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- (71) Applicant: SECOR WATER, LLC [US/US]; 270 Middle Turnpike, Storrs, CT 06268 (US).
- (72) Inventors: CREMINS, Matthew; 8 Horizon Hill, Poughkeepsie, NY 12603 (US). GUO, Yanbing; Vernon, CT 06066 (US). WALCZAH, Tomas; Willimantic, CT 06226 (US). RITTER, David; Sherman, CT 06784 (US). JONES, Dillon; Old Saybrook, CT 06475 (US).
- (74) Agent: BERTRAM, Elana, A.; Hawley Legal Resources, LLC, Post Office Box 139, Hawleyville, CT 06440 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,

[Continued on next page]

(54) Title: WATER STATION WITH INTEGRATED QR CODE-READING SYSTEM FOR USER ACCESS

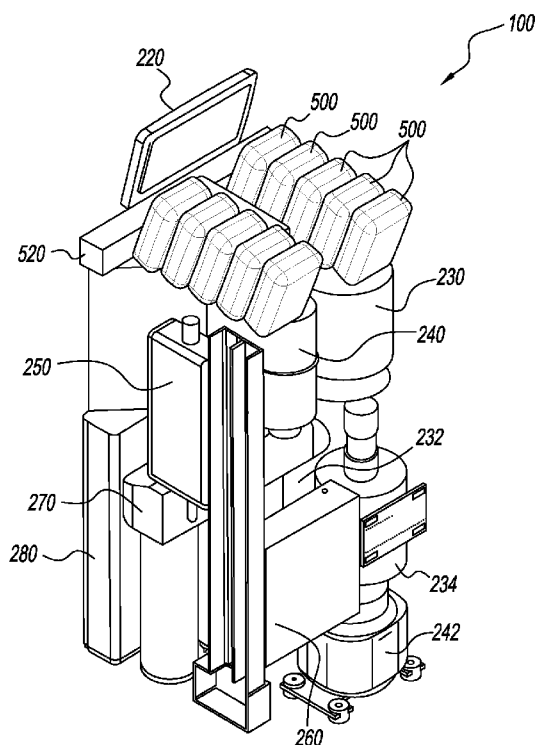


FIG. 1

(57) Abstract: A beverage dispenser. The beverage dispenser further comprises a plurality of water-soluble additives, a filter, a plurality of holding tanks, and a networked central processing unit, wherein the central processing unit controls the addition of any of the plurality of water-soluble additives to liquid from any of the plurality of holding tanks.



SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))

WATER STATION WITH INTEGRATED QR-CODE READING SYSTEMS FOR USER ACCESS

Cross-Reference to Related Applications

This Application claims the benefit of United States Provisional Patent Application Serial No. 61/967,756, filed on March 26, 2014, incorporated herein in its entirety by reference.

Statement Regarding Federally-Sponsored Research or Development

Not Applicable.

Field of the Invention

[0001] The present invention is directed to a beverage dispenser, and, more particularly, to a beverage dispenser which may prepare and dispense customized flavored and/or functional beverages keyed to an individual consumer at many different venues. The beverages are flavored and/or functional as a result of hygienic cartridges which are replaced as needed by the consumer.

Background of the Invention

[0002] An average adult human drinks approximately 2 liters of water per day. A consumer desires both an affordable and good-tasting source of water. From time to time, a person may desire a flavored, carbonated, or otherwise enhanced water beverage.

[0003] In an office environment where many individuals gather, each individual may have different tastes and preferences, leading them to purchase or store a variety of beverages in a common area. With space at a premium in most commercial environments, the square footage and electricity required to maintain a large vending machine or refrigerator to store and dispense these beverages is a disadvantage of the solutions in the prior art.

[0004] Most offices are located in commercially-zoned areas where the available tap water, though potable, is not of a high quality or flavor profile. In addition, the bacterial count of tap water in an office environment can be extremely high, often upwards of 2.7 million bacterial

cells per square inch. This water must be filtered or otherwise treated in order to make it suitable to the tastes of a consumer.

[0005] As individuals become more health-conscious and educated about the value of proper hydration and nutrition, they desire beverages which meet their taste preferences but also add nutritious elements such as antioxidants, electrolytes, vitamins, low- or zero-calorie flavors, and carbonation. In order to meet these taste preferences, an individual may desire a customized combination of flavors and nutrients.

[0006] Bottled beverages are commercially available at a relatively high price per gallon. In addition, the bottle itself requires a use of natural resources to create and results in waste as soon as the consumer has finished the beverage. Further, commercially-available flavored beverages are not customizable. As individuals become more conservation-conscious and educated about the value of waste reduction and reducing their carbon footprint and energy costs, they desire beverage options which reduce or eliminate the need for disposable packaging while still delivering flavorful and nutritious variety of beverages.

[0007] Consumers may prefer to use reusable cups, bottles, and mugs which may be of varying sizes. The consumer's beverage container can be measured and memorized for efficient re-creation of a preferred beverage.

[0008] Of particular interest is the lack of a means in the art to track and record consumer preferences and payment preferences in light of the various customization options available. In a multi-consumer environment, it is desirable to have a means for the beverage consumer to record his or her preferences across dispenser units and enable payment, if applicable, by accounts affiliated with any one of a number of employers, businesses, or individuals.

[0009] Beverage dispensers which allow a custom mix of additives are available, however they are not designed to track both consumption and payment options across networked dispensing units. These teach away from the present invention because they require the person to purchase and maintain an individual account linked to a payment tracking system; for example an RFID card reader.

[0010] The beverage dispensers currently available must be serviced by a technician in order to change or replace the additives and reset the applicable operating system. The present

invention claims a new delivery system for additives which permits any consumer to customize the available additives as well as automated identification of those additives by the dispenser.

