INTERNAL DRINK MIX SYSTEM

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ABSTRACT

A drink mix system is provided for mixing one or more additives with liquid in a container. An additive holder is provided having an end wall that attaches to the end wall of a standard screw-off bottle cap. Inner and outer walls define one or more additive holding spaces that are sealed off from the liquid with one or more removable seals. Additive holding spaces may be in the form of concentric cylindrical holding spaces, wedge-shaped holding spaces, or stacked holding spaces. Additives may comprise vitamins, flavorings or colorings, and may be in a liquid, powder, solid or gel form. When desired, a user removes the seal(s) and selectively mixes one or more additives with the liquid in the bottle. This results in an inexpensive drink mix system that can utilize standard bottle caps and allows a user to selectively flavor a beverage.
INTERNAL DRINK MIX SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS


BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention pertains to the art of drink mix systems and, more specifically, to an additive mixing system for screw-caps containers including additive holders that allow additives to be selectively added to a liquid by a user. The invention may be utilized to customize soft drinks, juices, bottled water, alcoholic beverages and other marketed drinks.

[0004] 2. Discussion of the Prior Art

[0005] Billions of beverage containers are sold throughout the world every year. Generally, they are limited to only one flavor per container, and the total range of flavors available from bottles is quite limited when compared with the vast quantities sold and the many millions of consumers involved. Thus far, few simple, inexpensive options exist that allow consumers the freedom to enhance or multiply flavors for satisfying individual tastes without utilizing specialized beverage containers or caps.

[0006] Virtually all conventional beverage bottles now marketed have a narrow threaded neck adapted to mate with a threaded, small diameter cap. Thus, consumers who wish to add their own flavoring to a beverage (e.g., lemon concentrate to bottled water) must remove the cap and insert their additive through the narrow bottle opening—a procedure that can be inefficient, untidy and inconvenient.

[0007] One system’s approach that has been explored for introducing additives within a closed container is to package the additives within storage cells incorporated into specifically designed caps. For example, U.S. Pat. Nos. 6,170,654 and 6,561,232 disclose caps shaped to include storage areas that release additives into a beverage or liquid upon opening of the cap, but do not allow a user to choose a range of additives or the quantity to be added. In other systems (e.g., U.S. Pat. No. 6,372,270, Japanese Patent Document No. 2003/072822, and World Patent Document No. 2004/060766), an additive also is housed in a storage area of a cap such that a user can mix the additive with a liquid. However, these systems require specifically constructed containers and caps, thereby increasing container size, complexity and manufacturing costs.

[0008] As a consequence of the system limitations cited above, there remains a need in the art for an additive mixing system that is inexpensive to manufacture, allows a user to easily introduce several additives to a liquid and can utilize standard beverage bottles and caps.

SUMMARY OF THE INVENTION

[0009] The present invention is directed to a drink mix system including a standard threaded container cap having an additive holder attached thereto. One or more seals are provided to secure different flavoring additives within the holder to prevent liquid in the container from contacting the additives until so desired by a user. The seals preferably include tabs to aid in removal and can be easily perforated by a user. The additive holder preferably include inner and outer concentric holding spaces, wedge shaped holding spaces or stacked holding spaces.

[0010] When a user wishes to introduce an additive to a contained liquid, he/she simply removes the cap from the container, selectively removes or perforates one or more seals of the additive holder, dispenses one or more additives into the liquid, replaces the cap on the container and shakes the container to dissolve the additive within the liquid.

[0011] Additives can constitute vitamins, flavorings, coloring, or any other desired additive, and may be in the form of powders, liquids, syrup or gels that dissolve easily in liquid. This results in an inexpensive drink mix system that allows a user to selectively add one or more additives to a beverage container, either at once or sequentially. Moreover, the adaptability of the invention to standardized bottle and cap designs allow for the alternative production and introduction of new flavors or flavor sequences not provided by the beverage industry.

