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(54) **A carton and blank**

(57) A carton for the packaging of products to be sent via postal services, the carton comprising: an inner carton portion having a plurality of panels including first and second opposing side panels, and an opposing top panel and bottom panel, one pair of opposing panels having a greater area than the second pair of opposing panels;

and an outer wrap portion configured to overlies at least one of each pair of panels; wherein a tear strip is provided to facilitate the at least partial separation of the outer wrap portion from the inner carton portion and wherein the tear strip is positioned so as to overlies the panel having the greatest area.

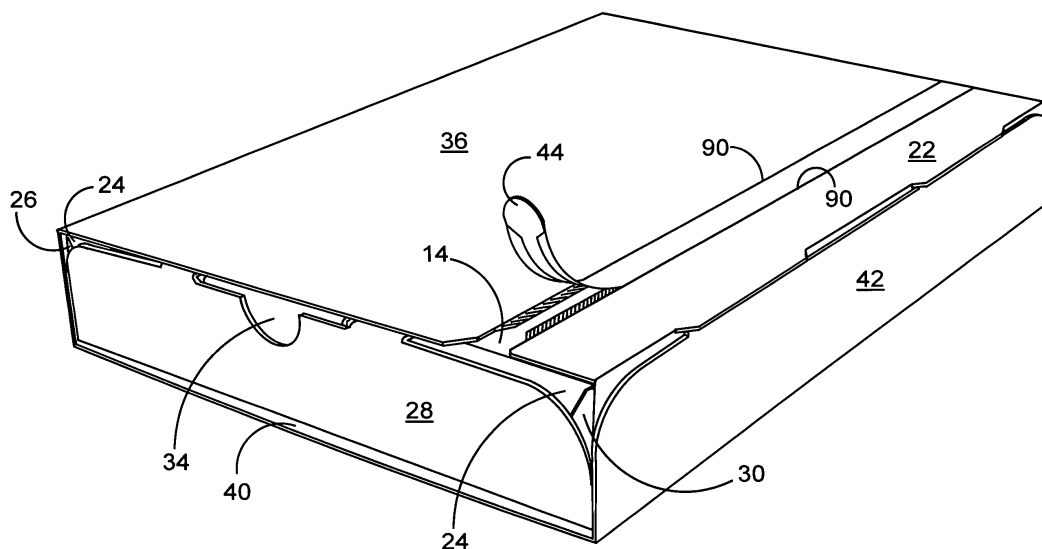


FIGURE 2

Description

[0001] The present invention relates to a carton and blank, in particular a carton and blank for the packaging of products sent via postal services. The present invention also relates to a method of erecting such a carton.

[0002] It is known to provide cartons for the sending of items via the post that comprise an inner portion whose primary function is to house the contents of the carton, and an outer portion that wraps around the inner portion. The primary function of the outer portion is to carry the mailing address, postage, customs and other information related to the dispatch of the contents of the carton to its recipient. It is also known to provide some means whereby the outer wrap-around portion may be removed by the recipient to reveal additional information on the inner portion e.g. relating to the use of the carton contents, or promotional material relating to the company sending the carton.

[0003] An example of such a carton is disclosed in US 4083454 (O'Neill).

[0004] Known cartons have however suffered from one or more of a number of disadvantages including a requirement for an excessive amount of materials in their manufacture, complexity of assembly (both of which lead to an increased cost associated with the dispatch of such products), a lack of strength or security during transit (which may lead to a loss of or tampering with the products), or difficulty by the end user in removing the outer portion and/or accessing the interior of the inner portion.

[0005] The present invention seeks to overcome, or at least mitigate the problems of the prior art.

[0006] Accordingly, a first aspect of the present invention provides a carton for the packaging of products to be sent via postal services, the carton comprising: an inner carton portion having a plurality of panels including first and second opposing side panels, and an opposing top panel and bottom panel, one pair of opposing panels having a greater area than the second pair of opposing panels; and an outer wrap portion configured to overlie at least one of each pair of panels; wherein a tear strip is provided to facilitate the at least partial separation of the outer wrap portion from the inner carton portion and wherein the tear strip is positioned so as to overlie the panel having the greatest area.

