



EUROPEAN PATENT APPLICATION

Application number : **92308436.2**

Int. Cl.⁵ : **B65D 5/46, B65D 5/54**

Date of filing : **16.09.92**

Priority : **16.09.91 GB 9119716**

Date of publication of application :
24.03.93 Bulletin 93/12

Designated Contracting States :
AT BE CH DE DK ES FR GB GR IE IT LI NL PT SE

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Containers and blanks.

A cardboard, paperboard or like container has an opening panel 8 defined in an upper closure panel 7 by lines of weakness 9. Handle panels 12,22 are hinged, connected to closure panels 7,21 and together form a handle 31. A portion 14 of the opening panel 8 extends through the handle 31 and has a tab 17 provided at its free end. The container is opened by pulling on the tab 17 to tear open the opening panel 8, with the handle 31 being hinged to a position wherein it will not interfere with the opening action. The handle is thus left intact upon opening of the container.

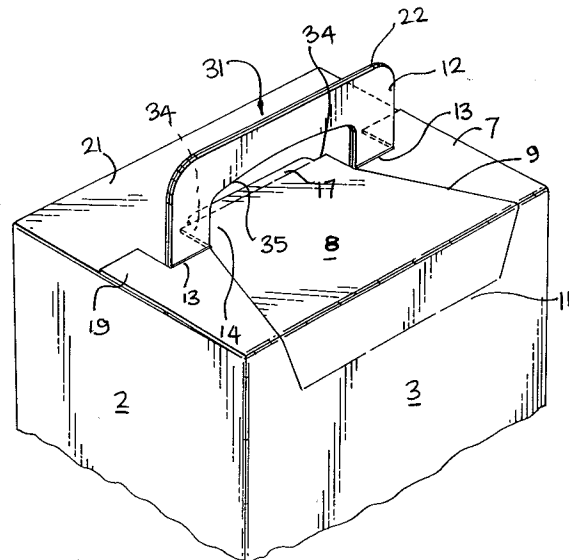


FIG. 2.

The present invention relates to containers made of cardboard, paperboard or similar lightweight foldable sheet material, and to blanks for making the same.

In certain containers of this type, used for storing concentrated detergent powders, it is known to provide a handle, for example of plastics, which is attached separately to the container, and the container is opened using a tear strip. The present invention seeks to provide a container and container blank which provide, in a simple manner, both an opening and an integral handle.

Thus viewed from one aspect the present invention provides a container made of cardboard, paperboard or similar lightweight foldable sheet material, including a top closure panel which has an opening panel at least partially defined therein by one or more lines of weakness and which also has a handle flap hingedly connected thereto, the opening panel being openable while leaving the handle intact.

The said opening panel could be arranged to be completely removable by way of said line or lines of weakness. Preferably however it comprises a hinged opening flap which is reclosable between uses.

The opening panel or flap may be wholly defined in the said top closure panel. Preferably however it also extends into an adjacent side wall of the container so as to provide increased access to the container contents when open. Then, when it comprises a hinged flap as aforesaid, its hinge may be located in the said side wall.

The opening panel or flap may be of any convenient shape, but in one embodiment it is trapezoidal, preferably extending outwardly from the respective inner edges of the handle hinge to the edge of the closure panel. By tapering inwardly towards the handle, after it is opened, the opening panel or flap may possibly be wedged in the closure panel to help prevent it opening inadvertently.

In a preferred form of the invention the said closure panel is arranged to close only part of the top of the container, the top closure being completed by at least one further closure flap. Such a further closure flap may also have a handle flap hingedly connected thereto, which is glued or otherwise secured to the first mentioned closure flap to form a double thickness handle.

The opening panel or flap may be secured, for example by adhesive, to the further closure panel. The opening flap may, therefore, in a preferred embodiment, be provided at a free end with a hinged tab which can be gripped by a user to lift the free end of the flap and open the container.

The line(s) of weakness may be formed in any suitable weakening manner, for example by perforations. Preferably however the opening panel or flap is defined by laterally offset cuts extending partially through the container material from opposite sides.

The cut on the inner surface lies within the cut on the outer surface such that when the container is opened, the blank material delaminates between the cuts in the desired manner. In this way egress of powderous material through perforations, for example, is avoided.

