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Remarks:

Amended claims in accordance with Rule 86 (2) EPC.

(54) **A leakage tight and/or sift-proof container**

(57) The present invention provides a leakage tight or sift-proof container (10) comprising a lid (12). The pouring spout (25) is on the external skirt of said lid. Said lid comprises a horizontal wing (20) under said pouring spout. The top edge (14) of said container is pressed against said horizontal wing when said container is

closed with said lid. This horizontal wing between said container and said lid prevents that the contained substance gets trapped in between the engagement mechanism between the container and the lid. Therefore it prevents that this trapped substance is lost on the outside of the container.

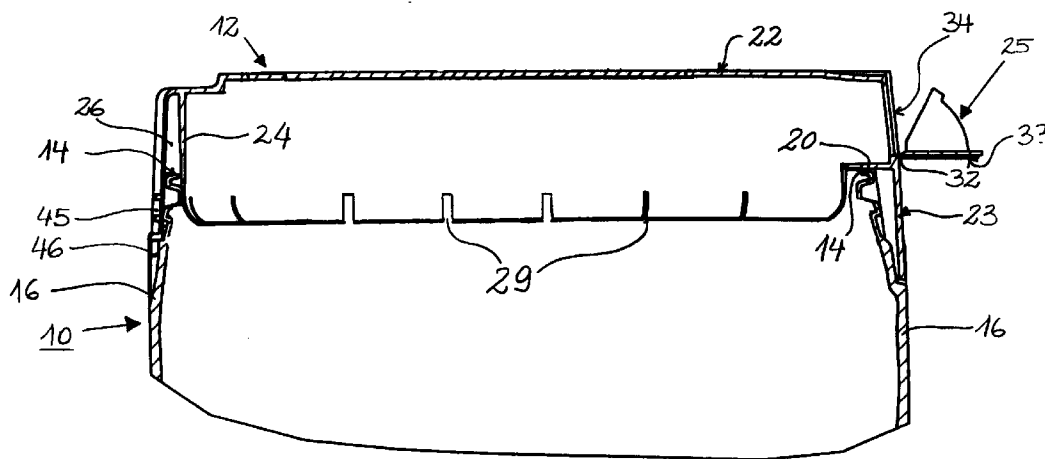


Fig. 1

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Description

Field of the Invention

5 The present invention relates to containers. These containers may contain liquid or granular contents, and are leak-tight or sift-proof.

Background of the Invention

10 Liquid laundry detergents are mainly delivered in plastic bottles. But also granular laundry detergents in plastic containers are used as an alternative to paperboard cartons. These plastic containers are more resistant to possible mechanical damages and protect the interior from any penetration of humidity and fluids from the outside. But for environmental reasons, such plastic containers are preferably sold as refillable containers, which can be refilled from, typically, refill pouches or bags.

15 These containers comprise a lid that is reversibly detachable from the container, for refilling. These containers also need a pouring spout so that the content can be directly poured out of the container. Preferably the pouring spout is located in the top region of the container, i.e. on the lid, and it is necessary that the pouring spout is completely accessible from the interior of the container. Therefore, the leak or sift proof attachment between the container and the lid is usually interrupted in the region of the pouring spout. In this manner, the contained substance comes in contact with said attachment
20 in said region of interruption when poured through said pouring spout on the lid or when the filled container is simply shaken as may happen during transport. It may happen that the liquid or granular substance goes between the free space of the attachment mechanism without having the possibility to get back into the container.

In this manner, a certain amount of granular substance may remain trapped between the lid and the container. This trapped granular substance may finally be released on the outside of the container when the lid is detached from the
25 container. Therefore, when the lid is detached from the container for refilling, a certain amount of substance is lost to the outside without use. This is not only an unnecessary waste, but it is also very messy. The same applies even more dramatically for liquid substances. Therefore it is an object of the present invention to provide a container that prevents contained substance to get in between the attachment of the container and the lid and through said attachment without impeding the free access to the pouring spout.

