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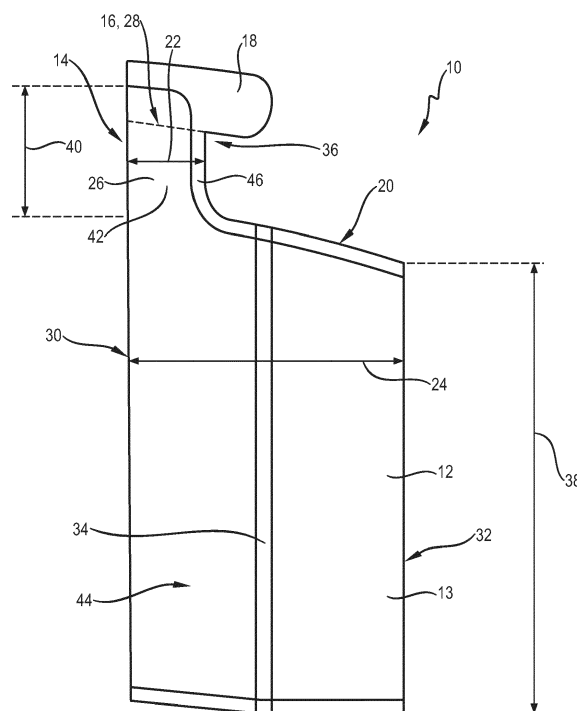
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(54) **Hair colorant container in the form of a flexible sachet**

(57) A hair colorant container (10) in the form of a flexible sachet having a laminate structure for storing a hair colorant component comprises:

- a reservoir (2) with an internal volume (13) for storing the hair colorant component,
- a pouring spout (14) being in fluid communication with the internal volume and having an dispensing end (16) for dispensing the hair colorant component,
- the pouring spout being integrally formed with the reservoir and projecting from an upper side of the reservoir and having an elongated shape with a width being smaller than the width of the reservoir, and
- a removable tear tab (18) at the dispensing end for sealing the container before the container has been opened.

Fig. 1



Description

FIELD OF THE INVENTION

[0001] In a first aspect, a hair colorant container in the form of a flexible sachet having a laminate structure for storing a hair colorant component is provided.

[0002] In a second aspect, a packaged hair colorant product comprising such a hair colorant container and a hair colorant component stored in the internal volume of the reservoir of the container is provided.

[0003] In a third aspect, a package kit for providing a ready to use hair color product comprising a hair colorant container as a first package containing a hair dye component and a second package, preferably a bottle or a hair colorant container containing a developer component comprising an oxidizing agent is provided.

BACKGROUND OF THE INVENTION

[0004] Colorant products for oxidative dyeing keratin fibers, like hair, are usually provided using a package kit comprising a hair dye component and a developer component with an oxidizing agent. The hair dye component, the developer component as well as ready to use "direct dyes" are hereinafter collectively referred to as "hair colorant components". The hair dye component typically in the form of a sticky cream is stored in an aluminium tube or in a plastic bottle, e.g. made of PVC, and the developer component is usually provided in a plastic bottle. To obtain a ready to use hair color product, the hair dye component has to be dispensed into the bottle containing the developer component. The hair dye component and the developer component are blended in the bottle before applying to the hair.

[0005] As the hair colorant components, i.e. the hair dye component, the developer component as well as "direct dyes" are relatively reactive the container must be resistant to chemicals and must exhibit excellent barrier properties.

[0006] Aluminium tubes meet these requirements due to thick metal walls in combination with protective lacquer, however, aluminium tubes or bottles made of plastic materials, e.g. PVC have the disadvantage of being undesirable from an ecological point of view. In particular, the manufacturing process is energy and cost intensive and the weight of the package is relatively high, thus leading to higher transportation costs. Furthermore, from a functional point of view, due to thick walls and rigid neck portions these packages are hard to squeeze and to dispense completely, thus, leading to residual hair colorant component remaining in the package. In particular, bottles made of plastic materials can only be used for low viscosity fluids.

[0007] Therefore, there is a need for providing an improved container for storing hair colorant components, i.e. hair dye components as well as developer components. In particular, the hair colorant container shall be

capable of providing safe dispensing/discharging of the hair colorant component into a second container, like a bottle. The container should be easy to hold and to be used in general and should be accessible by manufacturing in a cost-saving and facile manner. In addition, the package should meet sustainability requirements, e.g. should exhibit ecologically desirable properties in terms of production and disposal.

10 SUMMARY OF THE INVENTION

[0008] In a first aspect, the present invention relates to a hair colorant container in the form of a flexible sachet having a laminate structure for storing a hair colorant component. The hair colorant container comprises:

- a reservoir with an internal volume for storing the hair colorant component,
- a pouring spout being in fluid communication with the internal volume and having a dispensing end for dispensing the hair colorant component,
- the pouring spout being integrally formed with the reservoir and projecting from an upper side of the reservoir and having an elongated shape with a width being smaller than the width of the reservoir, and
- a removable tear tab at the dispensing end for sealing the container before the container has been opened.

[0009] In a second aspect, the present invention relates to a packaged hair colorant product comprising such a hair colorant container and a hair colorant component stored in the internal volume of the reservoir.

[0010] In a third aspect, the present invention relates to a package kit for providing a ready to use hair color product. The package kit comprises a first and a second package wherein the first package is a hair colorant container according to the invention that contains a hair dye component, and the second package is a bottle or a hair colorant container according to the invention which contains a developer component.

DETAILED DESCRIPTION OF THE INVENTION

[0011] A hair colorant container according to the invention comprises a reservoir with an internal volume and a pouring spout on the upper side of the reservoir for dispensing, i.e. discharging the hair colorant component stored in the reservoir. The pouring spout is integrally formed with the reservoir and projects with an elongated shape from an upper edge, i.e. upper side of the reservoir. The width of the pouring spout is smaller than the width of the reservoir, whereby the pouring spout is insertable into a bottleneck of a second package. An inner flow channel of the pouring spout is in fluid communication with the internal volume of the reservoir.

[0012] In order to provide a tight seal prior to usage of the hair colorant component a removable tear tab is

placed at the dispensing end of the pouring spout.

[0013] As the width of the pouring spout is relatively small, a hair colorant container with a relatively short tear distance is provided, so that the fingers of the user stay in control during the opening action, i.e. when the tear tab is being removed. In order to remove the tear tab the fingers of one hand rest below the dispensing end of the pouring spout, while the fingers of the other hand remove the tear tab.

[0014] The hair colorant container is made of a laminate structure resulting in the flexibility characteristics of a sachet. The laminate structure is chemically resistant to the hair colorant component.

[0015] The sachet may be designed as a flat and reclined, i.e. pillow-type pouch, which is easy to store or as an upstanding pouch, i.e. with an upright configuration comprising a base for supporting the sachet in the upright position. A sachet with an upright position is advantageous to handle, in particular, it can be set aside once the tear tab is removed without leakage of the hair colorant component.

[0016] The sachet may be made of one piece of a flexible laminate folded at one longitudinal edge and joined, i.e. sealed together at the remaining open edges and thereby providing a so-called "three-sided seal".

[0017] However, the laminate may also be folded at the two opposite longitudinal edges and sealed at the backside of the container and, thus, providing a so-called "fin-seal". The usage of one piece of laminate which is folded at least at one outer longitudinal edge results in a reduction of laminate-material during the production process of the sachet.