[0012] Additional objects, features and advantages of the present invention will become more readily apparent from the following detailed description of a preferred embodiment when taken in conjunction with the drawings wherein like reference numerals refer to corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a perspective exploded view of a first embodiment of the drink mix system of the present invention;

[0014] FIG. 2 is a cross-sectional side view of the embodiment of FIG. 1;

[0015] FIG. 3 is a cross-sectional side view of a second embodiment of the present invention;

[0016] FIG. 4 is a perspective exploded view of a third embodiment of the present invention;

[0017] FIG. 5 is a perspective exploded view of a fourth embodiment of the present invention;

[0018] FIG. 6 is a perspective exploded view of a fifth embodiment of the present invention; and

[0019] FIG. 7 is a cross-sectional view of the fifth embodiment shown in FIG. 6.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] With initial reference to FIG. 1, a drink mix system 10 includes a bottle cap 20 used to close a bottle 30, an additive holder or disk 40 and a seal 50. Cap 20 includes an end wall 60 and a side wall 70 which collectively define an inner portion 80. Cap 20 can be any cap having threads 90 that extend from side wall 70 and are adapted to mate with threads 100 on bottle 30. Preferably, cap 20 and bottle 30 have standard structures and shapes, thus allowing bottles and caps currently on the market to be used with little or no
modification in conjunction with the present invention. Disk 40 includes first and second sides 110 and 111, and preferably also includes first and second diametrically opposed tabs 120 and 121. Disk 40 is formed from cardboard, plastic, foam or any other thin flexible material capable of supporting a beverage or drink additive. A first drink additive 130 is coated on first side 110 of disk 40. Preferably, for a greater range of additives, a second drink additive 140 is coated on second side 111 of disk 40. Optionally, an additional (third) drink additive, or layer of additive 150 is coated on end wall 60 of cap 20. Additional drink additive 150 is used by itself in drink mix system 10, or is used in combination with disk 40. Likewise, disk 40 is used by itself in drink mix system 10 or is used in combination with additional drink additive 150. Drink additives 130, 140 and 150 may be any type and combination of desired additives, such as vitamins, flavorings, colorings, etc. In one example, additive 130 includes a lemon flavoring while additive 140 includes a lime flavoring. Preferably, disk 40 is formed by depositing a fluid or semi-fluid amount of additive 130 on first side 110 and hardening the additive by drying, microwaving, cooling, radiant heat, etc. When desired, second additive 140 is then deposited on second side 111 and hardened. Likewise, additional drink additive 150 is formed by depositing a fluid or semi-fluid amount of the additive onto end wall 60 of cap 20 and hardening. In the case where disk 40 is made of an absorbent foam or sponge-like material, additives 130 and 140 are impregnated within disk 40 or deposited on the surface thereof. Seal 50, which is adapted to seal off disk 40 and end wall 60 of cap 20 from any liquid contained within bottle 30, is manufactured from plastic, foil, or any other flexible material impermeable to liquids.

When a user wishes to drink from bottle 30, the user unscrews cap 20 from bottle 30 and decides to add one or more of additives 130,140 and 150 to a liquid within bottle 30. In the case where the user desires to add all of the additives to the liquid, he/she simply removes seal 50 from cap 20, preferably with the assistance of first and second tabs 155 and 156, and replaces cap 20 on bottle 30. The second additive 140 is now exposed to the liquid within bottle 30 and the user can shake bottle 30 to dissolve a desired amount of second additive 140 into the liquid. Once the desired amount of second additive 140 has been dissolved, the user removes cap 20 from bottle 30 and flips disk 40 over such that first additive 130 is now exposed to the liquid in bottle 30. Preferably, first and second tabs 120 and 121 can be utilized to aid a user in flipping disk 40. Next, the user replaces cap 20 on bottle 30 and shakes bottle 30 to dissolve a desired amount of first additive 130 in the liquid. The user can then remove cap 20 from bottle 30 and replace cap 20 on bottle 30. This allows additional drink additive 150 to be exposed to the liquid in bottle 30. Finally, the user can shake bottle 30 to dissolve a desired amount of additional drink additive 150 in the liquid. Of course, if a user does not wish to add a particular additive to the liquid, the mixing step associated with that particular additive can be skipped. For example, if a particular cap 20 includes only disk 40 having a first additive 130 which is lemon flavored and a second additive 140 which is lime flavored, a user can choose to dissolve only the lime flavored additive in the liquid within bottle 30. In another example, if a particular cap includes a cherry flavored additional drink additive 150, a user can choose to add or ignore the cherry flavored additive. Drink mix system 10 therefore allows a user to flavor a bottled beverage to his or her particular tastes, or to enjoy a sequence of several different flavors while proceeding to consume a beverage.

