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DESCRIPTION

TECHNICAL FIELD

[0001] The present invention relates to a carton for containing articles, to a blank for forming the carton, and more particularly to a carton having an improved dispensing feature.

BACKGROUND

[0002] Enclosed cartons with dispensing features have been used in the past. Many of these cartons include article dispensers defined by lines of disruption such as tear lines, cuts, score lines, and fold lines. A dispenser may be removable from, or hingedly attached to, a carton to create an opening from which articles can be removed from the carton. One problem with many conventional carton dispensers is that they may be difficult for a user to remove. Another problem with conventional carton dispensers is that they do not facilitate a user's ability to choose between two dispensing configurations, a first configuration in which the dispenser remains partially connected to a remaining portion of the carton and a second configuration in which the dispenser has been completely separated from the remaining portion of the carton. The present invention seeks to overcome or at least mitigate the problems of the prior art.

[0003] US 2005/0189405 to Gomes et al discloses a carton with an improved dispenser at an end of the carton which preserves the integrity of the carton when it is opened while permitting the bottom end flaps attached to the bottom panel to remain in place and also a portion of each side end flap that overlaps the bottom end flaps. This dispenser has a bottom tear line in the end of the carton which only extends partially across the end of the carton. The tear line extends upwardly from each side of the bottom tear line to form end retainers to prevent cans in the second row of the carton from rolling out. By placing the bottom tear line no higher from the bottom of the carton than necessary to retain a can in the bottom row and to make the end retainers on each side of the carton no larger than necessary to restrain a can in the second row from rolling out, easy access to the cans on the bottom row of containers is provided after the cans in the second and third rows of the carton have been removed. This dispenser may also provide a safety net for the first can dispensed. The top tear line in the top panel for forming the dispenser flap is located from the exiting end of the carton at a distance that is significantly less than the diameter of a can to be contained in the carton. Preferably this distance is between 70 and 85% of the diameter of a container to be contained in the carton, but can be as short at 50% of the diameter of a container plus approximately three millimeters.

SUMMARY

[0004] A first aspect of the invention provides a blank for forming a carton for containing a

plurality of articles, the blank comprising: a plurality of main panels hinged together in a linear series. The plurality of main panels is configured to form a tubular structure in a set-up carton. The plurality of main panels comprises a bottom panel, a first side panel, a top panel, and a second side panel; a plurality of exiting end flaps configured to form a front panel in the set-up carton. The front panel is configured to close a front end of the tubular structure. The plurality of exiting end flaps comprises a first side exiting end flap hingedly connected to said first side panel along a first marginal area of the blank along a longitudinally extending fold line and a second side exiting end flap hingedly connected to said second side panel along said first marginal area of the blank along a longitudinally extending fold line. A dispenser pattern extends through the top panel, the first side panel, the second side panel, and the front panel. The dispenser pattern comprises a first end dispenser pattern formed in the first side exiting end flap and a second end dispenser pattern formed in the second side exiting end flap. The first end dispenser pattern comprises a first end first tear line and the second end dispenser pattern comprises a second end first tear line. The first end first tear line and the second end first tear line are configured to extend downwardly toward each other from opposite sides of the front panel in the set-up carton. An outer edge of said first side exiting end flap is disposed opposite to said longitudinally extending fold line. An outer edge of said second side exiting end flap is disposed opposite to said longitudinally extending fold line, said blank is characterised in that said first and second end dispenser patterns do not extend completely across said respective first and second side exiting end flaps but stop short of the outer edges of respective first and second side exiting end flaps, so that, in the set-up carton, a bridging portion is generally defined by a region of the front panel between terminal ends of said first and second end first tear lines. The bridging portion provides for partial removal of a dispenser flap defined by the dispenser pattern. The first end first tear line and second end first tear line are configured to define at least in part a lower edge of an at least partially removable dispenser in the set-up carton and said first end dispenser pattern comprises a first J-shaped cut disposed at or adjacent to said terminal end of said first end first tear line. The second end dispenser pattern comprises a second J-shaped cut disposed at or adjacent to said terminal end of said second end first tear line. The first and second J-shaped cuts are configured to arrest further tearing of said first and second side exiting end flaps of the front panel in the set-up carton.

[0005] Optionally, the first end first tear line defines a first axis and said second end first tear line defines a second axis, a first angle between said first axis and a horizontal axis of said front panel is at least about 5 degrees, and a second angle between said second axis and said horizontal axis of said front panel is at least about 5 degrees.

[0006] Optionally, the dispenser pattern is configured so as to leave at least a portion of said dispenser connected to a remaining portion of the set-up carton when said dispenser is fully opened.

[0007] Optionally, the dispenser pattern is configured so as to give a user of the set-up carton the option of either partially or completely removing the dispenser from a remaining portion of the set-up carton when said dispenser is fully opened.

[0008] Optionally, the first end first tear line comprises a first plurality of shallow V-shaped cuts, each of said first plurality of shallow V-shaped cuts comprising a first leg generally coincident with an axis of said first end first tear line and a second leg angled slightly out of said axis of said first end first tear line and toward a top of the set-up carton, said second end first tear line comprises a second plurality of shallow V-shaped cuts. Each of said second plurality of shallow V-shaped cuts comprising a first leg generally coincident with an axis of said second end first tear line and a second leg angled slightly out of said axis of said second end first tear line and toward said top of the set-up carton.

[0009] Optionally, the blank further comprises a first side dispenser pattern formed in the first side panel and a second side dispenser pattern formed in the second side panel, the first side dispenser pattern comprising a first side first tear line angled obliquely toward a back and bottom of the set-up carton and a first side second tear line angled obliquely toward the front panel and top of the set-up carton. A terminal end of the first side second tear line is disposed at or adjacent to a beginning end of said first end first tear line. The second side dispenser pattern comprises a second side first tear line angled obliquely toward the back and bottom of the set-up carton and a second side second tear line angled obliquely toward the front panel and top of the set-up carton. A terminal end of the second side second tear line is disposed at or adjacent to a beginning end of said second end first tear line.

[0010] Optionally, the blank of the first side dispenser pattern comprises a first side curved tear line connecting said first side first tear line and said first side second tear line, and said second side dispenser pattern comprises a second side curved tear line connecting said second side first tear line and said second side second tear line.

[0011] Optionally, the blank of the first end dispenser pattern comprises a first end second tear line disposed at or adjacent to a terminal end of said first end first tear line. The first end second tear line curves down toward a bottom of the set-up carton. The second end dispenser pattern comprises a second end second tear line disposed at or adjacent to a terminal end of said second end first tear line. The second end second tear line curves down toward a bottom of the set-up carton.

[0012] Optionally, the blank of the first J-shaped cut is disposed within relatively close proximity of a bottom edge of said first side exiting end flap, wherein the second J-shaped cut is disposed within relatively close proximity of a bottom edge of said second side exiting end flap.

[0013] Optionally, the blank the first end dispenser pattern and said second end dispenser pattern are configured so as to allow a user to completely remove said dispenser when said dispenser is fully opened, said complete removal of said dispenser tends to cause generally vertical tearing of the first side exiting end flap through a region of said first side exiting end flap extending between said first J-shaped cut and said bottom edge of said first side exiting end flap. The complete removal of said dispenser is further configured to cause generally vertical tearing of the second side exiting end flap through a region of said second side exiting

end flap extending between said second J-shaped cut and said bottom edge of said second side exiting end flap.

[0014] A second aspect of the invention provides a carton and a plurality of articles contained therein, the carton comprising: a top panel; a bottom panel; a first side panel coupled to both the top panel and the bottom panel; a second side panel disposed opposite the first side panel and coupled to both the top panel and the bottom panel; a back end panel disposed at a back end of the carton; an exiting end panel disposed at a front end of the carton, the exiting end panel comprising a first side exiting end flap hinged to the first side panel along a first fold line wherein an outer edge of said first side exiting end flap is disposed opposite to said first fold line; and a second side exiting end flap hinged to the second side panel along a further fold line. An outer edge of said second side exiting end flap is disposed opposite to said further fold line. A dispenser defined by a dispenser pattern, the dispenser pattern defining a dispenser flap that is separable along said dispenser pattern to form an opening into an interior of said carton. The dispenser pattern extends at least through the top panel, the first side panel, the second side panel, and the exiting end panel. The dispenser pattern comprises a first end dispenser pattern formed in the first side exiting end flap and a second end dispenser pattern formed in the second side exiting end flap. The first end dispenser pattern comprises a first end first tear line and the second end dispenser pattern comprises a second end first tear line defining a lower edge of the dispenser flap. The first end first tear line and the second end first tear line extend downwardly toward one another from opposite sides of the exiting end panel. The carton is characterised in that said first and second end dispenser patterns do not extend completely across said respective first and second side exiting end flaps but stop short of the outer edges of respective first and second side exiting end flaps, whereby a bridging portion is generally defined by a region of the exiting end panel between terminal ends of said first and second end first tear lines. The bridging portion provides for partial removal of the dispenser flap. The first end dispenser pattern comprises a first J-shaped cut disposed at or adjacent to said terminal end of said first end first tear line. The second end dispenser pattern comprises a second J-shaped cut disposed at or adjacent to said terminal end of said second end first tear line. The first and second J-shaped cuts being configured to arrest further tearing of the exiting end panel.

[0015] Optionally, the plurality of containers comprises a plurality of cans.

[0016] Optionally, the plurality of cans are arranged on their sides in at least two stacked rows. A width of said top panel and said bottom panel is about equal to or slightly greater than a characteristic height of each of said plurality of cans.

[0017] Optionally, the first end first tear line defines a first axis and said second end first tear line defines a second axis. A first angle between said first axis and a horizontal axis of said front panel is at least about 5 degrees. A second angle between said second axis and said horizontal axis of said front panel is at least about 5 degrees.

[0018] Optionally, the dispenser pattern is configured so as to leave at least a portion of said

dispenser flap connected to a remaining portion of the carton when said dispenser is fully opened.

[0019] Optionally, the dispenser pattern is configured so as to give a user of the carton the option of either partially or completely removing the dispenser flap from a remaining portion of the carton when said dispenser is fully opened.

