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(54) Bottle retaining device

(57) There is provided a paperboard device for attachment to and retention by a number of bottles 12 having annular rims 13 on their necks. The device 11 has a top 16 with apertures having flaps 18 for engagement

below the rims 13. A pair of angled panels 21 extend from the top 16, which panels 21 are in turn hingedly connected to side panels 24 having end extensions 25 for attachment to parts 29 of end flaps.

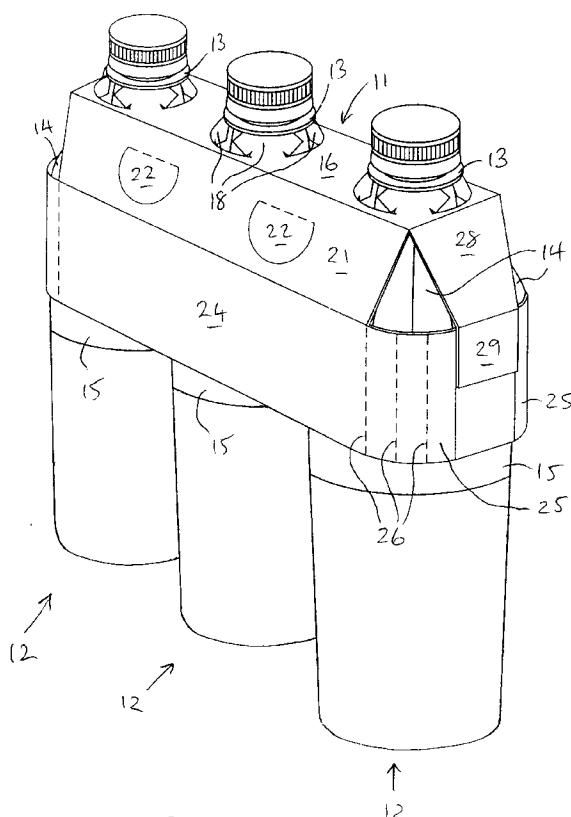


FIGURE 2

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Description

This invention relates to paperboard devices for retaining a plurality of bottles which have a neck and a projecting annular rim. An example of such a bottle is a PET (Polyethyleneterephthalate) bottle for beverages.

According to the present invention there is provided a paperboard device for retaining a plurality of bottles having a projecting annular rim at a location on the neck of the bottle, the device comprising a top panel having a plurality of apertures arranged in a row along its length for receiving the bottle necks, each aperture having formations for engagement and retention below the annular rim, a pair of lengthwise extending angled panels hingedly connected at opposite side edges of the top panel and a pair of lengthwise extending side panels hingedly connected at opposite side edges of the respective angled panels so as in use to lie against the bottles, said side panels having end extensions which in use extend around and follow the contours of the end bottles and which are adhesively secured.

In some embodiments the end extensions at each end of the pack are adhesively secured together. In other embodiments the end extensions at each end are adhesively secured to an end flap which is hingedly connected to the top panel between the angled panels and which, in use, is folded down over the shoulder of its adjacent end bottle.

Preferably the end extensions are provided with multiple creases to assist the following of the bottle contours. Often, said creases and said side panels are, in use, substantially vertical.

One preferred feature is that the end extensions have portions which in use extend upwardly above the hinge lines between the side panels and angled panels. With some embodiments said portions in use extend up to the level of the top panel.

Other preferred features are that the formations in the apertures comprise a number of inwardly projecting flaps and also that handle apertures are provided in the angled panels and/in the top panel. In other arrangements further rows of apertures may be provided.

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

Figure 1 is a view of a blank for producing a device according to the present invention,

Figure 2 is a view of the assembled device attached to a plurality of bottles,

Figure 3 is a view of another blank for producing another device according to the present invention, and

Figure 4 is a view of a blank similar to the figure 3 blank in an assembled condition attached to a plurality of bottles.

Figure 1 shows a paperboard blank 10 for produc-

ing a device 11 as shown in figure 2 for retaining a plurality of bottles 12 having a neck with an annular rim 13 projecting therefrom. The bottles 12 also have shoulders 14 leading from the neck to the side walls 15. Examples of such bottles are PET bottles but other bottles could also be used with the present invention with some modifications where necessary.

