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(54) **CARTON HAVING IMPROVED DISPENSING FEATURE AND BLANK THEREFOR**

(57) A carton for packaging a plurality of articles includes a dispenser defined by a dispenser pattern extending through the carton's first side panel, top panel, second side panel, and exiting end panel. The dispenser is at least partially separable along the dispenser pattern to form an opening into an interior of the carton. The dispenser pattern includes first and second end dispenser patterns formed on respective first and second side exiting end flaps. Each of the first end dispenser pattern and the second end dispenser pattern includes a lower end section that overlies the bottom exiting end flap. These lower end sections define therebetween a bottom end portion of the removable section that is not adhered to the bottom exiting end flap.

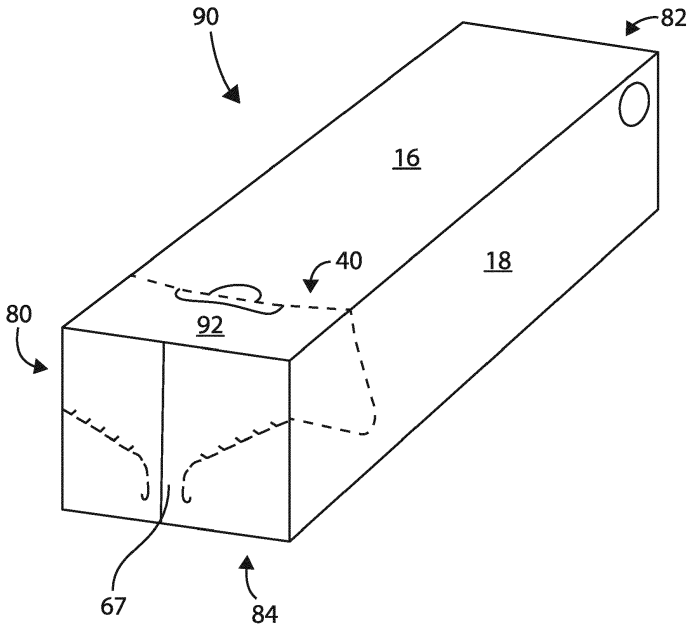

FIGURE 2

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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. The present invention seeks to overcome or at least mitigate the problems of the prior art.

SUMMARY

[0003] According to a first aspect of the invention, there is provided a carton for packaging a plurality of articles. The carton includes 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, and a dispenser defined by a dispenser pattern. The exiting end panel includes a bottom exiting end flap, a first side exiting end flap, and a second side exiting end flap. The dispenser pattern defines a removable section that is separable at least partially along the dispenser pattern to form an opening into an interior of the 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 includes 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. Each of the first end dispenser pattern and the second end dispenser pattern includes a lower end section that overlies the bottom exiting end flap. The lower end sections of the first and second end dispenser patterns define therebetween a bottom end portion of the removable section which is not adhered to the bottom exiting end flap.

[0004] Optionally, the removable section is formed partially from part of the first side exiting end flap and partially from part of the second side exiting end flap, and the bottom exiting end flap is adhered to portions of the first and second side exiting end flaps other than those parts.

[0005] Optionally, the removable section is configured to be completely removed from a remaining portion of the carton when the dispenser is fully opened.

[0006] Optionally, the exiting end panel further includes a top exiting end flap.

[0007] Optionally, the first side exiting end flap defines a notched upper outer corner and a generally squared-off lower outer corner. The notched upper outer corner overlies the top exiting end flap. The squared-off lower outer corner overlies the bottom exiting end flap. A glue strip extends along an outermost edge of an exterior surface of the first side exiting end flap. The glue strip is placed at an upper end thereof on a portion of the top exiting end flap that is left exposed by the notched upper outer corner. The generally squared-off lower outer corner prevents a lower end of the glue strip from being placed on the bottom exiting end flap. The second side exiting end flap is folded down so that an outermost edge of the second side exiting flap overlies the glue strip such that the second side exiting end flap is adhered to the first side exiting end flap and the top exiting end flap.

[0008] Optionally, the bottom exiting end flap includes a design feature that is configured to be at least partially revealed when the removable section is separated along the dispenser pattern.

[0009] Optionally, the design feature includes a sculpted upper edge of the bottom exiting end flap.

[0010] Optionally, the design feature further includes a printed design element disposed on an exterior surface of the bottom exiting end flap.

[0011] Optionally, the design feature includes a logo.

[0012] Optionally, the bottom exiting end flap includes a finger access notch that is configured to be at least partially revealed when the removable section is separated along the dispenser pattern.

[0013] According to a second aspect of the invention, there is provided a blank for forming a carton for containing a plurality of articles. The blank includes a plurality of main panels hinged together in a linear series. The plurality of main panels are configured to form a tubular structure in a set-up carton. The plurality of main panels include a bottom panel, a first side panel, a top panel, and a second side panel. The blank also includes 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 include a first side exiting end flap hingedly connected to the first side panel along a first marginal area of the blank, a second side exiting end flap hingedly connected to the second side panel along the first marginal area of the blank, and a bottom exiting end flap hingedly connected to the bottom panel along the first marginal area of the blank. The blank also includes a dispenser pattern extending through the top panel, the first side panel, the second side panel, and the front panel. The dispenser pattern defines a removable section that is separable at least partially along the dispenser pattern to form an opening into an interior of the set-up carton. A lower end section of the removable section overlies the bottom exiting end flap in the set-up carton. The first side exiting end flap defines a notched upper

outer corner and a generally squared-off lower outer corner. The squared-off lower outer corner is configured to overlie the bottom exiting end flap in the set-up carton. An outermost edge of the second side exiting end flap is configured to overlie an outermost edge of the first side exiting end flap in the set-up carton.

[0014] Optionally, the removable section is formed partially from part of the first side exiting end flap and partially from part of the second side exiting end flap, and the bottom exiting end flap is arranged to be adhered to portions of said first and second side exiting end flaps other than said parts in the set-up carton.

[0015] Optionally, the plurality of exiting end flaps comprises a top exiting end flap hingedly connected to the top panel along a first marginal area of the blank.

[0016] Optionally, the bottom exiting end flap comprises a design feature that is configured to be at least partially revealed when the blank is formed into the set-up carton and the removable section is separated along said dispenser pattern.

[0017] Optionally, the design feature comprises a sculpted upper edge of the bottom exiting end flap.

[0018] Optionally, the design feature further comprises a printed design element disposed on an exterior surface of said bottom exiting end flap.

[0019] Optionally, the design feature comprises a logo.

[0020] Optionally, the bottom exiting end flap comprises a finger access notch that is configured to be at least partially revealed in the set-up carton and said removable section is separated along said dispenser pattern.

[0021] 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

[0022] 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 in a closed configuration;

Figure 3 is a perspective view of the carton of Figure 2 in a first open or dispensing configuration in which the dispensing flap remains partially connected to the remainder of the carton;

Figure 4 is a perspective view of the carton of Figure 2 in a second open or dispensing configuration in which the dispensing flap is completely removed from the remainder of the carton;

Figure 5 is a back end view of the carton of Figure 2 during construction which illustrates how the back end flaps can be adhered to one another;

Figure 6 is a front end view of the carton of Figure 2 during construction which illustrates how the front end flaps can be adhered to one another while preventing the portion of the bottom exiting end flap underlying the removable section from being adhered to the removable section;

Figure 7 is a plan view of a blank for forming a carton according to a second embodiment of the invention;

Figure 8 is a perspective view of the carton formed from the blank of Figure 7 in a closed configuration;

Figure 9 is a perspective view of the carton of Figure 8 in an open or dispensing configuration;

Figure 10 is a plan view of a blank for forming a carton according to a third embodiment of the invention;

Figure 11 is a perspective view of the carton formed from the blank of Figure 10 in a closed configuration; and

Figure 12 is a perspective view of the carton of Figure 11 in an open or dispensing configuration.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0023] Detailed descriptions of specific embodiments of the 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.

[0024] In the embodiments detailed herein, the term "carton", for the non-limiting purpose of illustrating the various features of the invention, refers 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.

[0025] Figure 1 is a plan view of a blank 10 used to form a carton 90 (illustrated in Figures 2 to 4) 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.

[0026] 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.

[0027] 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.

[0028] Second side back end flap 28 has two generally squared-off outer corners as shown. In contrast, first side back end flap 24 has notched lower and upper outer corners 61, 63. Notched corners 61, 63 can be defined by generally square or rectangular-shaped cutouts. Second side exiting end flap 36 generally mirrors second side back end flap 28 and thus also includes two generally squared-off corners. First side exiting end flap 32 has an upper outer corner 64 that is notched and a lower outer corner 65 that is generally squared-off. Notched corner 64 may generally mirror notched corner 63.

[0029] 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.

[0030] 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 tear first 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.

