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(54) **Household container for used cooking oil**

(57) Household container for used cooking oil characterized in that it comprises a rigid container (1) that houses in the inside thereof, removably, a bag (2) of flexible, laminar impermeable material. Rigid container (1) is made up of a rigid vessel (3) closed at the top by a rigid, removable cover (4) with a tubular shaped mouthpiece (5) that projects outwards. Bag (2) is shaped by a

main body (9) that defines a volume for containing the used cooking oil and main body (9) extends at the top into a neck (8). When container body (9) of bag (2) rests on bottom wall (12) of vessel (3), it passes internally through mouthpiece (5) and protrudes therefrom, so that the section protruding from neck (8) is externally foldable over mouthpiece (5).

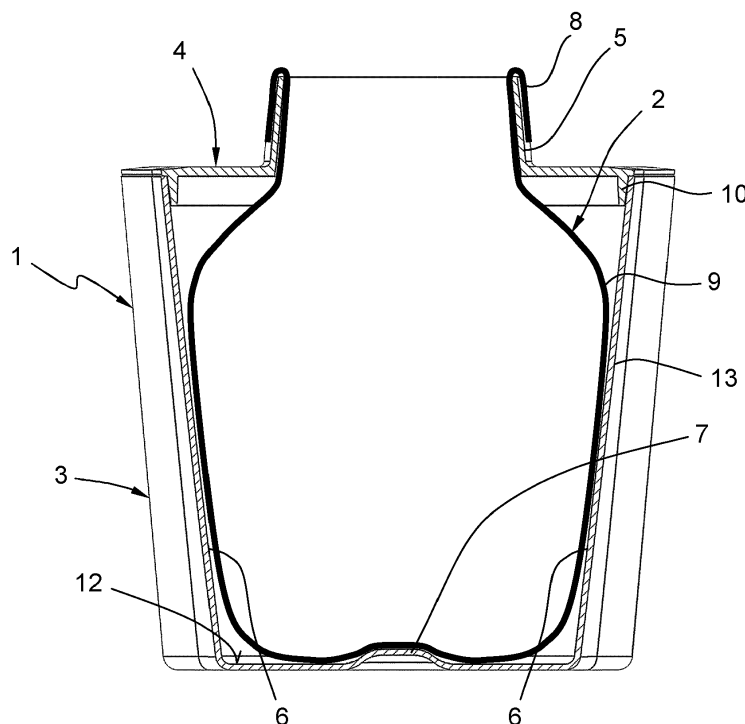


FIG. 7

Description

Field of the invention

[0001] The invention relates to the field of used cooking oil recovery to facilitate increasing its value, recycling or appropriate treatment as waste.

[0002] More particularly, the invention relates to a household container for used cooking oil, intended for collecting, at household level, used oils produced mainly in the kitchen.

State of the art

[0003] The used cooking oils that are generated in the home are typically oils that have been used to cook food and that are usually disposed of down the kitchen drain while washing frying pans, casseroles, etc. Said disposal down the drain originates a large cost in the wastewater treatment plants and, where no specific oil removal treatment is carried out; it causes a harmful pollution of natural waters. On the other hand, these used cooking oils constitute a material of considerable value, since they can be used directly as fuel in certain processes or be converted into quality fuel, for example for the production of biodiesel.

[0004] The recovery of these used cooking oils is thus highly advantageous, both from the environmental point of view and from the economic point of view. Nevertheless, at household level said recovery is not being carried out at significant levels because the present systems of storage and collection are too troublesome for the citizens, which means that they mainly choose not to store these oils at home and continue disposing of them down the drain.

Summary of the invention

[0005] It is an object of the invention to provide a household container for used cooking oil that is easy to use and which is not excessively bothersome for citizens, both relating to the household storage of used oil and transporting it from the container to the collection point. Another object of the invention is to facilitate the subsequent treatment of used oil.

[0006] This aim is achieved by means of a household container for used cooking oil, characterized in that it comprises a rigid container that houses in the inside thereof, removably, a bag of flexible, laminar impermeable material, where said rigid container is made up of a rigid vessel closed at the top by a rigid, removable cover provided with a tubular shaped mouthpiece that projects outwards, and said bag is made up of a main body that defines a volume for containing the used cooking oil, with said main body extending at the top into a neck which, when the container body of bag rests on bottom wall of said vessel, passes internally through said mouthpiece and protrudes therefrom, so that the section protruding

from said neck is externally foldable over said mouthpiece.