The blank 10 has a top panel 16 having along its length three aligned, equally spaced apertures 17 for receiving the bottle necks. Four flaps 18 project into each aperture 17 in order to engage below the rims 13 of the bottles 12. The flaps 18 remain hingedly connected to the top panel 16 by way of curved folds 19.

Hingedly connected to opposite side edges 20 of the top panel 16 are angled panels 21 which may incorporate optional push through handle flaps 22. Alternatively handle holes or flaps may be provided in the top panel 16. Hingedly connected to opposite side edges 23 of the angled panels 21 are side panels 24. Hingedly connected to each side panel 24 at the ends thereof are a pair of oppositely disposed end extensions 25 each of which incorporate a number of optional creases 26 which are substantially perpendicular to side edges 23.

Hingedly connected to and projecting from the top panel 16, at each end thereof, is an end flap 27 which has an angled part 28 and an attachment part 29.

Assembly of the device 11 is described below. Firstly the flat blank 10 is aligned over the tops of the bottles 12, three PET bottles in this embodiment. The blank 10 is then lowered over the bottles 12 so that the necks push through the apertures 17 in the top panel 16, deflecting the flaps 18 upwardly about the folds 19 until the flaps 18 snap resiliently back under the rims 13. The action prevents the bottles from becoming detached accidentally, for example during carrying of the finished device.

The angled panels 21 are then guided down over the shoulders 14 of the bottles and the side panels are guided so as to be against the side walls 15 of the bottles 12. It will be appreciated that the height of the side panels is optional and the side panels can carry significant information or advertisement or other graphic images.

The end extensions 25 of the side panels 24 are then folded around the end bottles in close engagement with the contours of the side walls 15 of the end bottles 12. The end flaps 27 are then hinged downwardly so that the angled parts 28 lie against the shoulders 14 and the attachment parts 29 are secured with adhesive to the end extensions 25 of the side panels 24. It will be understood that the creases 26 assist this contouring of the end extensions 25 around the bottles.

The result is a simple, clip style retaining device for a plurality of bottles. The device uses minimal board yet displays good strength and pack integrity.

Minor alterations could be made to the order of folding and securing the end flaps and end extensions without changing the effect of the device. In addition the device 11 could be pre-glued for later application to the

bottles 12 by an end-user.

Figure 3 shows a blank 110 for a slightly different version of the device. Most parts have a similar form and function to those described above and so have been given identical reference numerals. These parts will not be described again in detail. The end flaps 27 have been omitted from the blank 110 and the top panel 16 extends slightly beyond both end apertures in the lengthwise direction. The end edges 40 of the top panel 16 are curved somewhat so as to approximate to the curve of the side walls 15 of the bottles 12. In addition, the end extensions 25 of the side panels 24 have upper portions 42 which when assembled tend to follow the end edges 40 of the top panel 16 and also the angled end edges 41 of the angled panels 21.

Assembly of this blank 110 is essentially the same as that for blank 10 except that the end extensions 25 are adhesively secured together because the end flaps 27 have been omitted. This is shown in figure 4 although the flaps 18 in this construction are in fact the same as those in the arrangement of figures 1 and 2.

It will of course be appreciated that other numbers of bottles could be retained using this type of device and other rim engaging means could be substituted for those described above. Also, the bottles 12 could be arranged in single or multiple rows.

wherein the end extensions are provided with multiple creases to assist the following of the bottle contours.

Claims

1. A paperboard device for retaining a plurality of bottles having a projecting annular rim at a location on the neck of the bottle, the device comprising a top panel having a plurality of apertures arranged in a row along its length for receiving the bottle necks, each aperture having formations for engagement and retention below the annular rim, a pair of lengthwise extending angled panels hingedly connected at opposite side edges of the top panel and a pair of lengthwise extending side panels hingedly connected at opposite side edges of the respective angled panels so as in use to lie against the bottles, said side panels having end extensions which in use extend around and follow the contours of the end bottles and which are adhesively secured.
2. A device as claimed in claim 1 wherein the end extensions at each end of the pack are adhesively secured together.
3. A device as claimed in claim 1 wherein the end extensions at each end are adhesively secured to an end flap which is hingedly connected to the top panel between the angled panels and which, in use, is folded down over the shoulder of its adjacent end bottle.
4. A device as claimed in any one of claims 1 to 3

