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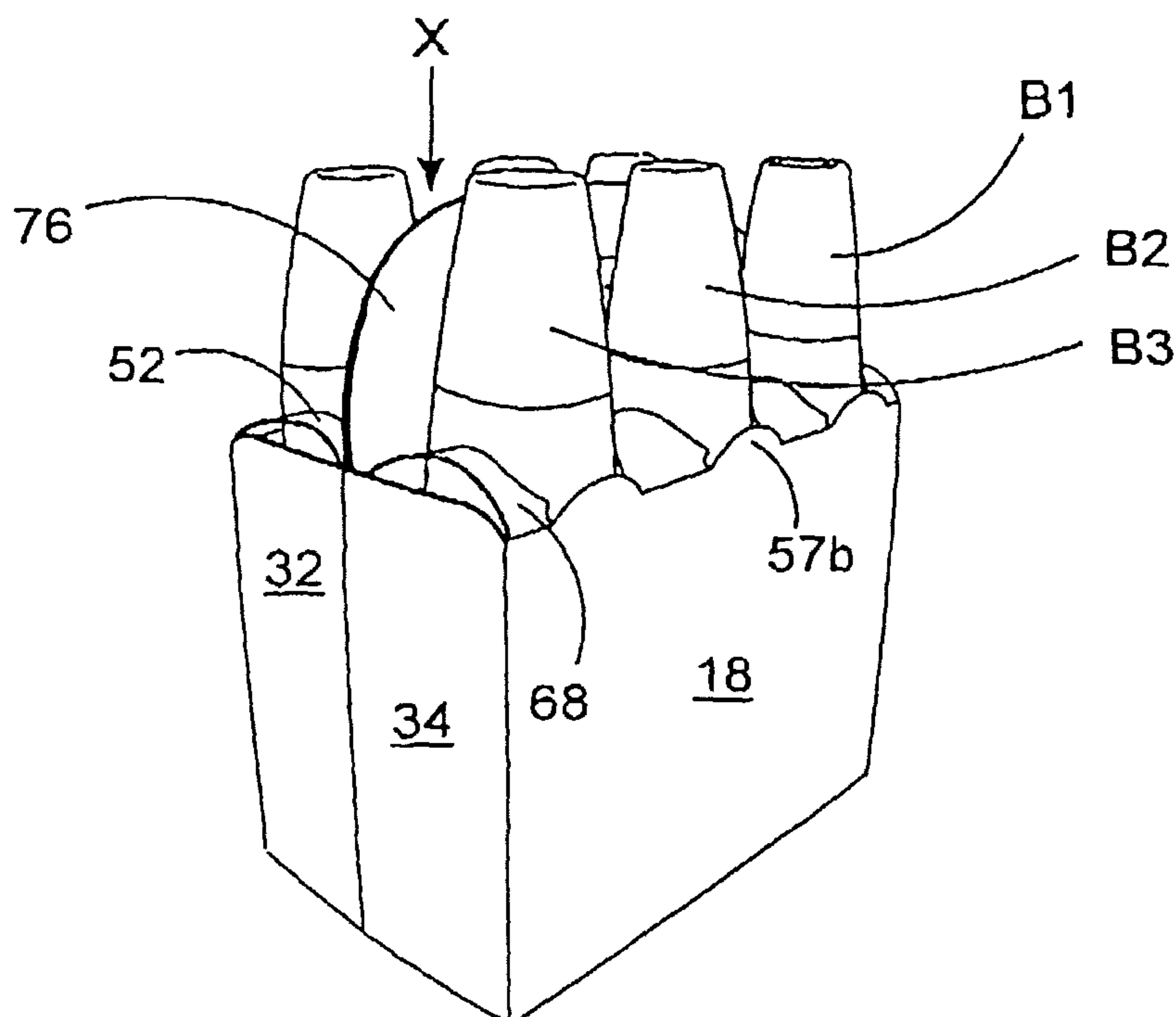
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(54) Title: ARTICLE CARRIER AND BLANK THEREFOR



(57) **Abrégé/Abstract:**

An article carrier and a blank for forming an article carrier for carrying one or more articles (B1, B2, B3) comprising a plurality of panels for forming the opposed sides and ends of the article carrier including a pair of laterally spaced top wall panels (52, 68) hingedly connected to the opposed side walls (14, 189). A carrying handle (H) is hinged to the top wall panels (52, 68). The handle (H) is movable between a retracted position when the handle does not extend above the top of the articles and deployed position whereby the handle protrudes above the article tops.