[0031] Dispenser pattern 40 also includes a first end dispenser pattern 60 disposed on first side exiting end flap 32. First end dispenser pattern 60 includes a first end first tear line 51. First end first 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 first end second tear line 98. First end first 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 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 90. First end first 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 from horizontal (with reference to the constructed carton 90) that is preferably at least about 5 degrees. First end second tear line 98 is preferably shorter in length than first end first tear line 51 and curves down toward the bottom of the erected carton 90. First end second tear line 98 is preferably oriented in a generally downward direction. First end second tear line 98 extends to a point at or adjacent to a J-shaped cut 53. J-shaped cut 53 is configured to arrest further tearing of first side exiting end flap 32. In the illustrated second embodiment, the "hook" of the J-shaped cut 53 opens toward the interior of the curve of first end second tear line 98. First end dispenser pattern 60 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. The angling of first end first tear line 51 and the curvature of first end second tear line 98 place J-shaped cut 53 within relatively close proximity of the bottom edge of first side exiting end flap 32. J-shaped cut 53 is separated from the bottom edge of first side exiting end flap 32 by a region of first side exiting end flap 32 labeled 96 in Figure 1, which is free of tear lines.

[0032] 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.

[0033] 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 first tear line 52. Second end first 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 second end second tear line 99. Second end first 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 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 90. Second end first tear line 52 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 from horizontal (with reference to the constructed carton 90) that is preferably at least about 5 degrees. Second end second tear line 99 is preferably shorter in length than second end first tear line 52 and curves down toward the bottom of the erected carton 90. Second end second tear line 99 is preferably oriented in a generally downward direction. Second end second tear line 99 extends to a point at or adjacent to a J-shaped cut 54. J-shaped cut 54 is configured to arrest further tearing of second side exiting end flap 36. In the illustrated second embodiment, the "hook" of the J-shaped cut 54 opens toward the interior of the curve of second end second tear line 99. Second end dispenser pattern 62 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. The angling of second end first tear line 52 and the curvature of second end second tear line 99 place J-shaped cut 54 within relatively close proximity of the bottom edge of second side exiting end flap 36. J-shaped cut 54 is separated from the bottom edge of second side exiting end flap 36 by a region of second side exiting end flap 36 labeled 97 in Figure 1, which is free of tear lines.

[0034] 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.

[0035] 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 back end flaps 22, 26 can be, for example, glued to interior surfaces of the first and second side back end flaps 24, 28. 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.

[0036] The use of notched corners 61, 63 on first side back end flap 24 facilitates the secure attachment of back end flaps 22, 24, 26, 28. When the carton 90 is constructed, and the back end of the tubular sleeve is being closed, the two minor back end flaps (i.e., top back end flap 26 and bottom back end flap 22) are folded down first. First side back end flap 24 is then folded down so that it overlaps corresponding portions of top back end flap 26 and bottom back end flap 22. As shown in Figure 5, glue strip G is placed along the outer edge of the exterior surface of second side back end flap 28. Glue strip G extends at its upper end onto a portion of the exterior surface of top back end flap 26 that is left exposed by notched corner 63. Glue strip G extends at its lower end onto a portion

of the exterior surface of bottom back end flap 22 that is left exposed by notched corner 61. Second side back end flap 28 is folded down so that its outermost edge overlies the outermost edge of first side back end flap 24, including glue strip G, thereby securing second side back end flap 28 to the remaining back end flaps 22, 24, 26. Notched corners 61, 63 thus allow the use of a single glue strip G to secure the four back end flaps 22, 24, 26, 28 to one another.

[0037] Figure 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 removable section 92 that may be partially or completely removed to place the carton 90 in an open or dispensing configuration.

[0038] 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 removable section 92 outwardly and downwardly and tearing carton 90 along tear lines 41, 42, 43, 45, 47, 48, 49, 50, 51, 52, 98, 99. The tearing of carton 90 along tear lines 98 and 99 may be arrested via the J-shaped cuts 53, 54 so as to leave the removable section 92 partially connected to the remainder of the carton 90 via a flexible bridging portion 67 (see Figure 2) generally defined by the region of exiting end panel 84 that extends between first end second tear line 98 and second end second tear line 99. The inclusion of generally vertically oriented first end second tear line 98 and second end second tear line 99 tends to create a flexible bridging portion 67 as the connection between the removable section 92 and the remainder of the carton 90 rather than a fold-line type connection. Figure 3 shows carton 90 in a first open or dispensing configuration following partial removal of removable section 92. Opening of dispenser 80 may have a tendency to cause a frontmost top article C to move into and be received within the interior of the now-inverted removable section 92 as shown in Figure 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.

[0039] Alternatively, and at a user's option, the removable section 92 may be fully removed by continuing to pull the removable section 92 in a downward and/or outward direction. The configuration of first and second end dispenser patterns 60, 62 is such that, in the event of such continued application of force, first and second side exiting end flaps 32, 36 will tend to tear down from J-shaped cuts 53, 54 through the tear line-free regions 96, 97 in a more or less vertical direction, thereby separating the removable section 92 completely from the remainder of the carton 90. This tearing through the tear line-free regions 96, 97 is accomplished without the guide of any tear lines in these regions. Figure 4 shows carton 90 in a second open or dispensing configuration following the complete separation of removable section 92 from the remainder of carton 90.

[0040] The downward angling of tear lines 51, 52 advantageously facilitates "automatic" tearing along these lines as the removable section 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 that is 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 removable section 92 is pulled and rotated in the manner described. The configuration of the first and second end dispenser patterns 60, 62 also advantageously gives the user greater control over the partial or complete removal of removable section 92. J-shaped cuts 53, 54 provide a natural stopping point for the tearing of first side and second side exiting end flaps 32, 36 and provide tactile feedback to the user to indicate that the dispenser 80 has reached its fully-open, connected configuration. However, should the user wish to fully remove the removable section 92, the configuration of first and second end dispenser patterns 60, 62 allows the user to do so via a continued, natural motion with relative ease.

[0041] It can be desirable to avoid adhering bottom exiting end flap 30 to first side exiting end flap 32 and second side exiting end flap 36, either altogether, or at least with respect to the portions of bottom exiting end flap 30 that underlie removable section 92. These portions may include the portion of bottom exiting end flap 30 that underlies flexible bridging portion 67 and the portion of bottom exiting end flap 30 that underlies the region of exiting end panel 84 extending between the regions 96 and 97. In certain embodiments, bottom exiting end flap 30 can be entirely free of adhesive. In other embodiments, one or more portions of bottom exiting end flap 30 that do not underlie removable section 92 can be adhered to the first and/or second side exiting end flaps 32,36.

[0042] The use of a first side exiting end flap 32 with a generally squared-off lower corner 65 can help prevent unwanted adhesion of bottom exiting end flap 30. When the carton 90 is constructed, and the exiting end of the tubular sleeve is being closed, the two minor exiting end flaps (i.e., top exiting end flap 34 and bottom exiting end flap 32) are folded down first. First side exiting end flap 32 is then folded down so that it overlaps corresponding portions of top exiting end flap 34 and bottom exiting end flap 30. As shown in Figure 6, a glue strip G is placed along the outer edge of the exterior surface of first side exiting end flap 32. Glue strip G extends at its upper end onto a portion of the exterior surface of top exiting end flap 34 that is left exposed by notched corner 64. However, squared-off corner 65 prevents the lower end of

glue strip G from contacting bottom exiting end flap 30. Second side exiting end flap 36 is folded down so that its outermost edge overlies the outermost edge of first side exiting end flap 32, including glue strip G, thereby securing second side exiting end flap 36 to first side exiting end flap 32 and top exiting end flap 34.

[0043] Avoiding the use of adhesive on at least the portions of bottom exiting end flap 30 that underlie removable section 92 advantageously facilitates the partial and/or complete removal of removable section 92 by avoiding the need to tear through bottom exiting end flap 30. Accordingly, removable section 92 can be partially or fully removed while leaving bottom exiting end flap 30 intact. Such a configuration may also advantageously facilitate the revealing of one or more beneficial features that may be present in bottom exiting end flap 30, as will be best understood with reference to the additional embodiments.

[0044] Figure 7 is a plan view of a blank 210 used to form a carton 290 (see Figures 8 to 9) 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 differences between the first and second embodiments relate to first end dispenser pattern 260 disposed on first side exiting end flap 232, second end dispenser pattern 262 disposed on second side exiting end flap 236, and bottom exiting end flap 230.

[0045] First end dispenser pattern 260 includes a first end first tear line 285 and a first end second tear line 286. First end first tear line 285 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 286. First end first tear line 285 preferably consists of a plurality of straight-line cuts. First end first tear line 285 extends in a generally transverse direction (i.e., toward the second side of the constructed carton 290). First end second tear line 286 is preferably shorter in length than first end first tear line 286 and curves down toward the bottom of the erected carton 290. First end second tear line is oriented in a generally downward direction and extends to a point at or adjacent to the lower edge of first side exiting end flap 232.

[0046] 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 287. Second end first tear line 287 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 288. Second end first tear line 287 preferably consists of a plurality of straight-line cuts. Second end first tear line 287 extends in a generally transverse direction (i.e., toward the first side of the constructed carton 290). Second end second tear line 288 is preferably shorter in length than second end first tear line 287 and curves down toward the bottom of the erected carton 290. Second end second tear line is oriented in a generally downward direction and extends to a point at or adjacent to the lower edge of second side exiting end flap 236.

