

CARTON WITH ARTICLE OPENING

5 FIELD OF THE INVENTION

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

10 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, Georgia for the sale of Coca-Cola® brand products.

15 The "FRIDGE PACK™" cartons generally have a two by six (2 x 6) 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
20 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.

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
25 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
30 how many articles remain in the carton. Still other cartons may employ an opening that pulls up from the bottom. In this design, the portion of the carton remaining after

being pulled up may be tucked into a slot along the top. Such a design may fail to satisfy the consumer's desire to pull down and toward the front to remove the access portion of the carton.

5 SUMMARY OF THE INVENTION

The present application thus describes a carton for containing a number of articles with each article having an article diameter. The carton includes a front wall, a hinged flap positioned on the front wall, and an access flap positioned on the front wall adjacent to the hinged flap. The access flap has a height less than the article
10 diameter such that the articles are retained within the carton by the hinged flap when the access flap is removed.

The hinged flap may include a tear line or a pair of tear lines. The tear lines may be a line of weakening. The hinged flap may include a pair of legs. The carton may include a pair of sidewalls positioned adjacent to the front wall and the access
15 flap extends into the sidewalls. The access flap along the sidewalls may include a height of less than the article diameter. The access flap may include a thumb guide positioned therein. The carton may include a bottom wall and the access flap may include a further tear line adjacent to the bottom wall. The carton may include a two article by six article configuration.

20 The present application further describes carton for containing a number of articles with each article having an article diameter. The carton may include a front wall, a top wall, an access flap formed along the front wall and the top wall, and a number of side tear lines positioned adjacent to the access flap along the top wall so as to allow the front wall to bend after the access flap is removed and one of the articles
25 is removed therethrough.

The access flap along the top wall may include a dimension of about the article diameter. The top wall may include a pair of strips, with one of the strips on either side of the access flap. The side tear lines are positioned within the strips. The side tear lines may be a pair of side tear lines. The carton further may include a bottom
30 wall and the access flap may include a further tear line adjacent to the bottom wall.

The access flap may include a width of less than an article length. The carton may include a two article by six article configuration.

The present application further describes carton for containing a number of articles with each article having an article length. The carton may include a front wall
5 and an access flap positioned within the front wall. The access flap may include a width greater than half of the article length and the access flap may include a thumb flap positioned along the front wall.

The access flap may include a height of about a multiple of the article diameter. The carton may include a two article by six article configuration.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a plan view of a blank as described herein.

Fig. 2 is a perspective view of a carton erected from the blank of Fig. 1.

Fig. 3 is a perspective view of the carton of Fig. 2 with the dispensing panel
15 removed.

Fig. 4 is a perspective view of the carton of Fig. 2 with the dispensing panel removed.

Fig. 5 is a perspective view of the carton of Fig. 2 with the dispensing panel removed.

20 Fig. 6 is a perspective view of an alternative carton as described herein.

Fig. 7 is a perspective view of the carton of Fig. 6 with a dispensing panel removed.

Fig. 8 is a plan view of a blank of an alternative embodiment as described herein.

25 Fig. 9 is a perspective view of a carton erected from the blank of Fig. 8.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

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
30 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.

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.

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.

It will be recognized that ordering references such as first and second and directional references, such as top, base, bottom, side, upper, lower, front, back, inner, outer, etc. do not limit the structure described herein to such orientations, but merely serve to distinguish relative structure from one another.

The blank **100** may have a number of panels and flaps separated by fold lines. Specifically, the blank **100** may have a top panel **110**, a bottom panel **120**, a first side panel **130**, and a second side panel **140**. The top panel **110** and the bottom panel **120** may have a pair of reinforcing flaps positioned adjacent thereto, a first reinforcing flap **150** and a second reinforcing flap **160**. The first side panel **130** and the second side panel **140** may have a pair of dispensing flaps positioned adjacent thereto, a first dispensing flap **170** and a second dispensing flap **180**. The first side panel **130** also may have a glue flap **190** positioned adjacent thereto. The respective panels and flaps may be connected by a number of fold lines **200**.

One set of the dispensing flaps **170**, **180** may have a number of tear lines positioned therein. Specifically, these dispensing flaps **170**, **180** may have a first tear line **220** that extends from the fold line **200** with the first and/or second side panel **130**, **140** for a relatively short distance in a direction substantially perpendicular to the fold line **200**. In this example, the first tear line **220** may be more in the nature of a

line of weakening. The dispensing panels 170, 180 further may have a second tear line 230 that may be positioned below the first tear line 220 and may begin about where the first tear line 220 stops. The second tear line 230 then may continue for the entire length of the dispensing flap 170, 180. The dispensing flaps 170, 180 further
5 may have a third tear line 240 that again starts at the fold line 200 with the side panel 130, 140 at a position beneath the first tear line 220 and parallel therewith. The third tear line 240 then may angle upward and may continue in the direction of the first tear line 220 and parallel with the second tear line 230.