5. A device as claimed in claim 4 wherein said creases and said side panels are, in use, substantially vertical.
6. A device as claimed in any one of claims 1 to 5 wherein the end extensions have portions which in use extend upwardly above the hinge lines between the side panels and angled panels.
7. A device as claimed in claim 6 wherein said portions in use extend up to the level of the top panel.
8. A device as claimed in any one of claims 1 to 7 wherein the formations in the apertures comprise a number of inwardly projecting flaps.
9. A device as claimed in any one of claims 1 to 8 wherein handle apertures are provided in the angled panels and/in the top panel.
10. A paperboard blank for producing a device as claimed in any one of claims 1 to 9.

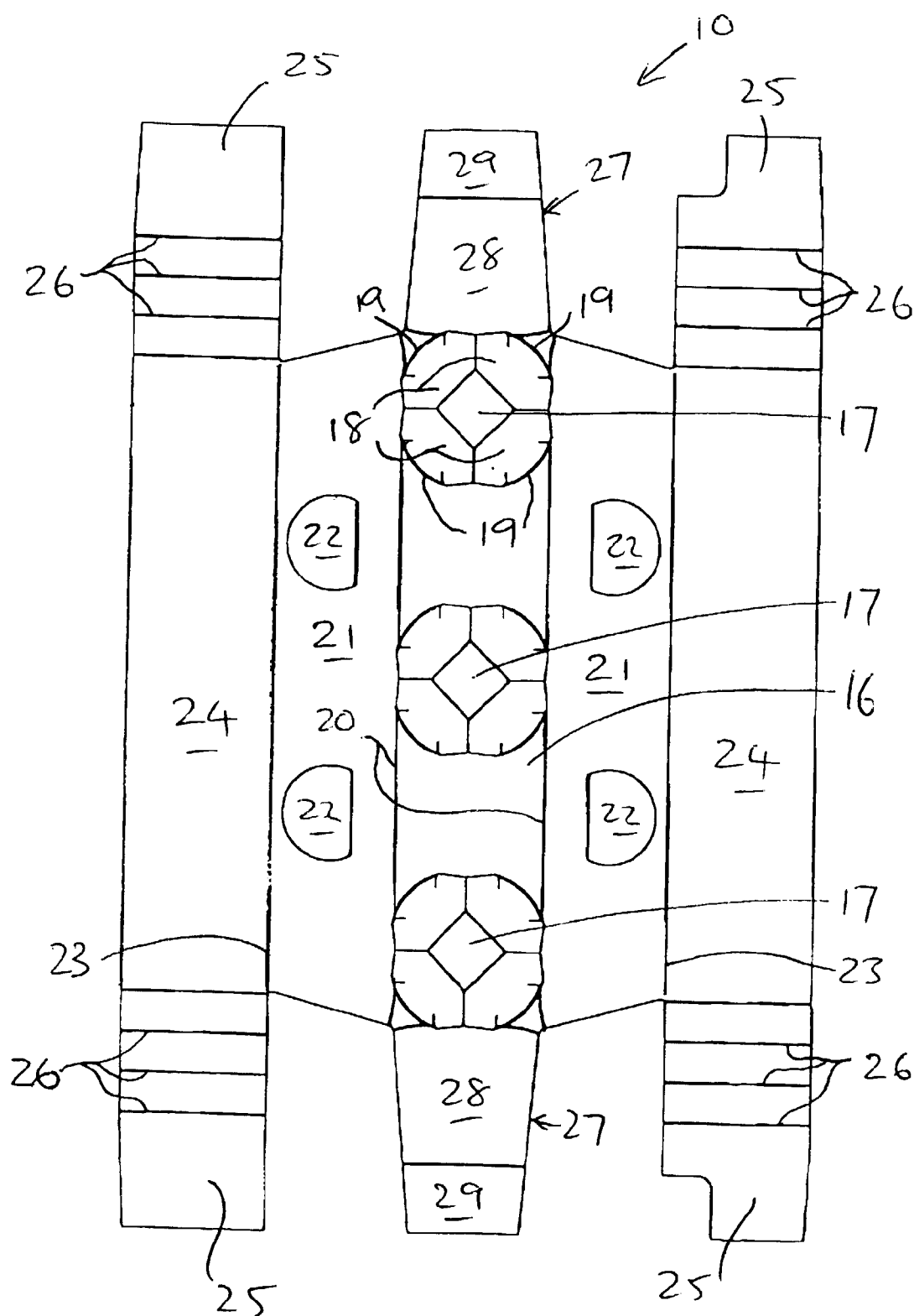


FIGURE 1

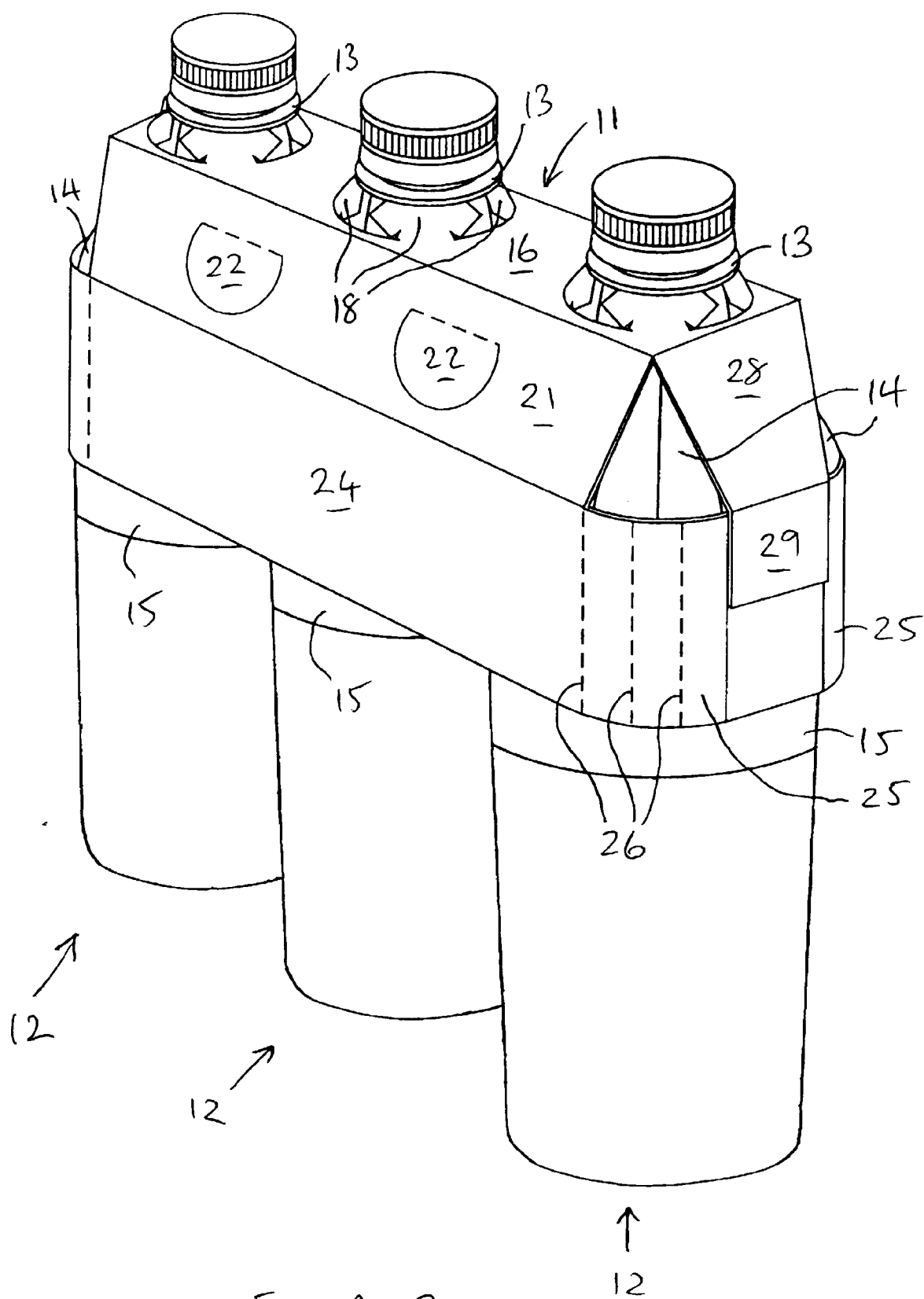


FIGURE 2

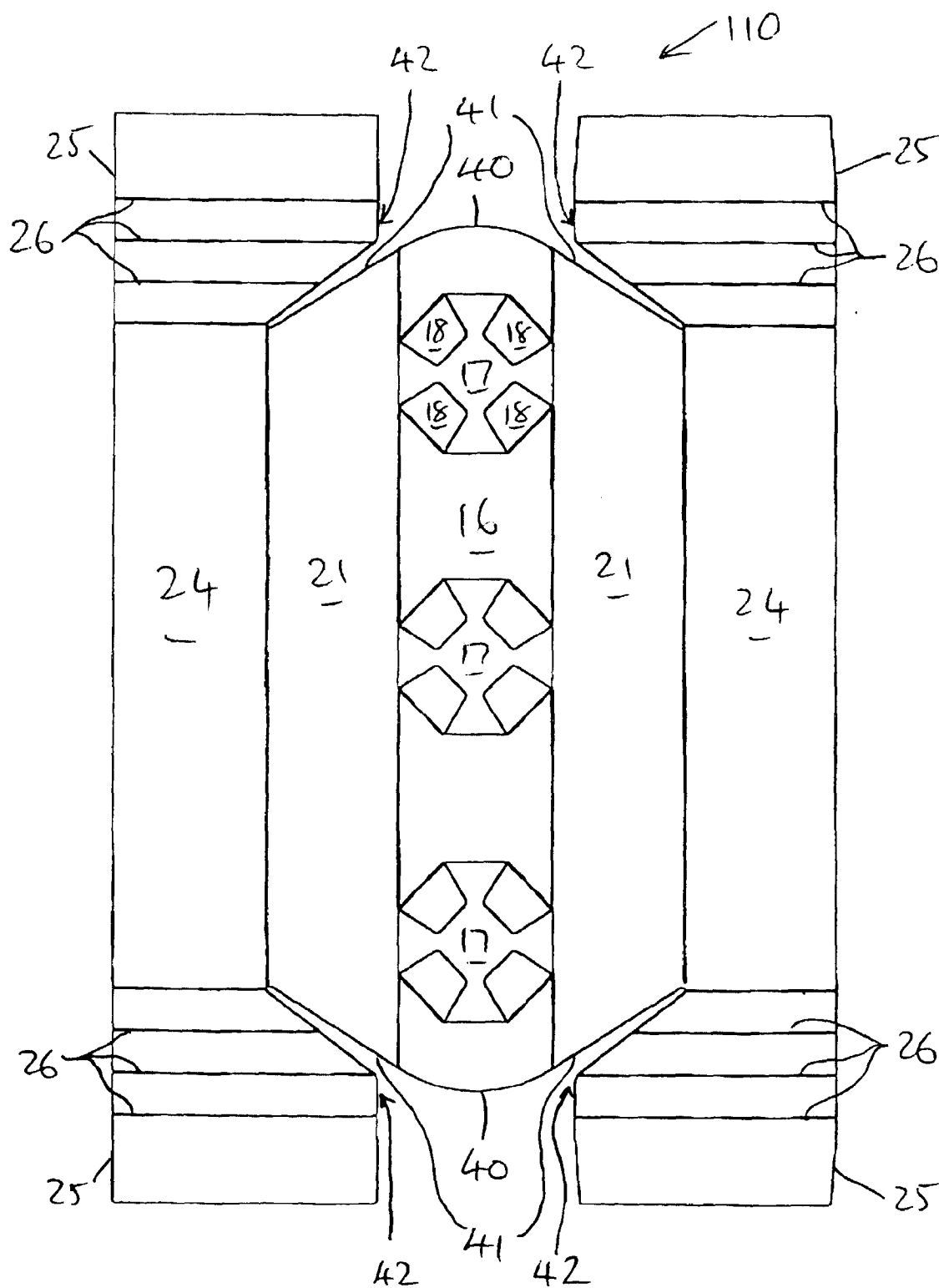


FIGURE 3

