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(54) **Method for assembling a product holder, assembly, and blank and system**

(57) A method for assembling a product holder, comprising:

- providing a bag (1) fillable or filled with product, which bag is provided with a projection (3), for instance a product dispensing unit (3) or a part (3a) thereof;
- providing a bag holder (B) which surrounds an inner space (S) for receiving said bag (1), wherein the bag (1) and holder (B) can be brought from a first position removed from each other to a second position, at which

second position the bag (1) is located inside said inner space (S), wherein said bag projection (3) is guided by a guide (14) of the bag holder (B) to a particular position when bringing the bag (1) and bag holder (B) to the second position.

The invention also relates to an assembly comprising a holder (B) and a bag (1) and to system to carry out the assembling method.

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Description

[0001] The invention relates to a method for assembling a product holder. The invention further relates to an assembly and a blank.

[0002] This product holder comprises, in particular, a BIB (Bag in Box) package. The methods and BIB packages mentioned are known per se from practice. An example of such a method is manufacturing a cardboard outer package, while before the outer package is completely closed off, a flexible inner bag filled with, for instance, a liquid is introduced into the outer package. After this, the box is closed. The outer package comprises, for instance, an opening or a perforation edge, with which, by removing a part of the outer package, an opening is formed along the perforation edge. A drawback is that a thus manufactured BIB package is relatively user-unfriendly, as after opening the package, the user should first search for the outlet opening of the inner bag.

[0003] The present invention contemplates eliminating drawbacks, at least preventing them. The invention contemplates in particular a method with which a durable and user-friendly product holder provided with a bag and bag holder is obtained.

[0004] According to one aspect of the invention, a method is thereto characterized in that it comprises:

- providing a bag fillable or filled with product, which bag is provided with a projection, for instance a product dispensing unit or a part thereof;
- providing a bag holder which surrounds an inner space for receiving the bag mentioned, while the bag and holder are brought from a first position removed from each other to a second position, in which second position the bag is located inside the inner space, while the bag projection is guided by a guide of the bag holder to a particular position when bringing the bag and bag holder to the second position.

[0005] It appears that thus, a composite product holder can be manufactured particularly efficiently. Furthermore, the thus composed holder is durable while the bag and in particular the projection can be introduced into the holder relatively rapidly, to then remain accurately and durably positioned relative to the holder. Positioning the bag in the holder (at least combining the bag and holder such that the second position is achieved) can in particular be carried out in a split second.

[0006] The underlying idea of the invention is that the holder in itself can simply be provided with guide means/positioning means (at least the guide mentioned) which can cooperate with the bag projection (for instance directly engage it) for bringing the projection to a desired position (for instance in the holder, at least relative to the holder). Preferably, the guide is designed to then (after introduction of the bag into the holder) hold the projection in position, optionally utilizing a clamping force, and in particular in a first lateral direction of the projection.

[0007] In this application, the term "projection" is to be understood relatively broadly. The projection projects in particular at least outside the bag (i.e., outside a bag outer surface), and can optionally be provided with or coupled to means located in the bag. According to an advantageous embodiment, the bag projection is a product dispensing unit or a part thereof, for instance a (for instance manually operable) tap, a product dispensing unit provided with an operable valve or the like.

[0008] The projection as such can in particular be of rigid design, for instance non-flexible, substantially non-deformable (at least without being broken).

[0009] The projection can in particular be a part undetachably fitted on or to the bag, and can for instance comprise a protrusion, tube, profile and/or the like. The projection is manufactured from, for instance, plastic, but can also comprise one or more other materials, for instance metal or an alloy.

[0010] The bag as such can be manufactured from different materials, for instance plastic, paper, metal foil and/or the like, which will be clear to the skilled person.

[0011] The (outer) holder as such can also be made from different materials, for instance plastic, paper, metal foil and/or the like which will be clear to the skilled person. Preferably, the holder is manufactured entirely from solid cardboard.

[0012] A product, which is preferably (but not necessarily) already present in the bag, can comprise various products. Non-limitative examples of such a product are: fluid, gas, liquid, particles, granulate, pills, a foodstuff that can safely be consumed by a consumer, sauce, mustard, ketchup, beverage, wine, medicine, cleaning product, detergent, soap, oil, a building material, paint, glue. Preferably, the product can flow from the bag via a suitable outflow opening (for instance of a dispensing unit mentioned if the bag has one).

[0013] According to a special further elaboration, the bag has already been filled with product (for instance completely, or, conversely, partly), before the bag is introduced into the holder inner space. In that case, the bag is preferably hermetically sealed off, to prevent outflow of product. If the projection is a product dispensing unit, or a part thereof, then, when bag and holder are combined, this projection is also sealed off.

[0014] According to an advantageous embodiment of the invention, the bag and bag holder can be brought to (i.e. at least over a particular distance in the direction of) the second position, under the influence of gravity, and, preferably under the influence of a weight in the bag (in particular especially product located in the bag, if present).

[0015] According to an advantageous embodiment, the bag itself is manufactured from flexible material, while the bag is in an expanded condition when bringing the bag and holder to the second position. The expanded condition of the bag can for instance be achieved by holding an inner space enclosed by the bag at a particular excess pressure (relative to an ambient pressure of the

bag). The bag can be pressed into the expanded bag position under the influence of product located in the bag, or under the influence of gas pressure, or both.

[0016] According to a preferred embodiment, the bag projection is positioned, by a positioning device, opposite a projection receiver of the guide with the bag and holder in a first position, while then, the projection slides, with the projection in a second lateral direction, into the projection receiver when bringing the bag and bag holder to the second position.

[0017] It is further advantageous when the guide is a plate-shaped holder part, having an outer edge extending along an opening of the holder, in which edge a recess is provided extending along the bag inner space, which receives the bag projection such that opposite recess longitudinal edges guide the projection toward a particular position and then hold the projection virtually without clearance in a second lateral projection direction at or adjacent a recess bottom edge. In this manner, combining the bag can be carried out in one movement while the projection can for instance directly slide into the recess when the bag enters the holder inner space (in a similar direction as a holder movement direction).

[0018] According to a highly advantageous elaboration, the bag holder is manufactured in one piece and in particular from a blank provided with various, mutually foldable flaps, with at least one of the flaps comprising the guide mentioned.

[0019] According to a further embodiment, the guide can divide the holder into at least two compartments, comprising the inner space and a second space, while the bag projection reaches into the second space during the guidance effected by the guide.

[0020] A special aspect comprises use of a separate product dosing unit, for instance a dosing ball. According to a further elaboration, the second space may be provided with a product dosing unit, by moving this unit via a dosing unit opening provided thereto in an outer wall of the holder, into the second space. Here, it is extra advantageous when the dosing unit opening is provided along an inner edge with blocking parts reaching somewhat towards each other (for instance a ring of such blocking parts), which blocking parts, under the influence of the introduction of the dosing unit into the second space, each make a pivotal movement, into the second space, and then position the dosing unit in the second space at the dosing unit opening.

[0021] Uses of the dosing ball blocking parts for positioning a dosing unit in a holder space at the dosing unit opening (of the holder) can also be achieved independently of the features according to claim 1.

[0022] According to a further elaboration, a projection fixing element is used for substantially fixing the projection (of the bag) relative to the guide after the bag and holder are brought into the second position. Preferably, the projection fixing element is in integral part of the holder, which part is brought from a releasing position to a projection fixation position and, in this fixation position,

is glued tight onto the guide.

[0023] One aspect of the present invention provides an assembly which is characterized by the features of claim 12. The assembly is for instance at least obtained utilizing a method according to any one of claims 1 - 11.

[0024] Advantageously, the assembly comprises a holder with an inner space and a bag (preferably filled with product) present in the inner space. The holder is formed by various, mutually folded flaps glued together in a manner suitable for forming a holder. The bag is integrally provided with a projection, for instance a product dispensing unit or a part thereof. Here, it is advantageous when this projection reaches through a holder opening, which holder opening is bounded on a first side by a first projection positioning flap part and, on a second side, by a second projection positioning flap part. In this manner, the projection as such, and also, for instance, any parts that may be coupled to this projection, can be positioned relative to the holder in an accurate, robust and durable manner.

[0025] According to a further elaboration, the holder is provided with a front flap, while the front flap is provided with lengthening parts which comprise the positioning flap parts.

[0026] A further advantageous embodiment provides in a front flap, which has a first lengthening part comprising the first positioning flap part. More preferably, here, the first lengthening part is at least provided with: a first connecting flap, a partition flap containing the first positioning flap part, and a second connecting flap, with the first connecting flap and partition flap more particularly mutually folded through an angle of approximately 90° relative to the front flap, and wherein the second connecting flap and partition flap are more particularly mutually folded through an angle of approximately 90°.

[0027] Further - according to a different elaboration - a durable assembly can be obtained when a second lengthening part of the front flap is provided with a connecting flap which is preferably glued to the first positioning flap part, while the connecting flap is in particular folded through an angle of approximately 90° relative to the second lengthening part, and an edge of the connecting flap preferably partly bounds the holder opening.

[0028] A partition flap preferably forms a support between two opposite inner surfaces of the holder. As a result, a particularly good stackability of the holder can be achieved.

[0029] In addition, the invention provides a blank, apparently intended and suitable for forming a holder for use in a method according to any one of claims 1-7 and/or a holder of an assembly according to any one of claims 8 - 20.

[0030] According to a special elaboration, the invention provides a blank, which is provided with several mutually foldable flaps for forming a holder for receiving a bag with a bag projection, the blank being at least provided with a first side flap, a rear flap, a second side flap and a front flap, the front flap being provided with:

- a first lengthening part which is provided with a first connecting flap, a partition flap containing a first bag projection positioning flap part and a second connecting flap,
- a second lengthening part provided with a second bag projection positioning flap part foldable therefrom;

wherein folding lines between the lengthening parts on the one side and the front flap are at an angle of 90°. The blank can be used for providing a holder which can offer various advantages of the invention.

