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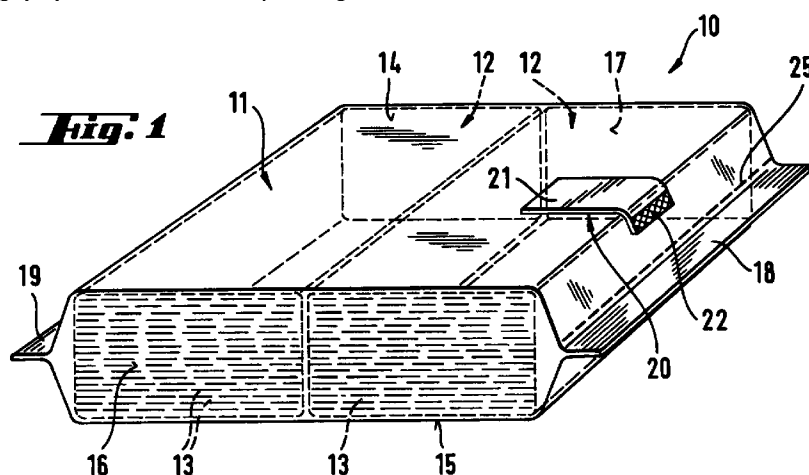
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(54) **Tape for resealing a pack of flexible articles**

(57) The present invention relates to a tape (20) used to reseal a pack (10) of flexible articles (13). The invention has particular application to jumbo packs consisting of a large quantity of flexible articles such as moisture-impregnated tissues. In a preferred embodiment of the present invention, the pack comprises a region of weakening (26) in an area corresponding to

the positioning of the tape. The region of weakening serves as an anchor mechanism. In a further embodiment of the present invention, the tape (20) itself comprises the region of weakening (26). In yet a further embodiment of the present invention, an anchor tape (30) underlies the tape.



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Description

Field of the invention

The present invention relates to a tape used to reseal a pack of flexible articles. The invention has particular application to packs consisting of a large quantity of flexible articles such as moisture-impregnated tissues.

Background of the invention

A variety of packaging solutions exists for laminar articles, in particular for moisture-impregnated tissues destined for cosmetic, toilet and cleaning purposes. For simplicity, the ensuing description focuses on moisture-impregnated tissues for the human skin, especially for the skin of an infant, but what is said must be understood in light of the foregoing comment about the wider applicability of the present invention.

Typically, moisture-impregnated tissues are stored in dispensers or containers that are either disposable or reusable. The prior art is rich with examples of such dispensers or containers. For instance, WO 96/37139 describes a resealable dispenser for dispensing a plurality of interleaved, moisture-impregnated articles. The dispenser comprises a housing having a recessed portion with an orifice for removal of the articles. A resealable flexible label is attached to the outer surface of the housing to completely cover the recessed portion. EP 0 752 375 details an opening device for a package formed of a tearable synthetic film. A straight incision is made across the film and an opening tab is either welded or stuck onto the external face of the film covering the incision. The opening tab comprises an adhesive portion, a gripping portion, which on being pulled causes pre-defined tearing along lines emanating from the extremities of the incision in order to allow access to the articles stored within. US 4,723,301 describes a container having an access opening and a resealable sealing device, the latter consisting of a closure flap which is secured at one end region to the front side of the container and is coated with a pressure-sensitive adhesive to permit the container to be opened and resealed. A pair of cuts are formed in the flap to define a pair of tabs integral with the one end region of the flap, and a pair of prevention holes are formed at the ends of the cuts on the line of attachment of the body of the flap to the one end region thereof, all to prevent the flap from tearing away from the container. A non-adhesive member is cut out of the front side of the container to define the access opening and is adhesively secured to the coated face of the flap. EP 0 590 708 B1 relates to a flow-pack for food products such as pasta. The flow-pack consists of a sealed wrapper having a longitudinal fin provided with a tear-strip easy-opening device, which is designed to prevent reliance on the use of either a scissors or a knife for opening purposes. On taking advantage of the tear-strip, complete separation of the wrapper into two distinct

parts occurs. The problem of resealing is not addressed.