[0007] As will be seen later in the detailed description of an embodiment, the container according to the invention achieves the intended purpose. The user pours the used oil into the container as it is produced in the kitchen. When the container is sufficiently full, the user easily removes the bag containing the oil, closes it at the neck and takes it to a collection point, such as for example a wheelie bin container on the public road. The bag is therefore a disposable element that is replaced regularly and which constitutes, together with the oil it contains, a complex residue. However, this complex residue is easier to process, in terms of its value increase or recycling, than those produced by the known systems which consist in collecting the used oil stored in rigid plastic or glass packages. Another advantage with respect to these known systems is that the user does not need to store rigid packages, since users store in their kitchen only the rigid container and only stores a reserve of bags as disposable elements.

[0008] Preferably, the neck of the bag has a tubular shape internally adjusting to the mouthpiece of the cover. So, when the section protruding from the neck is externally folded over the mouthpiece, the neck is well fastened thereto without the need to provide additional fastening elements. Optionally, a lid can be used to seal off the mouthpiece cover.

[0009] In the preferred embodiments, the inner volume of the vessel is defined by a substantially flat bottom wall and a side wall closed on itself, with said side wall having undulations vertically extending along said side wall and forming internally projections and externally cavities. When the oil is poured into the bag, the main body of the bag deforms and adopts the inner shape of the vessel wall, whereby the projections formed internally by the undulations retain in its position said main body of the bag, thereby preventing said bag from shifting inside the vessel. Furthermore, the cavities formed externally by the undulations form grasping means for seizing the container by hand. The undulations on the side wall of the vessel, which provide these advantageous effects, can be made easily by moulding the vessel in plastic material.

[0010] Preferably said bottom wall of the vessel, which internally defines the volume of said vessel, has in the centred position a projection which has the effect of distributing the oil towards the side wall of the vessel when the bag contains little or no oil, and this facilitates the action of the projections formed internally by the undulations on the side wall of the vessel.

[0011] In addition, said projection also helps to keep the main body of the bag in position when the bag contains a larger amount of oil.

Brief description of the drawings

[0012] The advantages and characteristics of the invention can be appreciated from the following description

wherein, in a non-limiting way, a preferred embodiment of the invention is described with reference to the accompanying figures, wherein:

Fig. 1, a perspective view of the container, made up of the rigid container and the bag, which shows the neck of the bag protruding from the mouthpiece of the cover, before said neck is externally folded over said mouthpiece;

Fig. 2, an identical view to Fig. 1, but it has omitted the bag and only shows the rigid container;

Fig. 3, a perspective view of the bag;

Fig. 4, an exploded perspective view of the rigid container, made up of the vessel and the cover;

Fig. 5, a top plan view of the vessel;

Fig. 6, a perspective view of the rigid container, according to a vertical central plane section;

Fig. 7, an elevated view of the container in its position of use, made up of the rigid container and the bag with its neck turned externally over the mouthpiece of the cover, according to a vertical central plane section.

Detailed description of an embodiment of the invention

[0013] The container shown in the figures is a container for used cooking oil that has been designed specifically for use in the household, ideally in a kitchen. It is made up of a rigid container 1, intended to remain in its place in the kitchen, and a bag 2 removably housed in said rigid container 1 and constituting a disposable element.

[0014] The rigid container 1 is made up of a rigid plastic vessel 3 and a cover 4, also of rigid plastic, which closes said vessel at the top. Both elements 3 and 4 are made by injection moulding of a plastic material, preferably a plastic that offers the possibility of obtaining a good surface appearance, such as for example ABS (Acrylonitrile Butadiene Styrene), so that rigid container 1 can be used as a decorative element in a kitchen.

