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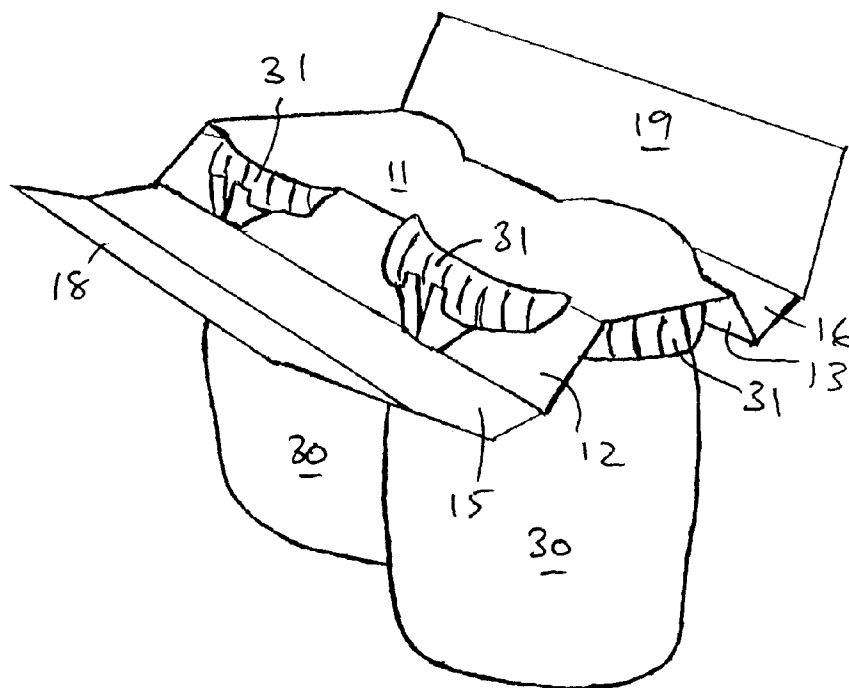
EUROPEAN PATENT APPLICATION

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Bristol BS1 4UD (GB)(71) Applicant: **RIVERWOOD INTERNATIONAL**
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Atlanta, Georgia 30339 (US)(54) **Retaining device for a plurality of containers**

(57) There is provided a paperboard retaining device for a plurality of containers having closure lids. The device comprises a top panel 11, first side panels 12, 13 which are hingedly connected to and extend downwardly from the top panel 11, second side panels 15, 16 which are hingedly connected to and extend upwardly from the first side panels 12, 13, cover panels 18, 19 which are hingedly connected the second side panels

15, 16 and lie generally in parallel with the top panel 11, and an aperture 21 in each first side panel for each closure lid. The cover panels 18, 19 extend across at least part of the top panel 11 and are secured thereto. Each aperture 21 has a centrally disposed upward projection 22 which is bisected by a cut 23 extending downwardly to the hinge between the first and second side panels, whereby a further transverse cut 24 provided along the hinge forms a T-shaped cut with first cut 23.

**FIGURE 2****EP 0 806 372 A2**

Description

This invention relates to devices for retaining a plurality of containers. The containers may be glass jars or bottles having a closure lid, but other types of container could also be used.

According to the present invention there is provided a paperboard retaining device for a plurality of containers having closure lids, the device having a top panel for lying substantially against the tops of the lids, first side panels which are hingedly connected at opposite side edges of the top panel and which extend downwardly from the top panel, second side panels which are hingedly connected at opposite side edges of the first side panels and which extend upwardly, cover panels which are hingedly connected at opposite side edges of the second side panels generally parallel to the hinges of the top panel with the first side panel and which extend across at least part of the top panel and are secured thereto, and an aperture being provided in each first side panel for each closure lid, each aperture having a centrally disposed upward projection which is bisected by a cut which extends downwardly to the hinge between the first and second side panels, a further transverse cut being provided along said hinge to form a T-shaped cut with said first cut. In use, the edge of the aperture on each side of the projection engages below the lid and the projection remains outside the lid.

In some arrangements the hinges between the first and second side panels are straight and parallel to the hinges between the top panel and the first side panels. In other arrangements these hinges are waisted slightly towards each other in the area between two adjacent pairs of cooperating apertures. In these other arrangements the waisted hinges may also be further waisted at the ends of the device.

With some preferred embodiments each aperture is generally channel shaped before the device is folded with the projection being located generally centrally of the base area of the channel. In certain embodiments the projection extends completely across the aperture prior to folding the device and also has generally straight, parallel outer side edges which are substantially parallel to the bisecting cut.

