protrusions 132 and slots 134 extend outside of conduits 106 and 108, and plate 300 fits in slots 134. Protrusion 132 of spindle 128 is positioned adjacent side 124 and protrusion 132 of spindle 130 is positioned adjacent side 126 so that spindles 128 and 130 are in the closed position covering plurality of openings 118.

[0042] Each of the pair of plurality of holes 118 that are aligned to form an opening through one of conduits 106 and 108, as shown in FIG. 3, is connected to tubing that connects to a source of liquid. The source of liquid, for example, is carbonated water,

still water, or flavor ingredients that is pressurized. The tubing connects to connector wall 121 surrounding plurality of holes 118 through housing 102.

[0043] Valve body 400 is connected housing 102 that is connected to dispenser wall 1117. Valve body 400 is positioned adjacent housing 102 so first loop 144a is between first connecting protrusion 410a and second connecting protrusion 410b so that openings 120a, 120b align with both opening 412a through first connecting protrusion 410a and the opening through second connecting protrusion 410b. Second connecting protrusion 410b is positioned between first loop 144a and second loop 144b so that openings 120c, 120d align with the opening through second connecting protrusion 410b. Third loop 144c is positioned between third connecting protrusion 410c and forth connecting protrusion 410d so that openings 122a, 122b align with both opening 412c through third connecting protrusion 410c and the opening through forth connecting protrusion 410d. Forth connecting protrusion 410d is positioned to fit between third loop 144c and fourth loop 144d so that openings 122c, 122d align with the opening through forth connecting protrusion 410d. First side portion 204 of clip 200 passes through openings 120c, 120d of second loop 144b, the opening through second connecting protrusion 410b, openings 120a, 120b of first loop 144a, and opening 412a of first connecting protrusion 410a. Second side portion 206 of clip 200 passes through openings 122c, 122d of fourth loop 144d, the opening through forth connecting protrusion 410d, openings 122a, 122b of third loop 144c, and opening 412c through third connecting protrusion 410c. Valve body 400 also connects to a bottom plate 1114 that connects to nozzle 1104 and lever 1106.

[0044] Once valve body 400 is connected to mounting assembly 100, protrusion 132 of spindle 128 is rotated about 90 degrees from the closed position to the open position and protrusion 132 of spindle 130 is rotated about 90 degrees from the closed position to the open position to actuate pressure to valve body 400 and beverage valve assembly 1100a from the source of liquid. Protrusions 132 in the open position are below middle portion 202 of clip 200 locking clip 200 in place. The remaining

components of the beverage valve assembly are assembled, and the beverage valve assembly is ready for operation.

[0045] To service the valve body 400 or mounting assembly 100 of the beverage valve assembly, protrusion 132 of spindle 128 is rotated about 90 degrees from the open position to the closed position and protrusion 132 of spindle 130 is rotated about 90 degrees from the open position to the closed position blocking the passage of the liquid to valve body 400 to depressurize valve body 400 and beverage valve assembly 1100a closing communication between valve body 400 and the source of liquid. In the closed position, clip 200 may be removed from housing 102 and valve body 400 so that valve body 400 may be removed from housing 102 to be removed for service. In addition, the screws may be removed from housing 102 and dispenser wall 1117 so that mounting assembly may be removed for service.

[0046] Mounting assembly 100 connects housing 102 to valve body 400 by clip 200, and separately actuates pressure to valve body 400 by rotating spindles 128 and 132. Thus, mounting assembly 100 allows connection of valve body 400 to mounting assembly 100, and then actuating the pressure from the liquid source to valve body 400 by mounting assembly 100 for ease of installation.

[0047] Access by a user to actuate pressure to the valve body 400 and beverage valve assembly 1100a is located at bottom portion 114 of housing 102 by rotating spindles 128 and 132. Therefore, it is not necessary for users to access mounting assembly 100 through upper space 1112 for installation and service of valve body 400 and mounting assembly 100. Rather, mounting assembly 100 can be accessed through lower space 1113 that is greater in size than upper space 1112 for installation and service of valve body 400 and mounting assembly 100. Protrusions 132 are sized so that minimal clearance is needed in rear space 1115 for rotating protrusions 132 from the closed position to the open position.

[0048] Wall 138 protruding downward covers spindles and a majority of clip 200. Wall 138 and positioning protrusions 132 of spindles 128, 130 over middle portion 202 of clip minimizes vandalism and clip 200 removal by unauthorized users.

[0049] It should also be recognized that the terms “first”, “second”, “third”, “upper”, “lower”, and the like may be used herein to modify various elements. These modifiers do not imply a spatial, sequential, or hierarchical order to the modified elements unless specifically stated.

[0050] While the present disclosure has been described with reference to one or more exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the present disclosure. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the scope thereof. Therefore, it is intended that the present disclosure not be limited to the particular embodiment(s) disclosed as the best mode contemplated, but that the disclosure will include all embodiments falling within the scope of the appended claims.