[0015] Vessel 3 is made up of a substantially flat lower base that forms the bottom wall 12 of said vessel and a side wall 13 closed on itself, so that the inner volume of said vessel is defined by bottom wall 12 and side wall 13. This side wall 13 has, in section, a substantially square shape with angled vertices and has undulations extending vertically along the full height of the vessel, forming internally projections 6 and externally cavities 11. As shown in Figs. 5, 6 and 7, said side wall 13 is slightly inclined with respect to the vertical, which confers an inverted frustoconical shape. This shape allows the vessels to be stacked in vessel stacking areas for distribution and, above all, enables users to remove bag 2 full

of oil. Bottom wall 12 of the vessel has centrally a frustoconically shaped projection 7. As explained above, in the summary of the invention, projections 6 and projection 7 have the effect of retaining the bag 2 in position when it is full of oil, while said projection 7 also has the effect of distributing the oil towards the side wall of the vessel at the beginning of the filling of the bag 2, thus helping projections 6 to produce also their effect during the initial filling stage. Cavities 11, in turn, constitute grasping means that enable seizing container 1 by hand. As shown in Fig. 5, in the preferred embodiment described herein, there are three undulations that form projections 6 on the inside and cavities 11 on the outside: two symmetrical undulations, located on respective opposite surfaces in the quadrilateral shape of the vessel, and a third undulation, less pronounced, located on one of the intermediate surfaces.

[0016] Cover 4 has a complementary shape to the sectioned shape of vessel 3 and fits on the top open surface of the latter by means of a circumferential lip 10. A tubular shaped mouthpiece 5 passes through cover 4 projecting outwards vertically. In the illustrated embodiment, the tubular configuration has a circular section and is slightly inclined towards the centre, so that it has a frustoconical shape.

[0017] Bag 2 is of a flexible, laminar impermeable material, for example polyethylene. It is made up of a main body 9 that defines the volume containing the used cooking oil, and a neck 8 extending said main body 9 at the top. The volume of main body 9 corresponds substantially to the inner volume of vessel 3, so that when bag 2 is full of oil, it deforms and adjusts to the shape of said inner volume of the vessel, as shown in Fig. 7. Neck 8 has a cylindrical tubular shape which adjusts internally to the tubular shape of mouthpiece 5 and has a length such that, when bag 2 rests on bottom wall 12 of the vessel, said neck 8 passes internally through mouthpiece 5 and protrudes therefrom in an end section that can be turned externally over said mouthpiece 5. Fig. 1 shows the protruding section of neck 8 of the bag before being externally folded over mouthpiece 5, whereas Fig. 7 shows the using position of the container, wherein said section protruding from neck 8 is turned.

[0018] When bag 2 is sufficiently full of oil, the user releases the section protruding from neck 8 and removes cover 4 from container 1. Bag 2 full of oil remains well seated in vessel 3. Then the user closes said bag 2 at neck 8, using a plastic peg (not shown) or by making a knot on said neck 8. Bag 2 thus closed can then be transported comfortably to a collection point. To return the container to its using condition, the user places a new empty bag 2 in vessel 3, passes neck 8 of the bag through mouthpiece 5 of cover 4, applies said cover with pressure to close vessel 3 and finally folds the section protruding from said neck 8 externally over said mouthpiece 5. Optionally, a lid can be used (not shown) to close mouthpiece 5.

Claims

1. Household container for used cooking oil, **characterized in that** it comprises a rigid container (1) that houses in the inside thereof, removably, a bag (2) of flexible, laminar impermeable material, said rigid container (1) being made up of a rigid vessel (3) closed at the top by a rigid, removable cover (4) provided with a tubular shaped mouthpiece (5) that projects outwards, said bag (2) being made up of a main body (9) that defines a volume for containing the used cooking oil, with said main body (9) extending at the top into a neck (8) which, when the container body (9) of bag (2) rests on bottom wall (12) of said vessel (3), passes internally through said mouthpiece (5) and protrudes therefrom, so that the section protruding from said neck (8) is externally foldable over said mouthpiece (5).

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2. Container according to claim 1, **characterized in that** said neck (8) of bag (2) has a tubular shape internally adjusting to said mouthpiece (5) of cover (4).

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3. Container according to claims 1 or 2, **characterized in that** the inner volume of said vessel (3) is defined by a substantially flat bottom wall (12) and a side wall (13) closed on itself, said side wall (13) having undulations vertically extending along said side wall (13) and forming internally projections (6) and externally cavities (11).

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4. Container according to claim 3, **characterized in that** said bottom wall (12) has in a centred position a projection (7).