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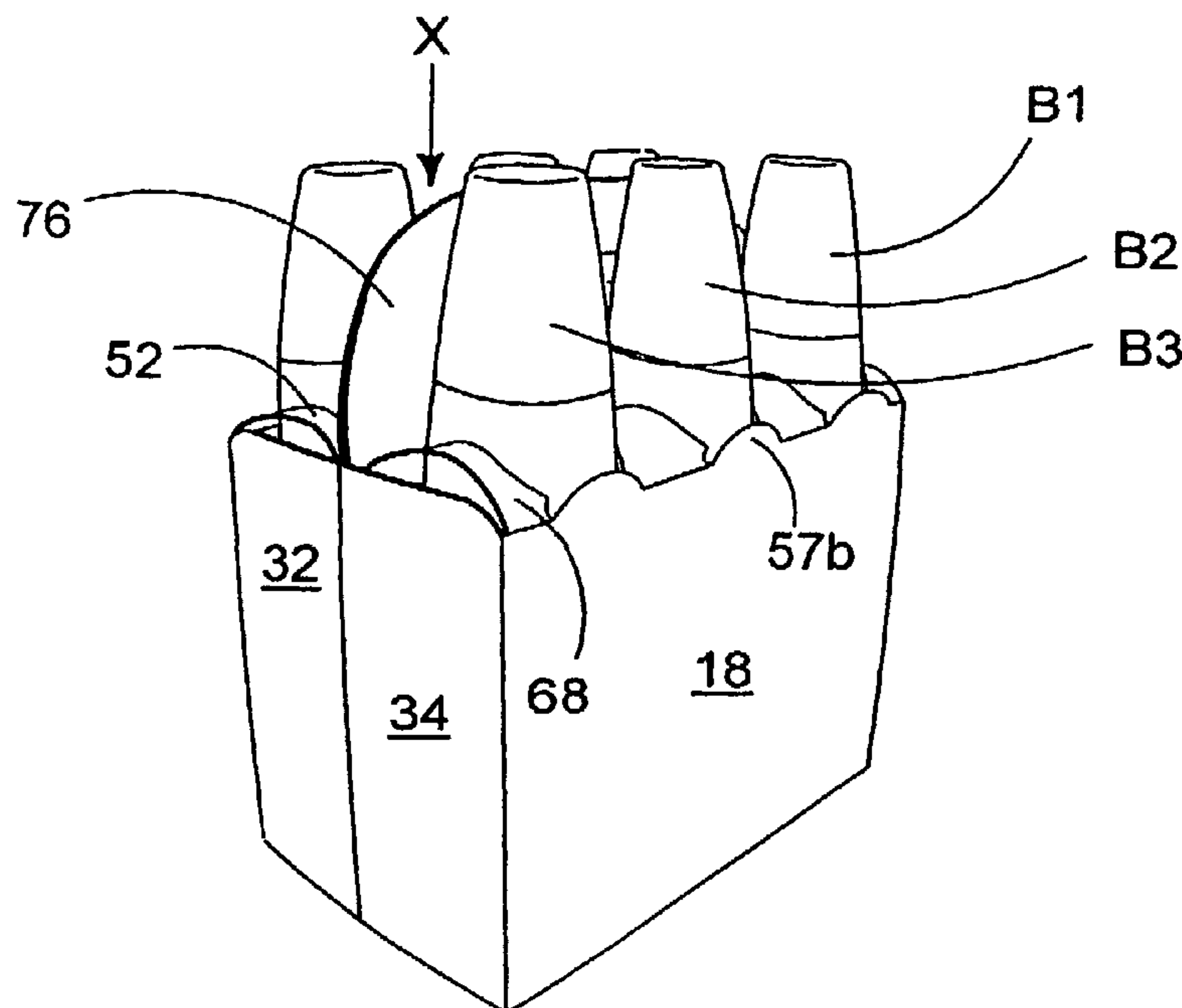
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(54) Title: ARTICLE CARRIER AND BLANK THEREFOR



(57) Abstract: An article carrier and a blank for forming an article carrier for carrying one or more articles (B1, B2, B3) comprising a plurality of panels for forming the opposed sides and ends of the article carrier including a pair of laterally spaced top wall panels (52, 68) hinged to the opposed side walls (14, 189). A carrying handle (H) is hinged to the top wall panels (52, 68). The handle (H) is movable between a retracted position when the handle does not extend above the top of the articles and a deployed position whereby the handle protrudes above the article tops.

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ARTICLE CARRIER AND BLANK THEREFOR

This invention relates to an article carrier, for example a basket type, adapted to accommodate a plurality of articles, such as bottles and to a blank for forming the carrier. In particular, the invention relates to a retractable handle for an article carrier.

Normally article carriers include a handle structure by which the carrier can be lifted and carried and the bottles are arranged in rows on either side of the handle structure. A problem associated with such carriers is that as the handle protrudes above the bottle tops it makes it harder to stack the carriers during transit because the handle arrangement may become deformed or may even tear if another carrier is mounted on top. Accordingly, known article carriers are not suited to stacking.

DE 2723957A discloses a basket carrier for bottles in which bottles are accommodated in individual cells on either side of an upstanding handle. Although the handle of this disclosure can be moved from a stowed position to a position of use, there is no suggestion that the handle includes a mechanism whereby the handle extension or retraction is assisted by means which employs tension created in the top wall panels.

The present invention and its preferred embodiments seek to overcome or at least mitigate the problems of the prior art.

A first aspect of the present invention provides a carton of the basket type carrying a plurality of articles for example bottles, which carton comprises a plurality of panels for forming the opposed sides and ends of the carton including a pair of laterally spaced top wall panels hingedly connected to opposed side wall panels and a carrying handle hinged to the top wall panels wherein the handle is movable between a retracted position when the handle does not extend above the tops of the articles and a deployed position whereby the handle protrudes above the article tops characterised in that the top wall panels are sized and hinged to the handle such that each top wall panel flexes in a resilient manner, the arrangement being such that the top wall panels are put into tension during initial lifting or lowering movement of the

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handle and are relaxed by further movement of the top panels to cause a pop-up effect when lifting the handle and a retracting effect when lowering the handle.

5 Optionally, the pop-up effect occurs when the top wall panels move upwardly above the horizontal plane containing the upper edges of the side walls and the retracting effect occurs when the top wall panels move downwardly below the horizontal plane containing the upper edges of the side walls.

10 According to an optional feature of this aspect of the present invention there further comprises an intermediate panel hingedly connecting each top wall panel to the handle, the intermediate panel being adapted to move from downward orientation in the retracted position to an upward orientation in the deployed position so as to enable the handle to flex relative to the top wall panels.

15 According to another optional feature of this aspect of the present invention each of the top wall panels further comprises one or more apertures to receive an upper portion of an article.

20 Preferably the aperture is ellipsoidal in shape so as to be circular in diameter in both the deployed and retracted positions.

According to an optional feature of this aspect of the present invention the carrier is a basket type carrier.

25 A second aspect of the present invention provides a blank for forming an article carrier for carrying a plurality of articles which blank comprises a plurality of panels for forming the opposed sides and ends of the carton hingedly connected together and a pair of laterally spaced top wall panels hinged to the respective side wall panels and a handle panel hinged to the top wall panel characterised in that the top wall panels are sized and hinged to the handle
30 such that each top wall panel flexes in a resilient manner in the set up carton, the arrangement being such that the top wall panels are put into tension during initial lifting or lowering

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movement of the handle and are relaxed by further movement of the top panels to cause a pop-up effect when lifting the handle and a retracting effect when lowering the handle.

According to an optional feature of this second aspect of the present invention there further
5 comprises an intermediate panel hingedly connecting each top wall panel to the handle, the intermediate panel is adapted to move from, downward orientation in the retracted position to an upward orientation in the deployed position so as to enable the handle to flex relative to the top wall panels in a set up article carrier.

10 According to another optional feature of the second aspect of the present invention the top wall panel further comprises a plurality of ellipsoidal apertures to receive an upper portion of an article.

