

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 October 2002 (17.10.2002)

PCT

(10) International Publication Number
WO 02/081323 A1

- (51) International Patent Classification⁷: **B65D 71/42**
- (21) International Application Number: PCT/FI02/00206
- (22) International Filing Date: 14 March 2002 (14.03.2002)
- (25) Filing Language: Finnish
- (26) Publication Language: English
- (30) Priority Data:
20010722 6 April 2001 (06.04.2001) FI
- (71) Applicant (for all designated States except US): **Å & R
CARTON OY** [FI/FI]; P.O. Box 120, FIN-27501 Kauttua
(FI).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **NURMEKSELA,
Mika** [FI/FI]; Maatähdentie 8 C 9, FIN-26100 Rauma (FI).
NIEMINEN, Jorma [FI/FI]; Eurantie 173, FIN-27500
Kauttua (FI).
- (74) Agent: **TURUN PATENTTITOIMISTO OY**; P.O. Box
99, FIN-20521 Turku (FI).
- (81) Designated States (national): AE, AG, AL, AM, AT, AT
(utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE
(utility model), DK, DK (utility model), DM, DZ, EC, EE,
EE (utility model), ES, FI, FI (utility model), GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 02/081323 A1

(54) Title: CARRIER FOR BOTTLES

(57) Abstract: The invention relates to a carton package for packaging several, most suitably 4-12, bottles together into a two-row bottle pack. The upper portions of the bottles, at least the caps of the bottles, are above apertures arranged for the bottles in the upper portion of the carton package. The carton package extends at least to a distance downwards from the upper portions of the bottles, thus forming a belt-like area around the bottles. The area between the upper portion of the package and the said belt-like area is on at least two sides inclined, and in the package the cardboard does not extend to below the bottles. In the orientation of the height, the support of the bottles in the carton package is effected at least partly by means of support lugs formed in the edges of the apertures extending to the said inclined area.

CARRIER FOR BOTTLES

The invention relates to a carton package according to the preamble of independent claim 1 for the packaging of bottles together for storage and transport.

5 Bottles are generally used as liquid packages containing a soft drink, mineral water, beer or suchlike. The use of a crate for the storage and transport of a plurality of bottles (usually 12 – 24) is often convenient and expedient, but a full crate is quite heavy to lift and carry. Especially for the storage and carrying of smaller quantities of bottles (usually 2 – 12) there have already for decades been used
10 various carton packages, on which it has also been possible to print at least the name of the drink, well visible at least on the side surfaces of the package. A carton package can even in other ways be designed so as to “sell” through both texts and pictures.

Publication US 5,058,735 discloses a carton package for bottles. The side parts of
15 the package are inclined when the package has been set up, and even the foldable end pieces of the side panels are inclined in the area of the bottle row end. This disclosed structure is, however, not suitable for use when a carton extending to a lower point is desired in order to obtain more space for advertising. Publication EP 256 497 discloses one option for a carton package for bottles. In this package, also,
20 it is not possible in practice to extend the side wall lower than the conical neck portion of the bottle in order to expand the space for advertising.

Publication US 3,410,596 discloses a carton package for bottles. In this option, cardboard is used in the upper portion in such an amount that the apertures for bottles are entirely within the flat area of the upper portion. A structure such as this
25 also requires the use of quite strong and stiff cardboard, and the buyer cannot without opening the package even visually check whether all of the bottles are full. The option disclosed in publication US 4,378,878 has the same disadvantages as the one described above. In this one, the end area is hardly at all used as advertising space, since the tape-like connecting member at the end is quite narrow.

30 Publications US 4,403,689 and US 4,339,032 disclose single-row carton packages for pairs of bottles, and in particular the opening arrangements for these packages. The support lugs are shaped so that they do not reliably support the bottles on the side surfaces of the caps, in which case there is the risk that when the carton pack-

age is being carried, a bottle or both bottles will become released from the carrier and fall.