[0011] Consumers are willing to pay for quality products such as premium customized beverages, however they desire a simple and secure way to pay. The present invention describes a networked system of beverage dispensers including a unique identifier for each consumer which securely records both user preferences and payment accounts, such as, for example, linking a mobile phone “tap to pay” feature. The consumer may not need to separately log in from a computer to maintain his account, but rather can set his preferences directly on the consumer interface on any one of a plurality of beverage dispensers and secure those preferences for use at any other beverage dispensers.

[0012] In a group environment, such as an office, gym, school, or municipal building, consumers affiliated with many different organizations will interact with a beverage dispenser. It is desirable that all potential consumers have the ability to receive a customized beverage, however the price, if any, charged for the beverage can be securely paid by any party. For example, in a shared office space, employees of one firm may receive as a benefit of employment “free” beverages from the beverage dispenser which are paid for by that firm while employees of another firm have access to the beverage dispenser on a pay-per-use basis. In this situation, it is desirable that a seamless and secure payment system functions quickly and confidentially for all consumers. The beverage dispenser can identify unique individuals association with different payment accounts and promptly process both a customized beverage and payment.

[0013] There is a need in the marketplace to accommodate consumer tastes and preferences while also providing beverage additives which are nutritious or otherwise beneficial to the consumer. Current commercial embodiments of beverage dispensers are large, use a great amount of electricity, and offer a standard slate of additives. The present invention meets an unmet need in the market by introducing consumer preference tracking linked to reusable containers, a networked payment system, and interchangeable additive cartridges which are self-contained and require no cleaning or special skills or tools to replace.

Summary of the Invention

[0014] The present invention resides in one aspect in a beverage dispenser. The beverage dispenser has a plurality of additives, a filter, a plurality of holding tanks, and a networked CPU which identifies a specific consumer. The additives are dispensed from interchangeable cartridges. The interchangeable cartridges are hygienic and easy to replace by the consumer. The additive types and amounts are tracked by the networked CPU. The networked CPU links the preferences and payment account of a specific consumer across multiple dispensing units.

Brief Description of the Drawings

[0015] FIG. 1 is an isometric rear side view of a beverage dispenser;

[0016] FIG. 2 is an isometric front side view of the beverage dispenser;

[0017] FIG. 3 is an isometric rear view of one embodiment of the beverage dispenser showing an array of concentrate cartridges;

[0018] FIG. 4 is a cross-sectional side view of a concentrate cartridge of the beverage dispenser;

[0019] FIG. 5 is a schematic view of one embodiment of the beverage dispenser;

[0020] FIG. 6 is a schematic view of another embodiment of the beverage dispenser;

[0021] FIG. 7A is a top view of one embodiment of the concentrate cartridge;

[0022] FIG. 7B is a top view of another embodiment of the concentrate cartridge; and

[0023] FIG. 7C is a top view of yet another embodiment of the concentrate cartridge.

Detailed Description

[0024] As shown in FIG. 1, a beverage dispenser 100 may be assembled as a free-standing tabletop, countertop, wall-mounted, or floor amenity. A consumer may access a user interface 220 set at a height convenient for the consumer, such as, for example, waist-level for a standing person so as to also be accessible to a person in a wheelchair or other seated position.

[0025] As shown in FIG. 5, water or other liquid may flow into the beverage dispenser 100 by, in one embodiment, a pipe 110 affixed to the plumbing system of, for example, the building where the beverage dispenser 100 is located.

[0026] As shown in FIGS. 1, 2, and 3, an array of cartridges 500 containing liquids 501 of any substance may be arranged, in one embodiment, in a two-row array. In another embodiment, the cartridges 500 may be arranged in one or more concentric stacks. In another embodiment, the cartridge 500 may be staggered or arranged asymmetrically. As shown in FIGS. 1, 2, and 3, the cartridges 500 are comparably sized, but in embodiments not shown here, the cartridges 500 are different sizes. As shown in FIGS. 1, 2, and 3, there are ten identical cartridges 500. In another embodiment, there are nine or fewer cartridges 500. In another embodiment, there are eleven or more cartridges 500.

[0027] Each of the plurality of cartridges 500 has a sealed end 512 and a dispensing end 510. Each cartridge 500 is watertight and has an interior cavity 502 which may contain a concentrated beverage additive in liquid form, such as, for example, the liquid 501. Each cartridge 500 is sealed in a hygienic and food-grade manner so that no foreign particles enter the system 600.

[0028] In one embodiment, the liquid 501 contained in the cartridges 500 is a concentrated flavor additive to be mixed with water to flavor a beverage. In another embodiment, the liquid 501 is a functional additive such as, for example, an electrolyte suspension to be mixed with water to create a functional beverage. In another embodiment, the liquid 501 is a functional additive such as, for example, a vitamin suspension to be mixed with water to create a functional beverage. In another embodiment, the liquid 501 is a functional additive such as, for example, a sweetener suspension to be mixed with water to flavor a beverage. In another embodiment, the liquid 501 is an additive such as, for example, an acid, for example but not limited to citric acid.

[0029] A system 600 controls the dispensing of said liquids 501 from one or more cartridges 500. Responsive to consumer inputs through the user interface 220, which may be a graphic user interface ("GUI") or other audiovisual system of inputting commands, the system 600 controls the dispensing of a beverage with one or more liquids 501 added, without any additives, or with carbonation added. As shown in FIG. 5, the system 600 is comprised of a series of tanks and valves which are controlled by a central processing unit 610 ("CPU"). Said

CPU 610 may be located within the beverage dispenser 100 or may be remotely located and in communication with the system 600 via wired or wireless signaling. The system 600 is hygienically sealed and closed to outside microbes and particles such that any water entering the system 600 remains clean until dispensing.

[0030] As further shown in FIGS. 5 and 6, water enters the beverage dispenser 100 via the pipe 110 and passes through a backflow valve 112. The water continues through a filtration system 120 which comprises, in one embodiment, a three-stage filter 121 and an ultraviolet light filter 122. In another embodiment, the filtration system 120 also comprises a micro-biological filter. In another embodiment, the filtration system 120 comprises a combination of filters. The system 600 controls how much water passes through the filtration system 120 by means of a pressure regulator 114.