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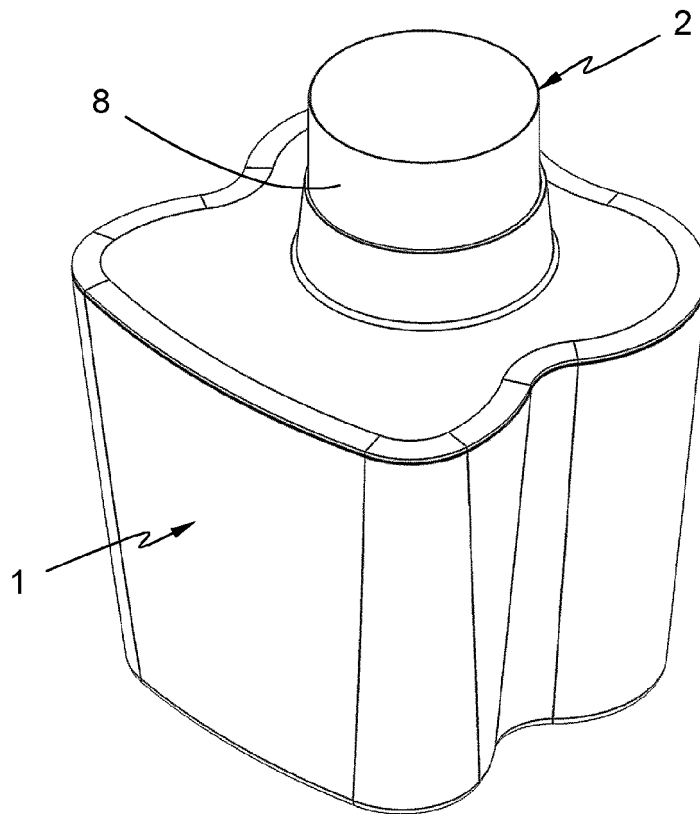