The carton package disclosed in publication US 4,300,680, which accommodates two rows of bottles, has an approximately flat upper portion that is to such an extent narrow that part of the bottle cap is not in the area of the upper portion but in the area of the inclined portion. However, this solution relates to a carton package having a bottom on top of which the bottles are supported. The inclined, opening sides are used in particular when bottles are being taken out of the package. Publication US 5,549,197 also discloses a carton package wherein the bottles are in two rows but the bottles are supported by the bottom of the package.

There is also known a carton package for crown-capped ½-liter bottles. This package has a bottom on which the bottles stand, but the inclined upper portion of the package has a side aperture for supporting the upper portion of the bottle and for holding it in place. Since these packages have nothing at the end, it is important that the bottle cannot tip over and fall out of the package. The said upper aperture exists specifically to hold the bottle cap in place in the lateral direction. The aperture below the cap may be either entirely open, for example the diameter of the aperture may be approx. 2.5 cm or the aperture may have strips which yield at the packaging stage and under the effect of which the bottle enters into its place in the package without a risk of the package breaking.

The object of the present invention is to disclose a double-row carton package which has no bottom and in which the bottles are therefore supported by the upper portion of the carton package when the package is being lifted and transported by carrying means in the upper portion. It is also an object of the invention specifically to arrange a considerable amount of advertising space on all sides of the package, however, it is also an object to save cardboard. One object is to design the package so that the strength properties of the cardboard would be well exploited while the package could nevertheless be opened with moderate ease in order to consume the contents of the bottle. One object is also that, for example, in the store the customer can see through relatively large apertures on the inclined upper side whether the caps are, as seen from the outside, in blameless condition and whether all of the bottles have the same quantity of liquid. Furthermore, it is an object of the invention to provide a carton package from which a bottle or bottles can be removed without breaking the package and which package can be exploited even so that partly full or empty bottles can be returned into the package and, when so desired, removed again, etc.

The object of the invention is accomplished in the manner stated in claim 1 and the other claims. The invention relates to a carton package for packing several, most suitably 4 – 12, bottles together into a two-row bottle pack wherein the upper portions of the bottles, at least the caps of the bottles, are above apertures arranged for the bottles in the upper portion of the carton package. The carton package extends to at least a distance downwardly from the upper portions of the bottles, forming a belt-like area around the bottles. The area between the upper portion of the package and the said belt-like area is inclined on at least two sides. The cardboard of the package does not extend below the bottles. If in the height direction the bottles are supported in the carton package with the help of support lugs formed at the edges of the apertures extending at least partly to the said inclined area, the upper portion of the package will be quite narrow, and therefore cardboard is required in quite a small amount. The upper surface of the package also has rather minor advertising value compared with the side surfaces. The upper surface of the package can also be used for partial support for the bottles.

If there are two per bottle of the said support lugs, the support lugs can be shaped so that the support lugs support a bottle to a large extent, i.e. at least in two directions. This makes the package sturdy and capable of retaining its shape.

If, in so-called PET bottles, the said support lugs support the large lower surface of the neck flange, the support will be very reliable, it is highly important that in carton packages such as this, without a bottom, the bottles remain securely in place during lifting and transport from the upper portion of the package.

If the said belt-like area is formed as a continuous ring at least 2 cm high, preferably 5 – 15 cm high, or even higher, to encircle the entire package on all of its sides, the said area will support the bottles in the package and keep them quite tightly in two rows.

If the belt-like area is formed as a continuous ring by means of at least one glue joint, the joint is in general very reliable and it is not necessary to use often quite unreliable mechanical joints, inconvenient metal staples or the like.

If in the belt-like area on the outer surface of the package there is information at least concerning the contents of the package, this area constitutes an excellent advertising area, in which it is possible to print the name of the drink and other information, as well as pictures, drawings, slogans and the like.

It is recommended that the upper portion of the carton package should have carrying means for the lifting and transport of the carton package. In such a case the managing and transport of the product in a retail store and any lifting and transport by the customer will be easy and convenient.

