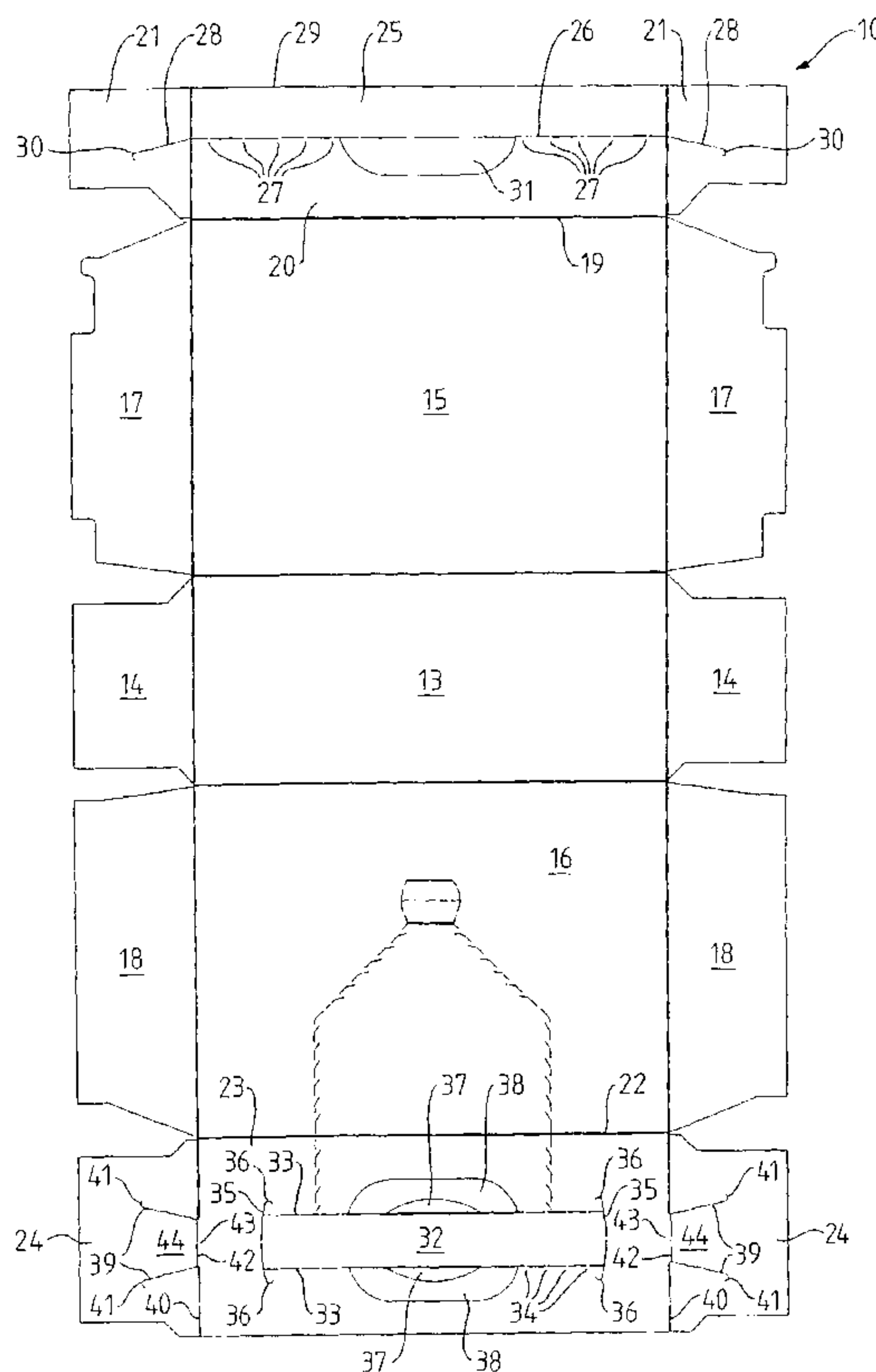




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 (54) Title: A PAPERBOARD CARTON WITH REINFORCED HANDLE



(57) **Abrégé/Abstract:**

There is provided a paperboard carton 10 having a base 13, side panels 15, 16, end panels 14, 17, 18, 21, 24 and first and second top panels 20, 23. The first top panel 20 defines a strap handle 25 and underlies the second top panel 23 which provides access means 38 for the strap handle 25. The strap handle 25 extends into first end panels 21 and second end panels 24 having reinforcing portions secured to those parts of the strap handle 26 in the first end panels 21.

