

EASY OPEN CARTON

TECHNICAL FIELD

[0101] The present application and the resultant patent relate generally to cartons
5 and other types of containers and packaging and more particularly relate to cartons for
products such as micro-ingredient pouches and other items with the carton having an easy
to open tear away section for accessing the products therein.

BACKGROUND OF THE INVENTION

10 [0102] Generally described, current post-mix beverage dispensers usually mix
streams of syrup, concentrate, sweetener, bonus flavors, other types of flavoring, and/or
other types of ingredients with water and/or other types of diluent. The ingredients may
be stored in bag-in-box containers and the like at a distance from the beverage dispenser.
The ingredients may be pumped to the beverage dispenser and mixed with the diluent in or
15 downstream of the nozzle.

[0103] Recent improvements in beverage dispensing technology have focused on
the use of micro-ingredients. With micro-ingredients, the traditional beverage bases are
separated into their constituent parts at much higher dilution or reconstitution ratios. For
example, the “COCA-COLA FREESTYLE®” refrigerated beverage dispensing units
20 offered by The Coca-Cola Company of Atlanta, Georgia provide a significant increase in
the number and types of beverages that may be offered by a beverage dispenser of a
conventional size or footprint. Generally described, the “COCA-COLA FREESTYLE®”
refrigerated beverage dispensing units create a beverage by combining a number of highly
concentrated micro-ingredients with a macro-ingredient such as a sweetener and a diluent
25 such as still or carbonated water. The micro-ingredients generally are stored in cartons
positioned within or adjacent to the beverage dispenser itself. The number and type of
beverages offered by the beverage dispenser thus may be limited only by the number and
type of micro-ingredient cartons positioned therein.

[0104] One of the issues with the micro-ingredients is how to provide an adequate
30 package to transport the micro-ingredients to the beverage dispenser and to maintain the
micro-ingredients while in the beverage dispenser given the relatively small amounts that
may be used in each dispense. Such a package preferably would provide adequate

protection against degradation of the micro-ingredients while being efficient in term of space, volume, and cost as well as easy to use.

SUMMARY OF THE INVENTION

5 **[0105]** The present application and the resultant patent thus provide a carton for enclosing one or more products. The carton includes a pair of side walls, a top wall or a bottom wall, an end wall, and a tear away section extending across the pair of sidewalls, the top wall or the bottom wall, and the end wall in a number of perforations and a number of slits. The tear away section defines a notch on the end wall at the intersection of one of
10 the pair of sidewalls.

[0106] The present application and the resultant patent further provide a blank for erecting a carton. The blank includes a first side panel with a first side panel flap connected thereto, a second side panel with a second side panel flap connected thereto, a top or a bottom panel connected to the first side panel and the second side panel, and a tear
15 away section extending across the first side panel flap, the first side panel, the top or bottom panel, the second side panel, and the second side panel flap in a number of perforations, a number of slits, and a number of notches.

[0107] The present application and the resultant patent further provide a method of filling a beverage dispensing system with micro-ingredients. The method may include
20 filling a pouch with the micro-ingredients, packaging the pouch in a carton, transporting the carton to the beverage dispensing system, removing a tear away section of the carton by tearing along a number of perforations, a number of slits, and a number of notches, and positioning the carton within the beverage dispensing system.

[0108] These and other features and advantages of the present application and the resultant patent will become apparent to one of ordinary skill in the art upon review of the following detailed description when taken in conjunction with the several drawings and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

30 **[0109]** Fig. 1 is a schematic diagram of a beverage dispensing system as may be described herein.

[0110] Fig. 2 is a plan side view of a micro-ingredient carton as may be described herein.

[0111] Fig. 3 is a perspective view of the micro-ingredient carton of Fig. 2.

[0112] Fig. 4 is a plan end view of the micro-ingredient carton of Fig. 2.

5 [0113] Fig. 5 is a plan view of a blank that may be used to create the carton of Fig. 2.

[0114] Figs. 6A-6G are diagrammatic views of the use of the micro-ingredient carton in a beverage dispensing system.

10 DETAILED DESCRIPTION

[0115] Referring now to the drawings, in which like numerals refer to like elements throughout the several views, Fig. 1 shows an example of a beverage dispensing system 100 as may be described herein. The beverage dispensing system 100 may be used for dispensing many different types of beverages or other types of fluids. Specifically, the
15 beverage dispensing system 100 may be used with diluents, macro-ingredients, micro-ingredients, and other types of fluids. The diluents generally include plain water (still water or non-carbonated water), carbonated water, and other fluids. Any type of fluid may be used herein.