Turning now to FIG. 3, there is shown a second embodiment of the present invention indicated at 210, including a bottle cap 220 adapted to close a bottle 230, a seal 250 and a nugget 260 having a first or outer additive layer 270 and optionally, a second or inner additive layer 280. Preferably, nugget 260 is bullet-shaped to aid in dissolution of nugget 260 in a liquid and includes an end wall 290. Seal 250 is placed over nugget 260 to sandwich nugget 260 between seal 250 and an end wall 295 of cap 220, with end wall 290 of nugget 260 abutting end wall 295. Seal 250 is preferably in the form of shrink wrap, but can be foil or any other flexible material impermeable to liquid. Just as discussed in accordance with the first embodiment, cap 220 can be any cap having threads 300 that extend from a side wall 310 and are adapted to mate with threads 320 on a bottle 230. Preferably, cap 220 and bottle 230 have standard shapes, thus allowing bottles and caps currently on the market to be used in conjunction with the present invention. Nugget 260 can be formed directly on cap 220 or can be separately formed and sealed to cap 220, preferably using a seal 250. When a user desires to dissolve nugget 260 in a liquid within bottle 230, he or she simply removes cap 220 from bottle 230, removes seal 250 from cap 220, replaces cap 220 on bottle 230 and shakes bottle 230 to dissolve nugget 260 within the liquid. Outer and inner additive layers 270 and 280 can comprise any type and combination of desired additives, such as vitamins, flavorings, colorings, etc. For example, outer additive layer 270 can include lemon flavoring while inner additive layer 280 can include lime.
flavoring. An original flavoring in bottle 30 can be used as
an additive so as to permit the user to intensify the original
taste. For example, a bottle originally containing cherry soda
could be fitted with additional cherry flavoring.

0024 A third embodiment of the drink mix system of the
present invention will now be discussed with reference to
Fig. 4. Drink mix system 400 includes a bottle cap 404, used
to close a bottle 408, an additive holder 410 and a seal 412.
Cap 404 includes an end wall 414 and a side wall 416
collectively defining an inner portion 418. Cap 404 can be
any cap having threads 420 that extend from side wall 416
and are adapted to mate with threads 422 on bottle 408. As
with the first and second embodiments, cap 404 and bottle
408 preferably have standard structures and shapes.

0025 Additive holder 410 includes an outer tube or wall
424, a concentric inner tube or wall 426 and a top wall 428
connected to both outer wall 424 and inner wall 426. A first
additive holding space 430 is defined between top wall 428
and outer and inner walls 424 and 426 and is adapted to hold
a variety of additives, such as additive 431. Likewise, a
second additive holding space 432 is defined by inner wall
426 and is adapted to hold a variety of additives, such as
additive 433. As with drink additives 130, 140 and 150 listed
above, additives 431 and 433 may be any type and combi-
nation of desired additives, such as vitamins, flavorings,
colorings, etc. For example, additive 431 may be lemon
flavoring and additive 433 may be lime flavoring. Although
shown in a solid form, it should be understood that additives
431 and 433 may be in any other useable form, such as a
powder, gel, or liquid form, for example.

0026 Additive holder 410 has a smaller diameter D than
the inner diameter D' of cap 404, and fits within inner
portion 418 of cap 404. Top wall 428 of additive holder 410
abuts and is removable from or permanently fixed to end
wall 414 of cap 404. The outer diameter of additive D is such
that threads 420 on cap 404 are unobstructed and can mate
easily with threads 422 of bottle 408. Additionally, outer and
inner walls 424 and 426 are preferably long enough to
extend into at least the neck portion 434 of bottle 408,
providing first and second additive holding spaces 430 and
432 with sufficient volume to hold a desired amount of
additive. Additionally, the length of additive holder 410
preferably extends beyond cap sidewall 416 to aid a user in
dispensing an additive stored therein without spillage. It
should be understood that the number of additive holding
spaces need not be limited to two as shown. Generally, the
number of additive holding spaces is only limited by the
inner diameter D' of cap 404.

0027 Seal 412 preferably includes first and second tabs
436, 438 and is adapted to seal additive holding spaces 430,
432 of additive holder 410 to selectively contain additives
therein. Seal 412 can be a conventional sealing material and
may be pulled or scratched off; or alternatively pierced, in
order to access additives within additive holder 410. Option-
ally, seal 412 can consist of separate sheets or seals (not
shown), each sealing one of the additive holding spaces 430,
432.

