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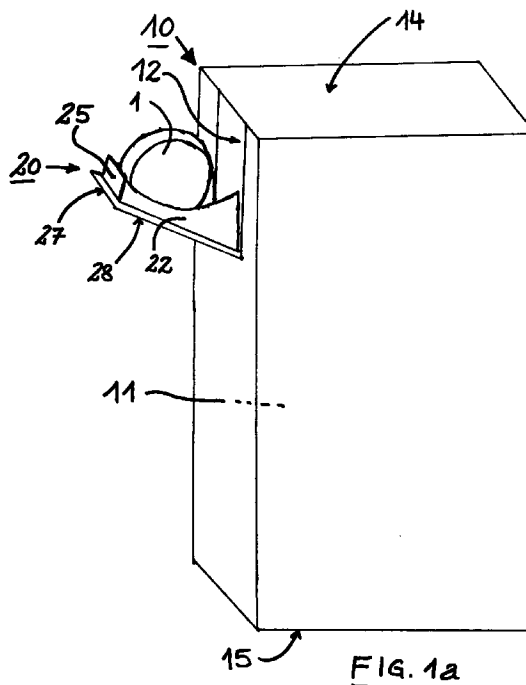
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(54) A package having a spout for dispensing tablets

(57) The present invention provides a package (10) for detergent tablets (1). Said package dispenses these detergent tablets one by one without complicated operations. This is achieved by a hinged spout attached to the dispensing opening of said package. Said hinged spout comprises a supporting wall (21), side walls (22) and end wall (25) to enable that a tablet is retained onto said hinged spout until the user grasps said tablet.



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Description

Field of the Invention

The present invention relates to a spout which facilitates the dispensing of tablets contained in a package.

Background of the Invention

Detergent compositions formed in non particulate solids such as bars or tablets or briquettes are known in the art. In the following, the term "tablet" will refer to any form of non particulate solids. The tablet provides a number of advantages to both the consumer and the manufacturer. Indeed, said tablet prevents spillage of the detergent composition. Furthermore, said tablet eliminates the need for the user to estimate the dosage of detergent composition required and ensures that the correct dosage of detergent composition per wash cycle is used by the user.

The detergent tablets available on the market are generally sold packed in containers in a loose way or individually wrapped in bags. Other possible containers enable to dispense tablets one by one from said package. For example, EP-A-573 859 describes a package for pharmaceutical tablets in which tablets fall singularly into a child resistant sliding drawer. Said drawer has to be pulled out from said package to reach said tablet.

We found that to get a tablet out of the packages as described in '859 above is a quite complicated manoeuvre by operating a drawer. Indeed, we found that especially users of detergent tablets consider these packages as being too complicated to be operated. Indeed, these users rather prefer a package which enables an easy one-by-one dispensing of detergent tablets out of said package with an easy handling of the package. Furthermore, the packaging of this document has a complicated construction, since a drawer has to be incorporated into a container. Consequently, this further increases the cost of manufacturing of said container.

Spouts able to dispense the content from a package are generally known by the person skilled in the art. Also hinged spouts as used, for example, on packages containing sugar are generally known. These hinged spout facilitate to direct the flow of the content to the outside. We found that when these spouts are used to dispense tablets, the tablets are not retained onto the spout. Consequently, more than one tablet may exit from the package the user having no control on the quantity of tablets dispensed. This creates inconvenience, since the user is then obliged to re-insert the surplus of tablets back into the package.

It is therefore an object of the present invention to provide a package for detergent tablets which dispenses said detergent tablets through a hinged spout without inconvenience, simple dispensing operations and at a reduced cost.

Summary of the Invention

The present invention provides a package containing tablets. Said package comprises a top wall, a bottom wall, a surrounding wall and a dispensing opening. Said dispensing opening further comprises a hinged spout dispensing said tablets. Said hinged spout comprises a supporting wall and two side walls, said side walls opposing each other. Said hinged spout further comprises an end wall, said end wall being located on the same side of said supporting wall as said side walls and at least partially along the width (W_s) of said supporting wall such that said side walls and said end wall retain a tablet onto said supporting wall of said hinged spout.

Brief Description of the Figures

Figure 1a is a perspective front view of an embodiment of the package according to the present invention. Figure 1b is a top view and Figure 1c is a side view of a hinged spout according to the present invention.

Figures 2a and 2b are cross sectional top views of an embodiment of the package according to the present invention.

Figure 3 is a perspective front view of another embodiment of the package according to the present invention.

Figures 4a and 4b are perspective front views of a detergent tablet which may be used in any of the embodiments of packages according to the present invention.

Figures 5a to 5d are perspective front views of another embodiment of the package of the present invention.

Figures 6a, 6b, 7a and 7b are front views of another embodiment of the package according to the present invention.

Figures 8a to 8c are cross sectional side views of an embodiment of the package according to the present invention.

Figures 9a and 9b are cross sectional side views of another embodiment of the package according to the present invention.

Figure 10a is a cross sectional front view and Figures 10b and 10c are cross sectional side views of another embodiment according to the present invention.

Figures 11a and 11b are partial perspective views of another embodiment of the package according to the present invention. Figures 11c and 11d are cross sectional side views of further embodiments of the package according to the present invention.

Detailed Description of the Invention

In the following any form of non particulate solids such as bars or tablets or briquettes will be encompassed by the term "tablet" (1). Pharmaceuticals in tablet form are, for example, tablets according to the present invention. Preferably, said tablet is made of a

detergent composition, specifically a detergent composition for washing of laundry or dish. Said tablet may have any shape or dimension. Preferably, said solid, non particulate tablet is symmetrical to ensure the uniform dissolution of said tablet in the wash liquor or in other specific environments.

According to the present invention the detergent tablet (1) may comprise any ingredients known in the art. Such ingredients may include surfactants, suds suppressers, bleaches, chelants, builders, enzymes, fillers and perfumes.

According to the present invention the detergent composition of the tablet (1) is prepared in its granular or particulate form and then formed into tablets of the desired shape and size by any one of the methods known in the art. Suitable methods include compression, extrusion and casting. The detergent composition may be homogeneously distributed throughout the tablet or may comprise distinct layers of certain detergent ingredients. Preferably, the shape of said detergent tablet is cylindrical, as shown, for example, in Figure 4a. In this case the dimensions of said detergent tablet are defined by the diameter (d) and by the height (h). Usually, detergent tablets have a cylindrical shape with the diameter being greater than the height of said tablet. Another possible shape of said tablet is rectangular, as shown, for example in Figure 4b. In this case the dimensions of this detergent tablet are defined by the length (L), by the width (w) and by the height (h). Usually, in a rectangular tablet the length is the greatest dimension and the width is equal to the height.

Figure 1a shows in a perspective front view a package (10) according to the present invention. Said package comprises a hollow body (11) and a dispensing opening (12), said hollow body being defined by a top wall (14), a bottom wall (15) opposed to said top wall and a surrounding wall (16) surrounding said hollow body and connected to said top and said bottom wall. Said bottom wall is the part of said package upon which said package stands in its upright position. Preferably, the external shape of said hollow body may be substantially rectangular. The inside of said hollow body (11) is filled with tablets. When said package stands upon its upright position, said dispensing opening is located on the upper portion of said surrounding wall, as shown in Figure 1, or on said top wall.

As a preferred option, said top wall (14) of said hollow body (11) comprises a refilling opening. Said refilling opening allows to refill said hollow body with new detergent tablets (1) once said package is emptied. Therefore, the dimension of said refilling opening corresponds at least to the dimension of a tablet. As a preferred option, said refilling opening is closed by a closure, more preferably by a child resistant closure. Said child resistant closure is adapted to prevent the removal of said tablet (1) through said refilling opening by infants and children. In particular, as used herein, the wording "child resistant closure" refers to any mechanism whereby access to the tablet is reduced so that the

tablet cannot be readily removed, especially by infants and children. An example of a child resistant closure is a closure on which the user has to apply a double or coordinated action on said closure to open said closure. For example, such child resistant closures are press-and-turn or press-and-pull closures known by the person skilled in the art.