Preferably the opening panel or flap comprises an extension portion which, when the handle is folded into a flat configuration, extends into the hand hole defined by the handle. This is particularly advantageous if the container is erected from a blank, representing an economical use of blank material since, if an integral handle were otherwise to be provided, the material cut away from the blank to form the hand hole would merely be discarded.

In one embodiment, that portion of the opening panel or flap which extends into the hand hole is secured to the further closure panel and the aforementioned hinged tab is provided at the edge of said portion.

Preferably the extension portion of the opening panel or flap extends a substantial distance towards the hand-engaging portion of the handle so that once opened, with the handle folded to its carrying configuration, it may co-operate with the handle to prevent the opening panel or flap from opening fully. Preferably the opposed lateral edges of the opening flap and the handle lie closely adjacent to one another so that once the opening panel or flap is opened, there may be a frictional engagement between them in use, to further prevent inadvertent opening of the opening panel or flap.

The scope of the invention also extends to a blank for making a container as set forth above. More specifically the invention provides, in a further aspect, a blank made of cardboard, paperboard or similar lightweight foldable sheet material, for making a container according to the aforesaid first aspect, including a top closure forming panel which has an opening panel at least partially defined therein by one or more lines of weakness and which also has a handle forming flap hingedly connected thereto, so arranged that in the erected container the opening panel is openable while leaving the handle intact. The blank may of course also incorporate the preferred features of the container described above.

A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Fig. 1 is a plan view of a blank in accordance with the invention;

Fig. 2 is a perspective view of a container erected from the blank of Fig. 1; and

Fig. 3 is a perspective view similar to that of Fig. 2, but with the container opened.

Referring firstly to Fig. 1, a blank for a rectangular container has a series of hingedly interconnected wall panels 1,2,3,4, an array of bottom closure panels 5

and an array of top closure panels 6. A first top closure panel 7 has, in its central region a generally trapezoidal opening panel 8 which is defined by lines of weakness 9,10. The lines of weakness are parallel, laterally offset, cuts extending partially through the blank thickness from opposed sides of the blank, as will be described in detail later. The opening panel is hingedly connected to the side wall panel 3 about a hinge line 11. A handle-defining panel 12 is hingedly connected to an upper part of the closure panel 7 about co-linear hinge lines 13.

An extension portion 14 of the opening panel 8 extends a substantial distance beyond the hinge lines 13 towards the hand-engaging portion 15 of the handle-defining panel 12. The portion 14 is separated from the handle defining panel 12 by cut lines 16. A tab 17 is hingedly connected to the end of the opening panel 8 about a hinge line 18.

Closing tabs 19 of the closure panel 7 are separated from the handle-defining panel 12 by cuts 20.

A second closure panel 21 also has a handle-defining panel 22, of the same shape as panel 12, hinged about hinge lines 23, and closing tabs 24 separated from the handle-defining panel 22 by cuts 25.

Third and fourth closure panels 26,27, which are intended to lie under the panels 7,21 on assembly, are separated from the panels 7,21 by respective cuts 28. The shape of the inclined upper edges 29 of the panels 26,27 is such that upon assembly, the edges 29 lie closely adjacent the cut line 10, as will be described further below.

To erect a container from the blank shown in Fig. 1, the blank is first erected to a rectangular configuration by securing a sealing tab 30 to the opposed wall panel 4. The bottom of the carton is then formed by suitably folding and adhering the panels of the array 5. At this point the container may be filled with a desired product, for example detergent powder, after which the top closure will be formed, as follows.

Closure panels 26,27 are first folded inwardly, and the panels 7,21 then folded inwardly over those panels and secured to them. In so doing, the handle-defining panels 12,22 are brought together in a face to face relationship and secured together to form a double thickness handle 31, as shown in Fig. 2. Since the handle-defining panels are hingedly connected to the respective closure panels 7,21, the handle 31 will be pivotable about its base between a carrying position shown in Fig. 2 and a flat, stacking configuration in which it lies flat against either panel, 7,21.

The extension portion 14 of the opening panel 8 is adhered to the closure panel 21 but the tab 17 is left unadhered.