0028 When a user wishes to drink from bottle 408, he or
she simply unscrews cap 404 from bottle 408 and decides
when and if to add one or more additives to a liquid 442
within bottle 408. In the case where the user desired to add
all of the additives to the liquid, he or she simply removes
seal 412 from additive holder 410, either by perforation of
the seals or with the assistance of pull tabs 436, 438. If a user
does not wish to add a particular additive to liquid 442, that
particular additive can remain sealed within additive holder
410 or may be discarded. The desired additives are then
added to liquid 442 to dissolve. Optionally, a user may close
cap 404 and shake bottle 408 to aid in dissolution. Additives
may be added all at once or in sequence over time. Drink
mix system 400 therefore allows a user to flavor a bottled
beverage to his or her particular tastes, or to enjoy a
sequence of different flavors while proceeding to consume a
beverage.

0029 A fourth embodiment indicated at 400 will now be
discussed with reference to Fig. 5. As with the third
embodiment, drink mix system 400 utilizes a standard cap
404 and bottle 408. These elements have already been
discussed previously, and will not be discussed in further
detail. Instead, your attention is drawn to an additive holder
500, which includes first, second, and third additive holding
spaces 504, 505 and 506. More specifically, additive holder
500 includes a top wall 508, an outer wall 509, and an inner
dividing wall 510 having first, second and third sections 511,
512 and 513. As shown, first additive holding space 504 is
defined by top wall 508, outer wall 509, and second and third
sections 512 and 513; second additive holding space 505 is
defined by top wall 508, outer wall 509 and first and third
sections 511 and 513; and third additive holding space 506 is
defined by top wall 508, outer wall 509, and first and
second sections 511 and 512. Although shown as holding
solid additive blocks 516, 517 and 518, it should be under-
stood that any type of desired additive may be stored in
additive holder 500. As with previous embodiments, addi-
tives 516-518 can comprise any combination of desired
additives.

0030 Additive holder 500 is adapted to fit within inner
portion 418 of cap 404, wherein top wall 508 of additive
holder 500 abuts and is removable from or permanently
fixed to end wall 414 of cap 404. The outer diameter D of
additive holder 500 allows sufficient space so that threads
420 on cap 404 are unobstructed and can mate easily with
threads 422 of bottle 408. Additionally, outer wall 509 and
inner wall 510 are preferably long enough to extend into at
least the neck portion 434 of bottle 408, providing a volume
in first, second and third additive holding spaces 504-506
sufficient to hold a desired amount of additive. Additionally,
the length of at least outer wall 509 preferably extends
beyond cap sidewall 416 to aid a user in dispensing an
additive stored therein without spillage. It should be under-
stood that the number of additive holding spaces need not be
limited to three as shown. Generally, the number of additive
holding spaces is only limited by the inner diameter D' of
cap 404.

0031 In a manner similar to drink mix system 400, seal
412 is adapted to seal additive holding spaces 504-506 in
drink mix system 400'. Optionally, seal 412 can consist of
separate sheets or seals (not shown) each sealing one of the
additive holding spaces 504-506.

0032 The function and operation of the additive holder
500 is generally the same as the function and operation of
additive holder 410. That is, when a user wishes to drink
from bottle 408, he or she simply unscrews cap 404 from
bottle 408 and decides when and if to add one or more
additives to liquid 442 within bottle 408. In the case where the user desired to add all of the additives to the liquid, he or she simply removes seal 412 from additive holder 500, either by perforation of the seal or with the assistance of pull tabs 436, 438. If a user does not wish to add a particular additive to liquid 442, that particular additive can remain sealed within additive holder 500 or may be discarded.

[0033] A fifth embodiment of the drink mix system of the present invention will now be discussed with reference to FIGS. 6 and 7. As with the third and fourth embodiments, drink mix system 400 utilizes a standard cap 404 and bottle 408. These elements have already been discussed previously, and will not be discussed in further detail. Instead, your attention is drawn to an additive holder 600 including an outer tube or wall 624 and a top wall 626, which define a first additive holding space 630 adapted to hold one or more additives, such as additives 631 and 632. As with drink additives listed above, additives 631 and 632 may be any type and combination of desired additives, such as vitamins, flavorings, colorings, etc. Although shown in powdered form, it should be understood that additives 631 and 632 may be in any other useable form, such as a solid, gel, or liquid form.

[0034] As shown, additive holder 600 is adapted to fit within cap 404, wherein top wall 626 of additive holder 600 abuts and is removable from or permanently fixed to end wall 414 of cap 404. The outer diameter d" of additive holder 600 allows sufficient space so that threads 420 on cap 404 are unobstructed and can mate easily with threads 422 of bottle 408. Additionally, outer wall 624 is preferably long enough to extend into at least the neck portion 434 of bottle 408, providing a volume in additive holding space 630 sufficient to store a desired amount of additive. Furthermore, the length of additive holder 600 preferably extends beyond cap sidewall 416 to aid a user in dispensing an addictive stored therein without spilling. It should be understood that the number of additive holding spaces need not be limited to two as shown.