In recent years, the trend has been towards the use of reusable dispensers or containers in combination with refill packs in order to reduce the severity of the disposal problem from an environmental standpoint. Furthermore, it has been studied that recent consumer purchasing trends have led to lower purchase frequencies with larger quantities of product per purchase. Manufacturers have thus responded by increasing the number of discrete articles contained within a single pack, resulting in packs containing relatively large quantities of products. Therefore, the demand in the market place for refill packs coupled with the increase in size of same has resulted in a need for an effective resealing mechanism that permits the resealing of a pack of moisture-impregnated articles in a completely satisfactory manner to guarantee enhanced moisture retention and reduced moisture leakage, a minimisation in the level of possible contamination from the external surrounds, a high level of user satisfaction and user confidence especially since the robust nature of the tape poses no danger to an infant from the point of view of accidental swallowing.

It has now been discovered that the present invention can provide a simple and very attractive solution to the above need by providing at least one tape that can be so positioned on one of the surfaces of the pack to allow free access to the end portion of the pack from where the articles are typically extracted, and by providing at least one tape that is so designed to enable partial peeling of the tape for attachment to one of the opposed surfaces.

Summary of the invention

The invention focuses on a pack formed of a pliable material, said pack enveloping more than one stack of flexible articles and comprising first and second surfaces opposed to each other, and two end portions. At least one of the first and second surfaces comprises at least one tape. The tape comprises a functional portion, a gripping portion, longitudinal outer edges and lateral outer edges and is so positioned on one of the first or second surfaces to enable free access to the end portion of the pack for removal of at least one of the stacks of flexible articles and to enable partial peeling of the functional portion of the tape for effective attachment to one of the first or second opposed surfaces to reseal the pack, after at least one of the stacks has been removed.

In a preferred embodiment of the present invention, one of the first or second surfaces corresponding to an area close to the outer edge of the functional portion of the tape is provided with a region of weakening. The region of weakening comprises at least one line of weakness. In another embodiment of the present invention, the tape per se comprises the region of weakening.

Brief description of the drawings

It is believed that the invention will be better understood from the foregoing description in conjunction with the accompanying drawings in which:

Figure 1 illustrates a pack comprising two stacks of flexible articles according to a preferred embodiment of the present invention;

Figure 2 illustrates the pack after one stack has been removed and the pack has been resealed; and

Figure 3 shows a cross sectional view taken along line 2-2 of Figure 2;

Figure 4 shows a magnified plan view of the tape overlying the corresponding surface of the pack comprising the region of weakening; and

Figure 5 details a further embodiment of the present invention wherein an anchor tape is disposed underneath the tape.

Detailed description of the invention

Figure 1 illustrates a pack 10 formed of a pliable material 11, which envelops more than one stack 12 of flexible articles 13. As used herein, the term "pliable" refers to materials that are flexible such as plastic materials, foil, thin paper or laminates. The material may be transparent or opaque and may comprise art-work. In particular, Figure 1 shows a preferred embodiment of the present invention in which the pack 10 contains two stacks 12 of moisture-impregnated tissues 13. The pack 10 essentially defines a rectangular volume. The pack 10 comprises first and second surfaces opposed to each other - an upper surface 14 and a lower surface 15; a side surface 16 and an opposing side surface 17 - and two end portions 18, 19. The end portions 18, 19 are sealed together according to means well-known to the man skilled in the art. The pack 10 may also comprise a fin seal, which may be located typically on either the upper surface 14 or lower surface 15, but the pack 10 may equally comprise the fin seal on the side surfaces 16, 17.

At least one of the first or second surfaces 14, 15, 16, 17 comprises at least one tape 20. The tape 20 comprises a functional portion 21, a gripping portion 22, longitudinal outer edges 23 and lateral outer edges 24 - refer to Figure 4. The tape 20 can be made from any suitable material that is relatively robust and durable so as to permit the user to firmly pull back the tape 20 without tearing, deforming or otherwise damaging it upon multiple openings. It is normal to use a plastic material such as polypropylene. For the preferred embodiment of the present invention, the tape 20 is made of a biaxially oriented polypropylene. The functional portion 21 of the tape 20 comprises an adhesive. Suitable adhesives are pressure sensitive adhesives as supplied from 3M. As used herein, the term "gripping portion" describes the

part of the tape 20 that can easily be gripped by a user of the pack. The gripping portion 22 is typically adhesive free or if adhesive is present, it may comprise a less adhering substance or simply, the gripping portion 22 comprises a folded over portion of the functional portion 21 of the tape 20. The gripping portion 22 may comprise art-work. In the preferred embodiment of the present invention, the tape 20 ranges in size from 1 to 5 centimetres in width and from 5 to 10 centimetres in length. The thickness of the functional portion 21 of the tape 20 ranges from 70 to 130 micrometres. The gripping portion 22 typically ranges from 0.5 to 0.8 centimetres in length, but is preferably 0.75 centimetres in length. The tape 20 may also be embossed for aesthetic purposes and for ease of gripping.