FIG. 1

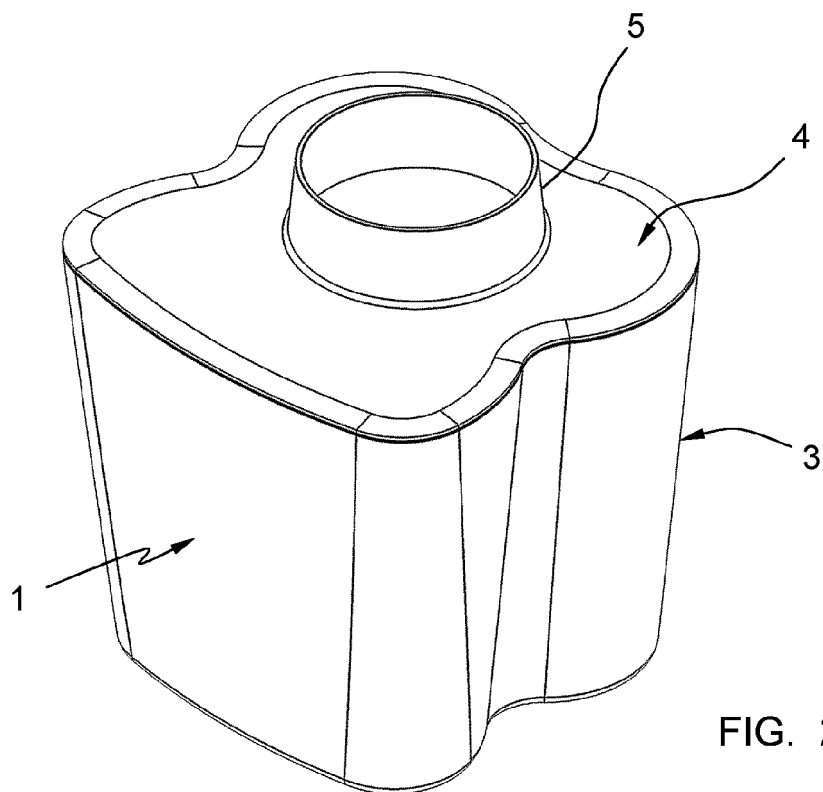


FIG. 2

FIG. 3

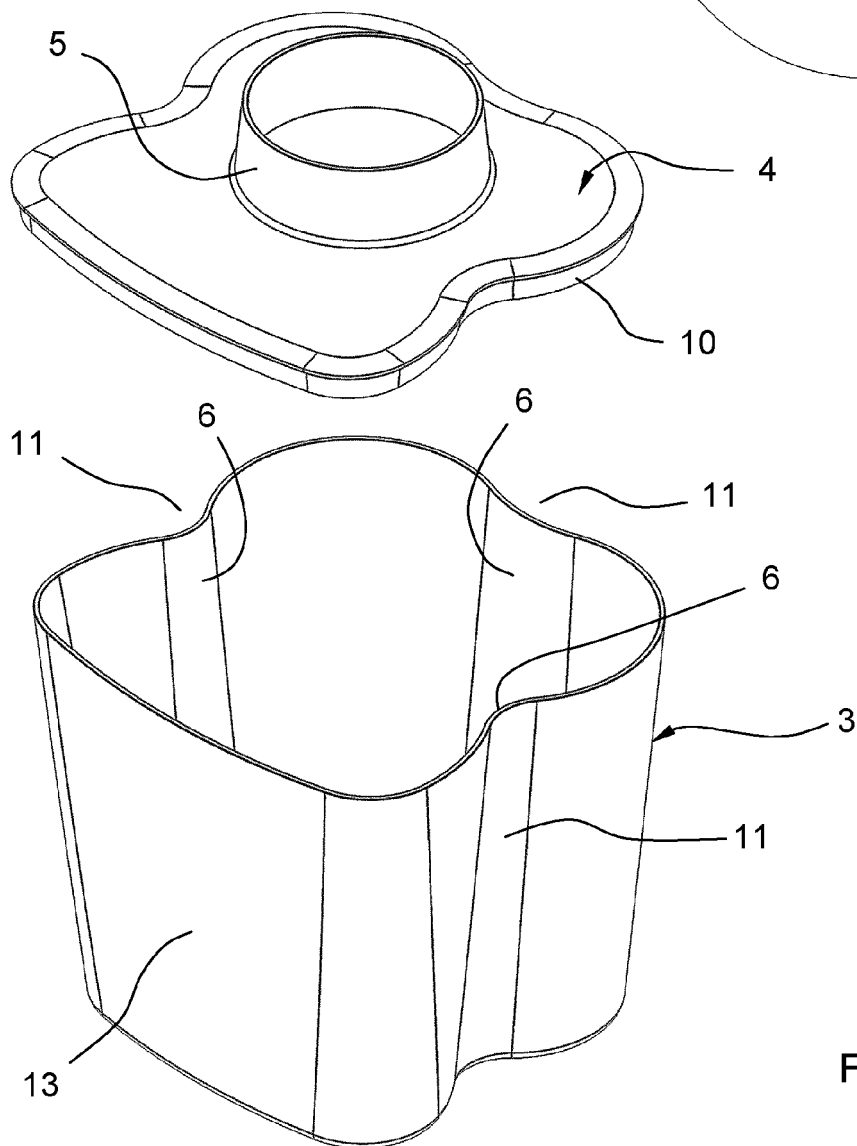
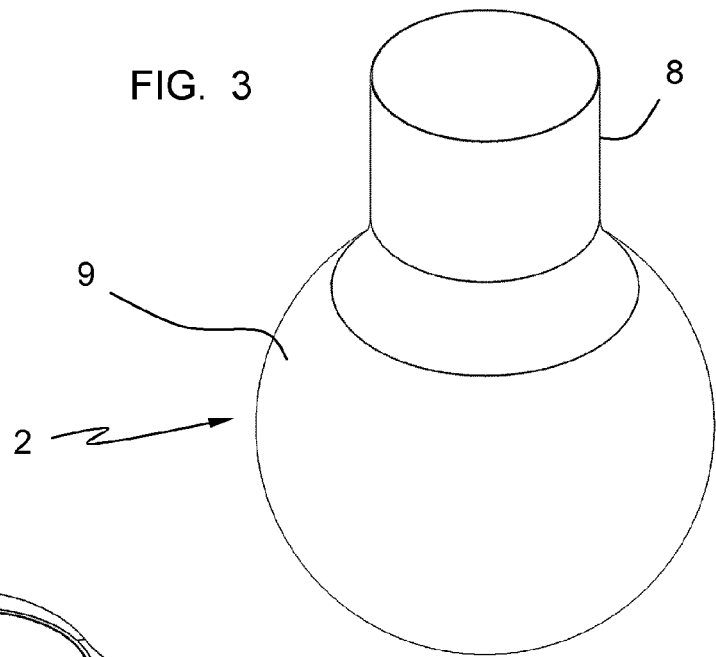