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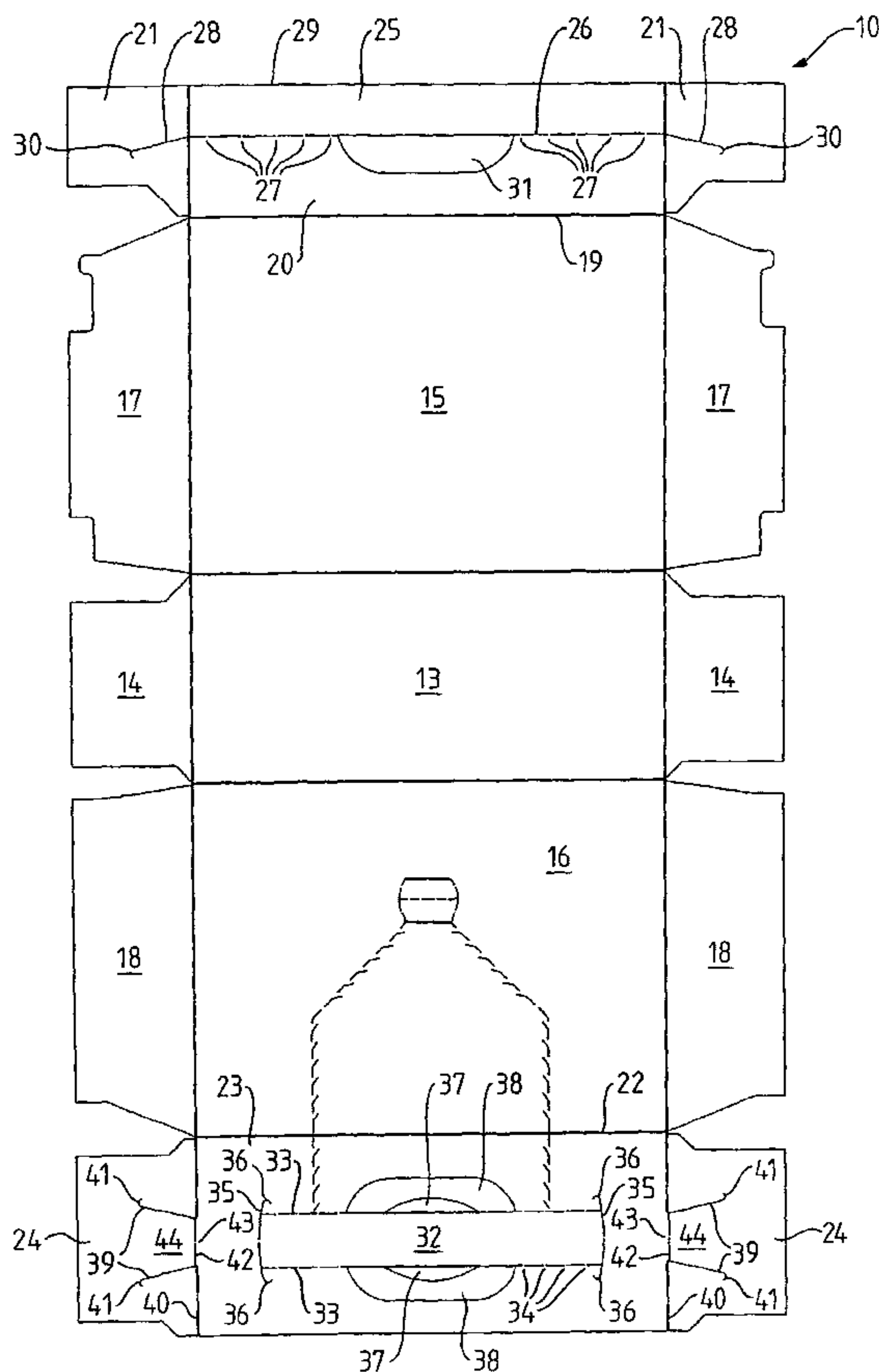
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(54) Title: A PAPERBOARD CARTON WITH REINFORCED HANDLE

(57) **Abstract:** There is provided a paperboard carton 10 having
a base 13, side panels 15, 16, end panels 14, 17, 18, 21, 24 and
first and second top panels 20, 23. The first top panel 20 defines a
strap handle 25 and underlies the second top panel 23 which pro-
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ing reinforcing portions secured to those parts of the strap handle
26 in the first end panels 21.

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A PAPERBOARD CARTON WITH REINFORCED HANDLE

The present invention relates to paperboard cartons and more particularly, but not exclusively to cartons for containing a number of cans or bottles as a multipack.

According to the present invention there is provided a carton having a base, oppositely disposed side walls extending from the base and first and second top panels hingedly connected to respective side walls along first and second top side edges, each top panel having oppositely disposed end panels which are folded down and secured relative to other end panels, said first top panel underlying the second top panel and having a portion disposed parallel to the top side edges and constituting by means of one or more cuts a strap handle extending the length of the top and into the first end panels, the second top panel having access means for enabling the strap handle to be gripped, the second end panels each having a reinforcing portion adhered to the associated part of the strap handle in the first end panels and defined between a pair of spaced cuts and the fold between the second end panels and the second top panel.