WHAT IS CLAIMED IS:

1. A mounting assembly, comprising:
a beverage mounting assembly having a housing, said housing having a housing wall that surrounds a cavity;
a valve body being connectable to said beverage mounting assembly, said valve body being connectable to said beverage mounting assembly via a clip, said clip being insertable into both said housing and said valve body to connect said valve body to said beverage mounting assembly;
at least one actuator being disposed in said cavity of said housing, said actuator rotating from a closed position to an open position that actuates pressure to said valve body from a liquid source, said actuator being separate from said clip that connects said housing to said valve body.
2. The mounting assembly of claim 1, wherein said clip is between said housing and said actuator in said open position maintaining said clip in said housing and said valve body.
3. The mounting assembly of claim 1, wherein said clip has a middle portion, a first side portion and a second side portion.
4. The mounting assembly of claim 3, wherein said housing has a first loop with a first opening and a second loop with a second opening on a first side, and wherein said housing has a third loop with a third opening and a fourth loop with a fourth opening on a second side.
5. The mounting assembly of claim 4, wherein, in a connected position, said first side portion of said clip is threaded said first opening of said first loop and said second opening of said second loop, and wherein said second side portion of said clip is

threaded through said third opening of said third loop and said fourth opening of said fourth loop.

6. The mounting assembly of claim 4, wherein said valve body has a connecting portion with a first connecting protrusion and a second connecting protrusion on a first side and a third connecting protrusion and a fourth connecting protrusion on a second side that is opposite to the first side, wherein said first loop has a complimentary shape to said first connecting protrusion and said second connecting protrusion to fit therebetween so that said first opening aligns with both an opening through said first connecting protrusion and an opening through said second connecting protrusion and said second connecting protrusion has a complimentary shape to fit between said first loop and said second loop of said housing so that said second opening of said second loop aligns with said opening through said second connecting protrusion, and wherein said third loop has a complimentary shape to said third connecting protrusion and said fourth connecting protrusion to fit therebetween so that said third opening aligns with both an opening through said third connecting protrusion and an opening through said fourth connecting protrusion and said fourth connecting protrusion has a complimentary shape to fit between said third loop and said fourth loop so that said fourth opening of said fourth loop aligns with said opening through said fourth connecting protrusion.

7. The mounting assembly of claim 6, wherein said first side portion of said clip passes through said second openings of said second loop, said second opening through second connecting protrusion, said first opening of said first loop, and said opening of first connecting protrusion in the connected position in the connected position, and wherein said second side portion of said clip passes through said fourth opening of said fourth loop, said opening through said fourth connecting protrusion, said third opening of said third loop, and said third opening through said third connecting protrusion in the connected position.

8. The mounting assembly of claim 3, wherein said middle portion of said clip is adjacent a bottom portion of said housing in the connected position.
9. The mounting assembly of claim 3, wherein said middle portion of said clip connects to each of said first side portion and second side portion of said clip by a curved portion that extends below said middle portion in said connected position.
10. The mounting assembly of claim 1, wherein once said valve body is connected to said housing, said actuator is moved from a closed position to an open position to actuate pressure to said valve body.
11. The mounting assembly of claim 1, wherein said actuator is moved from an open position to a closed position to block a passage of said liquid to said valve body to depressurize said valve body closing communication between said valve body and said liquid source, and wherein, in said closed position, said clip is removed from said housing and said valve body so that said valve body is removed from said housing.
12. A mounting assembly, comprising:
a housing having a top portion opposite a bottom portion, a front portion opposite a rear portion, and two opposite side portions, said front portion of said housing being connectable to a valve body of a beverage valve assembly, said housing having at least one actuator on said bottom portion that actuates pressure to said valve body from a liquid source.
13. The mounting assembly of claim 12, wherein said at least one actuator is accessed through a lower space below a nozzle of said beverage valve assembly.
14. A mounting assembly, comprising:

a housing that is connectable to a valve body, said housing having a housing wall that surrounds a cavity, said housing wall having at least two openings therethrough that are aligned to provide access through said cavity;

at least one actuator having an aperture therethrough and rotates in said cavity, said actuator rotating from a closed position covering said two openings to an open position that aligns said two openings with said aperture uncovering said two openings to actuate pressure to said valve body from a liquid source.

15. The mounting assembly of claim 14, wherein said actuator is a spindle having a spindle body that is removably connectable to said housing in said cavity.

16. The mounting assembly of claim 14, wherein said actuator is a spindle having a spindle body having a protrusion that is outside of said cavity when said spindle body is in said housing.

17. The mounting assembly of claim 16, wherein said housing has a wall that extends beyond and covers said protrusion of said spindle body when said spindle is in said cavity.

18. The mounting assembly of claim 14, wherein said actuator is a spindle that is inserted into said cavity by accessing an opening at a bottom portion of said housing.

19. The mounting assembly of claim 16, wherein said protrusion of said spindle is rotated from said open position to said closed position to block a passage of said liquid to said valve body to depressurize said valve body.