[0020] Optionally, the first end first tear line comprises a first plurality of shallow V-shaped cuts, each of said first plurality of shallow V-shaped cuts comprising a first leg generally coincident with an axis of said first end first tear line and a second leg angled slightly out of said axis of said first end first tear line and toward the top panel. The second end first tear line comprises a second plurality of shallow V-shaped cuts, each of said second plurality of shallow V-shaped cuts comprising a first leg generally coincident with an axis of said second end first tear line and a second leg angled slightly out of said axis of said second end first tear line and toward the top panel.

[0021] Optionally, further comprising a first side dispenser pattern formed in the first side panel and a second side dispenser pattern formed in the second side panel. The first side dispenser pattern comprises a first side first tear line angled obliquely toward the back and bottom panels of the carton and a first side second tear line angled obliquely toward the exiting end panel and top panel. A terminal end of the first side second tear line is disposed at or adjacent to a beginning end of said first end first tear line. The second side dispenser pattern comprises a second side first tear line angled obliquely toward the back and bottom panels and a second side second tear line angled obliquely toward the exiting end panel and top panel. A terminal end of the second side second tear line is disposed at or adjacent to a beginning end of said second end first tear line.

[0022] Optionally, the first side dispenser pattern comprises a first side curved tear line connecting said first side first tear line and said first side second tear line. The second side dispenser pattern comprises a second side curved tear line connecting said second side first tear line and said second side second tear line.

[0023] Optionally, the first end dispenser pattern comprises a first side second tear line disposed at or adjacent to a terminal end of said first end first tear line. The first end second tear line curves down toward the bottom panel. The second end dispenser pattern comprises a second end second tear line disposed at or adjacent to a terminal end of said second end first tear line. The second end second tear line curves down toward the bottom panel.

[0024] Optionally, the first J-shaped cut is disposed within relatively close proximity of a bottom edge of said first side exiting end flap. The second J-shaped cut is disposed within relatively close proximity of a bottom edge of said second side exiting end flap.

[0025] Optionally, the first end dispenser pattern and said second end dispenser pattern are configured so as to allow a user to completely remove said dispenser flap when said dispenser

is fully opened, said complete removal of said dispenser flap tends to cause generally vertical tearing of the first side exiting end flap through a region of said first side exiting end flap extending between said first J-shaped cut and said bottom edge of said first side exiting end flap. The complete removal of said dispenser flap is further configured to cause generally vertical tearing of the second side exiting end flap through a region of said second side exiting end flap extending between said second J-shaped cut and said bottom edge of said second side exiting end flap.

[0026] Within the scope of this application it is envisaged that the various aspects, embodiments, examples, features and alternatives set out in the preceding paragraphs, in the claims and/or in the following description and drawings may be taken independently or in any combination thereof. For example, features described in connection with one embodiment are applicable to all embodiments unless there is incompatibility of features.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] Exemplary embodiments of the invention will now be described with reference to the accompanying drawings, in which:

FIGURE 1 is a plan view of a blank for forming a carton according to a first embodiment of the invention;

FIGURE 2 is a perspective view of the carton formed from the blank of Figure 1;

FIGURE 3 is a perspective view of the carton of Figure 2 in an open or dispensing configuration;

FIGURE 4 is a plan view of a blank for forming a carton according to a second embodiment of the invention;

FIGURE 5 is a perspective view of the carton formed from the blank of Figure 4;

FIGURE 6 is a perspective view of the carton of Figure 5 in a first open or dispensing configuration in which the dispensing flap remains partially connected to the remainder of the carton;

FIGURE 7 is a perspective view of the carton of Figure 5 in a second open or dispensing configuration in which the dispensing flap is completely removed from the remainder of the carton;

FIGURE 8 is a close-up plan view of the first side exiting end flap of the blank of Figure 1;

FIGURE 9 is a close-up plan view of the first side exiting end flap of the blank of Figure 4.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0028] Detailed descriptions of specific embodiments of a package, blanks and cartons are disclosed herein. It will be understood that the disclosed embodiments are merely examples of the way in which certain aspects of the invention can be implemented and do not represent an exhaustive list of all of the ways the invention may be embodied. As used herein, the word "exemplary" is used expansively to refer to embodiments that serve as illustrations, specimens, models, or patterns. Indeed, it will be understood that the packages, blanks and cartons described herein may be embodied in various and alternative forms. The Figures are not necessarily to scale and some features may be exaggerated or minimised to show details of particular components. Well-known components, materials or methods are not necessarily described in great detail in order to avoid obscuring the present disclosure. Any specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the invention.

[0029] In the embodiments detailed herein, the term "carton", for the non-limiting purpose of illustrating the various features of the invention, to a container for engaging, carrying, and/or dispensing articles, such as cans and bottles. However, it is contemplated that the teachings of the invention can be applied to various containers, which may or may not be tapered and/or cylindrical. Other exemplary articles include bottles (for example metallic, glass or plastics bottles), cans (for example aluminium cans), tins, pouches, packets and the like. In this specification, the relative terms "lower," "bottom," "upper" and "top" may indicate orientations determined in relation to fully erected cartons.

[0030] FIG. 1 is a plan view of a blank 10 used to form a carton 90 (illustrated in FIGS. 2-3) according to a first embodiment of the invention. Blank 10 is generally rectangular in shape and includes a plurality of main panels 12, 14, 16, 18 and an adhesive flap 20 hinged together in a linear series. Back end flaps 22, 24, 26, 28 and front or exiting end flaps 30, 32, 34, 36 are hingedly connected at respective ends of a corresponding one of the main panels.

[0031] The blank 10 includes a bottom panel 12 hinged to a first side panel 14 by a fold line 11. The first side panel 14 is hinged to a top panel 16 by a fold line 13. The top panel 16 is hinged to a second side panel 18 by a fold line 15. The second side panel 18 is foldably connected to an adhesive flap 20 by a fold line 17.

[0032] The bottom panel 12 is foldably connected to a bottom back end flap 22 and a bottom exiting end flap 30. The first side panel 14 is foldably connected to a first side back end flap 24 and a first side exiting end flap 32. The top panel 16 is foldably connected to a top back end flap 26 and a top exiting end flap 34. The second side panel 18 is foldably connected to a second side back end flap 28 and a second side exiting end flap 36. The back end flaps 22, 24, 26, 28 may extend along a first marginal area of the blank 10 and may be foldably

connected along a first longitudinally extending fold line 19. The exiting end flaps 30, 32, 34, 36 may extend along a second marginal area of the blank 10 disposed opposite the first marginal area, and may be foldably connected along a second longitudinally extending fold line 21. The longitudinal fold lines 19, 21 may be straight or substantially straight fold lines, or may be offset at one or more locations to account for, for example, blank thickness. When the carton 90 is erected, the end flaps 22, 24, 26, 28 close a back end of the carton 90, and the exiting end flaps 30, 32, 34, 36 close a front or exiting end of the carton 90.

[0033] The carton blank 10 includes a dispenser pattern 40 that defines a dispenser 80 in the erected carton 90. The dispenser pattern 40 includes a top dispenser pattern 70 disposed on top panel 16. Top dispenser pattern 70 includes a first top tear line 41 and a second top tear line 42. First top tear line 41 extends in a generally longitudinal direction from a point at or adjacent to fold line 13 to a point at or adjacent to an opening feature 66. Opening feature 66 may be disposed at or near a midpoint of top panel 16 between fold lines 13 and 15. First top tear line 41 may be angled slightly in the direction of the carton's front or exiting end. Second top tear line 42 may generally mirror first top tear line 41. Second top tear line 42 extends in a generally longitudinal direction from a point at or adjacent to fold line 15 to a point at or adjacent to opening feature 66. Second top tear line 42 may be angled slightly in the direction of the carton's front or exiting end. Opening feature 66 can be defined by a semi-circular cutout 55 and a fold line 58 that defines an elongated generally rectangular tab 59.

[0034] Dispenser pattern 40 also includes a first side dispenser pattern 44 disposed on first side panel 14. In the illustrated embodiment, first side dispenser pattern 44 is generally V-shaped and consists of a first side first tear line 47 and a first side second tear line 48 joined to one another via a rounded tear line 43 which forms the vertex of the V-shape. First side first tear line 47 extends from a point at or adjacent to fold line 13 that is at or adjacent to first top tear line 41 to a point at or adjacent to rounded tear line 43. First side first tear line 47 extends in a predominantly longitudinal direction (i.e., toward the bottom of the constructed carton 90), but is also angled toward the back end of the carton 90. First side second tear line 48 extends from a point at or adjacent to rounded tear line 43 to a point at or adjacent to fold line 21. First side second tear line 48 extends in a predominantly transverse direction (i.e., toward the front end of the constructed carton 90) but is also angled toward the top of the carton 90.

[0035] Dispenser pattern 40 also includes a first end dispenser pattern 60 disposed on first side exiting end flap 32. FIG. 8 shows a close-up view of first end dispenser pattern 60. First end dispenser pattern includes a first end tear line 51. First end tear line 51 extends from a point at or adjacent to fold line 21 that is at or adjacent to first side second tear line 48, to a point at or adjacent to a J-shaped cut 53. First end tear line 51 preferably consists of a plurality of shallow V-shaped cuts disposed in a relatively straight line defining an axis. The first leg of each of the V-shaped cuts is generally coincident with this axis, and the second leg is bent slightly out of axis toward the top of the constructed carton 90. First end tear line 51 extends in a predominantly transverse direction (i.e., toward the second side of the constructed carton 90) but is also angled down toward the carton's bottom at an angle α from horizontal (with reference to the constructed carton 90). Angle α is preferably at least about 5 degrees. First

end tear line 51 does not extend completely across first side exiting end flap 32, and J-shaped cut 53 is thus spaced inwardly a distance from the outer edge of first side exiting end flap 32. J-shaped cut 53 is configured to arrest further tearing of first side exiting end flap 32. In the illustrated first embodiment, the "hook" of J-shaped cut 53 faces up toward the top of the constructed carton 90.

