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(54) **Dispensing valve locator and container therewith**

(57) A dispensing valve locator 24 is received within an opening 18 in a lower edge of a container wall 22. The

locator 24 comprises a pair of spaced apart flanges 26, 28 defining a channel 30 therebetween. The container wall 22 is received within the channel 30.

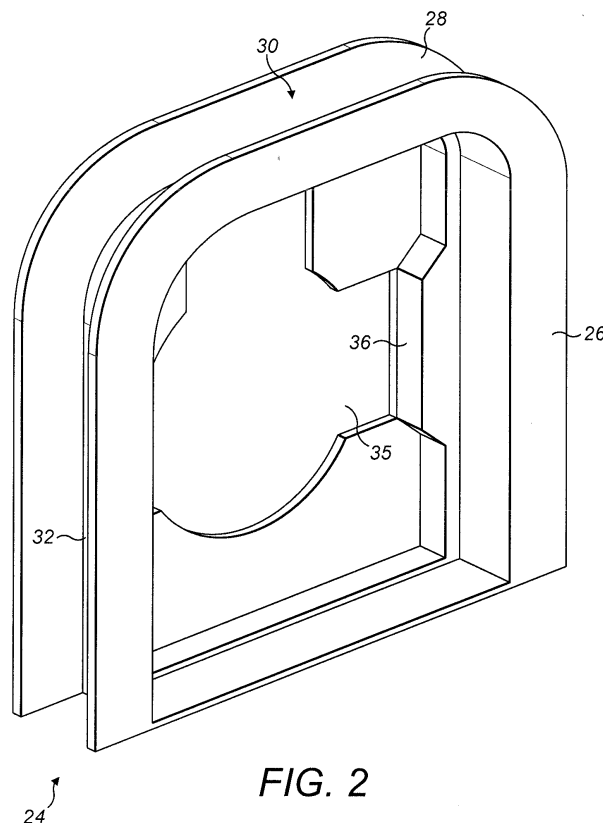


FIG. 2

Description

[0001] The present invention relates to containers and more particularly to containers for transporting fluids and powders in bulk. The invention is particularly suited to the transportation of liquids aseptically or non-aseptically.

[0002] Various containers for transporting fluids in bulk are known. These containers can, typically, accommodate large quantities of liquids, for example 1,000 litres or more. They may therefore, have a footprint of 1 m² and be 1 metre tall, or even larger, depending on the material being transported..

[0003] For reasons of cost and weight, such containers may be made from corrugated cardboard or other sheet material. Typically the container comprises an outer polygonal, e.g. rectangular sleeve, which receives a polygonal, e.g. octagonal, or other tubular inner sleeve. This inner sleeve in turn receives a bag which contains the fluid being transported. The outer sleeve is typically mounted on a pallet to allow the container to be moved by a forklift truck or the like.

[0004] The bag is provided with a valve which in use extends through an opening in the lower part of the container wall. This valve is used typically to both fill the bag aseptically and then to dispense the liquid from the bag. The valve is typically provided with a mounting plate which is clipped into the wall opening. However this has a number of disadvantages. Firstly, since the wall of the container is generally made of board, it does not provide a particularly strong location for the clip. This means that the clip and therefore the dispensing valve may become dislodged and thereby make it more difficult to dispense liquid from the container. Secondly, it is quite possible that during dispensing, liquid may be spilt onto the surrounding board, thereby softening and weakening the board. This exacerbates the first problem above.

[0005] The present invention seeks to overcome or at least mitigate the above problems and from a first aspect provides a container comprising an outer body made from a sheet material, for example a corrugated board material, said outer body receiving a bag containing a fluid or powder, a wall of said outer body having a dispensing opening provided at a lower edge thereof, said dispensing opening extending into said wall from said lower edge; and a dispensing valve locator received within said opening from said lower edge; said dispensing valve locator comprising a pair of spaced apart flanges defining a channel therebetween, the wall of said container outer body wall being received within said channel.