Preferably the reinforcing portions of the second end panels are connected to the second top panel by way of frangible bridges. Conveniently the spaced cuts taper away from each other from spaced locations on the top side edges and also the spaced cuts terminate with outwardly extending radiuses.

Ideally the adhesive connection between the strap handle and each reinforcing portion extends from immediately adjacent the top edge of the reinforcing portion to the free edge of the end panels remote from the top edge.

In preferred embodiments the cuts defining the strap handle in the first end panels are disposed below the associated cuts in the second end panels and also the centrally disposed portion of the first top panel is a marginal edge portion of the first top panel.

It is a preferred feature that the second top panel has a secondary handle portion which overlies the strap handle and is adhered thereto. Preferably midway between its ends, the secondary handle portion has lateral flaps which in use can be folded around the strap handle.

A further preferred feature is that said access means comprises openings on either side of the central portion of the secondary handle portions. In addition the secondary handle portion extends at its lengthwise ends beyond the openings towards the second end panels by means of further spaced cuts which terminate in a transverse cut at each end, which transverse cuts are spaced from the respective top end edges. Ideally frangible bridges are provided in the further spaced cuts and transverse cuts.

In preferred arrangements the base has oppositely disposed base end panels which are folded up and each side wall has oppositely disposed side end panels, the base end panels and side end panels constituting said other end panels. Normally, the top, base, sides and ends of the carton are substantially rectangular.

Embodiments of the invention will now be described in more detail. The description makes reference to the accompanying drawings in which:

Figure 1 shows the inside of a paperboard blank for producing a carton according to the present invention,

Figure 2 shows the inside of the figure 1 blank with some glue lines included,

Figure 3 shows a perspective view from one side of the carton according to the present invention,

Figure 4 shows a perspective view from the other side of the carton with its handle raised, and

Figure 5 is an exaggerated partial view of a central, lengthwise section through the carton.

In the figures is shown a paperboard blank 10 for producing a carton 11 containing a number of articles such as cans 12. The blank 10 provides a rectangular base 13 having oppositely disposed base end panels 14 hingedly connected thereto. Side panels 15, 16 are hingedly connected to opposite side edges of the base 13 and each side panel 15, 16 has oppositely disposed side end panels 17, 18 hingedly connected thereto. Hingedly connected to one side panel 15 along a first top edge 19 is a first top panel 20 having oppositely disposed first end panels 21. Hingedly connected to the second side panel 16 along a second top edge 22 is a second top panel 23 having oppositely disposed second end panels 24.

The marginal portion of the first top panel 20 parallel to the first top edge 19 defines a strap handle 25 by means of a cut line 26 which, in this example, incorporates frangible bridges 27 at intervals along its length. The cut line 26 leads into end panel cuts 28 which taper outwardly away from the free edge 29 of the first top panel. Each cut 28 extends only partly into the first end panel 21 and terminates with a stress relieving radius 30. At the central area of the first top panel 20 is an opening 31 adjacent the strap handle for handle access purposes.

The second top panel 23, which when assembled overlies the first top panel 20 has a central secondary strap handle portion 32 which in use is glued on top of the strap handle 25 of the first top panel 20. The secondary strap handle portion 32 is defined between parallel cuts 33 which are arranged to be centrally disposed in the top of the assembled carton 11 and which preferably incorporate frangible bridges 34 along their length. The ends of the handle portion 32 are defined by transverse cuts 35 spaced from the respective second end panels 24. The transverse cuts 35 ideally incorporate stress-relieving radii 36 at their ends and the ends of each transverse cut 35 arc slightly away from its adjacent end panel.

At a central location of the handle portion 32, arcuate lateral flaps 37 are provided. Handle access openings 38 are also provided in the second top panel 23 on both sides of the handle portion 32.

In each second end panel 24 are provided a pair of cuts 39 which taper outwardly from spaced locations in the fold line 40 between the second top panel 23 and the second end panel 24. The ends of the cuts 39 remote from the fold line 40 are each provided with a stress-relieving radius 41. The fold line 40 between each pair of cuts is actually a further cut 42 which is provided with a frangible bridge 43. The further cut 42 and the cuts 39 each defining therebetween a reinforcing portion 44 of the second end panel 24.