[0047] Bottom exiting end flap 230 includes a design feature 269 that is configured to be partially or completely exposed and thus visible to a consumer when the removable section 292 is partially or fully removed. Design feature 269 may be formed by providing the bottom exiting end flap 230 with a sculpted design. This can be accomplished via, e.g., sculpting of the bottom exiting end flap's upper edge. In contrast, the upper edge of bottom back end flap 222 consists of a straight line edge. Alternatively, or in addition, design feature 269 may include a printed design element 271 on the bottom exiting end flap's exterior surface. In the illustrated embodiment, a printed design element 271 consists of a printed star and circle design. In other embodiments, bottom exiting end flap 230 may be embossed, etched, or otherwise altered so as to provide a three-dimensional design element on its exterior surface. In the illustrated embodiment, first end second tear line 286 and second end second tear line 288 have a curvature that is configured so as to generally track the outline of printed design element 271. Design feature 269 may consist of, by way of example and without limitation, a brand logo, product name, or other promotional, informational, and/or decorative content.

[0048] Figure 8 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 removable section 292 outwardly and downwardly and tearing carton 290 along tear lines 241, 242, 247, 249, 243, 245, 248, 250, 251, 252, 298, 299. Generally, it is intended that the removable section 292 be completely removed by the user. Figure 9 shows carton 290 in an open dispensing configuration following the complete separation of removable section 292 from the remainder of carton 290.

[0049] As with the first embodiment, at least the portion of bottom exiting end flap 230 that underlies removable section 292 is not adhered to first side exiting end flap 232 or second side exiting end flap 236. This advantageously facilitates the partial and/or complete removal of removable section 292 and the revealing of design feature 269. Thus, at least the portion of bottom exiting end flap that underlies the region of exiting end panel 284 extending between first end second tear line 286 and second end second tear line 288 is free of adhesive.

[0050] Figure 10 is a plan view of a blank 310 used to form a carton 390 (see Figures 11 to 12) according to a third embodiment of the invention. Blank 310 and the corresponding carton 390 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 primary difference between the first and third embodiments relates to bottom exiting end flap

330.

[0051] Bottom exiting end flap 330 includes a finger access notch 393. Finger access notch 393 can be formed from a generally U-shaped cutout taken from the upper edge of bottom exiting end flap 330 as shown. As with the other embodiments, at least the portion of bottom exiting end flap 330 that underlies removable section 392 is not adhered to first side exiting end flap 332 or second side exiting end flap 336. This advantageously facilitates the partial and/or complete removal of removable section 392 and the revealing of finger access notch 393. Thus, at least the portion of bottom exiting end flap 330 that underlies the flexible bridging portion 367 and the portion of bottom exiting end flap 330 that underlies the region of exiting end panel 384 extending between tear line-free regions 396 and 397 are free of adhesive. Finger access notch 393 is sized and shaped to receive a user's finger or thumb and can be used to facilitate a consumer's removal of a front-most lower article C.

[0052] 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.

[0053] 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.

[0054] 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.

[0055] 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.

[0056] 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.

[0057] 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.

Claims

1. A carton for packaging a plurality of articles, 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 bottom exiting end flap, a first side exiting end flap, and a second side exiting end flap;
a dispenser defined by a dispenser pattern, the dispenser pattern defining a removable section that is separable at least partially along said dispenser pattern to form an opening into an interior of said carton, said dispenser pattern extending at least through the top panel, the first side panel, the second side panel, and the exiting end panel, wherein 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, wherein each of the first end dispenser pattern and the second end dispenser pattern includes a lower end section that overlies the bottom exiting end flap, wherein the lower end sections of the first and second end dispenser patterns define therebetween a bottom end portion of the removable section, and wherein said bottom end portion of the removable section is not adhered to the bottom exiting end flap.

2. A carton according to claim 1, wherein the removable section is formed partially from part of the first side exiting end flap and partially from part of the second side exiting end flap, and wherein said bottom exiting end flap is adhered to portions of said first and second side exiting end flaps other than said parts.

3. A carton according to either of claims 1 or 2, wherein said removable section is configured to be completely removed from a remaining portion of the carton when said dispenser is fully opened.

4. A carton according to any of claims 1 to 3, wherein said exiting end panel further comprises a top exiting end flap.

5. A carton according to claim 4, wherein said first side exiting end flap defines a notched upper outer corner and a generally squared-off lower outer corner, wherein said notched upper outer corner overlies said top exiting end flap, wherein said squared-off lower outer corner overlies said bottom exiting end flap, wherein a glue strip extends along an outermost edge of an exterior surface of said first side exiting end flap, wherein said glue strip is placed at an upper end thereof on a portion of said top exiting end flap that is left exposed by said notched upper outer corner, wherein said generally squared-off lower outer corner prevents a lower end of said glue strip from being placed on said bottom exiting end flap, wherein said second side exiting end flap is folded down so that an outermost edge of said second side exiting flap overlies said glue strip such that said second side exiting end flap is adhered to said first side exiting end flap and said top exiting end flap.

6. A carton according to any of claims 1 to 5, wherein said bottom exiting end flap comprises a design feature that is configured to be at least partially revealed when said removable section is separated along said dispenser pattern.

7. A carton according to claim 6, wherein said design feature comprises a sculpted upper edge of said bottom exiting end flap.

8. A carton according to either of claims 6 or 7, wherein said design feature further comprises a printed design element disposed on an exterior surface of said bottom exiting end flap.

9. A carton according to any of claims 6 to 8, wherein said design feature comprises a logo.

10. A carton according to any of claims 1 to 9, wherein said bottom exiting end flap comprises a finger access notch that is configured to be at least partially revealed when said removable section is separated along said dispenser pattern.

11. 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 configured to form a tubular structure in a set-up carton, the plurality of main panels comprising 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 being configured to close a front end of the tubular structure, the plurality of exiting end flaps comprising a first side exiting end flap hingedly connected to said first side panel along a first marginal area of the blank, a second side exiting end flap hingedly connected to said second side panel along said first marginal area of the blank, and a bottom exiting end flap hingedly connected to said bottom panel along said first marginal area of the blank;
a dispenser pattern extending through the top panel, the first side panel, the second side panel, and the front panel, the dispenser pattern defining a removable section that is separable at least partially along said dispenser pattern to form an opening into an interior of the set-up carton, a lower end section of the removable section overlying said bottom exiting end flap in the set-up carton;
wherein the first side exiting end flap defines a notched upper outer corner and a generally squared-off lower outer corner, wherein said squared-off lower outer corner is configured to overlie said bottom exiting end flap in the set-up carton, wherein an outermost edge of said second side exiting end flap is configured to overlie an outermost edge of said first side exiting end flap in the set-up carton.

12. A blank according to claim 11, wherein the removable section is formed partially from part of the first side exiting end flap and partially from part of the second side exiting end flap, and wherein said bot-

tom exiting end flap is adhered to portions of said first and second side exiting end flaps other than said parts in the set-up carton.

13. A blank according to either of claims 11 or 12, wherein the plurality of exiting end flaps comprising a top exiting end flap hingedly connected to said top panel along a first marginal area of the blank.

14. A blank according to any of claims 11 to 13, wherein said bottom exiting end flap comprises a design feature that is configured to be at least partially revealed when the carton is set up and said removable section is separated along said dispenser pattern.

15. A blank according to any of claims 11 to 14, wherein said bottom exiting end flap comprises a finger access notch that is configured to be at least partially revealed when the carton is set up and said removable section is separated along said dispenser pattern.