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Summary of the Invention

The present invention provides a container (10) comprising a bottom wall, side walls (16) and an opening. Said container further comprises a lid (12). Said lid comprises a top wall (22), an external skirt (23) substantially perpendicular
35 to said top wall and depending from said top wall and a pouring spout (25). Said lid reversibly closes said opening by engaging the top edge (14) of said side walls of said container. Said lid (12) comprises a horizontal wing (20) substantially parallel to said top wall (22) of said lid when said lid is engaged on said container. Said horizontal wing (20) corresponds at least to said pouring spout (25) and said wing (20) is under said pouring spout (25) when said container is in its upright position. Said top edge (14) of said side walls (16) of said container presses onto said horizontal wing (20) to ensure
40 leak or sift tightness of said container in the region of said pouring spout.

Brief Description of the Figures

Figure 1 illustrates a partial cross sectional view of the closed container according to the present invention.
45 Figures 2a and 2b show the cross sectional view of the lid in some embodiments of the present invention.
Figure 3 shows the lid from the bottom according to an embodiment of the present invention.

Detailed Description of the Invention

50 Figure 1 shows a cross sectional side view of part of a container (10) with the corresponding lid (12). The container comprises a bottom (not shown), side walls (16) and an opening. Said opening is closed by the lid (12). The side walls, and therefore the bottom and the opening, may be of any form, rounded or polygonal. The container (10) may also comprise a handle to allow a handier pouring of the contained substance through the pouring spout (25) of the lid (12). The container (10) is preferably made of a plastic material. Polyethylene, polypropylene, polyethylene terephthalate or
55 polyvinyl chloride are for example possible plastic materials. The preferred manufacturing process of said container is blow molding. Also said containers may contain any substance, liquid or granular. Preferably these containers contain laundry detergents.

The lid (12) comprises a top wall (22), an external skirt (23) substantially perpendicular to said top wall (22) and depending from said top wall, a leak or sift proof attachment means between said lid and said container, a horizontal

wing (20) substantially parallel to said top wall (22) of said lid (12), and a pouring spout (25). The form of said lid may be various. Said external skirt may have a straight cross section (Fig. 2a, 23a) or have a stepped cross section (Fig. 2b, 23b). The stepped cross section is able to close larger or smaller openings in respect to said top wall of the lid. The length of the external skirt may also be different on the same lid. For example, the length of said external skirt in the front may be different from the length of said external skirt in the back of said lid.

Said pouring spout (25) may be chosen from any person skilled in the art. Said spout should allow an easy and controlled pouring of the contained substance. In the present invention a spout hinged to the lid is preferred. This particular pouring spout is shown in the open position also in Figure 1. Said spout is connected along one side (32) to the main body of the lid. This spout (25) is closed by pushing the part (33) into the corresponding hole (34) of the lid (12), the side (32) acting as a hinge. The spout (25) is blocked therein through a locking mechanism between said part (33) and the side wall of the hole (34). Exerting a small force in the opposite direction of the closing direction, the part (33) gets unlocked from said locking mechanism, obtaining again the open pouring spout.

As shown in Figure 1, the pouring spout is preferably located on the external skirt (23). In case that the container comprises a handle, said spout is preferably located opposite said handle. This location of the pouring spout opposite to the handle allows an easy pouring of the substance from the inside to the outside of said container. Indeed, said location helps to achieve small pouring angles to get the contained substance through said spout. On the contrary, a pouring spout on the top of said lid would increase the pouring angle, therefore increasing the difficulty and also the force needed to pour.

Said horizontal wing (20) is located under said pouring spout as shown again in Figure 1. Said horizontal wing has at least substantially the same dimensions of said pouring spout, therefore said wing at least corresponds to said pouring spout (25). Said wing is substantially parallel to the top wall (22) of said lid (12) when said lid is engaged on said container. Said wing (27) may also be inclined to increase the pressure exerted on said top edge (14) of said container (10). Indeed, when said lid (10) is engaged on said container, said horizontal wing (20) presses on said top edge (14). In this manner, liquid or granular substance is prevented from getting in between the engagement mechanism between the container and the lid. Therefore, in this manner the necessary leakage or sift tightness is ensured in the region of the pouring spout without preventing the free access to said pouring spout from the interior of said container. To increase the leakage or sift tightness, said horizontal wing may be provided with a vertical skirt directed to the interior of said container. This vertical skirt on said horizontal wing may then engage with the inner surface (17) of said side wall (16) near said top edge (14) of said container (10).

