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(54) **Double-walled container**

(57) The present invention relates to a container comprising a bottom (2) at the lower end of an inner side-wall (3) and an outer side wall (4), which is attached to the outer circumference of the inner side wall, wherein the outer sidewall comprises a multitude of embossed

shapings (5), which extend radially out of the outer surface of the second sidewall and wherein the lower end of the shaping is distant from the lower end of the outer side wall.

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Description

[0001] The present invention relates to a container comprising a bottom at the lower end of an inner sidewall and an outer side wall, which is attached to the outer circumference of the inner side wall, whereas the outer sidewall comprises a multitude of embossed shapings, which extend radially out of the outer surface of the second sidewall and whereas the lower end of the shaping is distant from the lower end of the outer side wall.

[0002] Such containers are for example known from the state of the art for example WO 2011/023401 A1 or WO 2011/023400 A1. The containers described in these publications have however the deficiency that there is a gap between the outer sidewall and the inner sidewall and/or that additional means is needed to stack the containers properly.

[0003] It is therefore the objective of the present invention to provide a container which does not comprise the deficiencies according to the state of the art.

[0004] The problem is attained by a container comprising a bottom at the lower end of an inner sidewall and an outer sidewall, which is attached to the outer circumference of the inner sidewall, whereas the outer sidewall comprises a multitude of embossed shapings, which extend radially out of the outer surface of the second sidewall, whereas the lower end of the shaping is distant from the lower end of the outer sidewall and the lower end of the shaping is utilized as a stacking means.

[0005] The inventive container has the advantage that it is very hygienic, because there is no gap between the outer- and the inner side wall. Additionally, the inventive container is stackable without providing additional stacking means.

[0006] The present invention relates to a container. Particularly the container is a cup, in which beverages, especially hot beverages such as coffee or tea or food, especially soup, mash or the like can be served. The container is preferably made from paper, thick paper, cardboard, fiber material, plastic material, PLA materials and/or made from renewable and/or biodegradable raw materials or a combination thereof. More preferably, the material, particularly the material from which the side walls are made, is plastically deformable, for example embossable. All parts of the inventive containers are made from this material, whereas the individual parts of the container can be made from different materials. Especially the surface of the parts of the container that are subjected to a liquid and/or vapour are preferably provided with means, especially a coating, an impregnation, a film or the like, which makes these parts at least temporarily resistant against for example humidity, water, aqueous solutions, oil and/or fat or a combination thereof. Preferably the above-mentioned means are also heat-sealable.

[0007] The container according to the present invention comprises an inner side wall, which is preferably conically shaped and which more preferably has at its upper

end a bended or rolled rim. The sidewall is preferably made from a flat segment, which is subsequently formed, preferably rolled, into its, for example conical, shape. Preferably at its lower end, the sidewall comprises a bottom in order to close the container at the base. The bottom is preferably a separate part which is attached, more preferably glued and/or heat-sealed to the lower end of the sidewall of the container. The sidewall and the base define the filling volume which can be filled with a product. In a preferred embodiment of the present invention, the inner sidewall comprises stacking means to assure that the containers are easily separated from each other when being stacked. Preferably, this stacking means extends around the entire inner circumference of the inner sidewall and/or extends into the container and is more preferably embossed into the inner sidewall.

[0008] According to the present invention, the container comprises an outer side wall, which is attached to the outer circumference of the inner side wall. This outer sidewall preferably extends around the entire circumference of the inner sidewall and more preferably extends essentially along the entire height of the inner side wall, particularly from the upper rim until the bottom. According to the present invention, the outer sidewall comprises a multitude of embossed shapings, which extend radially out of the outer surface of the second side walls. These embossments, together with the outer circumference of the inner side wall, each define a channel which is closed, preferably hermetically closed. Thus, no debris or the like can accumulate in the channels. The entrapped air in the channels is an insulation, so that the surface of the container that comes into contact with the hand of a user is neither too hot or too cold.

[0009] Furthermore, the outsidewall is designed such that the lower end of the shaping does not extend until the lower end of the outer side wall, but is distant from the lower end of the outer side wall. Thus, at its lower end, the outer sidewall comprises a flat portion, preferably a flat ring, which extends around the entire circumference of the inner sidewall and which can be partially or entirely attached to the outer surface of the inner side wall.