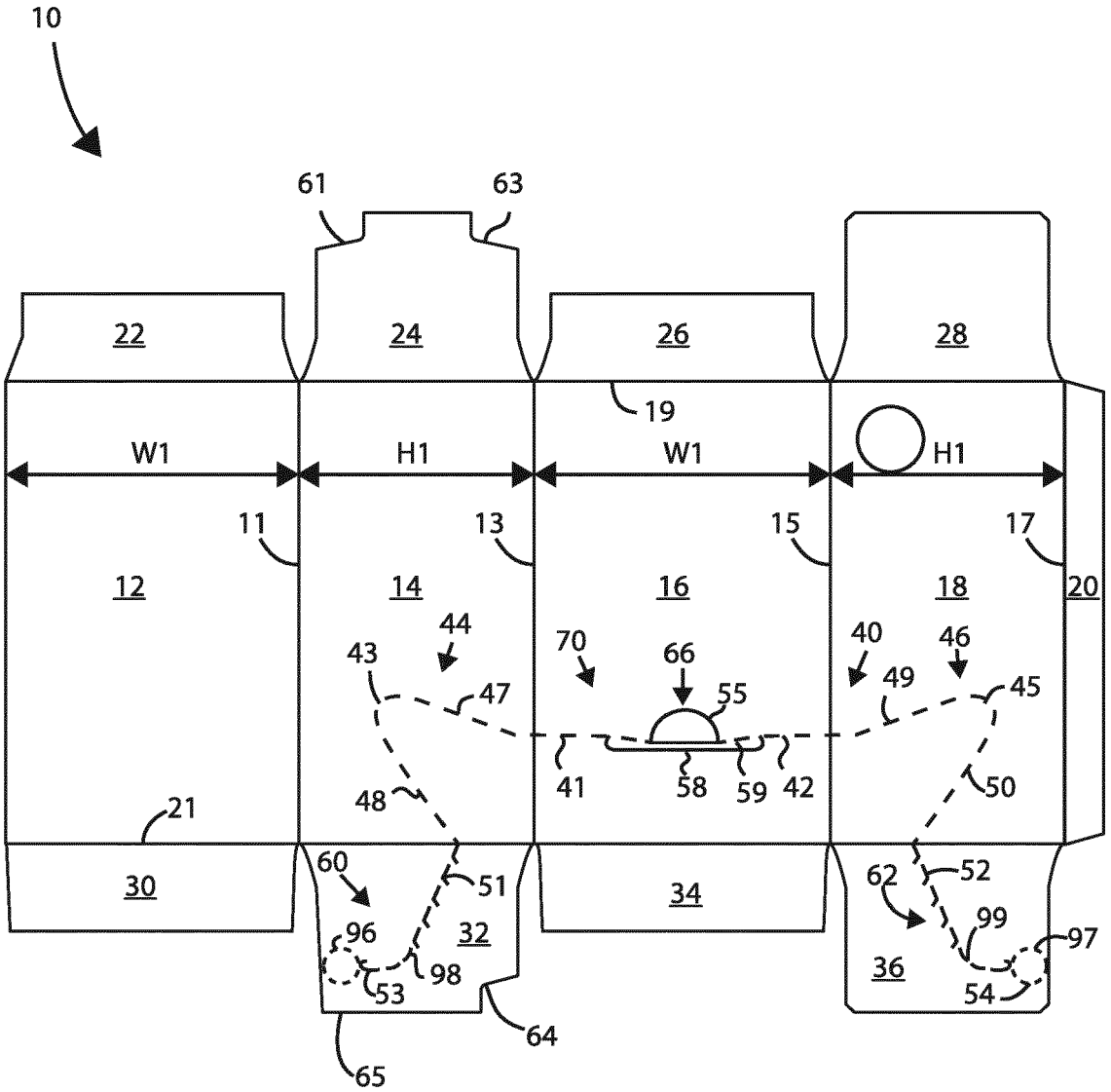
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FIGURE 1

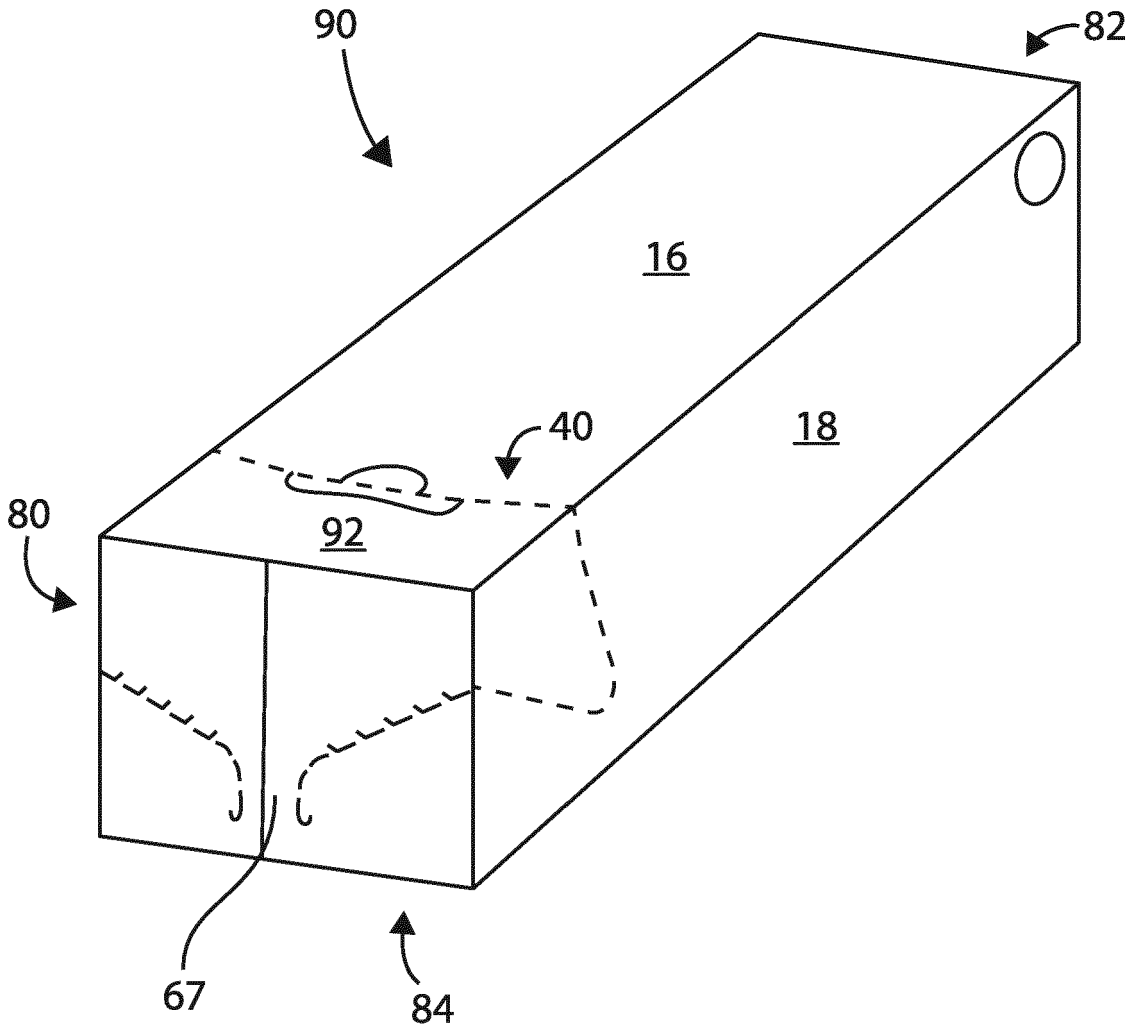
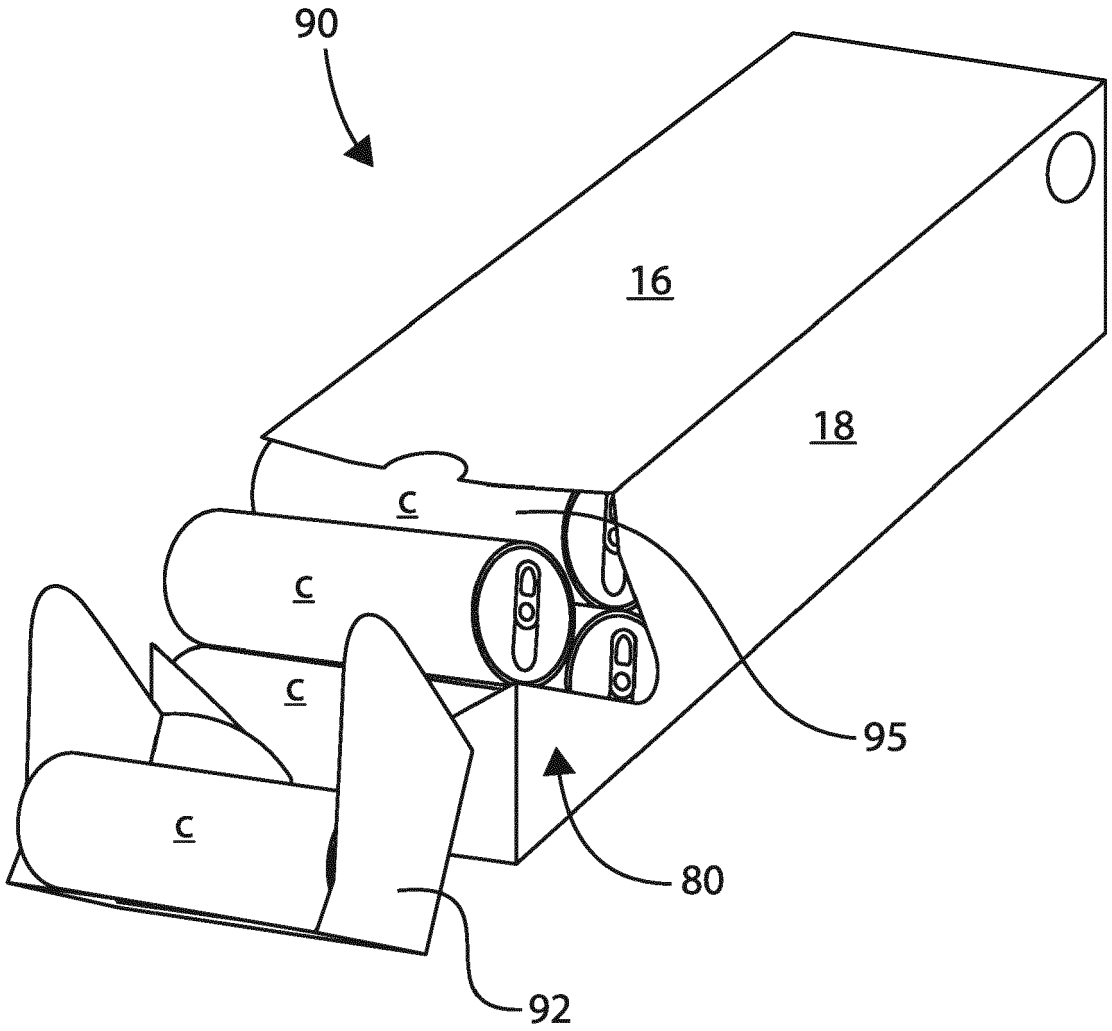