Said dispensing opening (12) is dimensioned in such a manner to enable the passage of at least one tablet. Preferably, said dispensing opening is made of a rectangular cut through the thickness of said surrounding wall (16) and/or top wall (14). For a cylindrical tablet as described above, said dispensing opening is made preferably of a cut having the length equal or greater than the diameter (d) and the width equal or greater than the height (h) of a cylindrical tablet. For a rectangular tablet as described above, said dispensing opening is made preferably of a cut. This cut has the length equal or greater than the length (L) of a rectangular tablet, whereby the width of this cut is equal or greater than the width (w) or height (h) of a rectangular tablet. Most preferably, said dispensing opening is located on that part of said surrounding wall having the smallest dimension, as shown in Figure 1.

As a preferred option, said hollow body (11) of said package comprises a funnel around the dispensing opening (12) to convey the tablets from the interior of said hollow body towards said dispensing opening. This funnel should be made in such a manner that said tablets are prevented to jam in the interior of said hollow body and in front of said dispensing opening blocking the exit through said dispensing opening for other tablets. This funnel may be, for example, conically shaped located in the interior of said hollow body having the smallest dimension in front of said dispensing opening. This funnel directs said tablets towards said dispensing opening in such a manner that said tablets pass through said dispensing opening without blocking each other.

In another preferred optional embodiment of the present invention, the internal dimension of said hollow body (11) is such that said tablets are orderly spaced one to each other. This also prevents that said tablets jam in the interior of said hollow body and in front of said dispensing opening blocking the exit through said dispensing opening for other tablets. This is achieved according to the present invention by limiting the internal width (Fig. 2a, W_i) of said hollow body to a width which is smaller than the largest dimension of said tablets. The "internal width" is hereinafter defined to be shortest distance between adjacent walls in a direction along the drawn line (5) in Figure 2a. Figure 2a is a cross sectional cut of a package according to the present invention on a plane parallel to said bottom wall (15) of said package.

For example, when said tablet (1) has a cylindrical-type of shape as described above, such a detergent tablet may only enter into said hollow body (11), if said tablet is placed onto said bottom wall (15) standing on the surface having the smallest dimension, i.e. its height

(Fig. 4a, h). This means that said tablet can never lay on the surface defining the diameter (d) of said tablet. Consequently, said tablets are ordered in a row, as shown, for example, in Figure 2a. As hereinafter referred to, a "row of tablets" is meant to be a row of tablets standing upon said bottom wall (15) or upon another row of tablets whereby each tablet stands on the part of said tablet having the smallest dimension, i.e. on the height (h) for the tablets defined before. Therefore, the internal width is a distance perpendicular to said row.

We found that this way of positioning said tablets (1) reduces the friction forces acting onto said tablets. Reducing the friction forces permits an easy dispensing of tablets from said package avoiding that tablets block each other from exiting said package. This is particularly important when the tablets are big and/or heavy where the friction forces between said tablets are substantially high. For example, friction forces between tablets may influence the dispensing of said tablets from the package when the largest dimension of the tablet is greater than 1 cm and/or the weight of the tablet is greater than 10 g. The roughness of the external surfaces of said tablets also contributes to increase the friction forces between said tablets.

The friction forces between said tablets (1) are reduced in the package according to this embodiment of the present invention. Indeed, only the smallest surface of a tablet interacts with other tablets and/or with said end wall. Furthermore, when said tablet is cylindrically shaped as described before, said tablet is able to roll towards said dispensing opening which further reduces the friction. Therefore, said tablet in said hollow body cannot block other tablets contained in said hollow body from exiting through said dispensing opening.

In a particular embodiment of the present invention said tablets (1) are orderly held in said hollow body (11) in one row within its internal width (W_i). Other single rows may be placed on top of the lowest row starting from the row standing on said bottom wall (15) until said hollow body is filled up to said top wall (14). In another preferred embodiment of the present invention said hollow body may contain more than one row of tablets parallel to each other within the internal width (W_i), when the diameter (d) or the length of said tablet is greater than twice the height of said tablet. Indeed, said hollow body may contain, for example, two parallel rows of tablets within the internal width (W_i), as shown in Figure 2a. Also in this case, the diameter (d) or the length of a tablet is greater than the width (W_i) of said hollow body, said width (W_i) being now equal or slightly greater than twice the height of a tablet. Again, these double rows of tablets are placed each over another filling up said hollow body to said top wall (14) starting from said bottom wall (15). We found that when said tablets are placed inside said hollow body, said tablets automatically get ordered in these single or double rows. Indeed, the tablets are forced into one of the rows by the weight of the tablets of the above rows. The same applies for more than two parallel rows of tablets when the diameter of

the tablet (d) is greater than n-times the height (h) of said tablet, n being greater or equal to 2.

As a further preferred option, when two or more rows of tablets (1) are to be placed inside said hollow body, said hollow body comprises preferably at least one divider (30), as shown in Figure 2b. Figure 2b is again a cross sectional cut along a plane parallel to said bottom wall (15). Said divider is perpendicular to the direction drawn by line (31) in Figure 2b. Said divider starts from said bottom wall (15) up to said top wall (14). Said hollow body may comprise more than one divider to contain several rows of tablets. The width (w) between said surrounding wall (16) and said divider or between each divider is smaller than the largest dimension, i.e. the diameter or the length, of said tablet. Consequently, said dividers divide the parallel rows of tablets from each other. In this manner, the friction between parallel rows is reduced to achieve an easy and readily dispensing of said tablets. When said hollow body comprises said dividers (30), said package may preferably comprise one dispensing opening (12) enabling the tablets of each divided row to exit said package.

Said dispensing opening (12) further comprises a hinged spout (20). Said hinged spout comprises a supporting wall (21), two side walls (22) and an end wall (25). One end edge (26) of said supporting wall is connected to said package, specifically at said dispensing opening. The other edges of said supporting wall, i.e. the side edges (28) and (29) and end edge (27), are free from any attachments to said package. Said side walls and said end wall are all located on one side of said supporting wall. Said two side walls are preferably located along the side edges (28) and (29) of said supporting wall. Said side walls are opposed to each other along the side edges (28) and (29). Said side walls may remain at the same distance from each other or the distance between said side walls may become narrower or brighter towards said end wall.

Said end wall is located opposed to said dispensing opening and is placed parallel to said end edge (27) or the width (W_s) of said supporting wall, i.e. said end wall is located at least partially along the width (W_s) of said supporting wall. For example, said end wall may be a bar, whereby each end of said bar is connected to a side wall (22). Preferably, said end wall is connected to said supporting wall and located along the end edge (27). Said end wall and said side walls are inclined walls with respect to said supporting wall, and said end wall is also inclined to said side walls. In a preferred embodiment, said end wall and said side walls are perpendicular to each other and to said supporting wall. In another preferred embodiment, said end wall and said side walls are connected to each other, therefore leaving no inter-spaces between said end wall and said adjacent side walls.

Said hinged spout (20) is attached to said dispensing opening (12) in such a manner that a tablet exiting said dispensing opening is received by said hinged

spout when said hinged spout is in its open position. For example, when said dispensing opening is located on said surrounding wall (16), said supporting wall (21) is located under said dispensing opening when said package stands in its upright position and said hinged spout is in its open position, as shown in Figure 1. In the same configuration, said end wall (25) and said side walls (22) are located above said supporting wall.