[0018] However, a container with a "fin-seal" is preferred as the capacity of the container is increased. Further, as the longitudinal edges can be inflated more easily during the filling process, the filling speed of the hair colorant compound into the container can be increased, as well.

[0019] However, the flexible sachet may also be made of two pieces of flexible laminate which are stacked upon each other and joined, i.e. sealed, at their outer circumference.

[0020] With respect to the reservoir, the pouring spout may be positioned symmetrically, i.e. in the centre, or may be positioned asymmetrically. Preferably, the pouring spout is aligned with an outer longitudinal edge of the reservoir that is folded along said edge.

[0021] Generally, the spout, i.e. the width of the spout, comprises a sealing portion and a flow channel portion. A symmetric, i.e. centric spout comprises two sealing portions and one flow channel portion, whereas a spout being aligned with the outer longitudinal edge comprises only one sealing portion and one flow channel portion as the sealing function on the remaining side is provided by the folded edge of the laminate. In order to maximize the flow channel relative to a given spout diameter, the spout aligned with the outer edge is preferred, as it allows a wider flow channel and subsequently an easier dispens-

ing/discharging experience.

[0022] The hair colorant container of the present invention is easy to handle and has decreased weight as compared to equivalent rigid containers mentioned in the state of the art. It requires, inter alia, less material as well as reduced amounts of energy for manufacturing and transportation and, thus, meets sustainability and cost-reduction requirements.

[0023] In order to obtain a ready to use hair color product suitable to be applied to the hair of a consumer, a hair dye component has to be mixed with a developer component. Preferably, the hair color product may be an oxidative hair color product, wherein the dye component is used in combination with a developer component comprising an oxidizing agent, i.e. oxidant, commonly a peroxo oxidizing agent. A package kit is thus provided comprising a first and a second package containing the hair dye component and the developer component, respectively. The first package is a hair colorant container according to the invention and the second package may be a hair colorant container, as well, or a bottle. Preferably, the second package is a bottle comprising a bottleneck with an opening.

[0024] The user is enabled to open the flexible sachet with the hair dye component in an easy manner by clamping the sachet in the region of the pouring spout and by removing the tear tab. After opening the sachet, the hair dye component can be dispensed into the bottle by inserting the pouring spout into the opening of the bottleneck.

[0025] Preferably, the pouring spout has an outer perimeter which fits at least over a defined section to an inner perimeter of the opening of the bottle for docking the sachet to the bottle. That means that the outer perimeter of the spout is adapted to the inner perimeter of the opening of the bottle so that at least a defined section of the outer wall of the spout lies against the inner wall of the bottleneck. This facilitates an easy and safe dispensing/discharging action. More preferably, a friction fit between the outer wall of the pouring spout and the inner wall of the bottleneck is provided such that the sachet receives support from the bottle during the dispensing action.

[0026] Preferably, the outer perimeter of the pouring spout has a profile that can expand to an oval shape. Thus, a defined circumferential section of the outer wall of the spout does not lie against the inner wall of the bottleneck but leaves a passage open through which air may be released from the inside of the bottle during dispensing/discharging the hair dye component. Therefore, fast and complete dispensing is allowed in an orderly fashion.

[0027] More preferably, the hair colorant container comprises an angled tear notch cut between the dispensing end of the pouring spout and the tear tab. When the spout gets inserted into the bottleneck in an essentially flattened condition the angled tear notch cut ensures that the top end of the spout has a width which is narrower

than the internal bottleneck diameter. The angle allows an easy insertion of the spout. Through the docking action, the spout gets pushed against the inner wall of the bottleneck and facilitates the opening of the spout profile.

[0028] Preferably, the width of the reservoir is about 40 % to about 60 %, more preferably of about 50 % of its height and further preferably, the width of the elongated shape of the pouring spout is about 40 % to about 100 %, more preferably of about 75 % of its height.

[0029] In particular, the reservoir may have a width of about 5 cm to about 9 cm and a height of about 11 cm to about 16 cm, whereas the pouring spout may have a width of about 1.5 cm to about 2.5 cm and a height of about 1.5 cm to about 3 cm. More preferably, the external width of the pouring spout is about 1.6 cm and the internal width of the spout, i.e. of the width of the flow channel is about 1.4 cm.

[0030] Thus, on the one hand the internal flow channel of the pouring spout is as wide as possible to enable easy and fast dispensing, and, on the other hand, the spout width is in line with the opening diameter of a bottle having a defined standard internal neck diameter of about 1.7 cm in which the spout has to be inserted in order to dispense the hair colorant component. These dimensions lead to a hair colorant container which is easy to handle, e.g. easy to open and easy to insert into the bottle. In contrast thereto, aluminium tubes according to the state of the art typically have smaller spout diameters of about 1 cm. In addition, the tube spout is relatively short and can be inserted only a short distance. This may lead to an uncontrolled movement of the aluminium tube spout during the dispensing action thereby increasing the possibility of depositing the hair colorant component onto the inner walls of the bottleneck or even slipping out of the neck and depositing the hair colorant component onto the outside of the bottleneck.

[0031] The above-mentioned dimensions of the hair colorant container have the advantage that a plurality of containers can be stored in a compact way. In particular, the hair colorant container can be packed into a box along with a second package, like a bottle, in a space-saving manner.

[0032] According to an embodiment, the hair colorant component is a hair dye component, a developer component or a direct dye.

[0033] The hair colorant container is suitable to be used for storing a hair dye component, preferably an oxidative hair dye component, or a developer component comprising an oxidizing agent, commonly a peroxy oxidizing agent. However, the hair colorant container can also be used for storing so-called "direct-dyes", which are ready to use and which can be applied to the hair directly. In particular, the laminate structure is resistant to chemicals of the hair dye component as well as to the developer component. Further, the hair colorant container is suitable to be used for storing all kind of hair colorant components, i.e. low or high viscosity fluids, like liquids or pastes, i.e. cremes. Thus, a hair colorant container is

provided which is capable of replacing, i.e. substituting both, an aluminium tube containing a hair dye component and a PVC bottle containing a developer component.

[0034] According to an embodiment the tear tab is integrally formed with the pouring spout.

[0035] Preferably, the tear tab is aligned with an outer edge of the pouring spout and extends in orthogonal direction to the outer edge of the pouring spout.

[0036] This embodiment provides an ergonomic design which enables the user to open the container in a facile manner. The sachet exhibits an asymmetric shape and is preferably made of one piece of a flexible laminate folded along one longitudinal edge, the fold forming an alignment of the reservoir, spout and tear tab. In other words, the longitudinal edge forming the alignment has no joint, which would decrease the width of the inner flow channel with respect to a given width of the spout. Thus, the width of the inner flow channel is maximized in relation to the width of a given internal opening of a second package into which the spout has to be inserted. The relatively large width of the inner flow channel allows easier and faster dispensing and contributes to a positive experience for the user.

[0037] According to an embodiment, the hair colorant container comprises a pre-defined tearing line between the tear tab and the dispensing end of the pouring spout along which the tear tab is teared when the container is opened.