[0010] According to the present invention, the lower end of the shaping is utilized as a stacking means, which, when two cups are stacked together, rests on the stacking means at the inner sidewall of another cup.

[0011] Since the shaping in the outer sidewall is completely closed the inventive container is very hygienic. Due to the utilization of the lower end of the embossments as stacking means, no additional stacking means have to be provided. Thus, the inventive cup is easily produced.

[0012] Preferably, the upper end of the shaping is also distant from the upper end of the outer side wall. Consequently, preferably a flat ring, which extends around the entire outer surface of the inner sidewall, is also provided at the upper end of the outer side wall. This flat ring can be connected, for example glued and/or sealed to the

outer circumference of the inner side wall.

[0013] The lower end of the shaping, particularly the surface that is in contact with the stacking means at the inner sidewall of a second container is preferably provided in an angle of less than 120° and preferably more than 80°. This assures that the cups can be denested easily.

[0014] The invention is now explained according to figures 1-4. These explanations do not limit the scope of protection.

Figure 1 shows two inventive cups stacked together.

Figure 2 shows a cut through the cups according to figure 1.

Figures 3 and 4 show details of the shapings and the stacking means.

[0015] Figures 1-4 show the inventive container, here a paper- or cardboard-cup. This container 1 comprises a conical inner sidewall 3, which has at its lower end a bottom 2. This bottom 2 is preferably attached, particularly glued or sealed to the inner sidewall 3 of container 1. The inner sidewall and the bottom define the filling volume of the container. The inner sidewall further comprises a shaping 7, here an embossment 7, which extends out of the inner surface of the inner sidewall 1 and which is a stacking means. The embossment 7 preferably extends around the entire inner circumference of the inner sidewall 2. At its upper end 3.3, the inner sidewall preferably comprises a rim 8, which is more preferably bended or rolled.

[0016] The inventive cup furthermore comprises an outer side wall 4, which is also conical and which extends around the entire circumference of the outer circumference 3.1 of the inner side wall 3. The length L of the outer sidewall is preferably chosen such that it extends from the upper end 3.3 of the inner side wall, preferably from rim 8, until essentially the bottom 2 of the container 1. The outer sidewall comprises a multitude of shapings, which each extend radially away from the inner sidewall 3 of container 1 and/or away from the inner surface 4.3 of the outer sidewall 4. Additionally, the shapings 5 each do not extend over the entire length L of the outer side wall. Particularly, the lower end 5.1 of the shaping 5 is distant from the lower end 4.1 of the outer side wall. Thus, the outer sidewall comprises at its lower end a flat ring, which extends around the entire circumference of the inner side wall 3. This ring is preferably used to connect, preferably glue and/or seal the outer sidewall 4 to the inner sidewall 3. The embossments 5 together with the outer circumference of the inner sidewall 3 each define a separate channel 6, in which a gas, preferably air, is entrapped. Preferably, these channels are closed, more preferably hermetically closed. The gas inside the channels 6 is a heat/cold-insulation. According to the present invention, the lower end 5.1 of each embossment 5 serves as a stacking means, which cooperates with

stacking means 7 of another container, when two containers are stacked. This assures that the stacked cups can be denested easily. Since the flat lower end 4.1 of the outer sidewall extends below the lower end 5.1 of each shaping 5, the lower end 4.1 is also a guidance for the cup during the stacking. The upper end 5.2 of each shaping is preferably also distant from the upper end 4.2. The flat ring of the outer sidewall can be attached to the inner sidewall.

List of reference signs:

[0017]

15	1	container
	2	bottom
	3	inner sidewall
20	3.1	outer circumference of the inner sidewall
	3.2	lower end of the inner sidewall
25	3.3	upper end of the inner sidewall
	4	outer sidewall
30	4.1	lower end of the outer sidewall, flat lower end of the sidewall
	4.2	upper end of the outer sidewall, flat upper end of the sidewall
35	4.3	inner surface of outer sidewall
	4.4	outer surface of outer sidewall
40	5	shaping in the outer sidewall
	5.1	lower end of the shaping
	5.2	upper end of the shaping
45	5.3	inner surface of the shaping
	6	channel
	7	stacking means
50	8	rim
	L	Length/height of the outer sidewall

