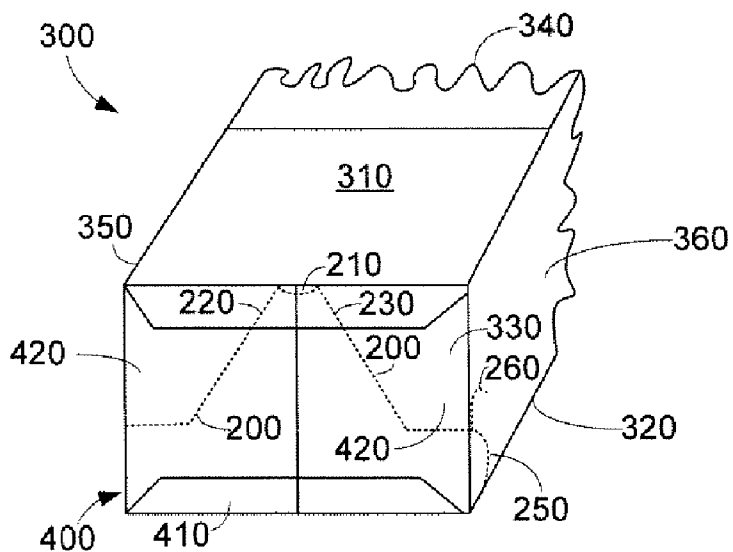
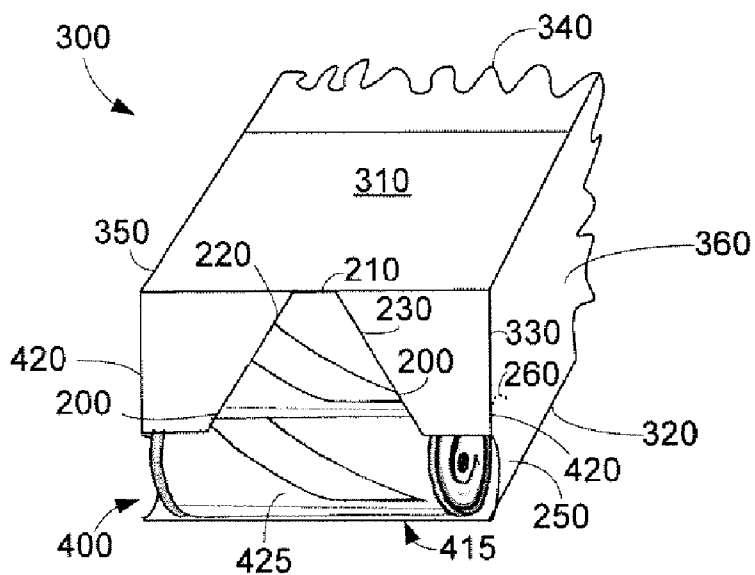