FIGURE 2



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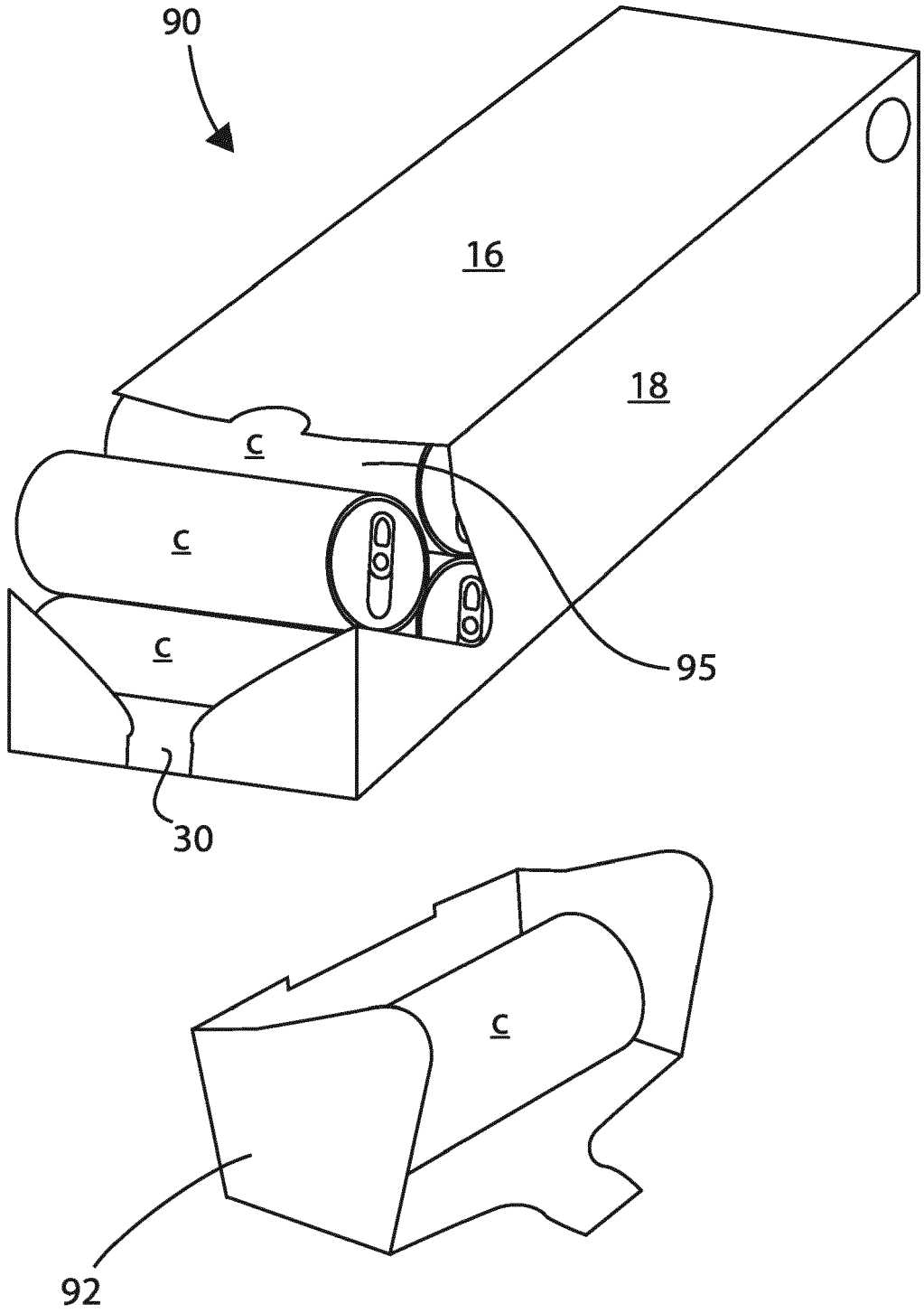


FIGURE 4

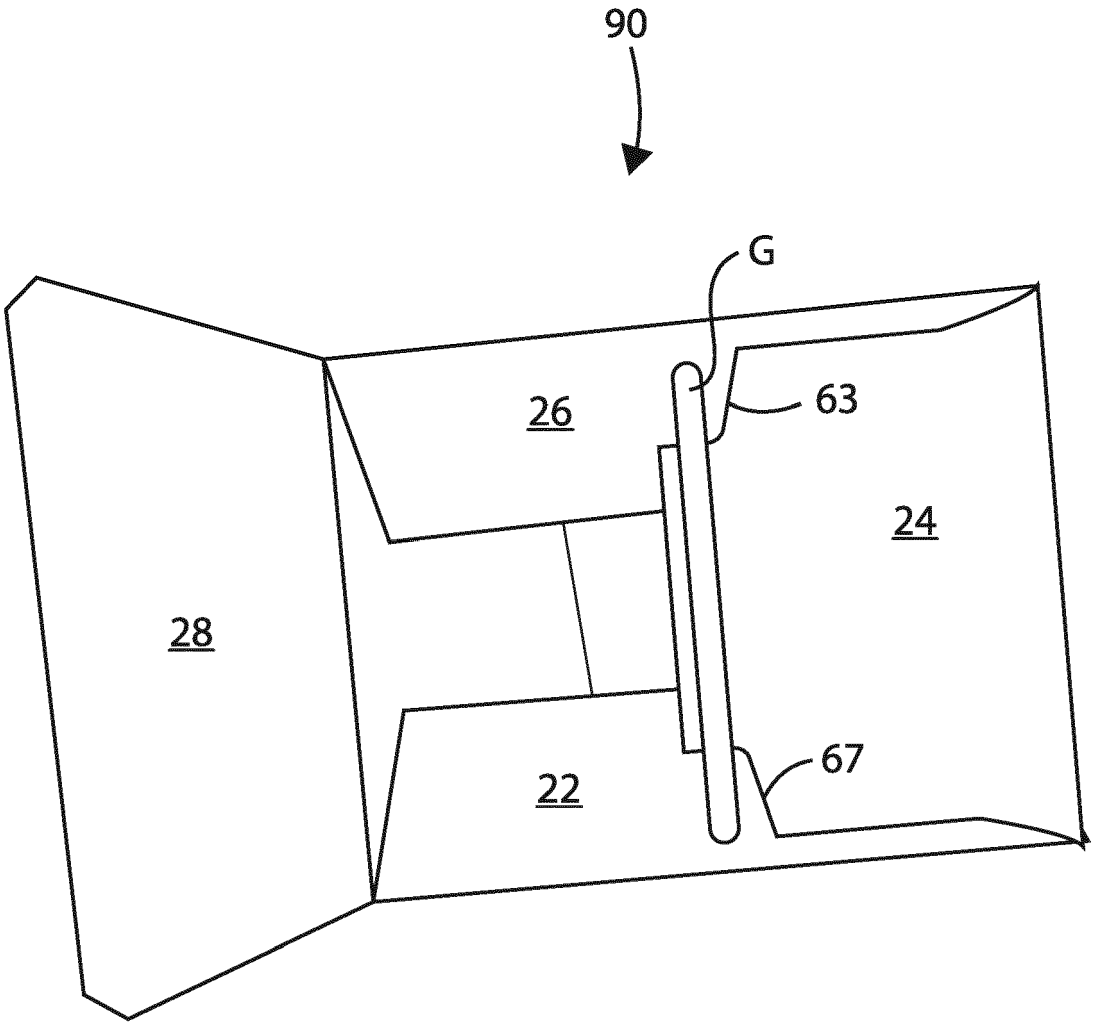
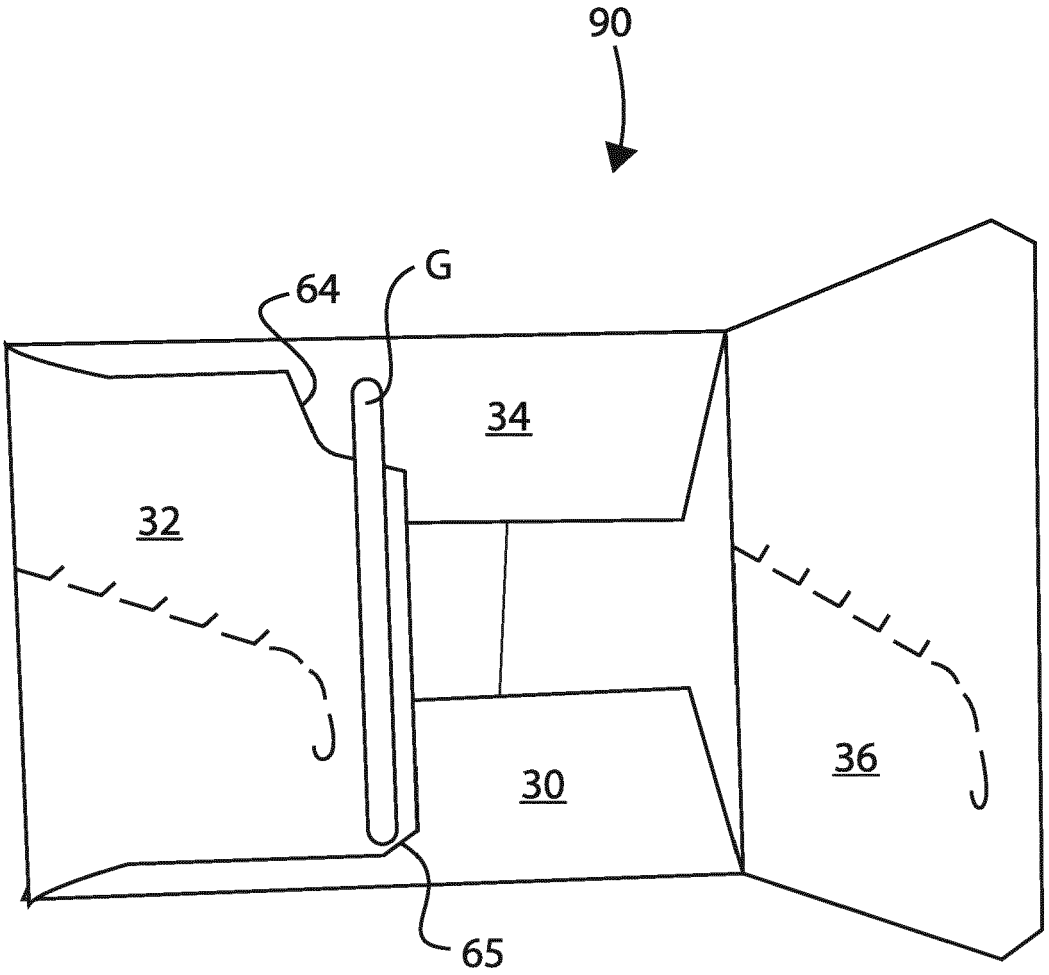