- 5 If the edges of the said apertures in the said inclined area are at least partly in contact with the conical upper portions of the bottles so that the carton package cannot at least significantly shift lower when the bottoms of the bottles are supported by a sales shelf, a lower carton package or the like, the carton package constantly remains well in place, supporting the bottles. The carton package cannot in this case
10 move up or down.

The invention is described below in greater detail with reference to the enclosed drawing, wherein

- Figure 1 depicts schematically a cardboard blank for a carton package according to the invention for PET bottles,
- 15 - Figure 2 depicts schematically a cardboard blank according to figure 1, but for a package for only four bottles,
- Figure 3 depicts schematically one aperture intended for a bottle in figure 1, together with its immediate vicinity and enlarged,
- Figure 4 depicts schematically the cardboard blank according to figure 1, already
20 glued but before being installed in place, and
- Figure 5 depicts schematically a carton package according to the invention, loaded with bottles.

In figure 1 of the drawing, reference numeral 1 indicates a package blank cut from cardboard, the blank being intended for packaging six bottles into a bottle pack
25 without a bottom. For the bottles there are apertures 2a – 2f, each of which has support lug blanks 3a and 3b separated from each other by a cut. The blank has a central area 4 having carrying means, in this case consisting of two apertures 5a and 5b, which are dimensioned for a thumb and respectively another finger such as the forefinger, for being used in situations of lifting and carrying. Apertures 2a –
30 2f are partly in the central area 4, but mainly in the inclined areas 6a and 6b of the package. Fold points 7a and 7b delimit the inclined areas 6a, 6b from the side walls 8a and 8b. Side wall 8a has fold points 9a, 9b and further, continuing to the side, fold points 10a, 10b, from which the cardboard blank continues as end flaps 11a and 11b. Side wall 8b has respectively folds 12a and 12b and, further 13a and
35 13b, after which there are relatively narrow areas of glue 14a and 14b. A package for bottles is formed from the package blank 1 by folding along the above-

mentioned fold points, so that glue area 14a and the edge area of the end flap 11a are placed one on top of the other and respectively glue area 14b and the edge of the end flap 11b are placed one on top of the other. By momentarily pressing together the said gluing areas placed one on top of the other, there is obtained a
5 packaging blank for fitting bottles in a carton package according to the invention.

Figure 2 depicts an option very similar to that in figure 1, but this blank, indicated by numeral 15, is intended as a carton package which accommodates only four bottles. For the sake of clarity, reference numerals are marked in figure 2 only in-
10 sofar as they deviate from the blank according to figure 1. The carrying means 16 is one aperture 16, which is in the middle of the central area 4 of the blank. It is recommended that the thumb or one of the two biggest fingers is pushed into this and another finger can be used for obtaining a better grip of the package, by hold-
ing the said finger at either end of the central area 4 of the package, these areas being indicated by numerals 17a and 17b.

15 Figure 3 depicts, enlarged, one aperture of figure 1, intended for a bottle, and its immediate vicinity. The support lug blanks 3a and 3b are located one opposite the other and they are detached from each other at cutting point 18. From areas 19a and 19b the cardboard is removed, and thus these areas form those end areas of the aperture between which the bottle cap penetrates the aperture and even slightly
20 beyond it. In this connection the support lug blanks 3a and 3b fold at fold lines 20a and 20b, and the edge areas 21a and 21b of the support lug blanks 3a and 3b form the surface which will here support the bottle put in place when the carton package is ready for transport from the packaging site towards its end user. It is to be noted that the dimensions and shapes of the support lug blanks 3a and 3b vary according
25 to whether the bottle is a so-called PET bottle having a considerably large flange below the cap or the question is of some other bottle type. The option depicted in figure 3 is suited in particular for PET bottles, since the said flange settles at the point indicated by reference numeral 22 and supports the bottle. It depends on the dimensioning and design of the package blank how much the conical upper por-
30 tion of the PET bottle provides support for the package, in particular for the inclined areas 6a, 6b of the package, so that the package would not shift lower. The placing of the said flange at point 22 below the cardboard also prevents the cardboard from shifting lower. The said flanges of the bottles prevent the package from shifting upwards relative to the bottles.

