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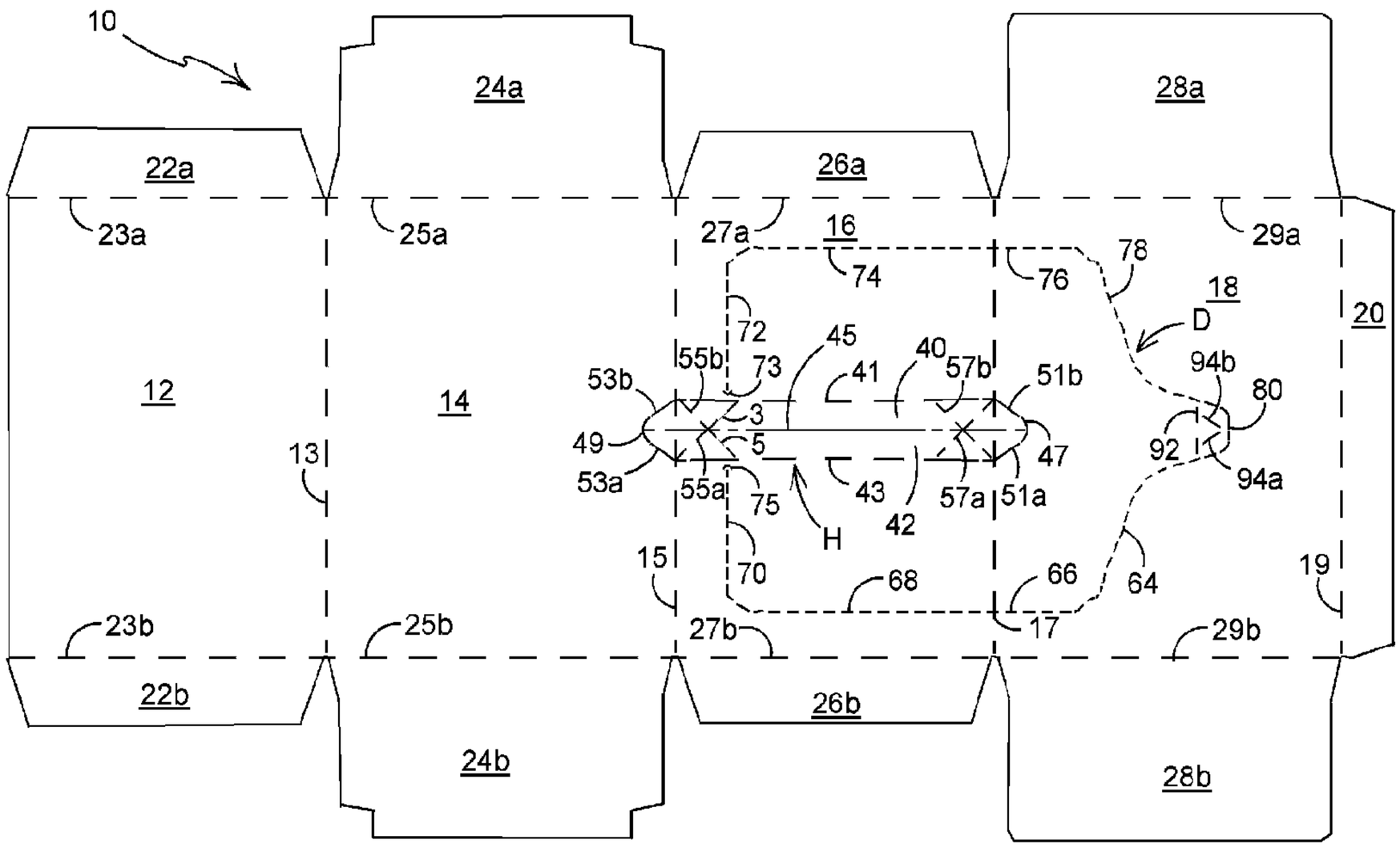

FIGURE 1

(57) Abrégé/Abstract:
A carton includes a plurality of panels for forming a structure for containing the one or more articles (C), and a dispenser (D) having an access panel (35). The access panel is at least partially defined by a frangible line (64, 66, 68, 70, 75, 72, 74, 76, 78, 80) extending in at least one of the plurality of panels. The access panel is at least partially removable from the carton (90) to thereby form a dispenser opening. The carton further includes a handle structure (H) for grasping and carrying the carton. The handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton with the access panel.

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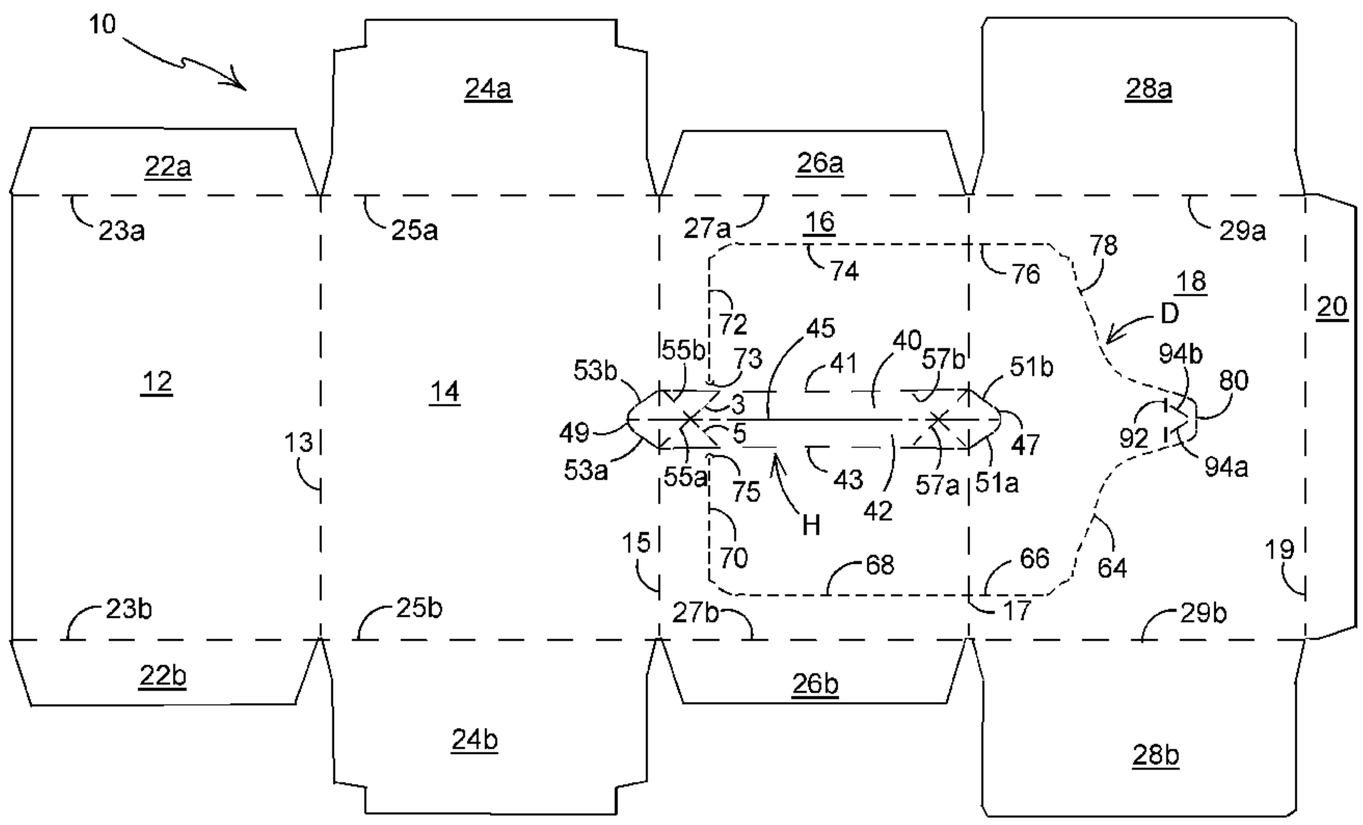

