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(11)

EP 0 861 789 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

02.09.1998 Bulletin 1998/36(51) Int Cl.⁶: **B65D 5/50**(21) Application number: **98301505.8**(22) Date of filing: **02.03.1998**

(84) Designated Contracting States:

**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**

Designated Extension States:

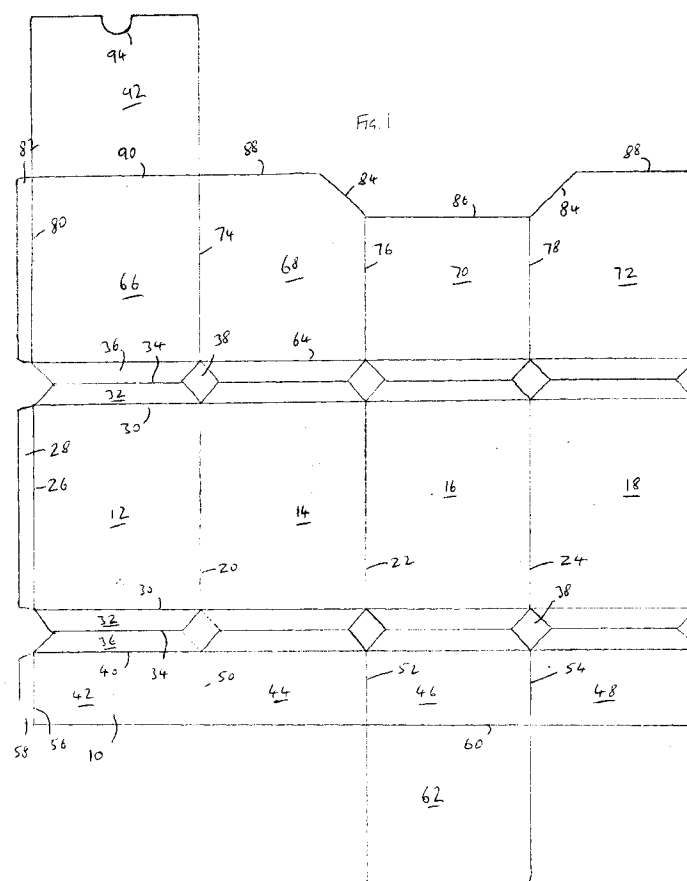
AL LT LV MK RO SI(30) Priority: **01.03.1997 GB 9704324**(71) Applicant: **BPC Taylowe Limited****Maidenhead, Berkshire SL6 7RF (GB)**(72) Inventor: **Cooper, William****Maidenhead, Berks, SL6 7ER (GB)**

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Dempster, Benjamin John Nafel et al**Withers & Rogers****4 Dyer's Buildings,****Holborn****London EC1N 2JT (GB)**(54) **Carton box for fragile products**

(57) A packaging article blank 10 comprises four rectangular panels 12, 14, 16, 18. Each panel includes two groups of three fold lines 30, 34, 40 to enable two folds to be formed out of the plane of the panels 12, 14,

16, 18. The panels 12, 14, 16, 18 are formed into a rectangular sleeve to be inserted into a carton 96 to line it. The folds extend inwards to grip an item such as a bottle 102 in the sleeve in the carton 96.



Description

The invention relates to a packaging article and a carton including the packaging article.

Where a delicate or fragile product is to be packed in a carton, there is a danger that it will become damaged in transportation or handling. In particular, the product may be loose inside the carton and may be damaged by impact with one of the walls. Otherwise, if the product is a tight fit in the carton then impact at the side of the carton can damage the product.

According to one aspect of the invention there is provided a packaging article comprising at least two sheets of material, each sheet having three fold lines to enable at least one inwards fold to be formed out of the plane of the sheet towards the other sheet such that an item can be gripped between the said folds of the sheets.

In this way, an article can be protected between two sheets of material and gripped by them by means of the folds, while at the same time being spaced from the sheets. There is thus a reduced danger of damage to a product from impact to the sheets because the product is held away from the sheets, while the product cannot rattle because it is gripped between the folds.

The packaging article may be arranged to be provided within a carton and in that case the sheets may be separate as they will be held in position by the carton. Alternatively, the sheets may be connected and preferably are connected to form a sleeve. The article may thus comprise four of said sheets of material to provide a rectangular sleeve.