Exemplary embodiments of the invention will now be described, by way of example only,
15 with reference to the accompanying drawings in which:

FIGURE 1 is a plan view of a unitary blank from which an article carrier according to one aspect of the invention is formed;

20 FIGURES 2, 3 and 4 illustrate the construction of the article carrier from the blank shown in Figure 1;

FIGURE 5 illustrates the article carrier in a set up and loaded condition with the handle in a deployed position;

25

FIGURE 6 is a perspective view of the article carrier shown in Figure 5 with the handle structure in a retracted position; and

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FIGURES 7, 8 and 9 are cross-section views of the article carrier shown in Figures 5 and 6 illustrating the pop-up effect of the handle structure.

5 Detailed Description of the Preferred Embodiments

Referring to the drawings and in particular Figure 1, there is shown a blank 10 for forming an article carrier, which blank is formed from paperboard or other suitable foldable sheet material. The article carrier formed from the blank is adapted to accommodate a plurality of articles, for example six bottles arranged in two rows of three bottles each. It is envisaged that the carrier can be adapted to accommodate a different number and/or configuration of articles according to user requirements.

10 The blank 10 comprises a plurality of panels for forming the opposed sides, ends and base of an article carrier. In this embodiment there comprises a first end wall panel 12, first side wall panel 14, second end wall panel 16 and second side wall panel 18 hingedly connected one to the next in series along fold lines 20, 22 and 24 respectively.

15 In Figure 1, an 'arrowhead' style basket carrier is formed, whereby the opposing ends are pushed together to separate the opposing side wall panels. In order to achieve this, the end wall panels are divided into two parts so that first end wall panel 12 comprises first part 26 and second part 28 hingedly connected together along fold line 30. Similarly second end wall panel 16 comprises first part 32 and second part 34 hingedly connected together along fold line 36. Of course, it is envisaged that in other embodiments, a 'parallelogram' style of basket carrier can be used without departing from the scope of invention.

20 One or more securing flaps 38, 40 and 44 are hingedly connected to an end edge of one of the end wall panels 12 to be secured to the opposing end of the carrier blank during construction of the carrier, described below.

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Base wall panels 46 and 50 are provided which are, preferably, hingedly connected to first and second side wall panels 14 and 18 respectively along fold lines 48 and 51.

5 A handle structure H is provided and is connected to the sides or ends of the article carrier by means of one or more top wall panels, so that top wall panel 52 is hingedly connected to first side wall panel along fold line 54 and second top wall panel 68 is hingedly connected to second side wall panel 18 along fold line 70.

10 In Figure 1, the handle structure H is provided by a pair of handle panels 62 and 76 which are hingedly connected to the respective one of the top wall panels 52, 68 along fold lines 64 and 78 respectively. Each handle panel is provided with a hand aperture 65a, 65b and one or more handle flaps 66a, 66b to provide a more comfortable handle arrangement. The top wall panel(s) 52, 68 further comprise one or more apertures 56a, 56b struck from their respective top wall panels 52, 68. The apertures may be elliptical in shape and viewed from above they
15 are circular so as to receive an article, although other shapes are envisaged, without departing from the scope of the invention. The shape of the apertures in Figure 1 enable the top panels to move from deployed to retracted positions, described in more detail below.

20 There may further comprise one or more protruding tabs 57a, 57b extending from the respective ones of the side wall panels 14, 18 respectively. In use, the protruding tabs provide additional protection for the upper portions of the articles.

In one class of embodiments, the handle structure H is allowed to flex relative the top wall panels 52, 68 and, to this end, intermediate panels 58 and 72 hingedly interconnect top wall
25 panels 52 and 68 to the respective handle panels 62 and 76 along fold lines 60, 64 and 74, 78.

It is envisaged that the construction of the article carrier can be formed by a series of sequential folding and gluing operations in a straight line machine, so that the carrier is not required to be rotated or inverted to complete its construction. The folding process is not
30 limited to that described below and may be altered according to particular manufacturing requirements.

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Figures 2, 3 and 4 illustrate the forming process of the carrier. The first stage of construction is to form the side and end walls so that panel 26 is folded inwardly along fold line 30 and in to face contacting arrangement with panel 28, shown in Figure 3. Thereafter, second side wall panel 18 is folded inwardly about fold line 36 to replace overlapping arrangement with first side wall panel 14. Second side wall panel 18 is secured to the securing flap 38 by glue G (Figure 3) or other suitable means known in the art. Thus the carrier is in a flat collapsed condition as shown in Figure 4, ready to be supplied to the user or bottling plant for loading and final construction.

In some embodiments, handle panels 62 and 76 are secured together by glue G or other suitable means known in the art.

In order to erect the carrier of Figure 4 the opposing end edges defined, at least in part, by fold lines 30 and 36, are pushed in an inward direction so as to separate panels 34, 18 and 26 from opposing panels 32, 14 and 28 respectively. Articles, for example bottles B1, B2 and B3 are loaded into the article carrier by relative vertical movement between the article carrier and the bottles, as is well known, and the outer portions of the bottles are inserted through the apertures 56a and 56b. Base panels 46 and 50 are folded inwardly and are secured together in overlapping arrangement, by glue or other suitable means, for example a locking tab arrangement, as is known in the art. The article carrier is then in a set up and loaded condition as shown in Figure 5.

In order to complete the construction of the carrier so that the article carriers can be shipped or stacked, the handle arrangement is pushed in a downward direction X, as shown in Figure 6.

The top wall panels 52, 68 are sized and hingedly connected to the handle H such that each side wall panel 14, 18 and/or each top wall panel 52, 68 flexes in a resilient manner when the handle is moved downwardly. This causes the top wall panels 52, 68 to be put into tension during the initial lowering movement of the handle H.

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As the lower edge E (Figures 7 and 8) of the handle H drops beneath the horizontal plane P (Figure 8) containing the upper side edges of the side walls 14, 18 the tension in the top panels forces the handle structure H downwards providing a automatic retracting effect so
5 that the handle H is positioned below the tops of the bottles B3, as shown in Figures 6 and 7.

To assist in this handle movement, intermediate panels 58, 72 may be provided to act as articulating parts so that the handle H can move relative the top wall panels 52, 68. This results in the intermediate panels 58, 72 moving from an upwardly oriented position shown in
10 Figure 9 to a downwardly oriented position shown in Figure 7 and reduces the prospect of the top panels creasing, or tearing.