When the blank 10 is assembled to form the carton 11 and the articles are enclosed with the carton, the handle portion 32 has been glued to the strap handle 25 by means of glue lines 45 shown on figure 2 and the first and second end panels 21, 24 have been glued to each other by means of glue lines 46 shown in figure 2. A further glue line 47 secures the free edge of the second top panel 23 to the first top panel 20. It will be seen that the glue lines 46 extend from adjacent the cut portion 42 of the fold line 40 to adjacent the free edge of the end panels. The strap handle 25 is, therefore, glued to second end panels 24 substantially along the whole length of the second end panels to improve handle strength.

With the carton 11 is to be lifted, the consumer can insert fingers through the openings 31, 38 to grasp the strap handle 25 from below, the flaps 37 being folded below the strap handle 25. When the handle is lifted, the frangible bridges 27, 34, 43 are severed such that the central portion of the strap handle 25 and secondary handle portion 32 are raised out of the plane of the top of the carton 11. The reinforcing portions 44 of the second end panels 24 are also pulled inwardly so as to follow the contours of the top corner articles. This is shown more clearly in figure 5 which shows one of the top corners on an enlarged and exaggerated scale.

The part of the second end flap 24 below the reinforcing portion 44 is secured to the side end panels 17, 18. The resulting handle is strong yet the original carton prior to lifting maintains a neat appearance with minimal openings or surface discontinuities.

It will be appreciated that the precise shape and dimensions of the described features are a matter of design choice and modifications can be made without departing from the scope of the invention. For example, the carton could be adapted for use with other types of articles such as bottles.

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Claims

1. A carton having a base, oppositely disposed side walls extending from the base and first and second top panels hingedly connected to respective side walls along first and second top side edges, each top panel having oppositely disposed end panels which are folded down and secured relative to other end panels, said first top panel underlying the second top panel and having a portion disposed parallel to the top side edges and constituting by means of one or more cuts a strap handle extending the length of the top and into the first end panels, the second top panel having access means for enabling the strap handle to be gripped, the second end panels each having a reinforcing portion adhered to the associated part of the strap handle in the first end panels and defined between a pair of spaced cuts and the fold between the second end panels and the second top panel.
2. A carton as claimed in claim 1 wherein the reinforcing portions of the second end panels are connected to the second top panel by way of frangible bridges.
3. A carton as claimed in claim 1 or claim 2 wherein the spaced cuts taper away from each other from spaced locations on the top side edges and also the spaced cuts terminate with outwardly extending radiuses.
4. A carton as claimed in any one of claims 1 to 3 wherein the adhesive connection between the strap handle and each reinforcing portion extends from immediately adjacent the top edge of the reinforcing portion to the free edge of the end panels remote from the top edge.

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5. A carton as claimed in any one of claims 1 to 4 wherein the cuts defining the strap handle in the first end panels are disposed below the associated cuts in the second end panels.
6. A carton as claimed in claim 5 wherein the centrally disposed portion of the first top panel is a marginal edge portion of the first top panel.
7. A carton as claimed in any one of claims 1 to 6 wherein the second top panel has a secondary handle portion which overlies the strap handle and is adhered thereto.
8. A carton as claimed in claim 7 wherein midway between its ends, the secondary handle portion has lateral flaps which in use can be folded around the strap handle.
9. A carton as claimed in claim 7 or claim 8 wherein said access means comprises openings on either side of the central portion of the secondary handle portions.
10. A carton as claimed in claim 9 wherein the secondary handle portion extends at its lengthwise ends beyond the openings towards the second end panels by means of further spaced cuts which terminate in a transverse cut at each end, which transverse cuts are spaced from the respective top end edges.
11. A carton as claimed in claim 10 wherein frangible bridges are provided in the further spaced cuts and transverse cuts.

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12. A carton as claimed in any one of claims 1 to 11 wherein the base has oppositely disposed base end panels which are folded up and each side wall has oppositely disposed side end panels, the base end panels and side end panels constituting said other end panels.
13. A carton as claimed in claim 12 wherein the top, base, sides and ends of the carton are substantially rectangular.