[0031] One aspect of the invention provides a system which is configured for carrying out a method according to the invention. Preferably, the system is provided with:

- at least one bag supply device for supplying at least one bag to a combining location;
- at least one holder supply device for supplying at least one holder to the combining location;

wherein the bag supply device and holder supply device are designed to cooperate with each other for bringing a bag and holder from a first position to a second position such that the bag projection is then guided by a guide of the bag holder to a particular position.

[0032] A holder supply device can for instance be designed for holding holders at the combining location in an at least partly set-up position, such that an entrance to a holder inner space is turned upwards.

[0033] A bag supply device can for instance be designed for dropping the bags in the holders supplied by the holder supply device.

[0034] According to a different aspect, an assembly is provided comprising a holder with an inner space and a bag located in the inner space, wherein the holder is formed by various mutually folded flaps glued to each other in a manner suitable for forming a holder, while the bag is integrally provided with a projection, for instance a product dispensing unit or a part thereof, with the projection reaching through a holder opening, for instance an assembly according to any one of claims 8 - 20. According to the other aspect, the holder is provided with a detachable product dosing unit, for instance a dosing ball, which unit, via a dosing unit opening provided thereto in an outer wall of the holder and accessible from a surrounding, the dosing unit opening being provided, along an inner edge, with blocking parts reaching somewhat towards each other, which blocking parts position the dosing unit in the holder at the dosing unit opening.

[0035] Further elaborations of the invention are described in the subclaims. Presently, the invention will be further elucidated on the basis of exemplary embodiments and the drawing. In the drawing:

Fig. 1 shows an exemplary embodiment of a blank; Fig. 2 shows the example shown in Fig. 1, after a first folding and gluing step;

Fig. 3 shows the example shown in Fig. 1, after a second folding and gluing step;

Fig. 4 shows the example shown in Fig. 1, after a third folding and gluing step;

5 Fig. 5A schematically shows a front view of a part of a holder, formed from the blank shown in Figs. 1- 4; Fig. 5B shows a top plan view of the holder shown in Fig. 5A;

10 Fig. 6A schematically shows a front view of an exemplary embodiment of a bag;

Fig. 6B shows a top plan view of the bag shown in Fig. 6A;

Fig. 7 shows a part of a method for assembling a product holder;

15 Fig. 8A shows a front view of the product holder assembly, after the bag and holder have been combined;

Fig. 8B shows a top plan view of the assembly shown in Fig. 8A;

20 Fig. 9A shows a front view of the product holder assembly, after a second lengthening flap of the front flap has been folded over;

Fig. 9B shows a top plan view of the assembly shown in Fig. 9A;

25 Fig. 10 shows a top plan view similar to Fig. 9B, after a lengthening of a rear flap has been folded up;

Fig. 11 shows a top plan view similar to Fig. 10, after side flap lengthenings have been folded up;

30 Fig. 12 shows a perspective drawing of the assembly shown in Fig. 11, after also a dosing unit has been provided;

Fig. 13 shows a front view of a product holder assembly shown in Fig. 12;

35 Fig. 14 shows a cross sectional view along the line XIV-XIV of Fig. 13;

Fig. 15 schematically shows a detail XV of Fig. 14;

Fig. 16 shows a longitudinal cross section along the line XVI-XVI of Fig. 14; and

Fig. 17 shows a detail XVII of Fig. 16.

[0036] In this specification, identical or corresponding parts are indicated with identical or corresponding reference numerals.

45 Blank

[0037] Fig. 1 shows a non-limitative example of a blank P, in particular a blank apparently intended and suitable for forming a holder for use in a method according to an exemplary embodiment of the invention and/or a holder of an assembly according to an exemplary embodiment.

[0038] The blank P is provided in particular with various mutually foldable flaps for forming a holder B for receiving a bag with bag projection 3. An example of such a holder B is represented in Figs. 12 - 17. In Fig. 1 the side of the blank facing a viewer is a holder outside of the holder B to be formed from the blank P.

[0039] The blank P can be manufactured from different

materials such as one or more of the above-mentioned materials. The present blank P is provided with a first side flap 24 (for forming a first holder side), a rear flap 22 (for forming a holder rear wall), a second side flap 23 (for forming a second holder side) and a front flap 21 (for forming a holder front wall). These flaps 21, 22, 23, 24 are in particular rectangular (as in the example), and/or for instance square, for forming a rectangular (preferably stackable) box 1. After assembly, in this example, the holder walls formed by the flaps 21, 22, 23, 24 mutually include angles of 90° (i.e. each flap 21, 22, 23, 24 extends at right angles relative to neighbouring flaps). Between the flaps 21, 22, 23, 24, folding lines v1 are provided, which folding lines v1, in this example, are parallel to each other.

[0040] Preferably, the first side flap 24, rear flap 22, and second side flap 23 are each provided on respective opposite longitudinal edges with connecting flaps 31, 32, or 30, 33, or 29, 24, respectively. Between these connecting flaps 31, 32, 30, 33, 29, 24 and associated flaps 24, 22, 23, respective folding lines v2 are provided, which folding lines v2, in this example, are parallel to each other.

[0041] The front flap 21 is for instance also provided with flap elements 18, 28 which extend along front flap longitudinal edges, and with further flap elements 25, 26, 27, 14b which are provided on a front flap cross edge (at least, in a direction away from the second side flap 23).

[0042] The present front flap 21 of the blank P is in particular provided (on the front flap edge side) with a first lengthening part 26. A folding line 26' is provided between front flap 21 and a first lengthening part 26, which folding line 26' is parallel to the first folding lines v1.

[0043] The first lengthening part 26 can comprise a first connecting flap 26. The first lengthening part 26 (in this example also functioning as connecting flap 26) is, in itself (along a cross edge, i.e. folding line 25', parallel to the first folding lines v1) provided with a partition flap 25. Along an edge remote from the first lengthening part 26 (i.e. folding line 36', parallel to the first folding lines v1) the partition flap 25 can be provided with a second connecting flap 36 (which, in this example, is an end flap of the blank P).

[0044] The present partition flap 25 can furthermore be provided with, on the one side, a first bag projection positioning flap part 14 and, on the other side, a connecting flap 27. The latter connecting flap 27 is located - in this example - on a first longitudinal side of the partition flap 25; between these flaps 25, 27, a second folding line v2 is provided.

[0045] The first positioning flap part 14 itself can be folded about a respective folding line 15 (which is parallel to the foldable, in particular mutually glueable flap elements 14a, 14b, with the first flap element 14 still forming part of the partition flap 25, and the second flap element 14b extending from a longitudinal edge (i.e. the folding line 15). As shown in the Figure, the first positioning flap part 14 is in itself provided with a recess 16. In the present example, the folding line 15 is thus interrupted by the

recess 16.

[0046] Preferably, the longitudinal edges 16a of the recess 16 of the second element 14b of the positioning flap part 14 taper at least partly from the folding line 15, viewed in front view of this flap part 14. In this example, the longitudinal edges 16a of the recess 16 of the second element 14b run parallel to each other at a recess bottom edge 16b. The latter bottom edge 16b can for instance be provided centrally with a concave (for instance curved) edge part 16d.

[0047] In the example, longitudinal edges 16e of the recess 16 in the first element 14 of the positioning flap part 14 run parallel to each other from the folding line 15 (viewed in front view of this flap part 14). In the example, a bottom edge of the recess 16 in the first flap part 14a is also provided centrally of a concave (for instance curved) edge part 16f.

[0048] Further, a distance between the parallel recess longitudinal edges 16e of the recess 16 in the first positioning flap element 14a can be greater than a distance between the parallel parts of the recess longitudinal edges 16a of the recess 16 in the second positioning flap element 14b (these distances measured in directions parallel to second folding lines v2). A difference between these distances can, for instance, be in the range of approximately 1 - 5 mm, or comprise another difference.

[0049] In addition, the front flap 21 can be provided on a first cross edge (comprising a folding line 18') with a second lengthening part 18, and on a second cross edge (comprising a second folding line v2) with a connecting flap 28. In this example, the latter connecting flap 28 is provided with a handle part 38, which, after assembly, extends on handle parts 39 of connecting flaps 29, 31 lying underneath of the above-mentioned side flaps 23, 24.

[0050] As follows from the drawing, in this example, the folding line 18' between second lengthening part 18a and front flap 21 extends at right angles relative to the folding line 26' between first lengthening part 26 and front flap 21.

[0051] The second lengthening part 18 (of the front flap 21) is preferably provided with a first bag projection positioning flap part 18a, and a second bag projection positioning flap part 18b foldable therefrom (about a folding line 18"). In this example, the second positioning flap part 18b is bounded on two respective longitudinal edges by cutting lines or breaking lines 18d, and, along one of the folding lines 18", by a central recess 18c (manufactured in the second lengthening part 18) and a recess 37 which is provided in the front flap 21. The latter recess 37 is designed for access, after assembly, from a surrounding (extending opposite the front flap 21) to a part 3 positioned via positioning parts 14, 18 (see, also, Figs. 12, 13).

[0052] According to a further elaboration of the invention, at least one side of the blank P is printed or printable (for instance with text, drawing, one or more photos, content indication, a code and/or other printings, which will

be clear to the skilled person). This blank side can, in itself, be provided with a printed layer, or a printable (for instance white) layer, for instance a layer of paper. The blank can for instance consist of solid cardboard, having a (for instance only one) white side. Preferably, the blank is designed such that all outsides of a holder B to be formed from the blank P are printed or printable.