Said external skirt (23) prevents leaking or sitting in the rest of the lid-container engagement. To improve the tightness in said lid-container engagement, in a preferred embodiment of the present invention said horizontal wing (20) is continued to the whole perimeter of said top edge (14) of said container (10). The leakage or sifting is prevented in the same manner as said horizontal wing (20). In another preferred embodiment of the present invention, said lid (12) comprises the internal skirt (24). Said internal skirt is substantially parallel to said external skirt (23). The bottom view of said lid (12), shown in Figure 3, illustrates said internal skirt (24) interrupted at and connected to said horizontal wing (20). In Figure 1, said internal skirt (24) presses against the inner surface (17) of said top edge (14) of said container (10). Therefore, said internal skirt also ensures leakage or sift tightness. Any of the previous embodiments prevent liquid or granular substance to enter the engagement mechanism between the container and the lid when said substance is poured through said spout or when said container is shaken during transportation. Therefore, no substance gets trapped in between the engagement that may be released by detaching the lid from the container. This means that messiness and waste of unused substance is avoided.

In another preferred embodiment of the present invention, the bottom edge (28) of said internal skirt (24) may be curved to the inside of said container (10), as schematically shown in Figure 1. This curved configuration of said internal skirt helps to guide the top edge (14) of said container into the channel (26) when closing said container with said lid. Said internal skirt may also comprise one or more cuts (29) through said internal skirt. Said cuts (29) divide said internal skirt in independent parts. Therefore, these cuts increases the flexibility of said internal skirt.

The internal skirt (24) may also comprise ribs for reinforcement of the internal skirt itself. These ribs strengthen said internal skirt to better resist the engagements and disengagement of the lid from the container. Indeed, said internal skirt engages tightly the inner surface (17) of the container (10). Therefore, the major amount of mechanical stresses during the engagement or disengagement of the lid from the container resides on said internal skirt. Said ribs are substantially perpendicular to said top wall (22) of the lid. They may be on the inner and/or outer surface of said internal skirt. Another improvement is to have the ribs on the inner surface of said internal skirt extended or elongated over the edge of said internal skirt. These elongated ribs may contribute with or without the curved part of said internal skirt, as described before, in guiding the top edge (14) of the container into the channel (26) to achieve a tight engagement between said lid (12) and said container (10).

Any person skilled in the art can choose any of the engaging mechanisms which tightly engages the lid with the side wall. Preferably the snapping mechanism is used in the present invention. Nevertheless, a threaded engagement is also possible. In the case of a snapping mechanism and to allow an easy lid-container detachment, said lid (12)

comprises an opening lip (Fig. 1, 45) opposite to the pouring spout (25), which cooperates with an undercut portion (46) on the container (10) right under said opening lip.

Plastic materials are preferably used for the lid. For example, polypropylene is a suitable material. The manufacturing process is preferably injection molding.