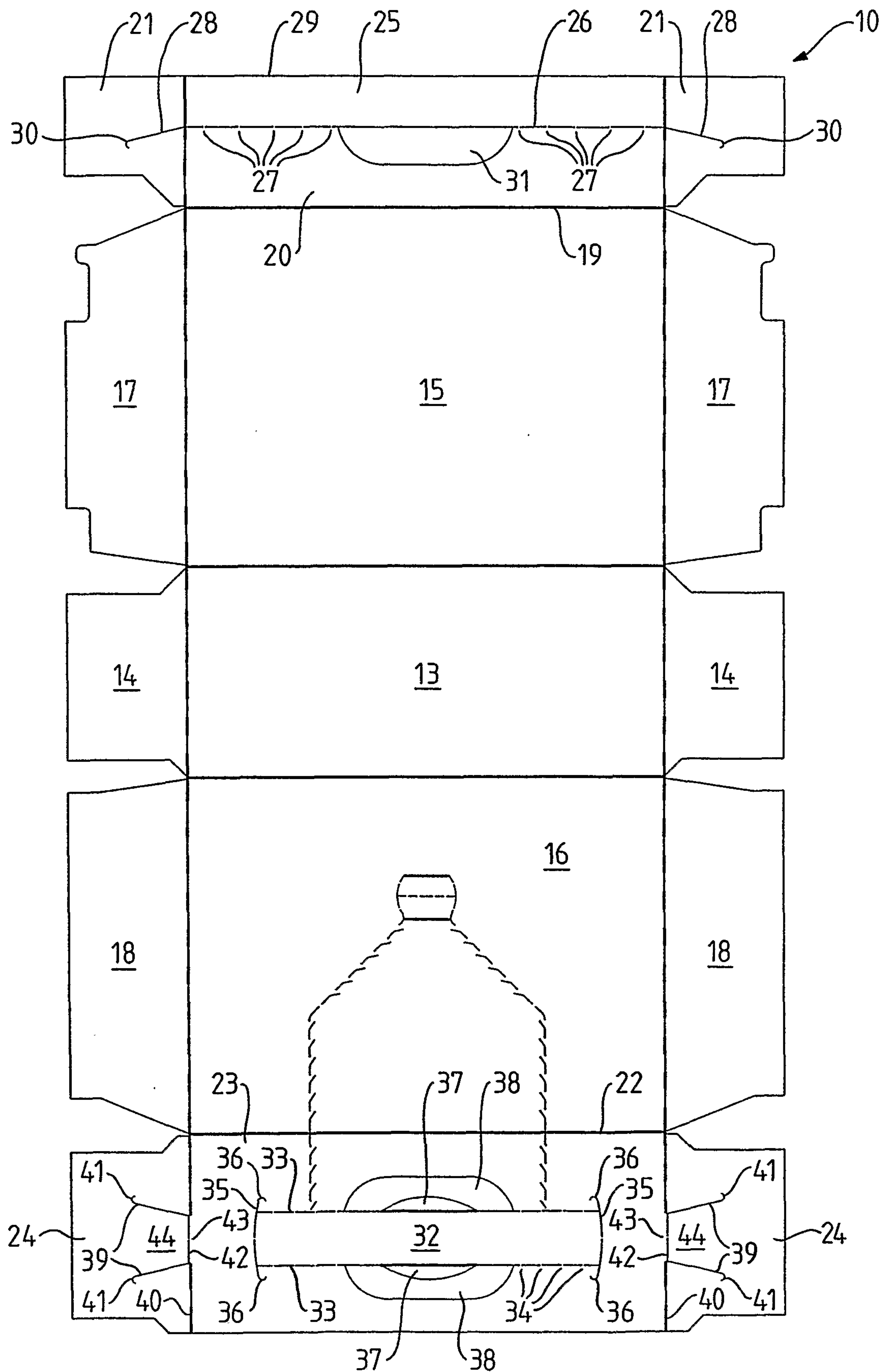


FIG. 1

