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(54) **LIQUID DISPENSER WITH STORAGE TANKS**

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206/431; 220/23.2–23.8, 4.21, 4.26
See application file for complete search history.

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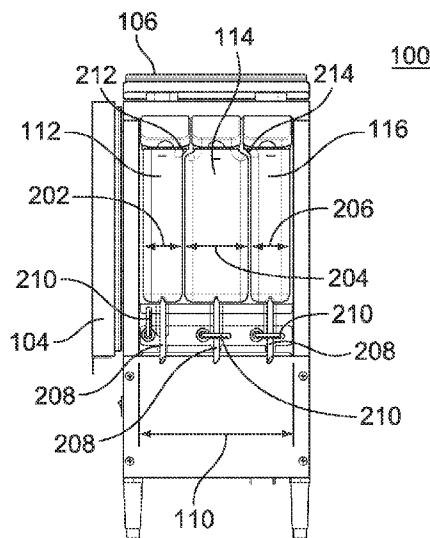
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(57) **ABSTRACT**

A liquid dispenser has containers, sized, shaped and arranged
to enclose different volumes but each of the containers has a
top with a refill opening that is substantially the same as the
top and openings of the other containers. The containers are
provided with curving transition sections that taper the sides
of the container to increase or decrease the width of the
container to provide a smaller or large top sizes as needed.

22 Claims, 6 Drawing Sheets



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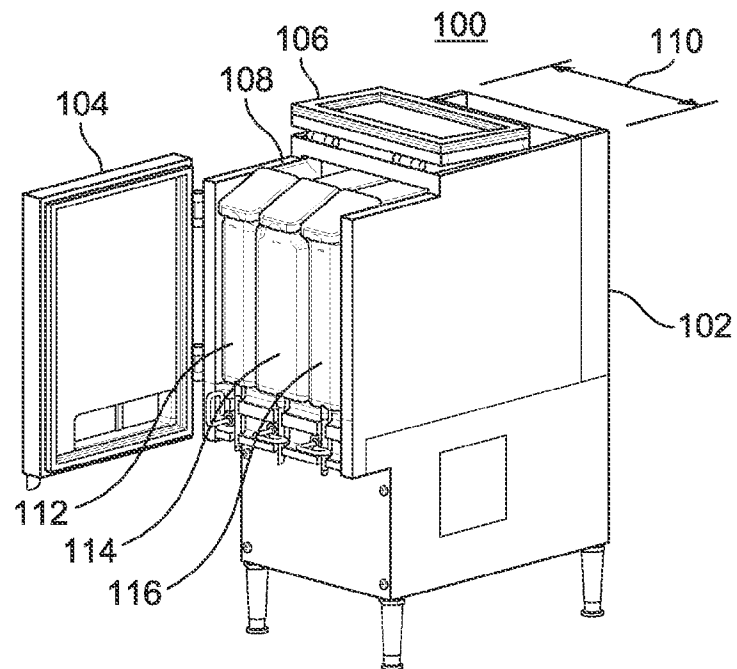