35 Figure 4 depicts the cardboard blank glued, without the bottles. It is recommended that the cardboard blank should be glued quite close to the site at which the bottles

are placed in the package. The folds at the package corners may also be such that they have the same or approximately the same radius of curvature as has the outer surface of a bottle. Thus the package can, when so desired, be placed quite tightly around the bottles.

- 5 Figure 5 depicts the completed package with its bottles. The name of the drink, the text, pictures or other advertising is not shown here.

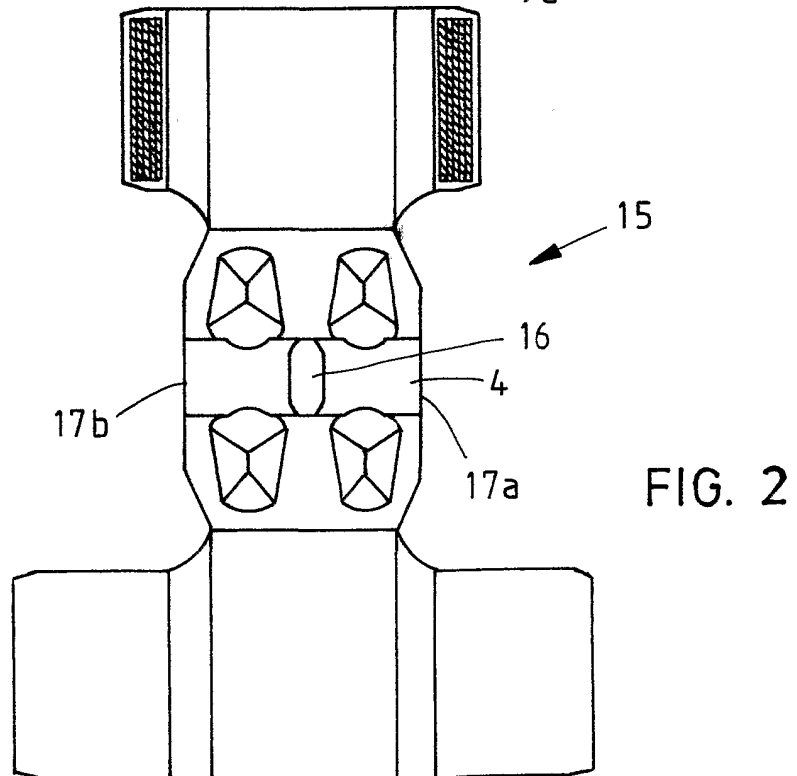
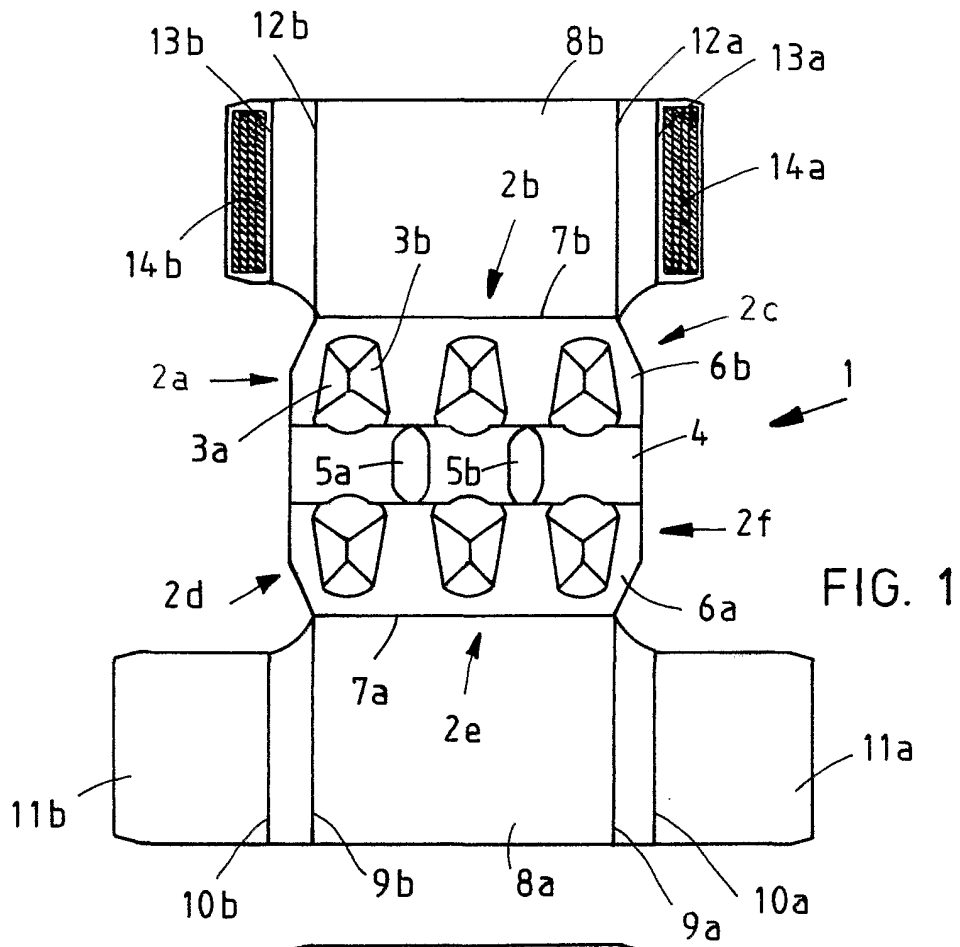
The figures depict two-row carton packages having 4 or 6 bottles. Within the scope of the invention it is also possible to manufacture in a corresponding manner packages having 8, 10 or 12 bottles. In this case the strength factors of the package
10 are to be taken into consideration, in particular sturdiness and durability, since the weight of the bottles and their contents will rise to several kilograms.