Each side panel 130, 140 also may have a tear line therein. Specifically, a
10 fourth tear line 250. The fourth tear line 250 may extend from the fold line 200 with the dispensing flaps 170, 180 at an intersection with the third tear line 240. The fourth tear line 250 then may proceed in concave fashion until it again meets the fold line 200 with the dispensing flap 170, 180. A fifth tear line 260 also may be present between the first tear line 220 and the second tear line 230 of the dispensing flaps 170,
15 180 along the fold line 200. A sixth tear line 270 may extend between the second reinforcing flap 160 and the second side panel 140 along the length of the fold line 200. A seventh tear line 275 may be positioned on the side panels 130, 140 adjacent to the first tear line 220. The seventh tear line 275 may be in the shape of an arc or a half circle. Any number of other tear lines also may be used in any position or
20 direction.

The top panel 110 also may have a handle cutout 270 positioned therein. The handle cutout 270 may be formed by a number of tear lines. The handle cutout 270 may extend into the side panel 130, 140.

The blank 100 may be used to erect a carton 300 as is described herein. The
25 carton 300 may have a top wall 310, a bottom wall 320, a front wall 330, a back wall 340, a first side wall 350, and a second side wall 360. The carton 300 may be erected by attaching the glue flap 190 to the bottom panel 120, folding the reinforcing flaps 150, 160, and attaching the dispensing panels 170, 180 to the reinforcing flaps 150, 160 and/or to each other. A conventional adhesive or other type of joinder means may
30 be used.

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 width of the front wall 330. The third tear line 240 may define the
5 dispensing panel 410 across the front wall 330. The dispensing panel 410 also may extend into the first and second sidewall 350, 360 via the fourth tear line 250. The dispensing panel 410 also may have a thumb guide or finger access 420. The second tear line 230 may define the thumb guide or finger access 420. The first tear line 220 may define a hinged flap 425 on either side of the front wall 330.

10 To open the carton 300, the dispensing panel 410 may be removed by pushing in along the thumb guide or finger access 420 such that the second and the third tear lines 230, 240 begin to be broken. The panel 410 then may be grasped and pulled outward, thus breaking the fourth 250 tear lines and creating an access aperture 435. The seventh tear lines 275 generally limit the amount of extra tearing along the
15 sidewalls 350, 360. The dispensing panel 410 either may lie open or the panel 410 may be removed completely by tearing along the sixth tear line 270.

Once the dispensing panel 410 is opened and/or removed, one or more legs are formed along the hinged flap 425 of the front wall 330. Preferably, a first leg 430 and a second leg 440 are positioned as illustrated, although a single leg of sufficient length
20 and height may also be employed. When a single leg is employed, it may be positioned inwardly, i.e., centered relative to the access aperture 435, providing improved gripping on the ends of the container 500. The legs 430, 440 of the hinged flap 425 function to retain an article within the carton 300. The first and fifth tear lines or score lines 220, 260 may be positioned about the legs 430, 440 to allow the
25 legs 430, 440 to "give" so as to permit an article 500 to be removed from the carton 300 while keeping the remaining articles in place.

For example, beverage containers such as a number of cans 500 may be positioned within the carton 300. The first can 500 may be removed through the access aperture 435. The legs 430, 440 of the hinged flap 425 will bend somewhat
30 about the first tear or score lines 220 and the fifth tear lines 260 as the can 500 is removed. Once the first can 500 is removed, the one or more legs 430, 440 may

spring back and keep the remaining cans **500** in place. Of course, more than two legs **430, 440** could also be used, depending on the width of the package. For example, in a “double wide” carton containing two rows of containers side-by-side, (e.g., a “2x2x6” configuration) it might be advantageous to include two legs **430, 440** on either end of the access opening and a third in the middle thereof in order to retain both rows of containers within the package.

Although the carton **300** described herein is shown in the context of a two (2) row by six (6) column format, any size or shape may be used herein. The nature of the dispensing panel **410** does not depend upon the overall configuration of the carton **300**.

Fig. 6 and Fig. 7 show an alternative embodiment of carton **600**. As described above, the carton **600** 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 **600** also may have a dispenser **610**. The dispenser **610**, similar to dispenser **400** described above, may be defined by a number of fold lines and/or tear lines. For example, the dispenser **610** may include a fold line **620** positioned on the top wall **310**. The fold line **620** may be substantially parallel to the edge between the top wall **310** and the front wall **330**. The fold line **620** may be about the width of one can **500** away from the top edge of the front wall **330**, although other positions may be used. The fold line **620** may extend for a majority of the width of the top wall **310**. For example, if the top wall **310** has a width of about 7.5 centimeters, the fold line **620** may extend for about 4.5 centimeters, thereby leaving about 1.5 centimeters on either side. Any dimensions may be used, however, and it is within the scope of this invention that the fold line **620** may extend the entire width of the top wall **310**. The fold line **620** also could be a tear line.