[0116] Generally described, the macro-ingredients may have reconstitution ratios
20 in the range from full strength (no dilution) to about six (6) to one (1) (but generally less than about ten (10) to one (1)). The macro-ingredients may include sugar syrup, HFCS (“High Fructose Corn Syrup”), concentrated extracts, purees, and similar types of ingredients. The micro-ingredients may have reconstitution ratios ranging from about ten (10) to one (1) and higher. Specifically, many micro-ingredients may have reconstitution
25 ratios in the range of about 20:1, to 50:1, to 100:1, to 300:1, or higher. The viscosities of the micro-ingredients typically range from about one (1) to about six (6) centipoise or so, but may vary from this range.

[0117] The various fluids used herein may be mixed in or about a dispensing nozzle 110. The dispensing nozzle 110 may be a conventional multi-flavor nozzle and the
30 like. The dispensing nozzle 110 may have any suitable size, shape, or configuration. The dispensing nozzle 110 may be positioned within a dispensing tower 120. The dispensing tower 120 may have any suitable size, shape, or configuration. The dispensing tower 120

may extend from a countertop and the like and/or the dispensing tower 120 may be a free-standing structure. The dispensing tower 120 may have a number of the dispensing nozzles 110 thereon.

5 **[0118]** The micro-ingredients may be stored in a number of micro-ingredient containers 130 or other types of micro-ingredient sources. The micro-ingredient containers 130 may have any suitable size, shape, or configuration. Any number of the micro-ingredient containers 130 may be used herein. The micro-ingredient containers 130 may be in communication with the dispensing nozzle 110 via a number of micro-ingredient pumps 140 positioned on a number of micro-ingredient conduits 145. The
10 micro-ingredient pumps 140 may have any suitable volume or capacity. The micro-ingredient containers 130 may be positioned in, adjacent to, and/or remote from the dispensing nozzle 110. For example, the micro-ingredient containers 130 may be positioned under the counter top upon which the dispensing tower 120 rests. Some or all of the micro-ingredient containers 130 may be agitated.

15 **[0119]** A still water source 150 may be in communication with the dispensing nozzle 110 via a still water conduit 160. Other types of diluents may be used herein. Still water or other types of diluents may be pumped to the dispensing nozzle 110 via a still water pump 170. The still water pump 170 may be any type of conventional fluid moving device and may have any suitable volume or capacity. Alternatively, the
20 pressure in a conventional municipal water source may be sufficient without the use of a pump. Any number of still water sources 150 may be used herein.

[0120] A carbonated water source 180 may be in communication with the dispensing nozzle 110 via a carbonated water conduit 190. The carbonated water source 180 may be a conventional carbonator and the like. The carbonator may have any suitable
25 size, shape, or configuration. Carbonated water or other types of diluents may be pumped to the dispensing nozzle 110 via a carbonated water pump 200. The carbonated water pump 200 may be any type of conventional fluid moving device and may have any suitable volume or capacity. Any number of carbonated water sources 180 may be used herein. A carbonated water recirculation line also may be used herein.

30 **[0121]** One or more macro-ingredient sources 210 may be in communication with the dispensing nozzle 110 via one or more macro-ingredient conduits 220. As described above, the macro-ingredient sources 210 may include sweeteners such as high fructose

corn syrup, sugar solutions, and the like. The macro-ingredient sources 210 may be a conventional bag-in-box or other type of container in any suitable size, shape, or configuration. Any number of the macro-ingredient sources 210 may be used herein. The macro-ingredients may flow to the dispensing nozzle 110 via a macro-ingredient pump 230. In this case, the macro-ingredient pump 230 may be a controlled gear pump and the like. Other types of pumps may be used herein.

[0122] Figs. 2-4 show a micro-ingredient carton 250 as may be described herein. As will be described in more detail below, the micro-ingredients may be dispensed into flexible pouches 260 or other types of containers. The pouches 260 may be packaged within the cartons 250 and the cartons may be transported to the beverage dispensing system 100. In describing the carton 250, the terms “bottom,” “top,” “side,” “end,” “first,” “second,” and the like are used for purposes of relative orientation only and not as absolute positions. For example, any surface of the carton 250 may be used as the bottom or the top as oriented by a user. Further, the terms “length,” “width,” “height,” and the like also refer to relative orientations. Similarly, the term “carton,” is meant to encompass “containers,” “boxes,” “packages,” and any other type of enclosure or packaging.

