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(11) **EP 1 008 533 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**14.06.2000 Bulletin 2000/24**

(51) Int Cl.7: **B65D 71/00**

(21) Application number: **99309929.0**

(22) Date of filing: **09.12.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

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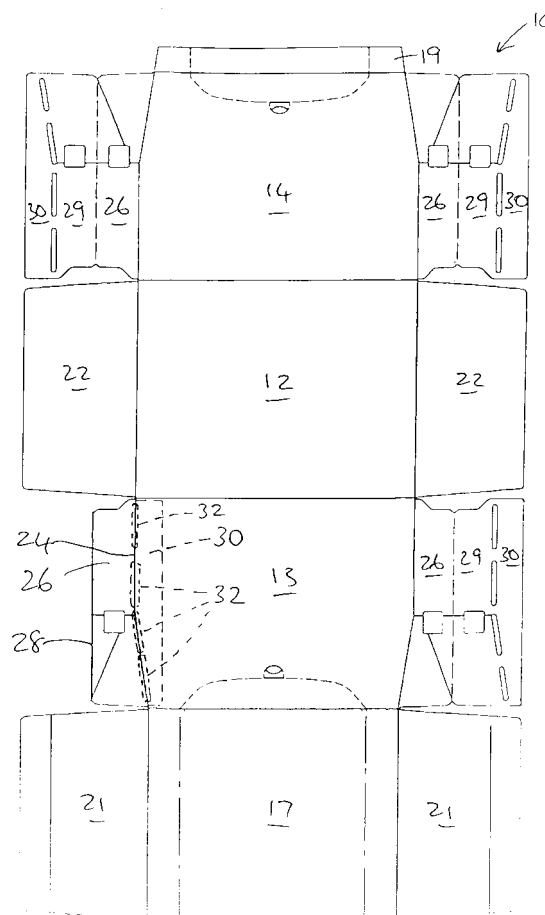
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(30) Priority: **10.12.1998 GB 9827028**

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(54) **Paperboard carton**

(57) There is provided a paperboard carton having top (17), side (13,14) and base (12) panels. There are also side end panels (25) which are of double thickness and which underly adjacent base and top end panels (22,21).



**FIGURE 2**

**EP 1 008 533 A1**

## Description

**[0001]** This invention relates to paperboard cartons, particularly fully enclosed cartons for carrying an array of cans or bottles.

**[0002]** According to a first aspect of the present invention there is provided a paperboard carton having a base, a top, first and second side panels connected to opposite side edges of the base and top, top end panels hingedly connected to the opposite end edges of the top, base end panels hingedly connected to the opposite end edges of the base and side end panels hingedly connected to opposite end edges of each side panel, each side end panel being of double thickness and underlying its adjacent base end panel and top end panel.

**[0003]** Preferably each side end panel extends substantially the full height of its associated side panel.

**[0004]** In preferred arrangements each side end panel comprises a main side end flap and a second end flap hingedly connected thereto and folded back inwardly. Conveniently each second side end flap is adhesively secured to its associated main side end flap.

**[0005]** Ideally each second side end flap is wider than its associated main side end flap such that in use it spans the hinge connection between its associated main side end flap and the side panel, the second side panel having a fold which aligns with said hinge connection. In preferred embodiments each second side end flap is also adhesively secured to the side panel.

**[0006]** With some arrangements elongate slots are cut from the fold line in each second side end panel to facilitate folding. Preferably the combined, unfolded width of each side end panel is less than or equal to the width of one of the adjacent top end panel or base end panel.

**[0007]** Sometimes the hinge between each main side end panel and its side panel has a portion which is angled inwardly towards the top. In other arrangements the hinges between the side panels and the side end panels are substantially perpendicular to the top and the base.

**[0008]** According to a second aspect of the present invention there is provided a paperboard blank for producing the carton described above.

**[0009]** An embodiment of the present invention will now be described in more detail. The description makes reference to the accompanying diagrammatic drawings in which:

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

Figure 2 shows the figure 1 blank with a side end panel partially folded, and

Figure 3 shows an end perspective view of the carton formed from the blank.