[0031] As further shown in FIGS. 5 and 6, the water passes within a water tube 130 to a splitter 134 that diverts the flow into one or more holding tanks. In one embodiment, one holding tank is a heated tank 250. In another embodiment, there is a second holding tank which is a chilled holding tank 230. The system 600 controls how much water passes to out of the heated tank 250 by means of a solenoid valve 251. Excess water will flow into the chilled holding tank 230. Water is free to flow into the hot, chilled, and carbonated tanks up to the point of the carbonator pump; solenoid valves are after the tanks. A check valve 231 is controlled by the system 600 and permits some water to flow from the chilled holding tank 230 and into a carbonator 240 by means of a chilled water tube 131. A solenoid valve 233 permits some water to flow from the chilled holding tank 230 into a beverage tube 400 via a chilled water tube 135. A solenoid valve 243 permits some carbonated water to flow from the carbonator 230 into the beverage tube 400 via a carbonated water tube 132. A hot water valve 251 permits some heated water to flow from the heated holding tank 250 to the beverage tube 400 via a heated water tube 133. Each of the valves 233, 243, and 251 are responsive to signals from the system 600 to start and stop flow as needed.

[0032] The pressure regulator 114 controls pressure into the beverage dispenser 100. Water is free to enter the heated tank 250 and the chilled tank 230 up to an input 142 of the carbonator 240. In one embodiment, there is a vapor relief valve upstream of the solenoid valve 251 for safety. In one embodiment the chilled and carbonated flows will feed to the same flow control device upstream of the beverage tube 400. In another embodiment, each of the chilled and

carbonated flows will have separate flow control devices upstream of the beverage tube 400. Hot water will flow to the spigot separate from the chilled and carbonated water. In one embodiment, hot water may have its own spigot.

[0033] As shown in FIG. 6, a carbon dioxide tank 242 is connected to the carbonator 240 by means of a food-grade flexible tube 244.

[0034] The beverage tube 400 receives water from the chilled water tube 135, the carbonated water tube 132, and the heated water tube 133. The beverage tube 400 also receives liquid 501 from the plurality of cartridges 500. As shown in FIG. 4, the beverage tube 400 is perforated by a nib hole 420 corresponding to each one of the cartridges 500 used in the array in the selected embodiment. Each nib hole 420 is protected by a self-sealing gasket 544 that forms an air- and water-tight seal around a nib 542 attached to the cartridge 500. In one embodiment, each of the cartridges 500 may have a dedicated nib hole 420 in the beverage tube 400. In another embodiment any cartridge 500 may be connected at any location on the beverage tube 400.

[0035] As shown in FIG. 4, water flows in direction A through the beverage tube 400 from the tank end 410 toward the dispenser end 412. This water may be any combination of heated, chilled, or carbonated water from any of the water tubes 132, 133, and 135. When a consumer activates the beverage dispenser 100, the system 600 responds to cause water to flow into the beverage tube 400. Responsive to consumer inputs, the liquid 501 from one or more of the cartridges 500 is dispensed into the beverage tube 400 via a dispensing tube 540.

[0036] In one embodiment, the dispensing tube 540 is removably inserted in one of the nib holes 420 by means of one of the nibs 542. The dispensing tube 540 may be comprised of a food-grade plastic material, such as, for example, silicone, PVC, vinyl, or rubber. In another embodiment, the dispensing tube 540 is fixedly inserted in the nib hole 420. In another embodiment, the gasket 544 seals the juncture of the nib 542 and the nib hole 420. In yet another embodiment, the gasket 544 seals the beverage tube 400 when the nib 542 is removed from the nib hole 420.

[0037] As further shown in FIG. 4, in one embodiment, the cartridge 500 is encased in a pressure sleeve 520 which exerts pressure on the cartridge cavity 502. In one embodiment, the cartridge 500 is comprised of plastic, such as, for example, flexible polyethylene. In another

embodiment, the cartridge 500 is comprised of rubber or silicone. The pressure sleeve 520 is comprised of a flexible material such as, for example, plastic or silicone. In one embodiment, the pressure sleeve 520 is pressurized by carbon dioxide. In another embodiment, the pressure sleeve 520 is pressurized by an air pump. In another embodiment, the pressure sleeve 520 is pressurized by a mechanical clamp. In another embodiment, the cartridge 500 is pressurized by means of a screw clamp.

[0038] As shown in FIG. 7A, in one embodiment, a pump 560 is engaged with the dispensing tube 540 at the dispensing end 510 of the cartridge 500. The pump 560 may be any type of liquid pumping system, such as, for example, a stepper pump as manufactured by Quantex Arc Ltd., London, England. The pump 560 is made of food-grade materials, including but not limited to polypropylene, nitrile, hytrel, silicone, or other plastic materials. The pump 560 causes the liquid 501 to pass in a measured quantity from the cartridge cavity 502 into the dispensing tube 540. The liquid 501 travels in Direction B, as shown. The pump 560 is controlled by the system 600. In one embodiment, the pump 560 causes the liquid 501 to dispense in a pre-set quantity, such as, for example, 0.1 cc/sec. In another embodiment, the pump 560 produces a constant rate of flow of the liquid 501. The range of the liquid 501 that is dispensed by the pump 560 is from 0.01 cc to 10 cc.

[0039] As shown in FIG. 7B, in another embodiment, the pump 560 is engaged with the dispensing tube 540. As shown in FIG. 7C, in another embodiment, the pump 560 is engaged with the dispensing tube 540 at the nib 542. In another embodiment, the pump 560 is removably engaged with the gasket 544.