Returning to Figure 1, at least one tape 20 is so positioned on one of the first or second surfaces 14, 15, 16, 17 to enable free access to one of the end portions 18, 19 of the pack 10 for removal of at least one of the stacks 12 of flexible articles 13 and to enable partial peeling of the functional portion 21 of the tape 20 for effective attachment to one of the first or second opposed surfaces 14, 15, 16, 17 in order to reseal the pack 10, after at least one of the stacks 12 has been removed. Figure 2 shows the resealed pack 10 after one of the stacks 12 has been removed. The tape 20 is effectively applied to reseal the pack 10. In further detail, Figure 3 is a cross sectional view taken along line 2-2 of Figure 2. Before commencing the resealing process, one of the end portions 18, 19 of the pack 10 is generally opened with the aid of a sharp instrument such as a scissors or a knife due to the toughness of the material 11 of the pack 10. Thus in order to simplify the opening process and prevent any possible risk of damage to the articles 13 stored within, at least one of the end portions 18, 19 comprises an indication for opening 25. The indication for opening 25 may be in the form of a line or dashed line. Nevertheless, it is also possible to tear open the pack 10 and as such, the indication for opening 25 may be in the form of a line of weakening such as, for example, scores, cuts, incisions, indents, notches, grooves or perforations and may be formed by conventional methods. A liquid and gas impervious seal may overlie such an indication for opening 25 to prevent the drying out of the moisture-impregnated tissues. The indication for opening 25 is preferentially placed on the end portion 18, 19 that is in closest proximity to the tape 20.

In a preferred embodiment of the present invention, one of the first or second surfaces 14, 15, 16, 17 of the pack 10 corresponding to an area close to the lateral outer edge 24 of the functional portion 21 of the tape 20 is provided with a region of weakening 26. The region of weakening 26 comprises at least one line of weakening. The line of weakening may comprise scores, cuts, incisions or perforations and may be formed by means known to the man skilled in the art. Figure 4 shows a preferred configuration for the region of weakening 26.

The peeling action of the tape 20 by the user is continued until separation reaches the region of weakening 26 where the peeling action results in a portion of the material 11 of the first or second surfaces 14, 15, 16, 17 of the pack 10 being attached to the undersurface of the tape 20. This serves to reinforce and enhance the functionality of the tape 20. It can be understood that a further peeling action of the tape 20 beyond the lateral outer edge 24 of the functional portion 21 (that is failure) is prevented by this region of weakening 26. In another embodiment of the present invention, the tape 20 itself only comprises a region of weakening 26; the region of weakening 26 acting as an anchor portion. The region of weakening 26 comprises at least one line of weakening. The line or lines of weakness can take on any configuration in accordance with the objectives of the invention.

In a further embodiment of the present invention as illustrated in Figure 5, an anchor tape 30 is disposed underneath the tape 20. The anchor tape 30 thus lies adjacent to one of the first or second surfaces 14, 15, 16, 17 of the pack 10 and to the functional portion 21 of the tape 20. The anchor tape 30 is partially folded back and adhesively attached to the functional portion 21 of the tape 20. Nevertheless, the anchor tape, does comprise a functional portion for adhesive attachment to one of the first or second surfaces 14, 15, 16, 17 of the pack 10. Typically, the anchor tape ranges in size from 1 to 5 centimetres in width and from 1 to 5 centimetres in length. In general, the anchor tape 30 is partially folded back in the range from 0.5 to 0.8 centimetres, preferably 0.75 centimetres, although this is not limiting, to permit satisfactory attachment to the tape 20. The folded back portion of the anchor tape 30 serves as an anchor mechanism and prevents complete removal of the tape 20.