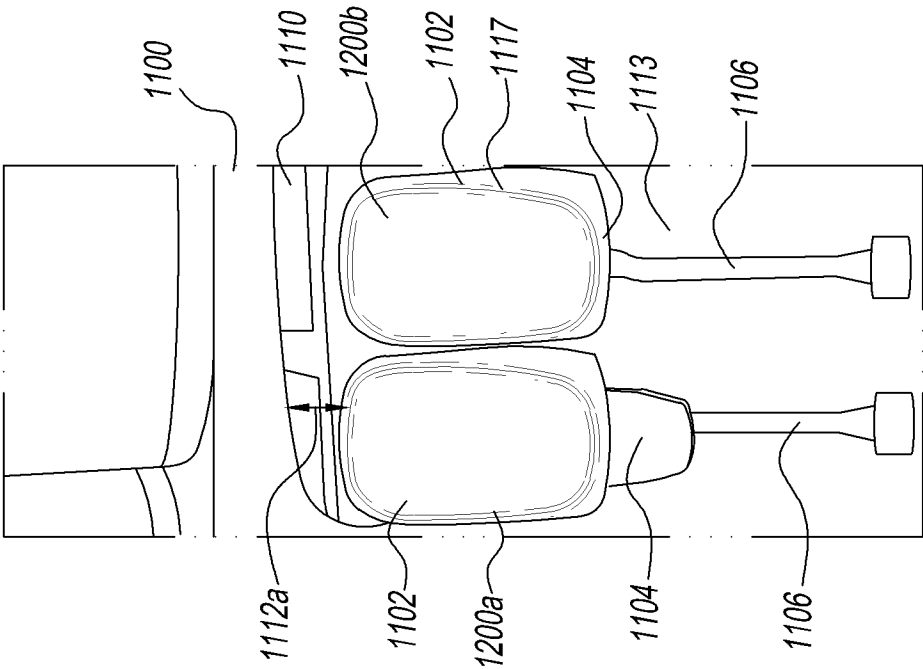


Fig. 2
(Prior Art)

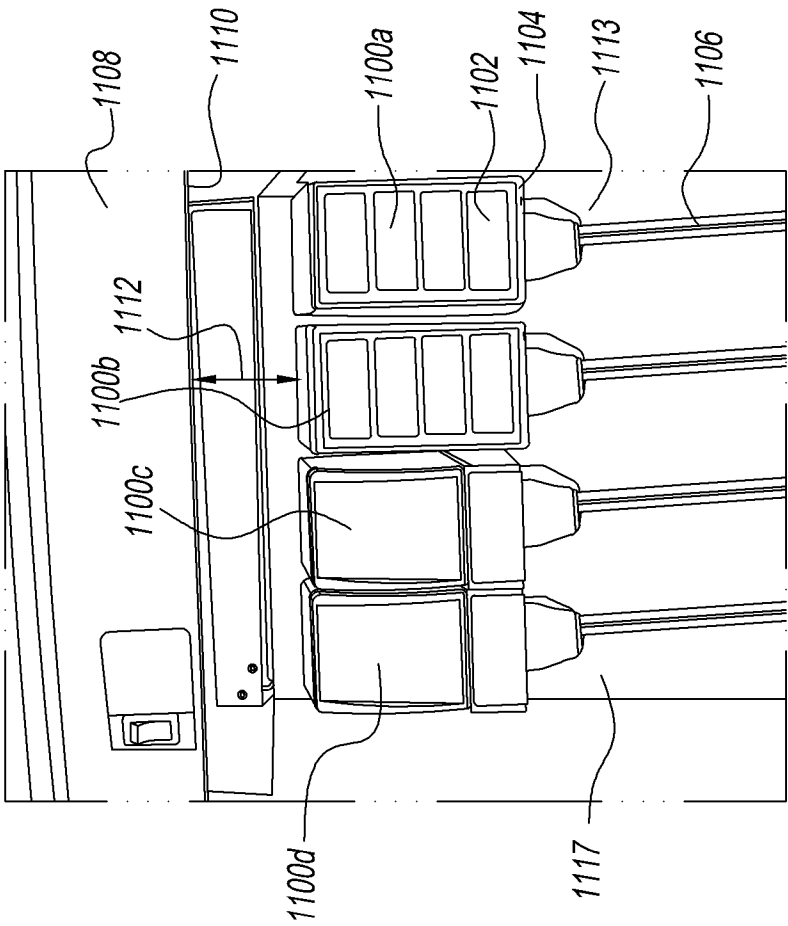


Fig. 1
(Prior Art)