FIG. 1

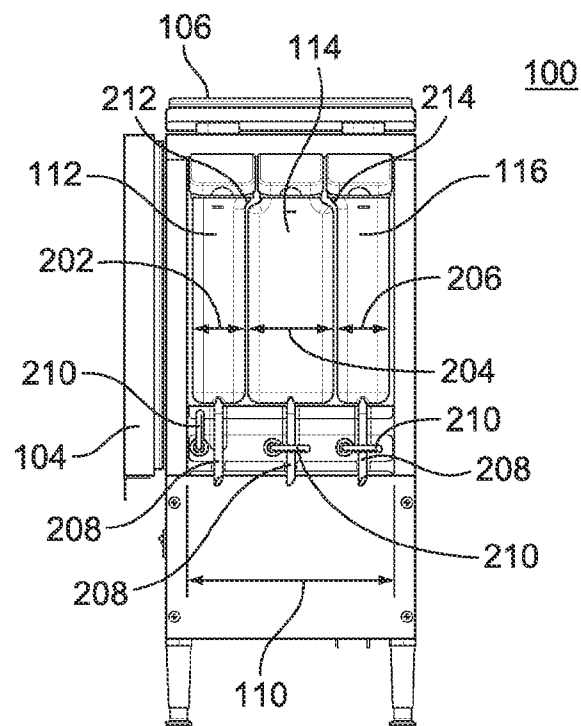


FIG. 2

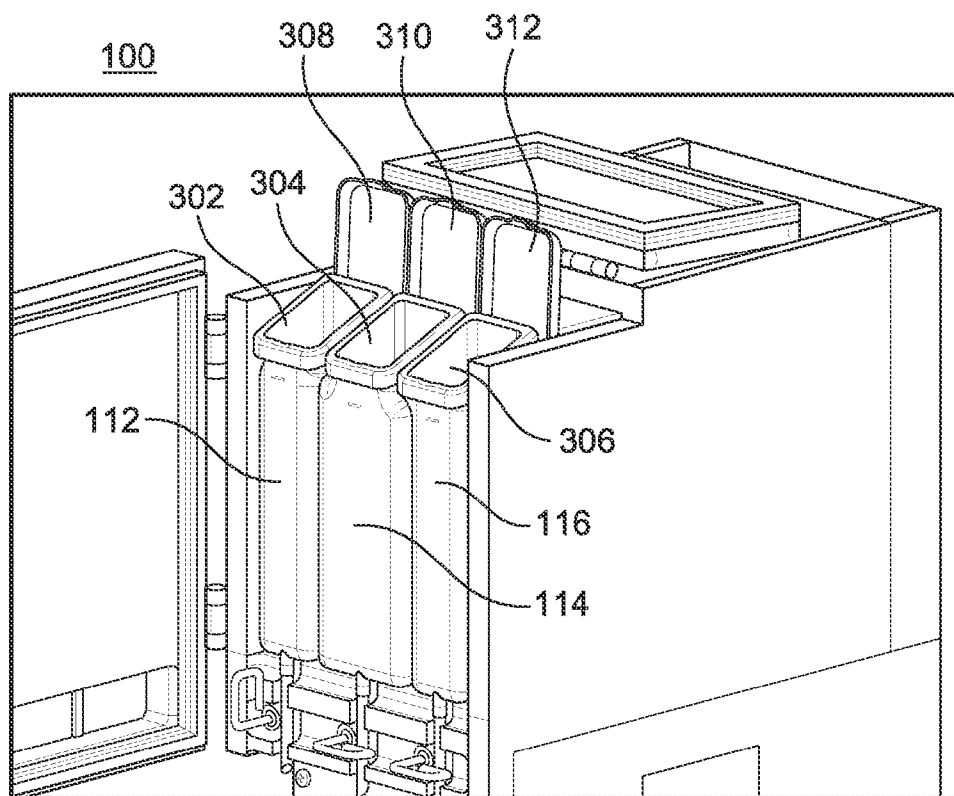


FIG. 3A

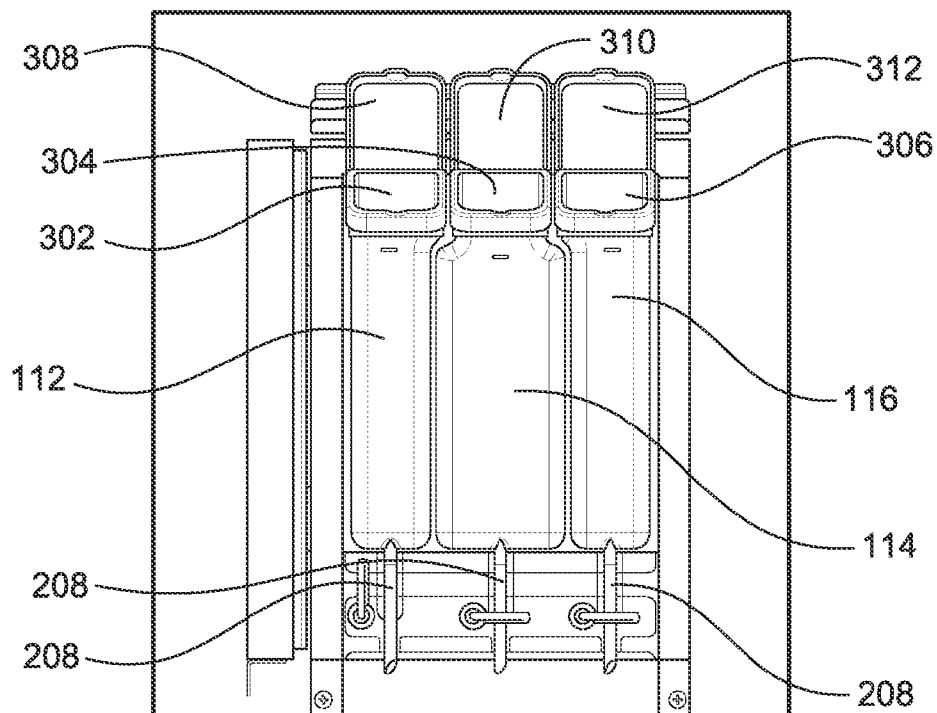


FIG. 3B

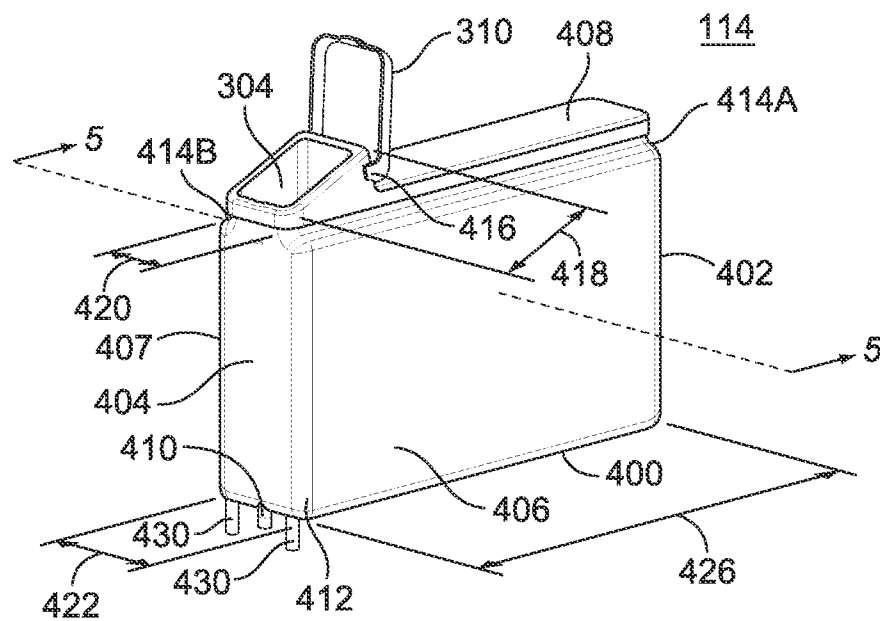


FIG. 4

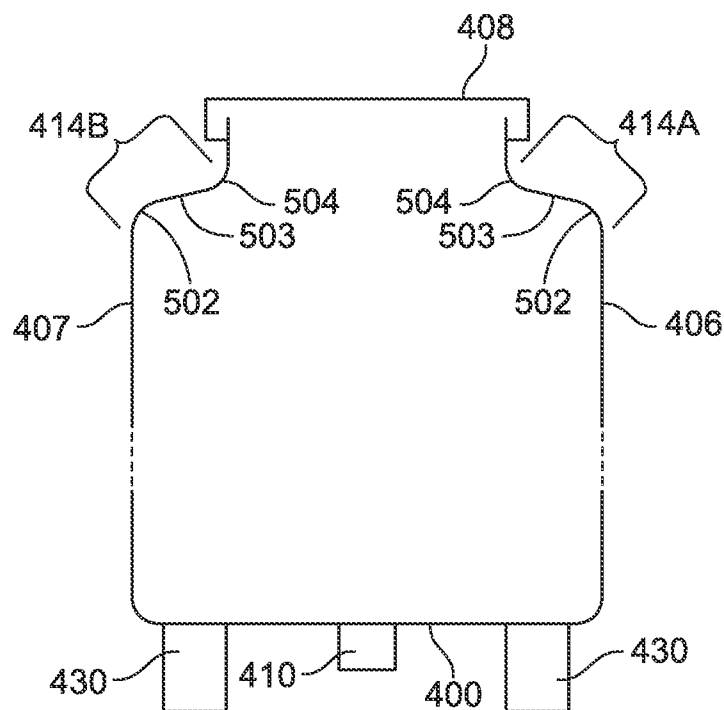


FIG. 5

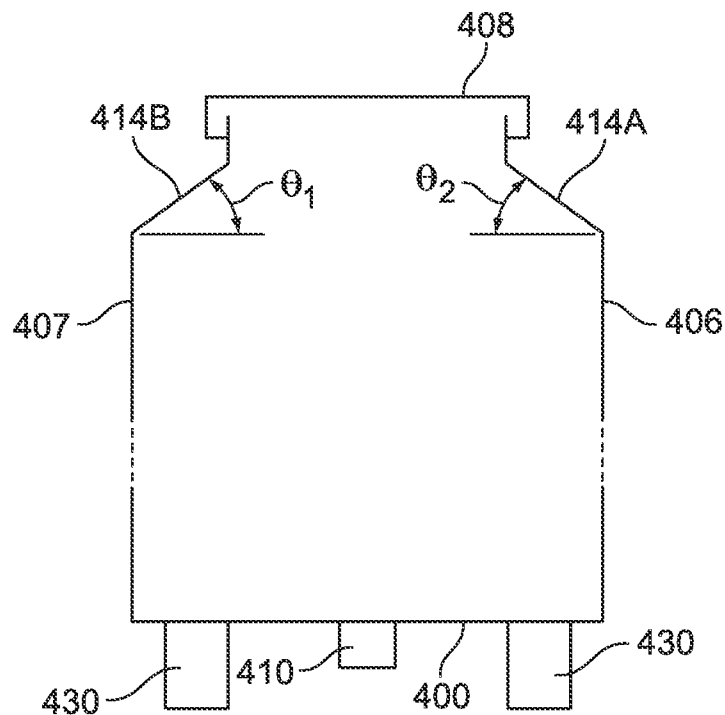


FIG. 6

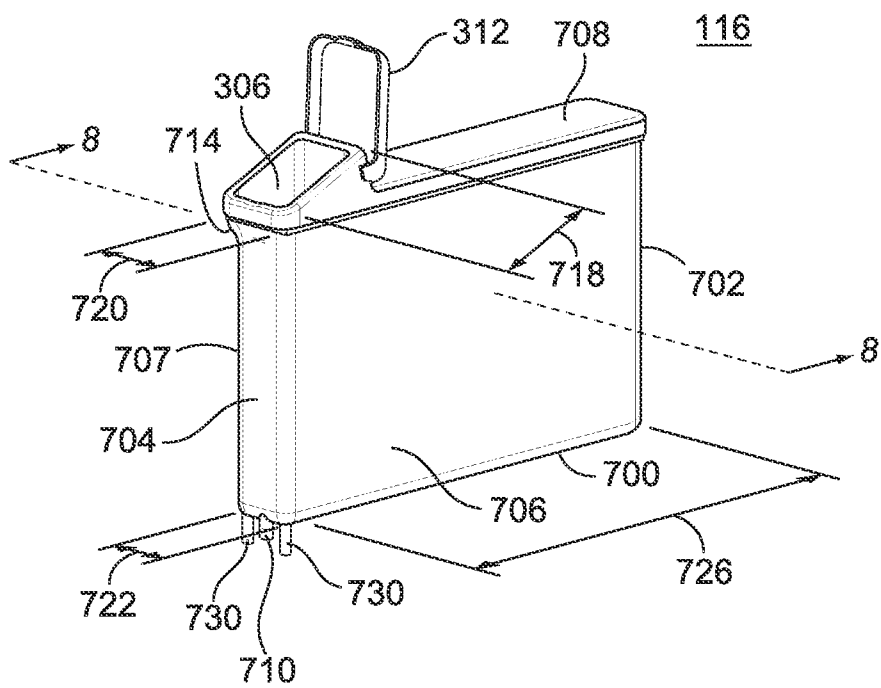


FIG. 7

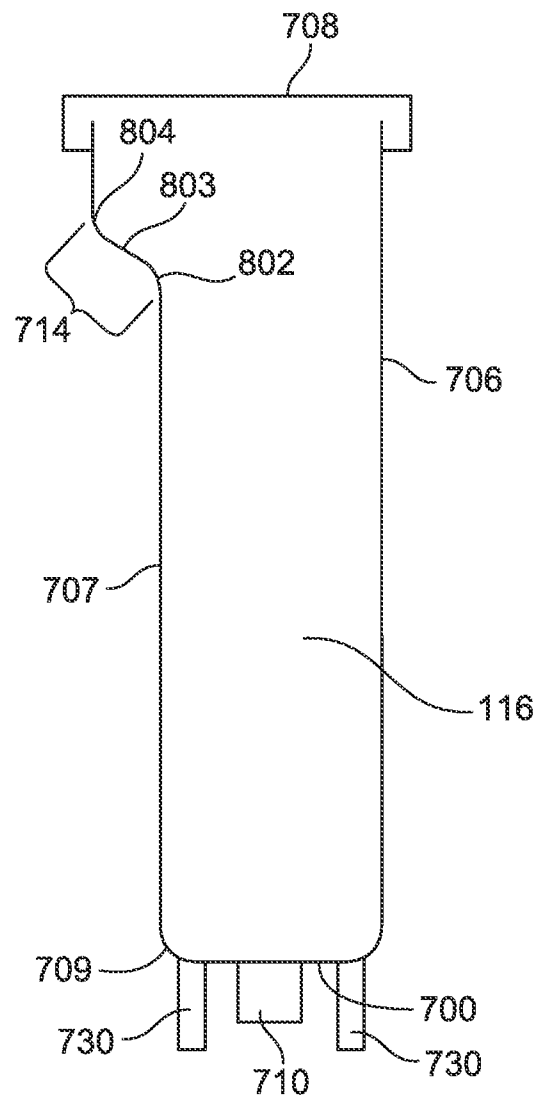


FIG. 8

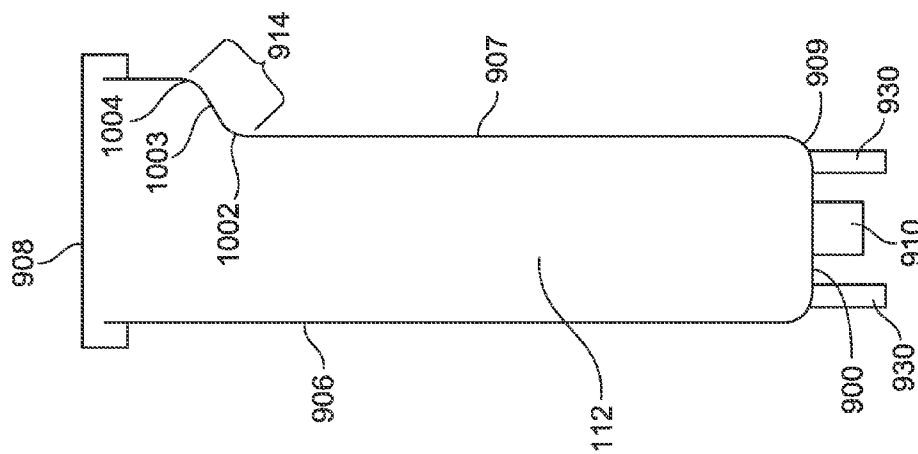


FIG. 10

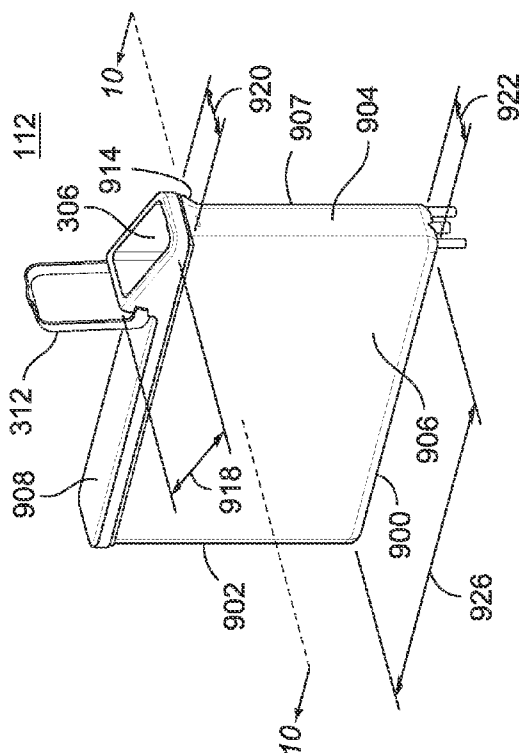


FIG. 9

LIQUID DISPENSER WITH STORAGE TANKS

BACKGROUND

Dispensers for bulk containers of liquid dairy products are well known. Such dispensers are comprised of a refrigerated cabinet in which one or more bulk containers of dairy products are kept cold. The bulk dairy product containers typically have a flexible dispensing tube at the bottom of the container through which product is dispensed using a pinch valve.

Another type of prior art dairy product dispenser uses refillable containers which also have a dispensing tube at the bottom of the container through which dairy product is controllably dispensed using a pinch valve. Prior art refillable containers have top-located openings proportional to their widths.