GLOSSARY

10	Pack
11	Material
12	Stacks
13	Flexible articles
14, 15, 16, 17	First or second surfaces
18, 19	End portions
20	Tape
21	Functional portion
22	Gripping portion
23	Longitudinal outer edges
24	Lateral outer edges
25	Indication for opening
26	Region of weakening
30	Anchor tape

Claims

1. Pack (10) formed of a pliable material (11) enveloping more than one stack (12) of flexible articles (13);

said pack (10) comprising first and second surfaces (14, 15, 16, 17) opposed to each other, two end portions (18, 19) with at least one of said first and second surfaces (14, 15, 16, 17) comprising at least one tape (20), said tape (20) comprising a functional portion (21), a gripping portion (22), longitudinal outer edges (23) and lateral outer edges (24), characterised in that

said at least one tape (20) is so positioned on one of said first or second surfaces (14, 15, 16, 17) to enable free access to one of said end portions (18, 19) of said pack (10) for removal of at least one of said stacks (12) of said flexible articles (13) and to enable partial peeling of said functional portion (21) of said at least one tape (20) for effective attachment to one of said first or second opposed surfaces (14, 15, 16, 17) to reseal said pack (10), after at least one of said stacks (12) has been removed.

2. Pack (10) according to claim 1 wherein one of said first or second surfaces (14, 15, 16, 17) corresponding to an area close to said lateral outer edge (24) of said functional portion (21) of said tape (20) is provided with a region of weakening (26).
3. Pack (10) according to claim 2 wherein said region of weakening (26) comprises at least one line of weakening.
4. Pack (10) according to claim 1 wherein said tape (20) comprises a region of weakening (26).
5. Pack (10) according to claim 4 wherein said region of weakening (26) comprises at least one line of weakening.
6. Pack (10) according to claim 1 wherein an anchor tape (30) is disposed underneath said tape (20), said anchor tape (30) being partially folded back and adhesively attached to said tape (20).
7. Pack (10) according to claim 6 wherein said anchor tape (30) ranges in size from 1 to 5 centimetres in width and from 1 to 5 centimetres in length.
8. Pack (10) according to any of the preceding claims wherein said tape (20) ranges in size from 1 to 5 centimetres in width and from 5 to 10 centimetres in length.
9. Pack (10) according to any of the preceding claims wherein said functional portion (21) of said tape (20) comprises an adhesive.
10. Pack (10) according to any of the preceding claims wherein said tape (20) is embossed.

11. Pack (10) according to any of the preceding claims

wherein at least one of said end portions (18, 19)
comprises an indication for opening (25).

12. Pack (10) according to any of the preceding claims
wherein said flexible articles (13) are moisture- 5
impregnated tissues.