The package according to the invention is advanced also in the respect that, for example, when the package is placed on its side, any or all of the bottles of the top row can be taken out without tearing or otherwise breaking the package. If the support lugs are pushed further apart, it is possible to take a bottle out of the package
15 quite easily by pulling it from the vicinity of its bottom and possibly by pushing the cap at the same time. When the contents of the bottle have been consumed, or even otherwise, the bottle can be pushed back into place. Therefore, loose bottles will not be left anywhere, because the package can thus be used also for storing
20 empty bottles and for transporting them to bottle return or elsewhere.

The invention is not limited to the above embodiment but many modifications of it are conceivable within the scope of the enclosed claims.

CLAIMS

1. A carton package for packing several, most suitably 4 – 12, bottles together into a two-row bottle pack wherein the upper portions of the bottles, at least the caps of the bottles, are above apertures arranged for bottles in the upper portion of the carton package, and which carton package extends to at least a distance downwards from the upper portions of the bottles, thus forming a belt-like area around the bottles and in which package the area between the upper portion and the said belt-like area is inclined on at least two sides and in which package the carton does not extend to under the bottles, **characterized** in that the support of the bottles in the carton package in the orientation of their height is at least partly effected by means of support lugs formed in the edges of apertures extending to the said inclined area.
2. The carton package according to claim 1, **characterized** in that there are two of the said support lugs for each bottle.
3. The carton package according to claim 2, **characterized** in that the said support lugs support the lower surface of the neck flange of so-called PET bottles.
4. The carton package according to claim 3, **characterized** in that the said belt-like area is formed as a continuous ring to encircle the entire package on all sides as an area at least 2 cm high, preferably 5 – 15 cm high, or even higher.
5. The carton package according to claim 4, **characterized** in that the belt-like area is formed into a continuous ring by means of at least one glue joint.
6. The carton package according to claim 5, **characterized** in that in the belt-like area on the outer surface of the package there is information at least concerning the contents of the package.
7. The carton package according to claim 6, **characterized** in that in the upper portion of the carton package there is a carrying means for the lifting and transport of the carton package.
8. The carton package according to any of the preceding claims, **characterized** in that the edges of the said apertures in the said inclined area are at least partly in contact with the conical upper portions of the bottles so that the carton package cannot, at least significantly, shift downwards when the bottle bottoms are supported by a sales shelf, a lower carton package or the like.