Claims

1. A container (10) comprising a bottom wall, side walls (16) and an opening, said container further comprising a lid (12), said lid comprising a top wall (22), an external skirt (23) substantially perpendicular to said top wall and depending from said top wall and a pouring spout (25), said lid reversibly closing said opening by engaging the top edge (14) of said side walls of said container, characterized in that said lid (12) comprises a horizontal wing (20) substantially parallel to said top wall (22) of said lid when said lid is engaged on said container, said horizontal wing (20) corresponds at least to said pouring spout (25), and said horizontal wing (20) is under said pouring spout (25) when said container is in its upright position, and said top edge (14) of said side walls (16) of said container presses onto said horizontal wing (20) to ensure leak or sift tightness of said container in the region of said pouring spout.
2. A container according to claim 1 characterized in that said pouring spout (25) is on said external skirt (23).
3. A container according to any of the preceding claims characterized in that said wing (20) is inclined when said lid is not engaged on said container.
4. A container according to claims 1 to 2 characterized in that said lid further comprises an internal skirt (24) substantially parallel to said external skirt (23) interrupted at and connected to said horizontal wing (20).
5. A container according to claim 4 characterized in that said internal skirt (24) comprises on the inner and/or outer side of said internal skirt, reinforcements provided by ribs substantially perpendicular to said top wall of said lid.
6. A container according to claim 5 characterized in that said reinforcements ribs are on said inner side of said internal skirt (24), extending over the edge of said internal skirt.
7. A container according to any of claims 4 to 6 characterized in that said internal skirt (24) is curved to the inside of said container near the bottom edge (28) of said internal skirt.
8. A container according to any of claims 4 to 7 characterized in that said internal skirt (24) comprises cuts (29) through said internal skirt.
9. A container according to any of the preceding claims characterized in that said horizontal wing (20) has a vertical skirt extending towards the interior of said container.
10. A container according to any of the preceding claims characterized in that said pouring spout (25) is a spout hinged to said lid (12).

Amended claims in accordance with Rule 86(2) EPC.

1. A container (10) comprising a bottom wall, side walls (16) and an opening, said container further comprising a lid (12), said lid comprising a top wall (22), an external skirt (23) substantially perpendicular to said top wall and depending from said top wall and a pouring spout (25), said lid reversibly closing said opening by engaging the top edge (14) of said side walls of said container, characterized in that said lid (12) comprises a horizontal wing (20) substantially parallel to said top wall (22) of said lid when said lid is engaged on said container, said horizontal wing (20) corresponds at least to said pouring spout (25), and said horizontal wing (20) is under said pouring spout (25) when said container is in its upright position, and said top edge (14) of said side walls (16) of said container presses onto said horizontal wing (20) to ensure leak or sift tightness of said container in the region of said pouring spout.
2. A container according to claim 1 characterized in that said pouring spout (25) is on said external skirt (23).
3. A container according to any of the preceding claims characterized in that said wing (20) is inclined when said lid is not engaged on said container.

4. A container according to any of the preceding claims characterized in that said lid further comprises an internal skirt (24) substantially parallel to said external skirt (23) interrupted at and connected to said horizontal wing (20).

5 5. A container according to claim 4 characterized in that said internal skirt (24) comprises on the inner and/or outer side of said internal skirt, reinforcements provided by ribs substantially perpendicular to said top wall of said lid.

6. A container according to claim 5 characterized in that said reinforcements ribs are on said inner side of said internal skirt (24), extending over the edge of said internal skirt.

10 7. A container according to any of claims 4 to 6 characterized in that said internal skirt (24) is curved to the inside of said container near the bottom edge (28) of said internal skirt.

15 8. A container according to any of claims 4 to 7 characterized in that said internal skirt (24) comprises cuts (29) through said internal skirt.

9. A container according to any of the preceding claims characterized in that said horizontal wing (20) has a vertical skirt extending towards the interior of said container.

20 10. A container according to any of the preceding claims characterized in that said pouring spout (25) is a spout hinged to said lid (12).