Conversely, in order to move the handle H into a deployed position from the position in Figure 7, the end user lifts the handle causing the top panels to be moved upwardly and the
15 side wall panels 52, 68 and in some embodiments, the intermediate panels 58, 72 flex. As the lower edge E of handle H passes through the horizontal plane P shown in Figure 8, the side walls 52, 68 force the handle structure upwards to cause a pop-up effect.

The 'pop up' and 'automatic retracting' effects are caused by making the width W1 and W2
20 of top panels (and optionally the intermediate panels) greater than the width of the end wall W3 thereby creating an imbalance effect in the horizontal plane P.

One advantage of employing the present invention is that the loaded carriers can be stored or shipped by stacking the carriers without destroying the integrity of the handle structure.
25

The present invention and its preferred embodiments relate to an arrangement for providing a retractable handle structure in a basket style carrier. However, it is anticipated that the invention can be applied to a variety of carriers, for example wrap around or fully enclosed cartons and is not limited to those of the type hereinbefore described.
30

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It will be recognised that as used herein, directional references such as “top”, “base”, “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:
5 indeed it is envisaged that hinged connection can be formed from one or more of one of the following, a score line, a frangible line or a fold line, without departing from the scope of invention.

It should be understood that various changes may be made within the scope of the present
10 invention, for example, the size and shape of the panels and apertures may be adjusted to accommodate articles of differing size or shape, alternative base closure structures may be used. The article carrier may accommodate more than one article in different arrays.

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CLAIMS

1. A carton of the basket type carrying a plurality of articles for example bottles, which carton comprises a plurality of panels for forming the opposed sides and ends of the carton including a pair of laterally spaced top wall panels hingedly connected to opposed side wall panels and a carrying handle hinged to the top wall panels wherein the handle is movable between a retracted position when the handle does not extend above the tops of the articles and a deployed position whereby the handle protrudes above the article tops characterised in that the top wall panels are sized and hinged to the handle such that each top wall panel flexes in a resilient manner, the arrangement being such that the top wall panels are put into tension during initial lifting or lowering movement of the handle and are relaxed by further movement of the top panels to cause a pop-up effect when lifting the handle and a retracting effect when lowering the handle.
2. An article carrier according to claim 1 wherein the pop up effect occurs when the top wall panels move upwardly above a horizontal plane containing the upper edges of the side wall panels and the retracting effect occurs when the top wall panels move downwardly below the same horizontal plane.
3. An article carrier as claimed in claim 1 or claim 2 further comprising an intermediate panel hingedly connecting each top wall panel to the handle and wherein the intermediate panel is adapted to move from downward orientation in the retracted position to an upward orientation in the deployed position so as to enable the handle to flex relative to the top wall panels.
4. An article carrier as claimed in any preceding claim wherein each of the top wall panels further comprises a plurality of apertures each to receive an upper portion of an article.
5. An article carrier as claimed in claim 4 wherein each aperture is normally ellipsoidal in shape so as to be circular in diameter in both the deployed and retracted positions.

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6. A blank for forming an article carrier for carrying a plurality of articles which blank comprises a plurality of panels for forming the opposed sides and ends of the carton hingedly connected together and a pair of laterally spaced top wall panels hinged to the respective side wall panels and a handle panel hinged to the top wall panel characterised in that the top wall panels are sized and hinged to the handle such that each top wall panel flexes in a resilient manner in the set up carton, the arrangement being such that the top wall panels are put into tension during initial lifting or lowering movement of the handle and are relaxed by further movement of the top panels to cause a pop-up effect when lifting the handle and a retracting effect when lowering the handle.

10

7. A blank as claimed in claim 6 further comprising an intermediate panel hingedly connecting each top wall panel to the handle, the intermediate panel being adapted to move from downward orientation in the retracted position to an upward orientation in the deployed position so as to enable the handle to flex relative to the top wall panels in the set up carton.

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8. A blank as claimed in claim 6 or claim 7 wherein the top wall panel further comprises a plurality of ellipsoidal apertures each to receive an upper portion of an article.