[0036] Dispenser pattern 40 also includes a second side dispenser pattern 46 disposed on second side panel 18. Second side dispenser pattern 46 may generally mirror first side dispenser pattern 44. In the illustrated embodiment, second side dispenser pattern 46 is generally V-shaped and consists of a second side first tear line 49 and a second side second tear line 50 joined to one another via a rounded tear line 45 which forms the vertex of the V-shape. Second side first tear line 49 extends from a point at or adjacent to fold line 15 that is at or adjacent to second top tear line 42 to a point at or adjacent to rounded tear line 45. Second side tear first line 49 extends in a predominantly longitudinal direction (i.e., toward the bottom of the constructed carton 90), but is also angled toward the back end of the carton 90. Second side second tear line 50 extends from a point at or adjacent to rounded tear line 45 to a point at or adjacent to fold line 21. Second side second tear line 50 extends in a predominantly transverse direction (i.e., toward the front end of the constructed carton 90) but is also angled toward the top of the carton 90.

[0037] Dispenser pattern 40 also includes a second end dispenser pattern 62 disposed on second side exiting end flap 36. Second end dispenser pattern 62 may generally mirror first end dispenser pattern 60. Second end dispenser pattern 62 includes a second end tear line 52. Second end tear line 52 extends from a point at or adjacent to fold line 21 that is at or adjacent to second side second tear line 50, to a point at or adjacent to a J-shaped cut 54. Second end tear line 52 preferably consists of a plurality of shallow V-shaped cuts disposed in a relatively straight line defining an axis. The first leg of each of the V-shaped cuts is generally coincident with this axis, and the second leg is bent slightly out of axis toward the top of the constructed carton 90. Second end tear line 52 extends in a predominantly transverse direction (i.e., toward the first side of the constructed carton 90) but is also angled down toward the carton's bottom at an angle α from horizontal (with reference to the constructed carton 90). Angle α is preferably at least about 5 degrees. Second end tear line 52 does not extend completely across second side exiting end flap 36, and J-shaped cut 54 is thus spaced inwardly a distance from the outer edge of second side exiting end flap 36. J-shaped cut 54 is configured to arrest further tearing of second side exiting end flap 36. In the illustrated first embodiment, the "hook" of J-shaped cut 54 faces up toward the top of the constructed carton 90.

[0038] The dimensions of the blank 10 may be selected to accommodate defining or characteristic dimensions of articles to be accommodated within the carton 90. For example, the top panel 16 and bottom panel 12 can have a width $W1$ that generally corresponds to or slightly exceeds a height of containers C or other articles to be accommodated within the carton 90. When cylindrical or substantially cylindrical containers C are used, the first and second side panels 14, 18 can have, for example, a height $H1$ that generally corresponds to or

slightly exceeds an integral multiple of a largest or characteristic diameter of the containers C. For example, if the containers C are to be stacked in two rows in the carton 90, the height H1 of the carton 90 can be about equal to or slightly greater than twice the containers' C largest or characteristic diameter.

[0039] The carton 90 may be erected from the blank 10 by gluing or otherwise adhering the adhesive flap 20 to the inner side of the bottom panel 12 so that the bottom panel 12, first side panel 14, top panel 16, and second side panel 18 may be opened or set up to form a generally tubular sleeve. The ends of the generally tubular sleeve may be closed by folding and adhering the back end flaps 22, 24, 26, 28 and the exiting end flaps 30, 32, 34, 36. The exterior surfaces of the bottom and top exiting end flaps 30, 34 can be, for example, glued to interior surfaces of the first and second side exiting end flaps 32, 36. Containers C, or other articles, can be loaded into the sleeve in a conventional manner at any time before one or both ends of the carton are closed by the end flaps 22, 24, 26, 28, 30, 32, 34, 36.

[0040] FIG. 2 is a perspective view of the carton 90 erected from the blank 10. In the erected carton 90, the back end flaps 22, 24, 26, 28 form a back end panel 82 and the exiting end flaps 30, 32, 34, 36 form a front or exiting end panel 84. The dispenser pattern 40 forms a dispenser 80 having a dispenser flap 92 that may be partially or completely removed to place the carton 90 in an open or dispensing configuration. Generally, however, it is intended that the dispenser flap 92 of the first embodiment be only partially removed from carton 90 during use.

[0041] Opening of the dispenser 80 may be initiated by inserting one or more fingers into the carton 90 through cutout 55 of opening feature 66. The dispenser 80 is fully opened by pulling the dispenser flap 92 outwardly and downwardly and tearing the carton 90 along tear lines 41, 42, 47, 48, 49, 50, 51, 52. This tearing of carton 90 along tear lines 41, 42, 47, 48, 49, 50, 51, 52 causes the dispenser flap 92 to move in a pivoting-type motion about an imaginary line extending horizontally between J-shaped cuts 53, 54. The tearing of carton along 90 tear lines 51 and 52 may be arrested via the J-shaped cuts 53, 54 so as to leave the dispenser flap 92 partially connected to the remainder of the carton 90 via a now-folded segment of first exiting end flap 32 and second exiting end flap 36 that extends generally horizontally between J-shaped cuts 53, 54. The partial removal of dispenser flap 92 creates an opening 95 into the interior of the carton 90, allowing a user to remove an article C from therewithin. FIG. 3 shows carton 90 in an open or dispensing configuration following partial removal of dispenser flap 92. Opening of dispenser 80 may have a tendency to cause a front-most top article C to move into and be received within the interior of the now-inverted dispenser flap 92 as shown in FIG. 3, thereby facilitating the dispensing of the first article C. Particularly in the case where articles C are cans or otherwise generally cylindrical in shape, the remaining top row of articles C may have a tendency to roll forward such that each of the remaining top row articles C is received within a valley defined by the space between two adjacent lower-row articles C.

[0042] The downward angling of tear lines 51, 52 advantageously facilitates "automatic" tearing along these lines as the dispenser flap 92 is rotated out and down in a natural movement by a user, and prevents tear lines 51, 52 from inadvertently functioning as fold lines.

It has been found that it is desirable to select an angle α greater than or equal to about 5 degrees in order to produce this type of "automatic" tearing functionality. The use of shallow V-shaped cuts for tear lines 51, 52 as disclosed has also been found to facilitate easier tearing along tear lines 51, 52 when the dispenser flap 92 is pulled and rotated in the manner described.

[0043] FIG. 4 is a plan view of a blank 210 used to form a carton 290 (see FIGS. 5-7) according to a second embodiment of the invention. Blank 210 and the corresponding carton 290 can be generally similar to the blank 10 and carton 90 discussed above, and like or similar reference numbers in the figures indicate like or similar elements. The difference between the first and second embodiments relates to first end dispenser pattern 260 disposed on first side exiting end flap 232, and the second end dispenser pattern 262 disposed on second side exiting end flap 236.

[0044] First end dispenser pattern 260 includes a first end first tear line 251. A close-up view of first end dispenser pattern 260 is shown in FIG. 9. First end first tear line 251 extends from a point at or adjacent to fold line 221 that is at or adjacent to first side second tear line 248, to a point at or adjacent to a first end second tear line 298. First end first tear line 251 preferably consists of a plurality of shallow V-shaped cuts disposed in a relatively straight line defining an axis. The first leg of the each of the V-shaped cuts is generally coincident with this axis, and the second leg is bent slightly out of axis toward the top of the constructed carton 290. First end first tear line 251 extends in a predominantly transverse direction (i.e., toward the second side of the constructed carton 290) but is also angled down toward the carton's bottom at an angle β from horizontal (with reference to the constructed carton 290). Angle β is preferably at least about 5 degrees. First end second tear line 298 is preferably shorter in length than first end first tear line 251 and curves down toward the bottom of the erected carton 290. First end second tear line 298 is preferably oriented in a generally downward direction. First end second tear line 298 extends to a point at or adjacent to a J-shaped cut 253. J-shaped cut 253 is configured to arrest further tearing of first side exiting end flap 232. In the illustrated second embodiment, the "hook" of the J-shaped cut 253 opens toward the interior of the curve of first end second tear line 298. First end dispenser pattern 260 does not extend completely across first side exiting end flap 232, and J-shaped cut 253 is thus spaced inwardly a distance from the outer edge of first side exiting end flap 232. The angling of first end first tear line 251 and the curvature of first end second tear line 298 place J-shaped cut 253 within relatively close proximity of the bottom edge of first side exiting end flap 232. J-shaped cut 253 is separated from the bottom edge of first side exiting end flap 232 by a region of first side exiting end flap 232 labeled 300 in FIGS. 4 and 9.

[0045] Second end dispenser pattern 262 may generally mirror first end dispenser pattern 260. Second end dispenser pattern 262 includes a second end first tear line 252. Second end first tear line 252 extends from a point at or adjacent to fold line 221 that is at or adjacent to second side second tear line 250, to a point at or adjacent to a second end second tear line 299. Second end first tear line 252 preferably consists of a plurality of shallow V-shaped cuts disposed in a relatively straight line defining an axis. The first leg of the each of the V-shaped

cuts is generally coincident with this axis, and the second leg is bent slightly out of axis toward the top of the constructed carton 290. Second end first tear line 252 extends in a predominantly transverse direction (i.e., toward the second side of the constructed carton 290) but is also angled down toward the carton's bottom at an angle β from horizontal (with reference to the constructed carton 290). Angle β is preferably at least about 5 degrees. Second end second tear line 299 is preferably shorter in length than second end first tear line 252 and curves down toward the bottom of the erected carton 290. Second end second tear line 299 is preferably oriented in a generally downward direction. Second end second tear line 299 extends to a point at or adjacent to a J-shaped cut 254. J-shaped cut 254 is configured to arrest further tearing of second side exiting end flap 236. In the illustrated second embodiment, the "hook" of the J-shaped cut 254 opens toward the interior of the curve of second end second tear line 299. Second end dispenser pattern 262 does not extend completely across second side exiting end flap 236, and J-shaped cut 254 is thus spaced inwardly a distance from the outer edge of second side exiting end flap 236. The angling of second end first tear line 252 and the curvature of second end second tear line 299 place J-shaped cut 254 within relatively close proximity of the bottom edge of second side exiting end flap 236. J-shaped cut 254 is separated from the bottom edge of second side exiting end flap 236 by a region of second side exiting end flap 236 labeled 301 in FIG. 4.