[0123] The carton 250 may be made out of cardboard, paperboard, corrugated board, and other types of foldable sheet materials. Various types of polymers and laminates also may be used. Specifically, the carton 250 may be made out of coated, unbleached paperboard. The paperboard may be recyclable. Other types of materials may be used herein. The paperboard may have a caliper (thickness) of about 0.026 to about 0.028 inches (about 0.66 to about 0.71 millimeters). The thickness of the paperboard may vary. (Thinner paperboard may result in a significant decrease in the overall amount of paperboard used and a resultant cost savings.) The carton 250 may have any suitable overall size and shape. Any suitable type of graphics, messaging, or other types of indicia may be printed or otherwise applied to the carton 250. The carton 250 may be constructed from a die cut blank as will be described in more detail below. Any number of the cartons 250 may be packaged and shipped together or separately.

[0124] The carton 250 may include a first sidewall 270, a second sidewall 280, a top wall 290, a bottom wall 300, a first end wall 310, and a second end wall 320. The carton 250 as a whole and the respective walls may have any suitable size, shape, or configuration. The carton 250 may include a tear away section 330. The tear away

section 330 may extend along each sidewall 270, 280 at an angle from the top wall 290 to the first end wall 310. The nature of the angle may vary. The tear away section 330 then extends across the top wall 290 and the first end wall 310. The top wall 290 may have a tab section 340 formed therein. The first end wall 310 may have one or more notches 350
5 formed therein. The one or more notches 350 may be positioned at the intersection of the first end wall 310 and the sidewalls 270, 280. The notches 350 may have a substantial “V” shape 360. The size, shape, and configuration of the notches 350 may vary. The tear away section 330 may be defined by a series of perforations 370 and slits 380. The nature and orientation of the perforations 370 and slits 380 may vary and will be described in
10 more detail below.

[0125] Fig. 5 shows a blank 400 that may be used to create a further example of the micro-ingredient carton 250. The blank 400 may have a number of “fold” lines and/or “tear” lines formed therein. The terms “fold line” or “hinge” and the like refer to lines that define the hinge features that facilitate folding portions of the blank 400. The terms may
15 refer to any type of weakened line that facilitates folding the material along the length of the line. The term “tear line” may refer to lines that facilitate separating portions of the material from one another. Fold lines, tear lines, and the like include elements that are formed in the material of the blank, including perforations, slits, scores, cuts, and any combination thereof. The elements may be dimensioned and arranged to provide the
20 desired functionality. For example, a line of perforations may be dimensioned or designed with differing degrees of weakness to define a fold line and/or a tear line. The lines of perforations also may be designed to facilitate holding and to resist breaking, to facilitate folding and to facilitate breaking with more effort, or to facilitate breaking with little effort. Other types of lines may be used herein.

[0126] Generally described, the blank 400 may have a number of panels and flaps separated by the fold lines and/or tear lines. The blank 400 may include a first side panel 410 that corresponds to the first side wall 270, a second side panel 420 that corresponds to the second side wall 280, a top panel 430 that corresponds to the top wall 290, a bottom panel 440 and a glue panel 450 that correspond to the bottom wall 300. Each of the panels
30 may be separated from the next by a panel fold line 460. The panels may have any suitable size, shape, or configuration.

[0127] The first side panel 410 may have a pair of first side panel flaps 470, 480. The second side panel 420 may have a pair of second side panel flaps 490, 500. One of the first side panel flaps 470 and one of the second side panel flaps 490 may define the first end wall 310 and other of the first side panel flaps 480 and the second side panel flaps 500 may define the second end wall 320. The top panel 430 may include a pair of top panel flaps 510, 520. The bottom panel 440 (and/or the glue panel 450) may have a pair of bottom panel flaps 530, 540. The flaps may be attached to the panels via a number of flap fold lines 550. The flaps may have any suitable size, shape, or configuration.