As mentioned earlier, when the container is assembled the upper inclined surfaces 29 of the panels 26,27 lie closely adjacent the cut line 10 on the inner surface of the closure panel 7. This can be seen in

Fig. 3. This feature gives additional support to the region of weakness, so that it is less likely to be pressed open accidentally during handling.

To open the container a user merely inserts his or her fingers under the tab 17 and pulls upwardly to break the bond between the extension portion 14 and the underlying portion of the closure panel 21. The flap 8 can then be gripped and peeled back to liberate the opening panel 8, as shown in Fig. 3. The handle 31 may be pivoted to a convenient position so that it does not interfere in this operation. The cuts 9,10 in the closure panel 7 allow the blank material to delaminate, and as can be seen in Fig. 3 respective lands 33 are formed in the closure panel 7 and opening panel 8. These lands prevent the opening flap from being pushed into the container once it is opened. The opening panel 8 may be folded back further about hinge line 11, if necessary.

The contents of the container may then be removed for example in measured doses by a measuring scoop. When it is desired to close the container again, the opening panel 8 is folded up about hinge line 11, and the lands 33 brought together. The opening panel 8 may possibly be wedged into the tapering portion of the closure panel 7 to help maintain the panel closed. It will also be apparent that should the panel begin to open the upper lateral edges 34 of the opening flap 14 will engage with the curved portions 35 of the handle 31 to prevent the panel opening fully.

It will be appreciated that the container could be erected by having the top closure formed first, followed by filling and finally formation of the bottom closure, if this was found to be desirable.

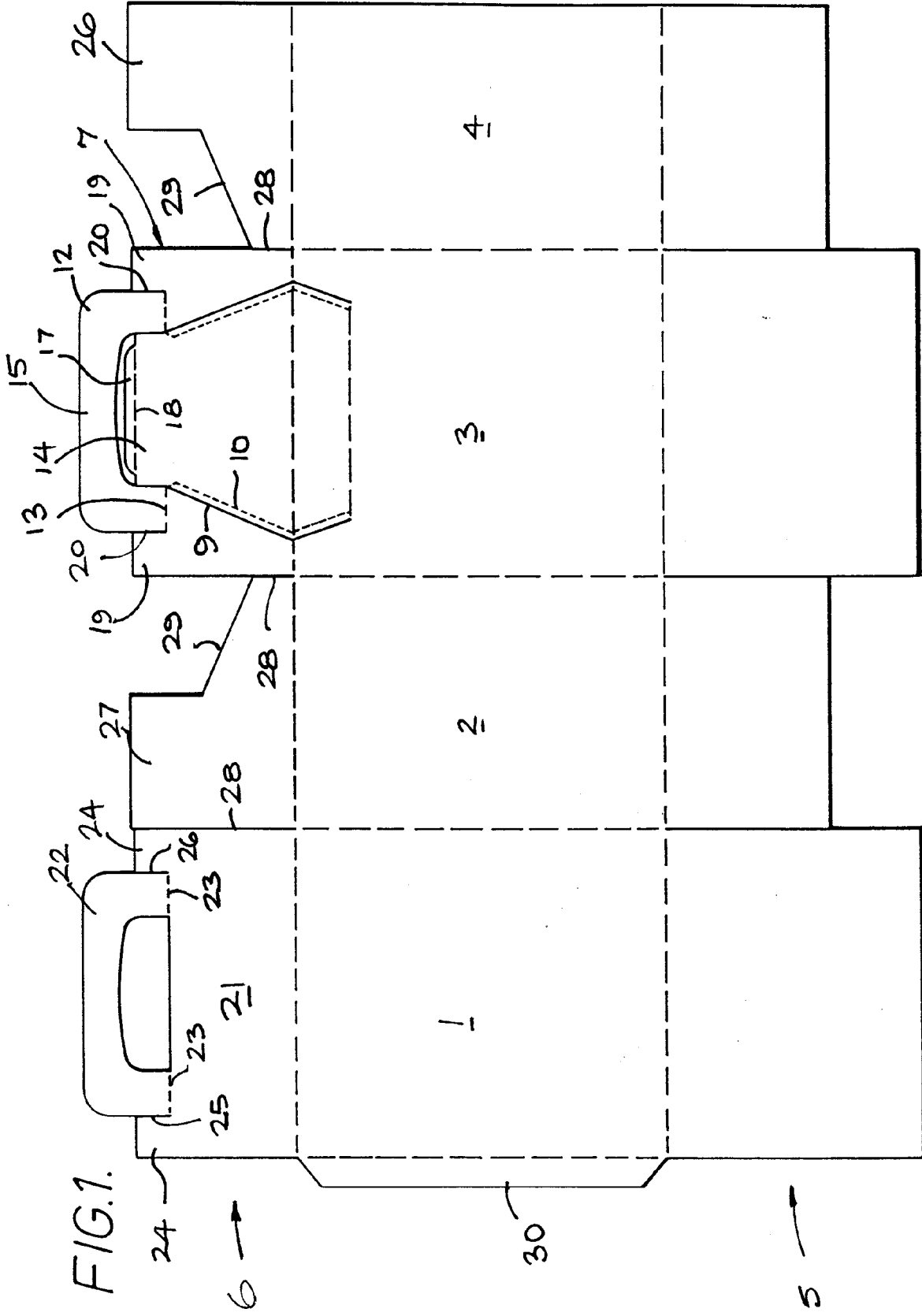
Many modifications may be made to the embodiment described above, within the scope of the invention. For example, the side limbs of each handle panel 22 may increase in width towards the hinge line 23, to increase the length of the hinge line. This will increase tear resistance, which may be desirable if recycled board material is used. Thus the side limbs may be generally trapezoidal in shape, for example. In such a case, the extension portion 14 will flare outwardly towards its edge 34. This may improve retention of the opening panel 8 in its closed position since the portion 14 may not then be so easily pulled through the erected handle 31.