FIGURE 1

(57) **Abstract**: A carton includes a plurality of panels for forming a structure for containing the one or more articles (C), and a dispenser (D) having an access panel (35). The access panel is at least partially defined by a frangible line (64, 66, 68, 70, 75, 72, 74, 76, 78, 80) extending in at least one of the plurality of panels. The access panel is at least partially removable from the carton (90) to thereby form a dispenser opening. The carton further includes a handle structure (H) for grasping and carrying the carton. The handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton with the access panel.

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CARTON AND CARTON BLANK

TECHNICAL FIELD

The present invention relates to a carton and blank for forming the same more specifically, but not exclusively, to a carton comprising a carrying handle and a dispenser for facilitating access to the contents of the carton.

BACKGROUND

In the field of packaging it is often required to provide consumers with a package comprising multiple primary product containers. Such multi-packs are desirable for shipping and distribution purposes and for the display of promotional information. For cost and environmental considerations, such cartons or carriers need to be formed from as little material as possible and cause as little wastage as possible in the materials from which they are formed. Another consideration is the strength of the packaging and its suitability for holding and transporting a desired weight of article.

It is desirable to provide a carton comprising a dispenser for facilitating access to the contents of the carton.

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

SUMMARY

According to a first aspect of the present invention there is provided a carton for packaging one or more articles, the carton comprising: a plurality of panels for forming a structure for containing the one or more articles; a dispenser comprising an access panel, the access panel being at least partially defined by a frangible line extending in at least one panel of the plurality of panels, the access panel being at least partially removable from the carton to thereby form a dispenser opening; and a handle structure for grasping and carrying the carton, wherein the handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton with the access panel.

Optionally, said frangible line defining the access panel comprises two termination points, which termination points are spaced apart from one another, and which termination points are disposed on opposite sides of the handle structure and proximate to the handle structure.

Optionally, each termination point comprises a tear termination.

Optionally, each tear termination is a curved slit.

Optionally, part of the curved slit is disposed substantially perpendicularly to the frangible line.

Optionally, the handle structure comprises a frangible feature such that when the frangible line defining the access panel is broken and the access panel is at least partially removed from the carton, the frangible feature can also be broken to allow the access panel and only a portion of the handle structure to be completely removed from the carton.

Optionally, the handle structure comprises a crease disposed in a region between the termination points and wherein the frangible feature is positioned along said crease to facilitate propagation of a tear along substantially along that crease when the access panel is removed from the carton.

Optionally, the crease and frangible feature at least partially define an edge of the access panel and an edge of a portion of the handle structure that remains when the access panel is removed from the carton.

Optionally, wherein the handle structure is a slot-handle type structure comprising a pair of elongate tabs which are defined in part by first and second fold lines and in part by a severance line that extends transversely across said one panel of the plurality of panels and into each of two side panels adjacent thereto, and the slot-handle type structure comprising a crease line extending between the first and second fold lines, wherein said frangible feature is disposed along said crease line and comprises one or more slits.

Optionally, the crease line is "V"-shaped and wherein the frangible feature comprises two slits: one on each arm of the "V"-shaped crease line.

Optionally, the "V"-shaped crease line forms part of a first "X"-shaped crease arrangement formed toward a first end of the slot-handle type structure and wherein a second "X"-shaped crease arrangement is formed toward a second end of the slot-handle type structure, which first and second "X"-shaped crease arrangements facilitate folding of the pair of elongate tabs when the handle structure is deployed for carrying the carton.

Optionally, the frangible feature is structured and arranged such that it does not readily break when the handle is deployed for carrying the carton, but can sufficiently easily be broken when the frangible line defining the access panel is broken for removing the access panel.

Optionally, between about 5% and about 30% of the handle structure remains after the access panel has been fully removed.

According to another aspect of the disclosure, there is provided a blank for forming a carton, the blank comprising: a plurality of panels for forming a structure for containing the one or more articles; a dispenser comprising an access panel, the access panel being at least partially defined by a frangible line extending in at least one panel of the plurality of panels, the access panel being at least partially removable to thereby form a dispenser opening; and a handle structure for grasping and carrying the carton when formed from the blank, wherein the handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton with the access panel.

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

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

Figure 1 is a plan view from above of a blank for forming a carton according to an embodiment of the invention;

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

Figure 3 is a perspective view from above of the carton of Figure 2, wherein a carrying handle has been deployed; and

Figure 4 is a perspective view from above of the carton of Figure 3, in which a dispenser has been deployed.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

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. 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.

Referring to Figures 1 and 2 there is shown a blank 10 for forming a carton 90 capable of accepting an input of primary products such as, but not limited to, bottles or cans, hereinafter referred to as articles C.

The blank 10 comprises a plurality of main panels 12, 14, 16, 18, 20, hinged one to the next in a linear series. A base panel 12 is hinged to a first side wall panel 14 by a hinged connection such as a fold line 13. A first side wall panel 14 is hinged to a top panel 16 by a hinged connection such as a fold line 15. A top panel 16 is hinged to a second side wall panel 18 by a hinged connection such as a fold line 17. A second side wall panel 18 is hinged to a glue panel 20 by a hinged connection such as a fold line 19.

The plurality of main panels 12, 14, 16, 18, 20 of the blank 10 form walls of an open ended tubular structure in a set-up condition. The tubular structure is at least partially closed by end closure structures. The tubular structure has a tubular axis defining a longitudinal direction.

Each of the ends of the tubular structure is at least partially closed by end closure panels which form end walls of the tubular structure. In the illustrated embodiment the ends of the tubular structure are fully closed by end closure panels 22a, 24a, 26a, 28a, 22b, 24b 26b, 28b.

End closure panels 22a, 24a, 26a, 28a are configured to close a first end of the tubular structure and end closure panels 22b, 24b, 26b, 28b are configured to close a second end of the tubular structure.