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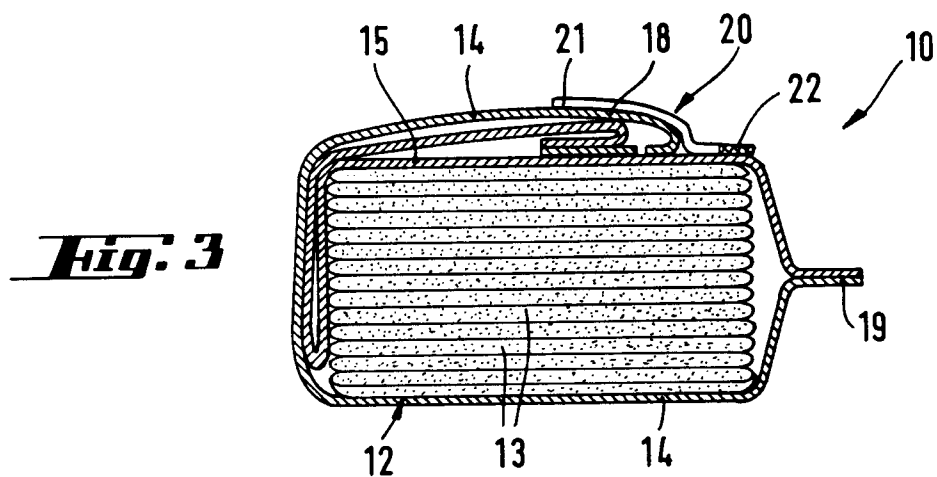
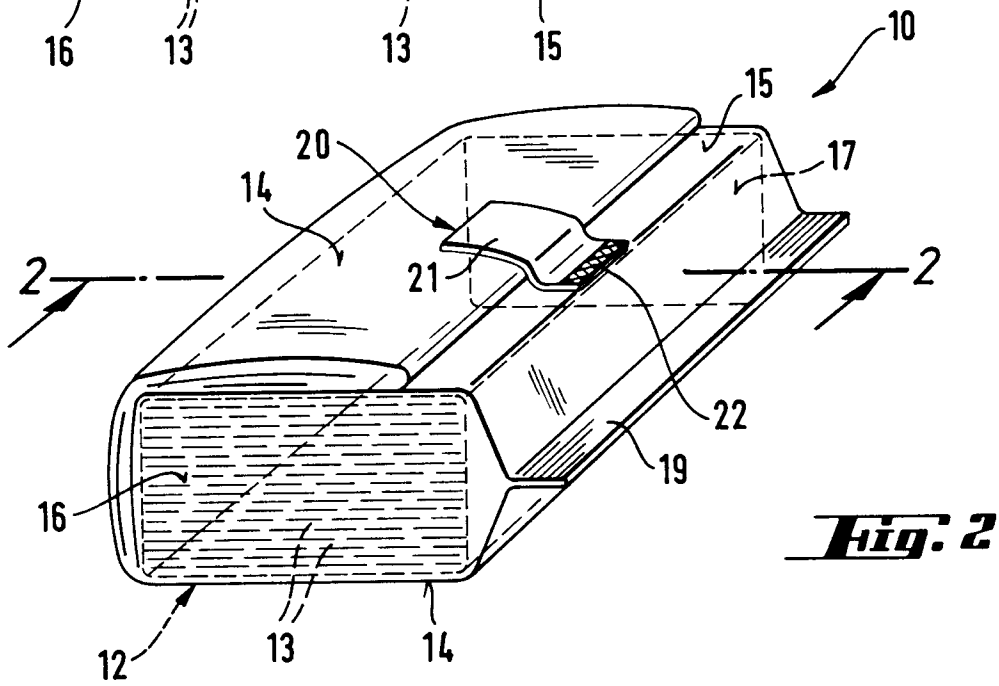
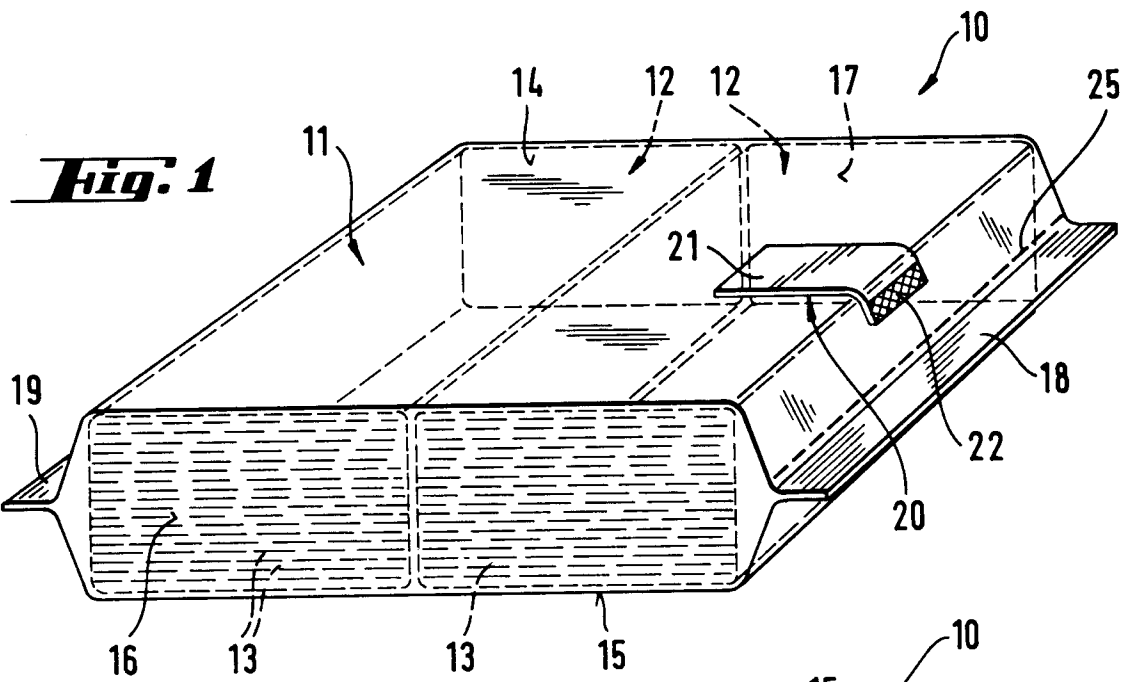
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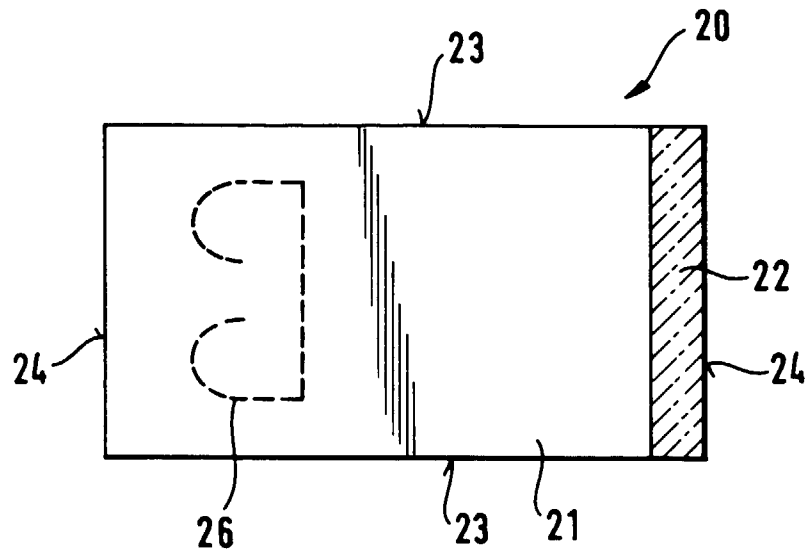