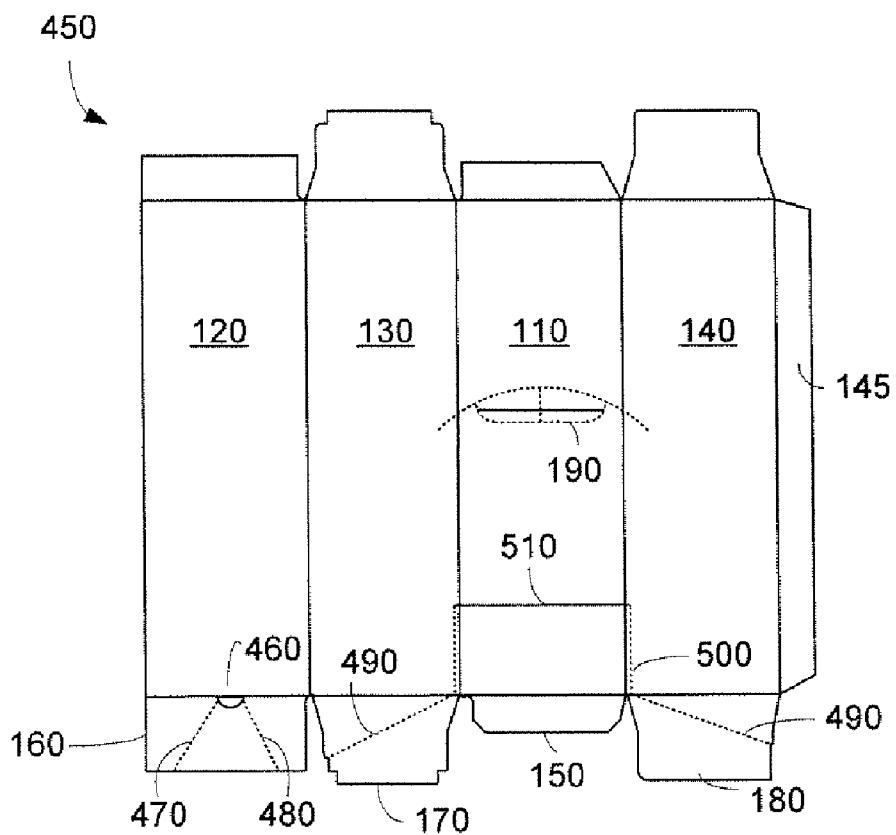
**FIG. 1**



**FIG. 2**



**FIG. 3**



**FIG. 4**



**CARTON WITH ARTICLE OPENING**

**RELATED APPLICATIONS**

[0001] The present application claims priority from U.S. Provisional Application Ser. No. 60/522,931, filed on Nov. 22, 2004, incorporated herein by reference.

**FIELD OF THE INVENTION**

[0002] The present application relates generally to cartons and more particularly relates to cartons with a dispenser opening that provides access to the articles therein.

**BACKGROUND OF THE INVENTION**

[0003] Various types of cartons are known for enclosing various types of articles, such as cans, bottles, and other objects. One recent type of container is known as the "FRIDGE PACK™" carton. Various types of "FRIDGE PACK™" cartons are produced for and sold to bottlers under license with The Coca-Cola Company of Atlanta, Ga. for the sale of Coca-Cola® brand products.

[0004] The "FRIDGE PACK™" cartons generally have a two by six (2x6) product shape, with two (2) product columns in height and six (6) product rows in length. One end of the carton generally is scored so as to permit the removal of a section of the carton such that a consumer can grasp the products within. The design of two (2) columns and six (6) rows with the removable end generally promotes the use of the carton within a standard refrigerator. Other configurations, however, such as two (2) rows of four (4) cans each (eight pack) and three (3) rows of four (4) cans each ("three by four twelve pack") also are possible and within the scope of the present invention.

[0005] One of the shortcomings of known cartons may be difficulty in opening the carton. For example, some cartons employ perforated openings along a top corner. It is often difficult to design perforations that will remain intact when the carton is being shipped and yet will yield without undue effort when the consumer desires to open the package. Another problem is preventing articles, particularly the first article, from falling out of the carton once it is opened. Still another problem is that consumers may desire to be able to see inside the carton after it is opened to take inventory of how many articles remain in the carton.

**SUMMARY OF THE INVENTION**

[0006] The present application thus describes a carton for containing a number of articles with each article having an article diameter. The carton may include a front wall, a pair of sidewalls, and an access panel positioned along the front wall and the pair of sidewalls. The access panel may include a height of less than about the article diameter along a portion of the front wall and along the pair of sidewalls.

[0007] The front wall may include a flap so as to retain the articles within the carton when the access panel is removed. The front wall may include a number of front tear lines defining in part the access panel. The carton further may include a top wall and the front tear lines may include a pair of front tear lines extending horizontally from the sidewalls and diagonally towards the top wall. The front tear lines may include a thumb guide tear line. The carton further may include a bottom wall and the front tear lines may include a

bottom tear line positioned adjacent to the bottom wall. The front wall may include a number of flaps. The sidewalls may include a number of side tear lines defining in part the access panel. The side tear lines may include semicircular tear lines. The sidewalls may include a number of curved tear lines adjacent to the access panel. The carton may have a two article by six article configuration. Other configurations may be used.

[0008] The present application further describes a carton for containing a number of articles with each article having an article diameter. The carton may include a front wall, a top wall, a pair of sidewalls, and an access panel formed along the front wall, the top wall, and the pair of sidewalls. The access panel may include a number of front wall tear lines, a number of sidewall tear lines positioned on the sidewalls and spaced from an edge formed by the top wall and the sidewalls, and a top wall fold line aligning with the sidewall tear lines.