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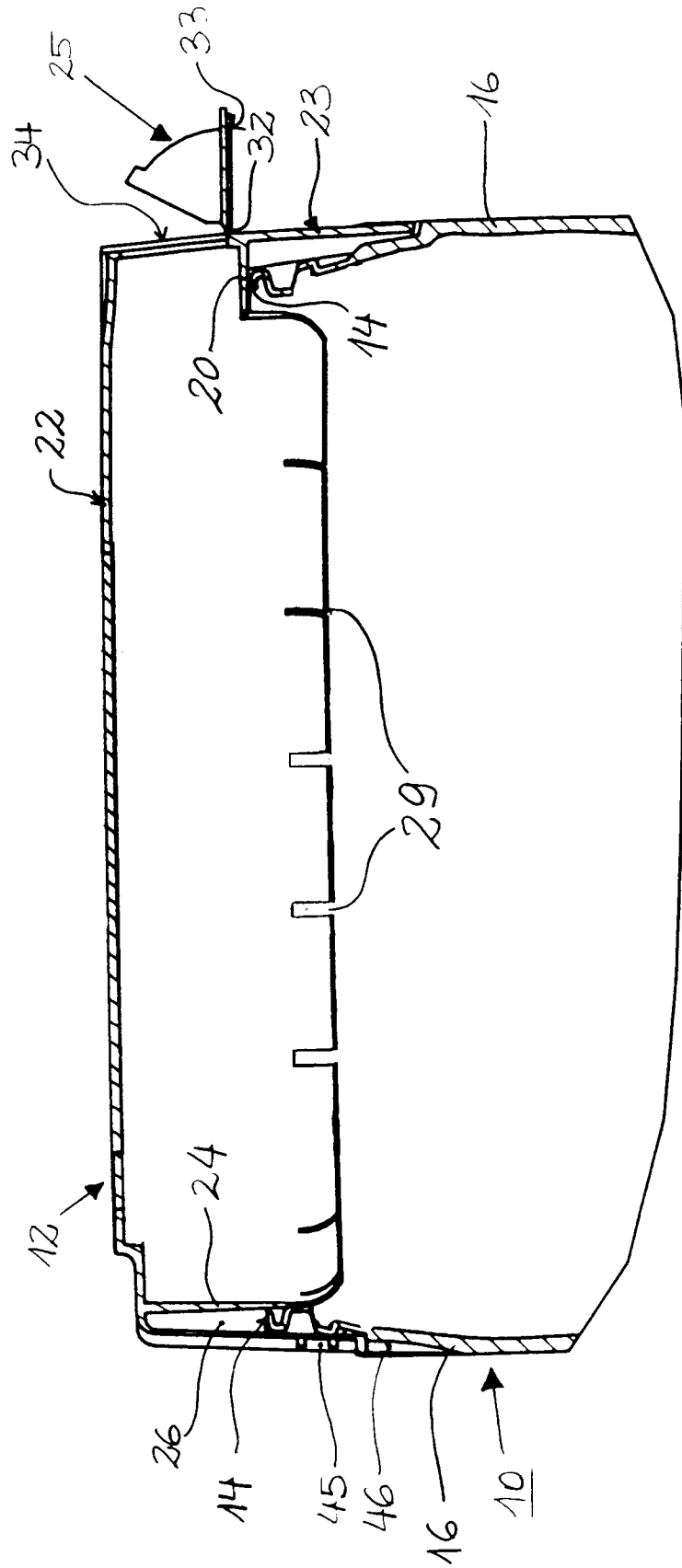