[0038] In order to facilitate opening of the container, i.e. in order to reduce the force required for tearing, a tearing aid may be provided at the dispensing end by means of a tear notch, perforations, laser scoring/cut for tear guidance, orientation of individual material layers, e.g. use of easy tear films such as a polyethylene sealing layer, or use of aluminium as a guidance material, for example. This allows for an easy initiation as well as good control of the tear direction during opening. A tear notch, e.g. in form of a simple cut, triangular cut or semi circular cut creates a focus point for the applied force of the user and facilitates initiation of the tear procedure.

[0039] However, design of the container allows for the use of accessories such as scissors, blades or knives may be used for opening, as well. Accordingly, cutting through the laminate structure of the sachet results in defined edges.

[0040] According to an embodiment the pouring spout of the hair colorant container comprises a grip zone on the outer surface of the pouring spout extending substantially along the complete width of the elongated shape and adapted with its dimensions to the fingers of a user for clamping/holding the pouring spout with the fingers when the tear tab is removed, thereby pressing opposite walls of the pouring spout together and, thus, providing protection against spill/splash, i.e. a spill prevention.

[0041] As the grip zone extends essentially along the complete width of the elongated shape of the spout and is adapted with its dimensions to the fingers of the user, the inner flow channel of the pouring spout can be

blocked once the user clamps the pouring spout by means of his fingers. By clamping the pouring spout, opposite walls of the spout are pressed together thereby substantially preventing the hair colorant component from spilling out of the reservoir when the tear tab is removed. Thus, the fingers of the user act as a temporary valve element.

[0042] By positioning the fingers in the manner described above, essentially no pressure is applied onto the reservoir that might lead to an immediate volume change that increases the risk of spillage. To the contrary, the fingers of the user are directed to areas of the spout which do not contain substantial amounts of hair colorant component when the sachet is held in an upright position, thereby preventing hair colorant component movement enforced by pressure. The hand which is holding the package below the tear line acts as a valve by firmly holding the spout thereby preventing substantial movement of the hair colorant component. Hence, a spill prevention as well as an easy-to-open sachet is provided.

[0043] In order to open the hair colorant container the following method may be applied: The pouring spout is clamped at the grip zone with the fingers of a first hand of the user, thereby pressing opposite walls of the pouring spout together and providing spill prevention. The tear tab is then removed from the dispensing end with the fingers of the second hand. Importantly, the fingers of the first hand rest below an imaginary tear line that covers, preferably, the complete width of the pouring spout, and, therefore interact with the tear motion above the imaginary tear line in a scissor like way.

[0044] According to an embodiment, the hair colorant container comprises at least one sealing element for reclosing the dispensing end of the pouring spout once the tear tab has been removed.

[0045] Preferably, the pouring spout is reclosable by folding and fixing the pouring spout at the outer surface of the reservoir by means of a sealing element. The sealing element may be integrally formed with or may be attached to the hair colorant container. Once the hair colorant container is reclosed, the inner flow channel of the pouring spout is substantially blocked, thereby preventing spillage of the hair colorant component.

[0046] It is advantageous to provide reclosing features in view of the requirement to conduct an allergy test 24 hours before applying the ready to use hair color product to the hair. In order to conduct an allergy test, the consumer removes a certain amount of the hair colorant component out of the container and applies it to the skin in order to examine if skin irritation occurs. In addition, some consumers prefer not to use the hair colorant component in a single dose, but rather in a split dose, i.e. multi dose, e.g. for hairline dyeing. After conducting the allergy test or after removing a certain amount of the hair colorant component for other purposes, the consumer is able to reclose the container in order to store the content in a safe manner. Further, exposure of the hair colorant component to air, and in particular to oxygen, is limited, there-

by protecting the content of the sachet from oxidation.

[0047] According to an embodiment the sealing element may be a wire tie, a hook and hook tape closure, a hook and loop tape closure, a snap and seal closure, a non-permanent adhesive bonding tab, an external clip and/or a sleeve, for example.

[0048] In case the sealing element is a wire tie, the wire tie is preferably attached at the outer surface of the pouring spout and extends downwards to and along a specific distance on the outer surface of the reservoir. Once the tear tab has been removed and the container has to be reclosed, the pouring spout can be folded along a folding line and flapped towards the reservoir. The tension of the wire tie keeps the pouring spout in the folded up position.

[0049] A sealing element like a hook and hook tape closure, a hook and loop tape closure or a snap and seal closure may consists of two elements, namely of a male and a female element, wherein one of the elements is attached at the outer surface of the pouring spout and the other one is attached at the outer surface of the reservoir, respectively. In order to reclose the container, the pouring spout is folded along a folding line and is secured at the reservoir. The male and female elements engage and keep the pouring spout in the folded position.

[0050] On order to reclose the container by means of a sleeve, the pouring spout has to be folded and flapped against the reservoir. Then, the container has to be inserted into the sleeve that prevents the pouring spout from unfolding.

[0051] According to an embodiment the pouring spout comprises at its inner perimeter at least one flow restrictor for restricting the flow of the hair colorant component when the component dispenses.

[0052] Preferably, the flow restrictor may be provided in case the hair colorant component stored in the reservoir has low viscosity, such as liquid hair dye components. By means of a flow restrictor the width of the inner flow channel is narrowed, thus, leading to spill prevention during the opening action as well as to a limited flow rate of the hair colorant component when it dispenses. The pouring spout is still adapted to the opening of a second package while providing a flow restriction leading to a mess-free dispensing. In other words, by means of a flow restrictor the same flow velocity can be provided for hair colorant compounds with different viscosities.

[0053] The flow restrictor may have the shape of a recess, indentation, notch or bulge, for instance. The shape, i.e. geometry of the flow restrictor is adapted to the desired flow velocity of the hair colorant compound. The flow restrictor is easy to integrate into the pouring spout. Preferably, the flow restrictor may be provided by means of removable and exchangeable sealing bars integrated in the manufacturing tools.

[0054] According to an embodiment, the at least one flow restrictor is formed as a bulge projecting inside the pouring spout.

[0055] Such a bulge projects inside the inner flow chan-

nel, thereby limiting the flow-through passage within the pouring spout.

[0056] According to an embodiment, at least two bulges are formed in a staggered arrangement.

[0057] The staggered arrangement of the at least two bulges further limits the flow rate of the hair colorant component. The bulges may be arranged in an overlapping or in a non-overlapping manner. An overlapping arrangement provides a further limitation of the flow rate.

[0058] According to an embodiment, the laminate structure of the hair colorant container comprises at least three layers, preferably four layers.

[0059] The hair colorant container is made of a laminate material comprising a multi-layer structure. The different layers may have diverse properties contributing to the overall property of the laminate. For example, the laminate material may comprise three layers, namely a sealing layer, a barrier layer and a protective layer. The barrier layer may be made of plastic material or aluminium, both having excellent barrier properties.

[0060] Preferably, at least one layer of the laminate structure is made of plastic material, preferably of polyethylene or polypropylene. The plastic material typically consists of polymers of high molecular mass, and may contain other substances to improve performance and/or reduce costs. The polymers are made from monomers which may be either natural or synthetic organic compounds. Plastic materials, such as polyethylene or polypropylene, are advantageous materials as they provide sufficient mechanical strength to withstand mechanical stress caused, for example, by transportation, handling and storage under varying temperature and moisture conditions. Furthermore, hair colorant containers made of plastic materials, preferably of polyethylene or polypropylene, have a low net weight and, therefore, permit a reduction in transportation costs compared to equivalent rigid containers.