The first end of the tubular structure is closed by a first end closure panel 22a, a second end closure panel 24a, a third end closure panel 26a and a fourth end closure panel 28a. The first end closure panel 22a is hinged to a first end of the base panel 12 by a hinged connection such as a fold line 23a. The second end closure panel 24a is hinged to a first end of the first side wall panel 14 by a hinged connection such as a fold line 25a. The third end closure panel 26a is hinged to a first end of the top panel 16 by a hinged connection such as a fold line 27a. The fourth end closure panel 28a is hinged to a first end of the second side wall panel 18 by a hinged connection such as a fold line 29a.

The second end of the tubular structure is closed by a fifth end closure panel 22b, a sixth end closure panel 24b, a seventh end closure panel 26b and an eighth end closure panel 28b. The fifth end closure panel 22b is hinged to a second end of the base panel 12 by a hinged connection such as a fold line 23b. The sixth end closure panel 24b is hinged to a second end of the first side wall panel 14 by a hinged connection such as a fold line 25b. The seventh end closure panel 26b is hinged to a second end of the top panel 16 by a hinged connection such as a fold line 27b. The eighth end closure panel 28b is hinged to a second end of the second side wall panel 18 by a hinged connection such as a fold line 29b.

The first end closure panel 22a and the fifth end closure panel 22b each form a minor lower end closure panel at opposing ends of the tubular structure. The third end closure panel 26a and the seventh end closure panel 26b each form a minor upper end closure panel at opposing ends of the tubular structure.

The second end closure panel 24a and the fourth end closure panel 28a each form a major side end closure panel at the first end of the tubular structure. The sixth end closure panel 24b and the eighth end closure panel 28b each form a major side end closure panel at the second end of the tubular structure.

The top panel 16 comprises a carrying handle H, which is optionally of the “slot-handle” type, comprises a pair of elongate tabs 40, 42 which are defined in part by a severance line 45. The severance line 45 extends transversely across the top wall panel 16 and into each of the first and second side wall panels 14, 18. (The part of the severance line 45 that extends into

the second side wall panel 18 has been labeled as 45a (see Figure 2)). Referring back to the carrying handle H, a first elongate tab 40 extends across the top panel 16 and terminates in end portions disposed in each of the adjacent first and second side wall panels 14, 18. The first elongate tab 40 is defined in part by a first fold line 41, first end fold line 53b, a second end fold line 51b, part of a first end cut 49, and part of a second end cut 47. The first fold line 41 is disposed in a spaced apart parallel relationship to the severance line 45.

A second elongate tab 42 extends across the top panel 16 and also terminates in end portions disposed in each of the adjacent first and second side wall panels 14, 18. The second elongate tab 42 is defined in part by a second fold line 43, third end fold line 53a, a fourth end fold line 51a, part of first end cut 49, and part of second end cut 47. The second fold line 43 is disposed in a spaced apart and substantially parallel relationship to the severance line 45.

The first and second fold lines 41, 43 are disposed on opposing sides of the severance line 45 and extend fully across the top wall 16. The first and third end fold lines 53a, 53b are optionally substantially linear, converging fold lines and along with the first end cut line 49 define a first end of the slot-handle H. The second and fourth end fold lines 51b, 51a are substantially linear, converging fold lines 53a, 53b and along with the second end cut line 47 define a second end of the slot-handle H.

The first end of the severance line 45 is disposed in the first side wall panel 14 and terminates in the “V” shaped first end cutline 49, wherein each of the arms of the “V” shaped first end cutline 49 form a vertex, the vertex being disposed at the first end of the severance line 45. The first and third end fold or crease lines 53a, 53b are formed substantially contiguously with the “V” shaped first end cutline 49, from opposing ends thereof.

The second end of the severance line 45 is disposed in the second side wall panel 18 and terminates in the “V” shaped second end cutline 47 wherein each of the arms of the “V” shaped cutline 47 form a vertex, the vertex being disposed at the second end of the severance line 45. The second and fourth fold or crease lines 51a, 51b are formed continuously with the “V” shaped cutline 47, from opposing ends thereof.

The handle structure H comprises a pair of fold or crease lines 55a, 55b proximate to the first end of the handle structure, and disposed in the top panel 16. The pair of fold or crease lines 55a, 55b comprise a first crease line 55a and a second crease line 55b; the first and

second crease lines 55a, 55b extend between the first fold line 41 and the second fold line 43; and cross over one another at the severance line 45, to form an "X"-shaped crease arrangement, and facilitate folding of the first and second tabs 40, 42, when the severance line 45 is broken and the handle H deployed.

Similarly, the handle structure H comprises a second pair of fold or crease lines 57a, 57b proximate to the second end of the handle structure, and disposed in the top panel 16. The second pair of fold or crease lines 57a, 57b comprise a first crease line 57a and a second crease line 57b; the first and second crease lines 57a, 57b extend between the first fold line 41 and the second fold line 43, cross over one another, and facilitate folding of the first and second tabs 40, 42, when the severance line 45 is broken and the handle H deployed.

In alternative embodiments, alternative handle structures may be employed. For example, in some slot handle arrangements only a first tab 41 may be present and the other tab 43 may be omitted. In yet other embodiments, a different style of handle structure, such as a strap handle, race-track style handle or handle aperture arrangement may be used.

The blank 10 comprises a dispenser D for facilitating access to the contents of the carton 90. The dispenser D comprises a removable access panel 35 (see Figure 2) defined at least in part by one or more frangible lines 64, 66, 68, 70, 75, 72, 74, 76, 78, 80. In the presently illustrated arrangement, the frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80 has a plurality of contiguous frangible sections or parts 64, 66, 68, 70, 72, 74, 76, 78, 80 that have been individually labelled to aid the description of the frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80, but which may also be considered as a single frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80 that partially circumvents and intersects the handle structure H. The frangible lines 64, 66, 68, 70, 72, 74, 76, 78, 80 optionally define an area of the carton 90 that encompasses some of the handle structure H, but only a portion of the handle structure H. As such, the plurality of frangible lines 64, 66, 68, 70, 72, 74, 76, 78, 80 are formed such that they intersect the handle structure H. Once the access panel 35 has been removed, only a portion of the handle structure H remains.

The dispenser D comprises a tear initiator in the second side wall 18. As viewed in Figure 1, the tear initiator is disposed such that it is optionally symmetrical about a notional line that extends through the main severance line 45 of the handle structure H. The tear initiator is spaced from the second end cutline 47. The tear initiator is defined in part by a first frangible line 80, and by weakened lines 92, 94a, 94b. The weakened lines 94a, 94b are angled

towards the first frangible line 80 and serve to direct force applied to the carton 90 in the region of the tear initiator, to the frangible line 80 to break that line 80. The weakened line 92 extends substantially transversely and facilitates folding of the tear initiator so that a hole in the carton 90 can easily be created by pressing the tear initiator inwardly of the carton 90. The created hole permits a user to grab a portion of the access panel 35 to aid pulling of the access panel 35.

