

HANDLE ARRANGEMENT FOR A PAPERBOARD CARTON

This invention relates to handle arrangements for paperboard cartons, such as fully enclosed cartons, partially enclosed cartons, sleeve type cartons. Such cartons may be used for holding a number of cans, bottles or other articles.

According to the present invention there is provided a paperboard carton having a top panel, a base panel, two oppositely disposed end panels hingedly connected to said top panel and a separate strap handle extending between the two end panels and being adhesively secured thereto, cuts being provided in each end panel on both sides of the adhesively secured portion of the strap handle, which cuts also extend across the hinges with the top panel and into the top panel.

In preferred arrangements the top panel provides a substantially continuous and uninterrupted surface except for the cuts.

Preferably the pair of cuts in each end panel flare outwardly and downwardly from the hinge with the top panel. Also, the lowermost end of each cut is provided with stress relieving means. In one arrangement the stress relieving means comprises an arcuate end portion of the cut which end portion extends outwardly and upwardly..

A further preferred feature is that the parts of each pair of associated cuts in the top panel are substantially parallel. Also further stress relieving means is also provided at the ends of the cuts in the top panel.

In one such arrangement said further stress relieving means is in the form of the end of the cuts curving outwardly.

Another feature is that between each pair of cuts in the top panel is a transverse fold which is parallel to and is spaced from the hinge between the

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associated end panel and the top panel.

In preferred arrangements the handle is in the form of a parallel sided strip of plastic or paperboard and the carton is in the form of a fully enclosed carton incorporating side panels. A further feature is that the adhesive for the handle extends up to the junction of the end panels and the top panel and the cuts include frangible connections which break in use of the carton so that the cuts extend their full length when the handle is used.

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

Figure 1 shows a paperboard blank for forming a carton,

Figure 2 shows the figure 1 blank with a handle member attached,

Figure 3 is a perspective view of the figure 2 arrangement assembled, and

Figure 4 is an enlarged perspective view of part of the figure 3 assembly from another angle with the assembly being lifted by the handle.

In the figures there is shown a blank 10 for forming a carton 11 for receiving therein an article or a number of articles such as cans or bottles. The blank 10 has a top panel 12, oppositely disposed end panels 13 hingedly connected to the top panel 12 at folds 14 and oppositely disposed side panels 15 hingedly connected to the top panel 12 at folds 17. A base panel 18 and an overlapping adhesive panel 19 are also provided as well as base closure flaps 20 and side closure flaps 21. When folded and secured together the blank produces the generally rectangular cuboid carton 11, although the upper parts 22 of the end panels 13 are angled slightly inwards in the arrangement shown. In other arrangements the upper

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parts of the side panels 15 could be angled inwards.

Spanning each fold 14 between the top panel and its associated end panel 13 is a pair of cuts 23. The pair of cuts 23 are centrally disposed along the fold 14 and extend parallel to each other in the top panel and flare outwardly and downwardly from the fold 14 in the end panel 13.

Apart from the cuts 23, the top panel 12 provides a continuous, uninterrupted surface which is particularly suitable for printing and which has no joins.

The lower ends of the cuts 23 in each end panel 13 are provided with stress relieving means 24 which in this embodiment comprise arcuate continuations of the cuts 23 extending outwardly and upwardly. Other stress relieving measures could be used as well as or in place of these continuations. Further stress relieving means 25 are also provided at the free ends of those parts of the cuts 23 in the top panel 12. This further relieving means 25 comprises the ends of the cut terminating in an outwardly extending arcuate continuation. The stress relieving means 24, 25 reduce the tendency for the paperboard to tear.

A further fold 26 is provided between the cuts 23 in the top panel 12 and is spaced from and is generally parallel to the fold 14. The fold 26 may comprise a partially cut line rather than a fold as such in the blank 10, the partially cut line forming a hinge when the carton 11 is used.

As shown in figure 2 a strap handle 27 extends between the two end panels 13 and is adhesively secured thereto by areas 28. These areas 28 are only on the end panels 13 and not on the top panel 12. Also the areas 28 are located substantially centrally between the cuts 23. The strap handle 27 may be made

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of any suitable material such as plastic or paperboard and may be applied at any stage of production of the carton 11 or blank 10 using adhesive or adhesive tape. For example the handle 27 could be attached after the carton 11 has been assembled and filled with articles or the handle 27 could even be applied to the paperboard before the blank 10 has been cut.

After the carton 11 is assembled and the handle 27 is applied, then the carton can be lifted by the handle 27. When lifted by the handle the areas of the end panels 13 between the cuts 23 tends to deflect inwardly and the parts of the top panel between the cuts 23 tends to deflect upwardly and initiate a hinge at the further folds 26 rather than the part of the folds 14 between the cuts 23. This is more clearly shown in figure 4, It has been found that the above arrangement is resistant to tearing and also gives the carton stability whilst being carried. In addition the movement between the cuts 23 on lifting also results in more room for the user's hand under the strap handle 27 when in use.

It will be appreciated that the orientation of the pack could be altered without affecting the fundamental operation. For example the handle could be provided on a side panel such that in use that side panel effectively becomes the top panel. Also it will be understood that the concept could be applied to cartons of any shape or size as long as the carton is balanced when it is being carried by the handle.

It will also be apparent that the cuts 23 may not be complete along their length during manufacture. There may be some frangible connections which are broken when the carton is lifted by the handle. Also the shape of the cuts 23 which span the folds 14 could be altered although the cuts 23 must be on both sides of the adhesively secured areas 28 of the handle 27.



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1. A paperboard carton having a top panel, a base panel, two oppositely disposed end panels hingedly connected to said top panel and a separate strap handle extending between the two end panels and being adhesively secured thereto, cuts being provided in each end panel on both sides of the adhesively secured portion of the strap handle, which cuts also extend across the hinges with the top panel and into the top panel.
2. A paperboard carton as claimed in claim 1, wherein the top panel provides a substantially continuous and uninterrupted surface except for the cuts.
3. A paperboard carton as claimed in claim 1 or claim 2, wherein the pair of cuts in each end panel flare outwardly and downwardly from the hinge with the top panel.
4. A paperboard carton as claimed in claim 3, wherein the lowermost end of each cut is provided with stress relieving means.
5. A paperboard carton as claimed in claim 4, wherein the stress relieving means comprises an arcuate end portion of the cut which end portion extends outwardly and upwardly.
6. A paperboard carton as claimed in any one of claims 1 to 5, wherein the parts of each pair of associated cuts in the top panel are substantially parallel.
7. A paperboard carton as claimed in claim 6, wherein further stress relieving means is also provided at the ends of the cuts in the top panel.

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8. A paperboard carton as claimed in claim 7, wherein said further stress relieving means is in the form of the end of the cuts curving outwardly.

9. A paperboard carton as claimed in any one of claims 1 to 8, wherein between each pair of cuts in the top panel is a transverse fold which is parallel to and is spaced from the hinge between the associated end panel.

10. A paperboard carton as claimed in any one of claims 1 to 9, wherein the handle is in the form of a parallel sided strip of plastic or paperboard.

11. A paperboard carton as claimed in any one of claims 1 to 10, wherein the adhesive for the handle extends up to the junction of the end panels and the top panel.

12. A paperboard carton as claimed in any one of claims 1 to 11, wherein the cuts include frangible connections which break in use of the carton so that the cuts extend their full length when the handle is used.

13. A paperboard carton as claimed in any one of claims 1 to 12 wherein the carton is in the form of a fully enclosed carton incorporating side panels.

14. A paperboard blank for producing a carton as claimed in any one of claims 1 to 13.

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