Fig. 1

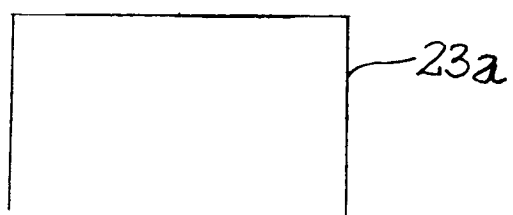


Fig. 2a

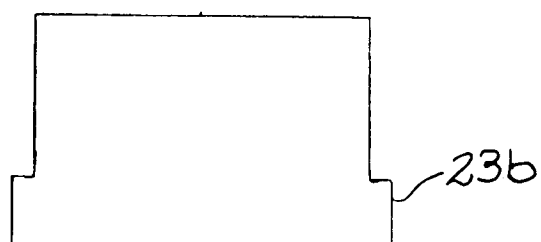


Fig. 2b

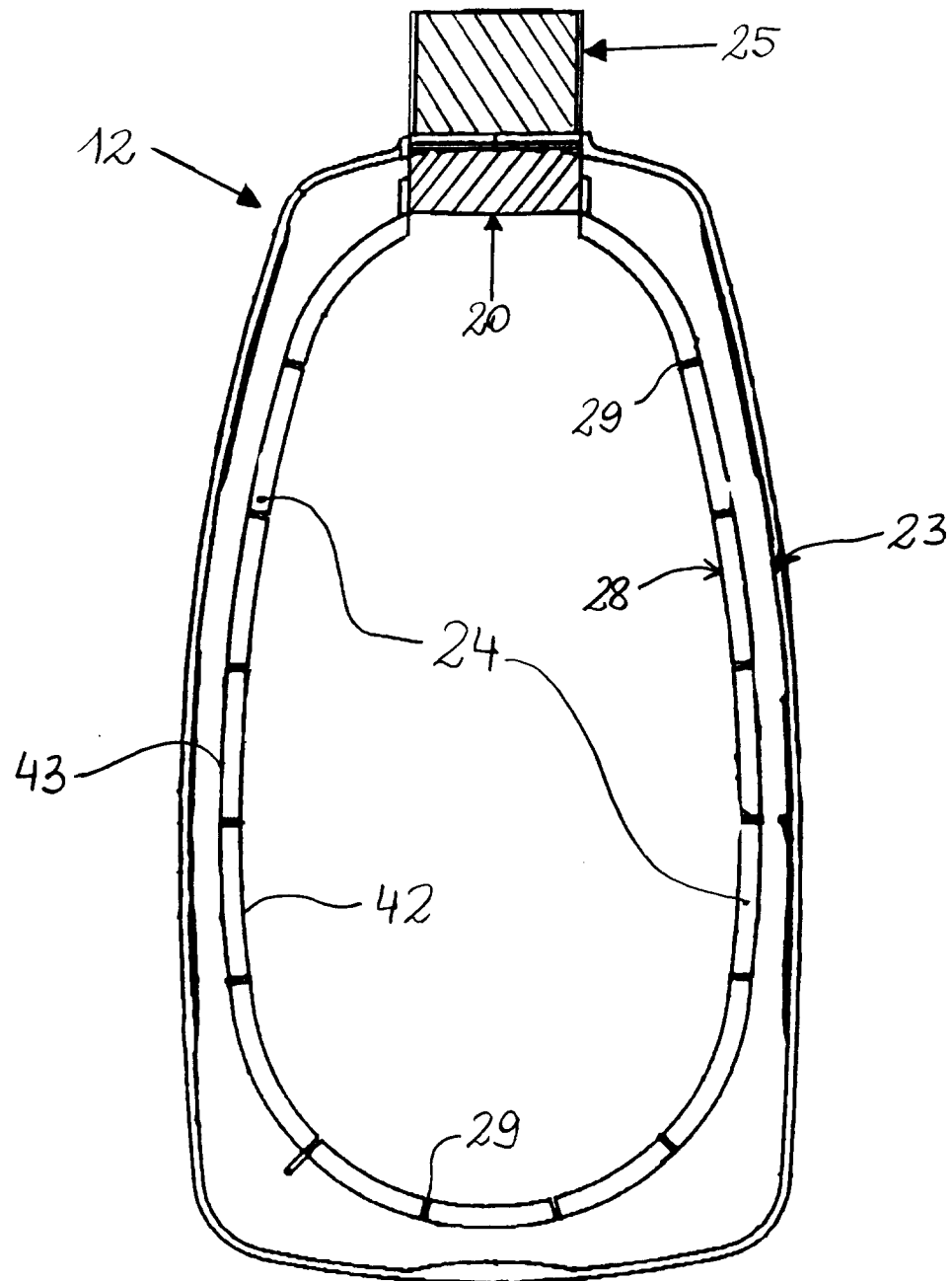


Fig. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 94 87 0108

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-A-3 739 957 (ALPERN) * column 2, line 53 - column 3, line 59; figures 1-6 *	1-3, 9, 10	B65D47/06 B65D47/04
X	DE-A-39 27 612 (MAGENTA) * column 4, line 15 - column 7, line 31; figures 1-9 *	1, 10	
A	US-A-3 373 909 (BELCHER)		
A	WO-A-85 01491 (STEINMANN)		
A	DE-U-92 07 892 (HEM)		
A	US-A-5 211 289 (MATTHEWS)		
A	US-A-4 898 298 (NORRIS)		
			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 29 November 1994	Examiner Martens, L
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