Ideally, in use the second side panels engage the projections and press them against the sides of the lids.

A preferred feature is that for each aperture there are angled fold lines extending from the aperture wide of the projection on both sides, to the hinge line between the first and second side panels, either wide of the transverse cut or at the ends of the transverse cut.

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

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

Figure 2 is a perspective view of the figure 1 blank

during attachment to a container,

Figure 3 is a close-up view of part of the figure 2 arrangement,

Figure 4 is a perspective view of the fully formed device, and

Figure 5 is an alternative blank for producing a different embodiment of the device according to the present invention.

In figures 1 to 4 there is shown a paperboard blank 10 for attachment to a pair of containers such as glass jars 30 each having a closure lid 31. Further containers could be accommodated using a modified blank, either in single or multirow format. The blank 10 has a top panel 11, first side panels 12, 13 hingedly connected by folds 14 at opposite side edges of the top panel 11, second side panels 15, 16 hingedly connected by folds 17 at opposite side edges of the first side panels 12, 13 and cover panels 18, 19 hingedly connected by folds 20 at opposite side edges of the second side panels 15, 16. The fold lines 14, 17, 20 are substantially parallel to each other.

Apertures 21 are provided for receiving portions of the jar lids 31. Each aperture 21 is generally channel shaped and has a projection 22 in the centre of the base part of the channel shape. Each projection 22 extends across its aperture and is bisected by a central cut 23 which terminates at the fold line 17 where it meets a transverse cut 24 which is provided along the fold line 17. The central cut 17 and the transverse cut are generally perpendicular to each other and the outer side edges 32 are generally parallel to the central cut 23.

On either side of the projection in each aperture 21 are edge portions 25 which in use engage below the lid 31 of the jar 30. In this embodiment these edge portions are straight and flare outwardly from the folds 17.

Further optional folds 26 are provided between each aperture 21 and the fold 17 between the first and second side panels. The folds 26 extend from positions wide of the projection 22 and the straight edge portions 25 inwardly towards each other to the fold 17 at a position wide of the ends of the transverse cut 24.

Forming of the retaining device from the blank is as follows. The blank 10 is positioned over the jars 30 to be retained such that they are generally aligned between respective pairs of oppositely disposed apertures 21. The first side panels 12, 13 are then folded down such that the edge portions 25 of each aperture engage below the lid 31 of the associated jar 30 whilst the projection 22 of each aperture remains outside the lid 31. The cuts 23, 24 and folds 26, 17 allow the projections and the immediately surrounding areas to move out of the general plane of the first side panels 12, 13.

The second side panels 15, 16 are then folded upwardly about the folds 17 so that the second side panels engage the projections 22 and urge them into contact with the side walls of lids 31. The cover panels 18, 19 are then folded over the top panel 11 about folds 20 and

secured thereto with adhesive. Other attachment methods may be possible such as interlocking formations.

The result is a secure multipack containing a number of lidded jars, two in the particular embodiment shown.

It will be appreciated that the particular form, shape and size of the apertures and projections are a matter of design choice.

In figure 5 there is shown a blank 40 which is very similar to the blank 10 shown in figure 1. Like features have been given like reference numerals. The difference in the blank 40 is that the fold 17 between the first and second side panels 12, 13; 15, 16 is no longer straight and parallel to the other folds 14, 20 but has sections 41 which are waisted inwardly towards each other. This waisting occurs in the area between adjacent apertures and at the ends of the cartons beyond the apertures. Also the optional angled folds 26 extend to the ends of the transverse cuts 24 from the ends of the straight edge portions 25. These waisted sections 41 aid the contouring of the first side panels 12, 13 around the jars/lids during and after assembly of the device and increase the strength and integrity of the pack.

Claims

1. According to the present invention there is provided a paperboard retaining device for a plurality of containers having closure lids, the device having a top panel for lying substantially against the tops of the lids, first side panels which are hingedly connected at opposite side edges of the top panel and which extend downwardly from the top panel, second side panels which are hingedly connected at opposite side edges of the first side panels and which extend upwardly, cover panels which are hingedly connected at opposite side edges of the second side panels generally parallel to the hinges of the top panel with the first side panel and which extend across at least part of the top panel and are secured thereto, and an aperture being provided in each first side panel for each closure lid, each aperture having a centrally disposed upward projection which is bisected by a cut which extends downwardly to the hinge between the first and second side panels, a further transverse cut being provided along said hinge to form a T-shaped cut with said first cut such that, in use, the edge of the aperture on each side of the projection engages below the lid and the projection remains outside the lid.
2. A device as claimed in claim 1 wherein the hinges between the first and second side panels are straight and parallel to the hinges between the top panel and the first side panels.
3. A device as claimed in claim 1 wherein the hinges

are waisted slightly towards each other in the area between two adjacent pairs of cooperating apertures.