Fig. 4

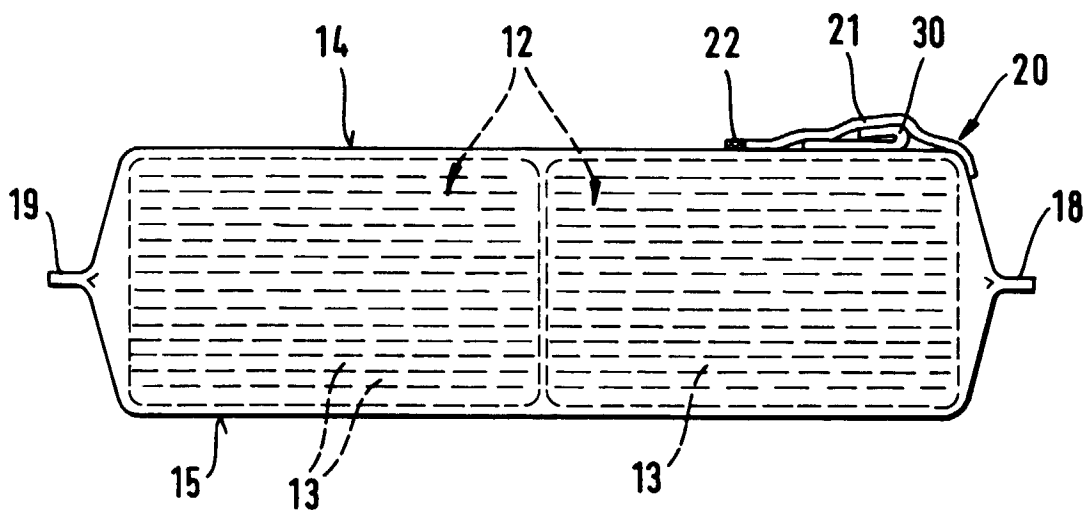


Fig. 5



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 97 10 3322

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.6)
X	US 5 511 883 A (CLARK JOHN ET AL) 30 April 1996 * column 2, line 10 - column 2, line 61 * * figures 1-5 *	1,8,9, 11,12	B65D33/16 B65D75/58
Y	---	4-7,10	
D,Y	US 4 723 301 A (CHANG SUNG-CHOI) 2 February 1988 * column 2, line 40 - column 2, line 58 * * figure 4 *	4,5	
A	---	2,3	
Y	US 3 616 114 A (HAMAGUCHI TSUNEJI ET AL) 26 October 1971 * column 4, line 11 - column 4, line 17 * * figure 1 * -----	6,7,10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11 July 1997	Examiner Farizon, P
<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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