[0053] In addition, the blank can be provided, for instance in the front flap 21 or in another flap, with a dosing unit opening 19. After assembly, a dosing unit can be held behind this opening 19 in the respective holder B, to be taken from the holder B by a user, via the opening 19. In the exemplary embodiment, the dosing unit opening 19 is advantageously provided along an inner edge with blocking parts 19b reaching somewhat towards each other (in particular a ring of such parts 19b), which blocking parts 19b, under the influence of the provision of a suitable dosing unit U, can each make a pivotal movement (towards a position out of the plane of the front flap 21). Then, the blocking parts 19b can position the dosing unit U in (a space F) in the holder B, at (behind, or partly in) the dosing unit opening 19. Between the pivotal blocking parts 19b and a remaining front flap part, pivot lines 19c (for instance provided with incisions) can be provided. In the example, each of these pivot lines 19c is of curved design (in front view), for instance shaped like the arch of a circle. The pivot lines 19c may run along a virtual circle, which circle also forms a contour in which the opening 19 is located (as in Fig. 1). Preferably, here, the diameter of this circle is equal to or somewhat greater than a diameter of a dosing unit U to be held, in particular if the dosing unit U is provided with a circular outer circumference (for instance if the dosing unit U is spherical, conical, or cylindrical). It is noted that use of the opening 19 with blocking parts 19b can also be used in a holder (or respective blank) without use of the positioning means 14, 18.

[0054] Figs. 2 - 4 show a few folding steps with which the blank P shown in Fig. 1 can be formed into a holder-intermediate product.

[0055] Fig. 2 shows the blank, in a position P' after the first bag projection positioning flap part 14 and a connecting flap 27 have been folded up over respective folding lines 15, v2 (i.e. folded double; backwards in the drawing) and have been provided on the partition flap 25. Preferably, these flaps 14, 17 are glued on a side of the partition flap 25 (in the Figure, glue connections are schematically indicated with G), which side, in the drawing, is remote from a viewer (i.e. downwards into the plane of the drawing).

[0056] Fig. 3 shows a following blank position P'', in a partly transparent condition, after the position shown in Fig. 2, wherein the first lengthening flap 26 with partition flap 25 and end connecting flap 27 has also been folded back (i.e. into the drawing, in a direction away from a viewer) over the folding line 26', located between front flap 21 and lengthening flap 26. Furthermore, the end connecting flap 27 is provided with a line (for instance a

glue line G2) with which this flap 27 is connected (after folding over the folding line 26') to an opposite side wall flap 23; here, a holder inside of the connecting flap 27 is connected to a holder inside of this side wall flap 23.

[0057] Fig. 4 shows the result B' (also represented in a transparent manner) of a folding step following Fig. 3, after rear flap 22 with end side flap 24 has been folded over the folding line v1, which is located between rear flap 22 and intermediate side flap 23 towards a remaining part 23, 31 (in a folding direction towards the viewer). Furthermore, a longitudinal part of an end side flap 24 is attached by a (in)side, by means of glue G3, on an (out) side of the lengthening flap 26 serving as connecting flap. The thus formed result B' is a holder intermediate product, which, after further folding and gluing operations, can be formed into a box-shaped holder B shown schematically in Fig. 5. The intermediate product B' is relatively flat and can therefore be easily stored and transported in large quantities in a relatively small space.

Assembling the product holder

[0058] Figs. 5A, 5B schematically show a holder B, in which a holder bottom side is turned upwards and with this bottom side in opened, set up position. In this position, the holder B surrounds an inner space S, in which a bag can be introduced. The holder B may be formed utilizing an exemplary embodiment shown in Figs. 1- 4. A top side of the holder B (comprising, in this example, the connecting flaps 28, 29, 30, 31 with a handle part 38) is already closed in Fig. 5.

[0059] As follows from the above, the present holder B is manufactured in one piece. Furthermore, the present holder B is divided into two compartments, by the partition 25, comprising the inner space S and a second space F.

[0060] The holder shown in Fig. 5 can in particular be formed from the intermediate product B' shown in Fig. 4, by opening the intermediate product from the flat condition (i.e. folding it out) to a position in which the rear flap 22, front flap 21 and partition 25 are at right angles to the sidewall flaps 23, 24. Then, the connecting flaps 29, 31 (in this case of a holder top side) which, in the exemplary embodiment comprise the handle parts 38, 39 can be folded up, and the two other connecting flaps 31, 28 of the same holder side (comprising the handle part 38) can be folded up and be glued to the already folded up flaps 29, 31.

[0061] With the holder position shown in Fig. 5, in a particularly efficient manner, a bag provided with a projection 3 can be introduced into the holder, while the holder B itself is provided with means for bringing the bag projection into a desired position. Figs. 6A, 6B show an example of a bag 1. Figs. 7 - 11 show a few steps of a method for introducing the bag 1 into the holder for forming a composite product holder B, 1, and Figs. 12- 17 show an example of an assembly obtained with this method.

[0062] The bag 1 may be a bag 1 (for instance flexible,

paper, plastic) filled or fillable with a product. The product may comprise various products, see hereinabove.

[0063] The bag 1 may be provided with a projection 3, which projects from the bag; and comprises, for instance, a product dispensing unit 3 or a part 3a thereof. The projection 3 (in this case an operable product dispensing unit, for instance a tap) can be designed in different manners (see hereinabove) and be, for instance, rigid or undeformable, manufactured from, for instance, plastic or metal or be configured otherwise.

[0064] Figs. 15 and 17 show an example of the product dispensing unit 3 in more detail. The unit 3 may comprise a hollow body 3a. The unit 3 can be provided on an outside with one or more guiding grooves 3c, which is/are defined or bounded by one or more circumferential flanges 3b. The unit 3 can be attached to the bag 1 in different manners, for instance by means of a welding connection, glue connecting, melt connection and/or be manufactured in one piece with the bag 1, or otherwise, which will be clear to the skilled person. As shown in Figs. 14 - 17, a part of the dispensing unit 3 can for instance be located in a space surrounded by the bag 1.

[0065] As schematically shown in Fig. 12 - 17, an advantageous method for assembling a product holder B comprises:

- providing a bag mentioned (see Fig. 6A, 6B); and
- providing a bag holder B which surrounds an inner space S for receiving the bag 1 (see Figs. 5A, 5B). For the sake of clarity of the drawing, a positioning flap part 18 and opposite connecting flap 33 of the holder B are not represented in Figs. 5A, 5B.

[0066] Furthermore, Fig. 7 schematically shows a system configured for carrying out such a method. The system is in particular provided with:

- at least one bag supply device L for supplying at least one said bag 1 to a combining location;
- at least one holder supply device M for supplying at least one said holder B to the combining location.

[0067] As shown in Figs. 5 - 11, the bag 1 and holder B can then preferably be designed to cooperate for bringing a bag 1 and holder B from a first position to a second position such that the bag projection 3 is then guided by a projection guide 14 of the bag holder B to a particular position (in Figs. 5 - 9, the projection guide 14 of the holder is represented in hatchings; in this example, this guide comprises the glued together bag projection positioning flap parts 14a, 14b). Here, combining bag 1 and holder B is preferably carried out by the system in an automated manner (in particular through cooperation between the bag supply device L and holder supply device M). The system can furthermore be designed for discharging from the combining location a thus assembled product holder 1, B.

[0068] As further shown in Fig. 7, the holder supply

device M can be designed for holding each holder B in the combining location in an at least partly set up position, such that an entrance to a holder inner space S is for instance turned upwards (as in Fig. 7) in particular such that a recess 16 provided in bag projection positioning part 14 is accessible from a surroundings for receiving a bag projection part 3a.

[0069] Further, a bag supply device can be designed for dropping the bags 1 each in holders supplied by a holder supply device M (see Fig. 7).

[0070] The schematically shown holder supply device M can be designed in different manners, and for instance comprise one or more holder stores for storage of holder intermediate products, one or more conveyors (for instance conveying tracks, conveying belts, rollers and/or chain conveyors, or other conveying means) for conveying bag holder 1 to be filled (from a store to the combining location), holder setup means for setting up the holder intermediate products (to the position shown in Fig. 5) and the like.

[0071] The schematically shown bag supply device L can also be designed in different manners, and comprise, for instance, one or more bag stores for storage of bags 1, one or more conveyors (for instance conveying tracks, conveying belts, rollers and/or chain conveyors, or other conveying means) for conveying bags 1 (from a store to the combining location), optional filling means for filling bags 1 still empty with product and/or a filler means (for instance gas or gas mixture), and the like.

[0072] The present holder supply device M is in particular designed for positioning a holder B at a predetermined position in the combining location, which is represented in Fig. 7.

[0073] The present bag supply device L is provided with a positioning device 50 (in particular with guide means 50) which is designed for bringing a bag 1 to a holder B positioned in a predetermined position, and in particular for positioning the respective bag projection 3 of the bag 1 opposite a projection receiver 16 of a guide part 14 (i.e. bag projection positioning part 14) of the holder B, and more particularly guiding it to the holder B (and in the recess 16 which is provided in bag projection positioning part 14).

[0074] As shown in Fig. 7, the positioning device 50 of the bag supply device L can for instance comprise guides 50, which can engage the bag projection 3, such that the projection 3 can move (in particular slide or drop) along the guides 50 to a holder B disposed opposite the holders 50. The guides 50 can, for instance, engage in an optional guide groove 3c (see Fig. 6B) of the bag projection, or otherwise. A downstream end 50a of the positioning device 50 can be located, during use, at a relatively short distance (for instance shorter than 10 cm, for instance approximately 1 cm or less) opposite the bag projection positioning part 14 of the holder B, however, this is not essential.

[0075] During operation of the system L, M (i.e. a method mentioned) the bag 1 and the holder B (see Fig. 7)

can be brought from a first position removed from each other to a second position, in which second position the bag 1 is located in the inner space S. When bringing the bag 1 and bag holder B to the second position, the bag projection 3 is guided by the (in particular fixed) guide 14 of the bag holder B towards a particular position (in the holder). During this latter guiding, the bag projection 3 reaches in particular into the second space F (from the bag-receiving inner space S).