[0040] It is understood that in other embodiments of the present invention the arrangement of cartridges 500 may be any combination of the types described above. It is understood that in other embodiments of the present invention, the liquid 501 can be any of a plurality of water-soluble concentrates. It is understood that in other embodiments of the present invention, the ease of a consumer exchanging a spent cartridge 500 for a new cartridge 500 can be effected manually, by use of tools, or through any of a variety of angles or arrangements.

[0041] A number of embodiments of the invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and

scope of the invention. Accordingly, other embodiments are within the scope of the following claims.

What is claimed is:

1. A beverage dispenser comprising:
 - a plurality of water-soluble additives;
 - a filter;
 - a plurality of holding tanks; and
 - a networked central processing unit,
 - the central processing unit controlling addition of any of the plurality of water-soluble additives to water from any of the plurality of holding tanks.
2. The beverage dispenser of claim 1 wherein at least one of the plurality of water-soluble additives is a flavor additive.
3. The beverage dispenser of claim 1 wherein at least one of the plurality of water-soluble additives is an electrolyte additive.
4. The beverage dispenser of claim 1 wherein the filter is a carbon filter.
5. The beverage dispenser of claim 1 further comprising a consumer interface.
6. The beverage dispenser of claim 5 wherein the dispensing of at least one of the plurality of water-soluble additives is directed by a consumer interacting with the central processing unit via the consumer interface.
7. The beverage dispenser of claim 1 further comprising a carbonation tank.
8. The beverage dispenser of claim 1 wherein the water-soluble additives are contained in cartridges.
9. The beverage dispenser of claim 1 wherein at least one of the plurality of cartridges is hygienically sealed.
10. The beverage dispenser of claim 8 wherein the hygienically sealed cartridge is removably attached to the beverage dispenser.

11. The beverage dispenser of claim 6 wherein the central processing unit records a consumer preference associated to the specific consumer.
12. The beverage dispenser of claim 9 wherein at least one of the plurality of cartridges further comprises a pump.
13. The beverage dispenser of claim 1 further comprising a sensor which receives a unique identifier associated with a specific water-soluble additive.
14. The beverage dispenser of claim 12 wherein the sensor receives information about the amount of water-soluble additive remaining.
15. The beverage dispenser of claim 6 wherein at least one of the plurality of water-soluble additives is dispensed in a specific concentration or combination which was previously associated with a specific consumer.
16. The beverage dispenser of claim 1 wherein the central processing unit is networked to multiple dispensers.
17. The beverage dispenser of claim 17 wherein any one of a plurality of beverage dispensing units receives information previously associated with a specific consumer from the central processing unit.
18. The beverage dispenser of claim 1 wherein the water-soluble additives and water are dispensed into a container provided by the consumer.
19. The beverage dispenser of claim 1 wherein at least one of the plurality of holding tanks heats water to at least 100° Fahrenheit.
20. The beverage dispenser of claim 1 wherein at least one of the plurality of holding tanks cools water below room temperature.
21. The beverage dispenser of claim 15 wherein the central processing unit indicates a low quantity remaining of any one of a plurality of water-soluble flavor additives and notifies via a network connection the location of the one of a plurality of beverage dispensers suffering low supply.

22. The beverage dispenser of claim 1 wherein at least one of the plurality of water-soluble additives is a vitamin additive.
23. The beverage dispenser of claim 1 further comprising a water source.
24. The beverage dispenser of claim 23 wherein the water source is plumbed from a source native to the location of the beverage dispenser.
25. The beverage dispenser of claim 23 wherein the water source is provided by a consumer.
26. The beverage dispenser of claim 5 wherein one or more customized messages, images, or advertising appears on the consumer interface.
27. The beverage dispenser of claim 26 wherein the customized messages, images, or advertising are responsive to the unique identifier of a specific user.
28. The beverage dispenser of claim 1 further comprising a sensor which determines the water level in a user-provided container.
29. The beverage dispenser of claim 9 wherein at least one of the plurality of cartridges is compressed by a pressure sleeve to dispense water-soluble additive.