The shape and the dimensions of said hinged spout (20) are such to enable the receiving and the retaining of a tablet (1) contained in said package. For example, when the package contains cylindrical tablets, as described above, and said dispensing opening (12) has a rectangular shape, as shown in Figure 1a, said hinged spout has preferably following dimensions shown in Figure 1b and 1c. The width (W_s) of said supporting wall (21) is preferably slightly greater than the height (h) of said tablet. This allows said tablet to stand on the surface of said tablet having the smallest dimension, i.e. its height (Fig. 4a, h). Consequently, said tablet is facilitated to exit said dispensing opening by rolling onto said supporting wall. Preferably, the width (W_s) of said supporting wall is between about 1 times the height (h) of said tablet and 1.5 times the height (h) of said tablet, more preferably about 1.2 times the height (h) of said tablet.

The distance ($L_{s,1}$) between said dispensing opening (12) and said end wall (25) is such that substantially a complete tablet has the sufficient space on said hinged spout such that the tablet can easily exit from said dispensing opening (12) and can be easily grasped by the user. Preferably, the distance ($L_{s,1}$) between said dispensing opening and said end wall is between about 0.8 times the diameter (d) of said tablet and about 2 times the diameter (d) of said tablet, more preferably between about 1 times the diameter (d) of said tablet and about 1.6 times the diameter (d) of said tablet.

As a preferred option, said hinged spout (20) further comprises a stopping notch (Fig. 5b, 40). Said stopping notch stops the opening of said hinged spout to a partial opening position of said hinged spout, as shown in Figure 5a. Several stopping notches can be foreseen, each of said stopping notches determining a different partial opening position of said hinged spout. Preferably, in a first opening position only one tablet is able to exit onto said hinged spout. This means that specifically this stopping notch ensures that tablets are dispensed one by one from said container (Fig. 5a). This is due to the high inclination of said supporting wall with respect to the full opening of said hinged spout. Indeed, the higher inclination limits the available space for the tablets. We found that the one by one dispensing of tablets can be made independent, with the help of said stopping notch, from the length of said supporting wall of said hinged spout. Indeed, we found that the length of said supporting wall may be greater than 1 time the diameter (d) of said tablet, and still only one tablet is able to exit on said hinged spout when said stopping notch stops the opening of said hinged spout to a partial opening position, as

shown in Figure (5a). When said hinged spout is further opened passing over said stopping notch, said hinged spout may be stopped by another stopping notch or, finally, said hinged spout is completely opened (Fig. 5b).

Said stopping notch may be located in any place of said hinged spout such that said hinged spout interacts with said opening (12) and stops the opening of said hinged spout to a partial opening position. In a preferred embodiment of the present invention comprising the stopping notch (Fig. 5b, 40), said stopping notch is positioned on the outermost surface of at least one of said side wall (22) of said hinged spout (20). Specifically, said stopping notch is an extension protruding away from the outermost surface of at least one side wall. As a preferred option, both side walls (22) may comprise each a stopping notch. As another preferred option, several stopping notches may be provided on each of said side walls. The position of the stopping notch may also be such that said stopping notch interacts with the upper or lower portion of said opening when said package stands in its upright position.

The height (H_s) and lengths ($L_{s,2}$) and ($L_{s,3}$) of said side walls (22) and said end wall (25) respectively should provide a sufficient barrier which impedes the falling of said tablet from said supporting wall of said hinged spout. Consequently, said tablet is held onto said hinged spout with the help of said end and side walls. On the contrary, the height (H_s) of said end and side walls should not impede an easy grasping of said tablet by a user. The height is the minimum distance between said supporting wall and the upper edge of said end wall or side walls. For, example, when said end wall is a bar as described above, the height is the distance between said supporting wall and the upper edge of the bar. The length, however, is measured parallel to said end (27) or side edges (28) and (29), i.e. perpendicular to the height.

Preferably, the height (Fig. 1c, H_s) of said side walls and said end wall is between about 0.2 times the diameter (d) of said tablet and about 1 times the diameter (d) of said tablet. Most preferably, the height (H_s) of said side walls and said end wall is about 0.5 times the diameter (d) of said tablet. As a preferred option, the height (H_s) of said end wall is equal to the height of said side walls. As another preferred option, the height (H_s) of said side walls is not constant. For example, said height (H_s) of said side walls is curved increasing said height (H_s), as shown for example in Figure 1c. In this case, the maximum height ($H_{s,max}$) is still within the range described before. Said side walls may curve only at one end or at both ends of said side walls. The curvature may also be such to decrease said height (H_s) of said side walls, but still within the range of the height (H_s) as described before. The length ($L_{s,2}$) of said side walls is preferably between about 0.5 times to 1 times the length ($L_{s,1}$) of said supporting wall (21). The length ($L_{s,3}$) of said end wall is preferably between 0.5 times to 1 times the width (W_s) of said supporting wall (21).

The dimensions of said hinged spout (20) are such

that a tablet is held onto said hinged spout. Said end (25) and said side walls (22) of said hinged spout prevents that the tablet (1) exiting from said dispensing opening (12) falls from said hinged spout. Furthermore, until tablet remains on said hinged spout, the exit of other tablets through said dispensing opening is prevented. Indeed, the dimensions of said hinged spout allow only one tablet to stay on said hinged spout. Consequently, other tablets are prevented to exit said dispensing opening by the tablet already staying on said hinged spout. Therefore, said hinged spout enables a one-by-one dispensing of the tablets through said dispensing opening. Furthermore, the additional end wall prevents that tablets fall uncontrolled from said dispensing opening. The user has only to grasp the tablet which is held on said hinged spout. This avoids messiness in the dispensing of tablets.

When said package comprises divided rows of tablets, as described before with said dividers (30), said package may preferably comprise a hinged spout for each divided row of tablets. More preferably, said hinged spouts are attached to the neighbouring hinged spout corresponding to another row of tablets forming a single hinged spout capable to dispense a multiple of tablets at the same time, as shown in Figure 3. As an option, said opening comprises a barrier (Fig. 5d, 45) and said hinged spout comprises at least a stopping notch (40), as shown in Figures 5c and 5d. As described before, the stopping notch on said hinged spout stops said hinged spout to a partial opening position. The partial opening position of said hinged spout allows only one tablet at a time to exit onto said hinged spout from one row. At the same time, the barrier on said opening prevents that another tablet of another row exits on said hinged spout. Said barrier may, for example, be a flap extending from the top edge of said opening (12) downwards. Consequently, the tablets of only one row are allowed to exit onto said hinged spout.

When the tablets of one row are finished, said hinged spout may be opened further until said hinged spout is again stopped by another stopping notch or said hinged spout is completely opened. In one of these opening positions, said hinged spout is sufficiently opened that the tablets of the other row are able to pass under said barrier (45). Said barrier may also be a flap hinged on a divider in the opening region, as shown in Figures 6a and 6b. Said hinged flap extending into the opening of the tablets of a row prevents the exit of these tablets (Fig. 6a). Once one row is emptied, said hinged flap is turned to the empty row, as illustrated in Figure 6b enabling the tablets of the other row to exit on said hinged spout. Another possibility is a removable cover which can be applied in the opening region of one row of tablets, as shown in Figures 7a and 7b. Said removable cover may be anything which impedes the exit of tablets through said opening. For example, a removable cross, as illustrated in Figure 7a, or a adhesive sticker, as illustrated in Figure 7b may be used as a removable cover.

Preferably, said hinged spout also closes said dispensing opening. This may be achieved, for example, when said hinged spout pivots around the end edge (26) attached to said package. Said hinged spout is therefore closed by pushing said hinged spout into said dispensing opening (12), the attached end edge (26) acting as a hinge. Said hinged spout is blocked in said dispensing opening through a closing mechanism between said hinged spout and the lip of the dispensing opening. Said closing mechanism keeps said hinged spout inside said dispensing opening in a closing position. Exerting a small force in the opposite direction of the closing direction, said hinged spout gets unlocked from said locking mechanism, obtaining again the open hinged spout.