[0007] A second aspect of the present invention provides a carton for the packaging of products to be sent via postal services, the carton comprising: an inner carton portion having a plurality of panels to form an enclosed space for housing products therein, at least one of the panels being arranged so as to be moveable to provide access to the enclosed space; and an outer wrap portion configured to overlie at least one of the panels of the inner carton portion and be separable therefrom; wherein the inner carton portion comprises a locking tab to inter-engage with the moveable panel, the locking tab being overlain by the outer wrap portion so as to prevent or inhibit access to the enclosed space whilst the outer wrap

portion is in place, but to permit such access when the outer wrap portion is removed.

[0008] A third aspect of the present invention provides a blank for forming a carton of the type described in the proceeding two paragraphs.

[0009] A fourth aspect of the present invention provides a method of forming a carton of the first and/or second aspects of the invention comprising the steps of: folding the plurality of panels to form an inner carton portion; folding at least one further panel so as to overlie the inner carton portion and form the outer wrap portion; and releasably securing the outer wrap portion in the overlying relationship with the inner carton portion.

[0010] Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings in which:

FIG. 1 is a plan view of a blank according to one embodiment of the present invention;

FIG. 2 is a perspective view of an erected carton formed from the blank of Fig. 1; and

FIG. 3 is a perspective view of the carton of Fig. 2 with the outer wrap portion removed.

[0011] Fig. 1 shows a plan view of the outer face of a blank 8 in which fold lines are generally denoted by broken lines and cut/score lines by solid lines. The blank can generally be divided into an inner carton portion 10 and an outer wrap portion 12, the two portions being detachably connected by a tear strip 44. The blank may be formed from any suitable material including paperboard, corrugated board, plastics material, or laminates of paperboard and plastics, having suitable strength such that the carton, when erected from the blank, can withstand the usual rigours of the postal system.

[0012] The inner carton portion 10 comprises, in series, in a top panel 14, first inner side panel 16, an inner bottom panel 18, second inner side panel 20 and a connecting panel 22, hinged together by fold lines 48, 50, 52 and 54 respectively. Fold line 54 is interrupted by two spaced D-shaped cut lines 88 whose purpose is discussed in greater detail below. Corresponding D-shaped projections 89 are provided on the free edge of inner top panel 14.

[0013] First 24 and second 28 end panels are hinged to both end edges of the inner top panel 14 and inner bottom panel 18 respectively along fold lines 56, 60 and 62.

[0014] Connector panels 52 and locking tabs 34 are struck from the inner top panel and first end panels respectively, being separated therefrom by cut lines 84 and hinged to the inner top panel by fold lines 64. The connector panels 32 and locking tabs 34 interrupt D-shaped cut lines 78 provided in the fold lines 56. The fold lines 66 that connect the connector panel 52 to the locking tab 34 are aligned with the cut lines 78.

[0015] In this embodiment a further D-shaped cut line 80 interrupts fold line 62 connecting the inner bottom pan-

el 18 to the second end panel 28 for reasons discussed in more detail below.

[0016] All the D-shaped cut lines 80, 88 and 89 terminate in short transverse cuts that act to dissipate stress and thus minimise the risk of tearing.

[0017] End tabs 35 are hinged to the second end panels 28 along fold lines 67 that are interrupted by a circular finger slot 86 and cut lines 82.

[0018] First and second end flaps 26 and 30 are hinged to first inner side panel 16 and second inner side panel 20 by fold lines 58 and 68 respectively.

[0019] The tear strip 44 is formed from first and second parallel score lines 90 provided on the upper face of the blank and third and fourth parallel score lines 92 on the underside of blank with a closer spacing therebetween, as is well known. Both score lines penetrate part way through the blank, such that tearing occurs between the score lines substantially parallel to the surfaces of the blank and clean torn edges are left.

[0020] The outer wrap portion comprises an outer top panel, first outer side panel 38, outer bottom panel 40 and second outer side panel 42 hinged to one another in a series along fold lines 70, 72 and 74 respectively. Panels 38, 40 and 42 have slightly larger dimensions than corresponding panels 16, 18 and 20 in order to permit them to overlie and wrap-around these panels when the carton is erected. The combination of panels 22 and 36 and tear strip 44 has a slightly larger dimension than that of panel 14, which they all overlie.