**[0010]** In the drawings there is shown a paperboard blank 10 for producing a carton 1 intended to contain a number of articles such as bottles or cans as a fully en-

closed multipack. The blank 10 has a base 12, a pair of side panels 13, 14 hingedly connected to opposite side edges 15, 16 of the base 12, a top panel 17 hingedly connected to the top edge 18 of one of the side panels 13 and an adhesive panel 19 hingedly connected to the top edge 20 of the other side panel 14. The top panel 17 and the base 12 also have at their ends, top and base end panels 21, 22 respectively which are hingedly connected to the top and base panels 17, 12 respectively.

**[0011]** The top panel 17 also has optional lines of weakening 23 extending across and into the side panels 13, 14 to facilitate access to the articles within the assembled carton 11. However, the presence of these lines of weakening 23 is not essential and their form, when present, can be varied as a matter of design choice.

**[0012]** Hingedly connected to each end of each side panel 13, 14, which may also be known as dust flaps, along fold line 24 is a side end panel 25, each comprising a main side end flap 26 adjacent the side panel and a second side end flap 27 hingedly connected to the main side end flap 26 along a fold line 28. The second side end flap 27 has a first portion 29 which is a mirror image of the main side end flap 26 about fold line 28 and a second portion 30 which is hingedly connected about fold 31 to the first portion 29. Along the fold 31 are a number of elongate slots 32 to facilitate folding.

**[0013]** The combined width x of each side end panel 25 is less than the width of either the top or base end panels 21, 22 such that the side end panels 25 are formed between the top and base end panels using what would normally be waste material.

**[0014]** To assemble the carton 11, each second side end flap 27 is folded inwardly and is adhesively secured to the inside of the main side end flap 26 and the adjacent side panel 13, 14 so that the fold 31 is aligned with the fold line 24. This is shown in figure 2 for one of the side end panels. The side panels 13, 14 are then folded up and the top panel 17 is folded over and secured to the adhesive panel 19. When the main side end flaps 26 are folded relative to the adjacent side panels 13, 14 ready for closing the carton, the upright corners of the carton are reinforced by virtue of the double thickness of board. After the main side end flaps are folded part-way across the open ends and the articles have been put in the carton, the base and top end panels 21, 22 are folded and secured to each other and to the main side end flaps.

**[0015]** The reinforced corners improve the stacking strength of the cartons 11 and improve the ability of the cartons 11 to be palletised. The corners also improve the ability of the cartons to absorb shocks etc. during transportation and reduce pack damage. This improves the pack appearance on the shelf.

**[0016]** It will be seen that the fold lines 24 are angled in towards the top panel at 36 and there is therefore a corresponding angled section to the fold 31 so as to ensure alignment. This is because the carton 11 is prima-

rily for bottles and the angled fold lines mean that the carton 11 more closely follows the contours of the bottles. If the carton 11 was for straight sided cans then such angling of the fold lines would not be necessary.

wherein the hinges between the side panels and the side end panels are substantially perpendicular to the top and the base.

- 5 11. A paperboard blank for producing a carton as claimed in any one of claims 1 to 10.

## Claims

1. A paperboard carton having a base, a top, first and second side panels connected to opposite side edges of the base and top, top end panels hingedly connected to the opposite end edges of the top, base end panels hingedly connected to the opposite end edges of the base and side end panels hingedly connected to opposite end edges of each side panel, each side end panel being of double thickness and underlying its adjacent base end panel and top end panel. 10 15
2. A carton as claimed in claim 1 wherein each side end panel extends substantially the full height of its associated side panel. 20
3. A carton as claimed in claim 2 wherein each side end panel comprises a main side end flap and a second end flap hingedly connected thereto and folded back inwardly. 25
4. A carton as claimed in claim 3 wherein each second side end flap is adhesively secured to its associated main side end flap. 30
5. A carton as claimed in claim 4 wherein each second side end flap is wider than its associated main side end flap such that in use it spans the hinge connection between its associated main side end flap and the side panel, the second side panel having a fold which aligns with said hinge connection. 35
6. A carton as claimed in claim 5 wherein each second side end flap is also adhesively secured to the side panel. 40
7. A carton as claimed in claim 5 or claim 6 wherein elongate slots are cut from the fold line in each second side end panel to facilitate folding. 45
8. A carton as claimed in any one of claims 1 to 7 wherein the combined, unfolded width of each side end panel is less than or equal to the width of one of the adjacent top end panel or base end panel. 50
9. A carton as claimed in any one of claims 1 to 8 wherein the hinge between each main side end panel and its side panel has a portion which is angled inwardly towards the top. 55
10. A carton as claimed in any one of claims 1 to 8