[0076] As follows from Fig. 7, the guide 14 of the bag holder B can advantageously cooperate with the bag projection (i.e. dispensing tap) 3 (and in particular with a part 3a of this projection, for instance a tube part 3a), for positioning the projection 3 in a first lateral direction X1 with respect to the bag holder B, which lateral direction X1 is in particular at right angles to a direction Z1 in which the bag 1 and holder B are brought towards each other (when being moved to the second position).

[0077] The bag 1 and bag holder B can be brought to the second position in particular under the influence of gravity, and preferably substantially under the influence of a weight of the bag 1 and/or bag content. Here, in particular, the bag 1 can drop in the holder B (opened at the bottom side). In an alternative embodiment, transport means are provided for moving the bag 1 and holder B together, utilizing motor power (for instance without or substantially without using gravity). Further, for instance a combination of gravity and a press-on force can be utilized for effecting the movement mentioned.

[0078] Preferably, with the bag 1 and holder B in the first position mentioned, the bag projection 3 is positioned by the positioning device 50 (of the bag supply L) opposite the projection receiver 16 (i.e. the recess 16) of the guide 14. Then, the projection 3 can slide in a second lateral direction Z1 of the projection into the projection receiver 16 when bringing the bag 1 and bag holder B to the second position (see Figs. 8 and 9). Figs. 8A, 8B show the result of the introduction of the bag 1 into the holder B.

[0079] As stated, for instance after introduction of the bag in the holder, the projection 3 can be held in position, optionally utilizing a clamping force (applied by the guide 14 to the projection) and in particular in a first lateral direction mentioned of the projection 3. Further, when combining the bag 1 and holder B, the projection 3 can for instance first be guided over a particular distance along/through the guide 14 under the influence of only gravity (for instance a weight of the bag 1 and possible content) and then be pressed to a desired end location under the influence of pressing means and/or under the influence of further closure of the holder (see below).

[0080] As follow from the above and the drawing, the bag projection guide 14 of the holder may be a plate-shaped holder part 14 (comprising the positioning flap parts 14a, 14b of the partition 14) having an outer edge 15 extending along an entrance to the holder B, at least remote from a holder topside (comprising flaps 28, 29, 30, 31). This edge 15 comprises the folding line 15 over which the positioning flap parts 14a, 14b are folded to-

gether. In this edge 15, the recess 16 (which receives the bag projection 3) extending along the bag inner space S may be provided such that the opposite recess longitudinal edges 16a guide the projection 3 towards a particular position and then hold the projection 3 in a virtually clearance free manner in a first lateral projection direction X1 at or adjacent a recess bottom edge 16b.

[0081] After the bag has been introduced into the holder B, and the dispensing unit has been automatically (under the influence of the composite positioning flap 14) brought into the desired position, the holder B can be closed off (see Figs. 8 - 11). A projection fixing element 18 can be used for substantially fixing the projection 3 relative to the guide 14, after the bag 1 and holder B have been brought in the second position. In the example, the projection fixing element is the second lengthening part 18 mentioned of the holder B, which part 18 is brought from a releasing position (see Figs. 8A, 8B) to a projection fixation position (see Figs. 9A, 9B) and, in this fixation position, is preferably glued onto the partition 14.

[0082] In Figs. 8A, 8B, the second positioning flap part 18b of the second lengthening part 18 is indicated in a checkerboard pattern. In particular the second lengthening part 18 is folded over the respective folding line 18' to the upper edge 15 of the holder partition 14, while the respective second bag projection positioning flap part 18b is folded open over the folding line 18" and is glued onto a longitudinal side of the partition 14. A part of the bag projection 3a is then preferably received in the central recess 18c of the flap part 18b. Figs. 9A, 9B show the result, with a part 3a of the product dispensing unit 3 completely surrounded by holder flap part 14, 18 and forcefully positioned.

[0083] Then (see Figs. 10 and 11) the remaining free flaps 33, 32, 34 can be folded up and glued for closing the holder provided with the bag 1 on the respective bottom side.

[0084] Further, a second space F can be provided with a product dosing unit U, for instance a dosing ball, by moving this unit U via the dosing unit opening 19 provided to that end in an outer wall of the holder B into the second space F. In particular the blocking parts 19b can each make a pivotal movement into the second space F under the influence of the movement of the dosing unit U into the second space F, and then position the dosing unit U in the second space F at the dosing unit opening.

Assembly

[0085] An example of an assembly is represented in Fig. 12 - 17. From these Figures it follows that the assembly is in particular provided with a holder B, formed by various, mutually folded flaps glued together in a manner suitable for holder forming. The bag 1 is provided with a projection 3, for instance a product dispensing unit or a part 3a thereof, while this projection 3 reaches through a holder opening 49, which holder opening 49 is bounded on a first side by a first projection positioning

flap part 14 (in particular by parts of edges 16a, 16b, 16d, 16e, 16f of the respective projection 16) and on a second side by a second projection positioning flap part 18 (in particular by opposite edges 18c of the flap part 18b). In the example, the holder B is provided at the front with an indentation/opening 37, via which the product dispensing unit 3 is accessible from a surrounding. The bottom (i.e. bottom flap parts 32, 34 and lengthening flap part 18a) of the holder B is provided with a recess (comprising recesses 46, 47 in the bottom flap parts 32, 34 and a recess in lengthening flap part 18a) which coincides with this opening 37. Thus, the product dispensing unit 3 is provided in a recessed manner in the holder 1.

[0086] Preferably, viewed from a surrounding, the holder 1 is completely printable and/or printed. According to a further elaboration, an outside of the positioning flap parts 14b, 18b visible from a surrounding can be white or have already been printed.

[0087] In particular, the first and second holder flap part 14, 18 are glued onto each other. Further, the holder B is provided with a partition flap 25 which divides the holder B into the compartments mentioned, with the partition flap 25 containing at least a part of the first positioning flap part 14. In particular the partition flap 25 forms a support between two opposite inner surfaces of the holder H so that the holder can be stacked particularly well.

[0088] In particular, the assembly is provided with a front flap 21, the front flap 21 being provided with said lengthening parts 18, 26 comprising the positioning flap parts 18a, 18b. The assembly comprises in particular a front flap 21 which is provided with a first lengthening part 26 comprising the first positioning flap part 14 (see Fig. 14), while the first lengthening part 26 is in particular provided with at least:

- a first connecting flap 26, a partition flap 25 containing the first positioning flap part 14, and a second connecting flap 36, while the first connecting flap and partition flap more particularly are mutually folded through an angle of approximately 90° relative to the front flap 2) and the second connecting flap and partition flap more particularly mutually folded through an angle of approximately 90°.

[0089] Preferably, a second lengthening part 18a of the front flap 12 is provided with a connecting flap 18b which is preferably glued to the first positioning flap part 14, the connecting flap 18b in particular folded through an angle of approximately 90° relative to the second lengthening part 18a, with an edge of the connecting flap 18b preferably bounding the holder opening 49 at least partly.

[0090] A first front flap lengthening part 26 is in particular provided with the first positioning flap part 14, which extends at right angles relative to the second front flap lengthening part 18a which comprises the second positioning flap part 18. Advantageously, each front flap

lengthening part 26, 18a extends at right angles to the front flap 21, Further, each of the flap elements can be provided with a respective recess with longitudinal edges, while the longitudinal edges 16e of one flap element 14e extend at a distance from longitudinal edges 16a of the other flap element 14b, along a surface of this other flap element 14b.

[0091] In addition, the assembly shown in Figs. 12 - 17 comprises a holder with an inner space S and a bag 1 located in the inner space (and which is preferably filled with product), the holder B being formed by various, mutually folded flaps glued together in a manner suitable for holder forming, the bag 1 being integrally provided with a projection 3, for instance a product dispensing unit or a part 3a thereof, this projection 3 reaching through a holder opening 49, while a feature of the assembly is that the holder is also provided with a detachable product dosing unit U, for instance a dosing ball, which unit U is accessible from a surrounding via a dosing unit opening 19 provided to that end in an outer wall of the holder B, while the dosing unit opening 19 is provided along an inner edge with the blocking parts 19b reaching somewhat towards each other, which blocking parts position the dosing unit U in the holder B at the dosing unit opening.

[0092] Advantages of the present product holder comprise, inter alia, a relatively high bearing capacity (stackability) and durability, and a high user-friendliness. In particular relatively thin, relatively easily foldable material can be used for manufacturing the holder 1 (a thickness of a blank can for instance be smaller than 2 mm, and is for instance in the range of approximately 1- 1.5 mm, measured in a direction transversely to the blank) to still obtain the properties mentioned (durability, solidity). Further, a projection mentioned (in particular a product dispensing unit 3) can be positioned very stably and durably relative to the holder 1.

[0093] Furthermore, owing to the limited thickness, use of different layers is also well feasible. Further, the material can provide a sort of 'memory effect' (resilience), for instance when utilizing solid cardboard, so that positioning a dosing unit utilizing integral blocking parts 19b can be very well achieved.

[0094] It is self-evident that the invention is not limited to the exemplary embodiments described. Various modifications are possible within the framework of the invention as set forth in the following claims.

[0095] In this application, the term "a" is to be understood broadly, and can for instance comprise "only one", "a number" "a plurality" and the like.