[0021] Two arrowhead tabs 46 are hinged to the second outer side panel 42 along fold lines 76.

[0022] Erection of the carton is as follows:

Adhesive (not shown) is applied to the underside of panel 22 and the inner carton portion is folded around such that inner top panel 14 and inner bottom panel 18 are brought into a spaced opposing relationship, and likewise first inner side panel 16 and second inner side panel 20 are brought into an opposed facing relationship. Connecting panel 22 is brought into a face contacting relationship with the margin of inner top panel 14 proximate the free end edge, causing the two panels to be adhered together with the D-shaped projections formed by cut lines 88 overlying the corresponding projections formed by cut line 89 on the inner top panel 14.

[0023] The carton may be supplied to packers in this partially erected state, since it may be stored flat and therefore takes up minimal space in storage and transit.

[0024] To complete the erection process, a packer will fold first and second end flaps 26 and 30 inwardly at one end of the inner carton 10, followed by first end panel 24 about fold line 56. End tab 35 and second end panel 28 are then also folded inwardly such that end tab 35 is tucked through the cut line 78. To complete the assembly of this end of the carton, connector panel 32 is folded back about fold line 64 and locking tab 34 is folded in-

wardly about fold line 66 and both the connector panel and the locking tab are then folded inwardly about fold line 64, such that the locking tab is inserted through the cut line 82 that interrupts fold line 67 between the second end panel 28 and the end tab 35.

[0025] The packer then loads the inner carton portion 10 with the items to be dispatched and closes the second end of the inner carton in the same manner as the first, as described above.

[0026] The outer wrap portion 12 is then folded around the inner carton portion 10 such that outer top panel 36 overlies inner top panel 14 first outer side panel 38 overlies first inner side panel 16, outer bottom panel 40 overlies inner bottom panel 18 and second outer side panel 42 overlies second inner side panel 20. To retain the outer panel in place, arrowhead tabs 46 are inserted into the slitted apertures formed by cut lines 88. The shape of the tabs 46 causes them to securely engage against the wall formed by second inner side panel 20 so as to prevent the unwanted opening of the carton 8 during transit.

[0027] The fully erected carton is illustrated in Fig. 2. It will be noted that outer top panel 36 overlies the connector panel 32, thereby preventing the locking tab 34 from being disengaged between the end tab and second end panel 28. This arrangement prevents the opening of either end of the inner carton portion whilst the outer wrap portion remains in place. This provides some measure of security and tamper-evidence to the carton, since accidental opening of the carton in transit is substantially prevented. If unauthorised access to the carton is attempted, this would only be possible without some evidence of tampering if the arrowhead tabs 46 are carefully removed from the cut line 88 without any tearing of the panels occurring. Should increased tamper-evident security be desired, it is contemplated that in other embodiments of the carton, the arrowhead tabs 46 could be replaced by a second glue strip that secures the outer wrap 12 to the inner carton 10, so that access to the carton may only be achieved if one or other portion of the carton is torn.

[0028] It will also be noted that the tear strip 44 is located on the top surface of the carton which has a significantly greater area than the side faces. It has been found that the tear strip 44 is less susceptible to damage and accidental removal in this location, compared with locations on the side edges, particularly if the strip is set in from the edge of the carton (i.e. from fold lines 54 and 70).

[0029] When the carton is received by the recipient, access to the inner carton is achieved by first removing the tear strip 44, which, due to the configuration of score lines 90 and 92 on opposing faces of the tear strip and their offset relationship, leaves a clean edge to both connecting panel 22 and outer top panel 36. By then disengaging the arrowhead tabs 46 from the cut lines 88, the entire outer wrap portion 12 may be removed from the inner carton. In a preferred embodiment, the inner face

of the outer wrap portion may be printed with promotional information that becomes visible only once the wrap is removed.