[0006] The invention also extends to a dispensing valve locator per se and from a second aspect provides a dispensing valve locator to be received within an opening in a lower edge of a container wall, said dispensing valve locator comprising a pair of spaced apart flanges defining a channel therebetween, whereby the wall of said container wall may be received within said channel.

[0007] With this arrangement, the wall of the container

is received within a channel defined within a dispensing valve locator. The locator acts to strengthen the container wall in this area and moreover, makes it harder for liquid to gain access to the cut edge of the wall around the opening, thereby preventing weakening of the wall due to wetting as might occur when the wall is of a board material.

[0008] The locator is preferably slidably received within the opening. The opening and the locator therefore preferably have generally parallel sides to permit the locator to be slidably located in the opening from the lower edge of the wall.

[0009] Since the locator is received in an edge of the container, the side of the locator adjacent the edge need not be provided with flanges.

[0010] The locator is provided with a central opening through which the dispensing valve may extend and is preferably provided with inwardly projecting lands to receive clips of a mounting plate provided on or attachable to the dispensing valve. This plate may be of the type used in the prior art constructions discussed above.

[0011] The spacing between the flanges is preferably chosen such that the locator is a tight fit within the opening.

[0012] The wall of the container may be of single material e.g. board thickness, but in preferred embodiments, it is of a multiple material e.g. board thickness so as to provide increased strength.

[0013] In the preferred embodiment, an inner sleeve, also preferably of a sheet material, particularly a corrugated board material, is received within the outer body to strengthen the container. This sleeve is provided with an opening in registry with the opening in the outer wall, and the inner sleeve and the outer wall are then received within the channel defined in the locator. In such an arrangement two thicknesses of board material are received within the channel.

[0014] The inner sleeve may itself be received within a tray, also preferably of sheet material, particularly a corrugated board material, which locates in the bottom of the container. In this event the tray will also be provided with an opening in registry with the openings defined within the outer wall and inner sleeve so that the outer body, inner sleeve and tray, i.e. three thicknesses of board, will be received within the channel of the locator, providing a very strong mounting for the locator.

[0015] The locator may be made from any suitable material, but is preferably made from a plastics material. The locator may, for example be made by injection moulding.

[0016] Although the locator may be made in a single piece, to facilitate manufacture, the locator may be made in two parts, suitably joined together. In a preferred arrangement a first part provides a first flange and a base of the channel defined between the flanges, and a second part provides the second flange to close off the channel.

[0017] The parts may be provided with interengaging location means to facilitate their assembly. For example

one of the parts may comprise a recess into which a corresponding projection on the other part locates.

[0018] The parts may be joined by any suitable process, for example by adhesive or thermal bonding or by mechanical interlocking.

[0019] The parts may be moulded or otherwise formed, for example thermoformed or injection moulded.

[0020] A preferred embodiment of the invention will now be described by way of example only with reference to the accompanying drawings in which:

Figure 1 is an exploded view of a container in accordance with the invention;

Figure 2 is a view of the dispensing opening of the container of Figure 1;

Figure 3 is a sectional view through the dispensing opening;

Figure 4 is a perspective view of the dispensing valve locator used in the container of Figure 1; and

Figure 5 is an exploded perspective view of the dispensing valve locator used in the container of Figure 1.

[0021] Referring to Figure 1, a container 2 in accordance with the invention comprises an outer body 4 which is received upon a pallet 6. Arranged within the outer body 4 is a tray 8, an inner sleeve 10 and a plurality of load transfer elements 12. Arranged within the inner sleeve 10 is a bag containing a fluid (not shown). The top of the container is closed by a lid 14. When the container 2 is assembled, the load transfer elements 12 sit in the corners between the inner sleeve 10 and the outer body 4 so as to transfer the bursting load of the liquid in the bag into the corner regions of the outer body 4. A container of this general construction is described in co-pending application number GB1201513.7.