Many dispensers are designed to be used with two or more refillable containers. Some such dispensers are designed to be used with two or more refillable containers that hold different volumes of liquid. A problem with prior art refillable containers that contain different volumes of liquid is that the openings in the tops of the refillable containers are proportional to the width of the container. When a small-volume container needs to be refilled, the liquid must be poured through an opening that is usually much smaller than the opening in large-volume containers. Refilling small-volume containers is thus more difficult than refilling large-volume containers.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a liquid dispenser;
 FIG. 2 is a front elevation view of the liquid dispenser;
 FIG. 3A is a perspective view of the liquid dispenser showing the containers with openings;
 FIG. 3B is a front elevation view of the liquid dispenser;
 FIG. 4 is a perspective view of the center container;
 FIG. 5 is a cross section of the center tank taken through section line 5-5;
 FIG. 6 is a cross section showing an alternative embodiment of the center tank taken through section line 5-5;
 FIG. 7 is a perspective view of the right side container;
 FIG. 8 is a cross section view of the right side container taken through section line 8-8;
 FIG. 9 is a perspective view of the left side container; and
 FIG. 10 is a cross section view of the left side container taken through section line 10-10

DETAILED DESCRIPTION

FIG. 1 is a perspective view of a liquid dispenser 100. The dispenser 100 is comprised of a refrigerated cabinet having a front door 104, a top access panel 106 and a refrigerated interior compartment 108 having a width 110 to accommodate three separate liquid containers 112, 114 and 116.

FIG. 2 is a front elevation view of the liquid dispenser 100. A first container 112 is positioned to the left side of a center container 114. A right side container 116 is positioned to the right side of the center container 114. The left side container 112 has a width 202; the center container 114 has a larger width 204. The right side container 116 has a width identified by reference numeral 206. The combined widths 202, 204 and 206 fit within the width 110 of the refrigerated compartment 108. Each of the containers 112, 114 and 116 has a dispensing tube 208 that extends downwardly from the container through a pinch bar of a pinch valve 210.