[0030] As illustrated in Fig. 3, the inner carton portion is then fully revealed and the product information and/or promotional information provided on panels 14, 16, 18 and 20 is fully visible. Furthermore, connector panels 32 are revealed, thus enabling the recipient to reverse the end panel erection process and thereby gain access to the interior of the inner carton. The finger slots 86 make it easier for the locking tabs 34 to be removed.

[0031] The D-shaped projections 78, 80 and 89 enhance the stability of the carton when stood on its end or side edge.

[0032] It will be appreciated that the carton of the present invention provides an economical, secure, easy to use and physically attractive means for the postal delivery of items such as nutritional supplements, compact discs, DVDs, contact lenses, books and innumerable other items.

[0033] It should be noted that terms such as "top", "bottom", "side" and "end" have been used for ease of description only, and are not limiting.

[0034] It will further be appreciated that numerous changes may be made within the scope of the present invention, for example, the outer wrap portion need only extend over one, two or three of the inner panels and the location of the cut lines 88 on the inner panel portion may therefore be moved in order to receive the arrowhead tabs. Alternative types of tear strip known in the art may be used instead of the arrangement disclosed above, the arrowhead tabs may be replaced by a second adhesive strip or other forms of connector. The D-shaped projections 89 may be replaced by recesses that correspond to the shape or arrowhead tabs 46 in order for the insertion of the tabs to be made easier during carton erection and for their removal to be made easier when opening the outer wrap portion. This may result in the tear strip being moved further away from the fold line 54. The general dimensions of the carton may be altered, as may the arrangement of end panels and flaps.

Claims

1. A carton for the packaging of products to be sent via postal services, the carton comprising:

an inner carton portion having a plurality of panels including first and second opposing side panels, and an opposing top panel and bottom panel, one pair of opposing panels having a greater area than the second pair of opposing panels; and an outer wrap portion configured to overlie at least one of each pair of panels; wherein a tear strip is provided to facilitate the at least partial separation of the outer wrap portion from the inner carton portion and wherein the tear strip

is positioned so as to overlie the panel having the greatest area.

2. A carton according to claim 1 wherein the tear strip is inset from an edge of the panel it overlies.
3. A carton according to claim 2 wherein the outer wrap portion extends around the entire periphery of the inner carton portion.
4. A carton according to claim 2 or claim 3 wherein the outer wrap portion further comprises a tab configured to engage a complementary slot on the inner carton portion.
5. A carton according to any preceding claim wherein the inner carton is formed into a tubular structure by securing together overlapping panels proximate to the tear strip, preferably by gluing.
6. A carton for the packaging of products to be sent via postal services, the carton comprising:

an inner carton portion having a plurality of panels to form an enclosed space for housing products therein, at least one of the panels being arranged so as to be moveable to provide access to the enclosed space; and
an outer wrap portion configured to overlie at least one of the panels of the inner carton portion and be separable therefrom;

wherein the inner carton portion comprises a locking tab to interengage with the moveable panel, the locking tab being overlain by the outer wrap portion so as to prevent or inhibit access to the enclosed space whilst the outer wrap portion is in place, but to permit such access when the outer wrap portion is removed.

7. A carton according to claim 6 wherein the moveable panel comprises an end panel provided to form an end wall of the carton, an end tab hinged to the end panel to be brought into contact with another panel of the carton, and a cut line provided therebetween into which the locking tab may be inserted, preferably wherein the end panel is provided with a cut out to facilitate the removal of the locking tab therefrom.
8. A carton according to claim 6 or claim 7 wherein the locking tab is hinged to the inner carton portion via a connecting panel.
9. A carton according to any one of claims 6 to 8 wherein the inner carton portion and outer wrap-portion are integral.
10. A carton according to any one of claims 6 to 9 wherein a tear strip is provided to separate the inner carton

portion and outer wrap portion preferably wherein the inner carton portion comprises a first panel of greater area than a second panel, and the tear strip overlies the first panel.

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- 11.** A carton according to any one of claims 6 to 10 further comprising a slit-type aperture on the inner carton portion and a complementary tab on the outer wrap portion for releasable securement of the outer wrap portion to the inner carton portion.

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- 12.** A blank for forming a carton according to any preceding claim.