[0022] The outer body 4 is in this embodiment square in shape, but it may, for example, be another quadrilateral shape, for example a rectangle. The outer sleeve 4 is formed from a blank of corrugated board (cardboard) material which is provided with top flaps 16 and a plurality of bottom flaps (not shown) which are folded inwardly and rest upon the upper surface of the pallet 6. A dispensing opening 18 for access to a dispensing valve provided on the bag is provided at a bottom edge 20 of one wall 22 of the outer body 4. The dispensing opening 18 receives a dispensing valve locator 24.

[0023] The tray 8, which is also formed from sheet material, particularly a corrugated board material sits on top of the inwardly folded bottom flaps of the outer body 4. The tray 8 is octagonal in shape, sitting snugly within the outer body 4. One wall of the tray 8 is provided by a pair of flaps 26 attached only to their adjacent walls. The flaps 26 define an opening 28 as can be seen, for example,

from Figure 3. When the tray 8 is assembled into the outer body 4, this opening 28 aligns with the opening 18 in the wall 22 of the outer body 4.

[0024] The inner sleeve 10 is octagonal in shape having a cross-sectional shape complementary to that of the tray. It is formed from a one piece blank of foldable sheet material, particularly corrugated board material. The opposing ends of the blank may be joined together by a glue tab or the like. The tray 8 locates the inner sleeve 10 within the bottom of the outer body 4. An opening 30 is defined in the lower edge 32 of one wall 34 of the inner sleeve 10. When the container is assembled, this opening 30 aligns with the openings 18, 28 provided in the tray 8 and the outer body 4.

[0025] Referring now to Figures 2 to 5, the dispensing valve locator 24 will be described in more detail.

[0026] The locator 24 is generally square in shape and comprises a front flange 26 and a rear flange 28 which between them define a channel 30. The channel 30 is open at its lower edges, although the bottom or the channel may be closed if so desired. The flanges 26, 28 extend around only three sides of the locator 24, since there is no need for them at the lower side.

[0027] The side walls 32 of the channel 30 are generally parallel, as are the sides of the openings in the container wall parts. As shown in Figure 4, the channel 30 receives three layers of board material of the container 2, namely a first layer formed by the wall 22 of the outer body 4, a middle layer formed by the flaps 26 of the tray 8 and a third layer formed by the wall 34 of the inner sleeve 10. The width of the channel 30 is chosen such that the layers of board are closely received within the channel 30 so as to provide a firm location for the locator 28. Thus, for example, the width of the channel 30 may be slightly smaller than the combined thicknesses of the board material so that the board material will have to be compressed when it is inserted into the channel 30. This will facilitate assembly as it will avoid the locator 24 disengaging from the container 2.

[0028] As will be understood from Figure 1, the dispensing valve locator 24 is slidably positioned over the lower edges of the outer wall 22, the tray flaps 26 and the inner sleeve wall 34. The locator 24 will top out on the upper edges of the openings in the container 2.

[0029] As can be seen in Figures 2 and 3, the locator 24 comprises a central opening 35 into which extend opposed lands 36 which receive, from behind, resilient clip 38 of a mounting part 40 (shown in phantom) of the dispensing valve of the bag. The valve (not shown) is of a conventional construction and need not be described further here. Although termed a dispensing valve herein, it may, however be used both to fill the bag aseptically in situ and dispense the bag's contents.

[0030] The mounting part 40 may be formed integrally with the valve or, more commonly, formed on a separate member which is attached to the valve. An example of such a mounting part is an Easifold clip supplied by TPS Rental Systems Limited.

[0031] The locator 24 may be formed in any convenient manner. In one embodiment, illustrated in Figure 5, the locator 24 is made from two parts, 50, 52. The first part 50 forms the front flange 26 and the base wall 54 of the channel 30. The second part 54 provides the second flange 28. The clip receiving lands 36 are also provided on the first part 50. The second part 52 comprises a recess 56 which is complementary to and receives a projection 58 provided around one face of the first part 50. To assemble the locator 24, the projection 58 is inserted into the recess 56 and located by suitable means, for example adhesive or thermal joining techniques such as ultrasonic welding etc, or by mechanical interlocking.

[0032] The component parts 50, 52 may be formed in any suitable manner. However, in a particularly advantageous arrangement, the parts are formed by thermofforming.