[0046] Carton 290 can be erected in a manner similar to that described above in connection with carton 90.

[0047] FIG. 5 is a perspective view of the carton 290 erected from the blank 210. Opening of the dispenser 280 of carton 290 may be initiated in a manner similar to that described above in connection with carton 90. Thus, a user may insert a finger or fingers into the carton 290 through cutout 255 of the opening feature 266. The dispenser 280 is fully opened by pulling the dispenser flap 292 outwardly and downwardly and tearing carton 290 along tear lines 241, 242, 247, 248, 249, 250, 251, 252, 298, 299. The tearing of carton 290 along tear lines 298 and 299 may be arrested via the J-shaped cuts 253, 254 so as to leave the dispenser flap 292 partially connected to the remainder of the carton 290 via a flexible bridging portion 305 (see FIG. 5) generally defined by the region of exiting end panel 284 that extends between first end second tear line 298 and second end second tear line 299. The inclusion of generally vertically oriented first end second tear line 298 and second end second tear line 299 in the second embodiment tends to create a flexible bridging portion 305 as the connection between the dispenser flap 292 and the remainder of the carton 290 rather than a fold-line type connection (as tends to be created in the first embodiment). FIG. 6 shows carton 290 in a first open or dispensing configuration following partial removal of dispenser flap 292.

[0048] Alternatively, and at a user's option, the dispenser flap 292 may be fully removed by continuing to pull the dispenser flap 292 in a downward and/or outward direction. The configuration of first and second end dispenser patterns 260, 262 is such that, in the event of such continued application of force, first and second end flaps 232, 236 will tend to tear down from J-shaped cuts 253, 254 through the regions 300, 301 in a more or less vertical direction, thereby separating the dispenser flap 292 completely from the remainder of the carton 290.

This tearing through regions 300, 301 is accomplished without the guide of any tear lines in these regions. FIG. 7 shows carton 290 in a second open or dispensing configuration following the complete separation of dispenser flap 292 from the remainder of carton 290.

[0049] As with the first embodiment, the downward angling of tear lines 251, 252 advantageously facilitates "automatic" tearing along these lines as the dispenser flap 292 is rotated out and down in a natural movement by a user, and prevents tear lines 251, 252 from inadvertently functioning as fold lines. It has been found that it is desirable to select an angle β greater than or equal to about 5 degrees in order to produce this type of "automatic" tearing functionality. The use of shallow V-shaped cuts for tear lines 251, 252 as disclosed has also been found to facilitate easier tearing along tear lines 251, 252 when the dispenser flap 292 is pulled and rotated in the manner described. The configuration of the first and second end dispenser patterns 260, 262 also advantageously gives the user greater control over the partial or complete removal of dispenser flap 292. J-shaped cuts 253, 254 provide a natural stopping point for the tearing of first side and second side exiting end flaps 232, 236 and provide tactile feedback to the user to indicate that the dispenser 280 has reached its fully-open, connected configuration. However, should the user wish to fully remove the dispenser flap 292, the configuration of first and second end dispenser patterns 260, 262 allows the user to do so via a continued, natural motion with relative ease. In certain embodiment, the underside of flexible bridging portion 305 and/or the region of exiting end panel 284 extending between regions 300 and 301, or portions thereof, may be glued or otherwise adhered to bottom exiting end flap 230. In such embodiments, complete separation of dispenser flap 292 from the remainder of the carton 290 may necessitate additional tearing or peeling to sever these connection(s).

[0050] It can be appreciated that various changes may be made within the scope of the present invention. For example, the size and shape of the panels may be adjusted to accommodate articles of differing size or shape.

[0051] It will be recognized that as used herein, directional references such as "top", "base", "front", "back", "end", "side", "inner", "outer", "upper" and "lower" do not limit the respective panels to such orientation, but merely serve to distinguish these panels from one another. Any reference to "hinged connection" should not be construed as necessarily referring to a single fold line only; indeed it is envisaged that a hinged connection can be formed from one or more of the following: a short slit, a frangible line or a fold line, without departing from the scope of the invention. It can be appreciated that various changes may be made within the scope of the present invention. For example, the size and shape of the panels may be adjusted to accommodate articles of differing size or shape.

[0052] As used herein, the terms "hinged connection" and "fold line" each refers to all manner of lines that define hinge features of the blank or substrate of sheet material, facilitate folding portions of the blank or substrate of sheet material with respect to one another, or otherwise indicate optimal panel folding locations for the blank or substrate of sheet material. Any reference to "hinged connection" should not be construed as necessarily referring to a single fold line only; indeed a hinged connection can be formed from one or more fold lines.

[0053] As used herein, the term "fold line" may refer to one of the following: a scored line, an embossed line, a debossed line, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, an interrupted cut line, aligned slits, a line of short scores and any combination of the aforesaid options, without departing from the scope of the invention.

[0054] As used herein, the terms "tear line", "weakened line of severance", "severance line" and "frangible line" each may refer to all manner of lines formed in the blank or substrate of sheet material that facilitate separating portions of the blank or substrate of sheet material from one another, or otherwise that indicate optimal separation locations on the blank or substrate. As used herein, the terms "tear line", "weakened line of severance", "severance line" and "frangible line" each may refer to one of the following: a single cut line, a single partial-depth cut line (e.g., a single half-cut line), an interrupted cut line, a score line, an interrupted score line, a line of perforations, a line of short cuts, a line of short slits, a line of short partial-depth cuts (e.g., a line of short half cuts), and any combination of the aforementioned options.

[0055] It should be understood that hinged connections, fold lines, tear lines, weakened lines of severance, frangible lines and severance lines can each includes elements that are formed in the blank or substrate of sheet material, including perforations, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, a cut line, an interrupted cut line, slits, scores, any combination thereof, and the like. The elements can be dimensioned and arranged to provide the desired functionality. For example, a line of perforations can be dimensioned or designed with degrees of weakness to define a fold line and/or a frangible line. The line of perforations can be designed to facilitate folding and resist breaking to provide a fold line, to facilitate folding and facilitate breaking with more effort to provide a frangible fold line, or to facilitate breaking with little effort to provide a frangible line.

REFERENCES CITED IN THE DESCRIPTION

Cited references

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Patent documents cited in the description

- US20050189405A [0003]

Patentkrav

1. Emne (10; 210) til dannelse af en kasse (90; 290) til at indeholde en flerhed af artikler (C),

hvilket emne (10; 210) omfatter:

- 5 en flerhed af hovedpaneler (12, 14, 16, 18; 212, 214, 216, 218) hængslet sammen i en lineær serie, hvor flerheden af hovedpaneler er konfigureret til at danne en rørformet struktur i en opstillet kasse (90; 290), flerheden af hovedpaneler omfatter et bundpanel (12, 212), et første sidepanel (14; 214), et toppanel (16; 216) og et andet sidepanel (18; 218);
- 10 en flerhed af udgangsendeflapper (30, 32, 34, 36; 230, 232, 234, 236) konfigureret til at danne et frontpanel (84; 284) i den opstillede kasse (90; 290), hvor frontpanelet er konfigureret til at lukke en frontende af den rørformede struktur, flerheden af udgangsendeflapper omfatter en første sideudgangsendeflap (32; 232) hængslet forbundet til nævnte første
- 15 sidepanel (14; 214) langs et første marginalområde af emnet langs en på langs udstrækkende foldelinje (21; 221) og en anden sideudgangsendeflap (36; 236) hængslet forbundet til nævnte andet sidepanel (18; 218) langs nævnte første marginalområde af emnet langs en på langs udstrækkende foldelinje (21; 221);
- 20 et fordelermønster der strækker sig igennem toppanelet (16; 216), det første sidepanel (14; 214), det andet sidepanel (18; 218) og frontpanelet (84; 284), hvor fordelermønsteret omfatter et første endefordelermønster (60; 260) dannet i den første sideudgangsendeflap (32; 232) og et andet endefordelermønster (62; 262) dannet i den anden sideudgangsendeflap
- 25 (36; 236), hvor det første endefordelermønster (60; 260) omfatter en første rivelinje af første ende (51; 251) og det andet endefordelermønster omfatter en første rivelinje af anden ende (52; 252), og hvor den første rivelinje af første ende (51; 251) og den første rivelinje af anden ende (52; 252) er konfigureret til at strække sig nedad mod hinanden fra modstående
- 30 sider af frontpanelet (84; 284) i den opstillede kasse (90; 290), hvor en ydre kant af nævnte første sideudgangsendeflap (32; 232) er anbragt modstående til nævnte på langs udstrækkende foldelinje (21; 221), hvor en ydre kant af nævnte anden sideudgangsendeflap (36; 236) er anbragt modstående til nævnte på langs udstrækkende foldelinje (21; 221), hvor

nævnte emne (10; 210 er **kendetegnet ved, at** nævnte første og andet endefordelermønstre (51, 52; 251, 252) ikke strækker sig fuldkommen over nævnte respektive første og anden sideudgangsendeflapper (32, 36; 232, 236), men stopper ved de ydre kanter af respektive første og anden sideudgangsendeflapper (32, 36; 232, 236), således at, i den opstillede kasse, en brodel (305) er generelt defineret af et område af frontpanelet (84, 284) mellem tilslutningsender af nævnte første rivelinjer af første og anden ende (51; 251; 52; 252), hvor nævnte brodel tilvejebringer delvis fjernelse af en fordelerflap defineret af fordelermønstret, hvor den første rivelinje af første ende (51; 251) og første rivelinje af anden ende (52; 252) er konfigureret til at definere mindst delvist en nedre kant af en mindst delvist fjernbar fordeler (92; 292) i den opstillede kasse (90; 290) og hvor nævnte første endefordelermønster omfatter et første J-formet snit (53; 253) anbragt ved eller tilstødende til nævnte tilslutningsende af nævnte første rivelinje af første ende (51; 251), og hvor nævnte andet endefordelermønster omfatter et andet J-formet snit (54; 254) anbragt ved eller tilstødende til nævnte tilslutningsende af nævnte første rivelinje af anden ende (52; 252), hvor nævnte første og andet J-formede snit (53, 54; 253, 254) er konfigureret til at stoppe yderligere afrivning af nævnte første og anden sideudgangsendeflapper (32, 36; 232, 236) af frontpanelet (84; 284) i den opstillede kasse (90; 290).