It will also be appreciated that the handle panels need not be adhered to each other, and that a thicker handle could be obtained, for example by providing a third panel hingedly connected to a lower edge of the hand engaging portion of handle panel 22 which panel is then folded up against panel 22, for example to be sandwiched between the panels 12,22.

Claims

1. A container made of cardboard, paperboard or

- similar lightweight foldable sheet material, including a top closure panel which has an opening panel at least partially defined therein by one or more lines of weakness and which also has a handle flap hingedly connected thereto, the opening panel being openable while leaving the handle intact.
- 2.** A blank made of cardboard, paperboard or similar lightweight foldable sheet material, comprising a top closure forming panel which has an opening panel at least partially defined therein by one or more lines of weakness and which also has a handle forming flap hingedly connected thereto, said panels being so arranged that in the erected container the opening panel is openable while leaving the handle intact.
- 3.** A container or blank as claimed in claim 1 or 2 wherein said opening panel comprises a hinged opening flap which is reclosable between uses.
- 4.** A container or blank as claimed in any of claims 1 to 3 wherein said opening flap extends into an adjacent side wall panel of the container or blank.
- 5.** A container or blank as claimed in any preceding claim wherein said opening panel or flap tapers inwardly towards the handle flap.
- 6.** A container or blank as claimed in any preceding claim wherein the said closure panel is arranged to close only part of the top of the container, the top closure being completed by at least one further closure flap.
- 7.** A container or blank as claimed in claim 6 wherein said further closure flap also comprises a handle flap hingedly connected thereto for forming a composite handle with said first mentioned handle flap.
- 8.** A container or blank as claimed in any preceding claim wherein said opening flap is provided at a free end with a tab which can be gripped by a user to lift the free end of the flap and open the container.
- 9.** A container or blank as claimed in any preceding claim wherein said lines of weakness are defined by laterally offset cuts extending partially through the container or blank material from opposite sides.
- 10.** A container or blank as claimed in any preceding claim wherein the opening panel or flap comprises an extension portion which, when the handle is folded into a flat configuration, extends into the
- hand hole defined by the handle.
- 11.** A container or blank as claimed in claim 10 wherein the extension portion of the opening panel or flap extends a substantial distance towards the hand-engaging portion of the handle.
- 12.** A container or blank as claimed in claim 10 or 11 wherein the opposed lateral edges of the opening flap and the handle lie closely adjacent to one another.
- 13.** A container or blank as claimed in any preceding claim wherein the side limbs of the or each handle flap increases in width towards the closure panel.