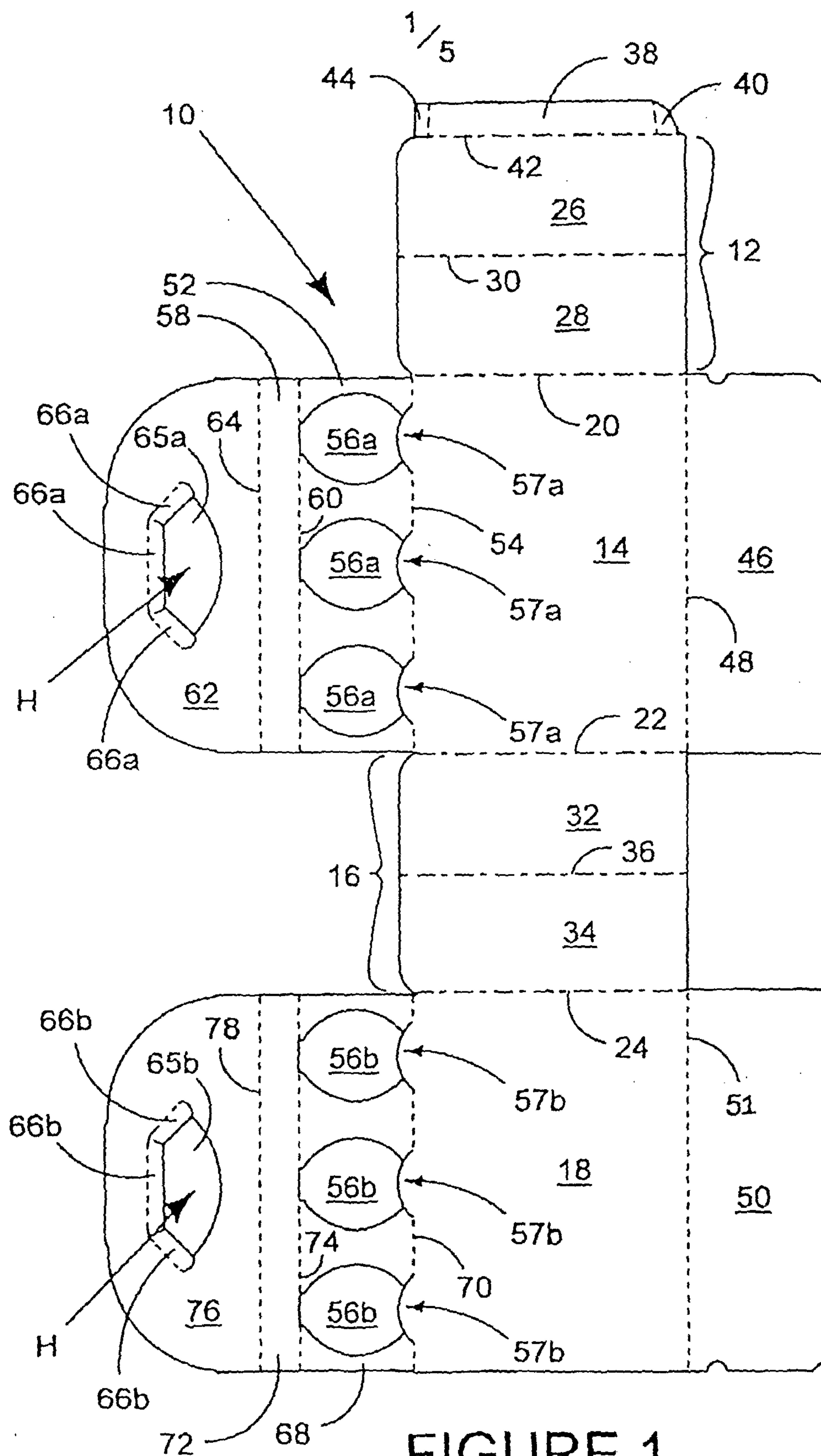


FIGURE 1

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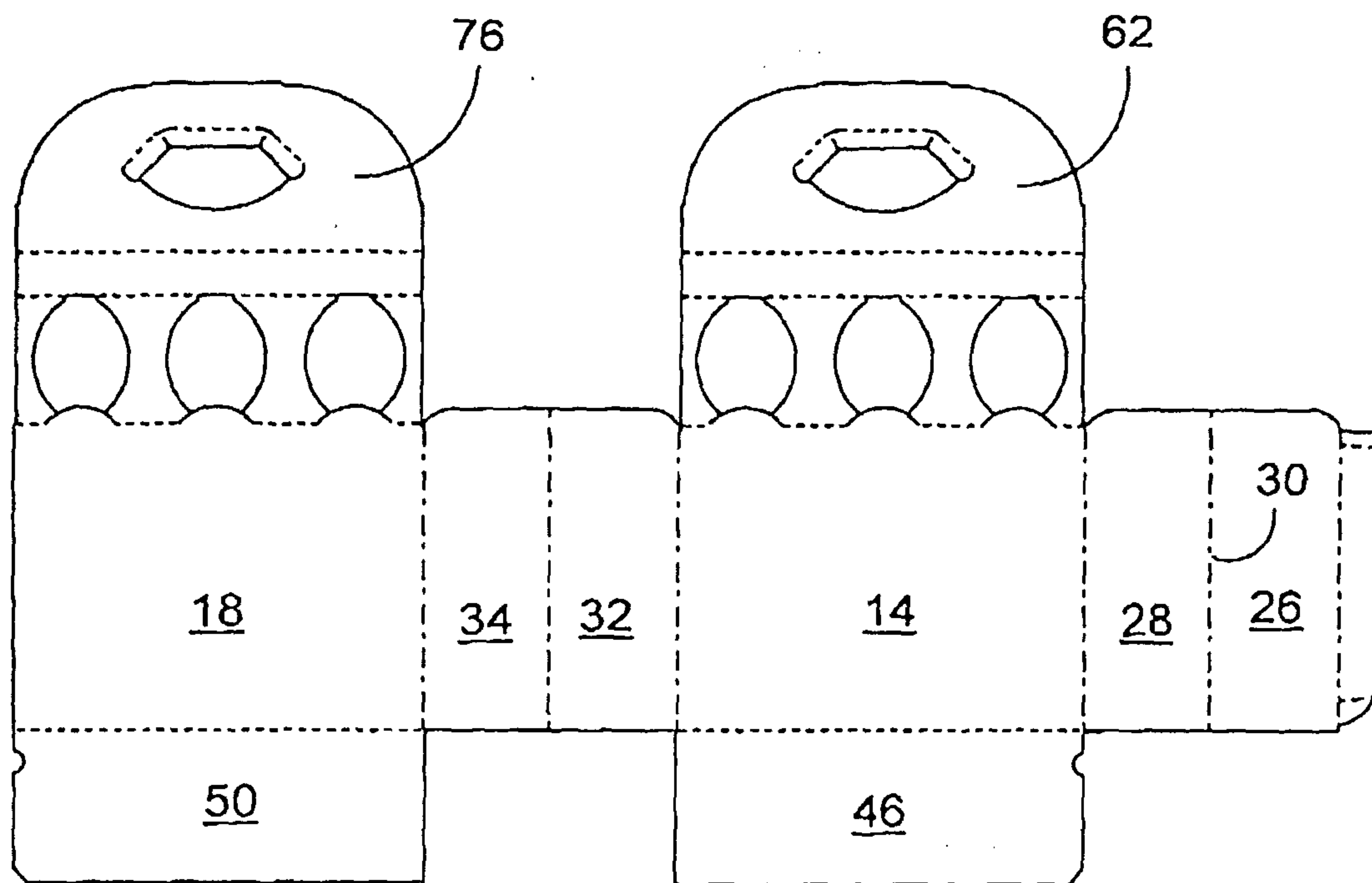