2. Emnet ifølge krav 1, hvor nævnte første rivelinje af første ende definerer en første akse og nævnte første rivelinje af anden ende definerer en anden akse, hvor en første vinkel mellem nævnte første akse og en horisontal akse af nævnte frontpanel er mindst omkring 5 grader, hvor en anden vinkel mellem nævnte anden akse og nævnte horisontale akse af nævnte frontpanel er mindst omkring 5 grader.
3. Emnet ifølge krav 1, hvor nævnte fordelermønster er konfigureret således til at efterlade mindst en del af nævnte fordeler forbundet til en resterende del af den opstillede kasse, når nævnte fordeler er helt åben.

4. Emnet ifølge krav 1, hvor nævnte fordelermønster er konfigureret således til at give en bruger af den opstillede kasse muligheden for enten delvist eller fuldkommen at fjerne fordeleren fra en resterende del af den opstillede kasse, når nævnte fordeler er helt åben.

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5. Emnet ifølge krav 1, hvor nævnte første rive linje af første ende omfatter en første flerhed af flade V-formede snit, hver af nævnte første flerhed af flade V-formede snit omfatter et første ben generelt koinciderende med en akse af nævnte første rive linje af første ende og et andet ben vinklet en smule ud af nævnte akse af nævnte første rive linje af første ende og mod en top af den opstillede kasse, hvor nævnte første rive linje af anden ende omfatter en anden flerhed af flade V-formede snit, hver af nævnte anden flerhed af flade V-formede snit omfatter et første ben generelt koinciderende med en akse af nævnte første rive linje af anden ende og et andet ben vinklet en smule ud af nævnte akse af nævnte første rive linje af anden ende og mod nævnte top af den opstillede kasse.

6. Emnet ifølge krav 1, yderligere omfatter et første sidefordelermønster dannet i det første sidepanel og et andet sidefordelermønster dannet i det andet sidepanel, det første sidefordelermønster omfatter en første rive linje af første side vinklet skråt mod en bagside og bund af den opstillede kasse og en anden rive linje af første side vinklet skråt mod frontpanelet og toppen af den opstillede kasse, hvor en tilslutningsende af den anden rive linje af første side er anbragt ved eller tilstødende til en begyndelsesende af nævnte første rive linje af første ende, det andet sidefordelermønster omfatter en første rive linje af anden side vinklet skråt mod bagsiden og bunden af den opstillede kasse og en anden rive linje af anden side vinklet skråt mod frontpanelet og toppen af den opstillede kasse, hvor en tilslutningsende af den anden rive linje af anden side er anbragt ved eller tilstødende til en begyndelsesende af nævnte første rive linje af anden ende.

7. Emnet ifølge krav 6, hvor nævnte første sidefordelermønster omfatter en krum rive linje af første side som forbinder nævnte første rive linje af første side og nævnte anden rive linje af første side, og hvor nævnte andet sidefordelermønster omfatter en krum rive linje af anden side som forbinder nævnte første rive linje af anden side og nævnte anden rive linje af anden side.

- 8.** Emnet ifølge krav 1, hvor nævnte første endefordelermønster omfatter en anden rivelinje af første ende anbragt ved eller tilstødende til en tilslutningsende af nævnte første rivelinje af første ende, hvor nævnte anden rivelinje af første ende krummer ned mod en bund af den opstillede kasse, hvor nævnte andet
- 5 endefordelermønster omfatter en anden rivelinje af anden ende anbragt ved eller tilstødende til en tilslutningsende af nævnte første rivelinje af anden ende, hvor nævnte anden rivelinje af anden ende krummer ned mod en bund af den opstillede kasse.
- 10 **9.** Emnet ifølge krav 8, hvor det første J-formede snit er anbragt inden for relativ tæt nærhed af en nederste kant af nævnte første sideudgangsendeflap, hvor det andet J-formede snit er anbragt inden for relativ tæt nærhed af en nederste kant af nævnte anden sideudgangsendeflap.
- 15 **10.** Emnet ifølge krav 9, hvor nævnte første endefordelermønster og nævnte andet endefordelermønster er konfigureret således til at gøre det muligt for en bruger til fuldkommen at fjerne nævnte fordeler, når nævnte fordeler er helt åben, nævnte fuldkomne fjernelse af nævnte fordeler tenderer at forårsage generel vertikal afrivning af den første sideudgangsendeflap igennem et område
- 20 af nævnte første sideudgangsendeflap der strækker sig mellem nævnte første J-formede snit og nævnte nederste kant af nævnte første sideudgangsendeflap, hvor nævnte fuldkomne fjernelse af nævnte fordeler er yderligere konfigureret til at forårsage generel vertikal afrivning af den anden sideudgangsendeflap igennem et område af nævnte anden sideudgangsendeflap der strækker sig mellem
- 25 nævnte andet J-formede snit og nævnte nederste kant af nævnte anden sideudgangsendeflap.
- 11.** Kasse (90; 290) og en flerhed af artikler (C) indeholdt deri, hvilken kasse (90; 290) omfatter:
- 30 et toppanel (16; 216);
- et bundpanel; (12; 212)
- et første sidepanel (14; 214) koblet til både toppanelet (16; 216) og bundpanelet (12; 212);

et andet sidepanel (18; 218) anbragt modstående det første sidepanel (14; 214) og koblet til både toppanelet (16; 216) og bundpanelet (12; 212);

en bagendepanel anbragt ved en bageste ende af kassen (90; 290);

et udgangsendepanel (84; 284) anbragt ved en frontende af kassen, hvor

5 udgangsendepanelet omfatter en første sideudgangsendeflap (32; 232) hængslet til det første sidepanel (14; 214) langs en første foldelinje (21; 221), hvor en ydre kant af nævnte første sideudgangsendeflap (32; 232) er anbragt modstående til nævnte første foldelinje (21; 221); og en anden sideudgangsendeflap (36; 236) hængslet til det andet sidepanel (18; 218)

10 langs en yderligere foldelinje (21; 221), hvor en ydre kant af nævnte anden sideudgangsendeflap (36; 236) er anbragt modstående til nævnte yderligere foldelinje (21; 221);

en fordeler defineret af et fordelermønster, hvor fordelermønsteret definerer en fordelerflap, som kan separeres langs nævnte fordelermønster

15 til at danne en åbning i et indre af nævnte kasse, nævnte fordelermønster strækker sig mindst igennem toppanelet (16; 216), det første sidepanel (14; 214), det andet sidepanel (18; 218) og udgangsendepanelet, hvor fordelermønsteret omfatter et første endefordelermønster (60; 260) dannet i den første sideudgangsendeflap (32; 232) og et andet

20 endefordelermønster (62; 262) dannet i den anden sideudgangsendeflap (36; 236), hvor det første endefordelermønster (60; 262) omfatter en første rivelinje af første ende (51; 251) og det andet endefordelermønster omfatter en første rivelinje af anden ende (52; 252) definerer en nedre kant af fordelerflappen, og hvor den første rivelinje af første ende (51; 251) og den første rivelinje af anden ende (52; 252) strækker sig nedad

25 mod hinanden fra modstående sider af udgangsendepanelet, hvor nævnte kasse (90, 290) er **kendetegnet ved, at** nævnte første og andet endefordelermønstre (51, 52; 251, 252) ikke strækker sig fuldkommen over nævnte respektive første og anden sideudgangsendeflapper (32, 36; 232, 236), men stopper ved de ydre kanter af respektive første og anden sideudgangsendeflapper (32, 36; 232, 236), hvorved en brodel (305) er generelt defineret af et område af udgangsendepanelet (84; 284) mellem tilslutningsender af nævnte første rivelinjer af første og anden ende (51; 251; 52; 252), hvor nævnte brodel tilvejebringer delvis fjernelse af

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- fordelerflappen, hvor nævnte første endefordelermønster omfatter et første J-formet snit (53; 253) anbragt ved eller tilstødende til nævnte tilslutningsende af nævnte første rive linje af første ende (51; 251), og hvor nævnte andet endefordelermønster omfatter et andet J-formet snit (54; 254) anbragt ved eller tilstødende til nævnte tilslutningsende af nævnte første rive linje af anden ende (52; 252), hvor nævnte første og andet J-formede snit (53, 54; 253, 254) er konfigureret til at stoppe yderligere afrivning af udgangsendepanelet.
- 5
- 10 **12.** Kassen ifølge krav 11, hvor nævnte flerhed af beholdere omfatter en flerhed af dåser.
- 13.** Kassen ifølge krav 12, hvor nævnte flerhed af dåser er anbragt på deres sider i mindst to stablede rækker, hvor en bredde af nævnte toppanel og nævnte bundpanel er omkring lig med eller en smule større end en karakteristisk højde af hver af nævnte flerhed af dåser.
- 15
- 14.** Kassen ifølge krav 11, hvor nævnte første rive linje af første ende definerer en første akse og nævnte første rive linje af anden ende definerer en anden akse, hvor en første vinkel mellem nævnte første akse og en horisontal akse af nævnte frontpanel er mindst omkring 5 grader, hvor en anden vinkel mellem nævnte anden akse og nævnte horisontale akse af nævnte frontpanel er mindst omkring 5 grader.
- 20
- 25 **15.** Kassen ifølge krav 11, hvor nævnte fordelermønster er konfigureret således til at efterlade mindst en del af nævnte fordelerflap forbundet til en resterende del af kassen, når nævnte fordeler er helt åben.
- 16.** Kassen ifølge krav 11, hvor nævnte fordelermønster er konfigureret således til at give en bruger af kassen muligheden for enten delvist eller fuldkommen at fjerne fordelerflappen fra en resterende del af kassen, når nævnte fordeler er helt åben.
- 30

17. Kassen ifølge krav 11, hvor nævnte første rive­linje af første ende omfatter en første flerhed af flade V-formede snit, hver af nævnte første flerhed af flade V-formede snit omfatter et første ben generelt koinciderende med en akse af nævnte første rive­linje af første ende og et andet ben vinklet en smule ud af nævnte akse af nævnte første rive­linje af første ende og mod toppanelet, hvor nævnte første rive­linje af anden ende omfatter en anden flerhed af flade V-formede snit, hver af nævnte anden flerhed af flade V-formede snit omfatter et første ben generelt koinciderende med en akse af nævnte første rive­linje af anden ende og et andet ben vinklet en smule ud af nævnte akse af nævnte første rive­linje af anden ende og mod toppanelet.