4. A device as claimed in claim 3 wherein the waisted hinges may also be further waisted at the ends of the device.
5. A device as claimed in any one of claims 1 to 4 wherein each aperture is generally channel shaped before the device is folded with the projection being located generally centrally of the base area of the channel.
6. A device as claimed in claim 5 wherein the projection extends completely across the aperture prior to folding the device and also has generally straight, parallel outer side edges which are substantially parallel to the bisecting cut.
7. A device as claimed in any one of claims 1 to 6 wherein in use the second side panels engage the projections and press them against the sides of the lids.
8. A device as claimed in any one of claims 1 to 7 wherein for each aperture there are angled fold lines extending from the aperture wide of the projection on both sides, to the hinge line between the first and second side panels, either wide of the transverse cut or at the ends of the transverse cut.
9. A blank for producing a paperboard retaining device as described in any one of the preceding claims.

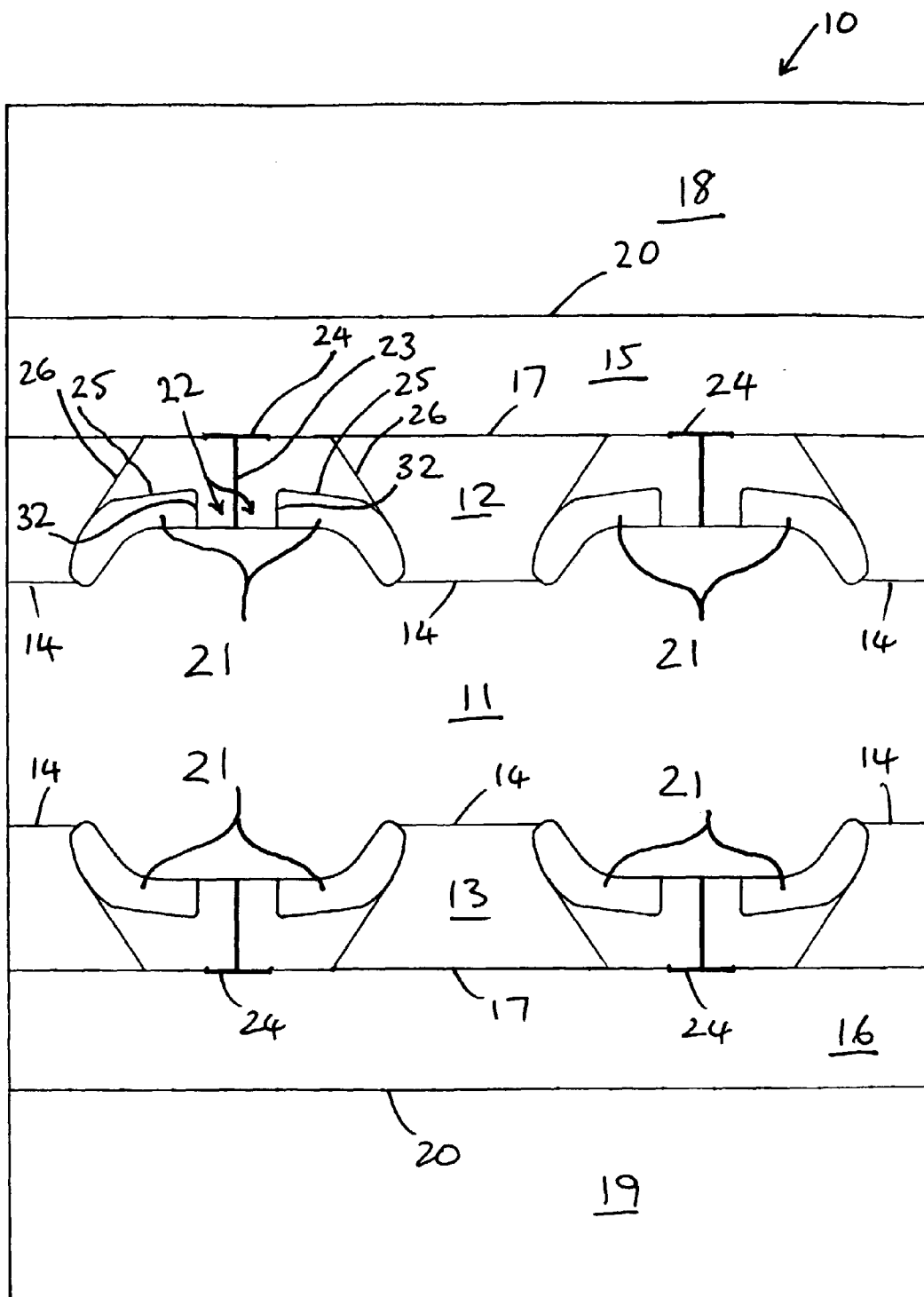


FIGURE 1

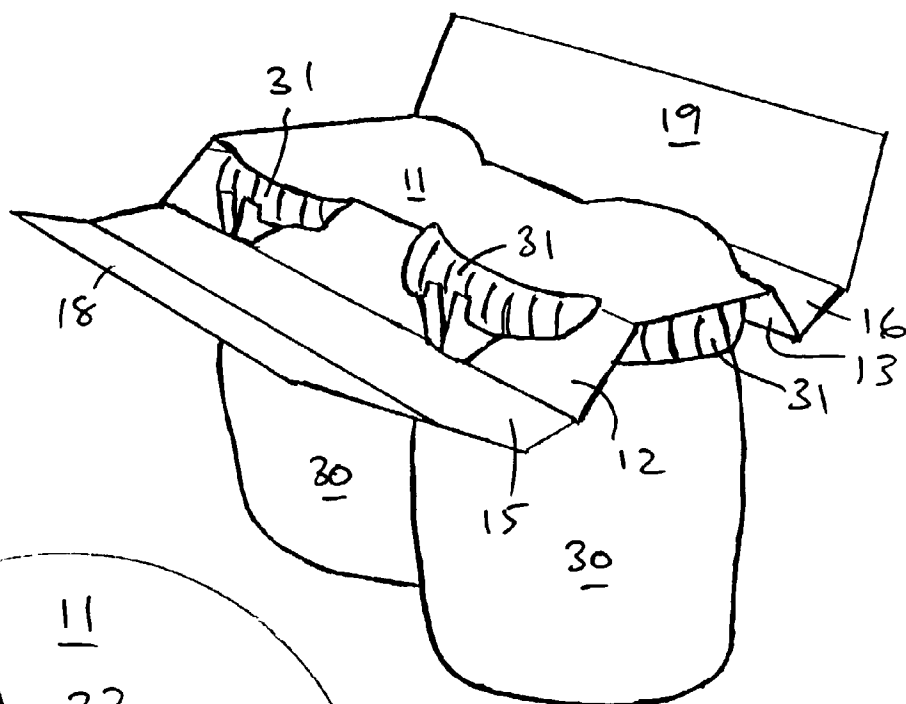


FIGURE 2

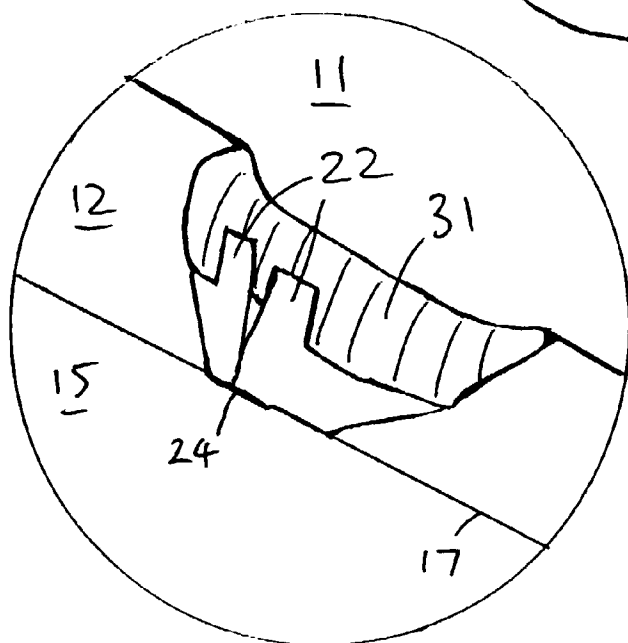


FIGURE 3

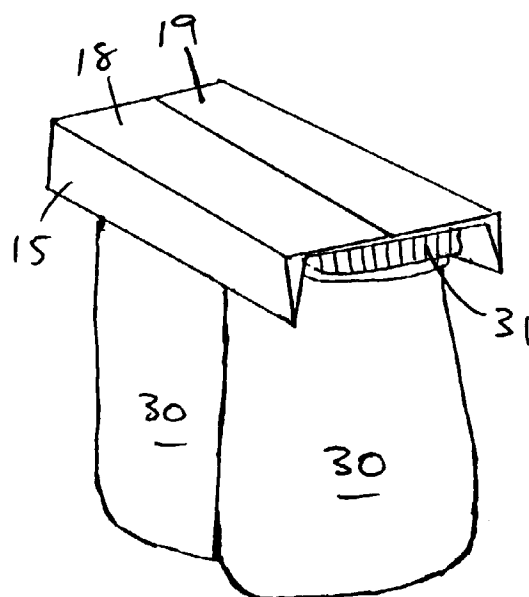


FIGURE 4

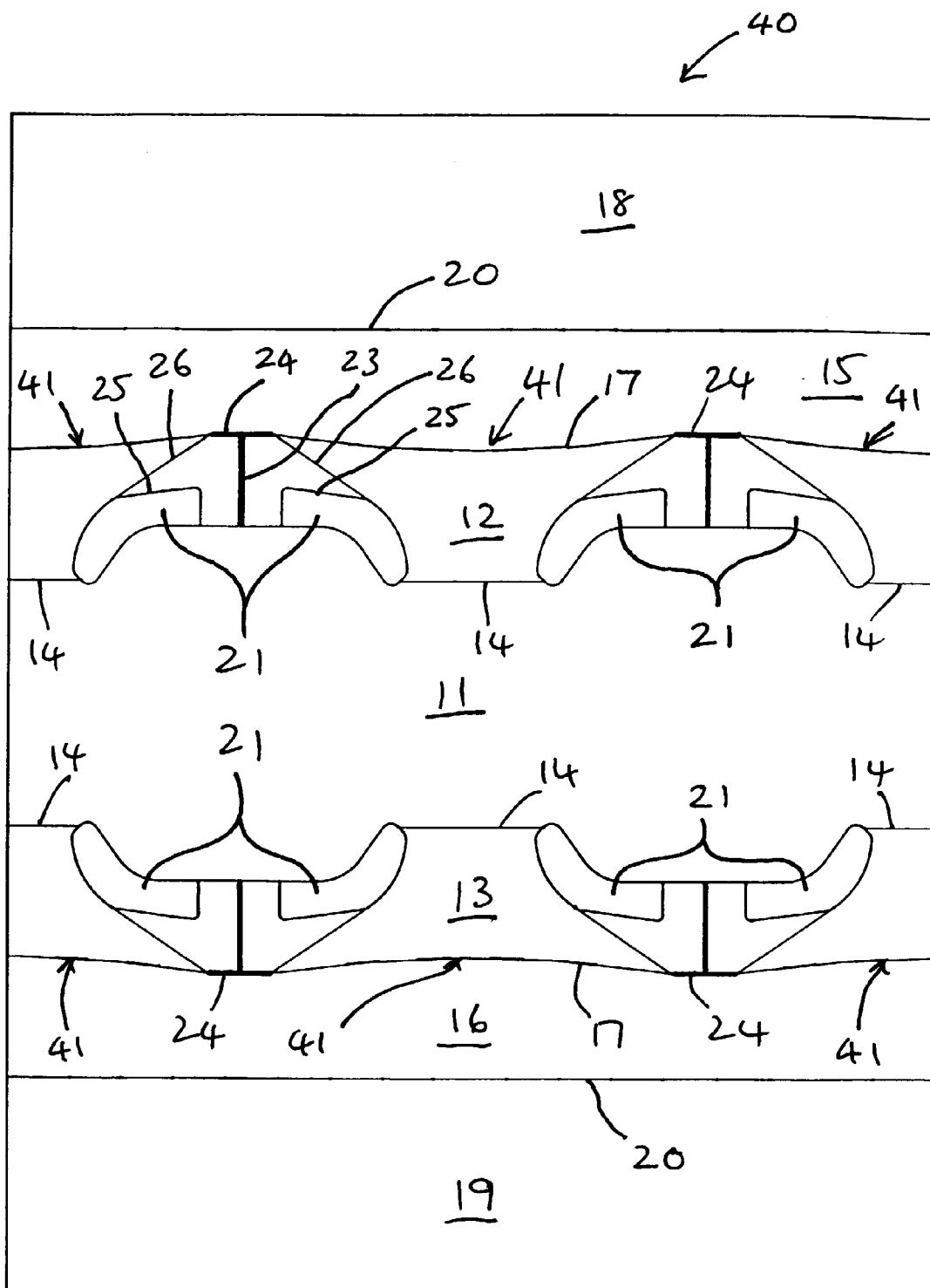


FIGURE 5