[0009] The carton further may include a bottom wall and the front wall tear lines may include a pair of diagonal tear lines extending from a middle portion of the front wall adjacent to the bottom wall towards but short of the top wall adjacent to the sidewalls. The front tear lines may include a thumb guide tear line. The front wall may include a number of flaps. The carton further may include a number of top wall fold lines. The sidewall tear lines may include a distance of about 1/16th to about 1/4th of an inch (about 1.6 to about 6.35 millimeters) from the top wall. The top wall may include a handle cutout and the access panel can be positioned within the handle cutout when the access panel is opened. The front wall retains the number of articles within the carton when the access panel is removed. The carton may have a two article by six article configuration. Other configurations may be used.

[0010] These and other features of the present invention will become apparent to one of ordinary skill in the art upon review of the following detailed description when taken in conjunction with the drawings and the appended claims.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0011] FIG. 1 is plan view of a blank as described herein.

[0012] FIG. 2 is a perspective view of a carton erected from the blank of FIG. 1.

[0013] FIG. 3 is a perspective view of the carton of FIG. 2 with the access panel removed.

[0014] FIG. 4 is a plan view of a blank of an alternative embodiment as described herein.

[0015] FIG. 5 is a perspective view of a carton erected from the blank of FIG. 4.

**DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS**

[0016] Referring now to the drawings, in which like numerals indicate like elements throughout the several views, FIG. 1 shows a blank 100 that may be used to erect a carton as is described herein. The blank 100 may be made out of cardboard, paperboard, corrugated board, or similar types of foldable sheet materials. Specifically, the blank 100 may be made out of coated unbleached paperboard. The blank 100 may be die cut from a continuous sheet of a material or individual sheets.

[0017] Each blank 100 may have a number of fold lines and tear lines formed therein. The term “fold line” may refer to a weakened line that facilitates folding of the material along the length of the line. The fold line may include, but is not limited to, a score line, a perforation, a line of short slits, a line of half-cuts, a combination of slits and score lines, and similar arrangements. Any reference to a fold line or any hinged connection should not be construed as being limited to a single fold line. Any such fold line or hinged connection may be formed from one or more fold lines.

[0018] The term “tear” line may refer to a line of severance or any other weakened line that facilitates separation along the length of the weakened line. The tear line may include, but is not limited to, a perforation, a line of short slits, a line of half-cuts, a combination of slits and score lines, and similar arrangements.

[0019] The blank 100 may have a number of panels and flaps separated by the fold lines. Specifically, the blank 100 may have a top panel 110, a pair of bottom panels, a first bottom panel 120 and a second bottom panel 125 (which are typically glued together along a seam to form the completed carton), and a pair of side panels, a first side panel 130 and a second side panel 140. Alternatively, the blank may have only one bottom panel, in which case the seam for forming the carton will run along a corner rather than the bottom panel. The top panel 110 and the bottom panels 120, 125 each may have a reinforcing flap positioned adjacent thereto, a top reinforcing flap 150 and a pair of bottom reinforcing flaps 160, 165. The first side panel 130 and the second side panel 140 each may have a dispensing flap positioned adjacent thereto, a first dispensing flap 170 and a second dispensing flap 180. The respective panels and flaps may be connected by a number of the fold lines. The top panel 110 may have a handle cutout 190 formed therein.

[0020] The dispensing flaps 170, 180 each may have one or more tear lines positioned therein. Specifically, the dispensing flaps 170, 180 each may have a dispensing flap tear line 200. As is shown, the dispensing flap tear lines 200 may extend from an edge of each flap 170, 180 near the top reinforcing flap 150 diagonally through the flaps 170, 180 for about more than half of the width of the flaps 170, 180. The dispensing flap tear lines 200 then may extend in a direction largely perpendicular to the edge between the side panels 130, 140 and the flaps 170, 180. The dispensing flap tear lines 200 then may continue along the edge between the side panels 130, 140 and the dispensing flaps 170, 180 until the bottom panels 120, 125 are reached.