FIGURE 5



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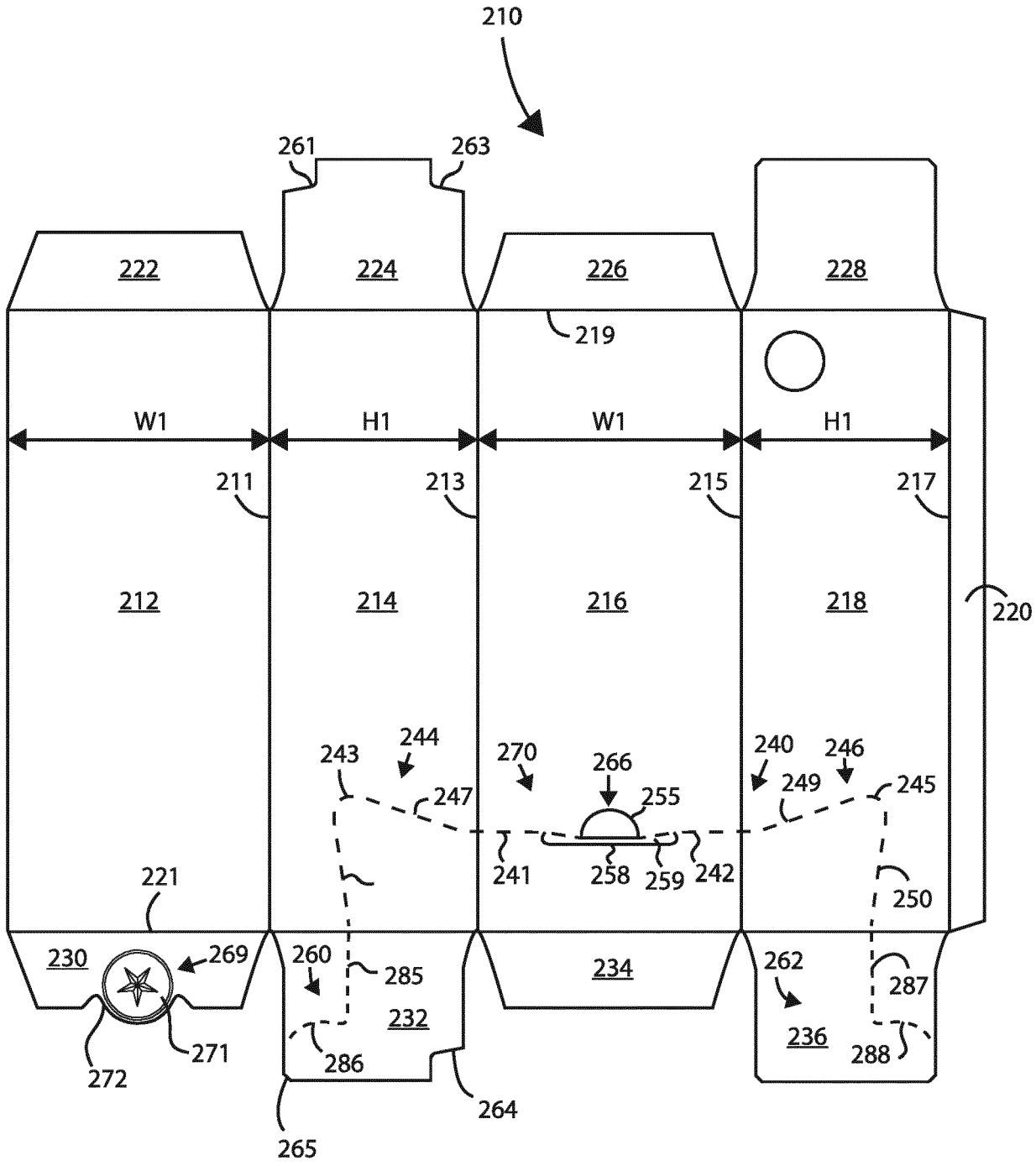
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FIGURE 7