[0061] Moreover, at least one of the plastic layers may be produced by means of an extrusion foaming process. The extrusion foaming process results in an increased thickness of the plastic layer without increasing material consumption, and, thus, resolving the conflict between the need to reduce weight and material use on the one hand and to improve the thickness of the container wall on the other hand.

[0062] According to an embodiment, the laminate structure of the hair colorant container comprises three layers, wherein

- the first layer facing the inside of the container comprises polyethylene or ethylene acrylic acid polymer or ethylene methacrylic acid polymer or combinations thereof;
- the second layer following the first layer comprises aluminium; and
- the third layer following the second layer and facing the outside of the container comprises polyamide or polyester, preferably polyethyleneterephthalat, or

combinations thereof.

[0063] Preferably, the first layer comprises polyethylene and about 5 wt% to about 10 wt% ethylene methacrylic acid polymer or polyethylene and about 5 wt% to about 10 wt% ethylene acrylic acid polymer. Such composition of materials contributes to improved bonding properties with the aluminium, i.e. barrier layer. This composite of layers results in a significant reduction of corrosion and/or migration of particles of the hair colorant component, like dye pigments, surfactants and aqueous ammonia solution. Preferably, the first and the second layer are joined together by means of extrusion lamination. This results in a laminate structure being sufficiently resistant against both, chemical, e.g. oxidation, and mechanical stress.

[0064] Furthermore, the first layer may be produced by means of an extrusion foaming process. The foaming process results in an increased thickness of the first layer without increasing material consumption.

[0065] According to an embodiment, the laminate structure of the hair colorant container comprises four layers, wherein:

- the first layer facing the inside of the container comprises polyethylene or ethylene acrylic acid polymer or ethylene methacrylic acid polymer or combinations thereof;
- the second layer following the first layer comprises polyethylene or ethylene acrylic acid polymer or combinations thereof;
- the third layer following the second layer comprises aluminium; and
- the fourth layer following the third layer and facing the outside of the container comprises polyamide, polyester, preferably polyethyleneterephthalat, or combinations thereof.

[0066] Preferably, the first layer is a polyethylene layer and may have a thickness of about 70 μm to about 100 μm . The first layer may be produced by means of an extrusion foaming process. The foaming process results in an increased thickness of the layer using the same amount of plastic material.

[0067] The second layer may have a thickness of about 18 μm to about 25 μm and comprises polyethylene and ethylene methacrylic acid polymer or polyethylene and ethylene methacrylic acid polymer. The aluminium layer, i.e. the third layer, acts as a barrier layer and may have a thickness of about 9 μm . The specific composition of the second layer contributes to improved bonding properties with the aluminium layer. Such composite of layers results in significant reduction of corrosion and/or migration of particles of the hair colorant component, like dye pigments, surfactants and aqueous ammonia solution.

[0068] Preferably, the first, the second and the third layer are joined together by means of extrusion lamination. Such a laminate structure results in sufficient chem-

ical and mechanical stress resistance.

[0069] The fourth layer may be made of polyamide with a thickness of about 5 μm or of polyethyleneterephthalat with a thickness of about 12 μm . Preferably, the fourth layer is joined to the third layer by means of adhesive lamination. Preferably, the overall thickness of the laminate material is about 100 μm to about 150 μm .

[0070] Further, the fourth layer may comprise a printing applied on the surface facing the aluminium layer so that the printing is protected against abrasion. As the fourth layer has transparent appearance, the printing can still be seen from the outside.

BRIEF DESCRIPTION OF THE DRAWINGS

[0071] The invention is described in more detail below with reference to illustrative embodiments, wherein:

Fig. 1 shows a back view of an embodiment of the hair colorant container;

Fig. 2 shows a front view of another embodiment of the hair colorant container with a snap and seal closure as a sealing element;

Fig. 3 shows the front view of another embodiment of the hair colorant container with a wire tie as a sealing element;

Fig. 4 shows the front view of another embodiment of the hair colorant container with a hook and loop tape closure as a sealing element; and

Fig. 5 shows another embodiment of the hair colorant container with a flow restrictor.

DETAILED DESCRIPTION OF THE INVENTION AS SHOWN IN THE EMBODIMENTS

OF THE DRAWINGS

[0072] Fig. 1 shows a hair colorant container 10 in the form of a flexible sachet for storing a hair colorant component, i.e. a hair dye component, a developer component or a "direct-dye". The container 10 comprises a reservoir 12 with an internal volume 13, a pouring spout 14 being in fluid communication with the internal volume 13 and having a dispensing end 16 and a removable tear tab 18. The tear tab 18 is attached at the dispensing end 16 for sealing the container 10 before the container 10 has been opened.

[0073] The pouring spout 14 and the tear tab 18 are integrally formed with the reservoir 12 and are aligned at one outer longitudinal edge 30 of the reservoir 12. The pouring spout 14 projects from an upper side 20 of the reservoir 10 and has an elongated shape with a width 22 being smaller than the width 24 of the reservoir 10. The tear tab 18 is placed at the dispensing end 16 in a perpendicular manner with respect to the pouring spout 14.

[0074] Further, the pouring spout 14 comprises a grip zone 26 which extends substantially along the width 22 of the spout 14 and is adapted with its dimensions to the

fingers of a user. Thus, the user is enabled to open the container 10 in an easy manner by clamping the container 10 in the region of the pouring spout 14, namely at the grip zone 26 and thereby providing a spill prevention. By clamping the pouring spout 14, the fingers of the user act as a temporary valve element. Opposite walls of the spout 14 are pressed together thereby substantially preventing the hair colorant component from spilling out of the reservoir 12 when the tear tab 18 is being removed.

[0075] After opening the container 10, the hair colorant component can be dispensed into a second package, like a bottle, to provide a ready mixed hair color product.

[0076] In order to facilitate the removal of the tear tab 18, a pre-defined tearing line 28 between the tear tab 18 and the dispensing end 16 of the pouring spout 14 is provided. The pre-defined tearing line 28 may be provided by means of a tear notch, perforations, laser scoring/cut for tear guidance, specific orientation of individual material layers, e.g. the use of easy tear films, such as a polyethylene layer, or the use of aluminium as a guidance material, for example. This allows an easy tear initiation as well as a controlled tear direction. The container 10 according to Fig. 1 shows a tear notch 36 which creates a focus point for the applied force of the user and makes it easier to initiate the tear.

[0077] The width 24 of the reservoir 12 is about 6.5 cm and the height 38 of the reservoir 12 is about 11 cm, whereas the pouring spout 14 has a width 22 of about 1.6 cm and a height 40 of about 3 cm. The internal width of the spout 14, i.e. of the flow channel 42 is about 1.4 cm. Thus, on the one hand the internal flow channel 42 of the pouring spout 14 is as wide as possible to enable easy and fast dispensing, and, on the other hand, the spout width 22 is in line with the opening diameter of a bottle having a defined standard internal neck diameter of about 1.7 cm in which the spout 14 has to be inserted in order to dispense the hair colorant component.