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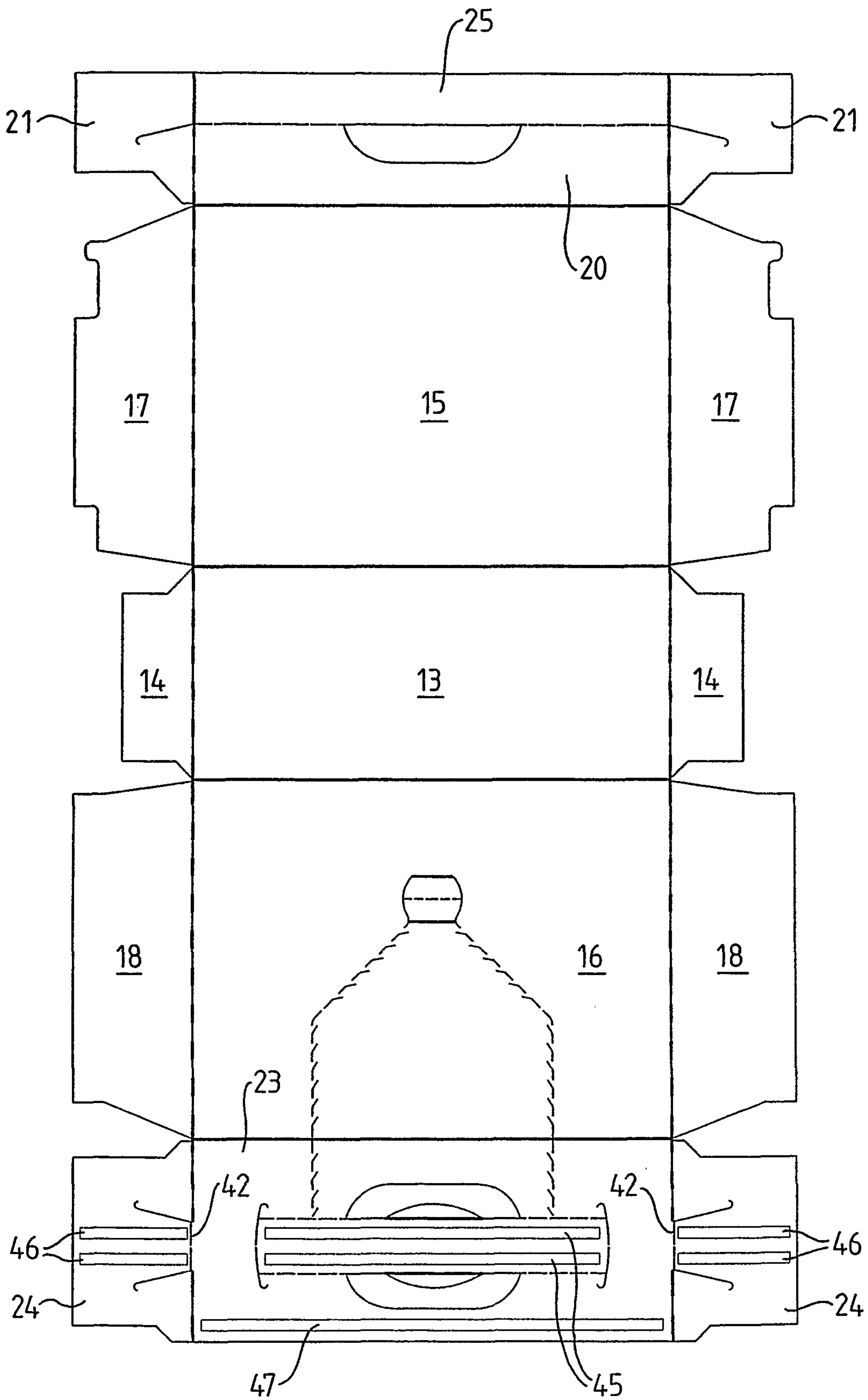