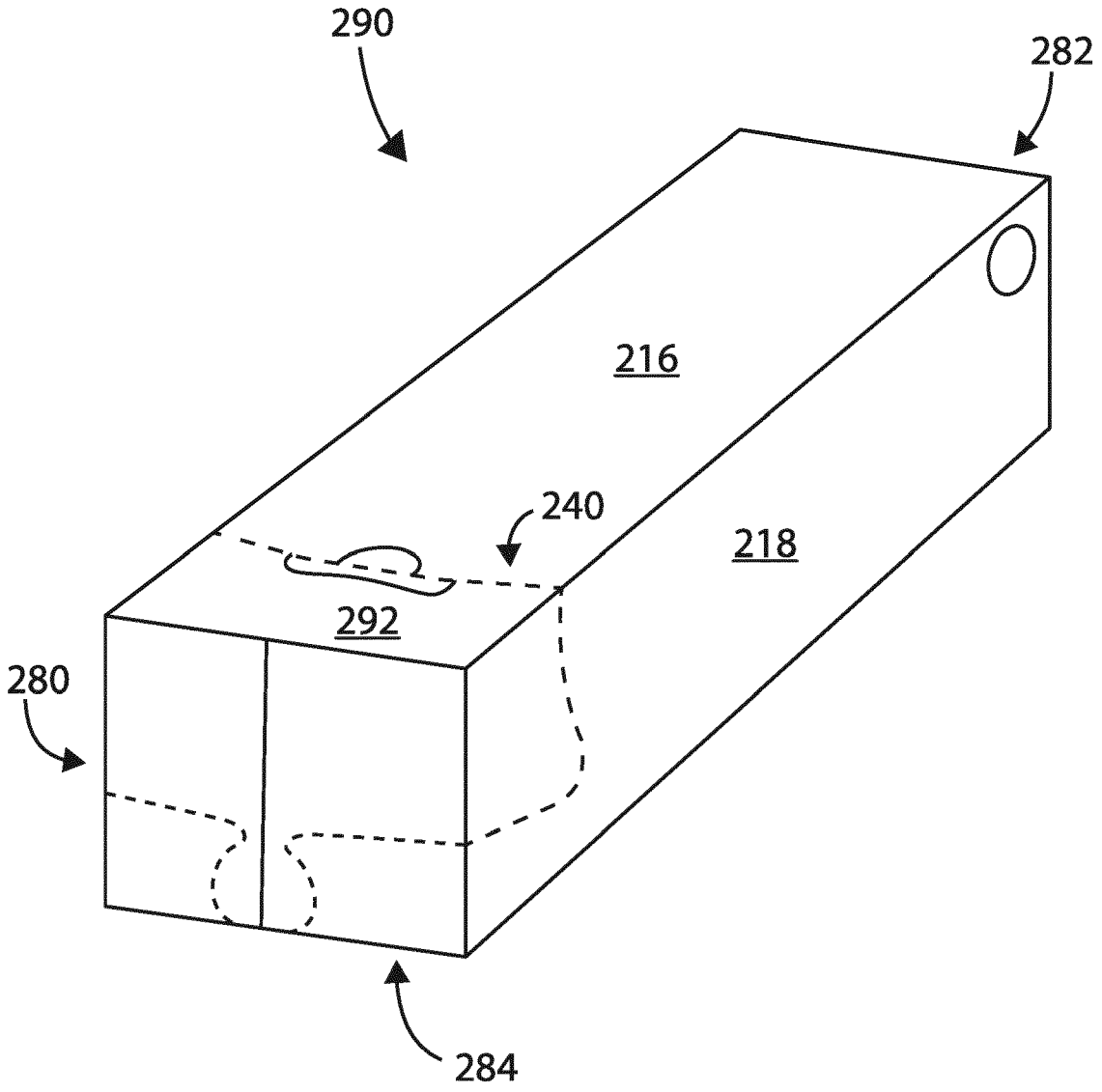

FIGURE 8

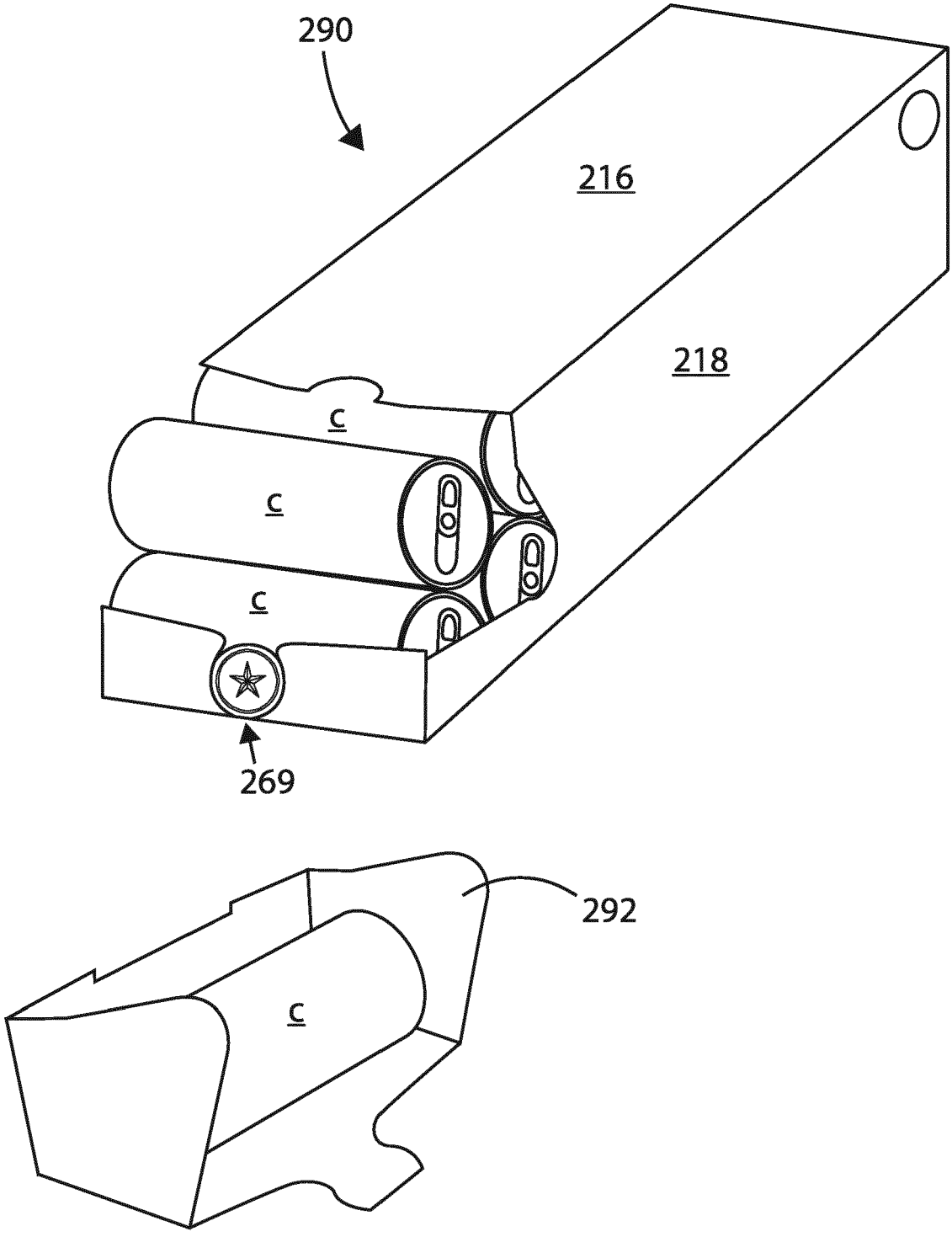

FIGURE 9

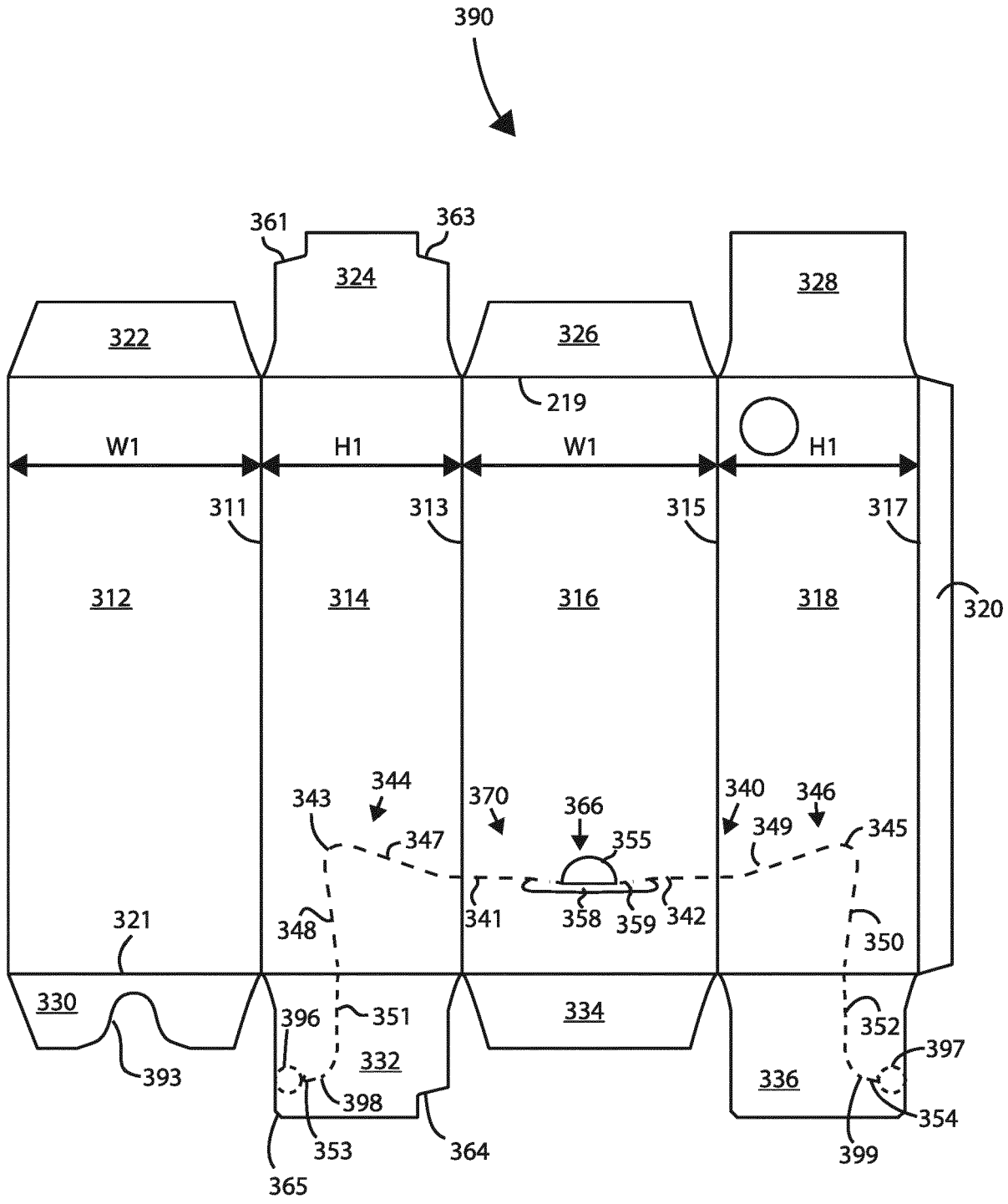
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FIGURE 10