Claims

1. A method for assembling a product holder, comprising:

- providing a bag (1) fillable or filled with product,

- which bag is provided with a projection (3), for instance a product dispensing unit (3) or a part (3a) thereof;
- providing a bag holder (B) which surrounds an inner space (S) for receiving said bag (1), wherein the bag (1) and holder (B) can be brought from a first position removed from each other to a second position, in which second position the bag (1) is located inside said inner space (S), wherein said bag projection (3) is guided by a guide (14) of the bag holder (B) to a particular position when bringing the bag (1) and bag holder (B) to the second position.
2. A method according to claim 1, wherein the guide (14) of the bag holder (B) cooperates with the bag projection (3) for positioning this projection (3) in a first lateral direction (X1) relative to the bag holder (B), which lateral direction is in particular substantially at right angles to a direction in which the bag (1) and holder (B) are brought towards each other.
 3. A method according to claim 1 or 2, wherein the bag (1) and bag holder are brought to the second position under the influence of gravity, and preferably substantially under the influence of a weight of the bag (1) and/or bag content.
 4. A method according to any one of the preceding claims, wherein the bag projection is positioned by a positioning device (50) opposite a projection receiver (16) of said guide (14) with the bag (1) and holder (B) in said first position, wherein the projection (3) then slides in a second lateral direction of the projection into the projection receiver (16) when bringing the bag (1) and bag holder (B) to the second position.
 5. A method according to any one of the preceding claims, wherein the guide (14) is a plate-shaped holder part, with an outer edge (15), in which edge (15) a recess (16) extending along the bag inner space (S) is provided, which receives said bag projection (3) such that opposite recess longitudinal edges (16a) guide the projection (3) towards a particular position and then hold the projection (3) in a virtually clearance free manner in a first lateral projection direction at or adjacent a recess bottom edge (16b).
 6. A method according to any one of the preceding claims, wherein a projection fixing element (18) is used for substantially fixing the projection (3) relative to the guide (14), after the bag (1) and holder (B) have been brought into the second position.
 7. A method according to claim 6, wherein the projection fixing element is an integral part (18) of the holder (B), which part (18) is brought from a releasing position to a projection fixation position and, in this fixation position, is glued onto the guide (14).
8. An assembly comprising a holder with an inner space (S) and a bag (1) located in the inner space, wherein the holder (B) is formed by various, mutually folded flaps glued together in a manner suitable for holder forming, wherein the bag (1) is integrally provided with a projection (3), for instance a product dispensing unit or a part (3a) thereof, wherein said projection (3) reaches through a holder opening (49), which holder opening (49) is bounded on a first side by a first projection positioning flap part (14) and on a second side by a second projection positioning flap part (18).
 9. An assembly according to claim 8, wherein said first and second holder flap part (14, 18) are glued onto each other.
 10. An assembly according to claim 8 or 9, wherein the holder (B) is provided with a partition flap (25) which divides the holder (B) into at least two compartments, the compartments comprising said inner space (S) and a second space (F), wherein the partition flap (25) contains at least a part of said first positioning flap part (14).
 11. An assembly according to claim 10, wherein the partition flap (25) forms a support between two opposite inner surfaces of the holder (H).
 12. An assembly according to any one of claims 8 - 11, provided with a front flap (21), wherein the front flap (21) is provided with lengthening parts (18, 26) which comprise said positioning flap parts (18a, 18b, 14).
 13. An assembly according to claim 12, wherein the front flap (21) is provided with a first lengthening flap (26) which comprises said first positioning flap part (14), wherein the first lengthening part (26) is in particular at least provided with:
 - a first connecting flap (26), a partition flap (25) containing the first positioning flap (14), and a second connecting flap (36), wherein the first connecting flap and partition flap are more particularly mutually folded through an angle of approximately 90° relative to the front flap (21), and wherein the second connecting flap and partition flap are more particularly mutually folded through an angle of approximately 90°.
 14. An assembly according to claim 12 or 13, wherein a second lengthening part (18) of the front flap (21) is provided with a connecting flap (18b) which is preferably glued to the first positioning flap part (14),

wherein the connecting flap (18b) in particular is folded through an angle of approximately 90° relative to the second lengthening part (18), wherein an edge of the connecting flap (18b) preferably bounds said holder opening (49) partly.

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bag projection (3) is then guided by a said guide (14) of the bag holder (B) to a particular position.

- 15.** An assembly according to any one of claims 11- 14, wherein a first front flap lengthening part (26) which is provided with the first positioning flap part (14) extends at right angles relative to a second front flap lengthening part (18) which comprises the second positioning flap part (18a, 18b). 10
- 16.** An assembly according to claim 15, wherein each said front flap lengthening part (26, 18) extends at right angles relative to the front flap (21). 15
- 17.** An assembly according to any one of claims 8 - 15, wherein said first positioning flap part (14) in itself comprises flap elements (14a, 14b) folded about a folding line (15) and glued to each other. 20
- 18.** An assembly according to any one of claims 8 - 17, wherein an outer edge (15) of the first positioning flap part (14), extending opposite a holder inside, is interrupted by a recess (16) which recess terminates in said holder opening (49) at bottom edge (16b) of the recess extending at a distance from said outer edge (15). 25
30
- 19.** An assembly according to claim 18, wherein longitudinal edges (16a) of the recess (16) of the positioning flap part (14) taper at least partly from said outer edge (15, viewed in front view of the flap part (14). 35
- 20.** An assembly according to at least claims 17 and 19, wherein each of said flap elements is provided with a respective recess with longitudinal edges (16a, 16e), wherein the longitudinal edges of one flap element (14a) extend at a distance from longitudinal edges of the other flap element (14b), along a surface of this other flap element (14b). 40
- 21.** A system configured for carrying out a method according to any one of claims 1- 7, wherein the system is in particular provided with: 45
- at least one bag supply device (L) for supplying at least one said bag (1) to a combining location; 50
 - at least one holder supply device (M) for supplying at least one said holder (B) to the combining location;

wherein the bag supply device and holder supply device are designed to cooperate with each other for bringing a said bag (1) and holder (B) from said first position to a said second position such that said

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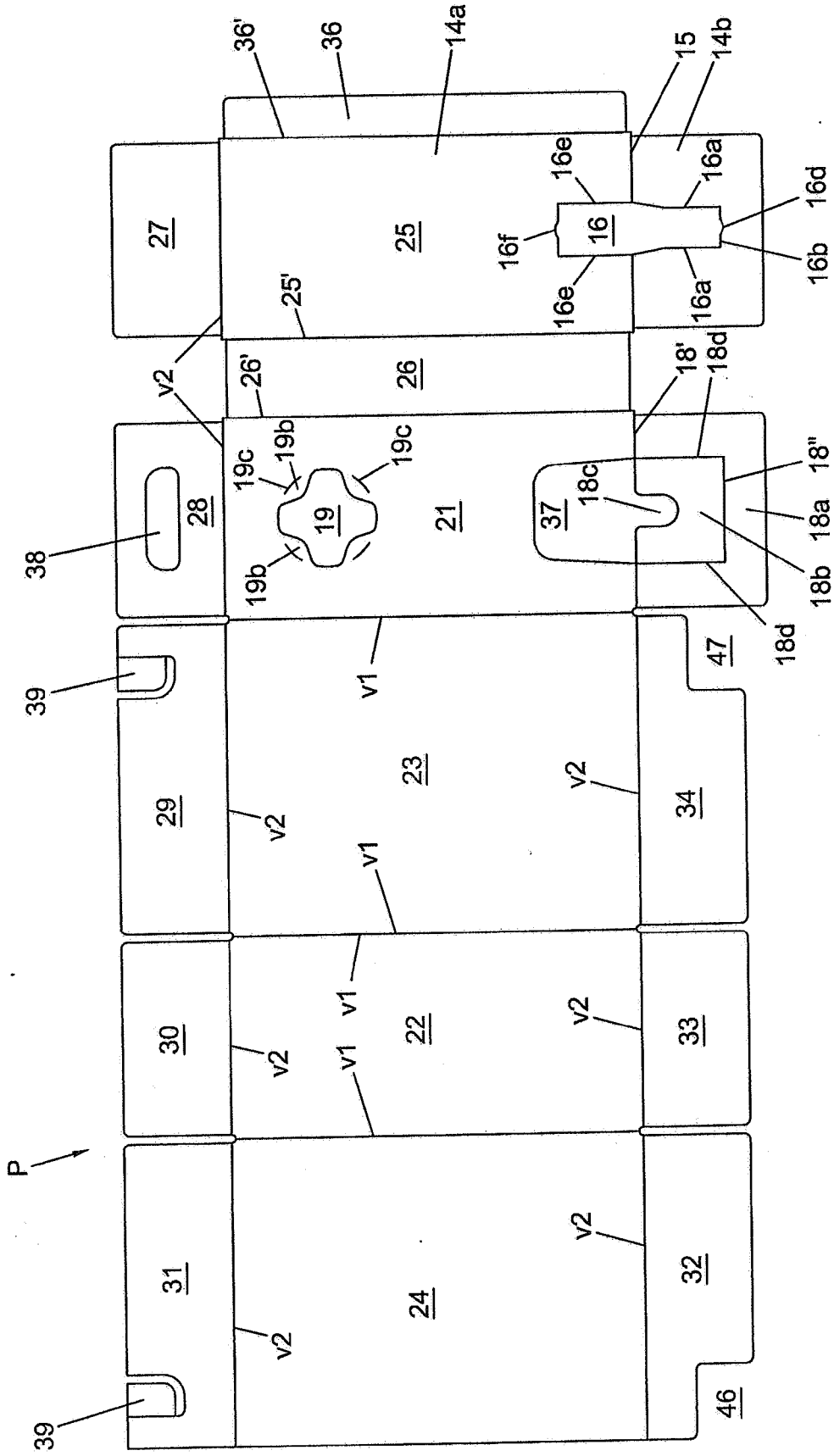