Claims

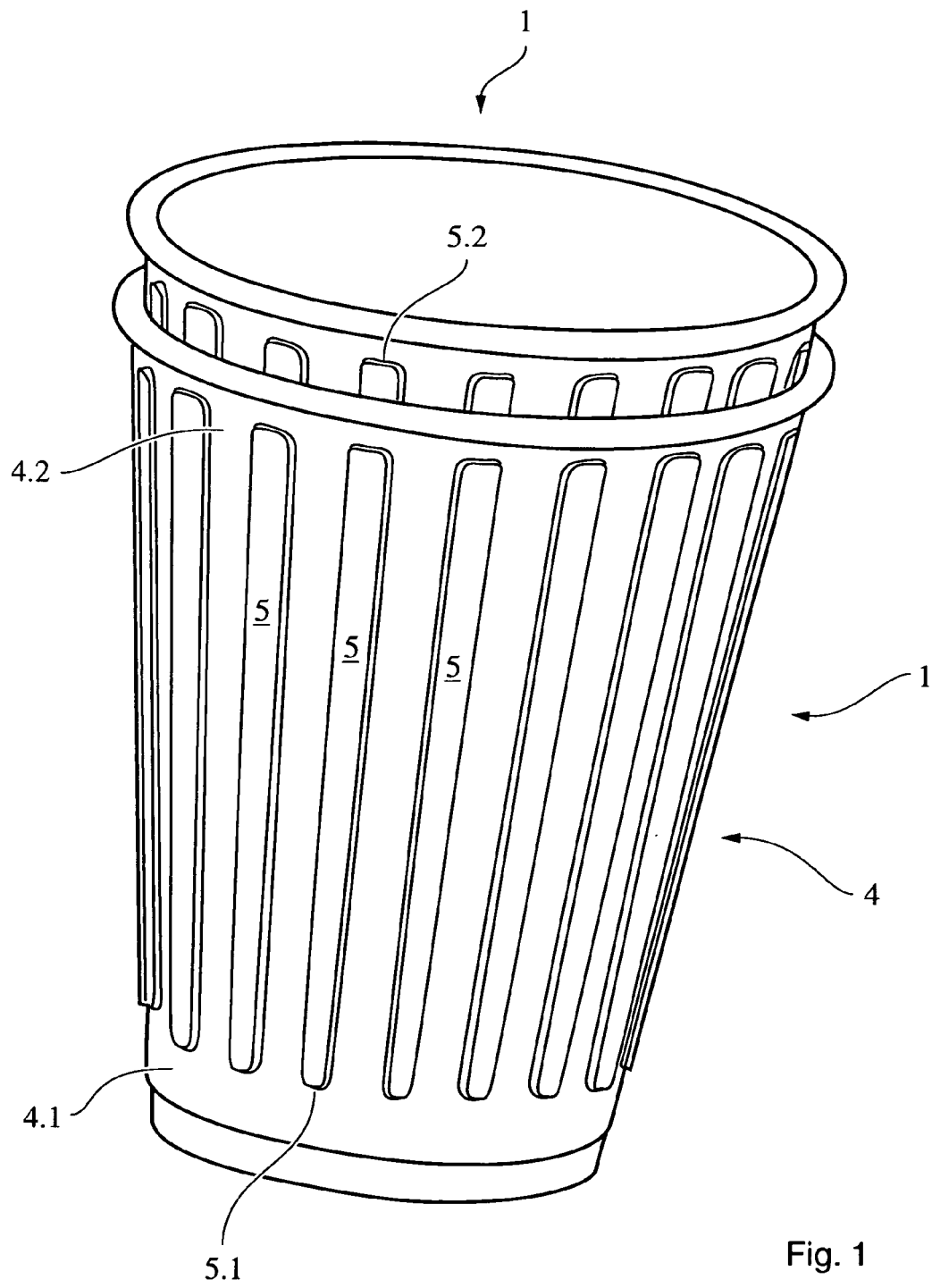
1. Container (1) comprising a bottom (2) at the lower

end (3.2) of an inner sidewall (3) and an outer sidewall (4), which is attached to the outer circumference (3.1) of the inner sidewall (3), whereas the outer sidewall (4) comprises a multitude of embossed shapings (5), which extend radially out of the outer surface (4.4) of the second sidewall (4) and whereas the lower end (5.1) of the shaping (5) is distant from the lower end (4.1) of the outer sidewall (4), **characterized in**, the that lower end (5.1) of the shaping (5) is utilized as a stacking means.