An example of such a closing mechanism is shown in Figures 8a to 8c. Figure 8a illustrates a cross sectional side view of the package according to the present invention. Said hinged spout (20) is in its closed position. Said end wall (25) is clipped on said top wall (14) of said package. Indeed, a ridge (34) of said end wall is snapped over a ridge (35) of said top wall. To open said hinged spout, said ridge (34) of said end wall has to be pulled over said ridge (35) of said top wall. As illustrated in Figures 8b and 8c, the opening is achieved by pulling the end edge (36) of said end wall along the direction indicated by the arrow (F) until said ridge (34) passes over said ridge (35) of said top wall. Preferably, said top wall comprising said ridge (35) further comprises a re-entrant portion (37) so to allow at least a finger to pull said end edge (36) of said end wall.

As a preferred option, said hinged spout closes dispensing opening in a child resistant manner. A child resistant means is adapted to prevent the removal of said tablet (1) through said dispensing opening by infants and children. In particular, as used herein, the wording "child resistant" refers to any mechanism whereby access to the tablet is reduced so that the tablet cannot be readily removed, especially by infants and children. An example of a child resistant means is a closure on which the user has to apply a double or coordinated action on said closure to open said closure.

For example, such a child resistant means is illustrated in Figures 9a and 9b. It is the same closing mechanism as described previously in Figures 8a to 8c, but said top wall (14) does not comprise a re-entrant portion. Consequently, a finger is not able to pull said end edge (36) of said end wall (25) to open said hinged spout. On the contrary, a force onto said end wall has to be exerted as indicated by the arrow (F) in Figure 9a. In this manner, the end edge of said end wall becomes sufficiently exposed to be gripped by a finger to pull said hinged spout and to let said ridge (34) of said end wall pass over again said ridge (35) of said top wall, as shown in Figure 9b.

Another possible child resistant means is shown in Figure 10a to 10c. In this case, said side walls (22) of said hinged spout have first to be pushed, as illustrated in Figure 10a by the arrows (F₁). By pushing on said

side walls the hooks (38) of said hinged spout are pressed outside the hooks (39) of said package. Preferably, said hooks (38) of said hinged spout are located on the innermost side of said side walls (22). Whereas said hooks (39) of said package are located on the innermost side of said surrounding wall in the region of the opening. Only when said hooks (38) of said hinged spout are disengaged from said hooks of said surrounding wall, said hinged spout can be pulled, as illustrated in Figure 10b by the arrow (F_2), to open said hinged spout as shown in Figure 10c.

A further child resistant means in a third embodiment is shown in Figures 11a to 11d. In practice this child resistant means can be seen as a combination of the child resistant means described in Figures 9 and 10. Indeed, the hinged spout (20) comprises a first child resistant means (41) located between the side walls (22) of the hinged spout and the surrounding wall as described in Figures 10a to 10c. This hinged spout further comprises a second child resistant means (42) located between the end wall (25) and the top wall (14) as described in Figures 9a and 9b. The second child resistant means (42) comprises a hook (43) and holding means (44). The holding means engages with the hook in such a manner that the hook is retained by the holding means until the hook is disengaged.

An example of a child resistant means in the third embodiment is shown in Figures 11a and 11b. The holding means (Fig. 11b, 44), located on the end wall (25) of the hinged spout, comprise a slot in which the hook (Fig. 11a, 43), located on the top wall (14), at least partially snaps into. The location of the hook and the holding means may also be reversed to each other, as shown in Figure 11c, i.e. the hook on the end wall and the holding means on the top wall. To disengage the hook from the slot, the hook is pressed until the hook exits the slot. Furthermore, to completely open the hinged spout, the side wall of the hinged spout has to be pressed, as described in Figures 10 a to 10c, at the same time as the hook.

The holding means may alternatively comprise a counter-hook (43a), as shown in Figure 11d. The hook and counter-hook are located in opposition to each other, whereby the hook or counter-hook may be located on the end wall or the top wall. Preferably, the hook or the counter-hook may bent in such a manner that it conform to the rest of the outermost surface of the end wall or the top wall, as shown in Figure 11d. Indeed, the hook (43) of Figure 11d located on the top wall (14) comprises a bent wall (47) uniting the hook to the outermost surface of the top wall. By pressing on the top wall, the hook can be disengaged from the counter-hook (43a). Furthermore, to completely open the hinged spout, the side wall of the hinged spout has to be pressed, as described in Figures 10 a to 10c, at the same time as pressing on the top wall. The combination of these two child resistant means can be foreseen also for other types of closures, like screw-on or snap-on caps.

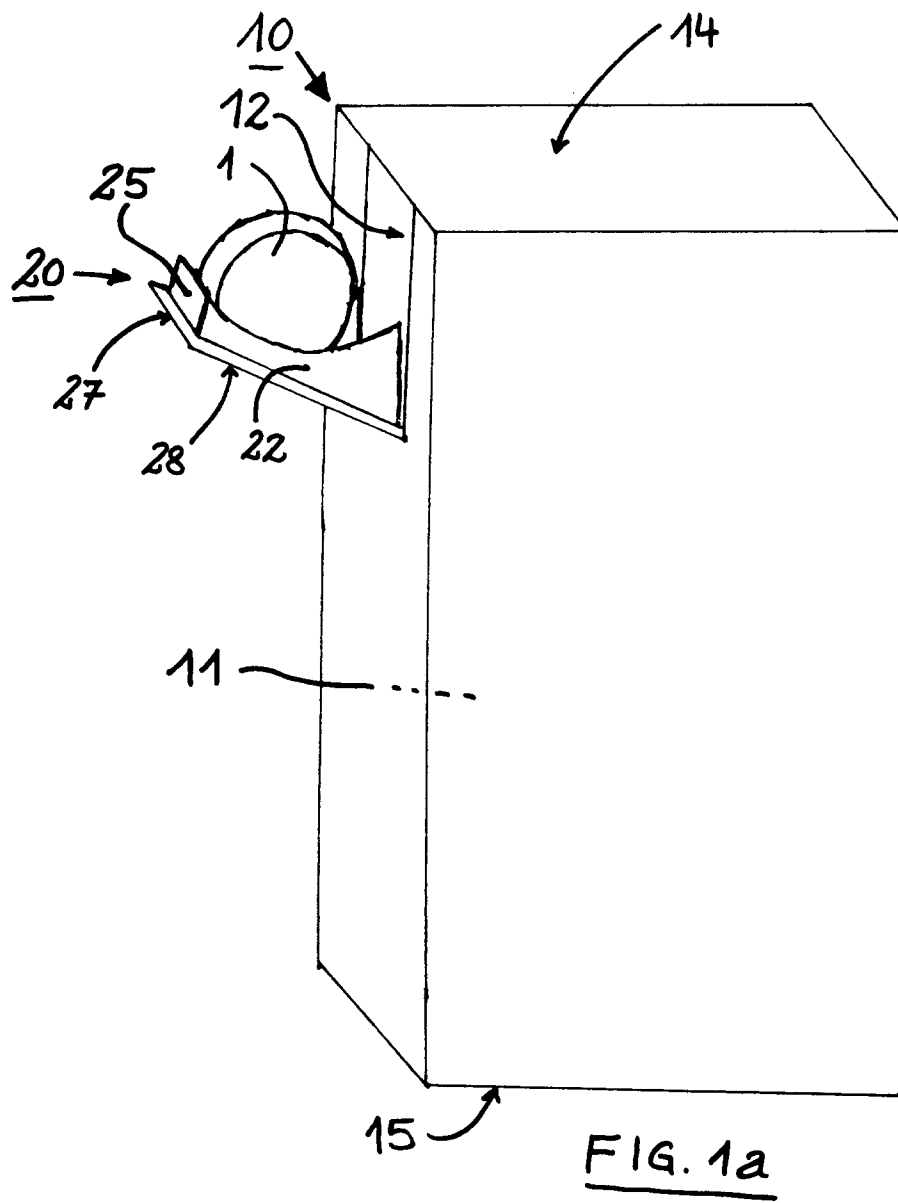
Preferably, said package (10) and said hinged spout are made of thermoplastic material. Such thermoplastic materials have been extensively described in the art and include vinyl chloride based resins, polymers and co-polymers derived from olefins, acrylic polymers and co-polymers, polyethylene, polypropylene, polystyrene, polyethylene terephthalate, polyethylene terephthalate glycol, or mixtures thereof. Said container can be made of single or multi-layer extrusion of such materials. It can also comprise recycled thermoplastic materials. A preferred thermoplastic material used herein is polyethylene. Preferably said package is made of low cost thermoplastic material such as polypropylene and formed by injection molding.