FIG. 1

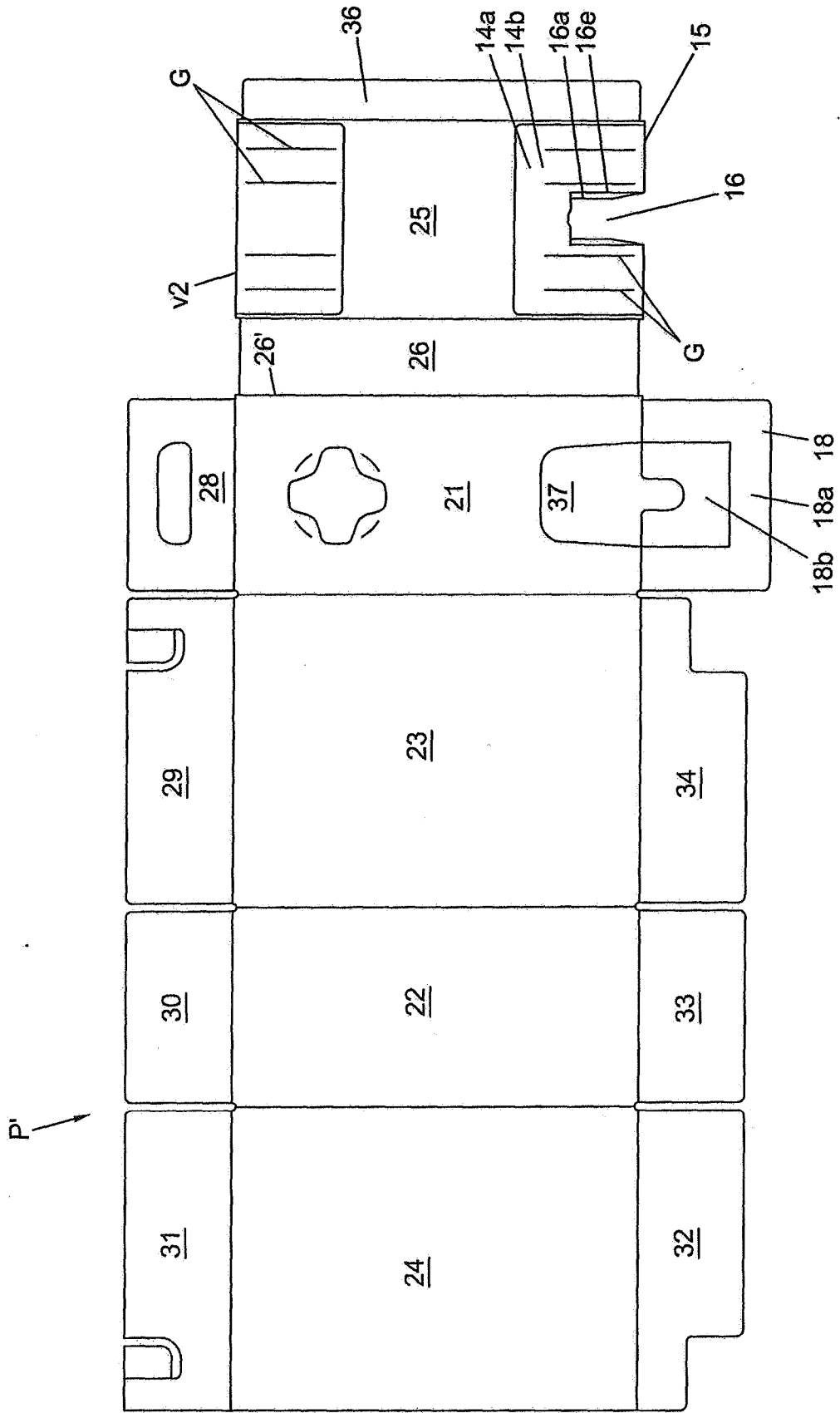


FIG. 2

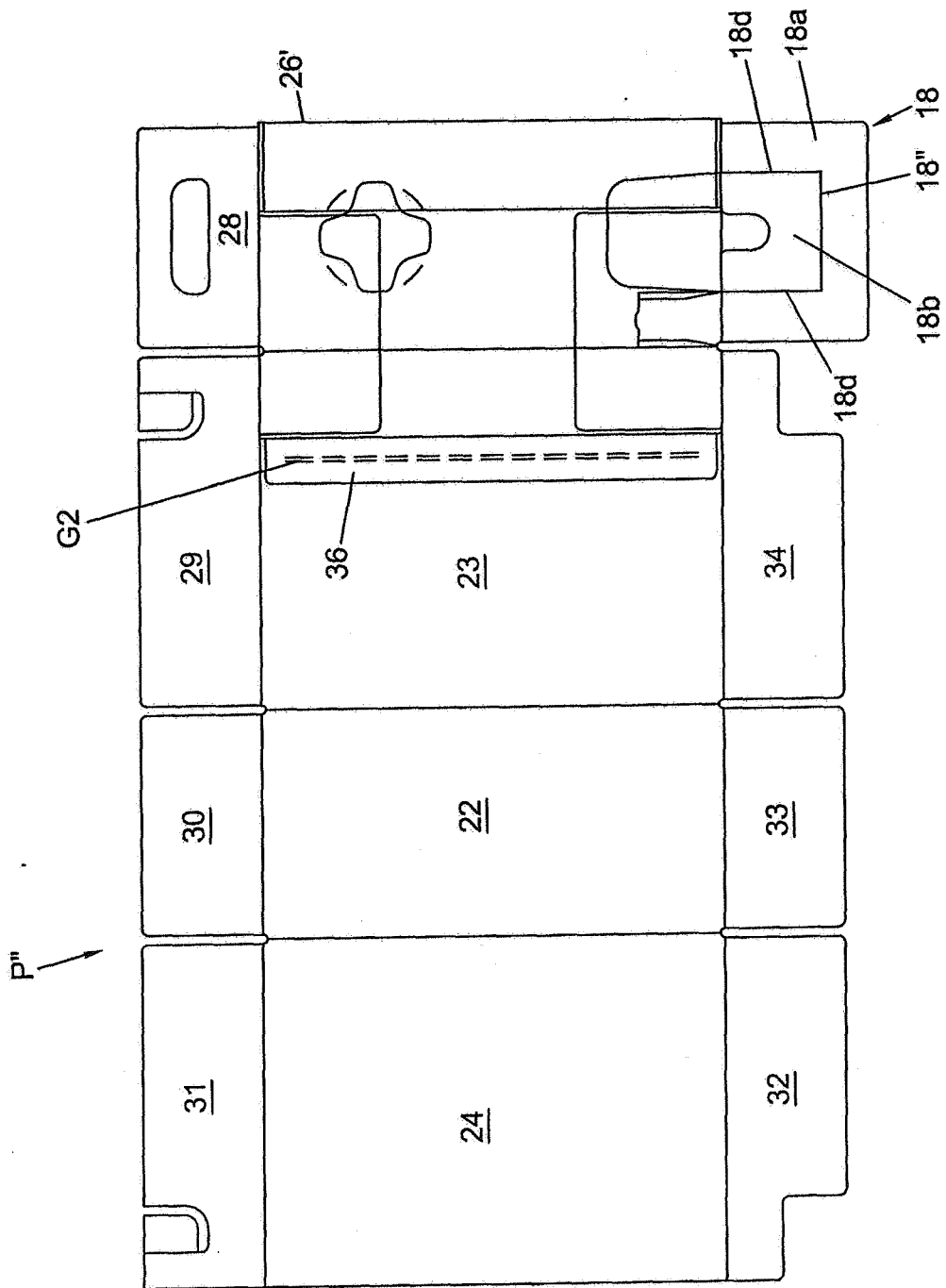
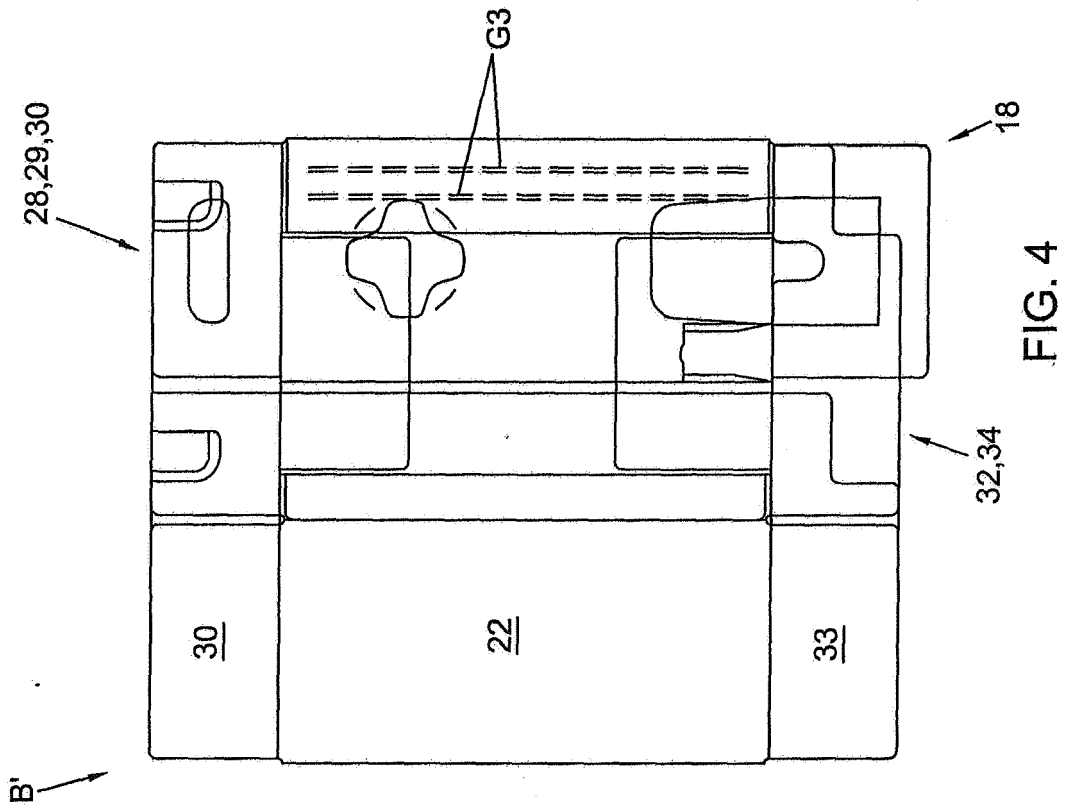