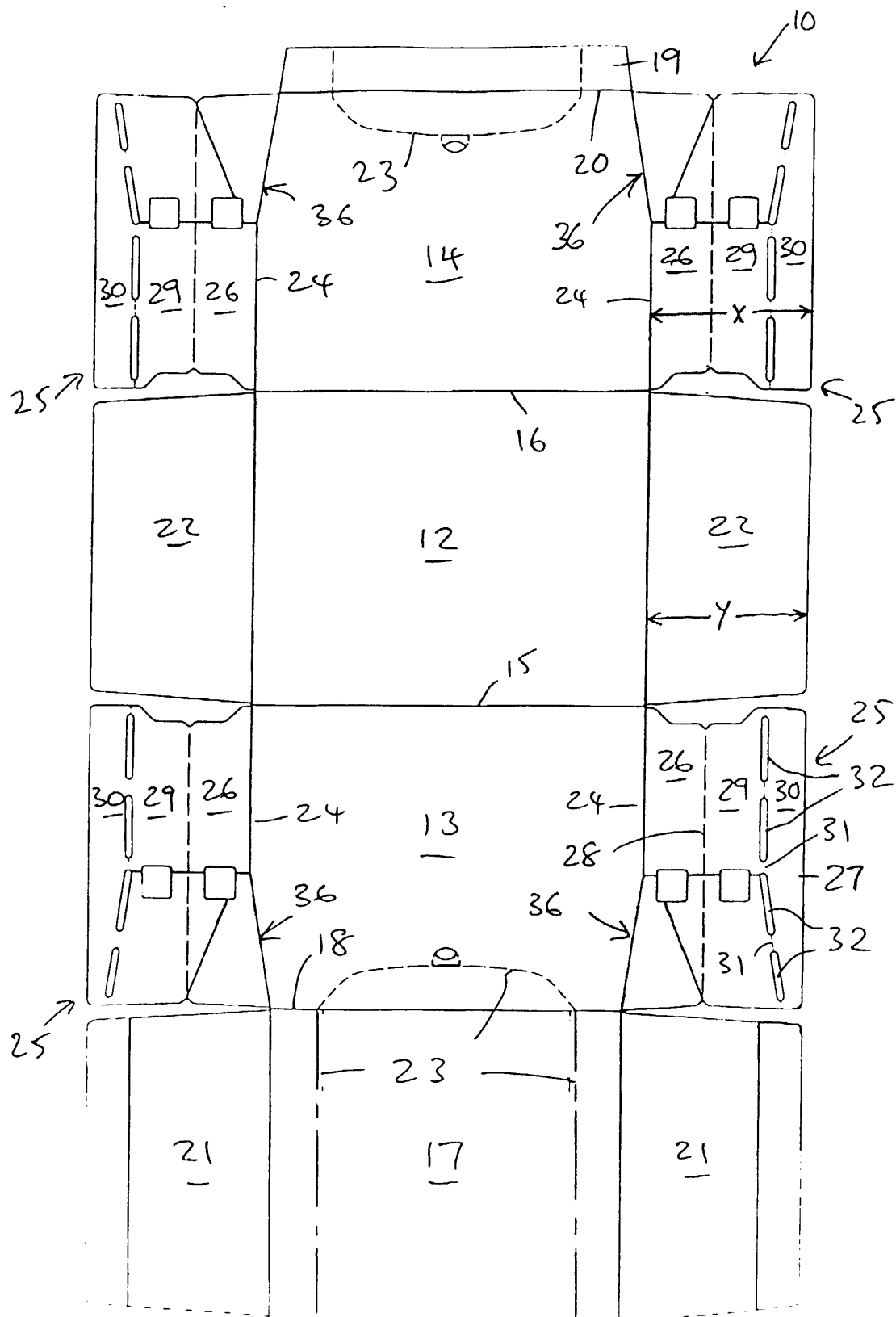


FIGURE 1

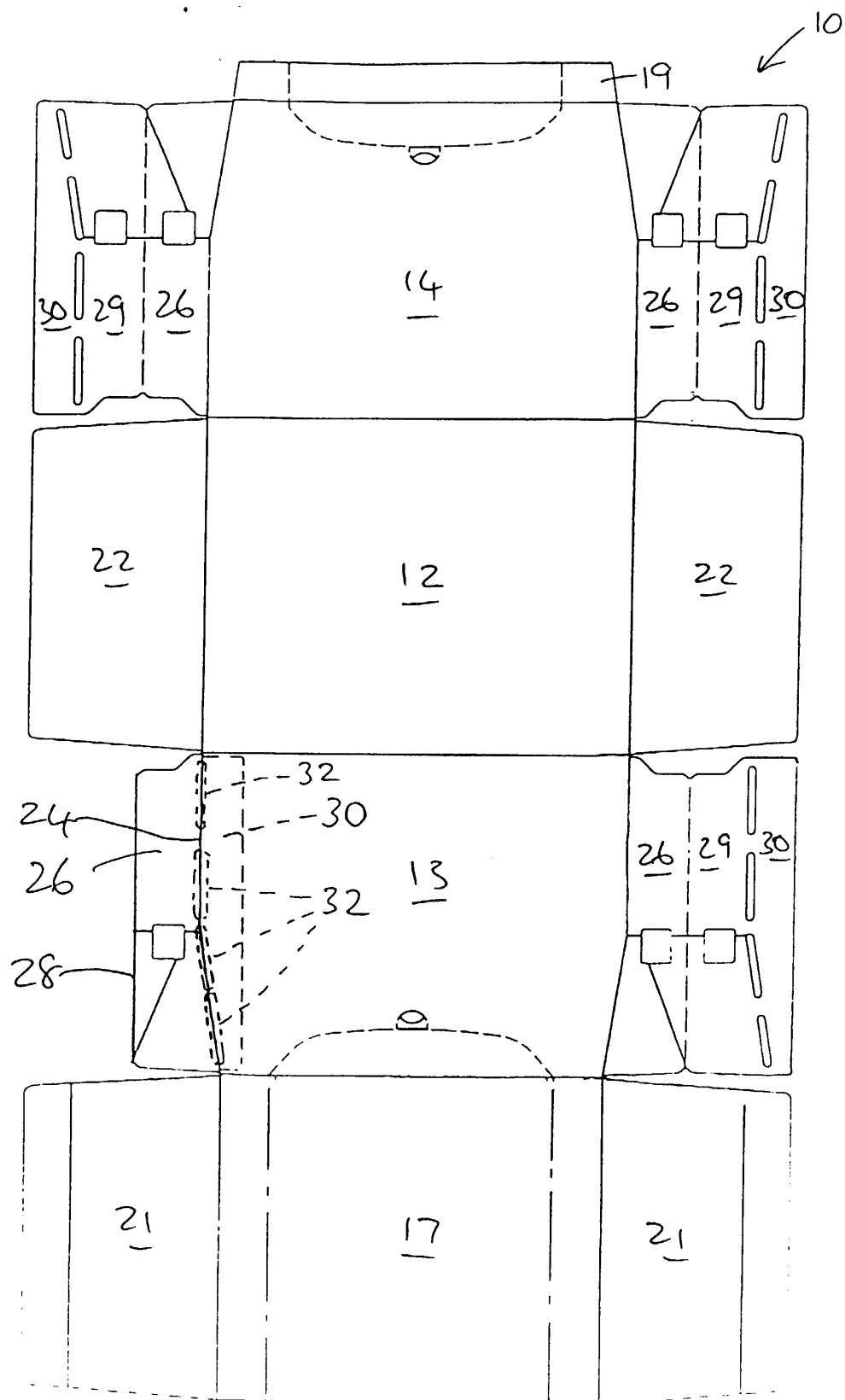


FIGURE 2

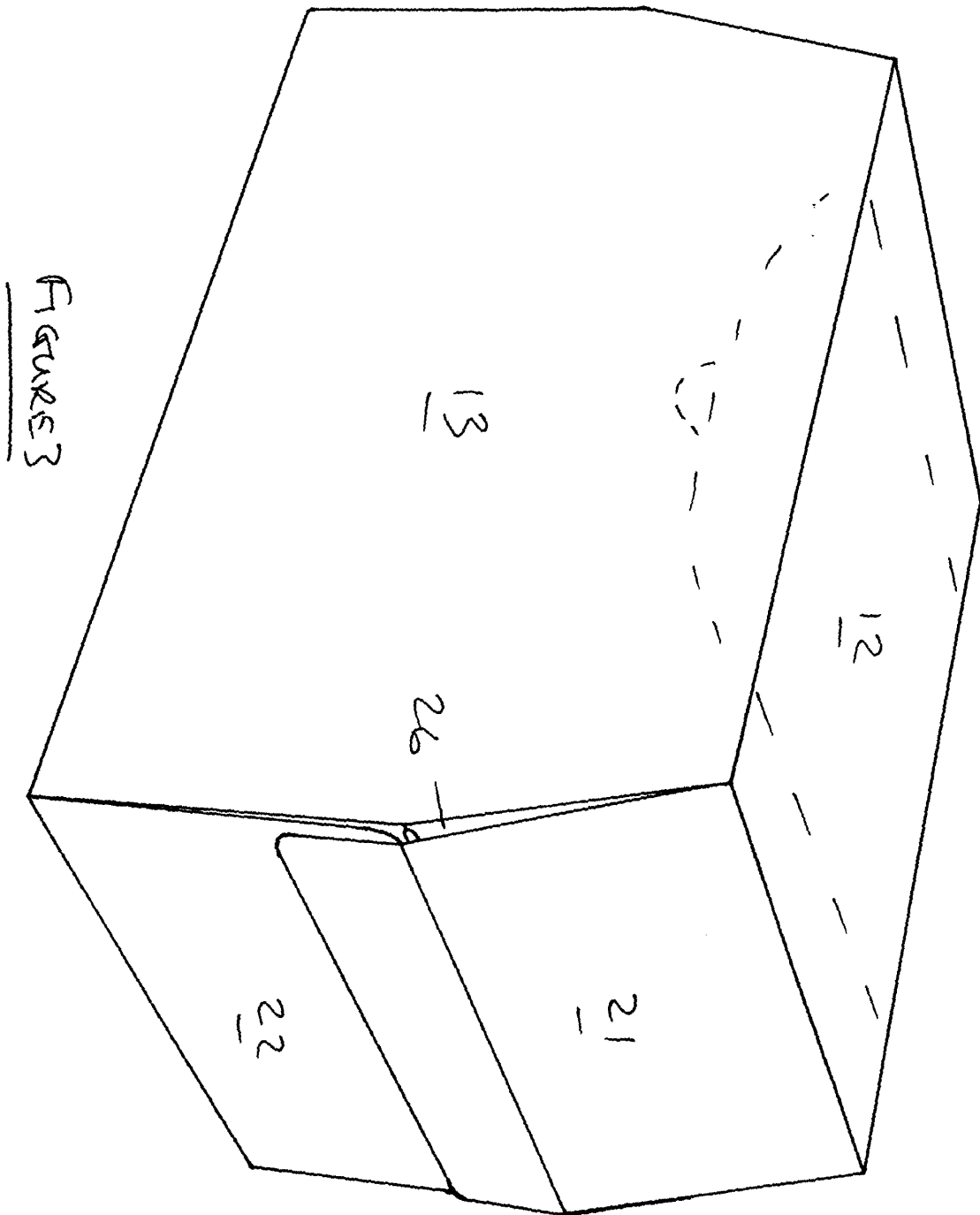


FIGURE 3



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Application Number  
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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                  |                                              |
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| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/> Y : particularly relevant if combined with another document of the same category<br/> A : technological background<br/> O : non-written disclosure<br/> P : intermediate document</p> <p>T : theory or principle underlying the invention<br/> E : earlier patent document, but published on, or after the filing date<br/> D : document cited in the application<br/> L : document cited for other reasons<br/> &amp; : member of the same patent family, corresponding document</p> |                                                                                             |                                  |                                              |

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