Second and third frangible lines 64, 78 diverge away from the first frangible line 80 and extend in a direction generally toward fold lines 29a and 29b. The second and third frangible lines 64, 78 can be broken once the tear initiator has been deployed and the access panel 35 peeled upwardly above the plane of the second side wall 18. Second and third frangible lines 64, 78 do not meet fold lines 29a and 29b, but curve toward a fourth frangible line 66 and a fifth frangible line 76 respectively.

The fourth frangible line 66 is contiguous with second frangible line 64 and is formed in the second side wall 18. The fourth frangible line 66 is spaced below (as viewed in Figure 1) and substantially parallel to a notional line that extends through the main severance line 45 of the handle structure H. The fifth frangible line 76 is contiguous with third frangible line 78 and is formed in the second side wall 18. The fifth frangible line 76 is spaced above (as viewed in Figure 1) and substantially parallel to a notional line that extends through the main severance line 45 of the handle structure H. The fourth frangible line 66 and fifth frangible line 76 are optionally disposed substantially parallel to fold lines 29a and 29b respectively and are contiguous with a sixth frangible line 68 and a seventh frangible line 74 respectively.

The sixth frangible line 68 and seventh frangible line 74 are optionally disposed substantially parallel to fold lines 27a and 27b respectively and are contiguous with an eighth frangible line 70 and a ninth frangible line 72 respectively. The sixth frangible line 68 is spaced below (as viewed in Figure 1) and substantially parallel to a notional line that extends through the main severance line 45 of the handle structure H. The seventh frangible line 74 is spaced above (as viewed in Figure 1) and substantially parallel to a notional line that extends through the main severance line 45 of the handle structure H.

The eighth frangible line 70 and a ninth frangible line 72 have a curved corner portion and a main portion that is substantially parallel with fold line 15. The eighth frangible line 70 terminates proximate to the second fold line 43 of the handle structure H. The ninth frangible line 72 terminates proximate to the first fold line 41 of the handle structure H. As such, the

frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80 defining the access panel 35 comprises two termination points, which termination points are spaced apart from one another, and which termination points are disposed on opposite sides of the handle structure H and proximate to the handle structure H.

To ensure that the access panel 35 is not prematurely displaced and to ensure that the frangible severance lines 70, 72 immediately either side of the handle structure H, are not broken prematurely, the dispenser D comprises tear terminations 73, 75. The tear terminations 73, 75 are each formed as an arcuate and curved cut, at least a part of which is disposed substantially perpendicularly to the frangible lines 70, 72.

The handle structure H comprises a frangible feature 3, 5, such that when the frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80 defining the access panel 35 is broken and the access panel 35 is at least partially removed from the carton 90, the frangible feature 3, 5 can also be broken to allow the access panel 35 and only a portion of the handle structure H to be completely removed from the carton 90.

As described, the handle structure H comprises crease lines 55a, 55b disposed in a region between the termination points of the frangible line 64, 66, 68, 70, 72, 74, 76, 78, 80. The frangible feature 3, 5 is positioned along said crease lines 55a, 55b to facilitate propagation of a tear substantially along that crease 55a, 55b when the access panel 35 is removed from the carton 90.

As can be seen in Figure 4, the crease lines 55a, 55b and frangible feature 3, 5 at least partially define an edge of the access panel 35 and an edge of a portion of the handle structure H that remains when the access panel 35 is removed from the carton 90.

The carton 90 can be formed by a series of sequential folding operations in a straight line machine so that the carton 90 may not be required to be rotated or inverted to complete its construction. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements. During loading and assembly of the carton 90, the carton 90 may be orientated such that one of the first and second side panels 14, 18 forms a loading surface. The bases of one or more articles C may be in sliding contact with the loading surface when being inserted into the carton 90. The articles C may be substantially cylindrical in shape and have a cylindrical axis. The cylindrical axis is

orientated perpendicularly to the first side panel 14 and in other packages may be orientated substantially vertically.

The main panel 16 forms the top panel (top wall) 16 when the handle structure H is in use as a carrying handle by a user and this top wall 16 is optionally, disposed adjacent to the sides of the articles C. In this orientation the top wall 16 is not disposed substantially planar to the tops or bottoms of the articles C held within the carton 90. In other words the cylindrical axis of the articles C is substantially parallel with the plane of the top wall 16 of the carton 90.

The main panel 12 forms the base panel 12 when the handle structure H is in use as a carrying handle by a user. The main panel 12 may also form the base panel 12 when the articles C are being dispensed from the carton 90 or when the carton 90 is at rest upon a surface such as a shelf. As such, it will be understood that descriptive terms “top”, “base”, and “side” do not necessarily limit the carton 90 to adopting a particular orientation but serve to distinguish those panels from one another. In other embodiments the cylindrical axis of the articles C may be orientated differently with respect to the top wall 16 of the carton 90. For example, but not limited to, the cylindrical axis of the articles C may be orientated substantially perpendicularly to the plane of the top wall 16 of the carton 90.

Turning to the construction of the carton 90, the blank 10 is folded about the fold line 17 such that the second side panel 18 is disposed in overlying relationship with the top panel 16 and such that the securing panel 20 is disposed in face contacting relationship with the first side panel 14.

Glue G or other adhesive treatment is applied to an outer surface of the securing panel 20. Alternatively, glue G or other adhesive treatment may be applied to a corresponding edge portion of an inner surface of the base panel 12.

The blank 10 is folded about the fold line 13 such that the base panel 12 is disposed in overlying relationship with the securing panel 20 and part of the first side panel 14. The base panel 12 is thereby secured to the securing panel 20.

The blank 10 is thus formed into a flat collapsed tubular structure which can be readily shipped or distributed to a convertor plant, at which the flat collapsed tubular structure may be erected into an open ended tubular structure and loaded with articles C.

The flat collapsed tubular structure may be erected to form an open ended tubular structure by unfolding the first side panel 14 with respect to the base panel 12 such that the first side panel 14 is disposed substantially perpendicularly with respect to the base panel 12.

The carton 90, in its open ended tubular form, may be loaded with articles C through one or both open ends thereof. It will be appreciated that in some embodiments one of the open ends of the carton 90 may be closed before loading the interior with articles C through the remaining open end.

Once the carton 90 has been loaded with articles C the open ends of the carton 90 are closed.

The method for closing each of the open ends of the carton 90 is substantially the same and will be described by reference to closing the first open end.

A first end of the tubular structure is closed by folding the first end closure panel 22a about fold line 23a and by folding the third end closure panel 26a about fold line 27a.
Glue or other adhesive treatment may be applied to a first portion of an inner surface of the second end closure panel 24a. In alternative embodiments glue or other adhesive treatment may be applied to a corresponding portion of an outer surface of first end closure panel 22a.