One example of a pinch bar and pinch valve is disclosed in the applicants' co-pending patent application Ser. No.

12/885,641, filed Sep. 20, 2010, issued Feb. 19, 2013 as U.S. Pat. No. 8,376,310 and which is entitled "Pinch Valve." The content of said application is incorporated in its entirety herein by reference.

Another example of a pinch bar and pinch valve is co-pending patent application Ser. No. 13/169,305 filed Jun. 27, 2011, which is entitled Liquid Dispenser Pinch Valve. The content of said application is also incorporated in its entirety herein by reference.

FIG. 3A is a perspective view of the liquid dispenser 100 showing the left container 112, the center container 114, and the right container 116 with openings 302, 304 and 306 in the top of the containers. Each opening 302, 304 and 306 is provided with a corresponding cover 308, 310 and 312.

FIG. 3B is a front elevation view of the liquid dispenser 100 also showing the containers 112, 114, and 116 along with the dispensing tubes 208. The covers 308, 310, and 312 are open to reveal openings 302, 304, and 306.

FIG. 4 is a perspective view of the center container 114. The center container 114 is one of three containers sized, shaped and arranged to fit within the width 110 of the refrigerated interior compartment 108 of the dispenser 100. The center or middle container 114 can be seen in FIG. 4 as having a shape substantially the same as a rectangular parallelepiped or cuboid. A parallelepiped is a six-faced polyhedron all of the faces of which are parallelograms and lying in pairs of parallel planes.

The center container 114 has a bottom wall or surface 400, a back side or wall 402, a front side or face 404, a right side 406, an opposing left side 407, and a top 408. A small cylinder 410 can be seen projecting downwardly from the bottom 400. The cylinder 410 is a drain for the container 114. Liquid stored in the container 114 flows through the cylinder 410 into a dispensing tube 208 into which the cylinder 410 is inserted. The cylinder 410, which is preferably formed of the same material as the container 114, is protected from breakage by two legs 430 that extend downwardly from the bottom 400 of the container 114.

Except for the top 408, the container 114 is molded. The corners 412 are thus rounded imbuing the side walls 402, 404, 406 and 407 with an uninterrupted connection or union between them. The rounded corners 412 and the side walls 402, 404, 406 and 407 can thus be considered as a continuous side wall or as four separate side walls separated by the rounded corners 412.

The top 408 has incorporated within it the aforementioned opening 304 and a cover 310. The cover 310 is hinged 416 to the top 408 by which the cover 310 can be rotated around the hinge 416 between an opened and closed position.

The opening 304 has a width 420 and a length or depth 418. The product of the depth 418 and the width 420 is substantially equal to the open area through which a liquid can be poured into the container 114 to refill it.

As used herein, the term, "substantially equal" means that in one embodiment, a cover for one opening will fit the other openings with a fit or seal, the tightness of which is substantially the same between them, regardless of the container volumes. In another embodiment, "substantially equal" means that the areas of the openings in the different containers vary by less than about ten percent (10%) regardless of the container volumes. Stated another way, one opening in one container is not more than ten percent larger or smaller than another opening in another container. In another embodiment, "substantially equal" means that the areas of the openings vary by less than about twenty percent (20%) regardless of the container volumes. One opening in one container is not more than twenty percent larger or smaller than another open-

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ing in another container. In yet another embodiment, the openings are “substantially equal” if the areas of the openings vary by less than about thirty percent (30%) regardless of the container volumes.

The container 114 has a width 422 defined herein as the separation distance between the right side 406 and the left side 407. In the embodiment shown, the right side 406 and the left side 407 are both substantially vertical and parallel to each other almost completely from the bottom 400 to the top 408. The width is identified in FIG. 4 by reference numeral 422. It can be seen that the width 420 of the opening 304 is less than the width 422 of the container itself 114. The reduced width 420 of the opening 304 is due in part to an arcuate, by which is meant, curved like a bow, or an otherwise curving transition section 414A and 414B on the right side 406 and the left side 407. The transition sections or transition portions reduce the width of the container 114 from its nominal width identified by reference numeral 422 to the width 420 of the opening 304. The transition sections 414A and 414B of the middle container 114 thus reduce the width dimension 422 of the container at or near the top of the container 114 because the transition sections or portions are complementary to each other.

The transition sections 414A and 414B are considered herein to be complementary because they are shaped to be mirror images of each other. By way of example, the right side transition section 414A has a curvature that transitions or moves the right side wall 406 inwardly or toward the left side wall 407. The left side transition portion 414B has a curvature that moves or transitions the left side of the tank 407 inwardly or toward the right side 406. The right side transition section 414A and the left side transition section 414B move the respective sides an equal distance inwardly. The transition sections are thus considered to be complements of each other.

FIG. 5 is a cross section of the center tank 114 taken through section lines 5-5. The transition sections 414A and 414B have inwardly curving sections 502 relatively straight intermediate sections 503 and outwardly curving sections 504. The transition sections 414A and 414B thus have a cross-sectional shaped serpentine in nature or boustrophedonic.

FIG. 6 is another cross-sectional view of the middle container 114 taken through section lines 5-5, but showing an alternate embodiment of the transition sections 414A and 414B. In FIG. 6, the transition sections are depicted as substantially straight lines inclined at angles $\ominus 1$ and $\ominus 2$ relative to horizontal. The relatively straight transition portions 414A and 414B are thus considered to be angular in shape, the term “angular” meaning forming an angle.

FIG. 7 is a perspective view of the right-side container 116. The container 116 has a bottom 700, a rear side or face 702, a front side or face 704, a right side 706, a left side 707 and top 708. The cylinder 710 is a drain for the right side container 116. As with the center container 114, liquid stored in the right-side container 116 flows through the cylinder 710 into a dispensing tube 208 into which the cylinder 710 is inserted. The cylinder 710, which is preferably formed of the same material as the container 116, is protected from breakage by two legs 730 that extend downwardly from the bottom 700 of the container 116.