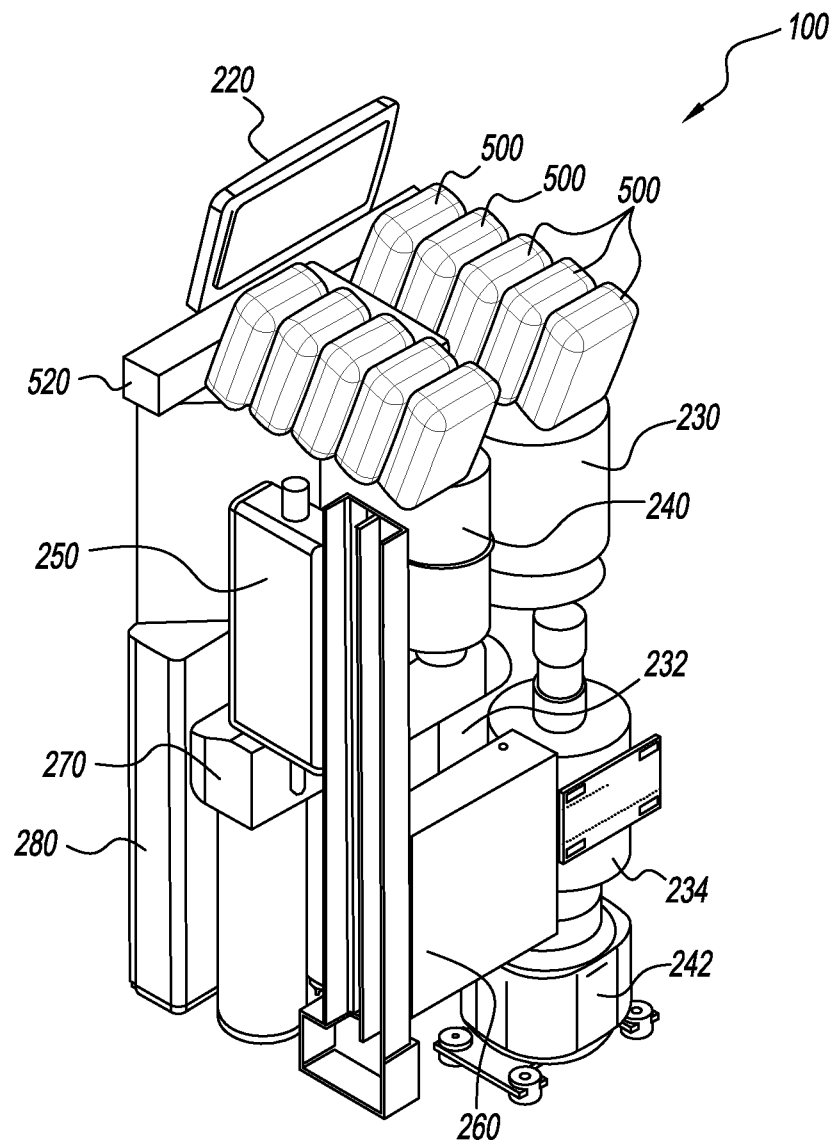
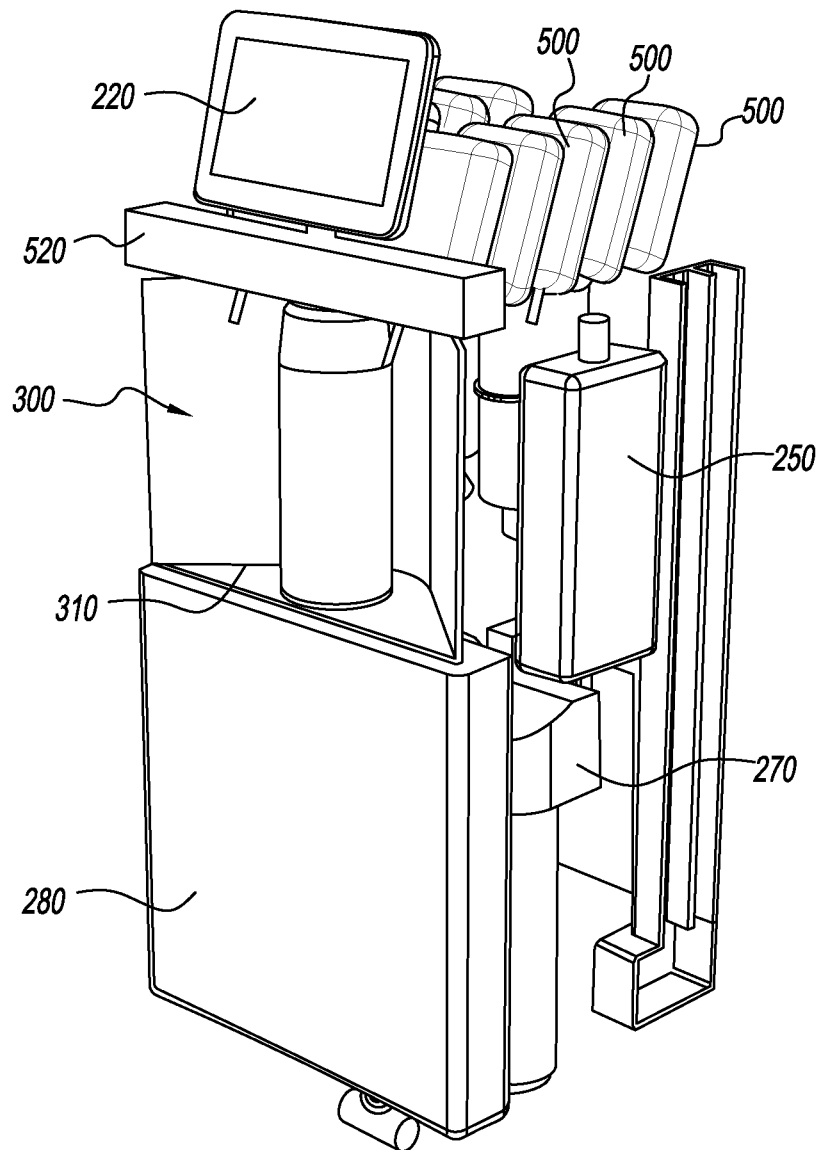