Glue or other adhesive treatment may be applied to a second portion of an inner surface of the second end closure panel 24a. In alternative embodiments glue or other adhesive treatment may be applied to a corresponding portion of an outer surface of third end closure panel 26a.

The second end closure panel 24a is then folded about the fold line 25a to be brought into contact with the first and third end closure panels 22a, 26a. The second end closure panel 24a may be secured to each of the first and third end closure panels 22a, 26a.

Glue or other adhesive treatment is applied to a portion of an inner surface of the fourth end closure panel 28a. In alternative embodiments glue or other adhesive treatment may be applied to a portion of an outer surface of the second end closure panel 24a.

The fourth end closure panel 28a is then folded about the fold line 29a to be brought into contact with the second end closure panel 24a and optionally into contact with the first and third end closure panels 22a, 26a.

The fourth end closure panel 28a is secured to the second end closure panel 24a. The fourth end closure panel 28a may be secured to the first and third end closure panels 22a, 26a, for example by glue or other adhesive treatment.

In alternative embodiments the second end closure panel 24a may be folded about fold line 25a after folding the fourth end closure panel 28a about fold line 29a. It will be appreciated that in such embodiments the second end closure panel 24a is disposed outermost.

In other embodiments alternative securing means may be employed to secure the end closure panels 22a, 24a, 26a, 28a, 22b, 24b, 26b, 28b for example, but not limited to, mechanical locking devices such as staples or punch locks integrally formed within the end closure panels 22a, 24a, 26a, 28a; 22b, 24b, 26b, 28b.

The process described above in relation to the first end is replicated to close the second end of the carton 90 and is not further described.

Figures 2 and 3 illustrate the assembled carton 90 forming a package with a plurality of articles C.

Referring to Figures 2 to 4, it can be seen that the carton 90 comprises the dispenser D which is disposed in part in the top panel 16 and in part in the second side wall 18, and it can be seen that the carton 90 comprises the carrying handle H. To deploy the carrying handle H one or both of the first and second tabs 40, 42 are folded inwardly of the carton 90 (into a space available between the curved sides of two adjacent articles C). In Figure 3, both the first tab 40 and the second tab 42 have been folded inwardly. The user can then grasp the carton 90 about one of the cushioned edges 41, 43. When the handle H is used to transport the carton 90, for example, from a retail outlet to a consumer's home, it is required that the dispenser D remains intact. The arrangement of tear terminations 73, 75 mitigates against the dispenser D being accidentally opened prematurely.

As shown in Figure 4, the access panel 35 can be completely detached from the carton 90, to provide an optionally large opening of any desired shape through which articles C may be

withdrawn out of the carton 90. To remove the access panel 35, the tear initiator is deployed by pressing inwardly, in the region of crease lines 94a, 94b. Then, the user can grasp a leading portion of the access panel 35 and peel the access panel 35 upwardly breaking in sequence the first and second frangible lines 64, 78; the third and fourth frangible lines 66, 76; the fifth and sixth frangible lines 68, 74; and the seventh and eighth frangible lines 70, 72. A final tearing force is then applied to overcome the tear terminations 73, 75 and to break through the frangible feature: parts of crease lines 55a and 55b, aided by the slits 3, 5. Once the access panel 35 has been fully removed, a user has easy access via the dispenser D to the articles C within the carton 90. Once the access panel 35 has been fully removed only a portion of the handle structure H is removed and a portion of the handle structure remains attached to the carton 90 (see Figure 4).

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 and the size and shape of the access panel 35 may be adjusted to accommodate articles of differing size or shape. The carton 90 may be provided with a different form of handle, a different number of handles and/or a differently positioned handle.

Whilst the foregoing embodiments have been described with reference to a fully enclosed style carton it is envisaged that the dispenser may be employed in cartons of alternative design such as, but not limited to, wrap around style cartons, basket carriers and top gripping clips.

It will be recognised that as used herein, directional references such as "top", "base", "front", "back", "end", "side", "inner", "outer", "upper" and "lower" do not necessarily 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 and apertures may be adjusted to accommodate articles of differing size or shape.

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.

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.

As used herein, the terms “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 “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.

It should be understood that hinged connections, fold lines, frangible lines and severance lines can each include 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 severance 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 severance line.

CLAIMS

1. A carton for packaging one or more articles, the carton comprising:

a plurality of panels for forming a structure for containing one or more articles;

a dispenser comprising an access panel, the access panel being at least partially defined by a frangible line extending in at least one of the plurality of panels, the access panel being at least partially removable from the carton to form a dispenser opening in the carton; and

a handle structure for grasping and carrying the carton, wherein the handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton together with the access panel.

2. A carton according to claim 1 wherein the frangible line comprises two termination points spaced apart from one another, the termination points being disposed on opposite sides of the handle structure and proximate to the handle structure.

3. A carton according to claim 2 wherein each of the termination points comprises a tear termination.

4. A carton according to claim 3 wherein each of the tear terminations comprises a curved slit.

5. A carton according to claim 4 wherein part of each of the curved slits is disposed substantially perpendicularly to the frangible line.

6. A carton according to any one of claim 2 to 5 wherein the handle structure comprises a frangible feature such that when the frangible line is broken and the access panel is at least partially removed from the carton, the frangible feature can also be broken to allow the access panel and only a portion of the handle structure to be removed from the carton.

7. A carton according to claim 6, wherein the handle structure further comprises a crease disposed in a region between the termination points and wherein the frangible feature is positioned along said crease to facilitate propagation of a tear substantially along the crease when the access panel and the portion of the handle structure are removed from the carton.

8. A carton according to claim 7 wherein the crease and frangible feature at least partially define an edge of the portion of the handle structure when the access panel is fully removed from the carton.

9. A carton according to claim 8 wherein the handle structure is a slot-handle structure comprising a pair of elongate tabs which are defined in part by first and second fold lines and in part by a severance line that extends transversely across the one of the plurality of panels and into each of two side panels adjacent thereto, wherein the crease extends between the first and second fold lines, and wherein said frangible feature comprises one or more slits.

10. A carton according to claim 9 wherein the crease is "V"-shaped and wherein the one or more slits comprise two slits, one being on each of arms of the "V"-shaped crease.

11. A carton according to claim 10 wherein the "V"-shaped crease forms part of a first "X"-shaped crease arrangement formed at a first end of the slot-handle structure and wherein a second "X"-shaped crease arrangement is formed at a second end of the slot-handle structure, the first and second "X"-shaped crease arrangements facilitate folding of the elongate tabs when the handle structure is deployed for carrying the carton.

12. A carton according to any one of claims 6 to 11 wherein the frangible feature is structured and arranged such that it does not readily break when the handle is deployed for carrying the carton, but can sufficiently easily be broken when the frangible line is broken for removing the access panel.

13. A carton according to any one of claims 1 to 11 wherein between about 5% and about 30% of the handle structure remains after the access panel has been fully removed.