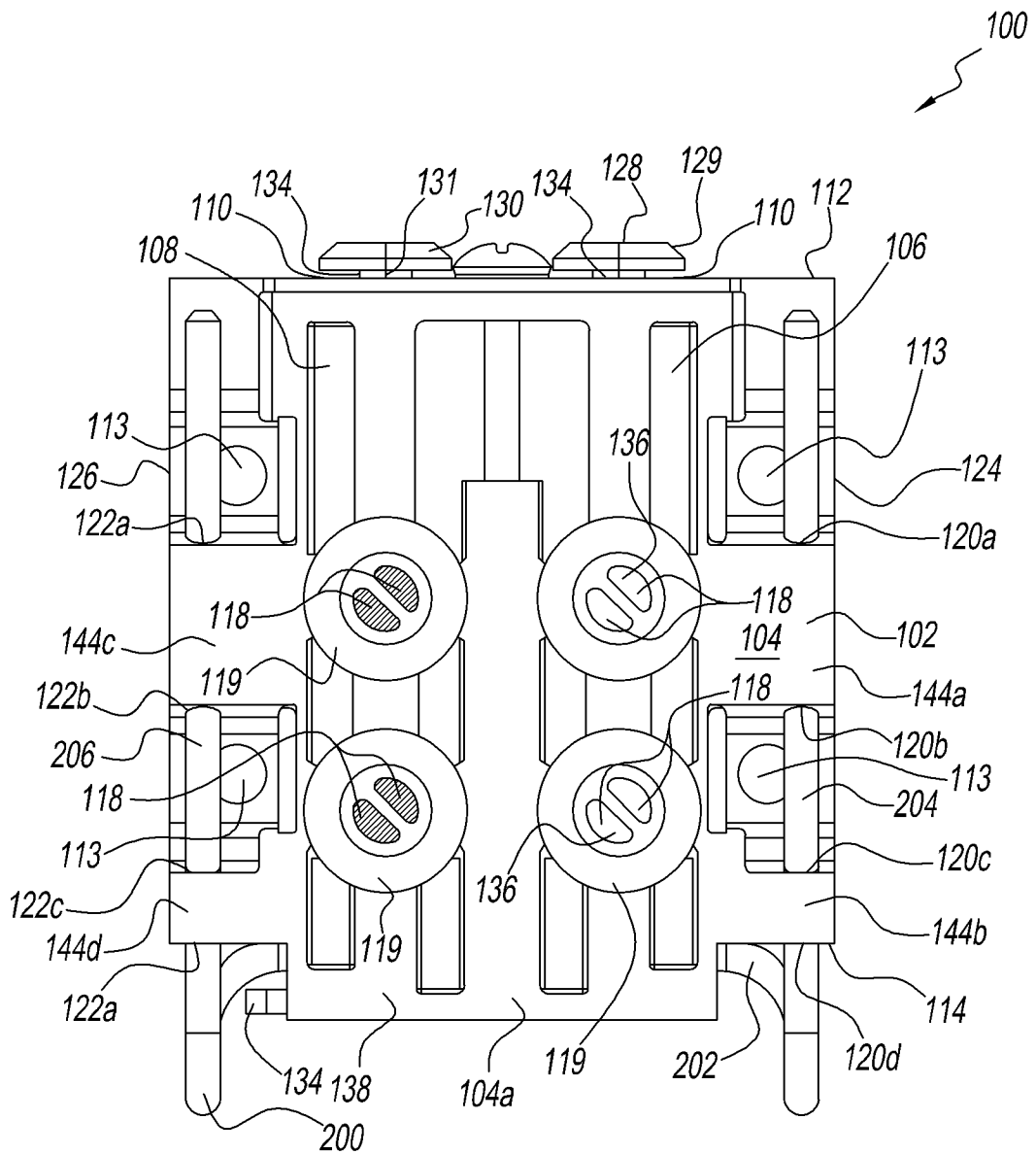


Fig. 3

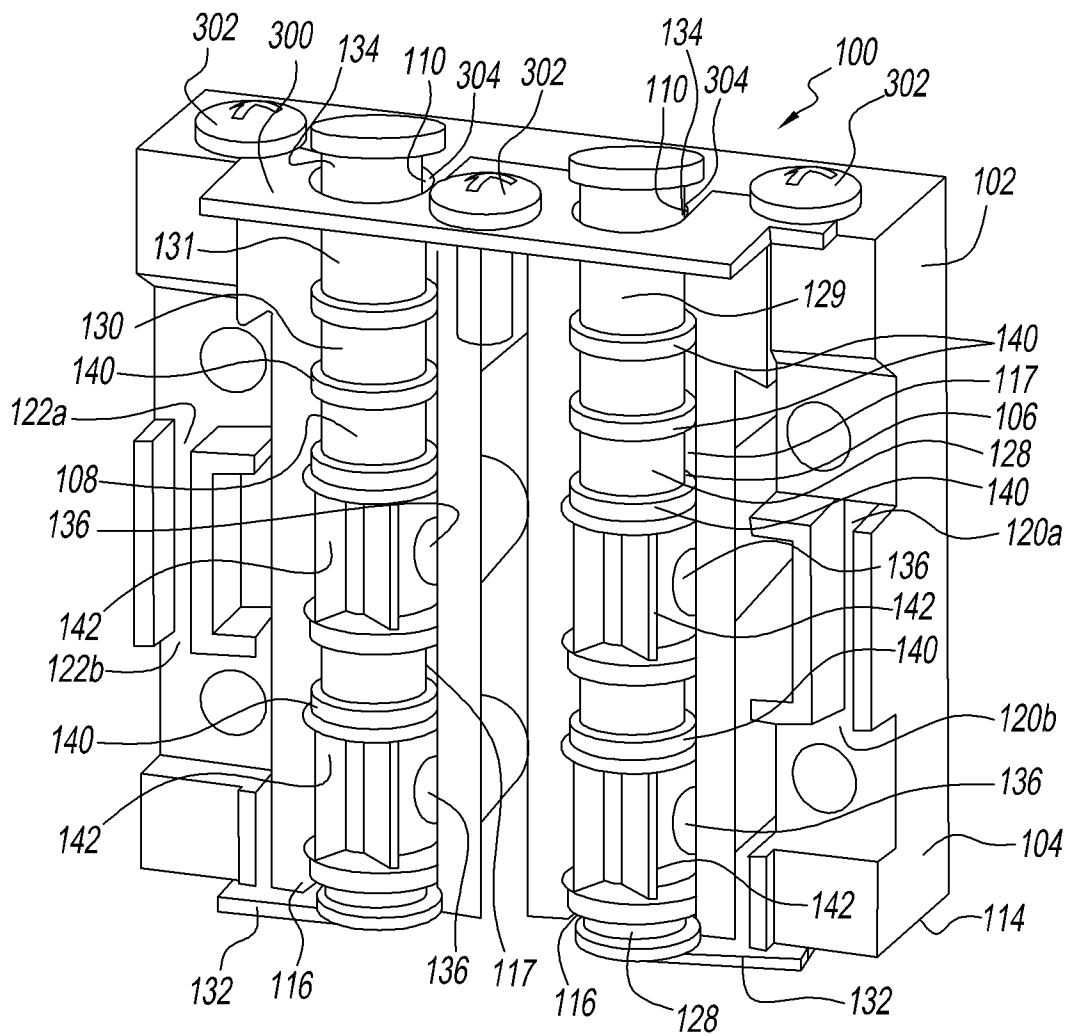


Fig. 4

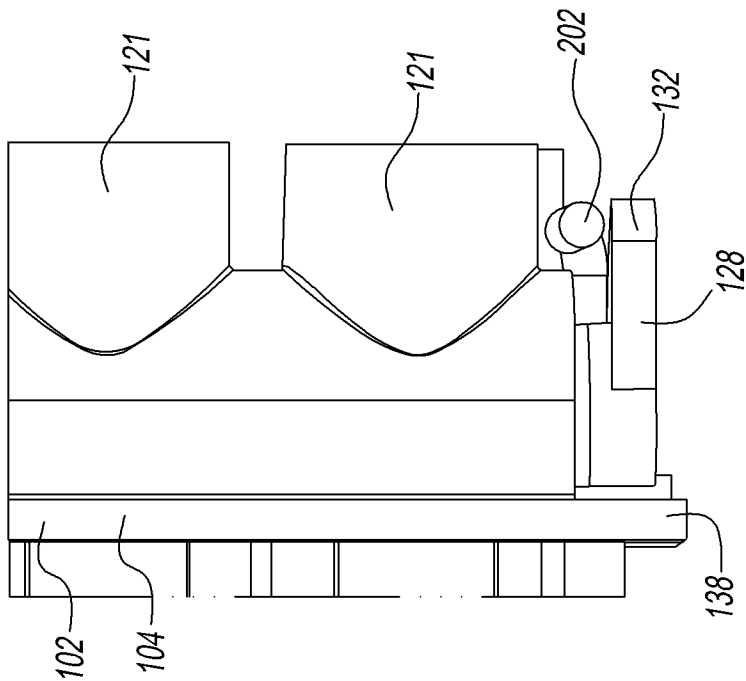


Fig. 6