2. Container (1) according to claim 1, **characterized in, that** the upper end (5.1) of the shaping (5) is distant from the upper end (4.1) of the outer sidewall (4). 15
3. Container (1) according to one of the preceding claims, **characterized in** a tight, two dimensional connection between the flat lower end (4.1) of the outer sidewall and the outer circumference (3.1) of inner sidewall (3). 20
4. Container (1) according to one of the preceding claims, **characterized in, that** the flat lower end (4.1) and/or the flat upper end (4.2) of the outer sidewall (4) are glued or sealed to the inner sidewall (3). 25
5. Container (1) according to one of the preceding claims, **characterized in, that** the channels (6) are closed. 30
6. Container (1) according to one of the preceding claims, **characterized in, that** there is a tight connection between the flat upper end (4.2) of the outer sidewall and the outer circumference (3.1) of inner sidewall (3). 35
7. Container (1) according to one of the preceding claims, **characterized in, that** the lower end (5.1) of each shaping (5) is at least partially, provided in an angle (α) of less than 120° and preferably more than 80° . 40
8. Container (1) according to one of the preceding claims, **characterized in, that** the inner sidewall comprises a stacking means (7). 45
9. Container (1) **characterized in, that** the stacking means (7) is embossed into the inner sidewall (3). 50

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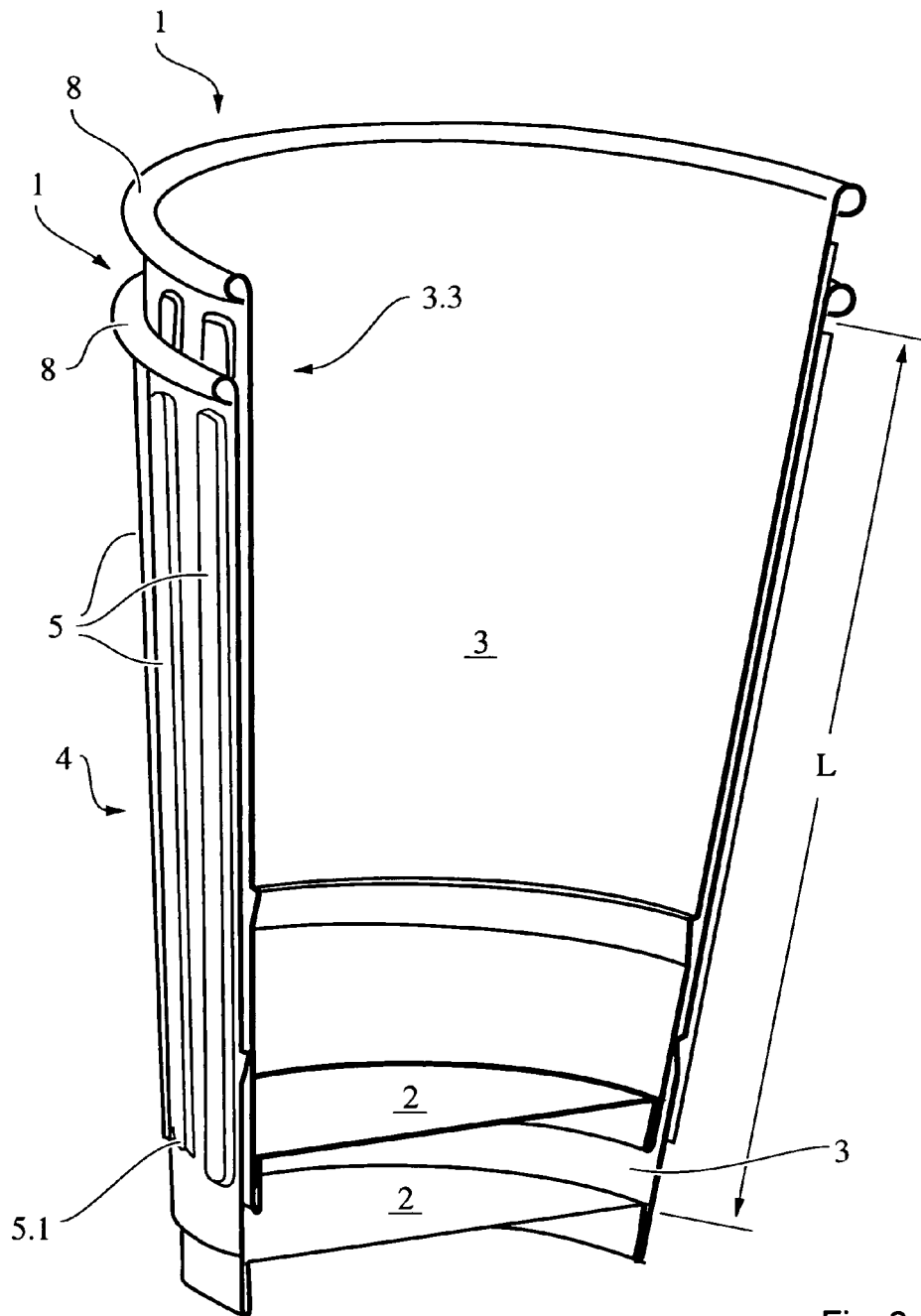