[0078] The outer perimeter of the pouring spout 14 has a profile that expands to an oval shape. Thus, a defined section of the outer wall of the spout 14 does not lie against the inner wall of the bottleneck but leaves a passage open through which air may be released from the inside of the bottle during dispensing/discharging the hair dye component. Therefore, a fast, complete and mess free dispensing is allowed.

[0079] When the spout 14 gets inserted into the bottleneck in a most flat condition the angled tear notch cut 36 ensures that the top end of the spout 14 has a width 22 which is narrower than the internal bottleneck diameter. The angled notch 36 allows an easy insertion of the spout 14. Through the docking action, the spout 14 gets pushed against the inner wall of the bottleneck and facilitates the opening of the spout profile.

[0080] The container 10 is made of a flexible laminate structure 44 which comprises at least three layers, preferably four layers. The laminate 44 of the present embodiment has a thickness of about 100 μm to about 150 μm and comprises four layers.

[0081] The first layer facing the inner volume 13 of the container 10 is a polyethylene layer and has a thickness of about 70 μm to about 100 μm . The first layer is produced by means of an extrusion foaming process.

[0082] The second layer following the first layer has a thickness of about 18 μm to about 25 μm and comprises polyethylene and ethylene methacrylic acid polymer or polyethylene and ethylene methacrylic acid polymer.

[0083] The third layer is made of aluminium and acts as a barrier layer. The aluminium layer has a thickness of about 9 μm .

[0084] The first, the second and the third layer are joined together by means of extrusion lamination. Such a laminate structure 44 results in sufficient chemical and mechanical stress resistance.

[0085] The fourth layer is made of polyamide with a thickness of about 5 μm or of polyethylenterephthalat with a thickness of about 12 μm . The fourth layer comprises a printing applied on the surface facing the aluminium layer and is joined to the third layer by means of adhesive lamination.

[0086] The laminate structure 44 of the present embodiment shows substantially no corrosion and/or migration of particles of the hair colorant component, like dye pigments, surfactants and aqueous ammonia solution.

[0087] The laminate 44 is folded at the two opposite longitudinal edges 30, 31 of the container 10 and sealed at the backside and provide a so-called "fin-seal" 34. As the pouring spout 14 is aligned with the outer longitudinal edge 30 of the reservoir 12, the spout 14 comprises one sealing portion 46 and one flow channel portion 42 as the sealing function on the remaining side 30 is provided by the folded edge of the laminate 44. Such a design results in a maximized flow channel 42 relative to a given spout diameter.

[0088] The hair colorant containers 10 shown in Fig. 2 to 4 comprise a sealing element 48, respectively, for reclosing the dispensing end 16 of the pouring spout 14 once the tear tab 18 has been removed. The pouring spout 14 is reclosable by folding and fixing the pouring spout 14 at the outer surface of the reservoir 12 by means of the sealing element 48. Once the hair colorant container 10 is reclosed, the inner flow channel 42 of the pouring spout 14 is substantially blocked, thereby preventing spillage of the hair colorant component.

[0089] The sealing element 48 shown in Fig. 2 is a snap and seal closure 50, whereas the sealing element 48 shown in Fig. 3 is a wire tie 52 and the sealing element 48 shown in Fig. 4 is a hook and loop tape closure 54.

[0090] According to Fig. 2, the wire tie 52 is attached at the outer surface of the pouring spout 14 and extends downwards to and along a specific distance on the outer surface of the reservoir 12. Once the tear tab 18 has been removed and the container 10 has to be reclosed, the pouring spout 14 can be folded along a folding line and flapped towards the reservoir 12. The tension of the wire tie 52 keeps the pouring spout 14 in the folded up position.

[0091] The hook and loop tape closure 54 (cp. Fig. 3)

and the snap and seal closure 50 (cp. Fig. 4) consist of two elements 56, 58, namely of a male 56 and a female element 58, wherein one of the elements 56, 58 is attached at the outer surface of the pouring spout 14 and the other one is attached at the outer surface of the reservoir 12, respectively. In order to reclose the container 10, the pouring spout 14 is folded along the folding line and is secured at the reservoir 12. The male and female elements 56, 58 engage and keep the pouring spout 14 in the folded position.

[0092] Fig. 5 shows a hair colorant container 10 comprising a flow restrictor 60 at the inner perimeter 62 of the pouring spout 14. The flow restrictor 60 is provided in case the hair colorant component stored in the reservoir 12 has low viscosity, such as liquid hair dye components. By means of the flow restrictor 60 the width of the inner flow channel 42 is narrowed, thus, leading to spill prevention during the opening action as well as to a limited flow rate of the hair colorant component when it dispenses. The flow restrictor 60 has the shape of two bulges 64 projecting inside the pouring spout 14 in a staggered manner.

[0093] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm."

List of reference signs:

[0094]

35	10	hair colorant container
	12	reservoir
	13	internal volume
40	14	pouring spout
	16	dispensing end
45	18	removable tear tab
	20	upper side of the reservoir
	22	width of the spout
50	24	width of the reservoir
	26	grip zone
55	28	pre-defined tearing line
	30	outer longitudinal edge

- 32 other outer longitudinal edge
- 34 fin seal
- 36 tear notch
- 38 height of the reservoir
- 40 height of the pouring spout
- 42 flow channel
- 44 laminate
- 46 sealing portion of the spout
- 48 sealing element
- 50 snap and seal closure
- 52 wire tie
- 54 hook and loop tape closure
- 56 male element
- 58 female element
- 60 flow restrictor
- 62 inner perimeter of the pouring spout
- 64 bulges

Claims

1. A hair colorant container (10) in the form of a flexible sachet having a laminate structure (44) for storing a hair colorant component comprising:

- a reservoir (12) with an internal volume (13) for storing the hair colorant component,
- a pouring spout (14) being in fluid communication with the internal volume (13) and having a dispensing end (16) for dispensing the hair colorant component,
- the pouring spout (14) being integrally formed with the reservoir (12) and projecting from an upper side (20) of the reservoir (12) and having an elongated shape with a width (22) being smaller than the width (24) of the reservoir (12), and
- a removable tear tab (18) at the dispensing end (16) for sealing the container (10) before the container (10) has been opened.

2. A hair colorant container (10) according claim 1,

wherein the hair colorant component is a hair dye component, a developer component or a direct dye.

3. A hair colorant container (10) according to any preceding claim,
wherein the tear tab (18) is integrally formed with the pouring spout (14).
4. A hair colorant container (10) according to any preceding claim,
wherein the hair colorant container (10) comprises a pre-defined tearing line (28) between the tear tab (18) and the dispensing end (16) of the pouring spout (14) along which the tear tab (18) is teared when the container (10) is opened.
5. A hair colorant container (10) according to any preceding claim,
wherein the pouring spout (14) comprises a grip zone (26) extending substantially along the width (22) of the elongated shape and being adapted with its dimensions to the fingers of a user for clamping the pouring spout (14) with the fingers when the tear tab (18) is removed, thereby pressing opposite walls of the pouring spout (14) together and providing a spill prevention.
6. A hair colorant container (10) according to any preceding claim,
wherein the container (10) comprises at least one sealing element (48) for reclosing the dispensing end (16) of the pouring spout (14) once the tear tab (18) has been removed.
7. A hair colorant container (10) according to claim 6,
wherein the sealing element (48) is a wire tie (52), hook and hook tape closure, hook and loop tape closure (54), snap and seal closure (50), non-permanent adhesive bonding tab, an external clip and/or a sleeve.
8. A hair colorant container (10) according to any preceding claim,
wherein the pouring spout (14) comprises at its inner perimeter (62) at least one flow restrictor (60) for restricting the flow of the hair colorant component when it dispenses.
9. A hair colorant container (10) according to claim 8,
wherein the at least one flow restrictor (60) is formed as a bulge (64) projecting inside the pouring spout (14).
10. A hair colorant container (10) according to claim 8 or 9,
wherein at least two bulges (64) are formed in a staggered arrangement.