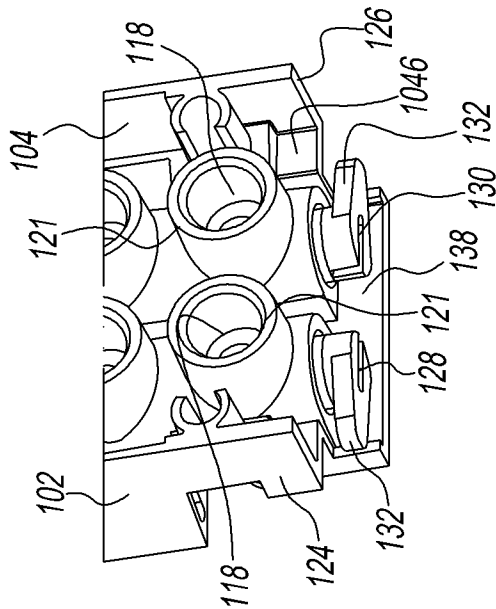


Fig. 5

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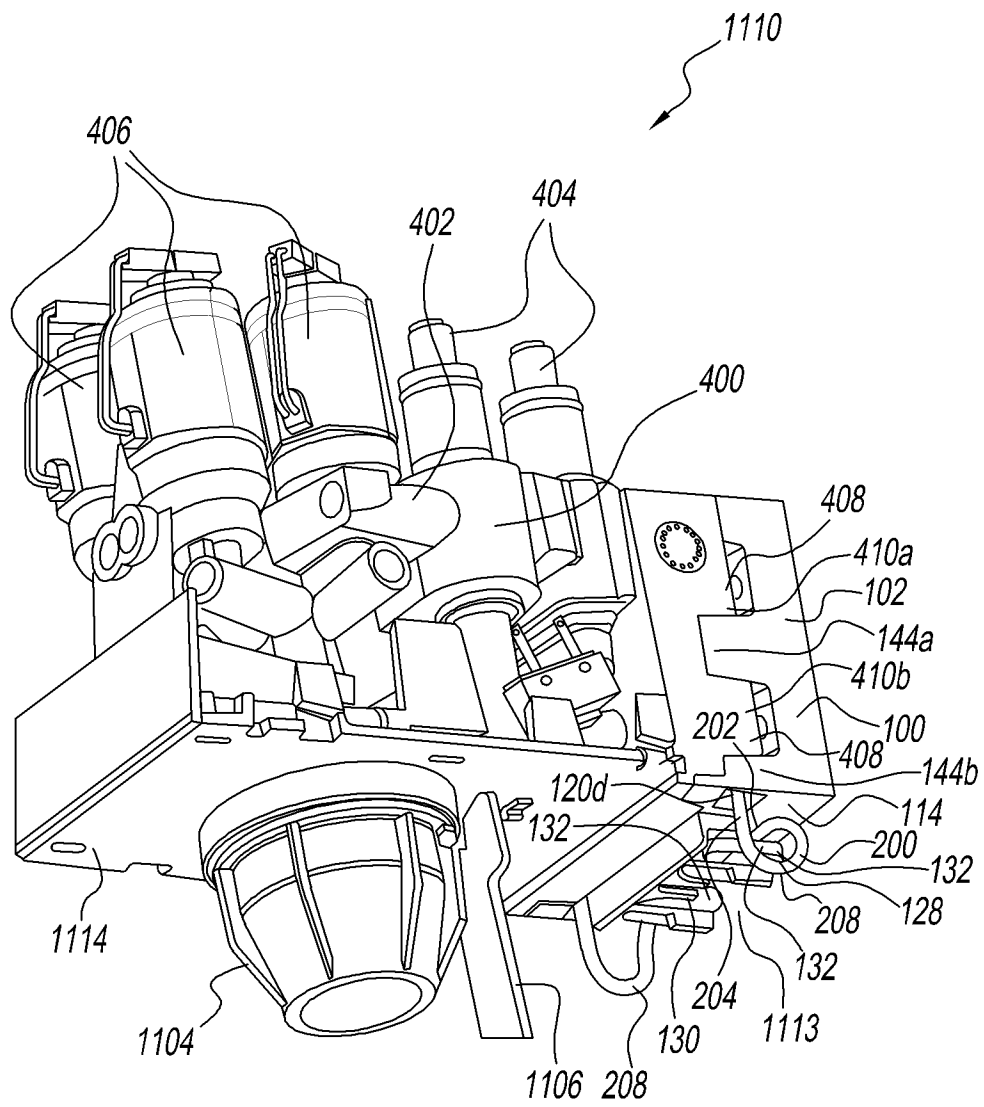