FIG. 3



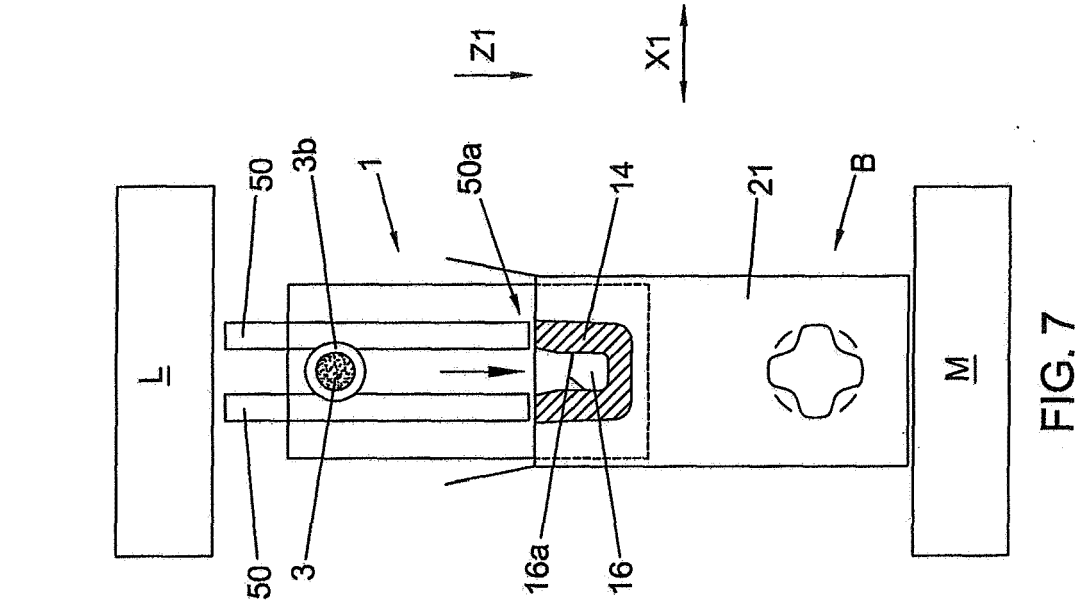


FIG. 6A FIG. 6B

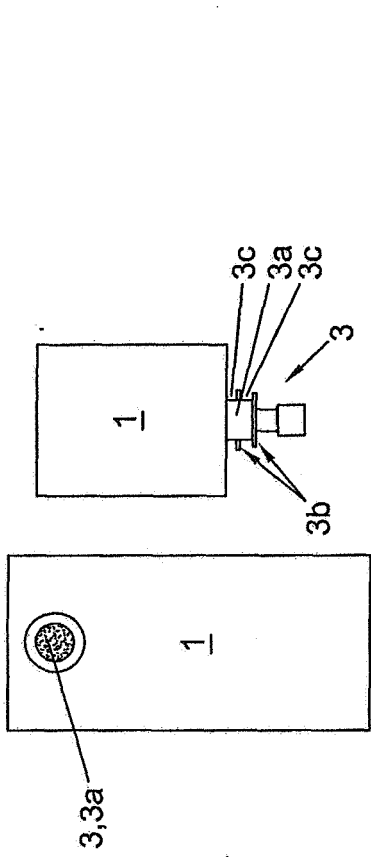


FIG. 5A

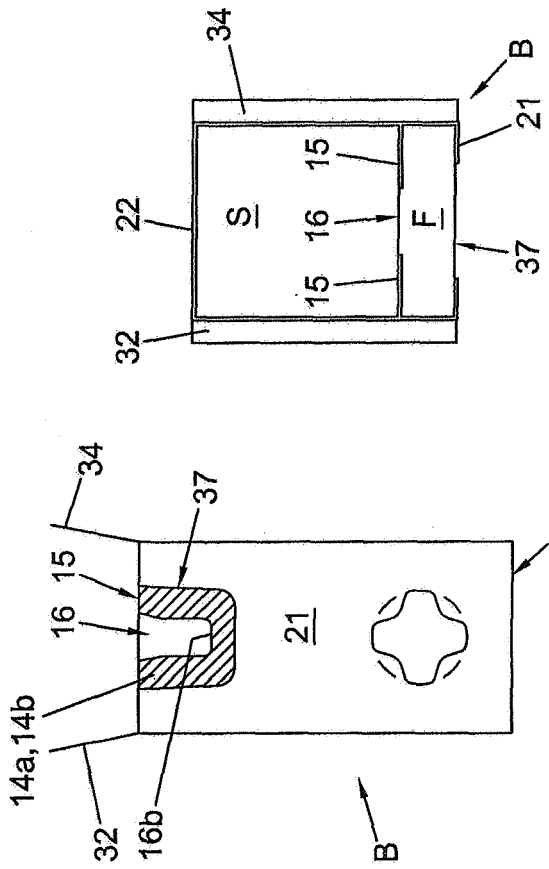


FIG. 5B

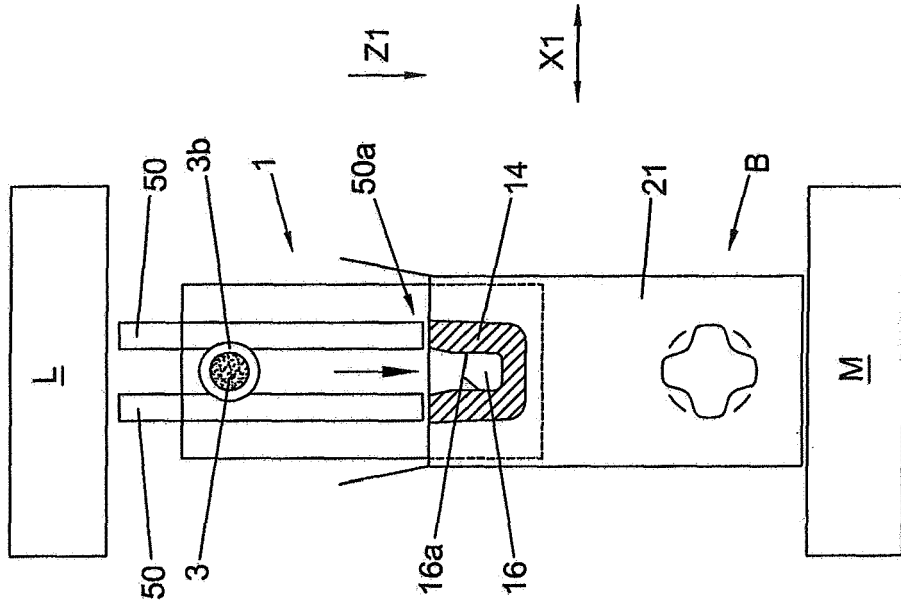


FIG. 7

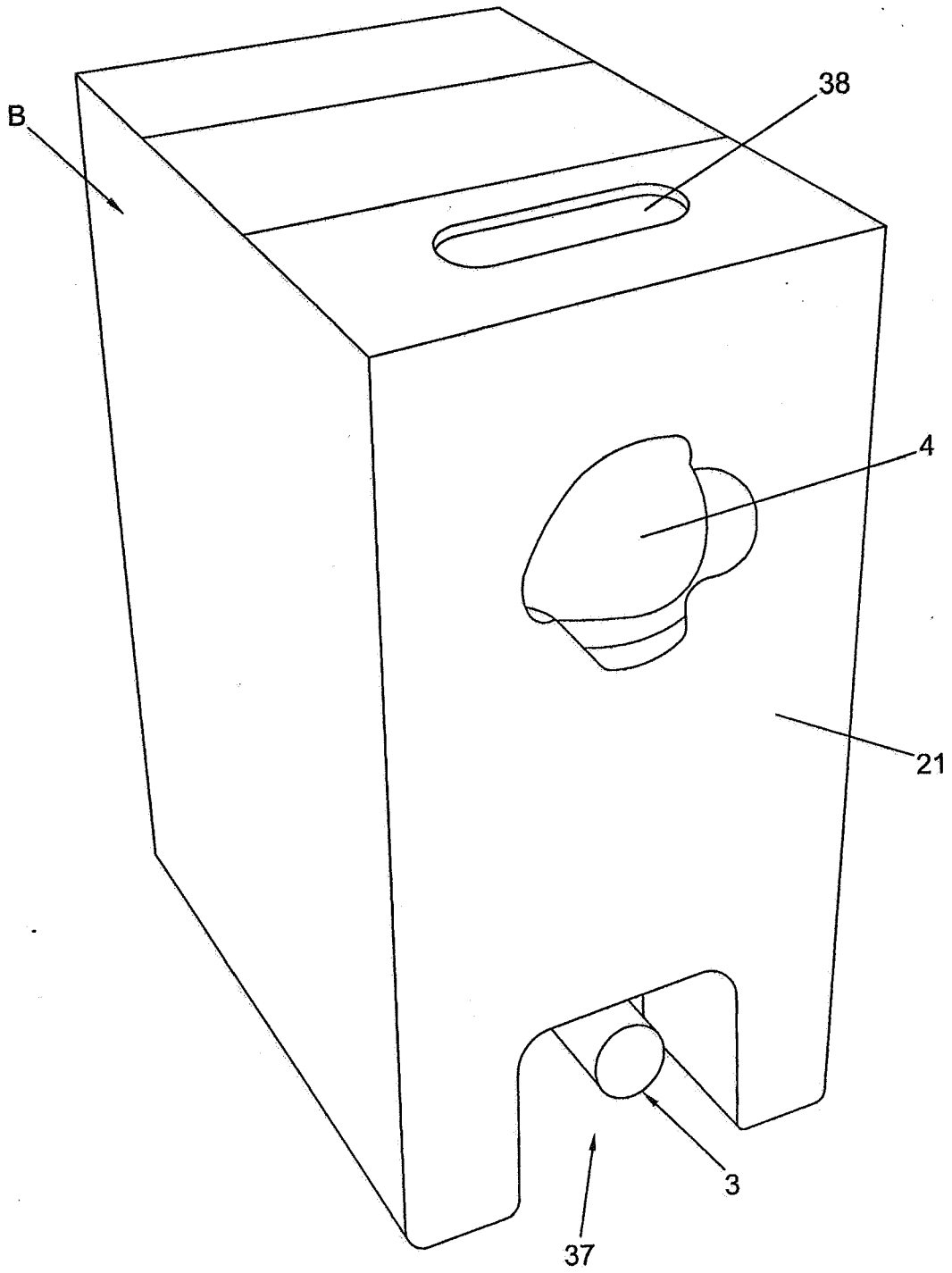


FIG. 12

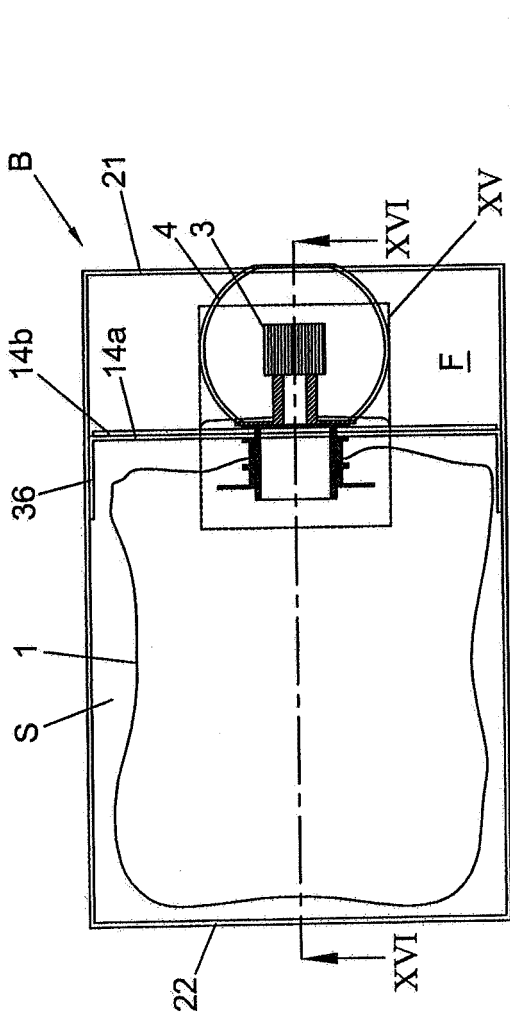


FIG. 14

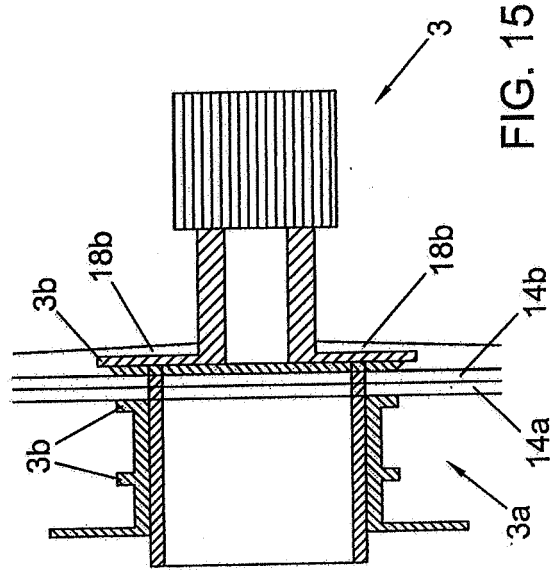


FIG. 15

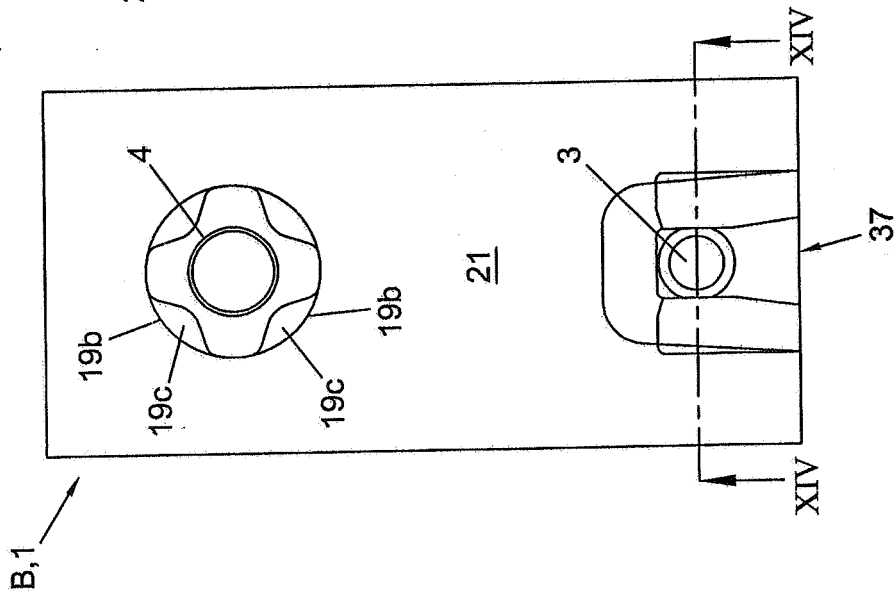


FIG. 13

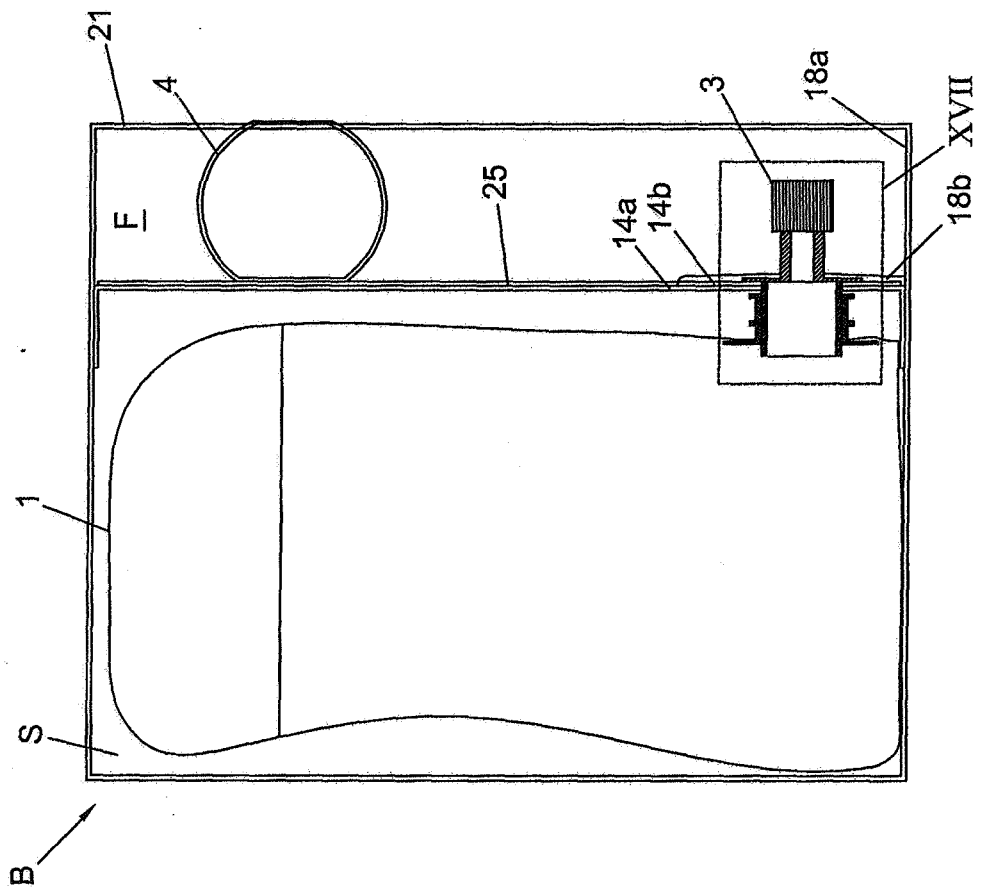


FIG. 16