14. A package comprising a carton according to any one of claims 1 to 13 and a plurality of articles disposed therein.

15. A blank for forming a carton, the blank comprising:

a plurality of panels for forming a structure for containing the one or more articles;

a dispenser comprising an access panel, the access panel being at least partially defined by a frangible line extending in at least one of the plurality of panels, the access panel being at least partially removable to form a dispenser opening; and

a handle structure for grasping and carrying the carton when formed from the blank, wherein the handle structure extends only partially within the access panel such that only a portion of the handle structure is removable from the carton along with the access panel.

16. A blank according to claim 15 wherein the frangible line comprises two termination points spaced apart from one another, the termination points being disposed on opposite sides of the handle structure and proximate to the handle structure.

17. A blank according to claim 16 wherein each of the termination points comprises a tear termination.

18. A blank according to claim 17 wherein each of the tear terminations comprises a curved slit.

19. A blank according to claim 18 wherein part of each of the curved slits is disposed substantially perpendicularly to the frangible line.

20. A blank according to any one of claim 16 to 19 wherein the handle structure comprises a frangible feature such that when the frangible line is broken and the access panel is at least partially removed from the carton, the frangible feature can also be broken to allow the access panel and only a portion of the handle structure to be removed from the carton.

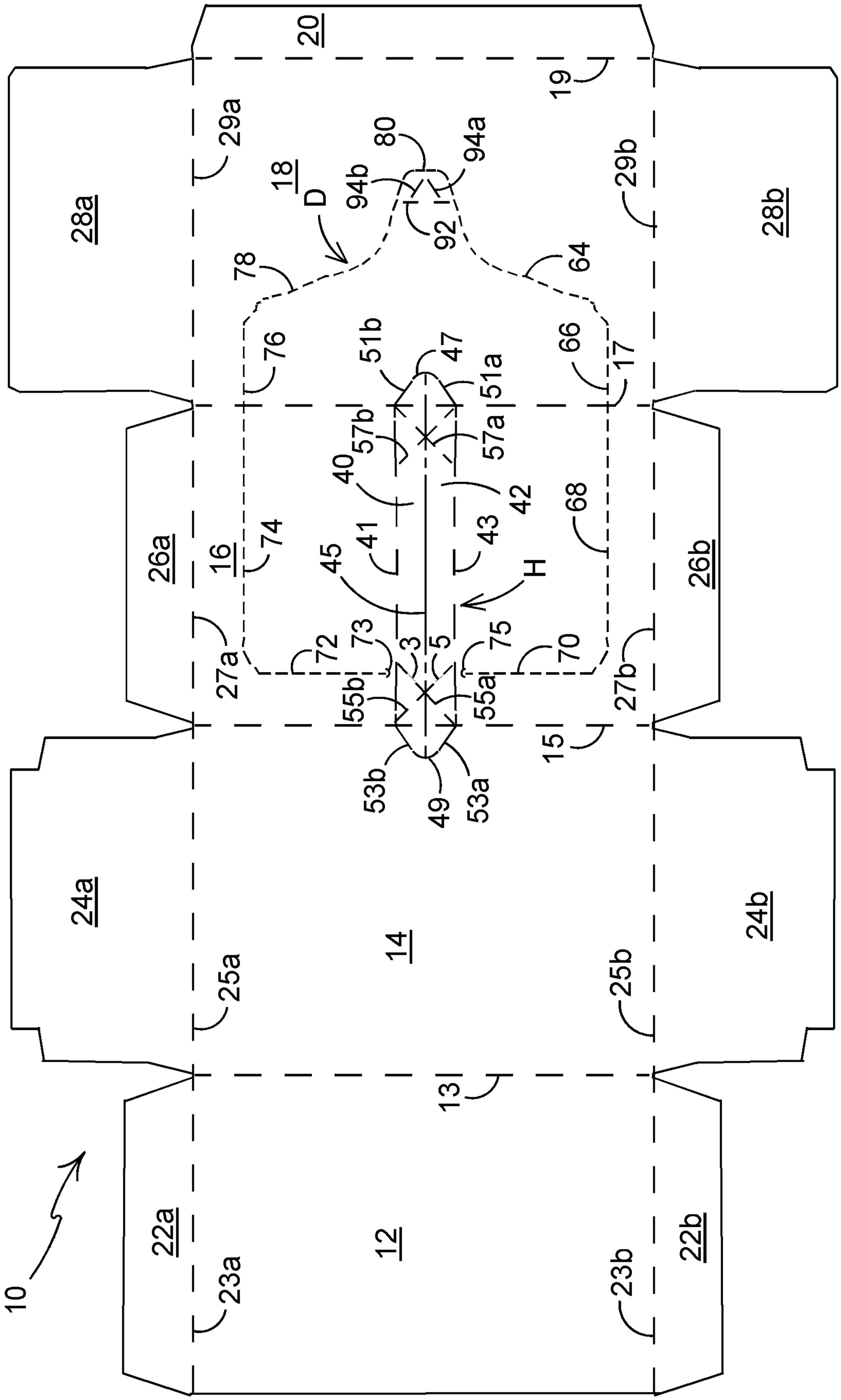
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FIGURE 1