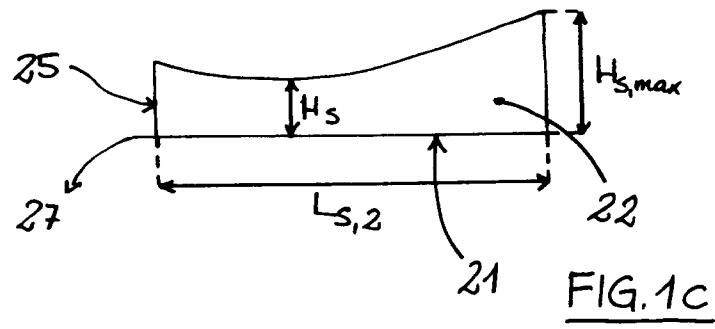
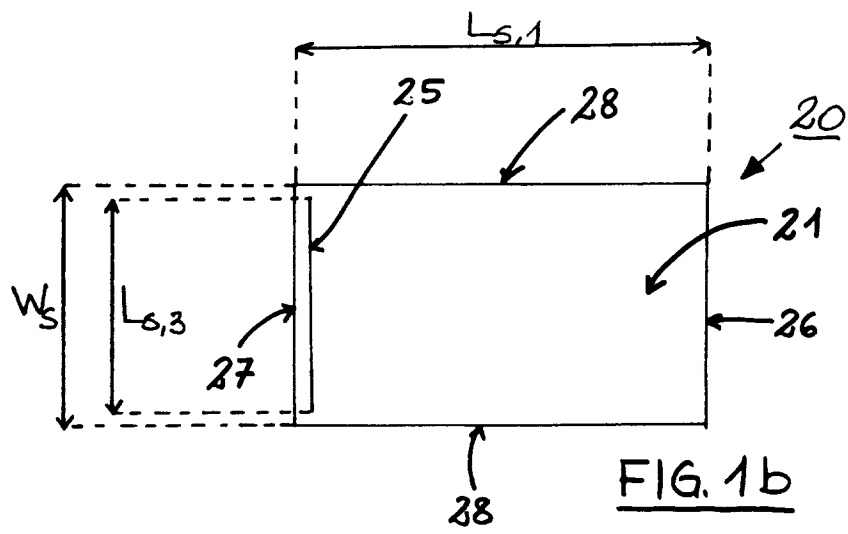
Claims

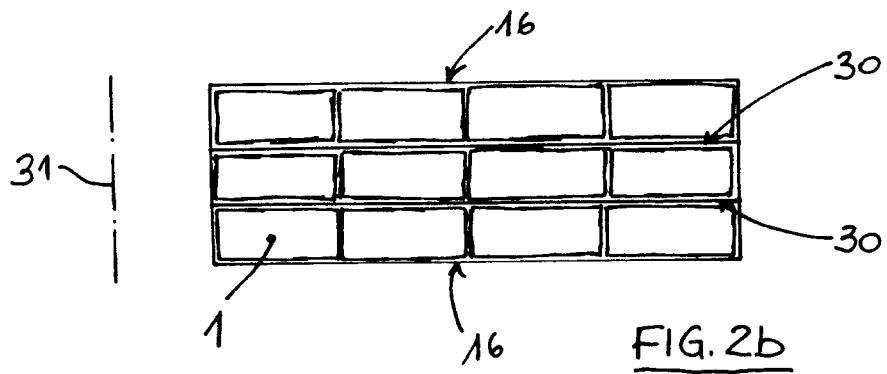
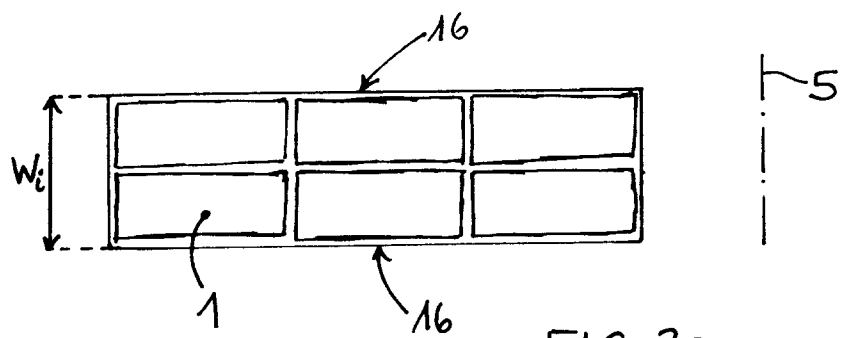
1. A package (10) containing tablets (1) comprising a top wall (14), a bottom wall (15), a surrounding wall (16) and a dispensing opening (12), said dispensing opening further comprising a hinged spout (20) dispensing said tablets, said hinged spout comprising a supporting wall (21) and two side walls (22), said side walls opposing each other, characterized in that said hinged spout further comprises an end wall (25), said end wall being located on the same side of said supporting wall as said side walls and at least partially along the width (W_s) of said supporting wall such that said side walls and said end wall retain a tablet onto said supporting wall of said hinged spout.
2. A package according to claim 1 characterized in that said end wall (25) is inclined to said supporting wall (21) and to said side walls (22).
3. A package according to claim 2 characterized in that said end wall (25) is perpendicular to said supporting wall (21) and to said side walls (22).
4. A package according to any of the preceding claims characterized in that said end wall (25) and said side walls (22) are connected to each other.
5. A package according to any of the preceding claims characterized in that the height (H_s) of said end wall (25) and/or of said side walls (22) is between about 0.2 times the diameter (d) of said tablet and about 1.5 times the diameter (d) of said tablet.
6. A package according to claim 5 characterized in that said end wall (25) and said side walls (22) have the same height (H_s).
7. A package according to any of the preceding claims characterized in that the length (L_s) of said supporting wall (21) is between about 0.8 times the diameter (d) of said tablet and about 2 times the diameter (d) of said tablet.