2/3

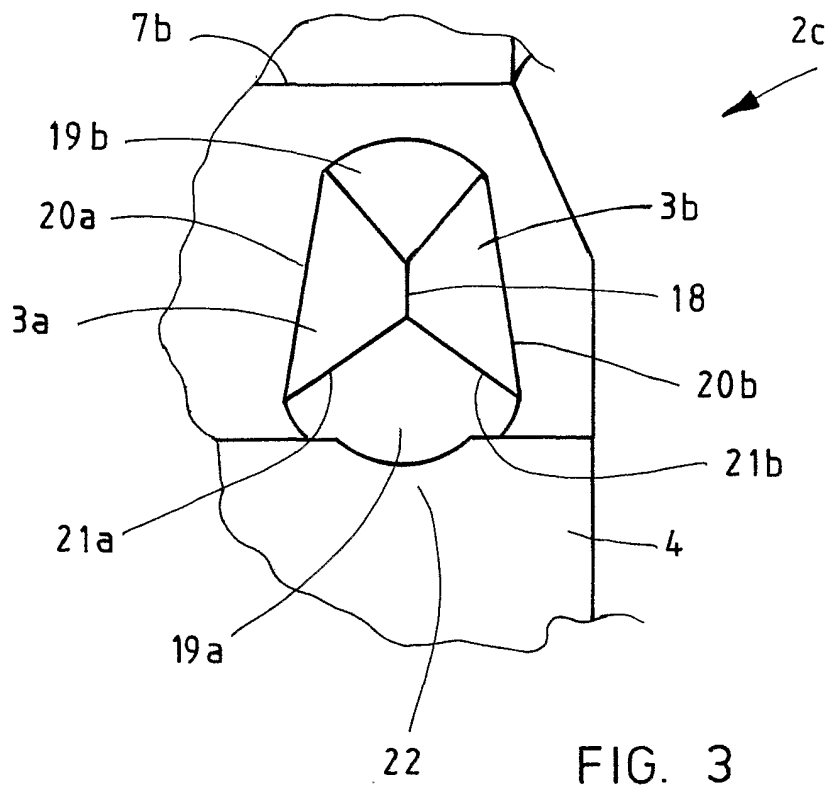


FIG. 3

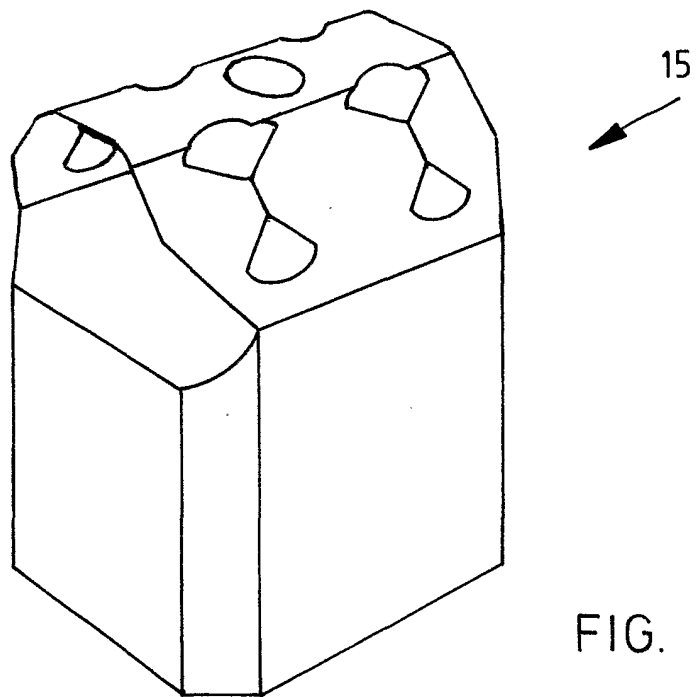


FIG. 4

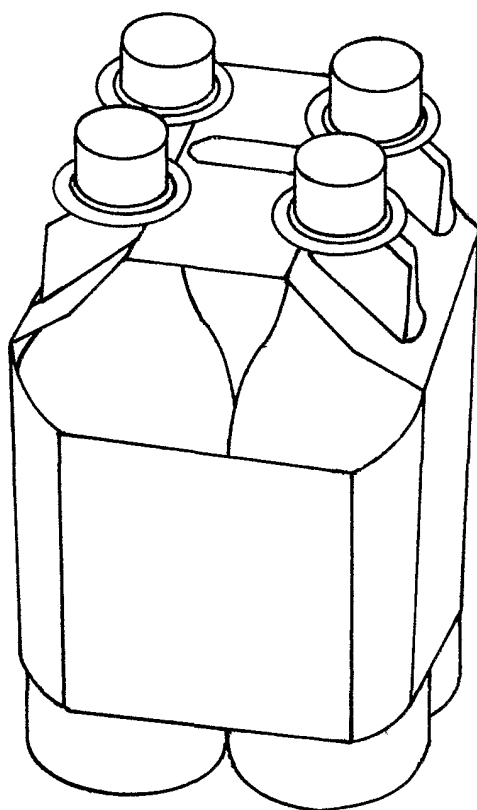


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 02/00206

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 71/42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5058735 A (BIENAIMÉ), 22 October 1991 (22.10.91), column 2, line 5 - line 30, figures 1, 3 --	1-8
A	US 3410596 A (J B SLEVIN, JR), 12 November 1968 (12.11.68), column 2, line 47 - column 3, line 28, figure 1 --	1-8
A	US 4378878 A (GRASER), 5 April 1983 (05.04.83), column 4, line 30 - line 34, figures 1,2 --	6

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone


"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

5 July 2002

Date of mailing of the international search report

 -07- 2002

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Anette Hall/EK
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 02/00206

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5549197 A (SUTHERLAND), 27 August 1996 (27.08.96), column 2, line 48 - column 3, line 7, figure 1 --	1-8