[0033] This provides a cost effective method of manufacture. Of course the parts can be formed by any other suitable process, for example, injection moulding etc..

[0034] It will be seen, for example from Figure 3, that when installed, the cut edges of the various layers of board material are received within the channel 30 of the locator. This not only provides a strong attachment for the locator 24 and thus for the dispensing valve, but it also protects the edges of the board layers from liquid splashing onto them during dispensing. This again provides improved strength. Although the lower edge of the board layers is not covered within the channel, the valve locator will minimise the possibility of liquid flowing to these areas, particularly if it extends slightly below the lower edge 20 of the wall edges.

[0035] It will be understood that various modifications may be made to the embodiments described above without departing from the scope of the invention. For example, whilst the embodiment discloses multiple layers of board material received between the flanges of the dispensing valve locator, this is not essential and in some embodiments only a single thickness of material may be required. Alternatively not all three layers of material may be necessary and in some embodiments, for example, only an inner sleeve and outer body may be provided so that just two layers of material are trapped between the walls of the channel.

[0036] While the dispensing valve locator 24 is shown to be generally square in shape, it can be other shapes, provided that the locator 24 can be inserted into the openings in the container walls from the lower edge of the container walls. Also, whilst shown as a two part construction it can be made in one part by suitable techniques such as injection moulding.

[0037] Moreover, while the container is described as having an outer body and/or an inner sleeve and/or a tray made from a corrugated board material, the invention has application to other sheet materials, e.g. corrugated plastics materials, where the flanged arrangement of the locator provides improved location of the dispensing valve on the container.

Claims

1. A container comprising an outer body made from a sheet material, said outer body receiving a bag containing a fluid or powder, a wall of said outer body having a dispensing opening provided at a lower edge thereof, said dispensing opening extending into said wall from said lower edge; and a dispensing valve locator received within said opening from said lower edge; said dispensing valve locator comprising a pair of spaced apart flanges defining a channel therebetween, the wall of said container outer body wall being received within said channel.
2. A dispensing valve locator to be received within an opening in a lower edge of a container wall, said dispensing valve locator comprising a pair of spaced apart flanges defining a channel therebetween, whereby the wall of said container wall may be received within said channel.
3. A container or locator as claimed in claim 1 or 2 wherein the locator is slidably received within the opening.
4. A container or locator as claimed in claim 3 wherein the opening and the locator have generally parallel sides.
5. A container or locator as claimed in any preceding claim wherein the side of the locator adjacent the edge is not provided with flanges.
6. A container or locator as claimed in any preceding claim wherein the locator is provided with inwardly projecting lands to receive clips of a mounting plate.
7. A container or locator as claimed in any preceding claim wherein the spacing between the flanges is chosen such that the locator is a tight fit within the opening.
8. A container or locator as claimed in any preceding claim wherein the wall of the container is of a multiple material e.g. board thickness.
9. A container or locator as claimed in claim 8 wherein the container comprises an inner sleeve received within the outer body, the sleeve having an opening in registry with the opening in the outer wall, with the inner sleeve and the outer wall being received within the channel defined in the locator.
10. A container or locator as claimed in claim 9 wherein the inner sleeve is received within a tray which locates in the bottom of the container, the tray also being provided with an opening in registry with the openings defined within the outer wall and inner

sleeve.

11. A container or locator as dammed in any preceding claim wherein the locator is made from a plastics material. 5
12. A container or locator as claimed in any preceding claim wherein the locator is made in two parts, suitably joined together. 10
13. A container or locator as claimed in claim 13 wherein a first part provides a first flange and a base of the channel defined between the flanges, and a second part provides the second flange to close off the channel. 15
14. A container or locator as claimed in claim 12 or 13 wherein the parts are provided with interengaging location means, for example a recess on one part into which a corresponding projection on the other part locates. 20
15. A container or locator as claimed in any of claims 12 to 14 wherein the parts are joined by adhesive, thermal bonding or mechanical interlocking, or wherein the parts are thermoformed or injection moulded. 25