FIGURE 2

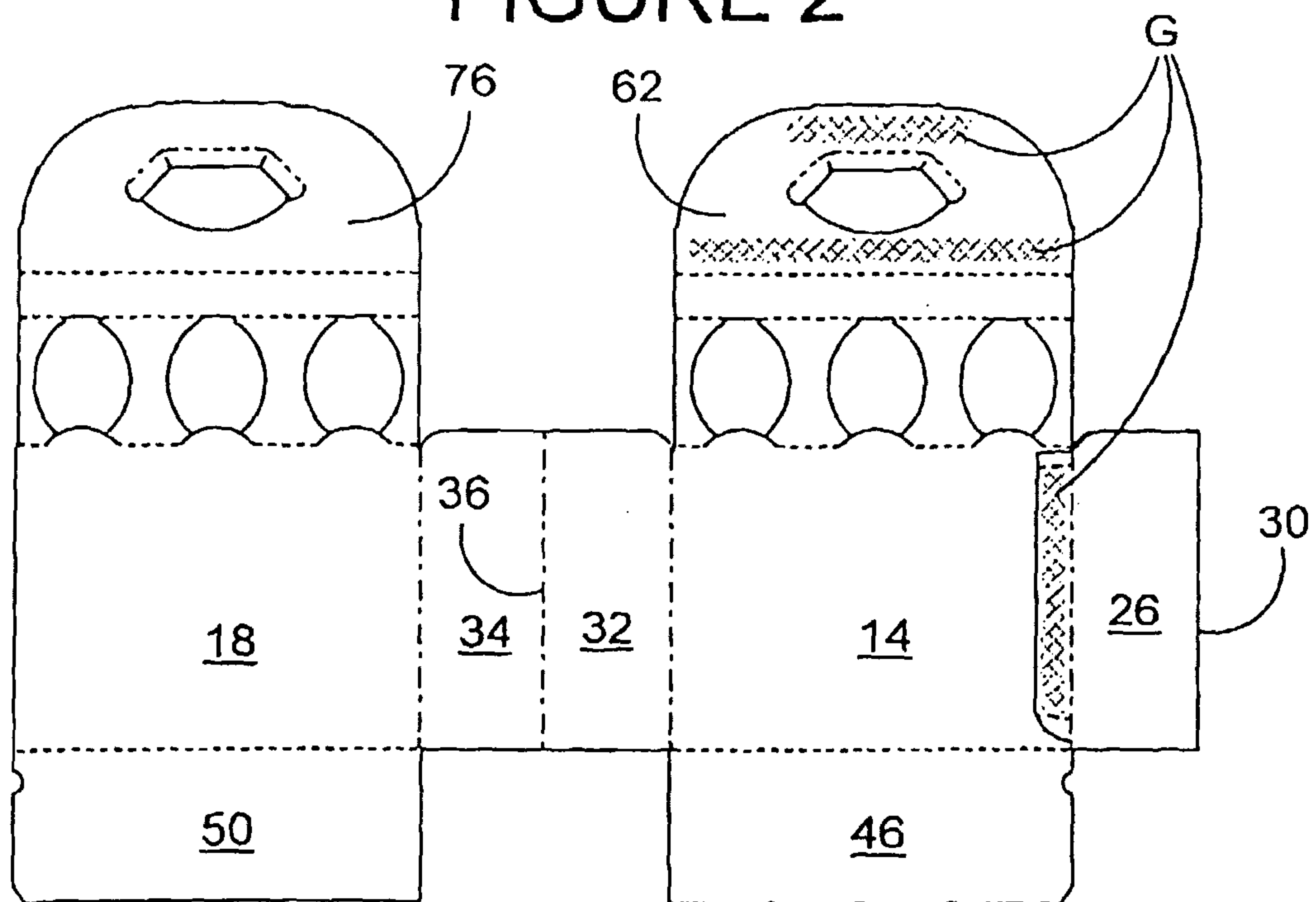


FIGURE 3

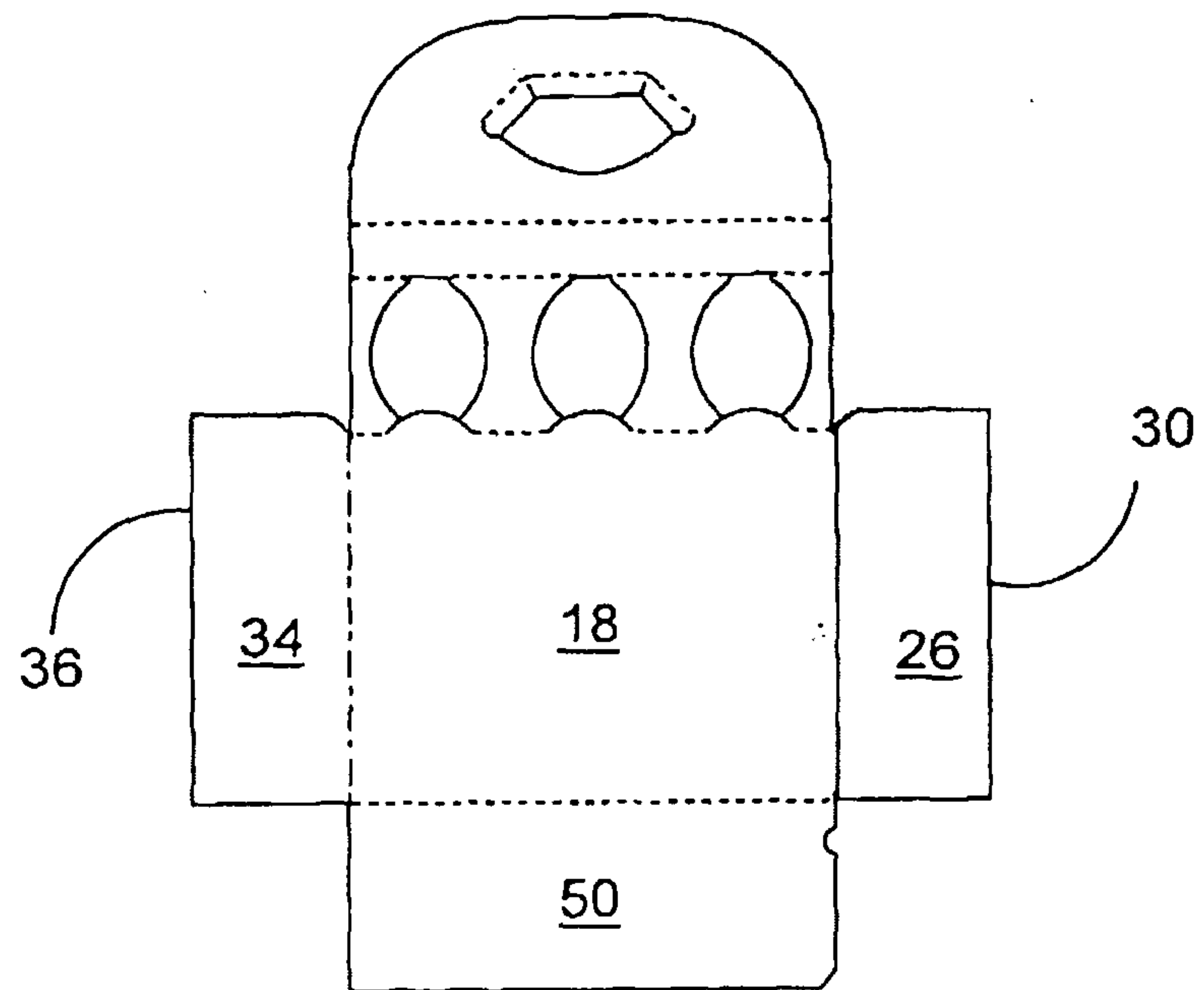
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FIGURE 4