8. A package according to any of the preceding claims characterized in that said hinged spout further comprises a stopping notch (40).
9. A package according to claim 8 characterized in that said dispensing opening (12) comprises a barrier (45). 5
10. A package according to any of the preceding claims characterized in that said hinged spout (20) closes said dispensing opening (12). 10
11. A package according to claim 10 characterized in that said hinged spout (20) provides a child resistant closure to said dispensing opening (12). 15
12. A package according to claim 11 characterized in that the child resistant closure comprises a combination of a first (41) and a second (42) child resistant means. 20
13. A package according to any of the preceding claims characterized in that said package comprises a funnel around the dispensing opening (12) to convey the tablets one-by-one from the interior of said hollow body (11) towards said dispensing opening 25
14. A package according to any of the preceding claims characterized in that said hollow body (11) comprises dividers (30) separating parallel rows of tablets (1) from each other. 30
15. A package according to any of the preceding claims characterized in that said hollow body (11) comprises a refilling opening. 35
16. A package according to claim 15 characterized in that said refilling opening further comprises a closure. 40
17. A package according to claim 16 characterized in that said closure of said refilling opening is a child resistant closure.
18. A package according to any of the preceding claims characterized in that said tablets (1) are made of a detergent composition. 45
19. A package according to any of the preceding claims characterized in that said tablets (1) have a cylindrical shape. 50

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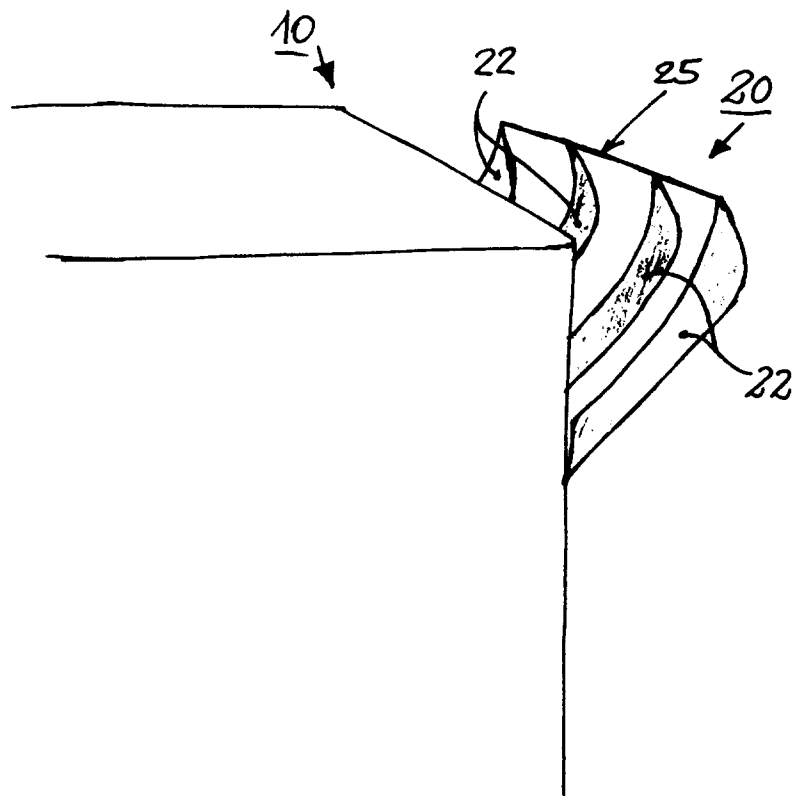


FIG. 3

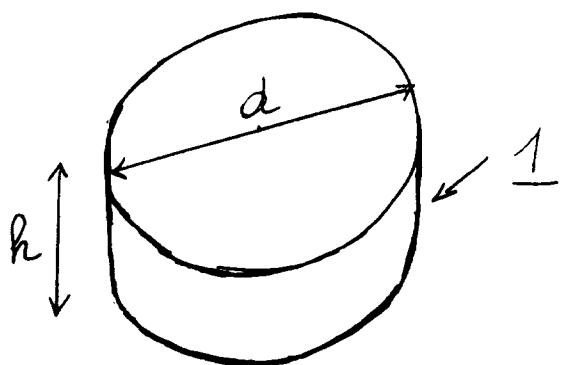


FIG. 4a

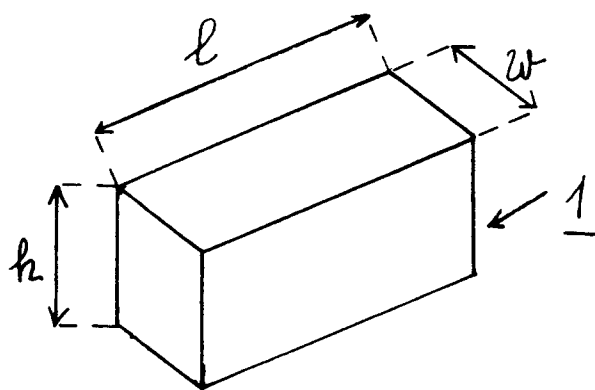
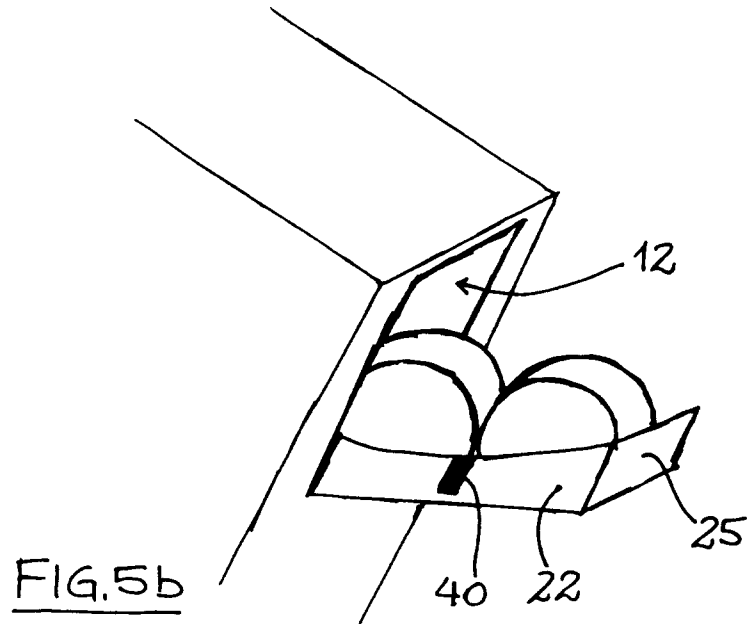
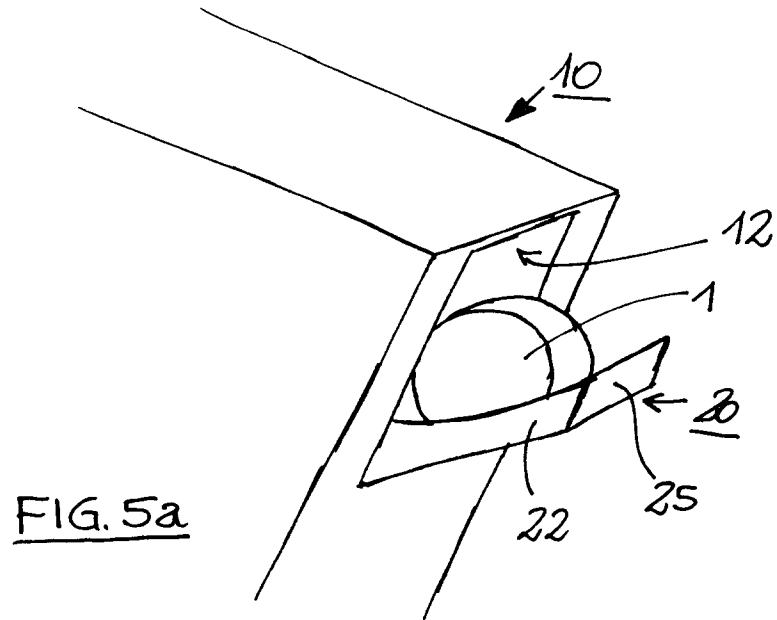