The sleeve may include at least one flap to cover at least one end of the sleeve. The sleeve may include a cut away at the end of one sheet. Where the sleeve is to be placed inside a carton, the cut away may provide room for a tuck in flap.

The sheets may be made of resilient material and conveniently are made of corrugated material such as corrugated board.

Each sheet may include any number of groups of said three fold lines and preferably includes two groups of said three fold lines.

According to another aspect of the invention, there is provided a carton including therein a packaging article according to the first aspect of the invention.

The packaging article preferably lines the carton when the sheets are folded at the fold lines.

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which;

Figure 1 is a plan view of the blank of the embodiment of the invention;

Figure 2 is a perspective view of the erected sleeve of the embodiment partially inserted into a carton; and

Figure 3 is a perspective view partially cut away of the carton of figure 2 enclosing a bottle gripped by the sleeve of the embodiment.

The blank 10 of the embodiment comprises four identical rectangular panels 12, 14, 16, 18 serially connected at their long edges through fold lines 20, 22, 24. The rectangular panel 12 at one end of the series is connected through a fold line 26 at its outer long edge to a short glue flap 28. Each rectangular panel 12, 14, 16, 18 is connected at its tip and lower edges through a fold line 30 to a all through trapezium shaped panel 32. Each trapezium shaped panel 32 has its longest edge as the fold line 30 which is the full width of the short side of the respective rectangular panel and the trapezium shaped panel tapers away from the rectangular panel to a fold line 34. The trapezium shaped panel 32 is connected through the fold line 34 to an identical trapezium shaped panel 36 which is the mirror image of the trapezium shaped panel 32 about the fold line 34. Three diamond shaped apertures 38 are left as a result to each side of the series of rectangular panels 12, 14, 16, 18. To the lower side of the rectangular panels 12, 14, 16, 18, each trapezium shaped panel 36 is connected through a fold line 40 to one of four identical rectangular lower panels 42, 44, 46, 48 which are serially connected through their short sides by fold lines 50, 52, 54 which are parallel to the fold lines 20, 22, 24. The panel 42 which is opposite the panel 12 also includes a glue flap 58 connected through a fold line 56 to the same side of the blank 10 as the glue flap 28. The panel 46 which is two lower panels, 42, 44 from the glue flap 58 is connected through a fold line 60 parallel to the fold line 40 to a square lower flap 62.

The trapezium shaped panels 36 above the rectangular panels 12, 14, 16, 18 are connected through a fold line 64 to four upper panels 66, 68, 70, 72 which are connected through fold lines 74, 76, 78 which are parallel to the fold lines 20, 22, 24. The upper panel 66 above the rectangular panel 12 includes a fold line 80 parallel to and co-linear with the fold lines 26, 56, through which it is connected to a glue flap 82. Each of the glue flaps 28, 58, 82 is of the same narrow width. The upper panel 70 which is the penultimate upper panel in the series to the opposite side from the glue flap 82 is also rectangular and is shorter than the upper panel 66. The upper panels 68, 72 to either side of the upper panel 70 have an upper edge which initially slants upwards as shown at 84 from the upper edge 86 of the upper panel 70 and then extends as shown at 88 parallel to the old line 64 and parallel to and co-linear with the upper edge 90 of the panel 66. The upper edge 90 is defined as a fold line through which the upper panel 66 is connected to a square upper flap 92. The flap 92 includes a semi circular cut out 94 centrally of its edge opposite the fold line 90.

To erect the blank the blank 10 is folded through 90° about each of the fold lines 20, 22, 24 and the glue flaps

28, 58, 82 are glued to the panels 18, 48, 72 respectively. The lower flap 62 is folded through 90° about the fold lines 60 to close the end of the sleeve. The sleeve is used as a lining insert for a carton 96 having a tuck in end 98 with side flaps 100. The sleeve is thus slightly smaller than the carton 96 and is inserted into it as shown in figure 2. An item to be packaged, in this case a bottle 102, is placed into the sleeve and stands on the flap 62. The sleeve is taller than the carton 96. When the sleeve is pushed downwards, the sleeve will fold in concertina fashion about the fold lines 30, 34, 64 so that the trapezium shaped panels 32, 36, move inwardly to engage the bottle 102 and grip it between them. The triangular shaped apertures 38 are such that the slanted edges of the trapezium shaped panels 32, 36 nearly touch one another in the fully folded position. In the fully folded or concertina position, the upper edge 88, 90 of the sleeve is just below the upper edge of the carton 96. The side flaps 100 can then be folded over the upper edges 88 to hold the sleeve in the concertina position within the carton 96. The flap 92 can then be folded about the fold line 90 over the top of the bottle and the tuck-in flap 98 can then be folded over and the tuck-in tongue 104 tucked into the front of the carton 96 in the known manner. The fact that the panel 70 is shorter than the other upper panels 66, 68, 72 provides space for the tuck-in tongue 104 so that the sleeve does not get in the way of the tongue 104.