The container 116 has width measured just above the bottom 700 that is identified by reference numeral 722. A width at the top 708 is identified by reference numeral 720. As shown in the figure, the top width 720 is significantly greater than the bottom width 722. The increased width at the top 720 over the bottom 722 is due to a transition portion identified by 714. The transition portion 714 of the right side tank 116

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increases the width of the container to be substantially equal to the width 420 at the top 408 of the middle container 114.

FIG. 8 is cross-sectional view of the right side container 116 taken through section lines 8-8. The transition portion 714 has an outwardly curving section 802 connected to a substantially straight intermediate section 803, which is followed by or connected to an inwardly curving section 804. The transition section 714 for the right hand side container 116 can thus also be characterized as serpentine or boustrophedonic.

Referring again to FIG. 7, it can be seen that the opening 306 and the top 708 also has an area determined by the product of the depth 718 by the width 720. As shown in FIG. 1, FIG. 2, and FIG. 3A, the area of the openings in both the center and right-hand side containers 114 and 116, respectively, are the same which is due to the fact that the transition areas for the middle container 114 squeeze or reduce the width of that container while the transition section 714 of the right-hand container 116 enlarges or increases the width 722 of the right-hand container 116. It can also be seen that the depth 726 of the right-hand container 116 is substantially equal to the depth 426 of the center container 114. The top portions of both containers are thus substantially equal in as much as the width of the top 408 of the center container 114 is substantially equal to the width 720 of the top 708 of the right-hand container 116.

FIG. 9 is a perspective view of the left-side container 112. The container 112 has a bottom 900, a rear side or face 902, a front side or face 904, a right side 906, a left side 907 and top 908. The container 112 has width measured just above the bottom 900 that is identified by reference numeral 922. A width at the top 908 is identified by reference numeral 920. As shown in the figure, the top width 920 is greater than the bottom width 922. This is a similar situation as occurs with the right side container. The increased width of the left side container at the top 920 over the bottom 922 is due to a transition portion identified by 914. The transition portion 914 of the left side tank 112 increases the width of the container to be substantially equal to the width 420 at the top 408 of the middle container 114.

FIG. 10 is cross-sectional view of the left side container 112 taken through section lines 10-10. The cylinder 910 is a drain for the right side container 112. As with the center container 114 and the right-side container 116, liquid stored in the left-side container 112 flows through the cylinder 910 into a dispensing tube 208 into which the cylinder 910 is inserted. The cylinder 910, which is preferably formed of the same material as the container 112, is protected from breakage by two legs 930 that extend downwardly from the bottom 900 of the container 112.

The transition portion 914 has an outwardly curving section 1002 connected to a substantially straight intermediate section 1003, which is followed by or connected to an inwardly curving section 1004. The transition section 914 for the left hand side container 112 can thus also be characterized as serpentine or boustrophedonic.

Referring again to FIG. 9, it can be seen that the opening 306 and the top 908 also has an area determined by the product of the depth 918 by the width 920. As shown in FIG. 1, FIG. 2, and FIG. 3A, the area of the openings in both the center and left-hand side containers 114 and 112, respectively, are the same which is due to the fact that the transition areas for the middle container 114 squeeze or reduce the width of that container while the transition section 914 of the left-hand container 112 enlarges or increases the width 922 of the left-hand container 112. Again, this situation is similar concerning the right-side container. It can also be seen that the

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depth **926** of the left-hand container **112** is substantially equal to the depth **426** of the center container **114**. The top portions of both containers are thus substantially equal in as much as the width of the top **408** of the center container **114** is substantially equal to the width **920** of the top **908** of the left-hand container **112**.

The left side container **112** is a mirror image of the right-side container **116**. Stated another way, the left-side container **112** has a width **202** near its bottom that is increased or enlarged by a transition section **212** that is a mirror image of the transition section **214** for the right-side container **116**. The left-side container **112** can thus be considered a third container. It has a top portion with a width substantially equal to the top portion width of the first container **116**. Similarly the left-side container **112** has a bottom having a width substantially equal to the bottom of the right-side container **116**. The left side container **112** has opposing side walls and front and back walls all four of which are attached to the bottom and which extend upwardly to the top.

All three containers **112**, **114** and **116** have input inlets or ports described above and identified by reference numeral **302**, **304**, and **306** the shape and areas of which are substantially identical. As best seen in FIG. 3A, those inlet ports are inclined at an angle relative to horizontal to facilitate refilling the containers. In a preferred embodiment, the inlet ports **302**, **304** and **306** are inclined at the same angle. However, alternate embodiments include inclining those inlet ports at different angles relative to each other.

Configuring the tanks and input ports **302**, **304** and **306** to have the shape as shown is contrary to common sense and non-obvious for at least two reasons. First, molding or assembling the tanks to have transition sections adds cost. Second, as can be seen in FIGS. 8 and 8, when the containers **112**, **114** and **116** are removed from the compartment **108**, the left-side container **112** and the right-side container **116** are made somewhat unstable by their enlarged openings. The enlarged input ports **302** and **306** for the left-hand container **112** and the right-hand container **116** extend sideways outside or beyond the foot prints **700** and **900** of the bottom of the containers. If the left-hand container **112** or the right-hand container **116** is refilled outside the compartment **108**, pouring a liquid into one of the input ports **302** and **306** can create a downward force on transition sections **714** and **914** that creates a torque around the corresponding inside edges **709** and **909** of the bottoms of the containers, which will tend to tip the containers over thus rendering them somewhat difficult to use. When the containers are inside the compartment **108** however, they are held together as an assembly, which prevents either one of them from tipping over during refilling.

Those of ordinary skill in the art will recognize that the transition sections **414A** and **414B** on the middle container **114** opened downwardly, which is to say the portions of the transition sections closest to the top **408** are closer to each other than the portions of the transition sections that are attached to or connected to the side walls **406** and **407**. The transition section **714** for the right-side container **116** and the mirror image transition section **914** for the left-side container **112** open upwardly, which is to say the top section of the right-side tank **708** is wider than the bottom section. In addition, the top section of the left-side tank **908** is also wider than the bottom section.