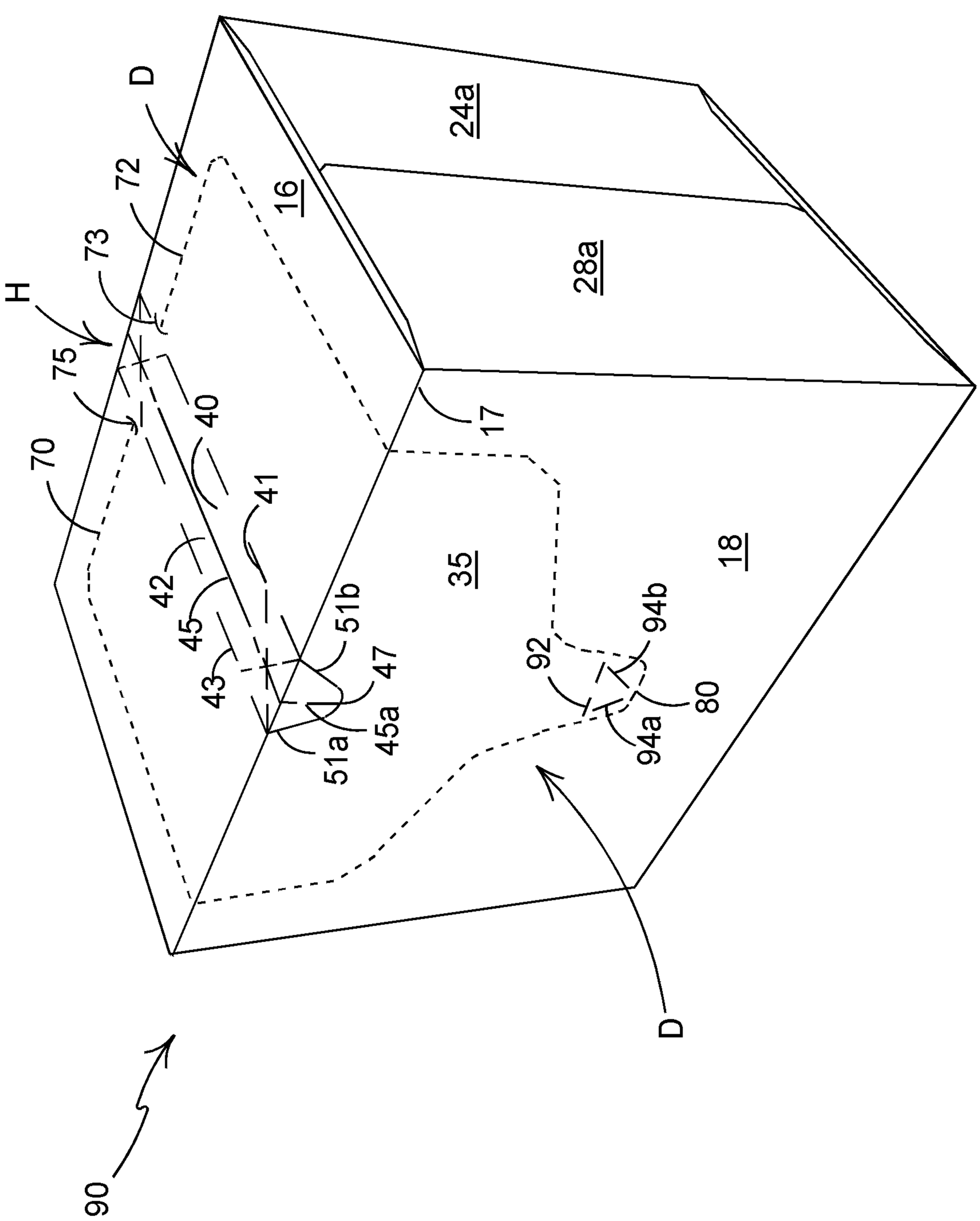
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FIGURE 2