11. A hair colorant container (10) according to any preceding claim,
wherein the laminate structure (44) of the hair colorant container (10) comprises at least three layers, preferably four layers. 5
12. A hair colorant container (10) according to claim 11,
wherein the laminate structure (44) of the hair colorant container (10) comprises three layers, wherein 10
- the first layer facing the inside of the container (10) comprises polyethylene or ethylene acrylic acid polymer or ethylene methacrylic acid polymer or combinations thereof; 15
 - the second layer following the first layer comprises aluminium; and
 - the third layer following the second layer and facing the outside of the container (10) comprises polyamide or polyester, preferably polyethyleneterephthalat, or combinations thereof. 20
13. A hair colorant container (10) according to claim 11,
wherein the laminate structure (44) of the hair colorant container (10) comprises four layers, wherein: 25
- the first layer facing the inside of the container (10) comprises polyethylene or ethylene acrylic acid polymer or ethylene methacrylic acid polymer or combinations thereof; 30
 - the second layer following the first layer comprises polyethylene or ethylene acrylic acid polymer or ethylene methacrylic acid polymer or combinations thereof; 35
 - the third layer following the second layer comprises aluminium; and
 - the fourth layer following the third layer and facing the outside of the container (10) comprises polyamide, polyester, preferably polyethyleneterephthalat, or combinations thereof. 40
14. A packaged hair colorant product comprising a hair colorant container (10) according to any of the preceding claims and a hair colorant component stored in the internal volume (13) of the reservoir (12). 45
15. A package kit for providing a ready to use hair color product comprising a hair colorant container (10) according to any of claims 1 to 13 as a first package containing a hair dye component and a second package, preferably a bottle or a hair colorant container (10) according to any of claims 1 to 13 containing a developer component. 50