Those of ordinary skill in the art will also recognize from FIG. 1, FIG. 2, FIG. 3A, and FIG. 3B that the transition section **714** and its adjacent transition section **414A** are complements of each other. The transition section **714** on the right-side container **116** transitions the left-side side wall **707** outwardly, whereas the right-hand transition section **414A** of

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the middle container **114** transitions the side wall **406** inwardly. Similarly, the transition section **914** on the left-side container **112** transitions the right-side wall outwardly, whereas the left-hand transition section **414B** of the middle container **114** transitions the side wall **407** inwardly.

In one embodiment, the covers **308**, **310** and **312** are pivotally attached to the top covers. However, in an alternate embodiment the covers **308**, **310** and **312** can be pivotally attached to the side walls of the containers.

The foregoing description is for purposes of illustration only. The true scope of the invention is set forth in the appended claims.

What is claimed is:

1. A liquid dispenser comprising:

a cabinet having an interior compartment, which is capable of being refrigerated, the interior compartment having an interior width;

first and second physically separate and individually refillable containers inside the compartment, the first and second containers being located side-by-side and enclosing first and second different volumes, each container comprised of:

i. a top portion having a width, a first container top portion width being substantially equal to a second container top portion width;

ii. a bottom portion having a width and a drain, the first container bottom portion having a first width less than the second container bottom portion second width;

iii. first and second opposing side walls attached to a corresponding bottom portion, the first and second opposing side walls of the first container having a first separation distance proximate the bottom of the first container, the first container top portion width being greater than the first separation distance, the first and second opposing side walls of the second container having a second separation distance proximate the bottom of the second container, the second container top portion width being less than the second separation distance, and the first separation distance being less than the second separation distance;

iv. a first wall transition section of the first container, connecting a first side wall of the first container to the first container top portion, the first container top portion width defined between the first wall transition section and the second wall of the first container;

v. a second wall transition section of the second container connecting a second side wall of the second container to the second container top portion;

wherein the first wall transition section and second wall transition sections having complementary shapes.

2. The liquid dispenser of claim 1, wherein the first container side walls and the second container side walls are substantially vertical and substantially parallel to each other.

3. The liquid dispenser of claim 1, wherein the first container top portion comprises a first opening having a first opening width, a first area and a first shape, and wherein the second container top portion comprises a second opening having a second opening width, a second area and a second shape, wherein the first opening width is substantially equal to the first container top portion width and the second opening width is substantially equal to the second container top portion width, and the first opening width is substantially equal to the second opening width.

4. The liquid dispenser of claim 1, wherein the first container side walls and second container side walls are substantially vertical and substantially parallel to each other, and the second container and the first transition section extends in a

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horizontal direction away from the second wall of the first container and past the second wall of the second container.

5. The liquid dispenser of claim 1, a first pinch valve coupled to the cabinet;

a second pinch valve coupled to the cabinet;

a first flexible discharge tube having a length, first and second ends and first and second portions, the first end of the first flexible discharge tube being attached to the drain for the first container, the first portion of the first flexible discharge tube extending directly from said drain for the first container to the first pinch valve, the second portion of the first flexible discharge tube being located between the first pinch valve and the second end of the first flexible discharge tube; and

a second flexible discharge tube having a length, first and second ends and first and second portions, the first end of the second flexible discharge tube being attached to the drain for the second container, the first portion of the second flexible discharge tube extending directly from said drain for the second container to the second pinch valve, the second portion of the second flexible discharge tube being located between the second pinch valve and the second end of the second flexible discharge tube.

6. The liquid dispenser of claim 1 further comprised of a third container inside the compartment, which encloses a third volume the third container comprising:

i. a top portion having a third container top portion width, the third container top portion width being substantially equal to the first container top portion width;

ii. a bottom portion having a third width, which is substantially equal to the first width;

iii. first and second opposing walls attached to the bottom portion of the third container, the first and second opposing walls of the third container having a third separation distance proximate the bottom of the third container, the third separation distance being less than the second separation distance and the third separation distance being less than the third container top portion width;

iv. a third wall transition section connecting a first wall of the third container to the top portion of the third container, the third container top portion width defined between the third wall transition section and the second wall of the third container;

wherein the second container further comprises a fourth wall transition section connecting the first wall of the second container to the top portion of the second container, and the second container top portion width is defined between the second wall transition section and the fourth wall transition section, and

wherein the third wall transition section and the fourth wall transition section have complementary shapes.

7. The liquid dispenser of claim 6, wherein the first container top portion comprises a first opening having a first opening width substantially equal to the first container top portion width, the second container top portion comprises a second opening having a second opening width substantially equal to the second container top portion width, and the third container top portion comprises a third opening having a third opening width substantially equal to the third container top portion width.

8. The liquid dispenser of claim 7, wherein the first container side walls, second container side walls, and third container side walls are substantially vertical and substantially parallel to each other;

wherein the first side wall of the first container is adjacent the second side wall of the second container and the first

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transition section extends in a horizontal direction away from the second wall of the first container and past the second wall of the second container; and

wherein the first side wall of the third container is adjacent the first side wall of the second container and the third transition section extends in the horizontal direction away from the second wall of the third container and past the first wall of the second container.