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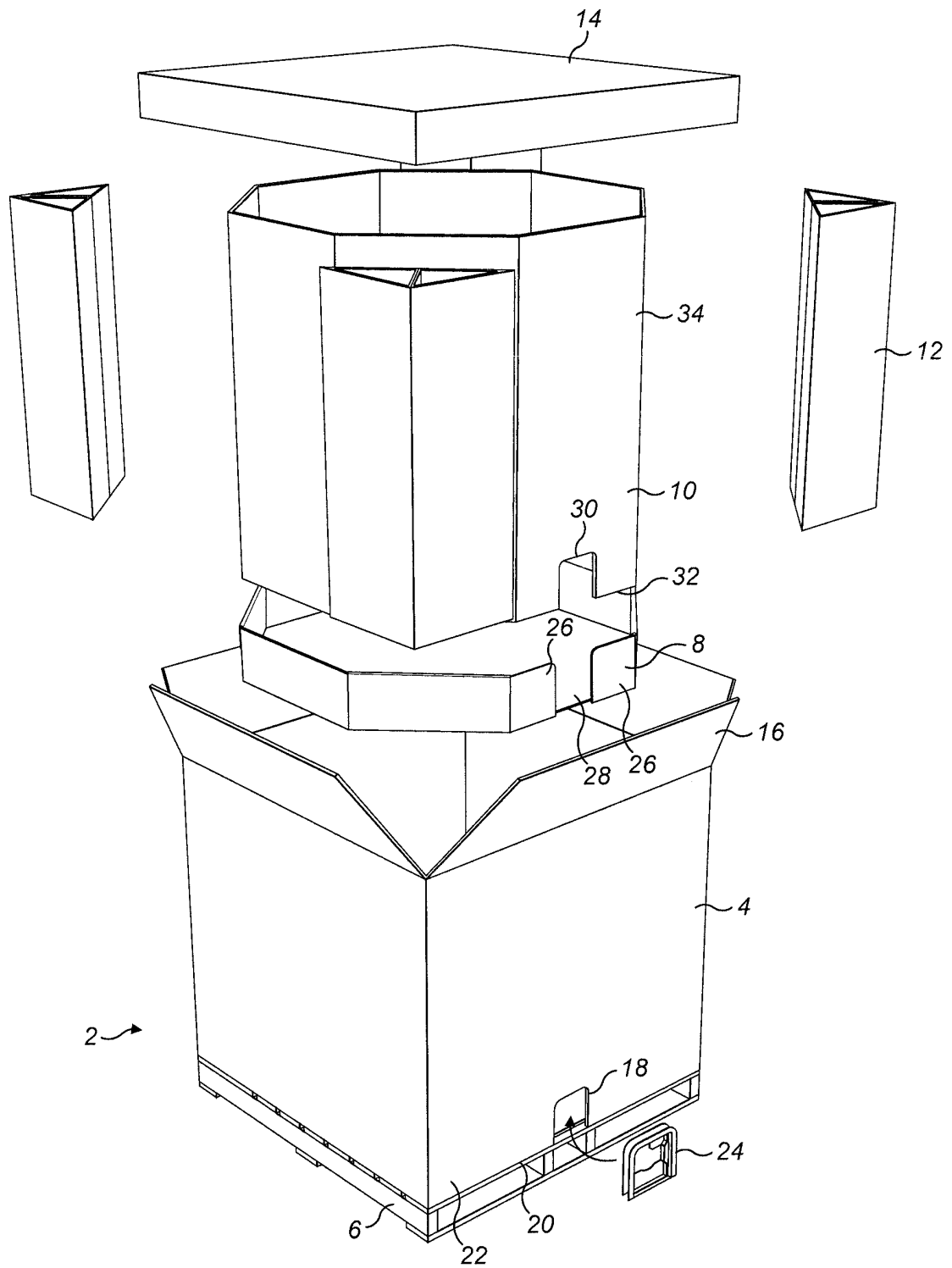
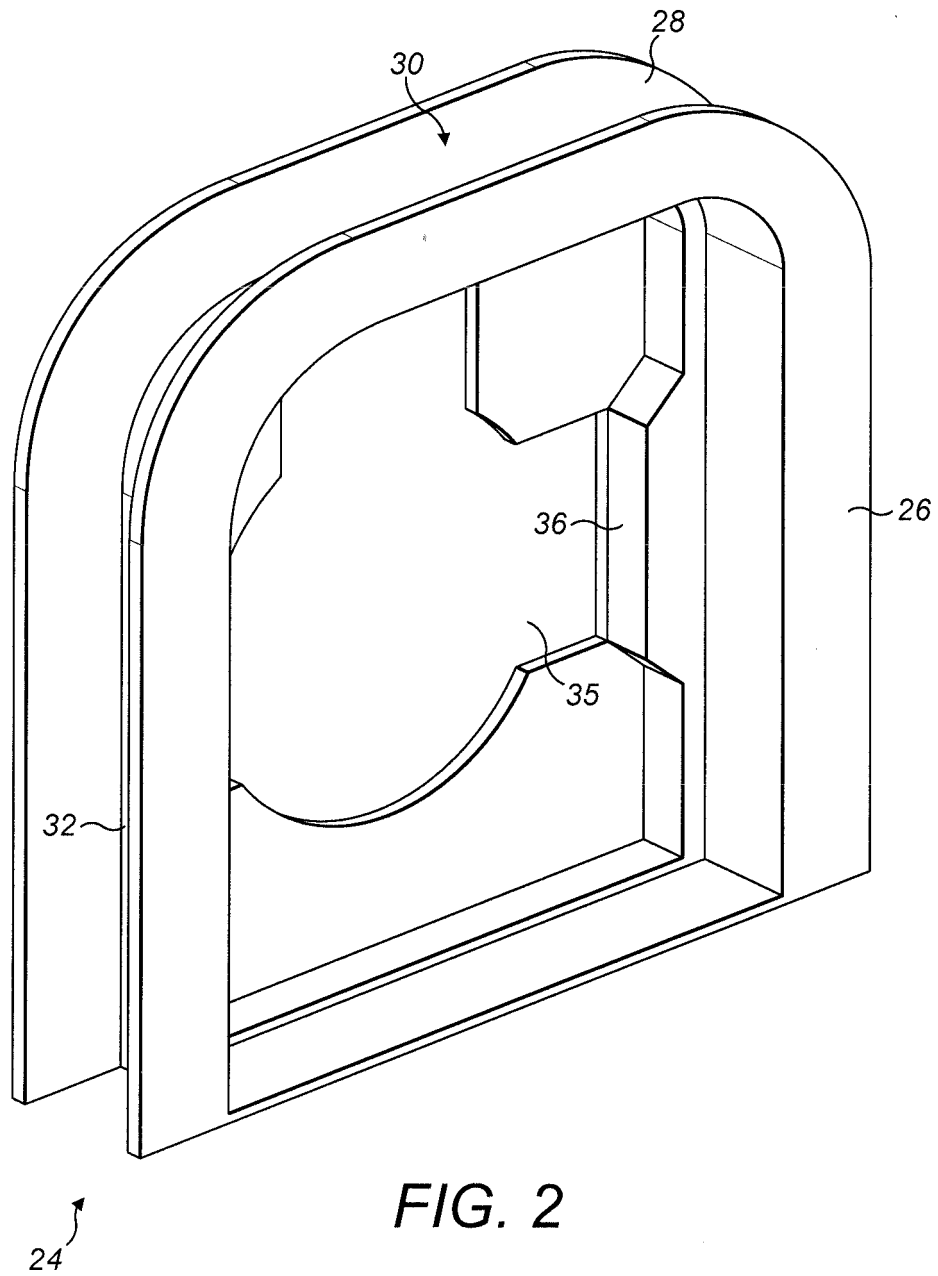