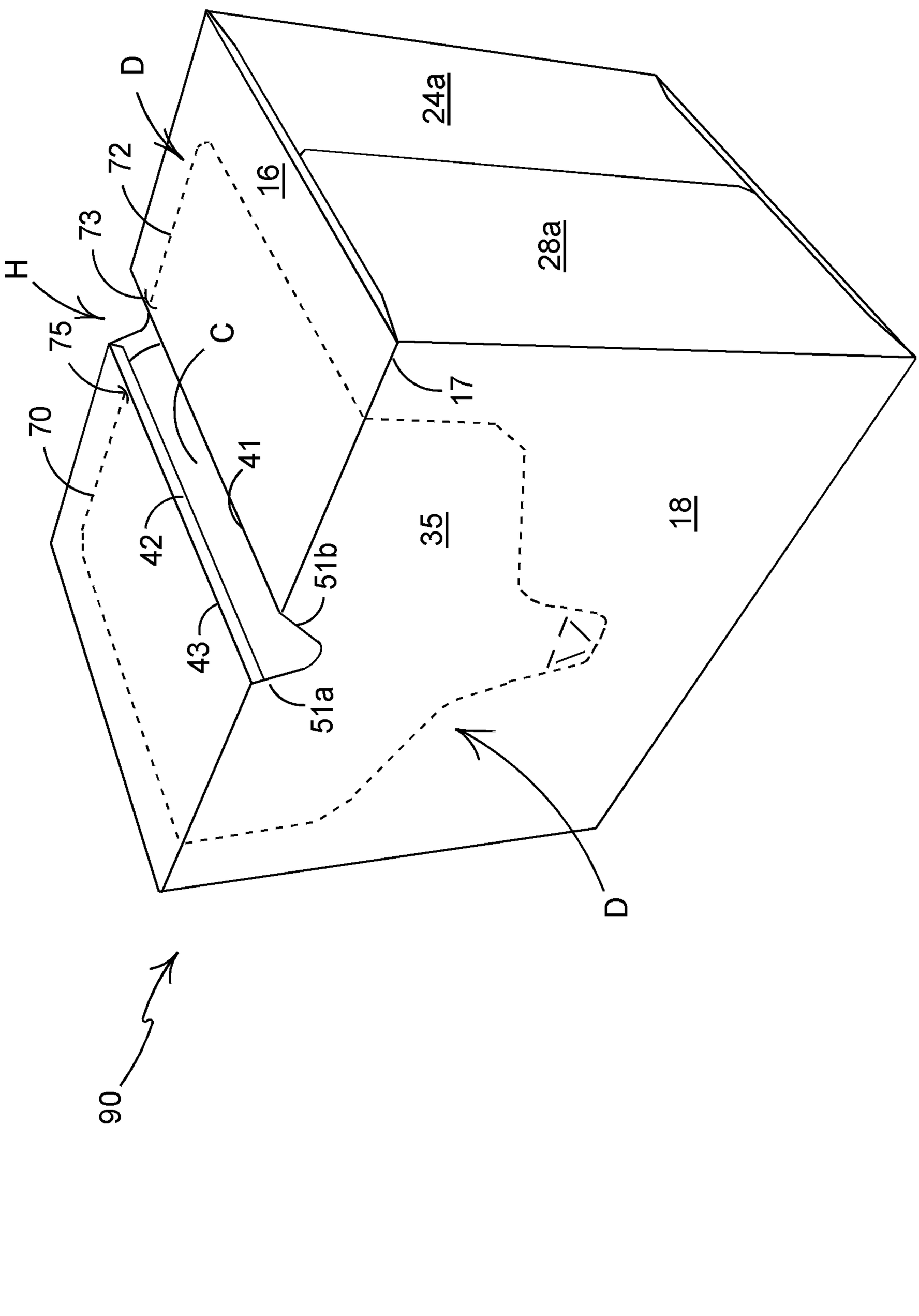

FIGURE 3

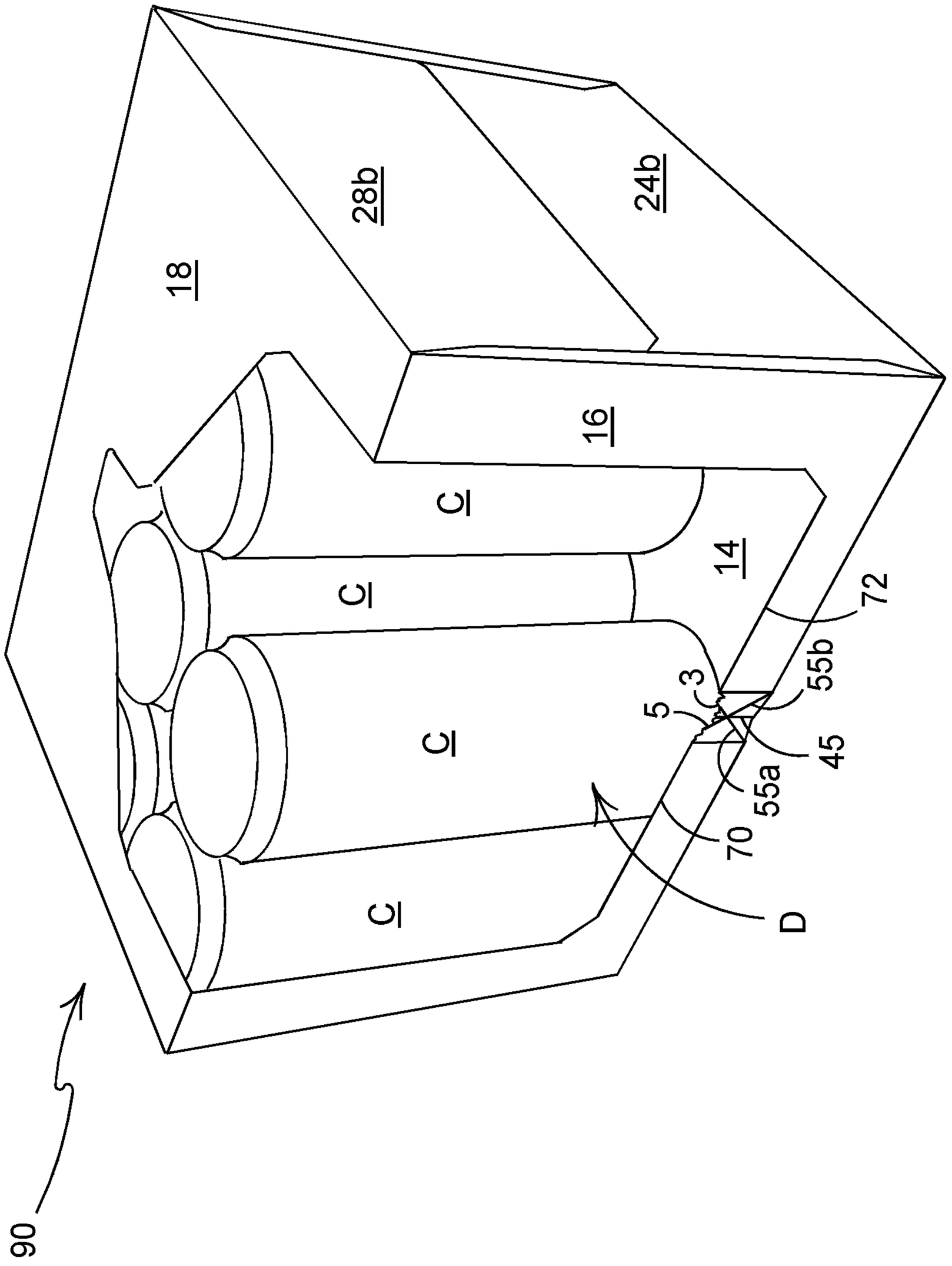

FIGURE 4

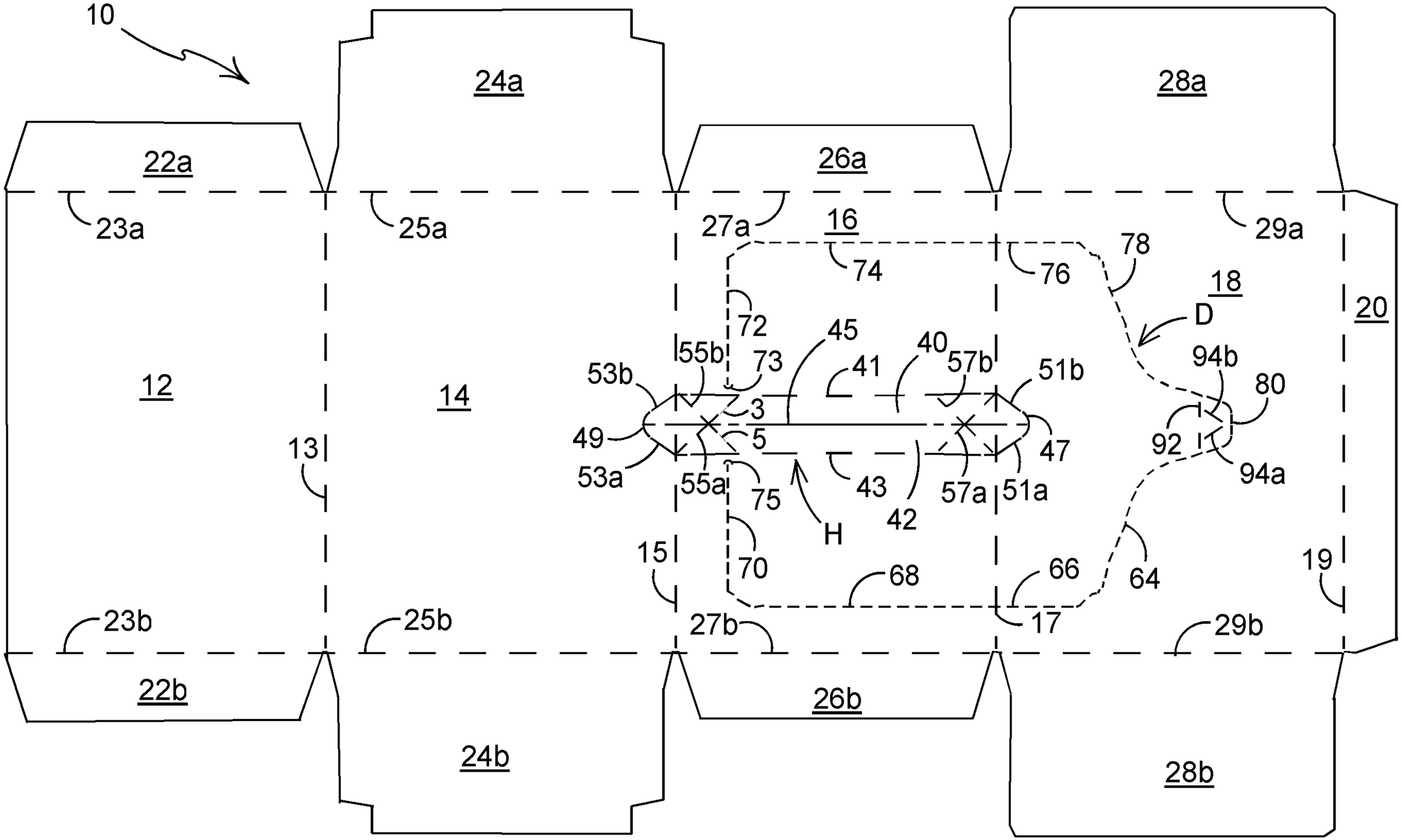
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FIGURE 1