18. Kassen ifølge krav 11, yderligere omfatter et første sidefordelermønster dannet i det første sidepanel og et andet sidefordelermønster dannet i det andet sidepanel, det første sidefordelermønster omfatter en første rive­linje af første side vinklet skråt mod bagside- og bundpanelerne af kassen og en anden rive­linje af første side vinklet skråt mod udgangsendepanelet og toppanelet, hvor en tilslutningsende af den anden rive­linje af første side er anbragt ved eller tilstødende til en begyndelsesende af nævnte første rive­linje af første ende, det andet sidefordelermønster omfatter en første rive­linje af anden side vinklet skråt mod bagside- og bundpanelerne og en anden rive­linje af anden side vinklet skråt mod udgangsendepanelet og toppanelet, hvor en tilslutningsende af den anden rive­linje af anden side er anbragt ved eller tilstødende til en begyndelsesende af nævnte første rive­linje af anden ende.

19. Kassen ifølge krav 18, hvor nævnte første sidefordelermønster omfatter en krum rive­linje af første side som forbinder nævnte første rive­linje af første side og nævnte anden rive­linje af første side, og hvor nævnte andet sidefordelermønster omfatter en krum rive­linje af anden side som forbinder nævnte første rive­linje af anden side og nævnte anden rive­linje af anden side.

30

20. Kassen ifølge krav 11, hvor nævnte første endefordelermønster omfatter en anden rive­linje af første side anbragt ved eller tilstødende til en tilslutningsende af nævnte første rive­linje af første ende, hvor nævnte anden rive­linje af første ende krummer ned mod bundpanelet, hvor nævnte andet endefordelermønster

omfatter en anden rive linje af anden ende anbragt ved eller tilstødende til en tilslutningsende af nævnte første rive linje af anden ende, hvor nævnte anden rive linje af anden ende krummer ned mod bundpanelet.

- 5 **21.** Kassen ifølge krav 20, hvor det første J-formede snit er anbragt inden for relativ tæt nærhed af en nederste kant af nævnte første sideudgangsdeflap, hvor det andet J-formede snit er anbragt inden for relativ tæt nærhed af en nederste kant af nævnte anden sideudgangsdeflap.
- 10 **22.** Kassen ifølge krav 21, hvor nævnte første endefordelermønster og nævnte andet endefordelermønster er konfigureret således til at gøre det muligt for en bruger til fuldkommen at fjerne nævnte fordelerflap, når nævnte fordeler er helt åben, nævnte fuldkomne fjernelse af nævnte fordelerflap tenderer at forårsage generel vertikal afrivning af den første sideudgangsdeflap igennem et område
- 15 af nævnte første sideudgangsdeflap der strækker sig mellem nævnte første J-formede snit og nævnte nederste kant af nævnte første sideudgangsdeflap, hvor nævnte fuldkomne fjernelse af nævnte fordelerflap er yderligere konfigureret til at forårsage generel vertikal afrivning af den anden sideudgangsdeflap igennem et område af nævnte anden sideudgangsdeflap der strækker sig
- 20 mellem nævnte andet J-formede snit og nævnte nederste kant af nævnte anden sideudgangsdeflap.