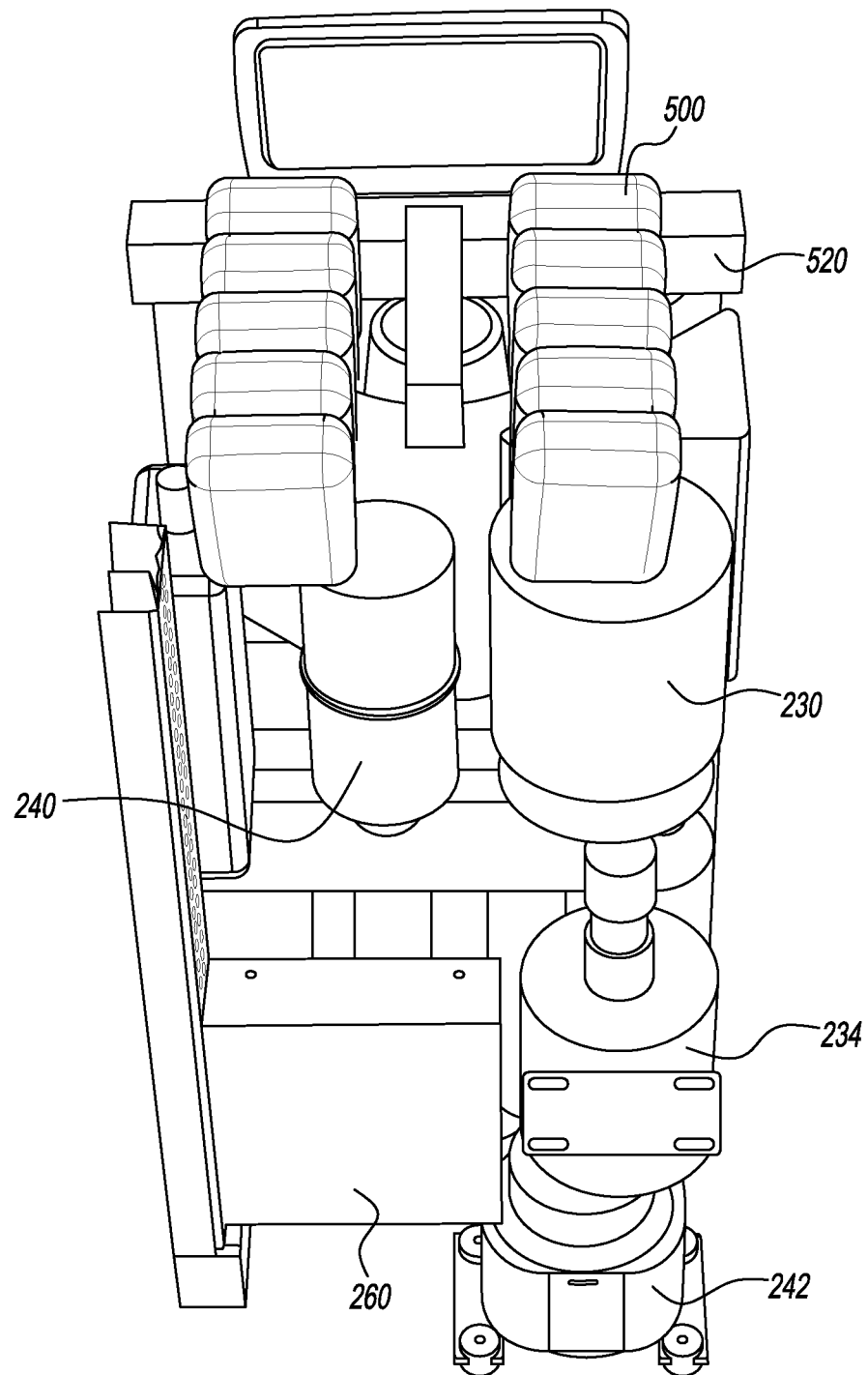
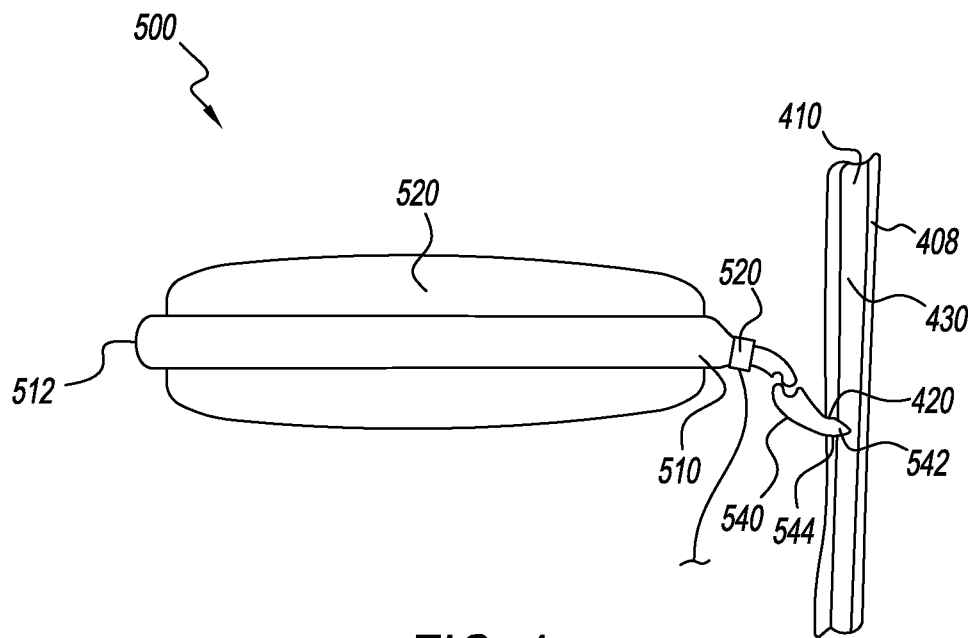