The blank 10 may be made of corrugated board and thus in addition to gripping the bottle to prevent it from rattling, and also spacing it from the walls of the carton 96, it also provides additional protection by its own resilience.

While the embodiment shows protection of a bottle, it is clear that the invention can be used for the packaging and protection of any delicate or fragile product such as glassware, ornamental objects, automotive parts, electrical equipment or aerosols.

Claims

1. A packaging article comprising at least two sheets of material, each sheet having three fold lines to enable at least one inwards fold to be formed out of the plane of the sheet towards the other sheet such that an item can be gripped between the said folds of the sheets.
2. A packaging article as claimed in claim 1, wherein the sheets are connected to form a sleeve.
3. A packaging article as claimed in claim 2, wherein the article comprises four of said sheets of material to provide a rectangular sleeve.
4. A packaging article as claimed in claim 2 or claim 3, wherein the sleeve includes at least one flap to

cover at least one end of the sleeve.

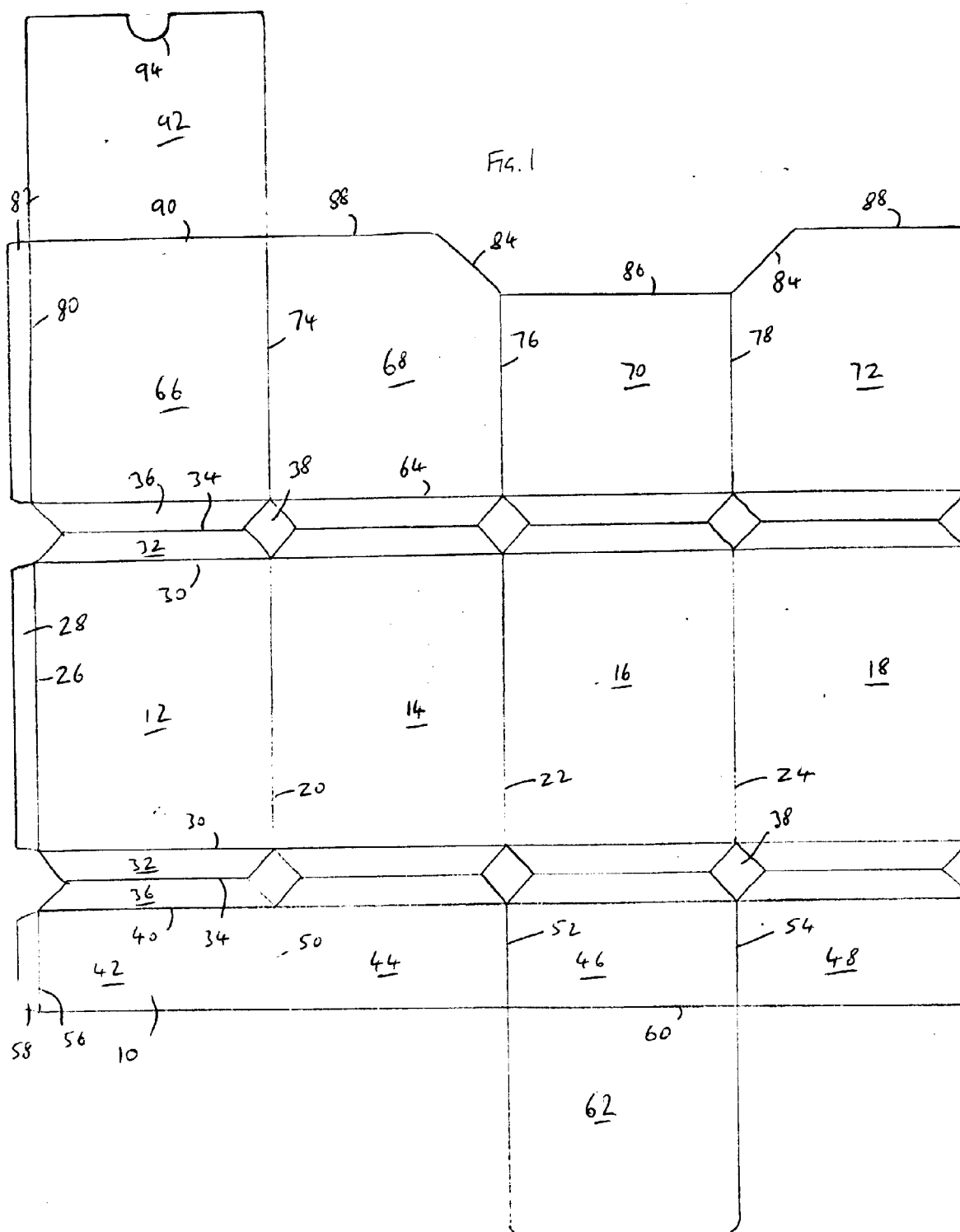
5. A packaging article as claimed in claims 2, 3 or 4, wherein the sleeve includes a cut-away at the end of one sheet.
6. A packaging article as claimed in any preceding claim, wherein the sheets are made of resilient material.
7. A packaging article as claimed in any preceding claim, wherein the sheets are made of corrugated material.
8. A packaging article as claimed in any preceding claim, wherein each sheet includes two groups of said three fold lines.
9. A carton including therein a packaging article as claimed in any preceding claim.
10. A carton as claimed in claim 9, wherein the packaging article lines the carton when the sheets are folded at the fold lines.