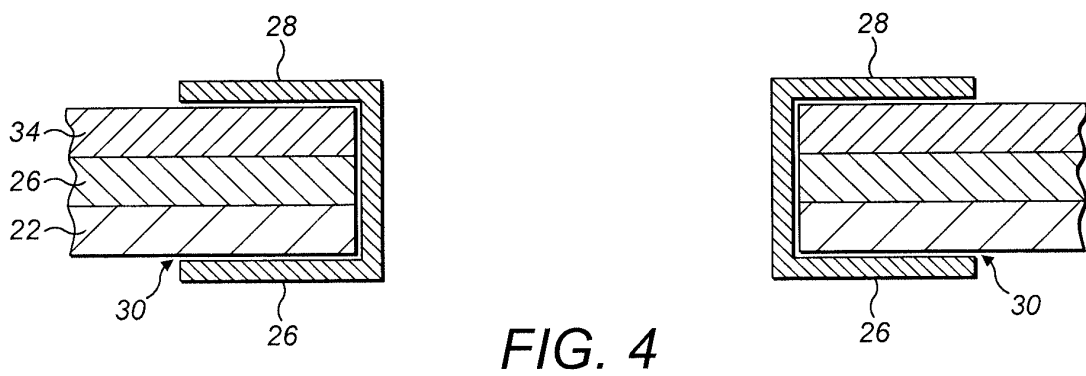
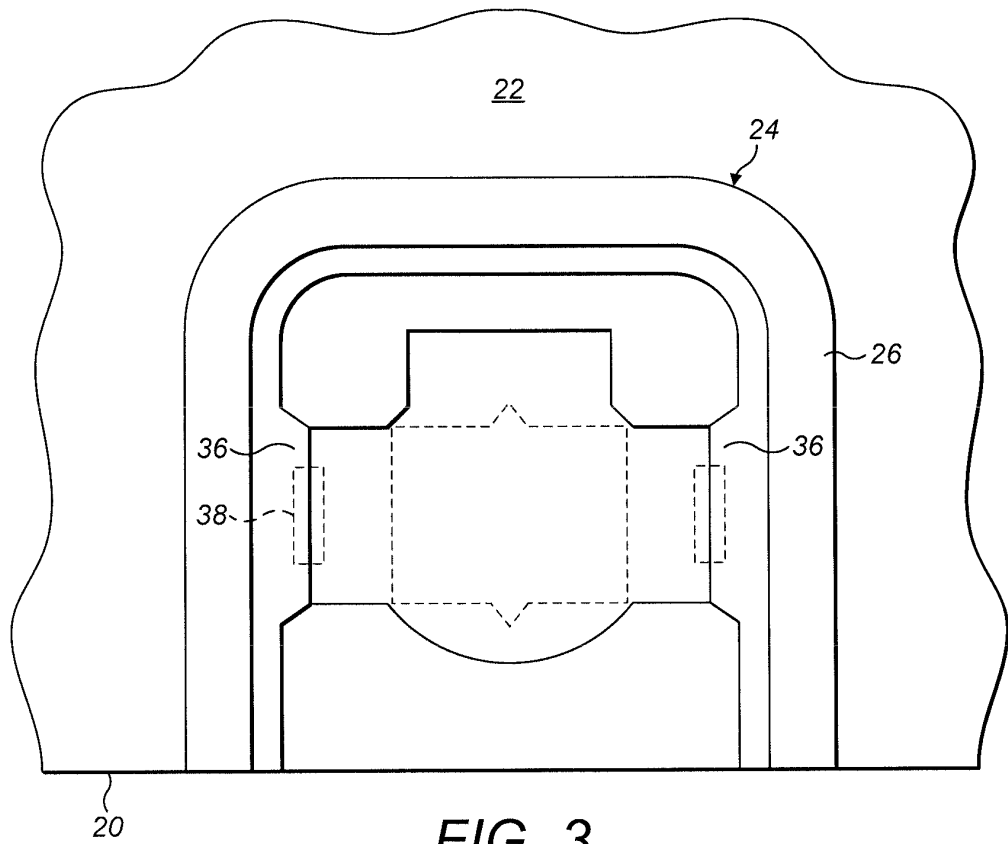