A	WO 9806638 A1 (THE MEAD CORPORATION), 19 February 1998 (19.02.98), page 2, line 7 - page 5, line 11 -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

10/06/02

International application No.

PCT/FI 02/00206

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	5058735	A	22/10/91	AT 110679 T	15/09/94
				DE 3820370 A	21/12/89
				DE 58908260 D	00/00/00
				DK 291789 A	16/12/89
				EP 0346693 A,B	20/12/89
				ES 2059618 T	16/11/94
				PT 90846 A,B	29/12/89

US	3410596	A	12/11/68	NONE	

US	4378878	A	05/04/83	NONE	

US	5549197	A	27/08/96	AU 694591 B	23/07/98
				AU 4146596 A	26/06/96
				BR 9506381 A	16/09/97
				CA 2181053 A	13/06/96
				EP 0740629 A	06/11/96
				FI 962266 A	10/06/96
				IL 116298 D	00/00/00
				JP 9509126 T	16/09/97
				NO 963310 A	03/10/96
				NZ 296769 A	25/03/98
				WO 9617781 A	13/06/96
				ZA 9510446 A	19/06/96

WO	9806638	A1	19/02/98	AT 215490 T	15/04/02
				AU 3915797 A	06/03/98
				DE 69711708 D	00/00/00
				EP 0958192 A,B	24/11/99
				EP 1157939 A	28/11/01
				GB 9616887 D	00/00/00
				NO 990623 A	08/04/99