[0021] The top reinforcing flap 150 may have a number of top reinforcing flap tear lines positioned therein. Specifically, the top reinforcing flap 150 may have a thumb guide tear line 210 positioned therein. The thumb guide tear line 210 may be positioned largely in the center of the top reinforcing flap 150 and may have a substantially semicircular, semi-oval, or semi-elliptical shape, or any other shape that facilitates insertion of one or more fingers and/or the thumb of the user for purposes of gripping the removable portion of the carton. Alternatively, the region defined in FIG. 1 as a thumb guide tear line 210 may be a cutout portion. The top reinforcing flap 150 also may have a pair of top reinforcing flap tear lines formed therein, a first reinforcing flap tear line 220 and a second reinforcing flap tear line 230. The top reinforcing flap tear lines 220, 230 may

extend largely in a diagonal direction from the thumb guide tear line 210 to the opposite edge of the reinforcing flap 150. When the carton is folded as illustrated in FIG. 2, the reinforcing flap tear lines 220, 230 may, and preferably do, largely align with the dispensing flap tear lines 200.

[0022] The bottom reinforcing flaps 160, 165 each also may have a bottom reinforcing flap tear line 240. As is shown, the bottom reinforcing flap tear lines 240 may extend along the edge between the bottom reinforcing flaps 160, 165 and the bottom panels 120, 125 from the dispensing flap tear line 200.

[0023] Either or both of the side panels 130, 140 may have a first side panel tear line 250 positioned thereon. The first side panel tear lines 250 may be largely semicircular in shape and may extend from the side panel tear line 200 towards the intersection of either or both of the side panels 130, 140 with the bottom panels 120, 125. Either or both of the side panels 130, 140 may have a second side panel tear line 260 positioned therein. The second side panel tear lines 260 may be largely hook-like or curved in shape and may extend from the intersection of the first side panel tear line 250 and the dispensing flap tear line 200 along the edge between the side panels 130, 140 and the dispensing flaps 170, 180 and then may extend in a largely semicircular direction towards the first side panel tear line 250. These second side panel tear lines 260 work to prevent the front wall of the carton from being torn at the corner when an article is being removed therefrom.

[0024] The blank 100 may be used to erect a carton 300 as is described herein. As shown in FIGS. 2 and 3, the carton 300 may have a top wall 310, a bottom wall 320, a front wall 330, a back wall 340, a first sidewall 350, and a second sidewall 360. The carton 300 may be erected by attaching the bottom flaps 120, 125, folding the reinforcing flaps 150, 160, 165, and attaching the dispensing panels 170, 180 to the reinforcing flaps 150, 160, 165 and/or to each other. A conventional adhesive or other type of joiner means may be used.

[0025] A dispenser 400 may be positioned about the front wall 330, the back wall 340, and/or both. The tear lines described above may form the dispenser 400. The dispenser 400 may include a dispenser panel 410. The dispenser panel 410 may extend across the front wall 330. Specifically, the dispensing panel 410 may be defined by the thumb guide tear line 210 and the top reinforcing flap tear lines 220, 230 in combination with the dispensing flap tear lines 200. The dispensing panel 410 also may extend into the first and second sidewalls 350, 360 via the first sidewall tear lines 250.

[0026] To open the carton 300, the dispensing panel 410 may be removed by pushing in along the thumb guide tear lines 210 such that the panel 410 then may be grasped and pulled forward, thus breaking the top reinforcing flap tear lines 220, 230, the dispensing flap tear lines 200, and the first side panel tear lines 250. The dispensing panel 410 either may lie open or the panel 410 may be completely removed along the bottom reinforcing flap tear lines 240. Once the dispensing panel 410 is opened and/or removed, an access aperture 415 is formed.

[0027] The carton 300 may hold a number of articles 425 therein, such as beverage containers, e.g., cans or PET

bottles. The remaining portion of the front wall **330** following removal of the panel **410** to create the access aperture **415** preferably is of sufficient dimension and stability such that the remaining portion of the wall **330** keeps the first article **425** such as the first beverage container in place when the access panel **410** is removed. Portions of the access aperture **415** therefore may have a height of less than the width of about one can diameter or the diameter of any other article **425** to be positioned therein.