DRAWINGS

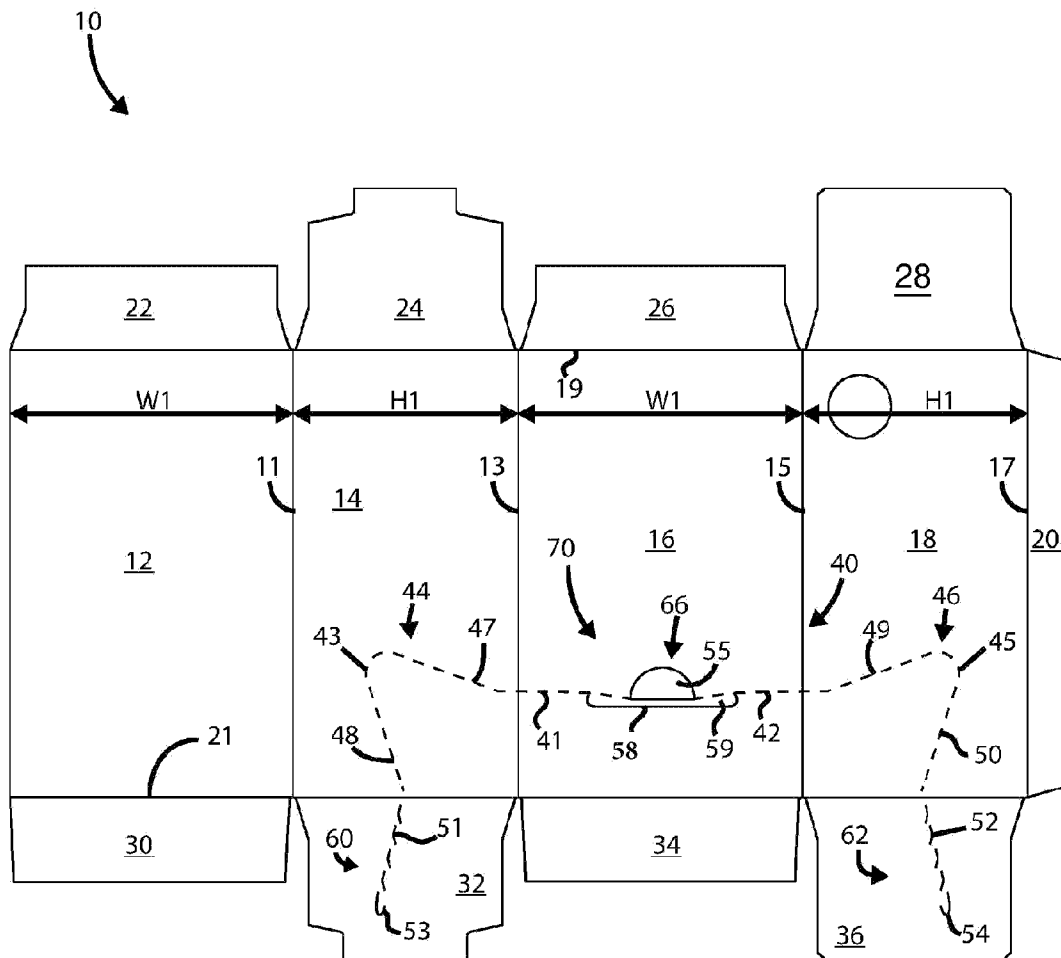


FIG. 1

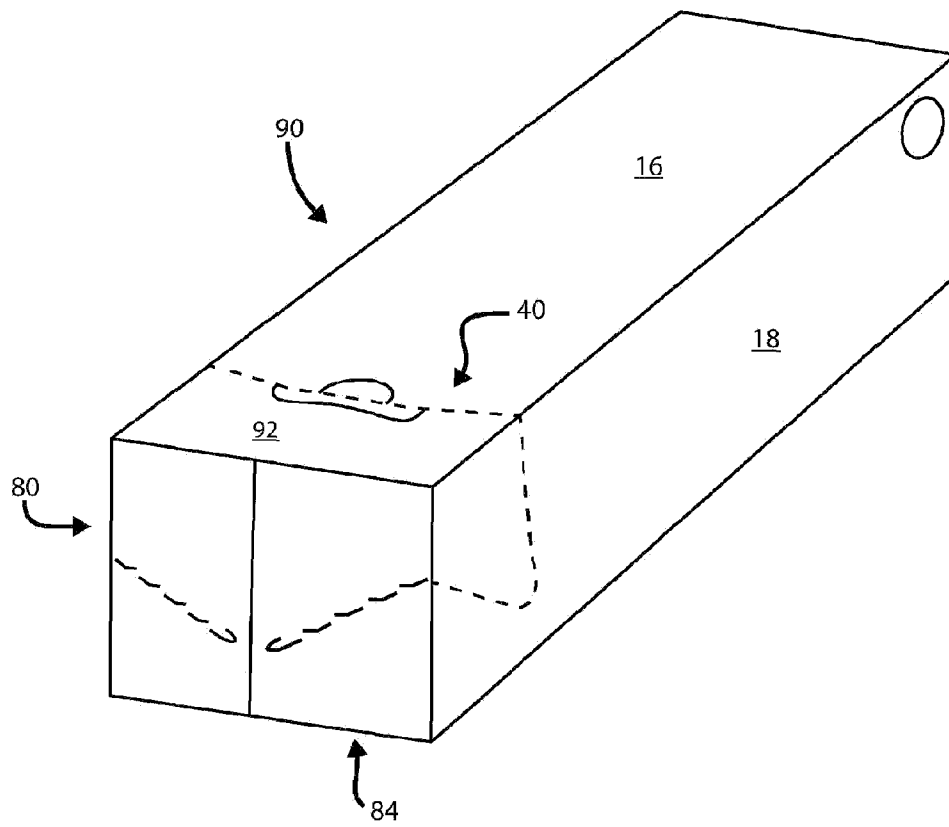


FIG. 2

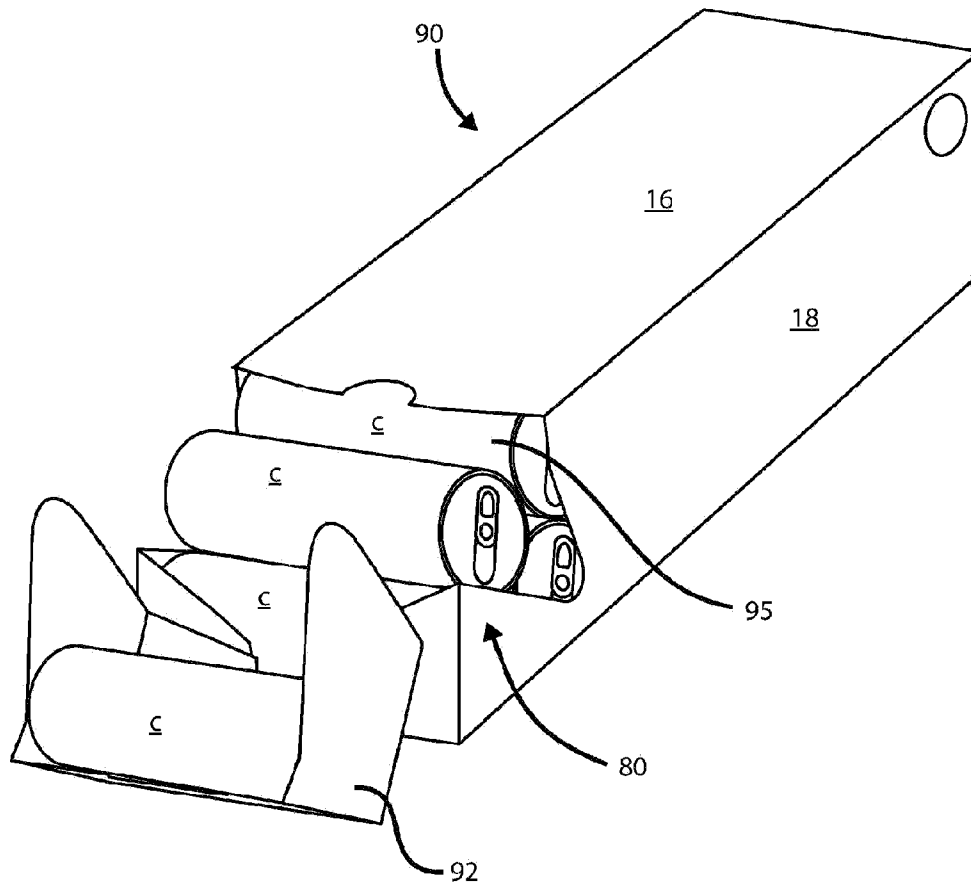


FIG. 3

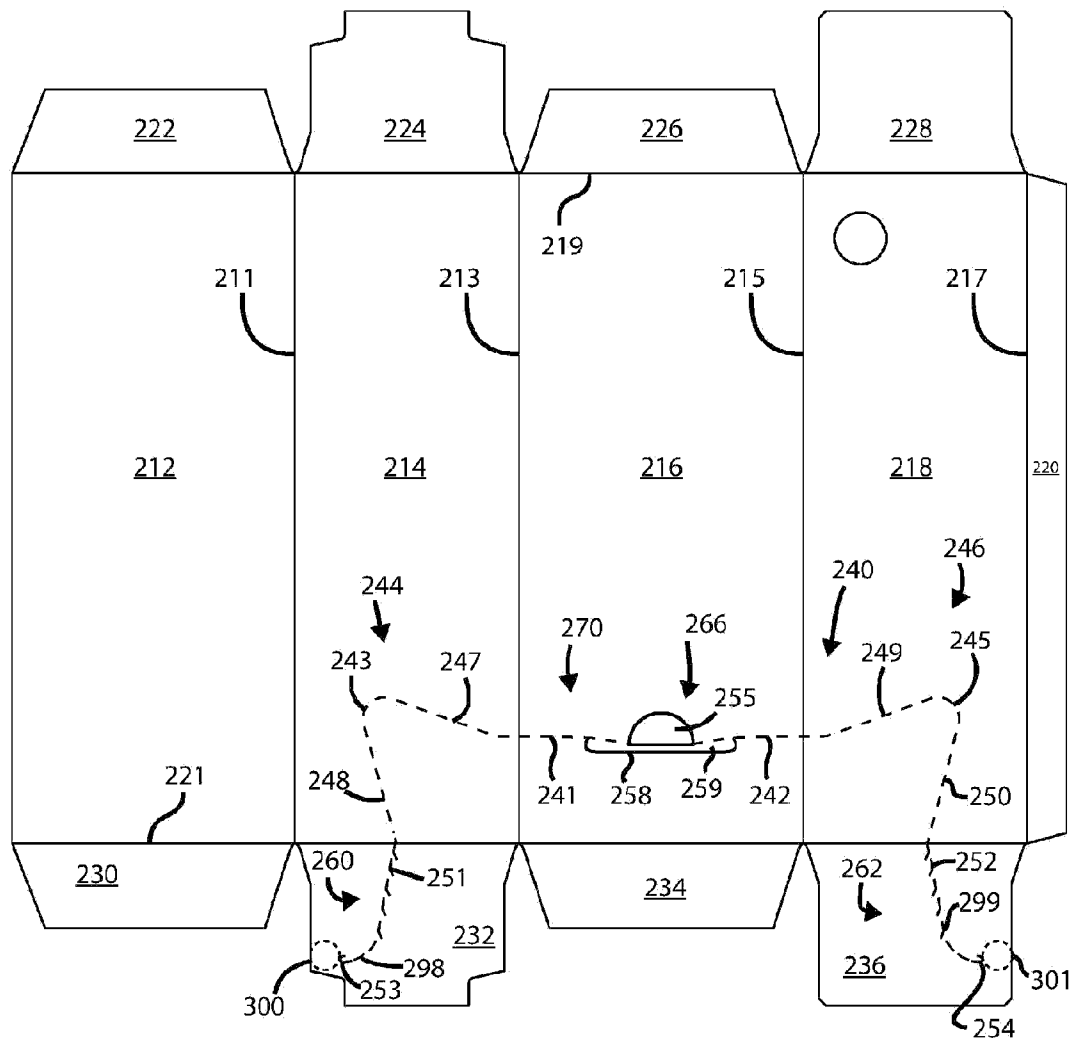


FIG. 4