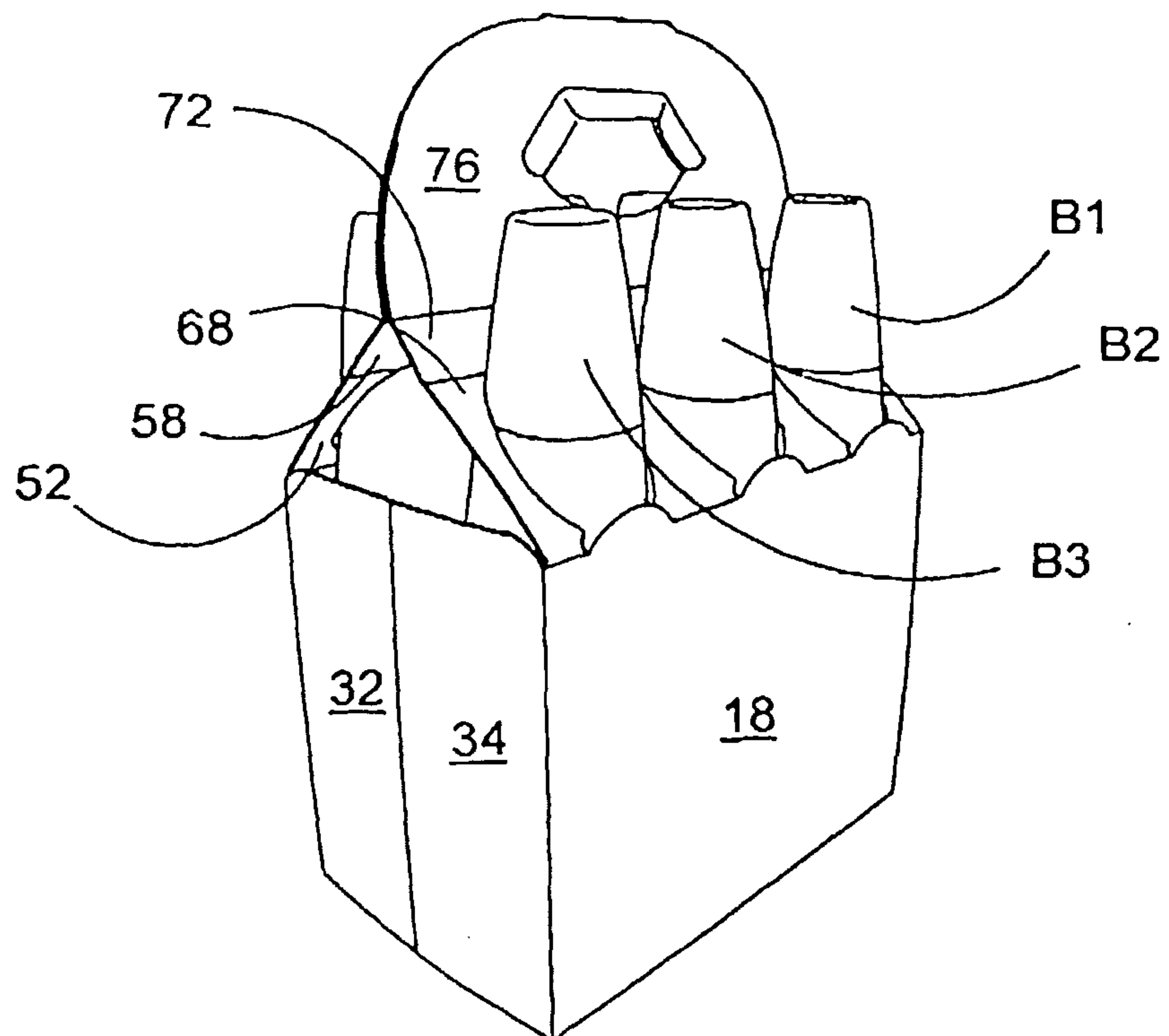


FIGURE 5

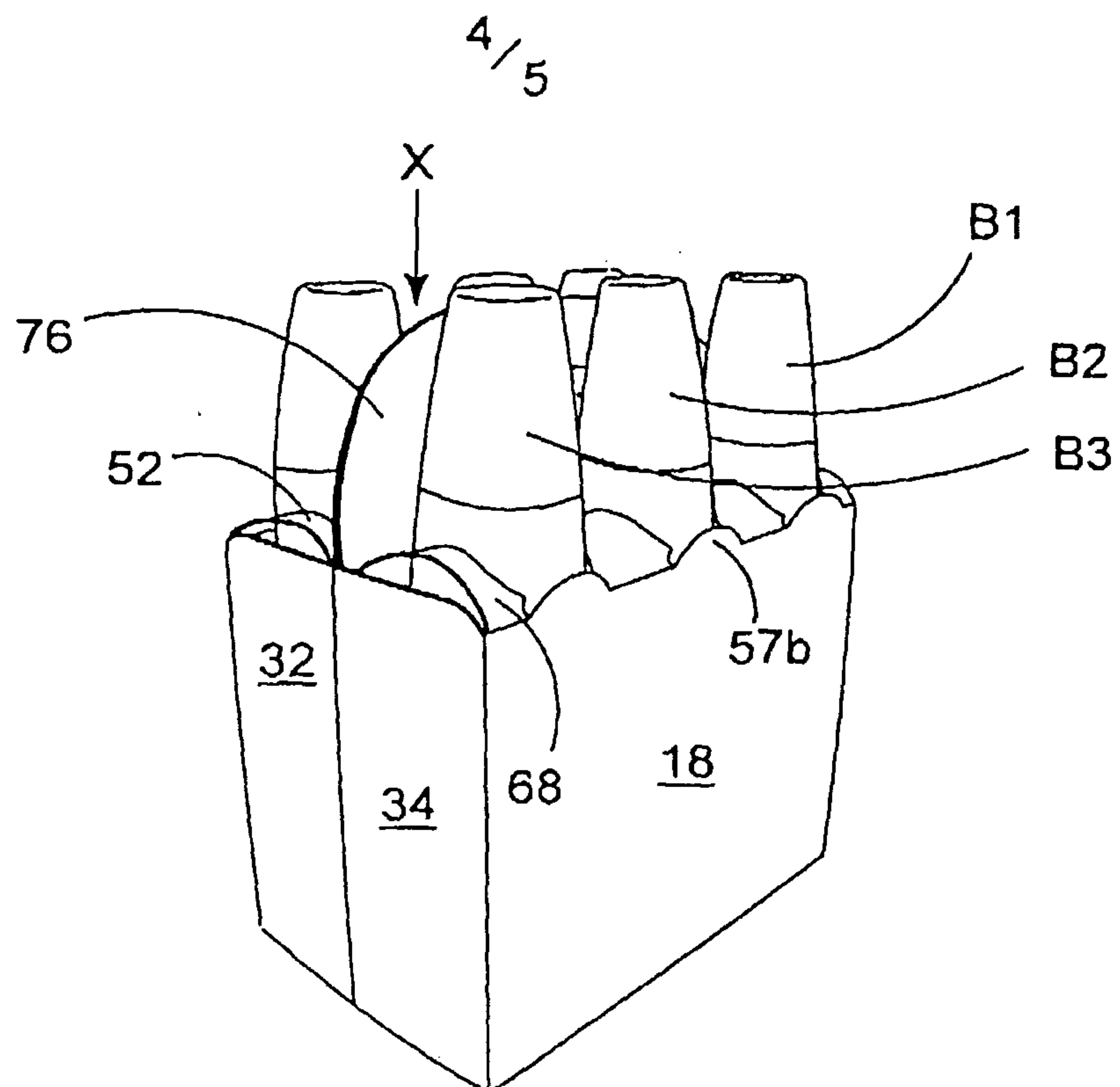


FIGURE 6