[0028] To remove the first article **425**, the article **425** may be grasped through the aperture **415**, particularly about the opening created by the sidewall tear line **250** in the sidewalls **350** and/or **360**. The front wall **330** has sufficient "give" such that the wall **330** will bend and allow the article **425** to be removed. This is accomplished by the lower portion of the front wall **330**, which, in conjunction with the second sidewall tear lines **260** form flaps **420** that both retain the article **425** within the carton **300** and flex a sufficient amount to allow the article **425** to be removed by pulling it past the flaps **420**. The flaps **420** in the front wall **330** then return to their original position so as to maintain the remaining articles **425** within the carton **300**. The flaps **420** also may include a score, crease, or perforation to assist in providing flexibility to the flaps **420**. This score, crease, or perforation may be positioned at about one article diameter from the bottom of the carton **300**.

[0029] FIGS. 4 and 5 show a further embodiment. Specifically, FIG. 4 shows a blank **450**. As above, the blank **450** may have a number of panels and flaps separated by the fold lines. The blank may have the top panel **110**, a single bottom panel **120**, the first side panel **130**, and a second side panel **140**. A glue flap **145** also may be used. The top panel **110** and the bottom panel **120** may have the top reinforcing flap **150** and the bottom reinforcing flap **160** attached thereto. The first side panel **130** and the second side panel **140** may have the first dispensing flap **170** and the second dispensing flap **180** attached thereto. The fold lines may connect the respective panels and flaps. The top panel **110** may have the handle cutout **190** formed therein.

[0030] The bottom reinforcing flap **160** may have a thumb guide **460** formed therein. The thumb guide **460** may be largely semi-circular in shape. As is shown, a pair of bottom reinforcing flap tear lines **470**, **480** may extend from the thumb guide **460** along a diagonal through the length of the flap **160**.

[0031] The dispensing flaps **170**, **180** each may have a dispensing flap tear line **490** positioned therein. As is shown, the dispensing flap tear lines **490** may extend from the outer edges adjacent to the bottom panel **120** and the glue flap **145** in a diagonal across the flaps **170**, **180** to the edge between the dispensing flaps **170**, **180** and the side panel **130,140** just short of the top panel **110**. The dispensing flap tear lines **490** largely may align with the reinforcing flap tear lines **470**, **480**.

[0032] The side panels **130**, **140** also each may have a side panel tear line **500** positioned therein. The side panel tear lines **500** may extend from the dispensing flap tear lines **490** in a direction largely parallel to the edge between the side panels **130**, **140** and the top panel **110**. Alternatively, the side panel tear lines **500** may run at an angle up the side panels **130**, **140** relative to the edge between the side panels **130**, **140** and the top panel **110**. The side panel tear lines **500** may

extend about  $\frac{1}{16}$ th to about  $\frac{1}{8}$ th or  $\frac{1}{4}$ th of an inch (about 1.6 to about 3.18 to about 6.35 millimeters) from the edge formed by the top panel **110** and each side panel **130**, **140**. Other distances may be used. The side panel tear line **500** may extend for about the width of one article **425**, such as beverage container, or more. Alternatively, the side panel tear lines **500** may extend for all or part of the length of the side panels **130**, **140**.

[0033] The top panel **110** may have a top panel fold line **510** formed therein. The top panel fold line **510** may extend across the width of the top panel. The top panel fold line **510** may be positioned at about the end of the side panel tear lines **500** and may be about the width of one beverage container or more from the edge between the top panel **110** and the top reinforcing flap **150**. Alternatively, the top panel fold line **510** may be a tear line, for example, a perforation. More than one top panel fold lines **510** may be used.

[0034] FIG. 5 shows a carton **550** formed from the blank **450**. As described above, the carton **450** may have the top wall **310**, the bottom wall **320**, the front wall **330**, the back wall **340**, the first sidewall **350**, and the second sidewall **360**. The carton **550** also may have a dispenser **560** formed therein. The dispenser **560**, similar to the dispenser described above, may be defined by the tear lines described above. Specifically, the dispenser **560** may be defined by the tear lines **460-500** described above to form a dispensing flap **570**. When the dispensing flap **570** is torn and folded, a dispensing aperture may be formed.