FIG. 4

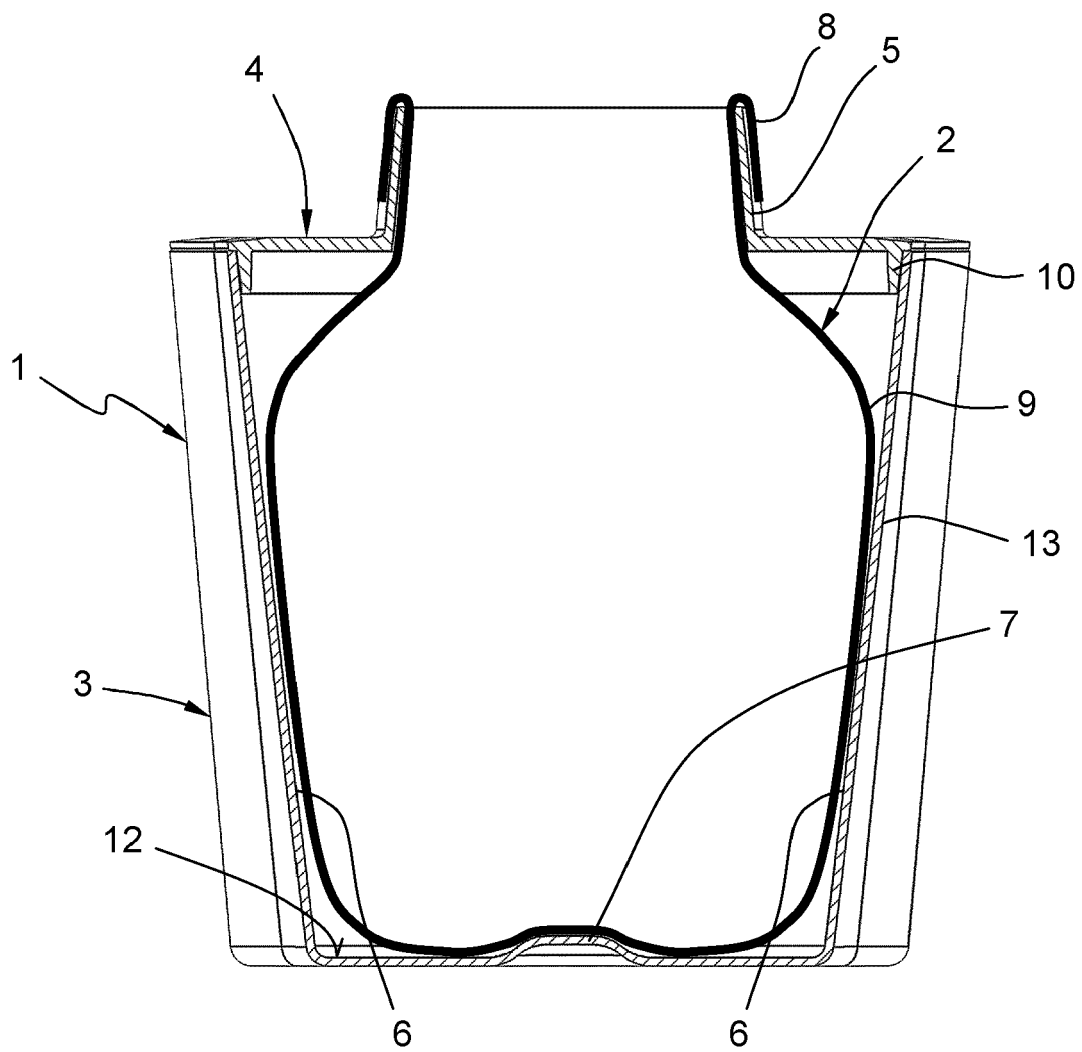


FIG. 7



EUROPEAN SEARCH REPORT

Application Number
EP 11 17 8993

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 January 2012	Examiner Smolders, Rob
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	
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82