FIG. 2

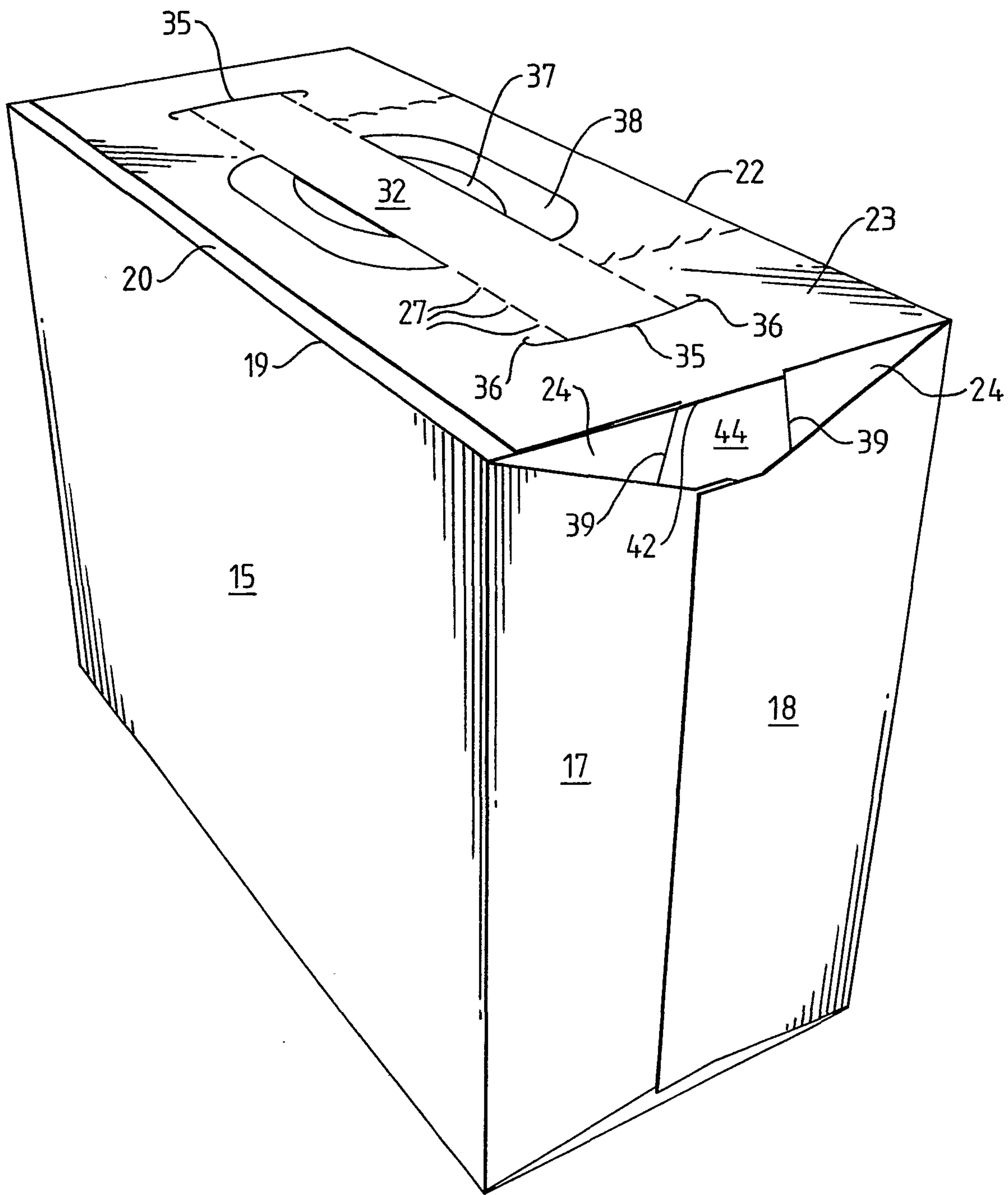


FIG. 3

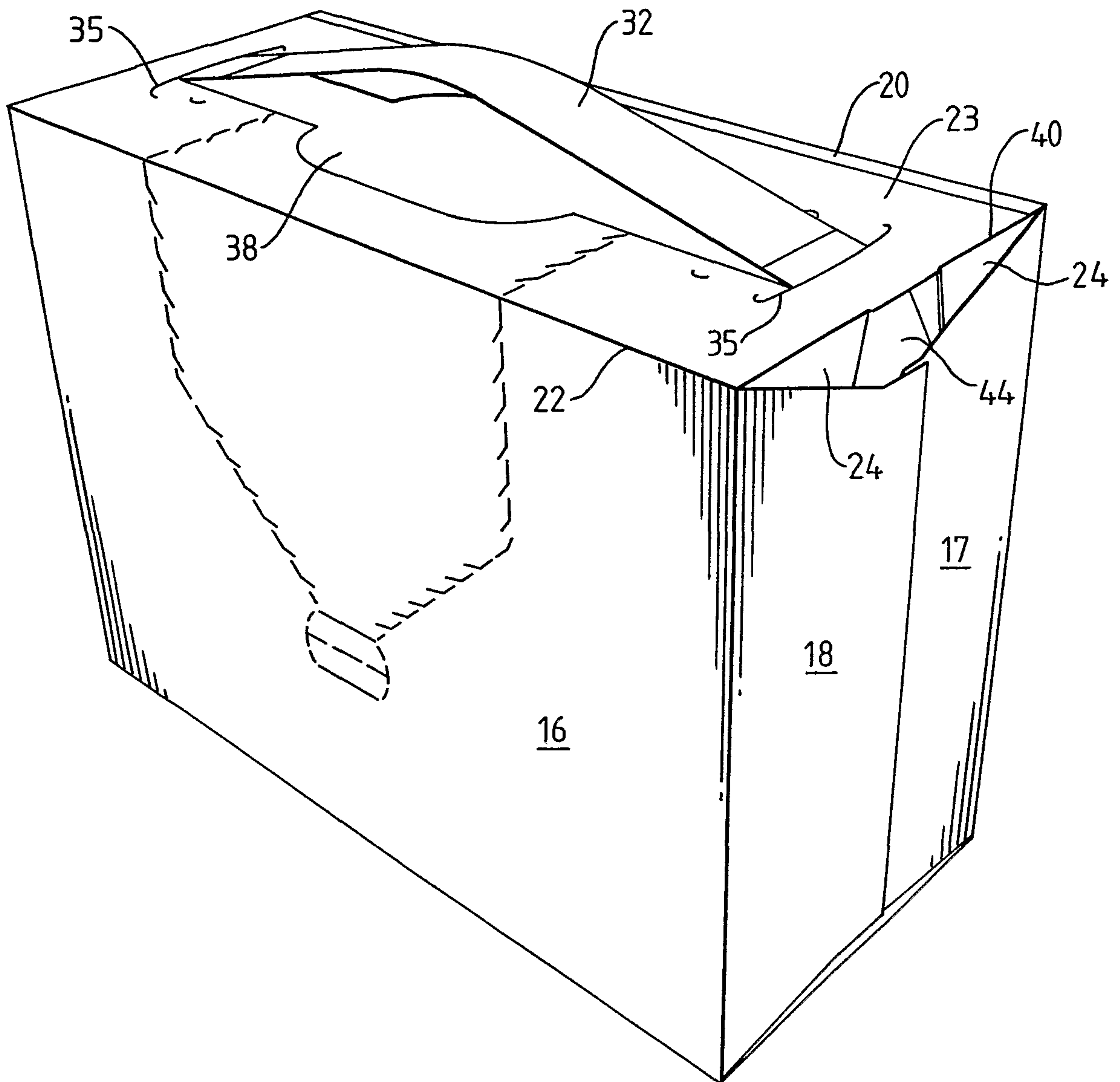