[0035] In use, the dispensing flap **570** may be removed by pulling along the thumb guide **460** and the bottom reinforcing flap tear lines **470**, **480** and pulling upward along the dispensing flap tear lines **490**. The dispensing flap **570** then may continue along the side walls **350**, **360** by ripping along the side panel tear lines **500**. The dispensing flap **570** then may be folded along the top panel fold line **510**. The dispensing flap **570** may be folded or tucked into the handle **190**.

[0036] The remaining portions of the front wall **330** maintain the articles **425** within the carton **550** when the dispensing flap **470** is removed and/or bent backwards. The articles **425** may be removed through the dispensing aperture by grasping the articles **425** through the front wall **330** and the top wall **310** and lifting the articles **425** over the front wall **330**.

[0037] The dispenser **560** may be positioned on either end or both ends of the carton **550**. Likewise, the size of the aperture and the remaining portion of the front wall **330** and the top wall **310** may vary.

[0038] The embodiment shown herein also may be used with the elements disclosed in U.S. patent application Ser. No. 10/680,364 entitled "Carton with Dispenser." U.S. patent application Ser. No. 10/680,364 is incorporated herein by reference.

[0039] It should be understood that the foregoing relates only to the exemplary embodiments of the present invention and that numerous changes and modifications may be made herein without departing from the general spirit and scope of

the invention as defined by the following claims and the equivalents thereof.

What is claimed is:

1. A carton for containing a number of articles, with each article having an article diameter, comprising:

a front wall;

a pair of sidewalls; and

an access panel positioned along the front wall and the pair of sidewalls;

the access panel comprising a height of less than about the article diameter along a portion of the front wall and along the pair of sidewalls.

2. The carton of claim 1, wherein the front wall comprises a flap so as to retain the number of articles within the carton when the access panel is removed.

3. The carton of claim 1, wherein the front wall comprises a plurality of front tear lines defining in part the access panel.

4. The carton of claim 3, further comprising a top wall and wherein the plurality of front tear lines comprises a pair of front tear lines extending horizontally from the pair of sidewalls and diagonally towards the top wall.

5. The carton of claim 3, wherein the plurality of front tear lines comprises a thumb guide tear line.

6. The carton of claim 3, further comprising a bottom wall and wherein the plurality of front tear lines comprises a bottom tear line positioned adjacent to the bottom wall.

7. The carton of claim 1, wherein the front wall comprises a plurality of flaps.

8. The carton of claim 1, wherein the pair of sidewalls comprises a plurality of side tear lines defining in part the access panel.

9. The carton of claim 8, wherein the plurality of side tear lines comprise semicircular tear lines.

10. The carton of claim 8, wherein the pair of sidewalls comprises a plurality of curved tear lines adjacent to the access panel.

11. The carton of claim 1, wherein the carton comprises a two article by six article configuration.

12. A carton for containing a number of articles, with each article having an article diameter, comprising:

a front wall;

a top wall;

a pair of sidewalls; and

an access panel formed along the front wall, the top wall, and the pair of sidewalls;

the access panel comprising:

a plurality of front wall tear lines;

a plurality of sidewall tear lines positioned on the pair of sidewalls and spaced from an edge formed by the top wall and the pair of sidewalls; and

a top wall fold line aligning with the plurality of sidewall tear lines.

13. The carton of claim 12, further comprising a bottom wall and wherein the plurality of front wall tear lines comprises a pair of diagonal tear lines extending from a middle portion of the front wall adjacent to the bottom wall towards but short of the top wall adjacent to the pair of sidewalls.

14. The carton of claim 12, wherein the plurality of front tear lines comprises a thumb guide tear line.

15. The carton of claim 12, wherein the front wall comprises a plurality of flaps.

16. The carton of claim 12, further comprising a plurality of top wall fold lines.

17. The carton of claim 12, wherein the pair of sidewall tear lines comprises a distance of about  $\frac{1}{16}$ th to about  $\frac{1}{4}$ th of an inch (about 1.6 to about 6.35 millimeters) from the top wall.

18. The carton of claim 12, wherein the top wall comprises a handle cutout and wherein the access panel can be positioned within the handle cutout when the access panel is opened.

19. The carton of claim 12, wherein the front wall retains the number of articles within the carton when the access panel is removed.

20. The carton of claim 12, wherein the carton comprises a two article by six article configuration.

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