FIG. 4b



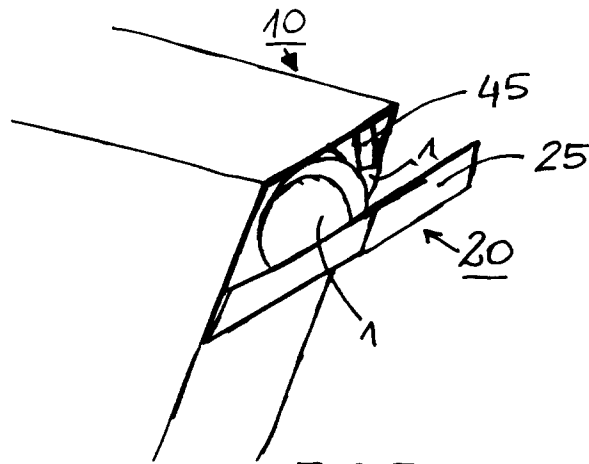


FIG. 5c

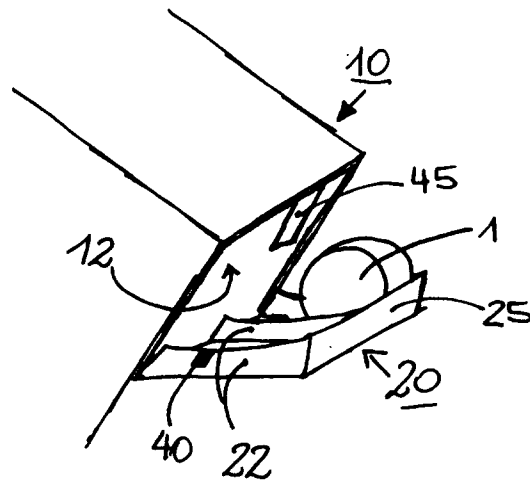


FIG. 5d

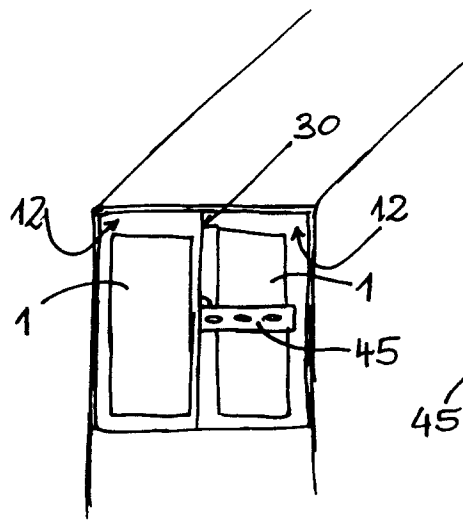


FIG. 6a

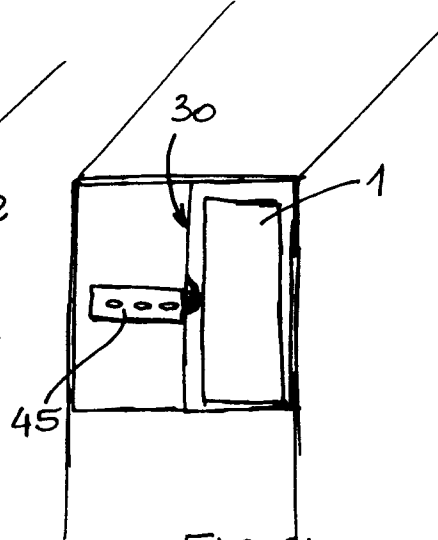


FIG. 6b

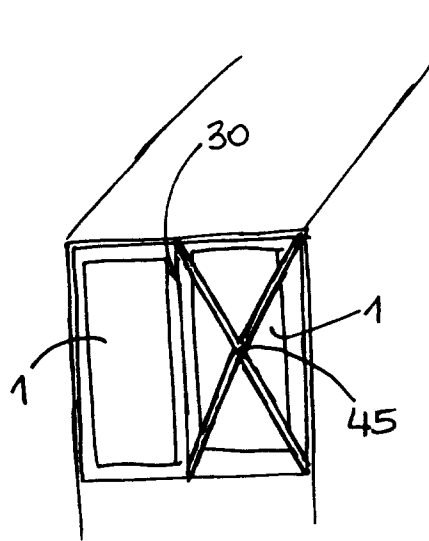


FIG. 7a

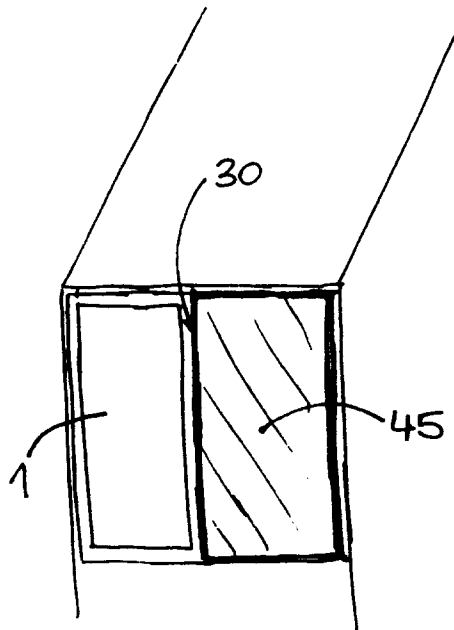


FIG. 7b

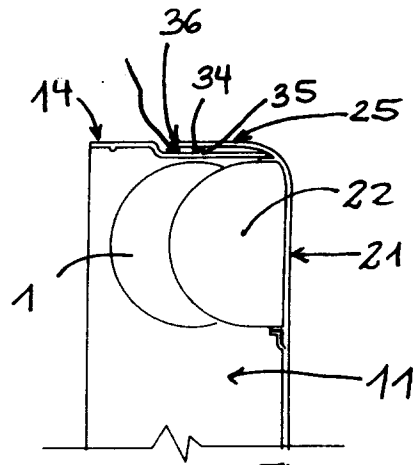


FIG. 8a

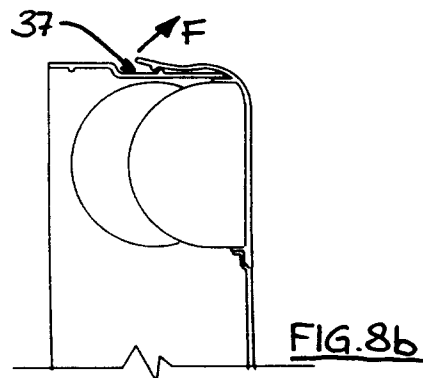


FIG. 8b

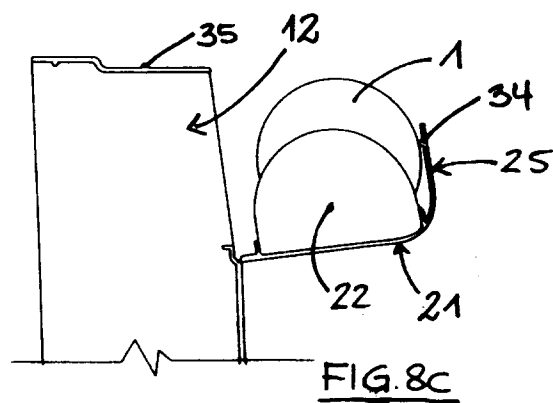
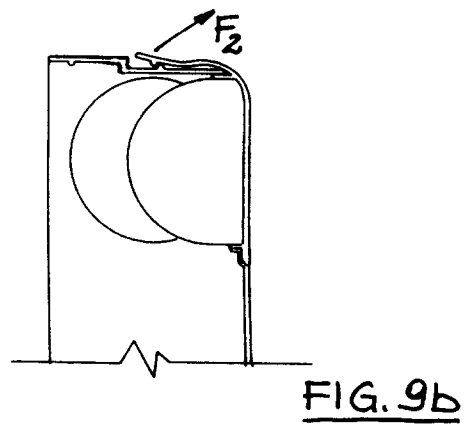
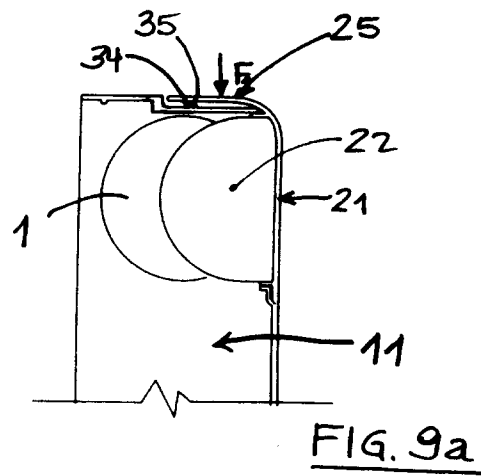