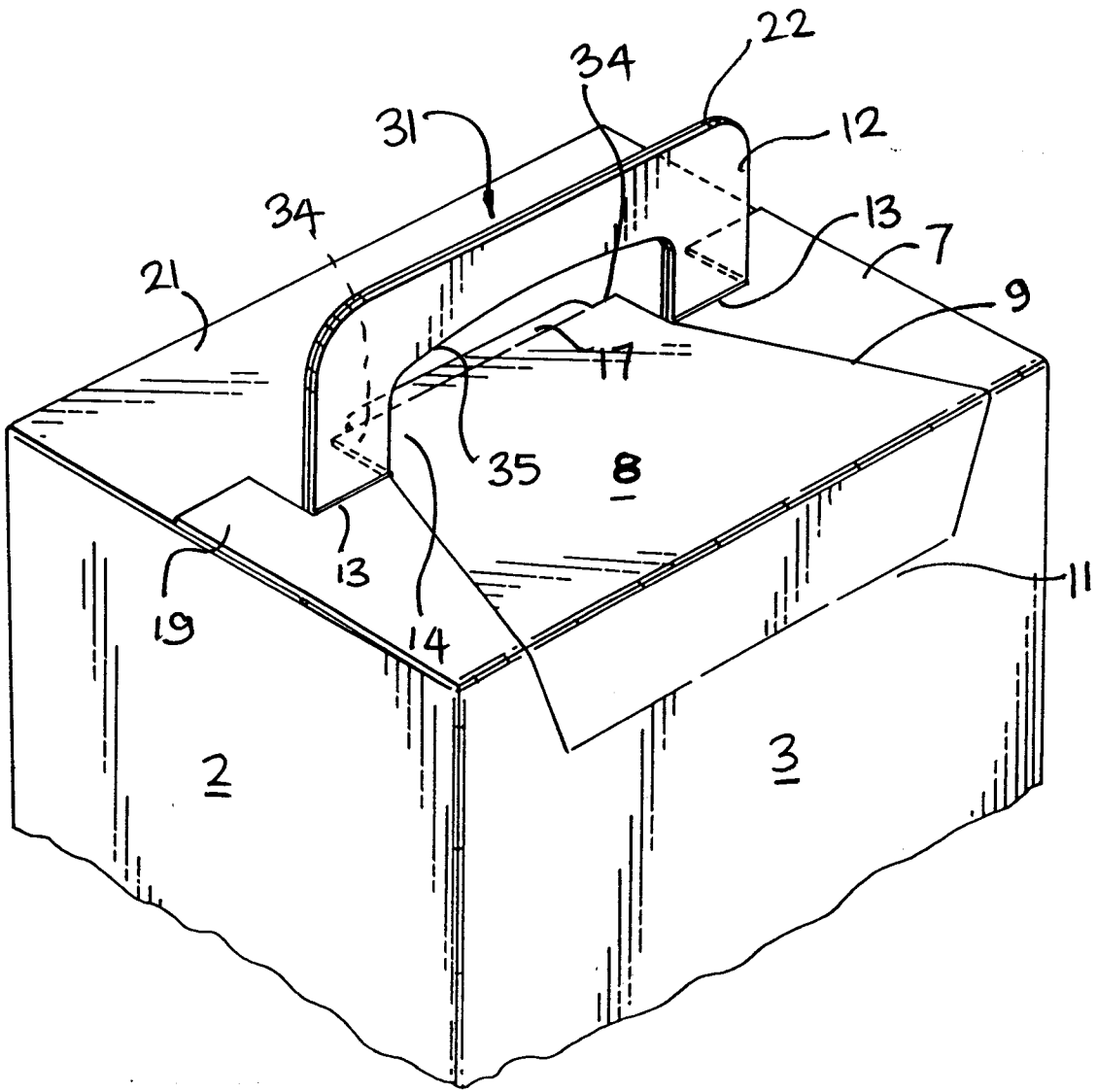


FIG. 2.