Fig. 7

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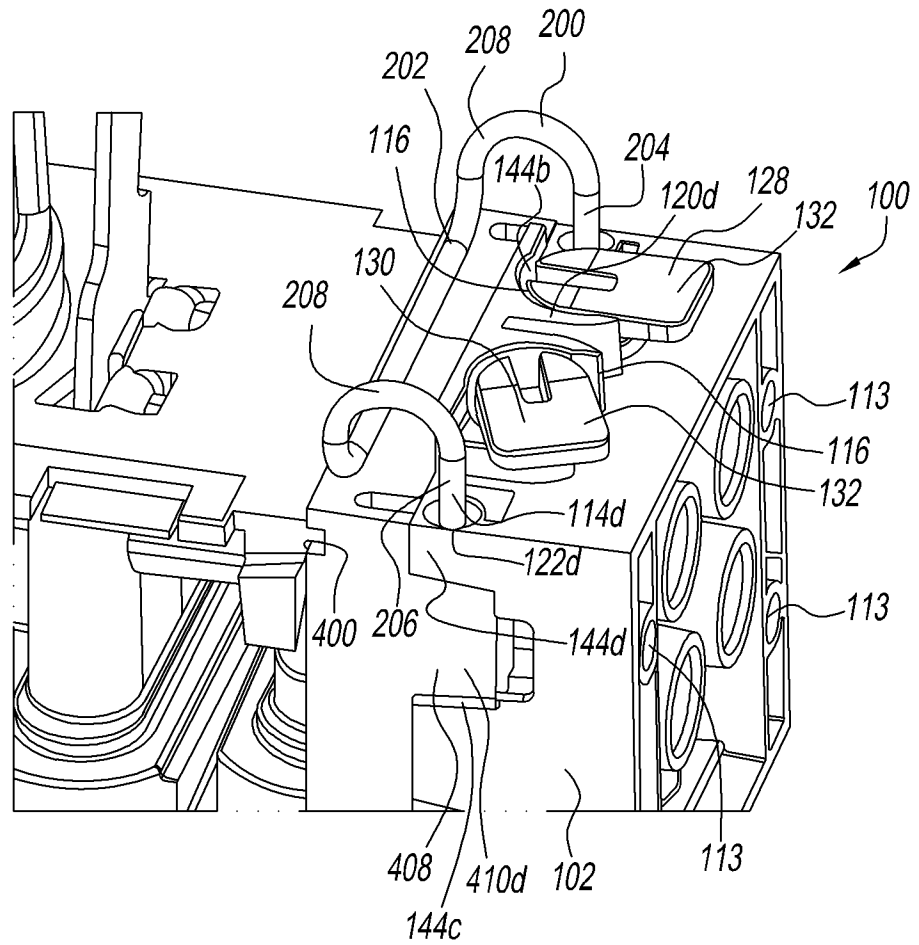