A pair of top tear lines **630** may extend from the fold line **620** towards the edge between the top wall **310** and the front wall **330**. The top tear lines **630** may be largely parallel to, or even collinear with, the edges between the top wall **310** and the sidewalls **350, 360**. Alternatively, a portion of the top tear lines **630** may be parallel with, collinear with, and/or at an angle relative to the edges between the top wall **310** and the sidewalls **350, 360**. If all or a portion of the tear lines **630** are collinear with

the edges between the top wall 310 and the sidewalls 350, 360, it may be necessary to angle a front portion of these tear lines inwardly so as to maintain narrow regions on the top and/or front walls that provide stability to the top 310 and/or front walls 330 after removal of the dispenser panel 370.

5 A pair of front tear line 640 then may continue down part or all of the length of the front wall 330. The front tear lines 640 may be largely parallel to the edges between the front wall 330 and the sidewalls 350, 360. A pair of edge tear lines 650 may extend between the front tear lines 640, one on the edge between the top wall 310 and the front wall 330 and one along the edge between the front wall 330 and the
10 bottom wall 620. A thumbhole tear line 660 may extend for part of the distance around the edge tear line 650 about the edge between the top wall 310 and the front wall 330. The thumbhole tear line 660 may be largely semicircular or oval in shape. The fold line 620, the top tear lines 630, and the edge tear line 650 along the edge between the top wall 310 and the front wall 330 thus form a top dispenser panel 670.
15 The front tear lines 640 and the edge tear lines 650 form a front dispenser panel 680.

 The top wall 310 also may have a pair of side-cut tear lines 690 and/or score lines formed therein. The side-cut tear or score lines 690 may extend from the top tear line 630 towards the edge between the top wall 310 and the sidewalls 350, 360. The side-cut tear or score lines 690 may be largely parallel to the edge between the top
20 wall 310 and the front wall 330. In this example, the side-cut tear line 690 may be about 2 centimeters in length and spaced about 1.5 centimeters from the edge between the top wall 310 and the front wall 330. Any dimensions may be used.

 In use, the dispenser 610 may be removed from the carton 600 by pushing in along the thumbhole tear line 660. The user can then pull up so as to tear the top
25 dispenser panel 670 along the top tear lines 630 and then bend the top dispenser panel 670 along the fold line 620. The user then may tear the front dispenser panel 680 downward along the front tear lines 640 and then remove the front dispenser panel 680 along the bottom edge tear line 650. Removal of the panels 670, 680 thus forms an access aperture 700. Once the panels 670, 680 are removed, the cans 500 within the
30 carton 600 remain in place due to the remaining sections of the top wall 310 and the front wall 330. To remove a can 500, the user pulls the top can through the aperture

700, thereby bending the top wall 310 and/or the front wall 330 along the side-cut tear lines 690. As is shown in Fig. 7, the can 500 can be easily removed from the carton 600 while the remaining portions of the top wall 310 and the front wall 330 keep the remaining cans 500 in place.

5 Additional top tear lines 630 may extend along the length of the top wall 310. Likewise, the top dispenser panel 670 may extend along the length of the top wall 310 such that portions of the panel 670 may be removed as the cans 500 are removed from the carton 610.

Figs. 8 and 9 show a further alternative embodiment. Specifically, Fig. 8
10 shows a blank 750. As above, the blank 750 may have a number of panels and flaps separated by fold lines. The blank 750 may have the top panel 110, the bottom panel 120, the first side panel 130, and a second side panel 140. The top panel 110 and the bottom panel 120 may have the first reinforcing flap 150 and the second reinforcing flap 160. The first side panel 130 and the second side panel 130 may have the first
15 dispensing flap 170 and the second dispensing flap 180. The respective panels and flaps may be connected by the fold lines 200.

The panels and flaps may have a number of tear lines positioned therein. Specifically, the first reinforcing flap 150 may have a thumb guide 760 formed therein by a first reinforcing flap tear line 770. The first reinforcing flap tear line 770 may be
20 largely semi-circular in shape. The first reinforcing flap 150 further may have a second reinforcing flap tear line 780 positioned therein. The second dispensing flap tear line 780 may extend the length of the first reinforcing flap 150 and may bisect the first reinforcing flap 150 in an offset position somewhat closer to the first dispensing flap 170. Further, the first reinforcing flap 150 may have a pair of third reinforcing
25 flap tear lines 790 positioned therein. The third reinforcing flap tear lines 790 may extend from the second reinforcing flap tear line 780 to the first reinforcing flap tear line 770 and the thumb guide 760 and then continue from the thumb guide 760 to the end of the reinforcing flap 150.