9. A liquid dispenser comprising:

a cabinet having an interior compartment, the interior compartment having an interior width;

a first container disposed inside the interior compartment and enclosing a first volume, the first container comprising:

a first top portion having a first top portion width;

a first bottom portion;

a first side wall and a second side wall, the first and second side walls attached to the first bottom portion and extending substantially vertically from the first bottom portion, the first and second side walls having a first separation distance there between, the first top portion width being greater than the first separation distance; and

a first wall transition section connecting the second side wall to the first top portion and extending in a horizontal direction away from the first side wall, the first top portion width defined between the first wall transition section and the first wall;

a second container disposed inside the interior compartment and enclosing a second volume, the second container comprising:

a second top portion having a second top portion width;

a second bottom portion;

a third side wall and a fourth side wall, the third and fourth side walls attached to the second bottom portion and extending substantially vertically from the second bottom portion, the third and fourth side walls having a second separation distance there between, the second top portion width being less than the second separation distance, wherein the first wall transition section extends in the horizontal direction across the third side wall;

a second wall transition section connecting the third side wall to the second top portion and extending in the horizontal direction interior of the third side wall; and

a third wall transition section connecting the fourth side wall to the second top portion and extending in the horizontal direction interior of the fourth side wall, the second top portion width defined between the second wall transition section and the third wall transition section; and

a third container disposed inside the interior compartment and enclosing a first volume, the third container comprising:

a third top portion having a third portion width;

a third bottom portion;

a fifth side wall and a sixth side wall, the fifth and sixth side walls attached to the third bottom portion and extending substantially vertically from the third bottom portion, the fifth and sixth side walls having a third separation distance there between, the third top portion width being greater than the third separation distance; and

a fourth wall transition section connecting the fifth side wall to the third top portion and extending in the horizontal direction away from the sixth side wall and

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across the fourth side wall, the third top portion width defined between the fourth wall transition section and the sixth wall;

wherein the first top portion width is greater than the first separation distance, the second top portion width is less than the second separation distance, and the third top portion width is greater than the third separation distance, and the first top portion width, second top portion width, and the third top portion width are substantially equal.

10. A liquid dispenser comprising:

a cabinet defining a compartment having a compartment width;

a first container disposed within the compartment, the first container having a first volume generally defined by a first bottom, a first side wall, a second side wall, a first back wall, and a first front wall, wherein a first container width is defined between the first side wall and the second side wall, a first transition portion extends in a vertical direction from the second side wall and extends in a horizontal direction away from the first side wall exterior of the second side wall, and wherein a first container opening of a first container opening width is defined between the first side wall and the first transition portion and the first container opening width is greater than the first container width; and

a second container disposed within the compartment, the second container having a second volume generally defined by a second bottom, a third side wall, a fourth side wall, a second back wall, and a second front wall, the second volume greater than the first volume, wherein a second container width is defined between the third side wall and the fourth side wall, the second container width greater than the first container width, a second transition portion extends in the vertical direction from the third side wall and extends in the horizontal direction towards the fourth side wall interior of the third side wall, and wherein a second container opening of a second container opening width is defined at least by the second transition portion, wherein the second container opening width is less than the second container width.

11. The liquid dispenser of claim **10** wherein the first container and the second container are configured to fit together with the second side wall adjacent the third side wall and the first transition portion adjacent the second transition portion and the first transition portion extends in the horizontal direction interior of the third side wall.

12. The liquid dispenser of claim **10** further comprising:

a third container disposed within the compartment, the third container having a third volume generally defined by a third bottom, a fifth side wall, a sixth side wall, a third back wall, and a third front wall, the second volume greater than the third volume, wherein a third container width is defined between the fifth side wall and the sixth side wall, the second container width greater than the third container width, a third transition portion extends in the vertical direction from the fifth side wall and extends in the horizontal direction away from the sixth side wall exterior of the fifth side wall, and wherein a third container opening of a third container opening width is defined between the sixth side wall and the third transition portion and the third container opening width is greater than the third container width.

13. The liquid dispenser of claim **12**, wherein the second container further comprises a fourth transition portion that extends in the vertical direction from the fourth side wall and extends in the horizontal direction towards the third side wall

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interior of the fourth side wall, and wherein the second container opening of the second container opening width is defined between the second transition portion and the fourth transition portion.

14. The liquid dispenser of claim **13**, further comprising:

wherein the first container and the second container are configured to fit together with the second side wall adjacent the third side wall and the first transition portion adjacent the second transition portion, and the first transition portion extends in the horizontal direction interior of the third side wall; and

wherein the third container and the second container are configured to fit together with the fourth side wall adjacent the fifth side wall and the third transition portion adjacent the fourth transition portion, and the third transition portion extends in the horizontal direction interior of the fourth side wall.

15. The liquid dispenser of claim **14** wherein the first container, second container, and third container are sized, shaped and arranged to fit within the compartment width.

16. The liquid dispenser of claim **13**, further comprising wherein the first transition portion extends in the horizontal direction interior of the third side wall and the third transition portion extends in the horizontal direction interior of the fourth side wall.

17. The liquid dispenser of claim **16**, wherein a first combined width of the first container width, second container width, and third container width is substantially equal to the compartment width and a second combined width of the first container opening width, second container opening width, and the third container opening width is substantially equal to the compartment width.

18. The liquid dispenser of claim **17**, wherein the first container opening width, the second container opening width, and the third container opening width are all substantially equal to one another.

19. The liquid dispenser of claim **18**, wherein the first container opening width, the second container opening width, and the third container opening width are all within 10% of each other.

20. The liquid dispenser of claim **13**, further comprising:

a first top at least partially extending over the first opening of the first container;

a second top at least partially extending over the second opening of the second container; and

a third top at least partially extending over the third opening of the third container.

21. The liquid dispenser of claim **10**, further comprising:

wherein the first container comprises a first drain extending below the first bottom, and at least one leg extending below the first bottom adjacent the first drain; and

wherein the second container comprises a second drain extending below the second bottom, and at least one leg extending below the second bottom adjacent the second drain.

22. The liquid dispenser of claim **21**, further comprising: first pinch valve;

a second pinch valve;

a first flexible discharge tube having first and second ends, the first end of the first flexible discharge tube attached to the first drain, the first discharge tube passing through the first pinch valve, the second end of the first discharge tube being located below the first pinch valve; and

a second flexible discharge tube having first and second ends, the first end of the second flexible discharge tube attached to the second drain, the second discharge tube

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passing through the second pinch valve, the second end of the second discharge tube being located below the second pinch valve.

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