Fig. 8

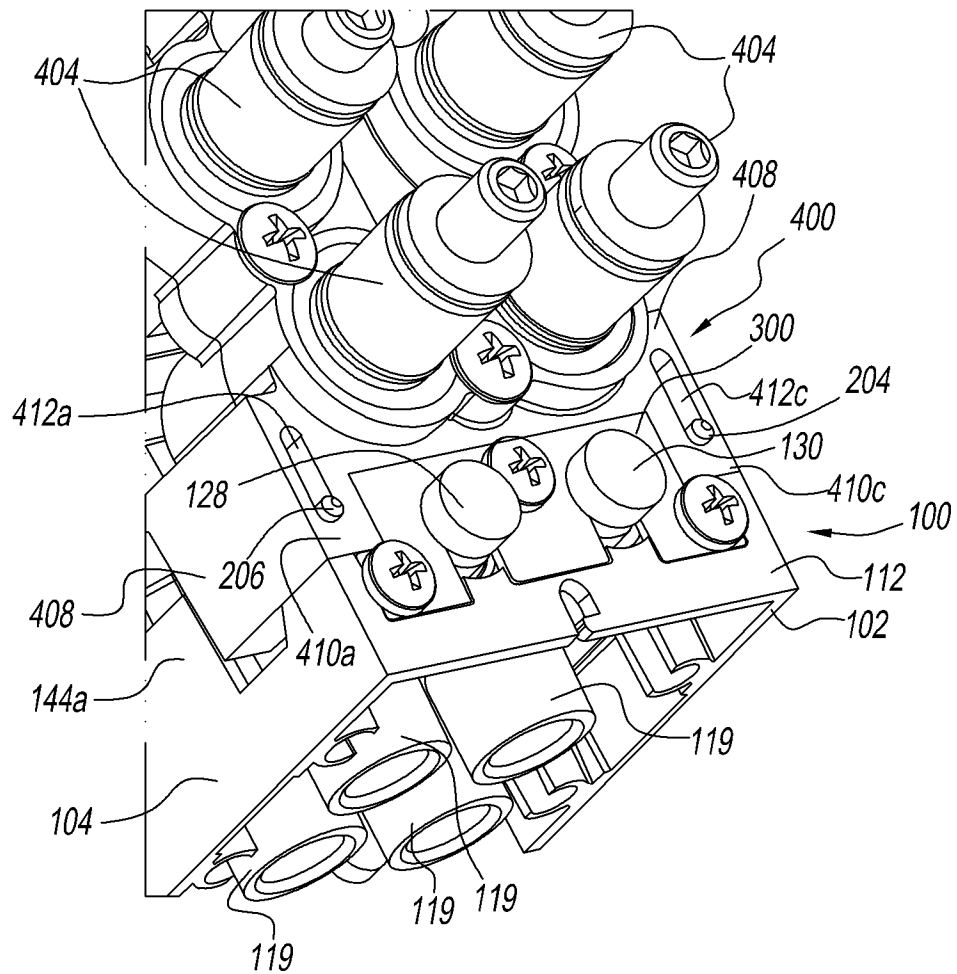
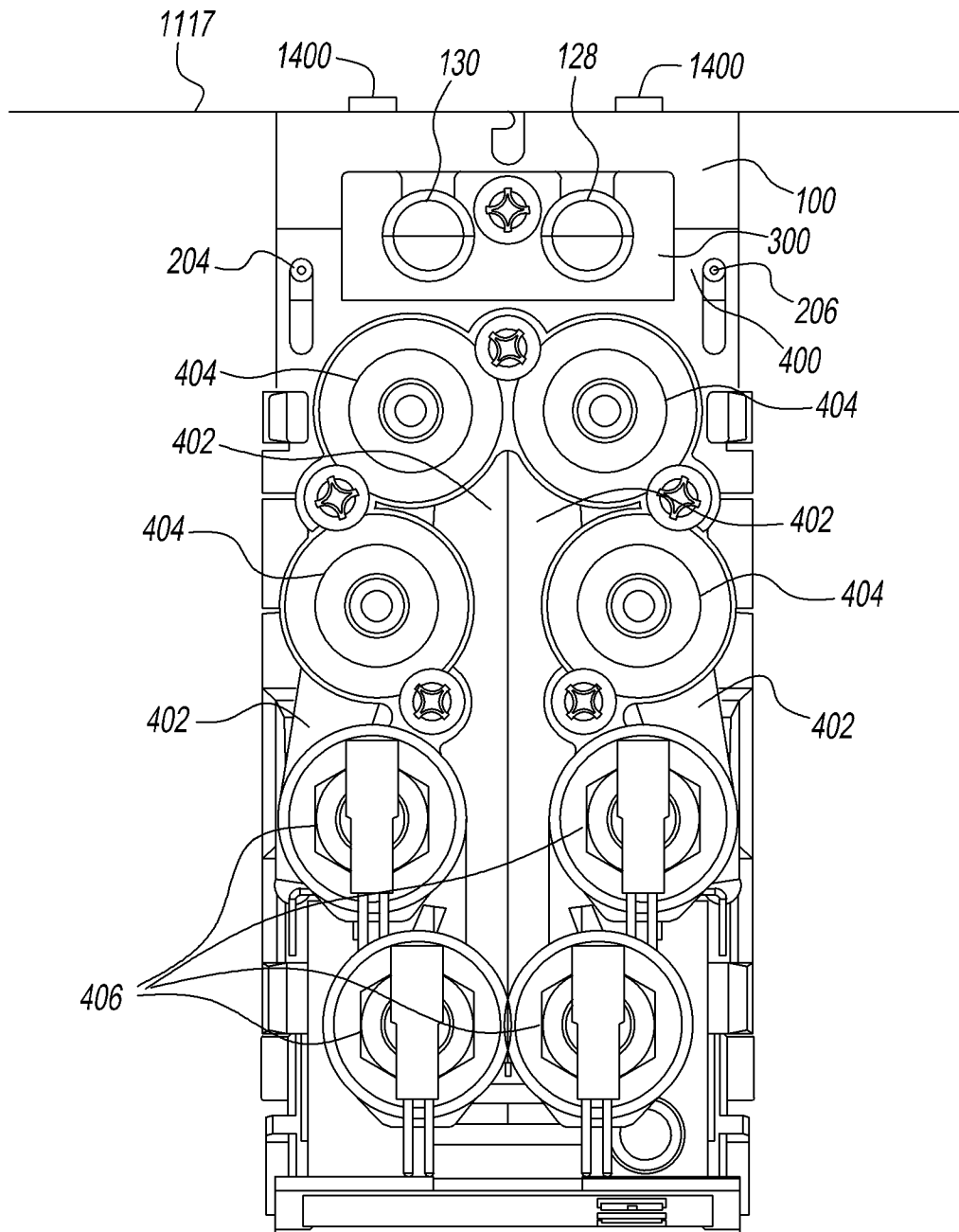