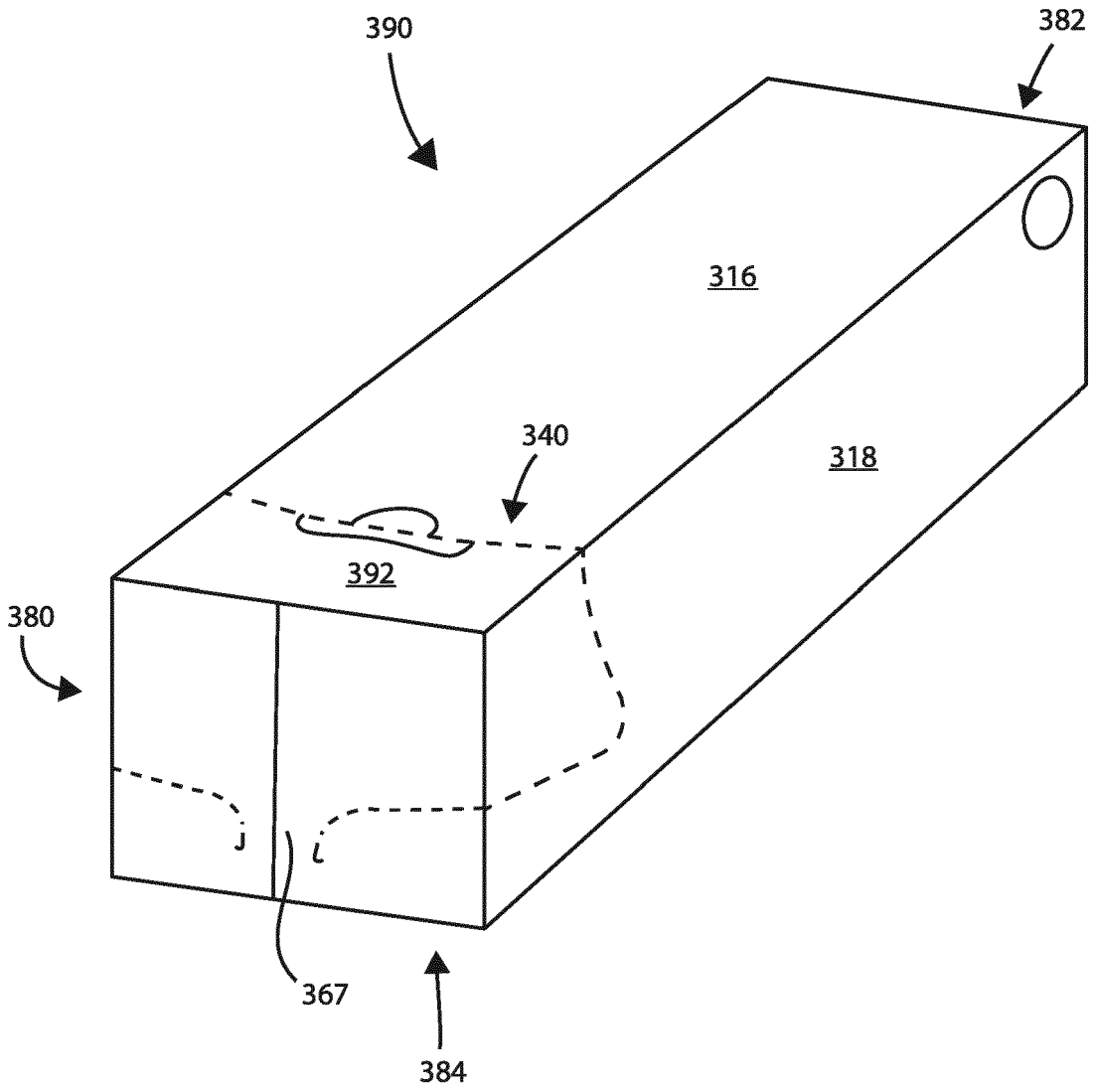

FIGURE 11

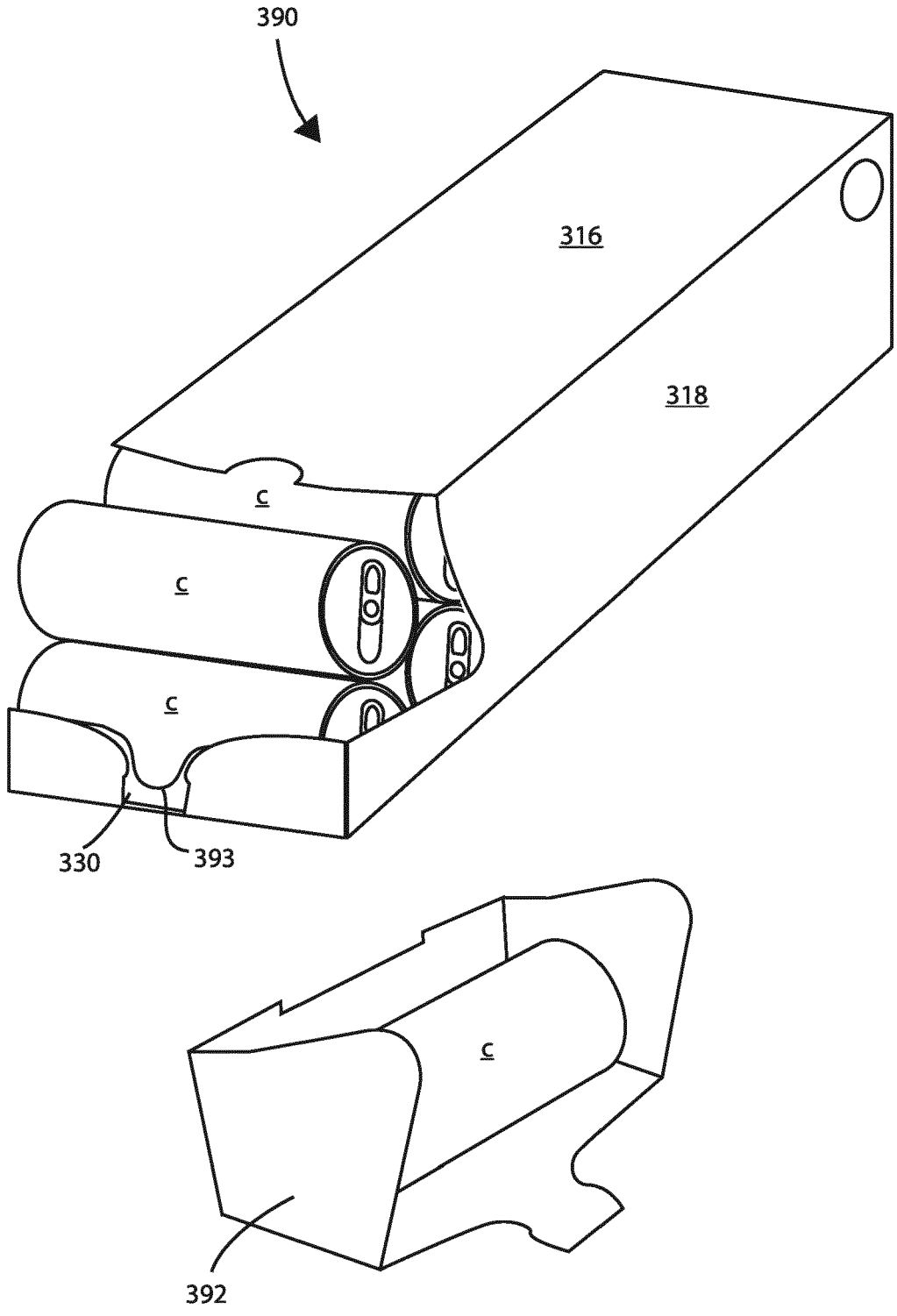

FIGURE 12

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EUROPEAN SEARCH REPORT

Application Number
EP 17 16 8840

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X	US 2006/091191 A1 (DEBUSK PATRICK J [US]) 4 May 2006 (2006-05-04) * page 1, paragraph 27 - page 3, paragraph 46 * * figures 1-19 * -----	1-15	INV. B65D71/36
X	US 2004/099558 A1 (OLIFF JAMES R [US] ET AL) 27 May 2004 (2004-05-27) * page 1, paragraph 16 - page 3, paragraph 31 * * figures 1-4 * -----	1-9, 11-14	
X	US 2005/189405 A1 (GOMES JEAN-MANUEL [US] ET AL) 1 September 2005 (2005-09-01) * page 2, paragraph 28 - page 4, paragraph 44 * * figures 1-4 * -----	1-9, 11-14	
A	US 2007/017966 A1 (DEBUSK PATRICK J [US] ET AL) 25 January 2007 (2007-01-25) * page 1, paragraph 16 - page 3, paragraph 33 * * figures 1-13 * -----	1,11	

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B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	8 August 2017	Piolat, Olivier

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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08-08-2017

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