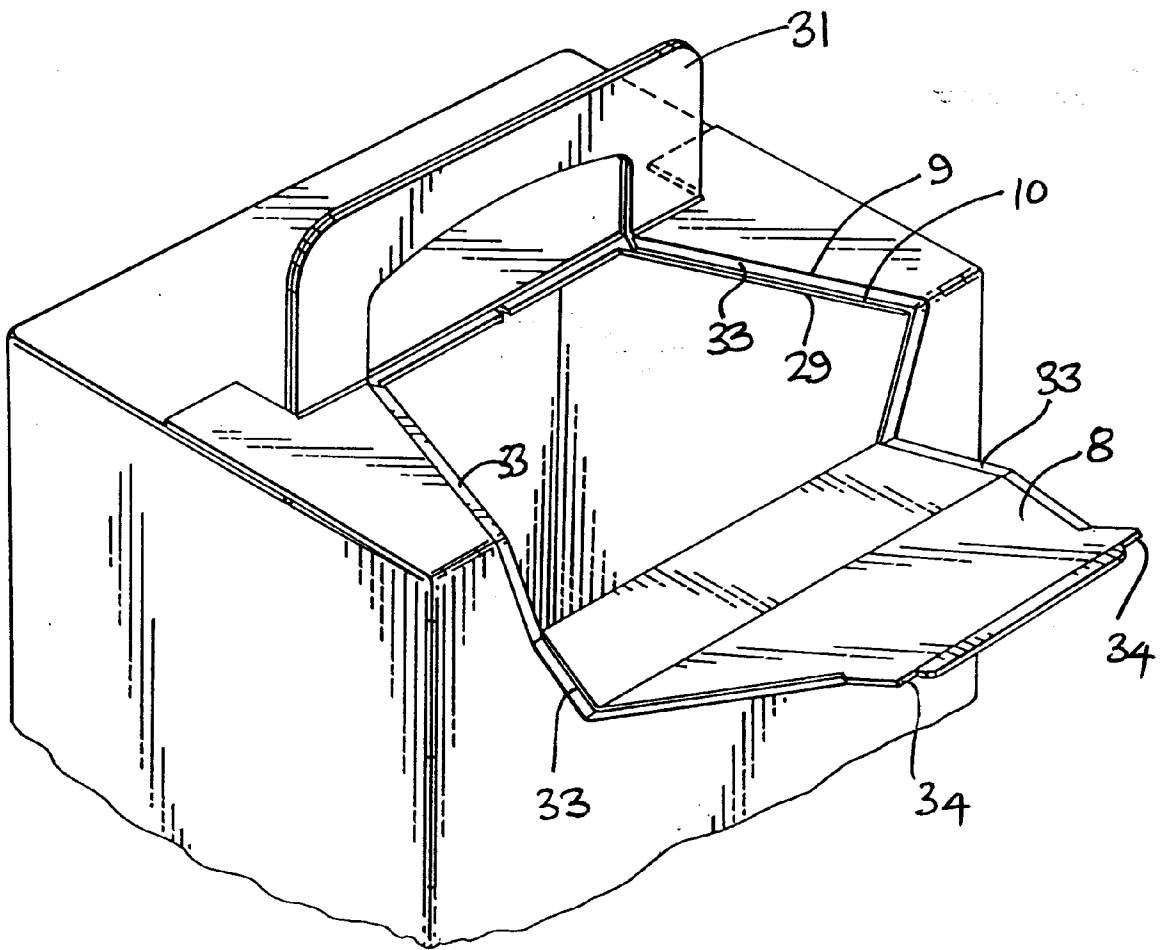


FIG. 3.



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 30 8436

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 042 184 (THE PROCTER & GAMBLE COMPANY) * the whole document *	1-3,5,8	B65D5/46 B65D5/54
Y	---	4,6,7, 9-13	
Y	GB-A-872 065 (HEDWIN CORPORATION) * figure 21 *	4,6,7	
Y	US-A-4 738 365 (PRATER) * column 4, line 44 - line 54; figures 12,13 *	9	
Y	US-A-4 308 995 (HANES) * column 3, line 13 - line 50; figures 1-7 *	10-13	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B65D
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 25 NOVEMBER 1992	Examiner SMITH C.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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