FIG. 4

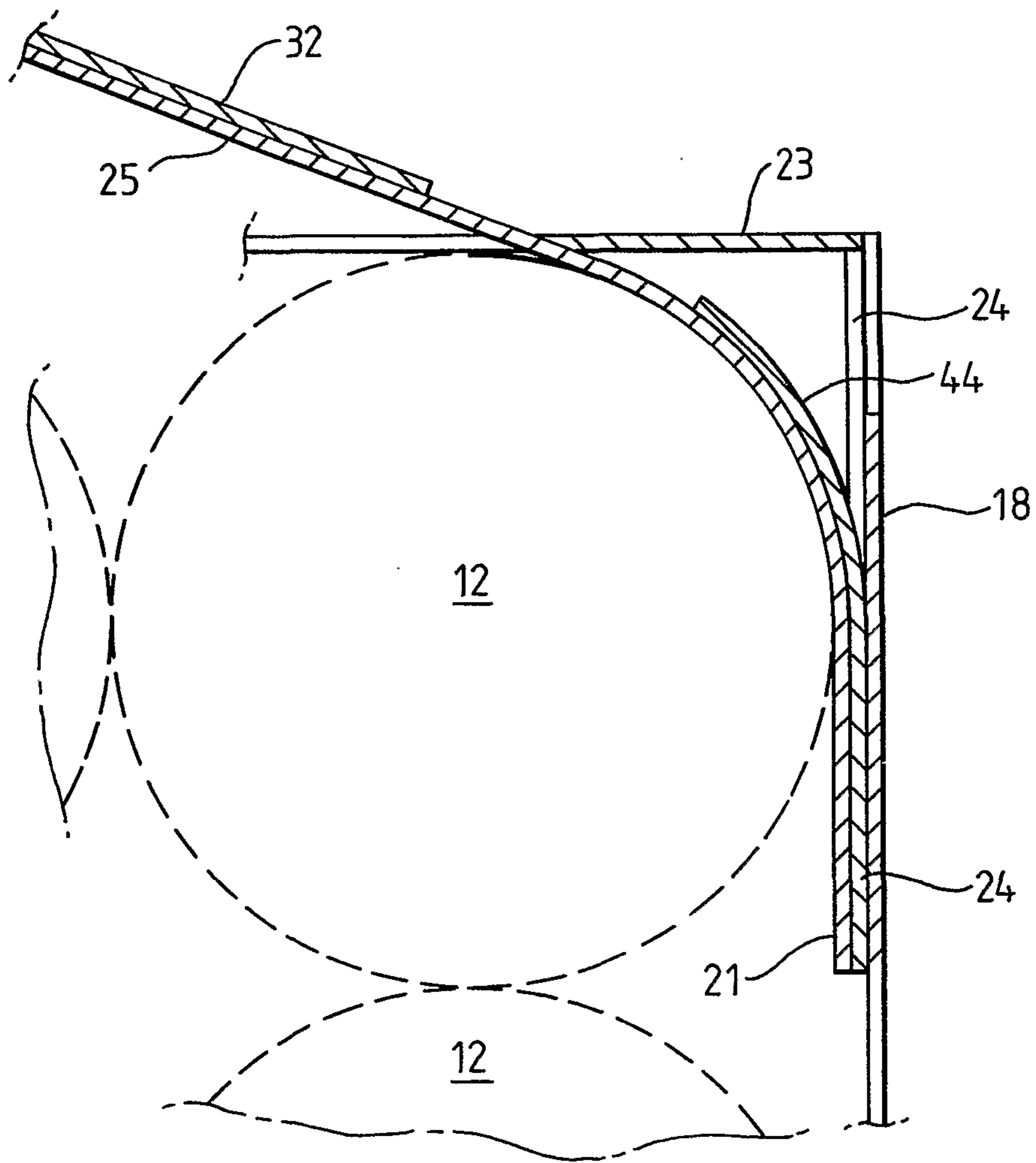


FIG. 5