FIG. 1

**FIG. 2**

**FIG. 3**

**FIG. 4**

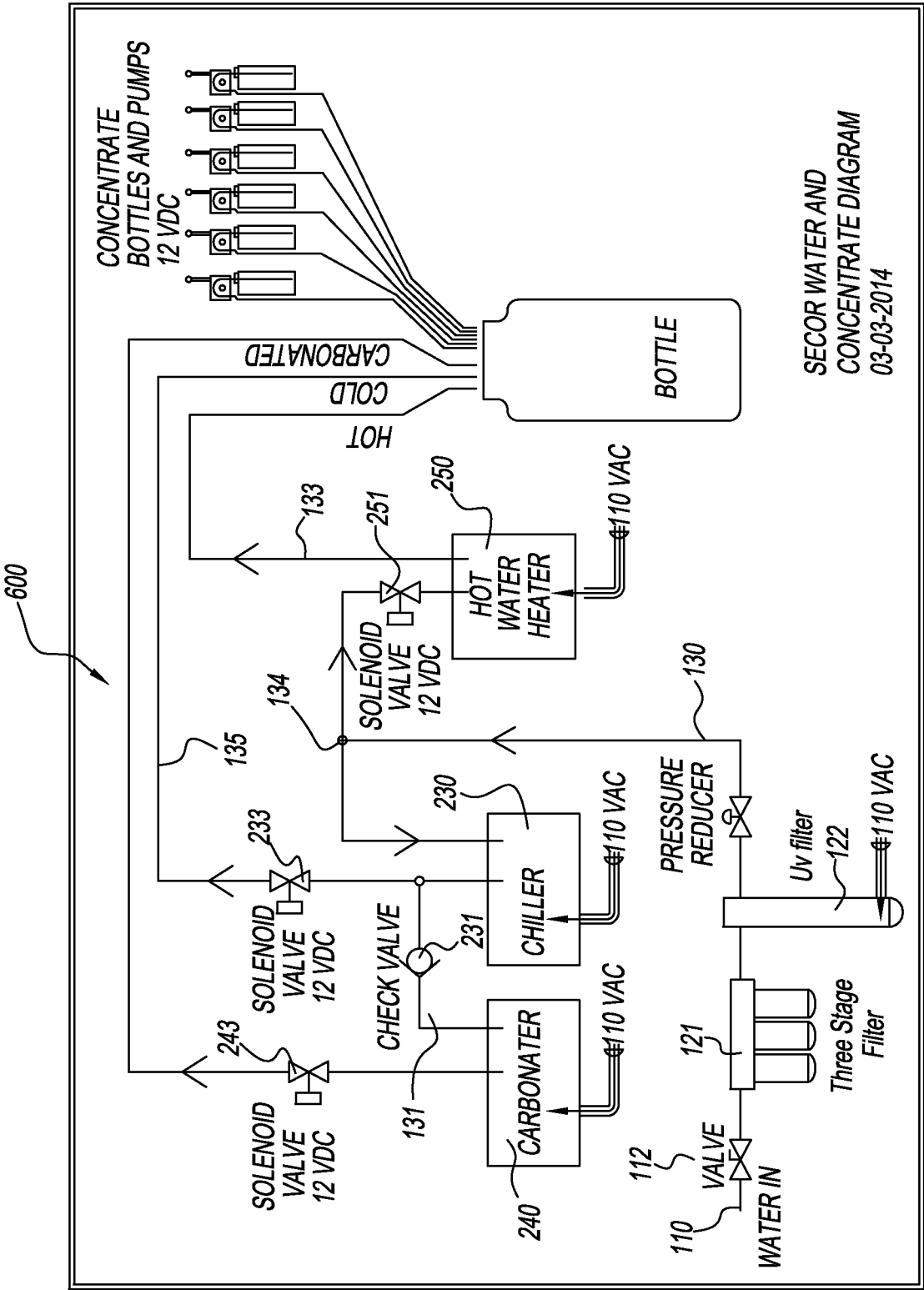


FIG. 5

SECOR WATER AND
CONCENTRATE DIAGRAM
03-03-2014

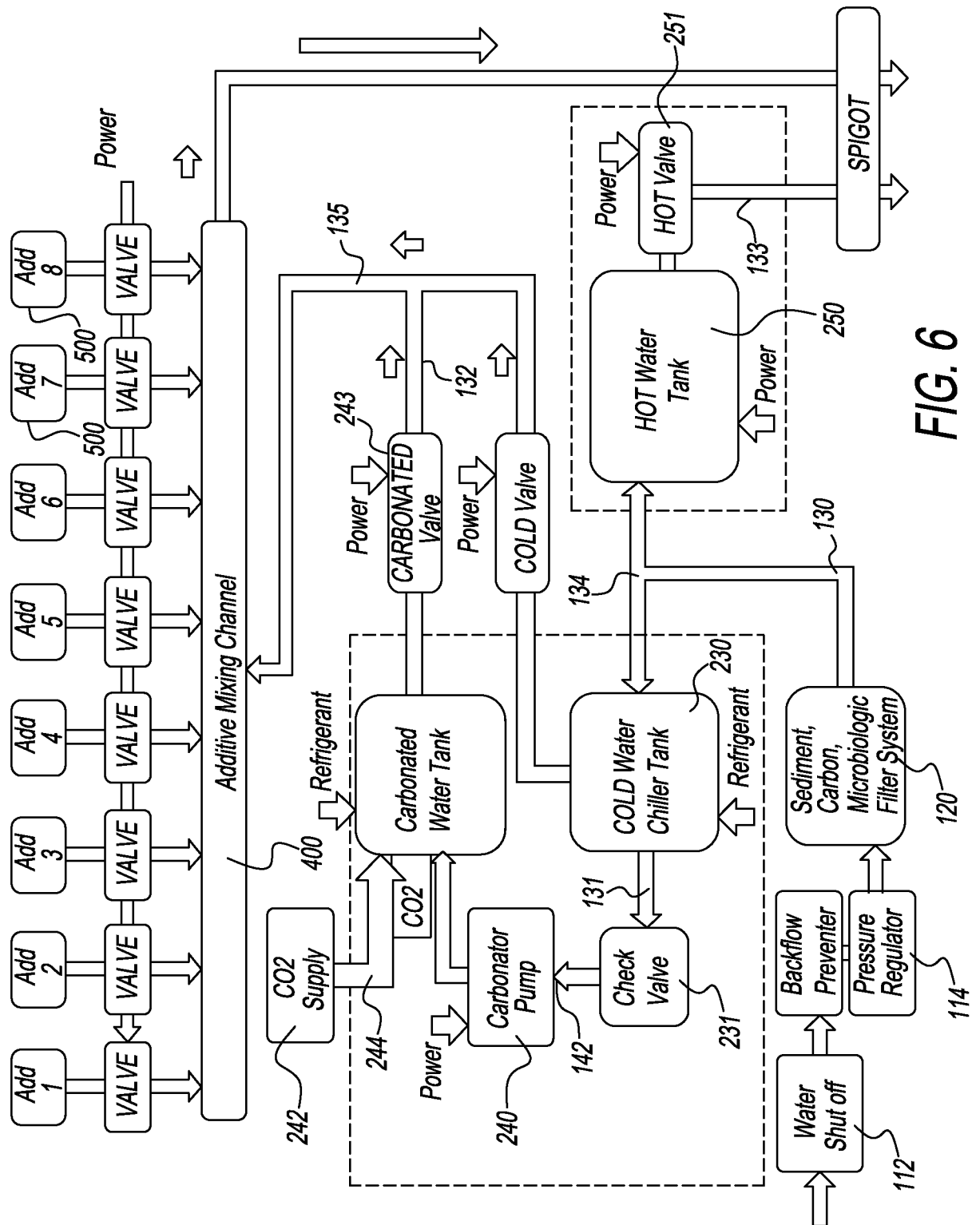
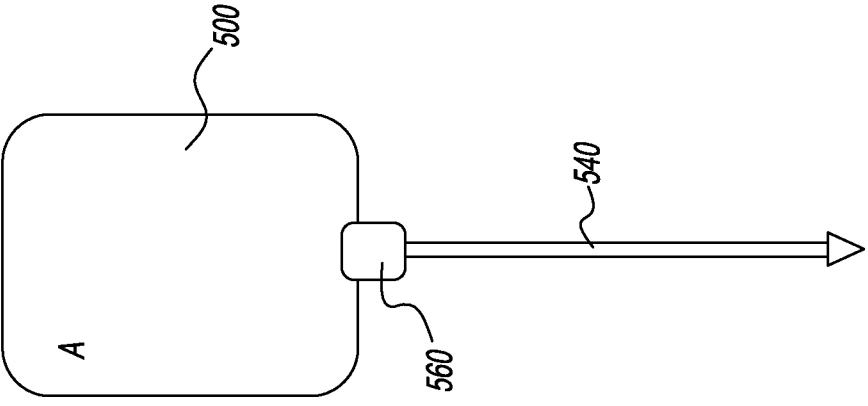
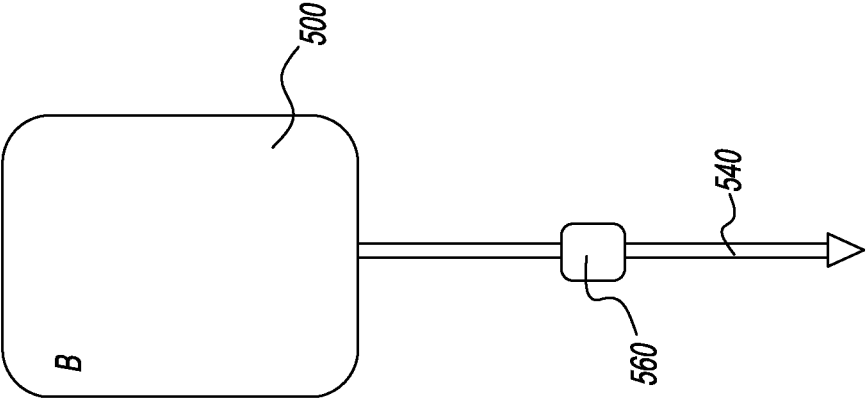
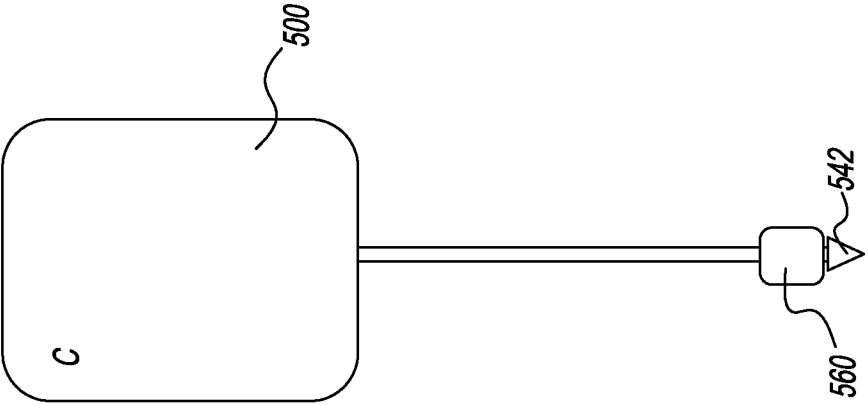


FIG. 6



B

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US15/22551

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B67D 1/00, 1/10, 1/12 (2015.01)

CPC - B67D 1/00, 1/0078, 1/0882

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 1/00, 1/04, 1/08, 1/10, 1/12 (2015.01)

CPC - B67D 1/00, 1/0014, 1/0021, 1/0022, 1/0078, 1/0079, 1/0882

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); ProQuest; EBSCO; Google Scholar; beverage, fluid, water, drink, dispenser, additive, flavor, sweetener, cartridge, tank, holder, CPU, interface

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/0114244 A1 (GATIPON, SB et al.) 24 May 2007; abstract; figures 1-2, 6A, 14A; 15A-15E; paragraphs [0006], [0009], [0036], [0038]-[0039], [0041], [0046]-[0047], [0073], [0076]-[0077], [0113], [0116]-[0118]	1-29
Y	US 5,064,097 A (BROG, L et al.) 12 November 1991; figure 5; column 2, lines 48-52; column 6, lines 52-55; column 7, lines 4-67; column 8, lines 12-23; column 14, lines 11-14	1-29
Y	US 2006/0021919 A1 (OLSON, JD et al.) 02 February 2006; abstract; paragraphs [0035], [0050]-[0051], [0053], [0058], [0068], [0071]	3, 8-10, 12-14, 21, 25, 29
Y	AU 2013/270607 A1 (THE COCA-COLA COMPANY) 06 February 2014; figures 1, 6; paragraphs [0030]-[0032], [0035], [0043]-[0044], [0069], [0071]-[0073]	16-17, 26-27
Y	GB 2,449,002 B (GRIFFITS, JP et al.) 31 December 2008; figure 9; page 28, lines 36-56; page 29, lines 14-15	28
Y	CN 103410721 A (QIAN, X et al.) 27 November 2013; abstract; paragraph [0035]	29



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"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

29 May 2015 (29.05.2015)

Date of mailing of the international search report

29 JUN 2015

Name and mailing address of the ISA/

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

Shane Thomas

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