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Fig. 1

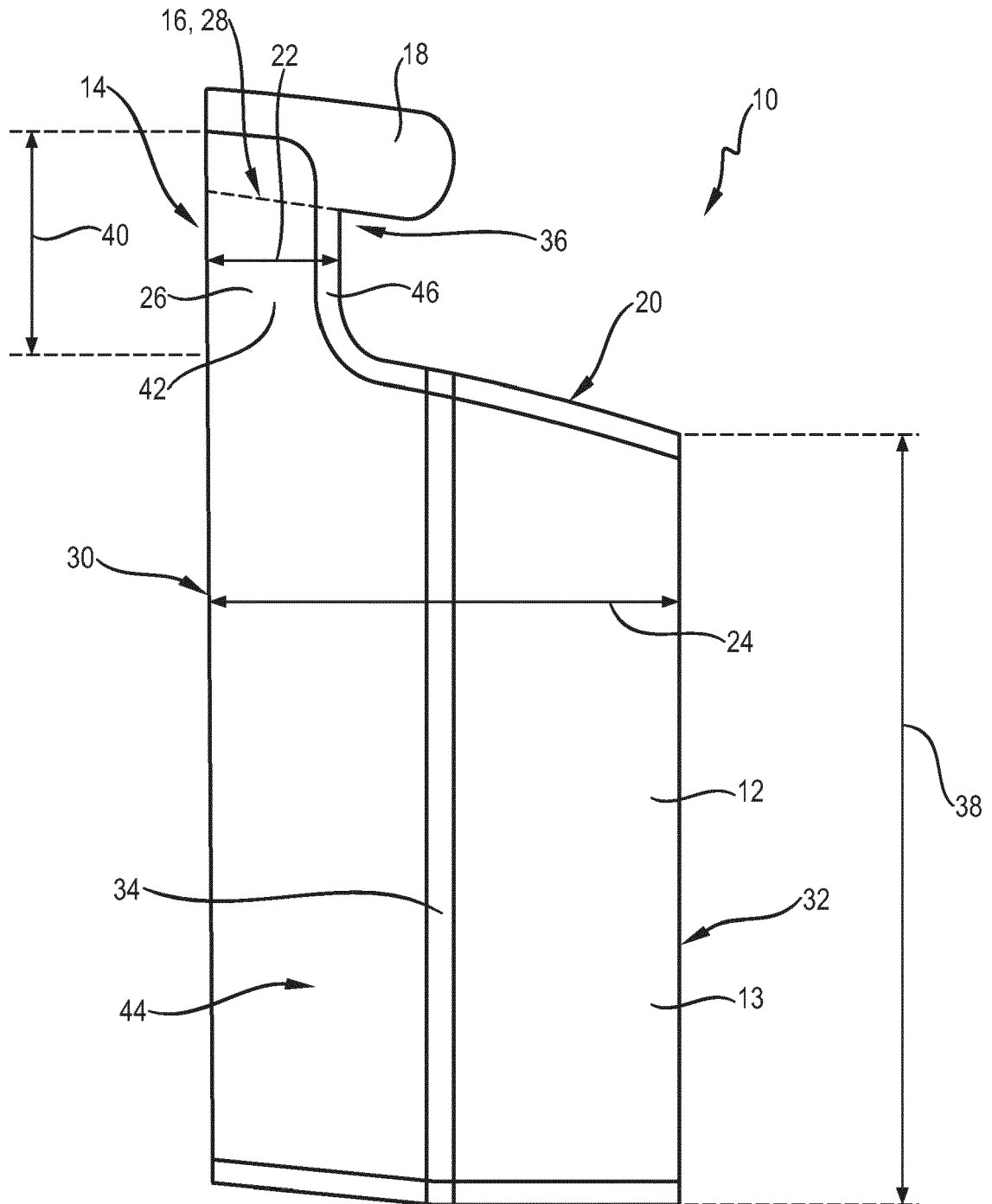


Fig. 2

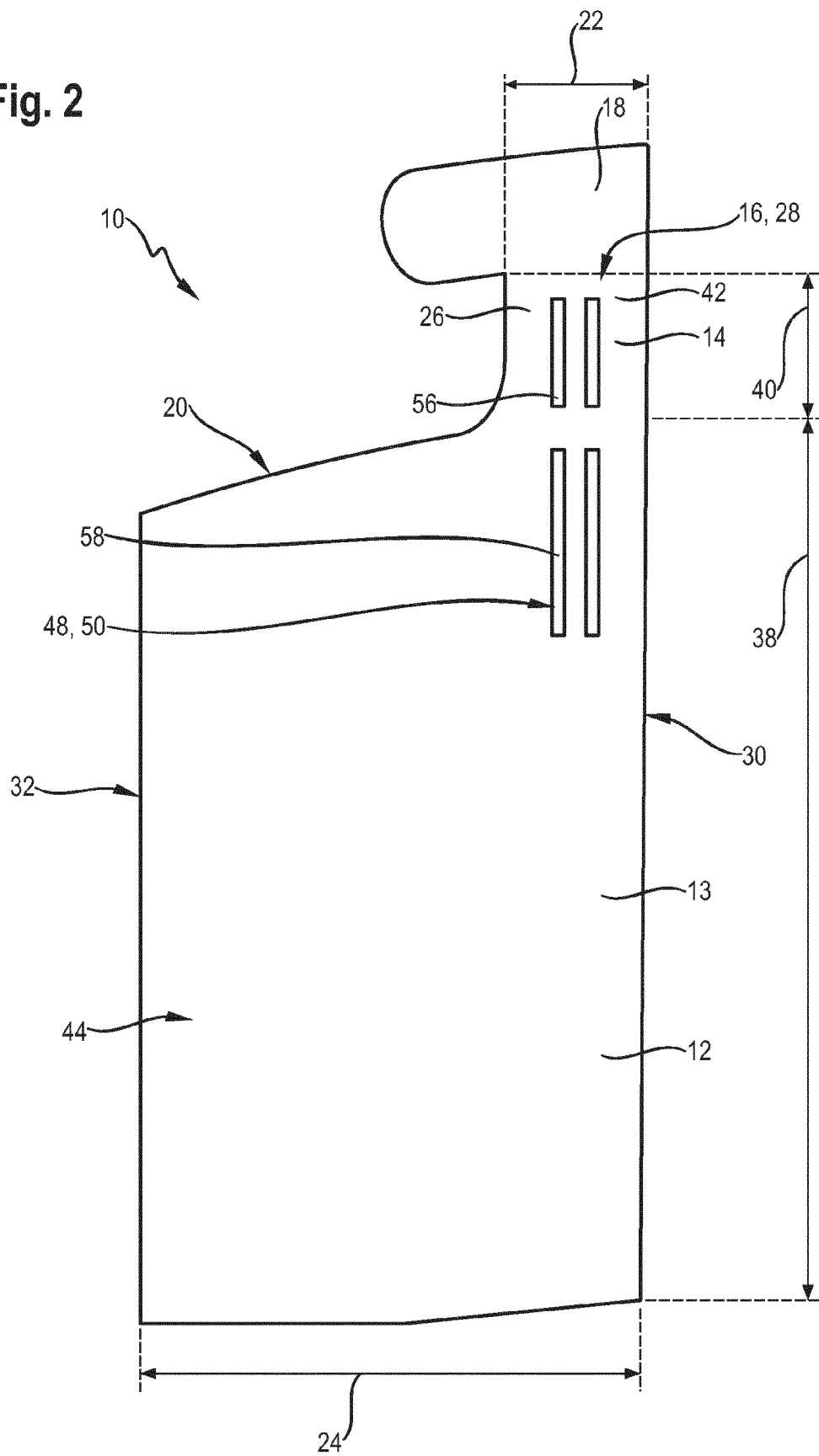


Fig. 3

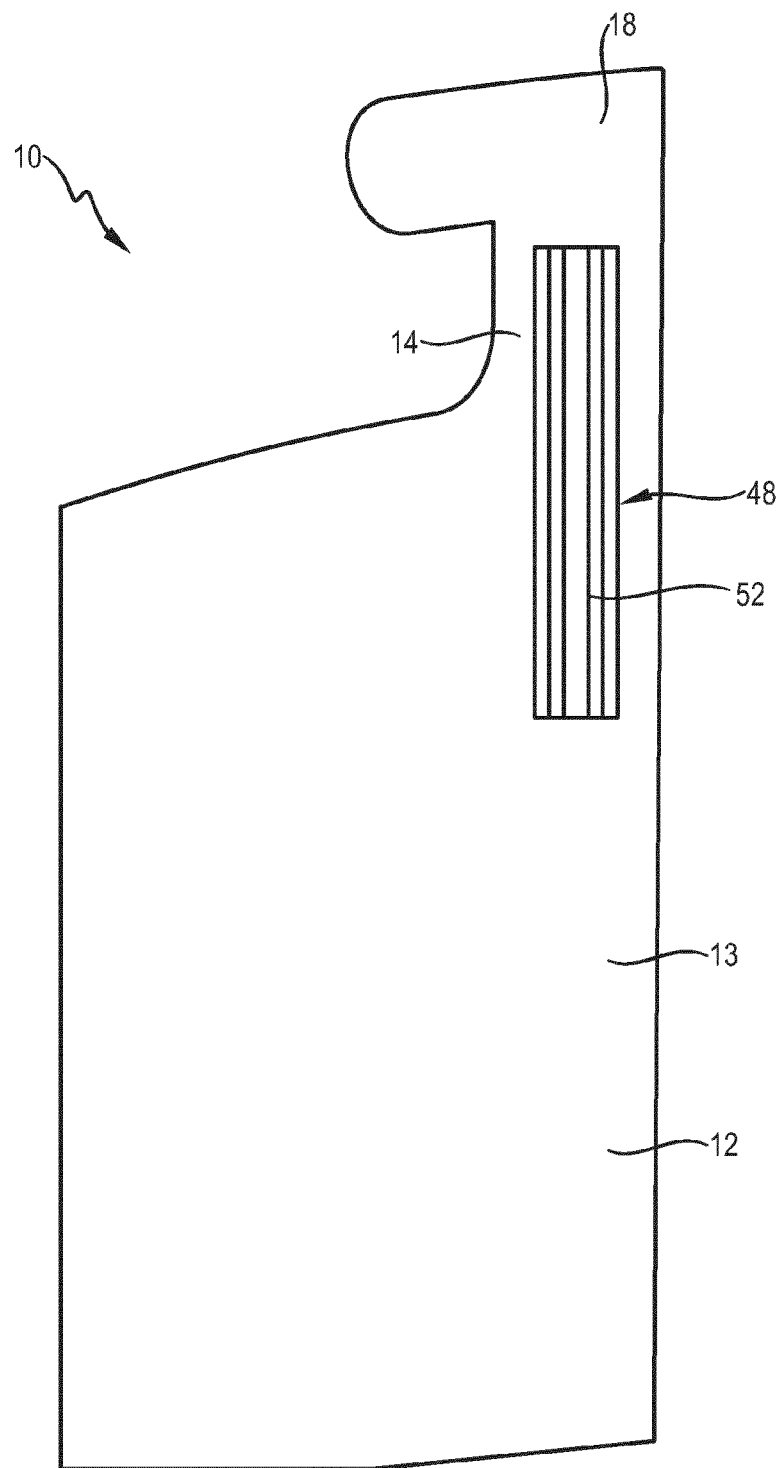


Fig. 4

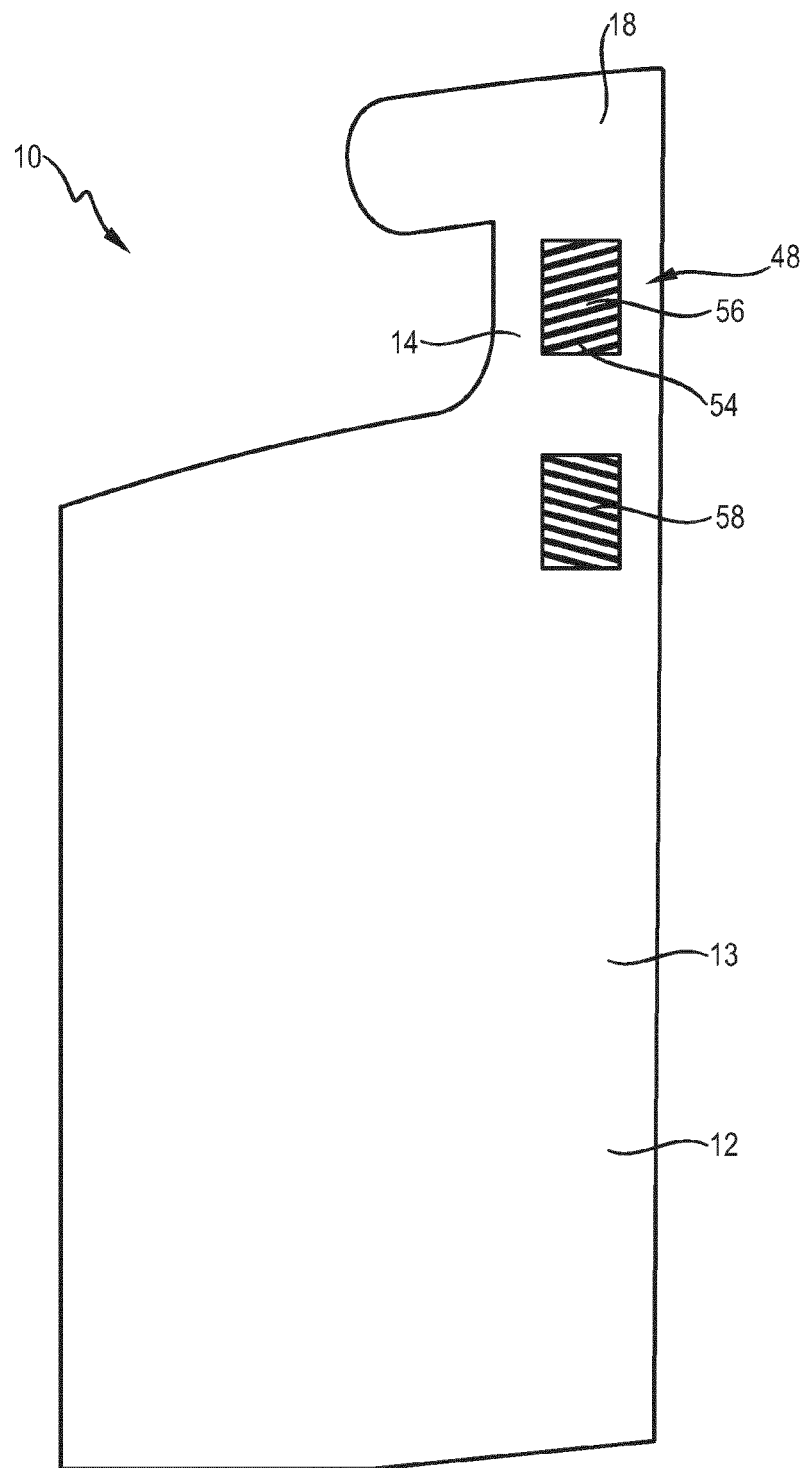
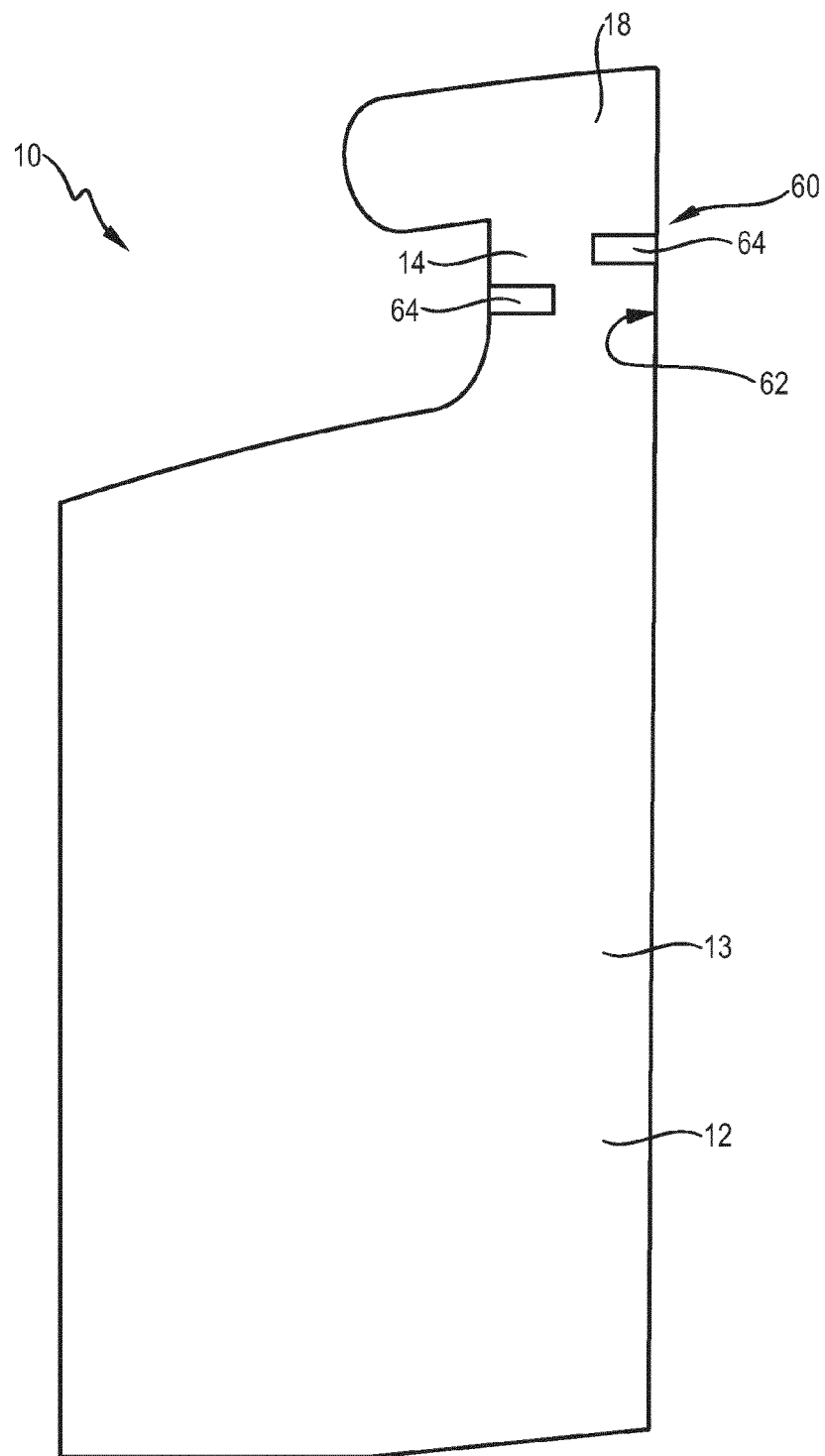


Fig. 5





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Application Number
EP 12 15 0162

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Place of search The Hague		Date of completion of the search 22 May 2012	Examiner Newell, Philip
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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