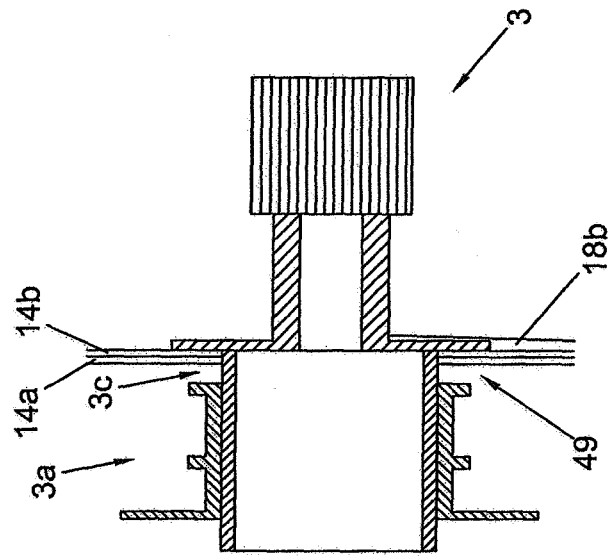


FIG. 17



EUROPEAN SEARCH REPORT

Application Number
EP 09 15 4517

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| | | | B65D |
| 1 | Place of search The Hague | Date of completion of the search 8 June 2009 | Examiner Serrano Galarraga, J |
| CATEGORY OF CITED DOCUMENTS | | T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | |
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EP 09 15 4517

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