[0128] The tear away section 330 may extend across one of the first side panel flaps 470, the first side panel 410, the top panel 430, the second side panel 420, and one of the second side panel flaps 490. The tear away section 330 may be defined by a number of tear lines in the form of perforations 560 and slits 570. The perforations 560 may be in the form of alternating or stagger right and left short cuts. The cuts may be about 1/16 inch (about 1.5875 millimeters) or so. Other lengths may be used. The slits 570 may be longer as is described below with gaps (non-cut areas) in between. In this example, the slits 570 may range from about 1/4 inch to about 7/8 inch (about 6.35 millimeters to about 22.225 millimeters) with a gap of about 3/32 inch (about 2.3 millimeters) in between. The length and orientation of the perforations 560 and the slits 570 may vary. For example, different types or perforations 560 or slits 570 may be used depending the thickness and strength of the paperboard and the like.

[0129] In this example, the first side panel flap 470 includes a first side panel flap notch 580, a first side panel flap perforation length 590, and a first side panel flap slit 600. The first side panel 410 includes a first side panel first slit 610, a first side panel second slit 620, a first side panel third slit 630, and a first side panel perforation length 640. The top panel 430 may include a top panel first perforation length 650, one or more top panel slits 660, and a top panel second perforation length 670. The one or more top panel slits 660 may define the tab section 340. The second side panel 420 includes a second side panel perforation length 680, a second side panel first slit 690, a second side panel second slit 700, and a second side panel third slit 710. The second side panel flap 490 includes a second side panel flap slit 720, a second side panel flap perforation length 730, and a second side panel flap notch 740. As described above, the length of the slits 570 may vary. In this example, the slits 570 closer to the flap fold lines 550 may be longer than the

ones closer to the panel fold line 460 of the top panel 430. Other dimensions and other configurations may be used herein.

[0130] In use, the carton 250 may be erected by folding the various panels and flaps and applying glue or another adhesive as appropriate. Specifically, the manufacturer may fold the panels and glue the bottom panel 440 and the glue panel 450 and ship the carton to the filler. The pouch 260 or other item or items may be positioned therein and the carton 250 may be sealed by the filler. The carton 250 then may be transported to the end user. The end user may then open the carton 250 by removing the tear away section 330. Specifically, the end user may depress the tab section 340 on the top wall 290 so as to break the top panel slits 660 and perforation lengths 650, 670. The end user may continue tearing through the slits 610-630, 690-710 and perforation lengths 640, 680 of the sidewalls 270, 280. At this point, the tear away section 330 is only attached via the first end wall 310. The end user then may remove the tear away section 330 by tearing either right or left through the first notch 480, the perforation lengths 590, 730, the slits 600, 720, and the second notch 740 of the first end wall 310. The notches 480, 740 assist in both starting the tear cleanly and ensuring that the tear away section 330 may be completely removed without any remaining material attached so as to hinder access therein.

[0131] The combination of the notches 350 in the V-shape 360, the perforations 370, and the slits 380 thus allows easy removal of the tear away section 330 without sacrificing the overall integrity and stability of the carton 250. Moreover, the combination of the notches 350 in the V-shape 360, the perforations 370, and the slits 380 also accommodates at least some misalignment of the flaps when the carton 250 is originally closed.

[0132] Figs 6A-6G show the use of the carton 250 with the beverage dispensing system 100. In Fig 6A, one of the micro-ingredient container 130 may be pulled out of the beverage dispensing system 100. In Fig. 6B, the tear away section 330 of the carton 250 may be removed by tearing along the notches 350 in the V-shape 360, the perforations 370, and the slits 380 as described above. In Fig. 6C, a cap 750 or other closure may be removed from a spout 760 of the pouch 260. In Figs. 6D and 6E, the carton 250 may be positioned in the micro-ingredient container 130. In Fig. 6F, a tamper evident seal 770 and the like may be removed from the spout 760. In Fig 6G, the micro-ingredient container 130, with the carton 250 therein, may be reinserted into the beverage dispensing

system 100. The beverage dispensing system 100 may now dispense the micro-ingredient therein. Many different components, configurations, and method steps may be used herein.

5 **[0133]** Although the carton 250 has been described herein in the context of the pouch 260 and the beverage dispensing system 100, the carton 250 also may be used to package any type of items. For example, the carton may be used to package conventional beverage cans or other containers with the tear away section 330 offering easy access to the can or other containers therein as a dispensing opening. The carton 250 described herein is not limited by the products intended to be used therein.

10 **[0134]** It should be apparent that the foregoing relates only to certain embodiments of the present application and the resultant patent. Numerous changes and modifications may be made herein by one of ordinary skill in the art without departing from the general spirit and scope of the invention as defined by the following claims and the equivalents thereof.