- 13.** A blank according to claim 12 comprising a plurality of panels hinged in series to form the top, bottom and sides of the inner carton and at least one further panel to form the outer wrap portion.

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- 14.** A method of forming a carton according to any one of claims 1 to 11 comprising the steps of:

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folding the plurality of panels to form an inner carton portion;

folding at least one further panel so as to overlie the inner carton portion and form the outer wrap portion; and

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releasably securing the outer wrap portion in the overlying relationship with the inner carton portion.

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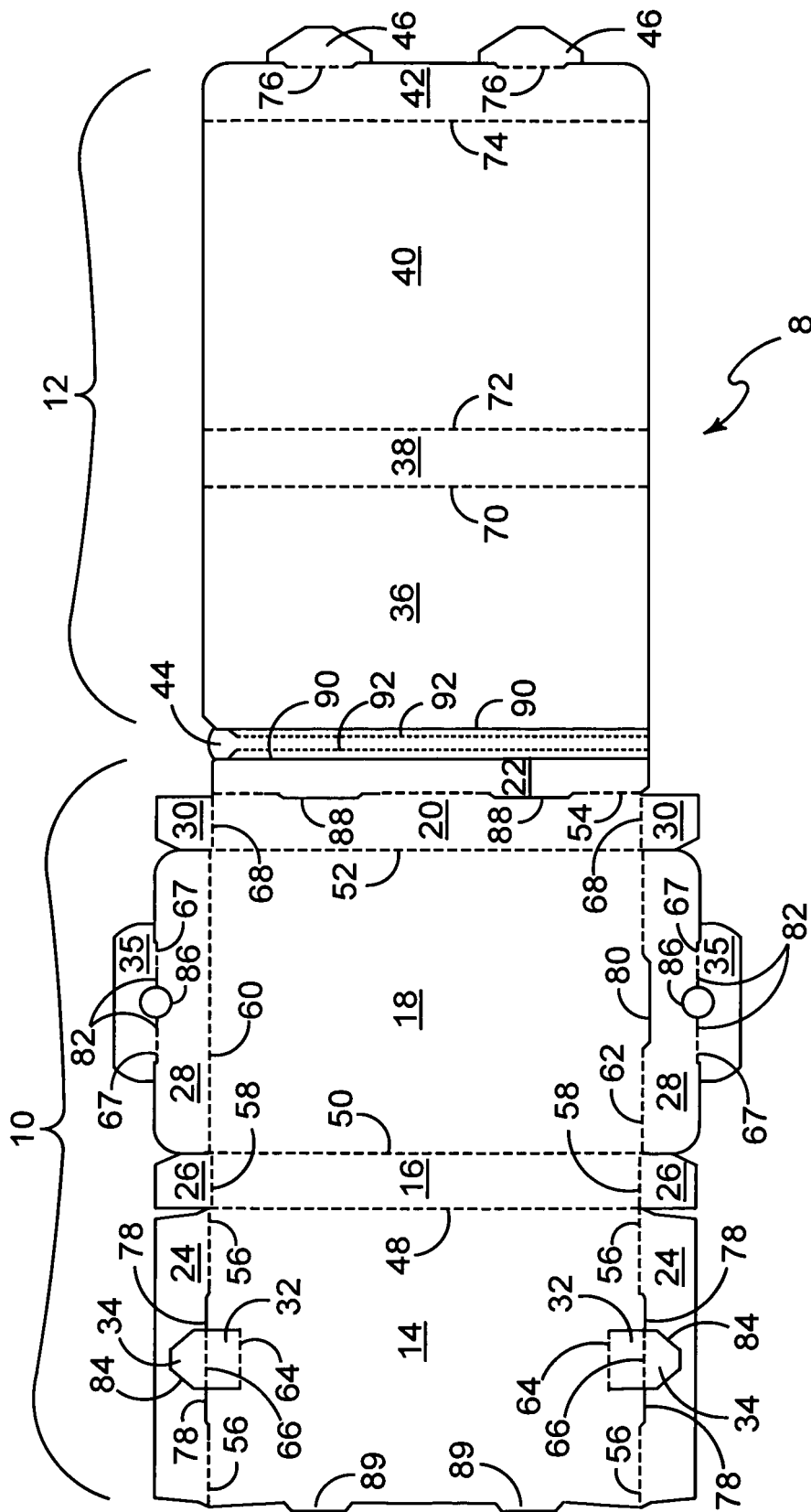