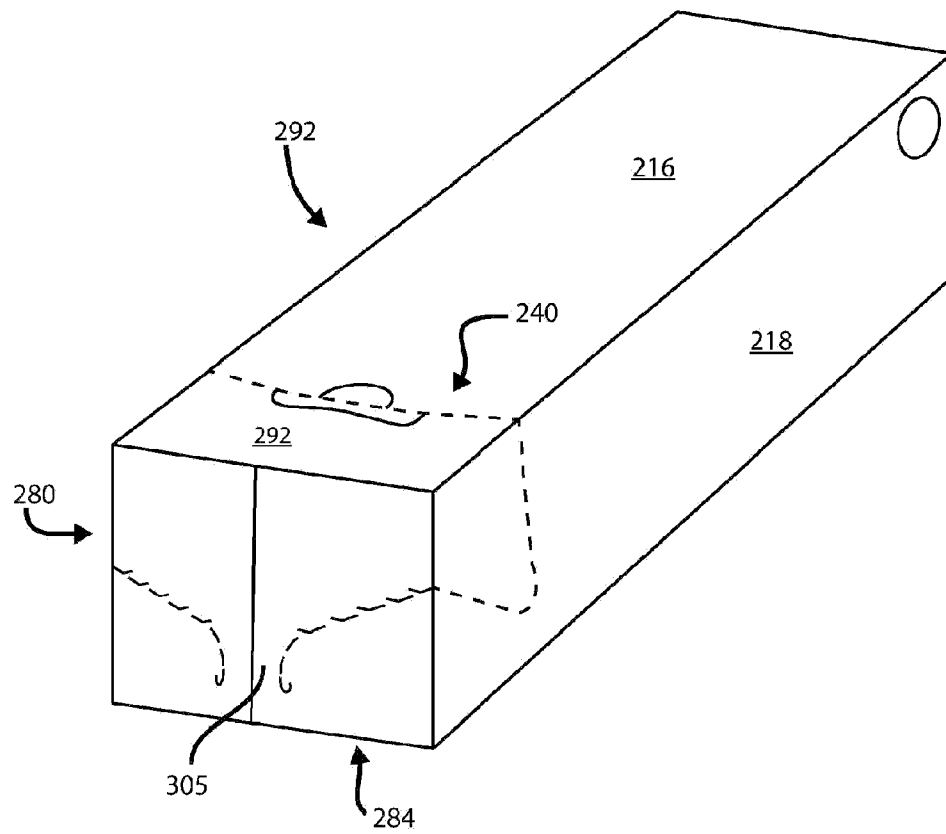


FIG. 5

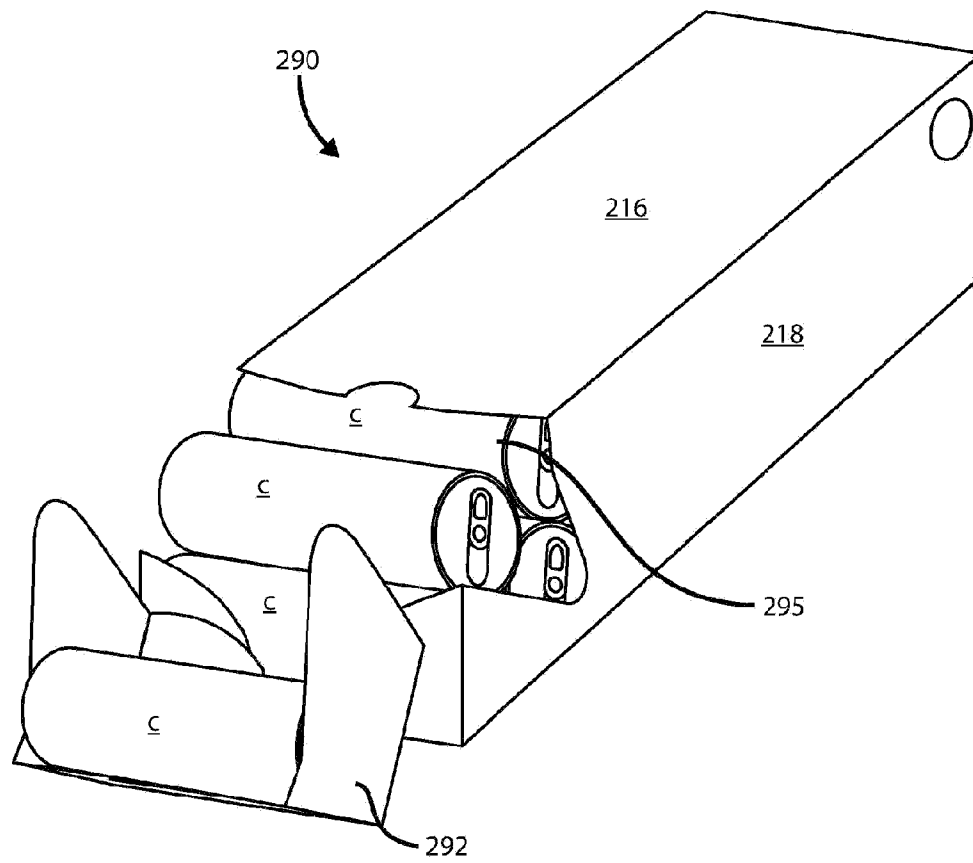


FIG. 6

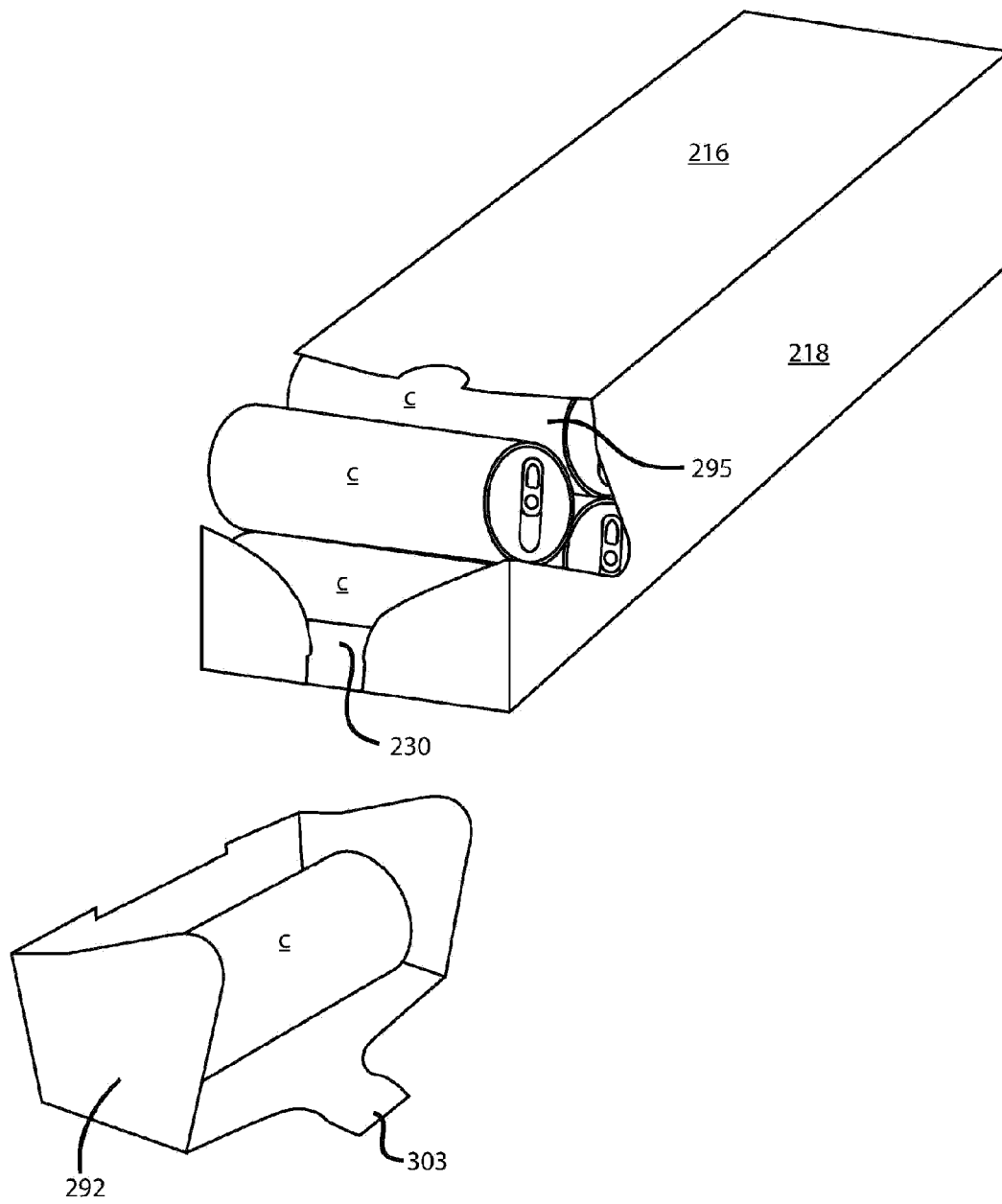


FIG. 7

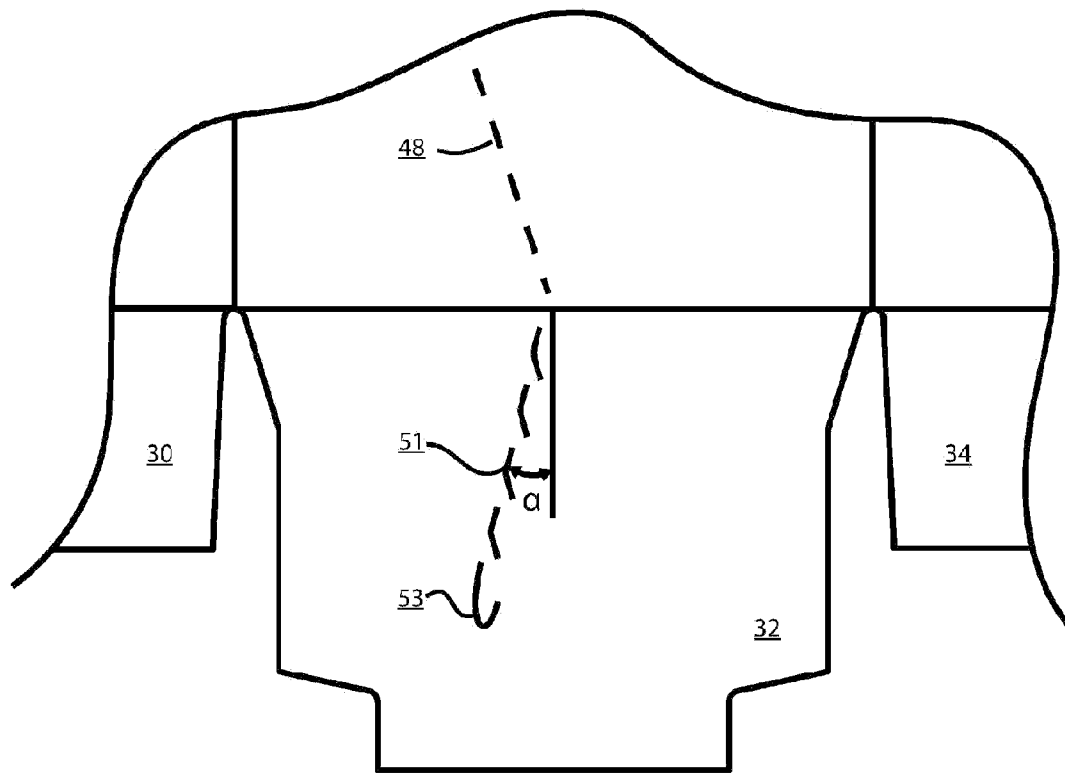


FIG. 8

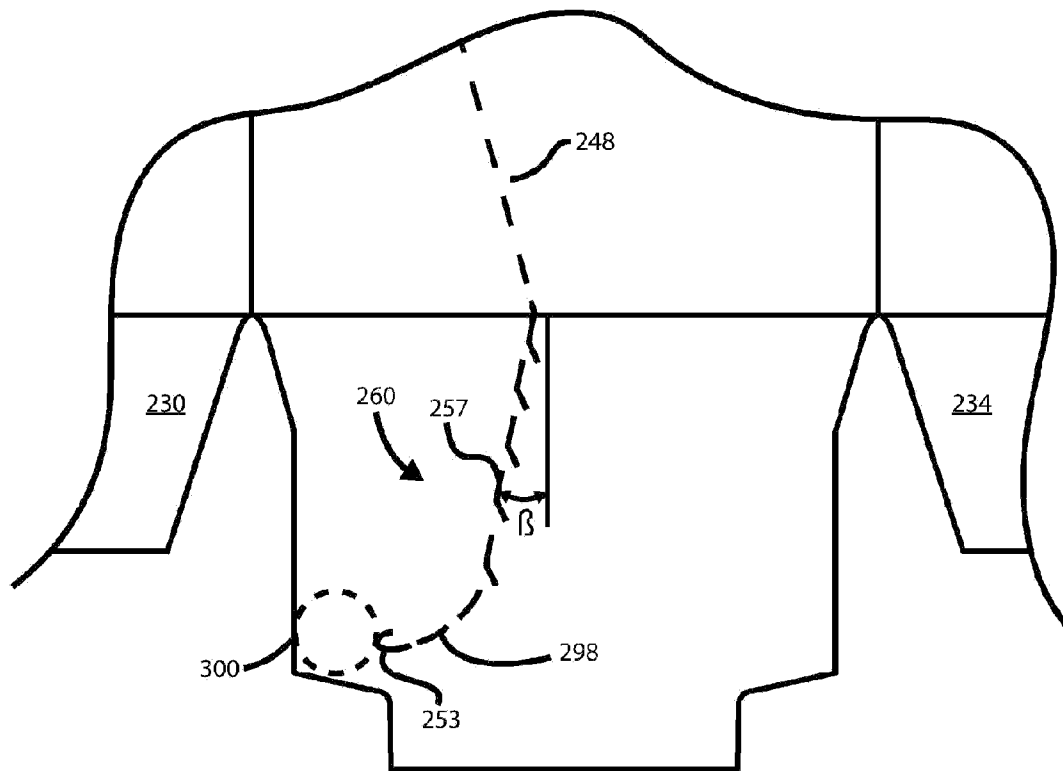


FIG. 9