Fig. 9

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*Fig. 10*

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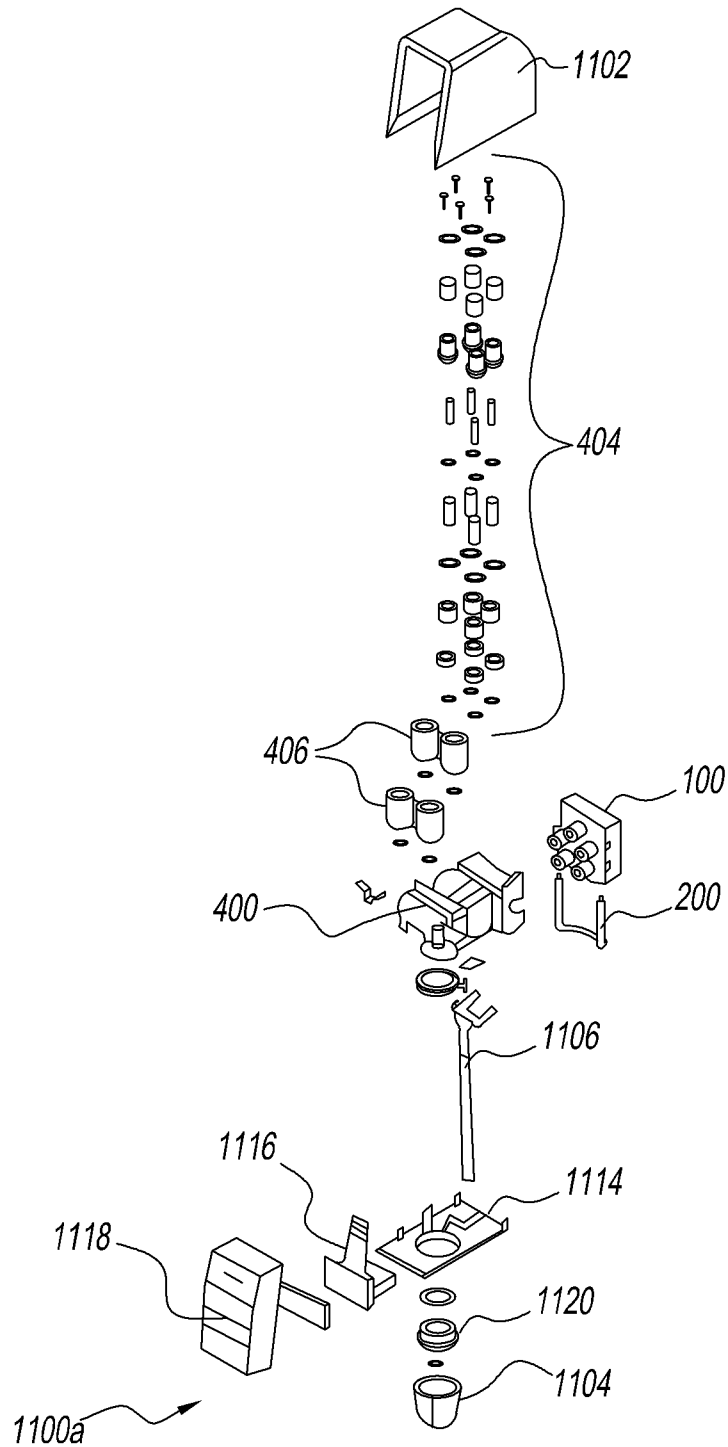


Fig. 11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 12/63285

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B67D 7/74 (2013.01)

USPC - 222/129

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8): B67D 7/74 (2013.01)

USPC: 222/129

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
222/132, 135, 160; 220/324; 24/455; IPC(8): B67D 7/74 (2013.01) (keyword limited; terms below)Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Patbase, Google Patents, Google Scholar, Google, PubWEST (PGPB,USPT,USOC,EPAB,JPAB) Search terms used: spindle, clip, catch, latch, pawl, bail, pin, clasp, valve, open, detach, attach, removable, join, secure, curve, loop, contour, bend, bent, arc, arch, wire, housing, body, section, beverage, liquid, fluid, dispense, rotate, spin, actuator, etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0269360 A1 (Piatnik et al.) 08 December 2005 (08.12.2005), entire document, especially Fig 1-4, 13A, 11G, 11K, 16C, 17; para [0048], [0051], [0052], [0054]-[0056], [0058], [0061], [0063]-[0067], [0070]	12, 13
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Y		1-11, 14-19
Y	US 6,588,725 B1 (Wisniewski et al.) 08 July 2003 (08.07.2003), Fig 2; col 1, ln 3-19; col 4, ln 6-25	1-11, 14-19
Y	US 3,602,253 A (Bahout et al.) 31 August 1971 (31.08.1971), Fig 1-3; col 2, ln 14-51	1-11
A	US 6,866,826 B2 (Moore et al.) 15 March 2005 (15.03.2005), Fig 3-4	1-11

☐ Further documents are listed in the continuation of Box C.


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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

15 January 2013 (15.01.2013)

Date of mailing of the international search report

31 JAN 2013

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
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