FIG. 1





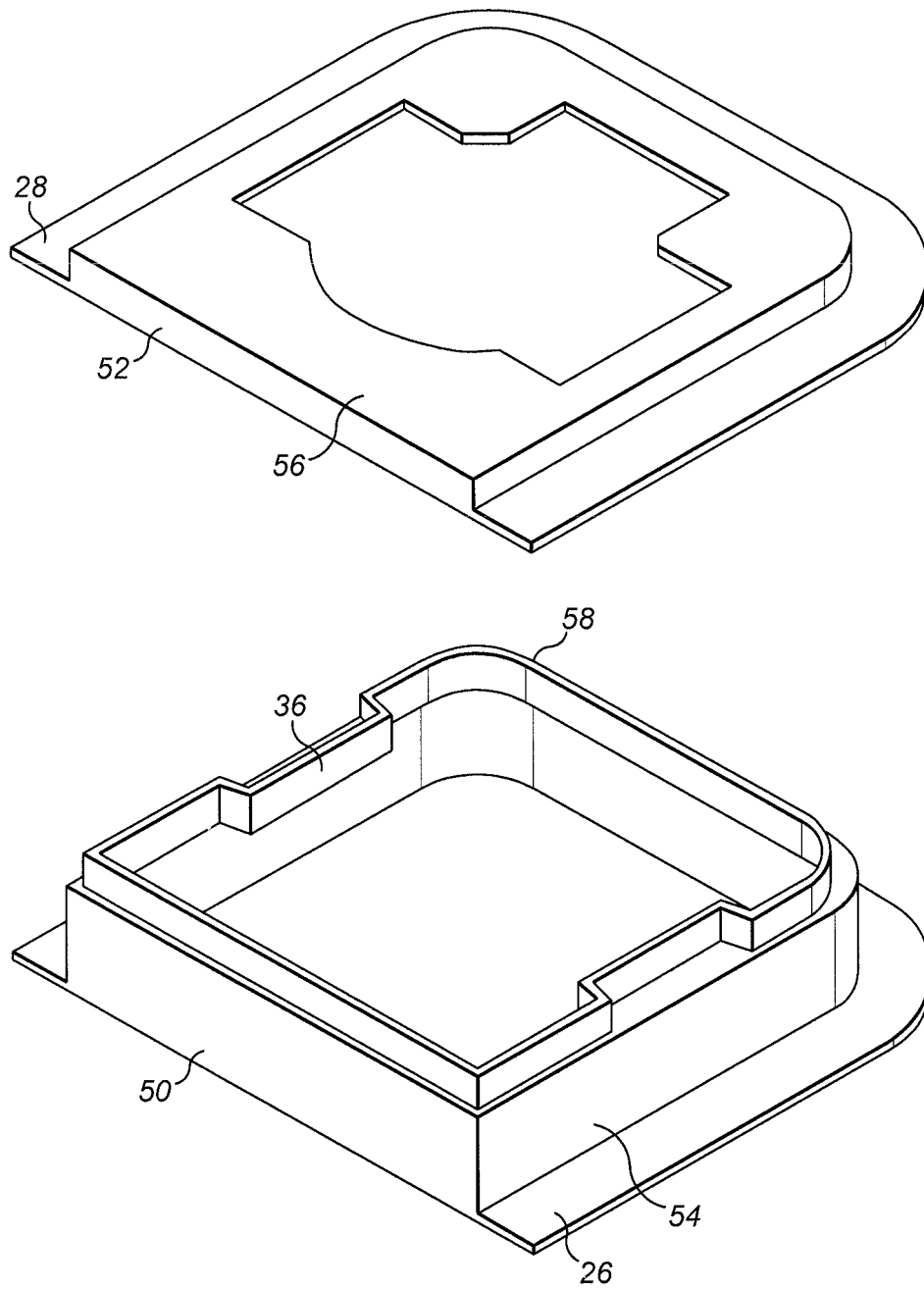


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
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Place of search Munich		Date of completion of the search 14 May 2013	Examiner Piolat, Olivier
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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