FIG. 8c



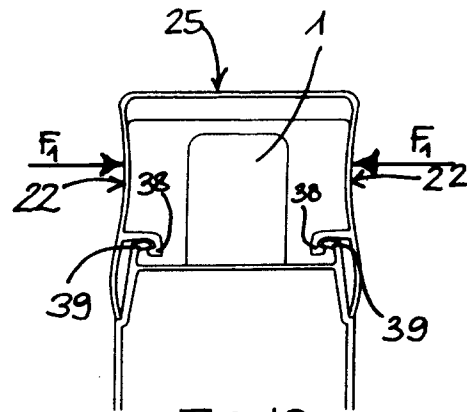


FIG. 10a

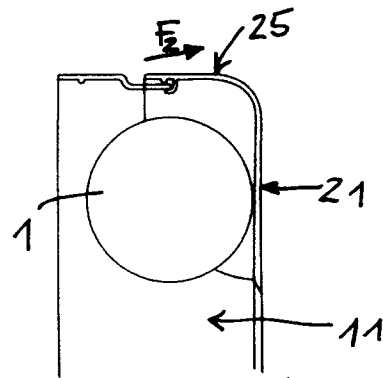


FIG. 10b

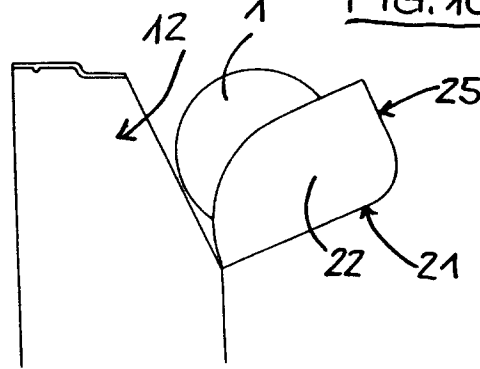


FIG. 10c

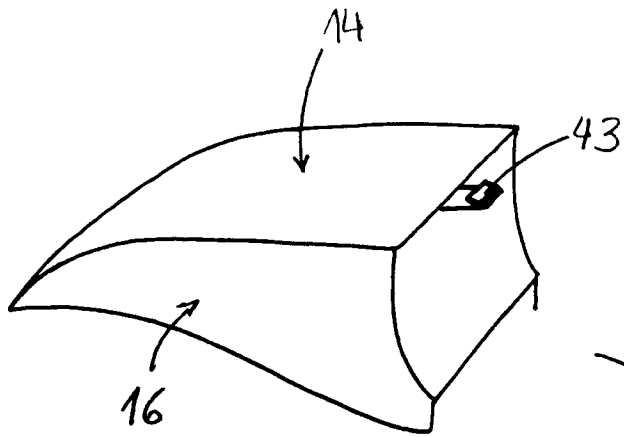


FIG. 11a

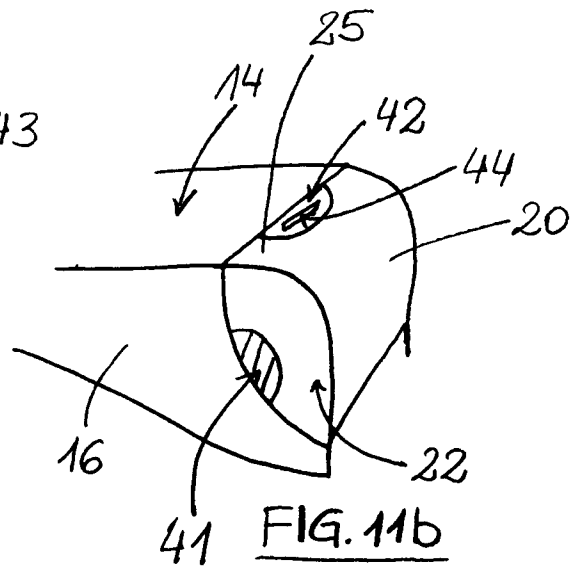


FIG. 11b

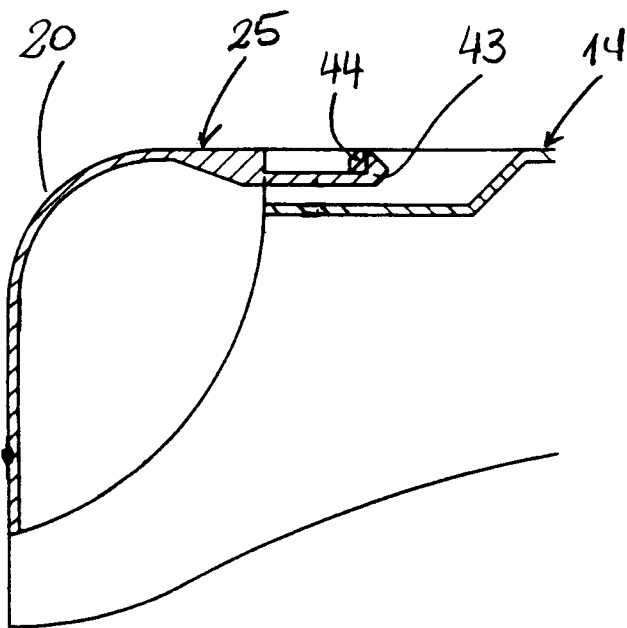


FIG. 11c

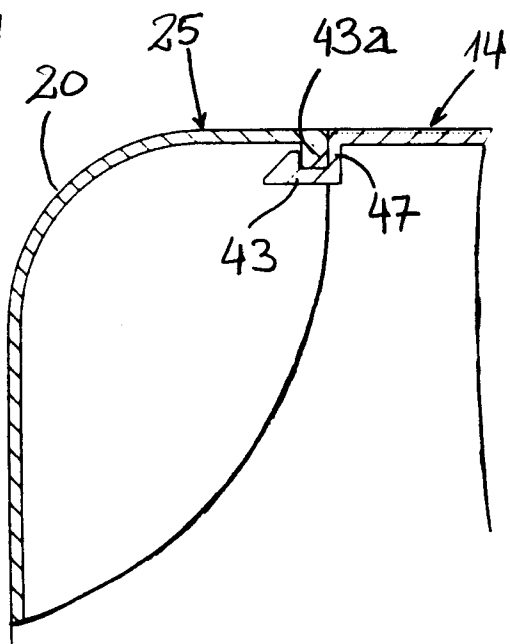


FIG. 11d



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 30 0848

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)
Y	US 3 289 885 A (VILLAVECES) * column 2, line 27 - line 55; figure 6 * ---	1-4,7, 10-13,19	B65D83/04 B65D25/46 B65D50/04
Y	FR 941 300 A (BEDAUX) * page 1, line 43 - page 2, line 31; figures * ---	1-4,7, 10-13,19	
A	DE 94 10 519 U (SADLER) * the whole document * ---	11,12	
A,D	EP 0 573 859 A (MILES) * column 3, line 54 - column 5, line 41; figures * -----	1,3,4, 11-13,19	
			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 27 January 1997	Examiner Bridault, A
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