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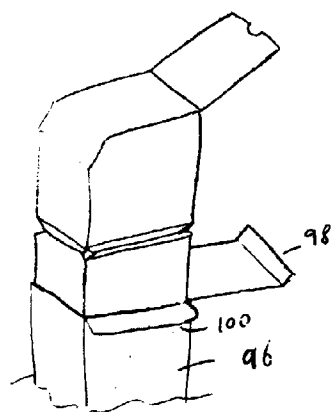


Fig 2

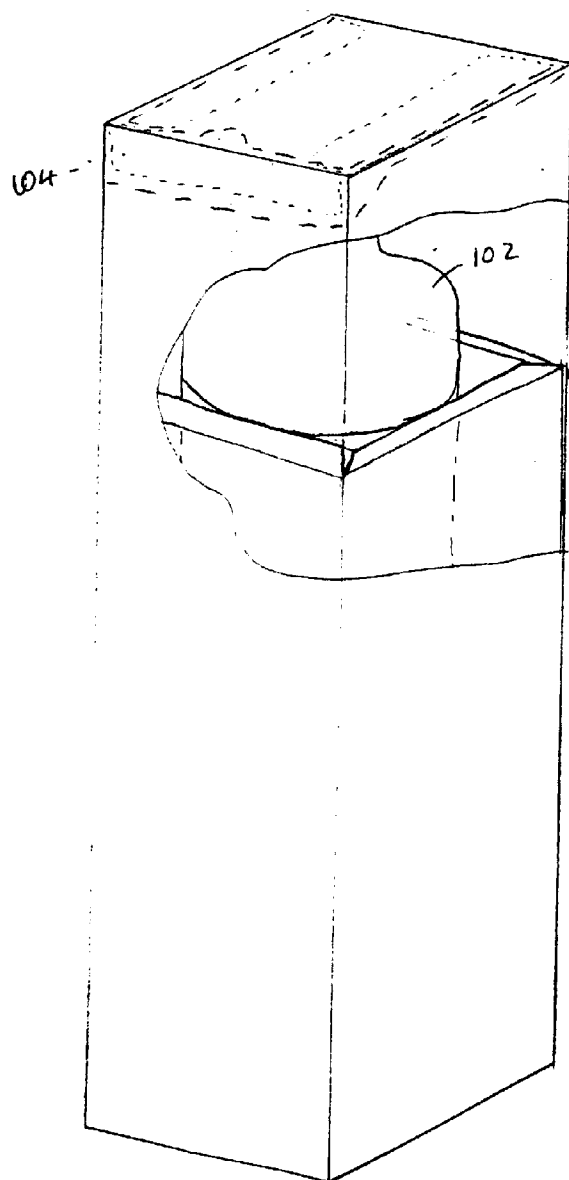


Fig 2