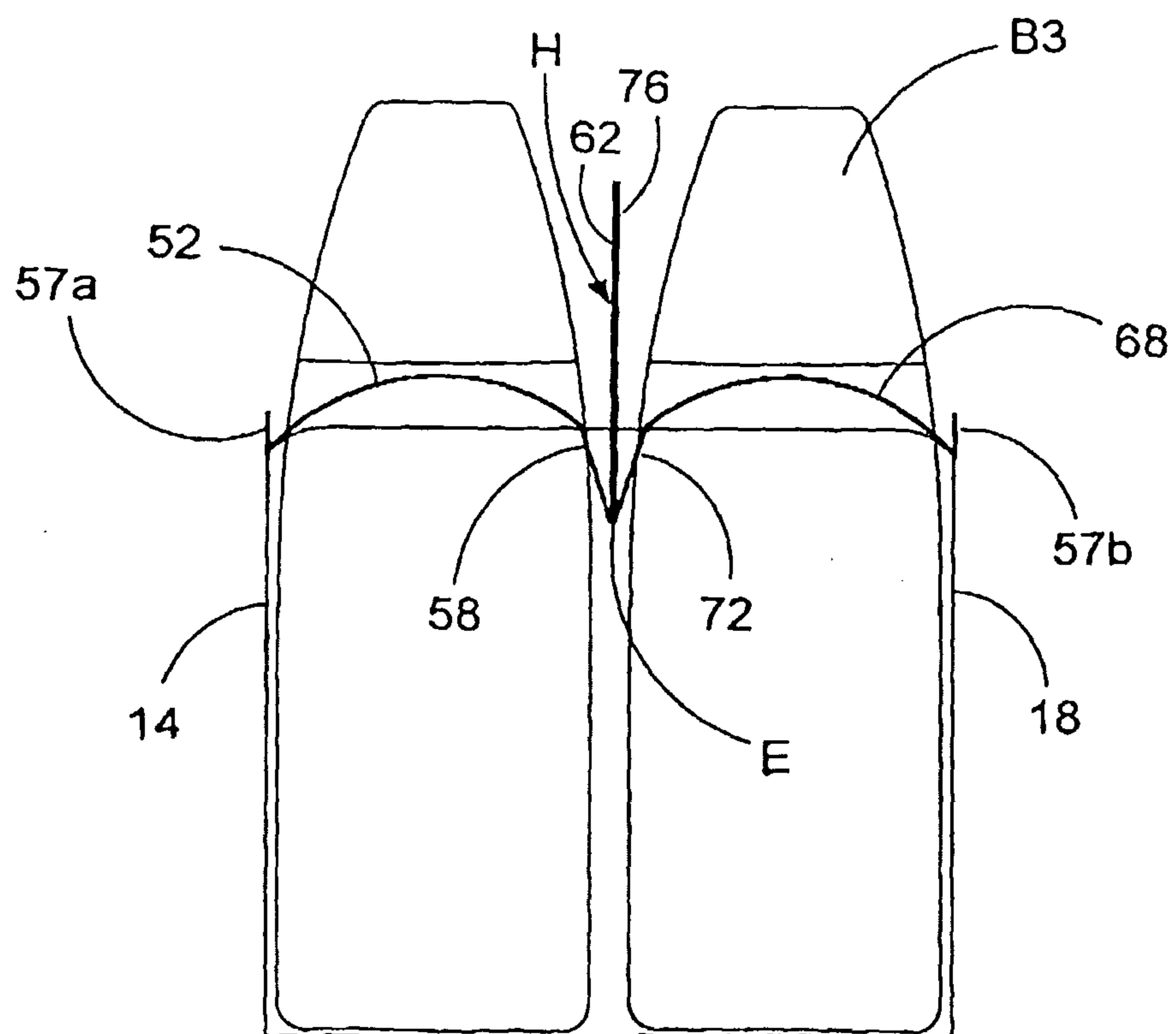


FIGURE 7

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