Fig. 2

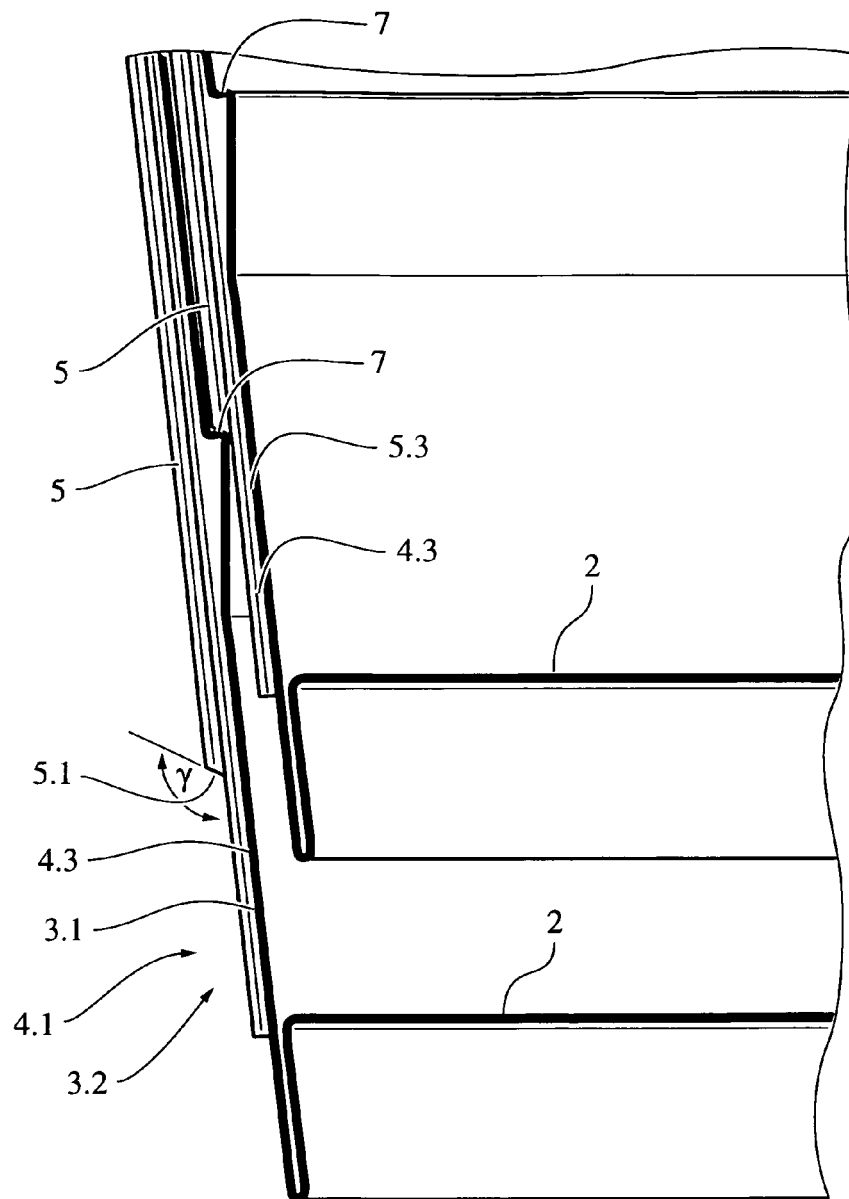


Fig. 3

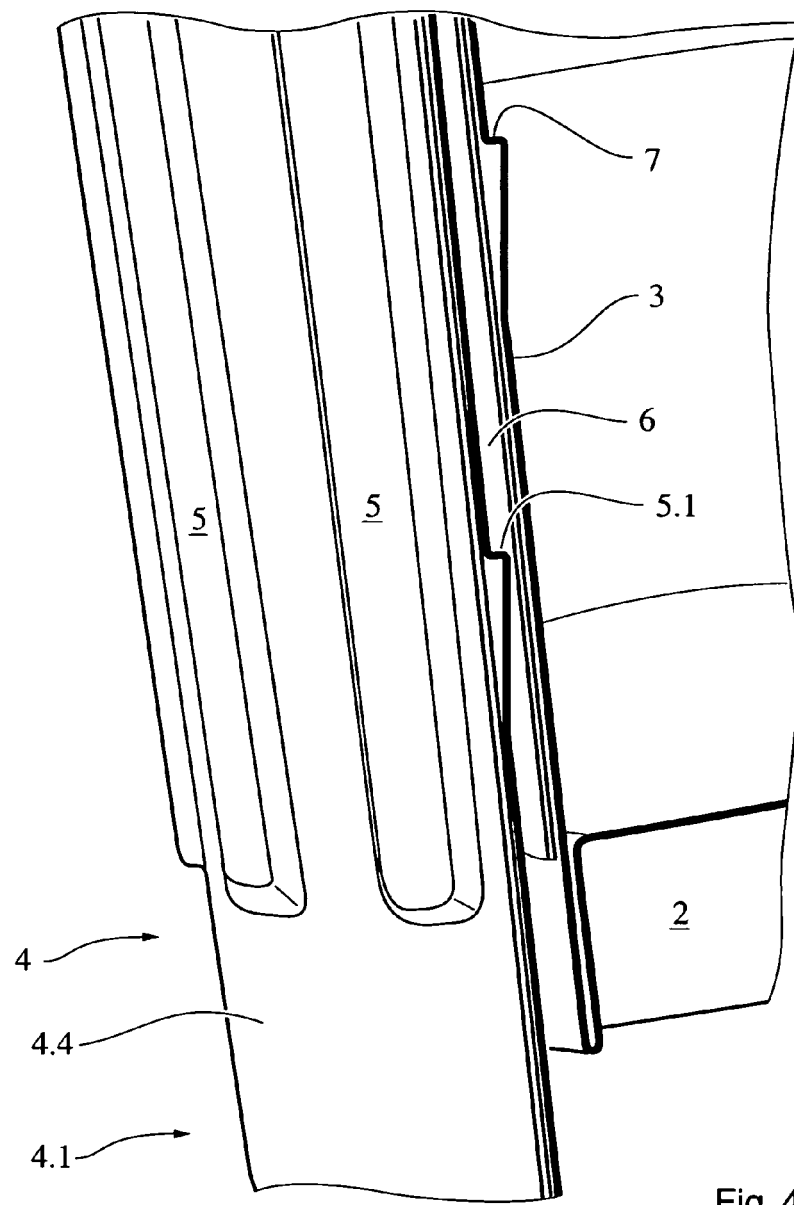


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 11 00 5394

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	DE 20 2009 011702 U1 (SEDA SPA [IT]) 20 January 2011 (2011-01-20) * page 7, line 14 - line 23 * * page 9, line 4 - page 13, line 27; figures 1-6 *	1-9	INV. B65D81/38
A	GB 2 420 267 A (HOERAUF MICHAEL MASCHF [DE] HOERAUF MICHAEL MASCHF [DE]; PTM PACKAGING) 24 May 2006 (2006-05-24) * page 6, line 6 - page 7, line 2; figures 1-4,7,8 *	1	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
Place of search		Date of completion of the search	Examiner
The Hague		20 October 2011	Newell, Philip
CATEGORY OF CITED DOCUMENTS		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	
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 11 00 5394

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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