The second reinforcing flap 160 may have a fourth reinforcing flap tear line
30 800 positioned therein. The fourth reinforcing flap tear line 800 also may bisect the second reinforcing flap 160 and may align, when erected, with the second reinforcing

flap tear line 780 on the first reinforcing flap 150. The second reinforcing flap 160 also may have a fifth reinforcing flap tear line 810. The fifth reinforcing flap tear line 810 may extend from the fourth reinforcing flap tear line 800 towards the second dispensing flap 180 along the edge between the bottom panel 120 and the second reinforcing flap 160.

The second dispensing flap 180 may have a first dispensing flap tear line 820 positioned therein. The first dispensing flap tear line 820 may run the width of the second dispensing flap 180 and may be positioned along the edge between the second side panel 140 and the second dispensing flap 180.

The first dispensing flap 170 also may have a second dispensing flap tear line 830 positioned therein. The second dispensing flap tear line 830 may be positioned largely parallel to the edge between the first side panel 130 and the first dispensing flap 170. The second dispensing flap tear line 830 may run about most of the width of the first dispensing flap 170. The second dispensing flap tear line 830 may be positioned towards the edge of the first dispensing flap 170 away from the edge with the side panel 130.

Fig. 9 shows a carton 850 that may be erected from the blank 750. As described above, the carton 850 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 side wall 360. The carton 850 also may have a dispenser 860. The dispenser 860, similar to the dispensers described above, may be defined by the tear lines described above. Specifically, dispenser 860 may be defined by each of the tear lines 770-830 described above.

In use, the user may open the carton 850 by pushing in along the thumb guide 760, thus tearing the first reinforcing flap tear line 770 and the third reinforcing flap tear lines 790 on either side of the thumb guide 760. The user may then pull down a portion of the front wall 330, thus ripping the first and second dispensing flap tear lines 820, 830 as well as the second and fourth reinforcing flap tear lines 780, 800. Finally, the user may tear the fifth reinforcing flap tear line 810 thus leaving an aperture 870 exposed. The user then may remove a can 500 through the aperture 870.

Meanwhile, the remaining portion of the front wall **330** keeps the remaining can **500** in place.

The dispenser **860** may be positioned on either side of the carton **850**. Likewise, the size of the aperture **870** and the remaining portion of the front wall **330**
5 may vary.

CLAIMS

We claim:

- 5 1. A carton for containing a number of articles, with each article having an article diameter, comprising:
 - a front wall;
 - a hinged flap positioned on the front wall; and
 - an access flap positioned on the front wall adjacent to the hinged flap;
- 10 the access flap comprising a height less than the article diameter such that the number of articles are retained within the carton by the hinged flap when the access flap is removed.
- 15 2. The carton of claim 1, wherein the hinged flap comprises a tear line.
3. The carton of claim 2, wherein the tear line comprises a line of weakening.
- 20 4. The carton of claim 2, wherein the hinged flap comprises a pair of tear lines.
5. The carton of claim 1, wherein the hinged flap comprises a pair of legs.
6. The carton of claim 1, further comprising a pair of sidewalls positioned adjacent to the front wall and wherein the access flap extends into the sidewalls.
- 25 7. The carton of claim 6, wherein the access flap along the pair of sidewalls comprises a height of less than the article diameter.
- 30 8. The carton of claim 1, wherein the access flap comprises a thumb guide positioned therein.

9. The carton of claim 1, further comprising a bottom wall and wherein the access flap comprises a further tear line adjacent to the bottom wall.

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

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

10 a front wall;
a top wall;
an access flap formed along the front wall and the top wall; and
a plurality of side tear lines positioned adjacent to the access flap along the top wall so as to allow the front wall to bend after the access flap is removed and one of
15 the number of articles is removed therethrough.

12. The carton of claim 11, wherein the access flap along the top wall comprises a dimension of about the article diameter.

20 13. The carton of claim 11, wherein the top wall comprises a pair of strips, with one of the pair of strips on either side of the access flap, and wherein the plurality of side tear lines is positioned within the pair of strips.

25 14. The carton of claim 11, wherein the plurality of side tear lines comprises a pair of side tear lines.

15. The carton of claim 11, further comprising a bottom wall and wherein the access flap comprises a further tear line adjacent to the bottom wall.

30 16. The carton of claim 11, wherein each of the articles includes an article length and wherein the access flap comprises a width of less than the article length.

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

5 18. A carton for containing a number of articles, with each article having an article length, comprising:

a front wall; and
an access flap positioned within the front wall;
the access flap comprising a width greater than half of the article length; and
10 the access flap comprising a thumb flap positioned along the front wall.

19. The carton of claim 18, wherein each article comprises an article diameter and wherein the access flap comprises a height of about a multiple of the article diameter.

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20. The carton of claim 18, wherein the carton comprises a two article by six article configuration.

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