FIGURE 1

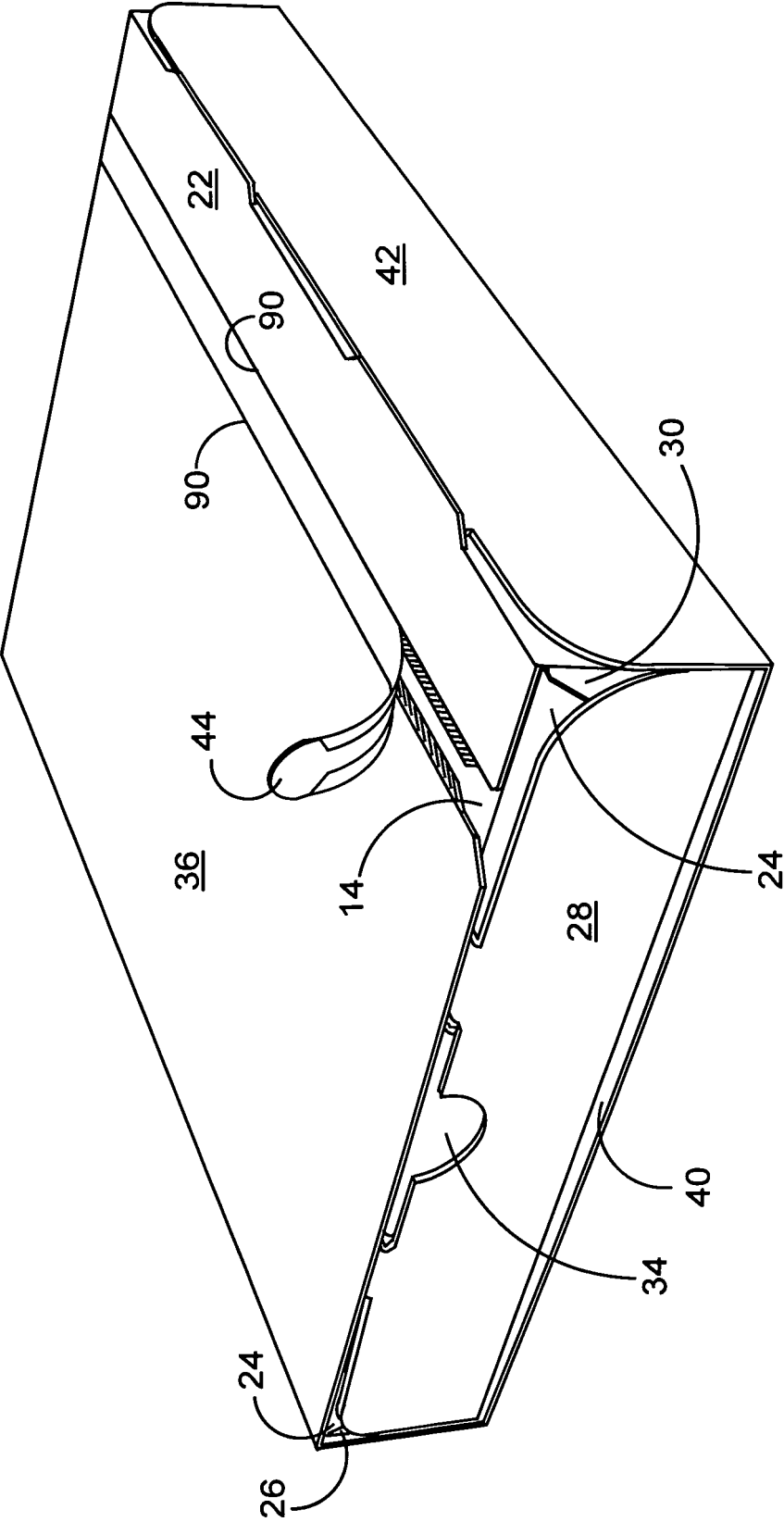


FIGURE 2

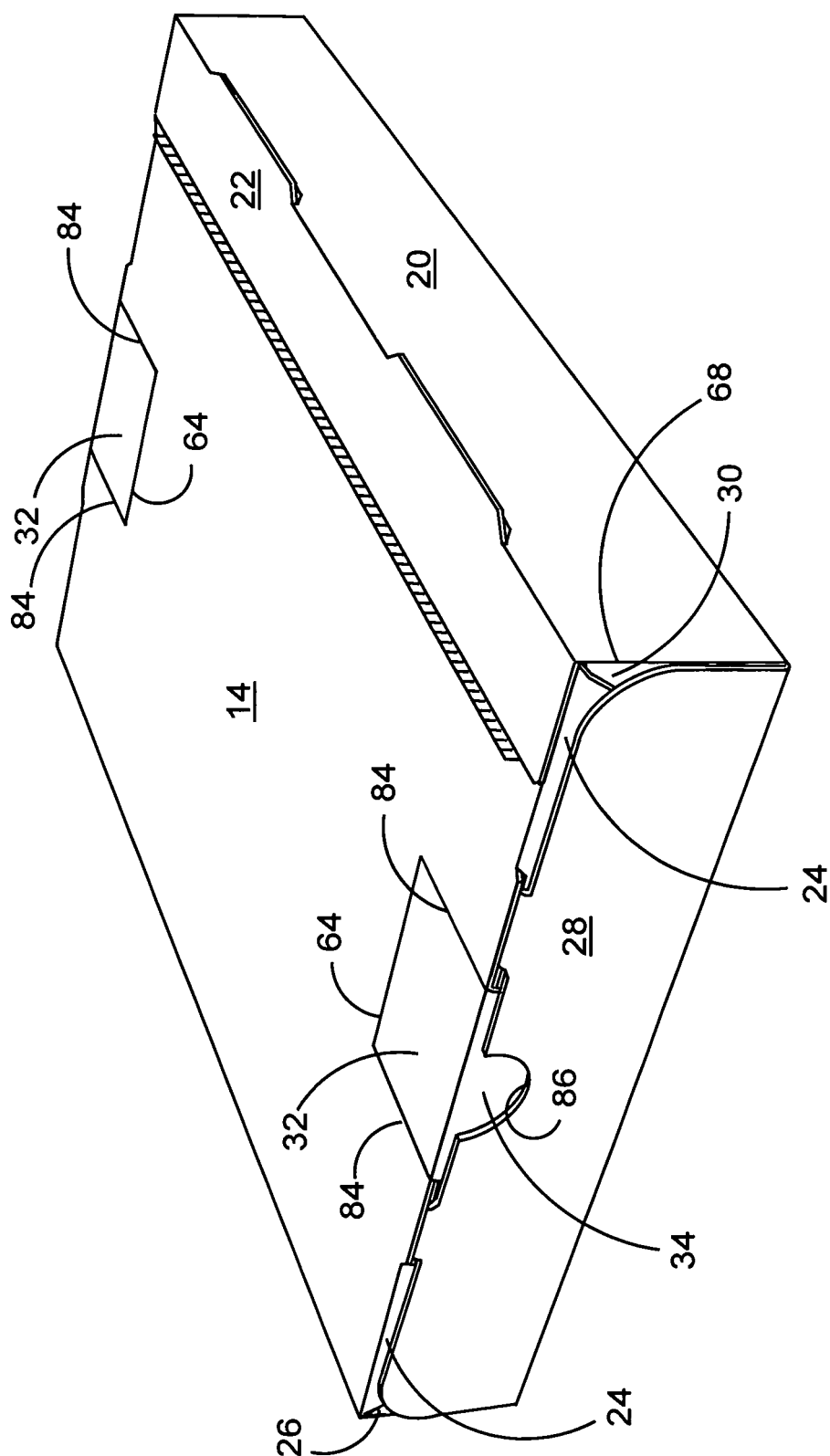


FIGURE 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 4083454 O, O'Neill [0003]