[0035] A seal 612 provides a sealed barrier between a first portion 630 of additive holding space 630 and a second portion 637 of additive holding space 630. Likewise, a seal 613 provides an impermeable barrier between liquid 442 in bottle 408 and the second portion 637. Seals 612 and 613 can be made from any conventional sealing material and may be pulled or scratched off, or alternatively pierced, in order to access additives within additive holder 600. Seals 612 and 613 may optionally includes pull tabs, such as tabs 640 and 642, to aid in removal of the seals.

[0036] When a user wishes to drink from bottle 408, he or she simply unscrews cap 404 from bottle 408 and decides when and if to add one or more additives to liquid 442 within bottle 408. More specifically, a user may remove or puncture seal 613, thereby gaining access to additive 632. The user may then mix a desired amount of additive 632 with liquid 442, or discard all or some of the additive. Next, the user may then remove or puncture seal 612, thereby gaining access to additive 631, or leave seal 612 in place. When seal 612 is punctured or removed, the user may then add a desirable amount of additive 631 to liquid 442.

[0037] Although described with reference to a preferred embodiment of the invention, it should be readily understood that various changes and/or modifications can be made to the invention without departing from the spirit thereof. For instance, a fourth additive could be on seal 50 to supplement disk 40. Furthermore, although shown as cylindrical, additive holders may be a different shape without departing from the invention. In general, the invention is only intended to be limited by the scope of the following claims.

I claim:

1. A drink mix system for mixing one or more additives into liquid held by a container comprising:

   a cap including an end wall and a side wall which collectively define an inner portion, and threads extending from the side wall into the inner portion adapted to mate with threads formed on the container;
   an additive holder including a top wall and an outer wall extending therefrom, the top wall and outer wall defining a first additive holding space, wherein the top wall is attached to the end wall of the cap;
   a first additive removably stored in the first additive holding space; and
   a removable first seal adapted to seal the first additive holding space.

2. The drink mix system of claim 1, wherein the first seal includes a tab to aid in removal of the first seal from the additive holder.

3. The drink mix system of claim 1, wherein the additive holder is permanently attached to the end wall of the cap.

4. The drink mix system of claim 1, wherein the outer wall of the additive holder is sized to extend into a neck portion of the container.

5. The drink mix system of claim 1, wherein the seal is easily penetrated by a user to allow mixing of at least the first additive with the liquid in the container.

6. The drink mix system of claim 1, wherein the additive holder comprises a ridged or semi-ridged material.

7. The drink mix system of claim 1, wherein the container is a bottle.

8. The drink mix system of claim 1, wherein the first additive is selected from the group consisting of a vitamin, a flavoring, a coloring agent and a combination thereof.

9. The drink mix system of claim 1, wherein the first additive is in the form selected from the group consisting of a liquid, a solid, a powder, a gel and a combination thereof.

10. The drink mix system of claim 1, wherein the additive holder further comprises an inner wall defining a second additive holding space; and a second additive removably stored in the second additive holding space.

11. The drink mix system of claim 10, wherein the inner wall further defines a third additive holding space having a third additive removably stored therein.

12. The drink mix system of claim 10, wherein the first seal is adapted to seal the first and second additive holding spaces.

13. The drink mix system of claim 10, wherein the inner wall of the additive holder is sized to extend into a neck portion of the container.

14. The drink mix system of claim 10, wherein the first additive includes a lemon flavoring and the second additive includes a lime flavoring.

15. The drink mix system of claim 10, wherein both the outer and inner walls are cylindrical in shape.
16. The drink mix system of claim 10, wherein the outer and inner walls define wedge-shaped first and second additive holding spaces.

17. The drink mix system of claim 10, further comprising a removable second seal separating said first additive holding space from a second additive holding space.

18. The drink mix system of claim 10, wherein the second additive is selected from the group consisting of a vitamin, a flavoring, a coloring agent and a combination thereof.

19. The drink mix system of claim 10, wherein the second additive is in the form selected from the group consisting of a liquid, a solid, a powder, a gel and a combination thereof.

20. The drink mix system of claim 10, wherein the second seal includes a tab to aid in removal of the second seal from the additive holder.

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