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(54) A BLANK CONFIGURED TO BE ERECTED INTO A PACKAGE, AND A METHOD FOR REMOVING GOODS FROM THE PACKAGE

(57) The present disclosure relates to a blank configured to be erected to form a package, the blank comprising a first side wall panel having an opening, two end wall panels, a second side wall panel, a first bottom panel having an aperture, a closing panel, and a second bottom panel. The first bottom panel is configured to be displaced between a non-actuated and an actuated position. In the non-actuated position the closing panel is configured to cover the opening in the first side wall panel. In the actuated position, the upward folding of the first bottom panel provides an upward displacement of the closing panel, thereby leaving the opening at least partly exposed allowing goods to be removed through the opening. The present disclosure also relates to a method for selectively allowing goods inside a package to be removed from the package, and to a method of providing a package.

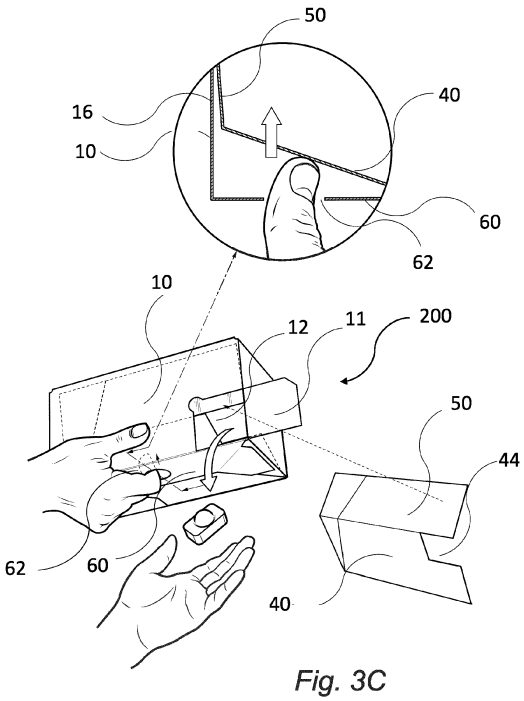

Fig. 3C

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Description

Field of invention

[0001] The invention relates to a blank configured to be erected to form a package. The invention also relates to a method for selectively allowing goods inside a package to be removed from the package.

[0002] The invention also relates to a method of providing a package.

Technical background

[0003] When designing a package, the designer typically takes a plurality of design criteria in consideration. The package should often be designed such that it makes efficient use of material, is easy to manufacture, is easy to transport to the point of use, is easy to prepare for use, provides a strong structure and also use a minimum of adhesive.

[0004] When designing a package, it is typically desirable to consider other aspects as well, such as that it should be user-friendly and provide functions for which it is designed. Such functions may be that it is possible to see if it has been opened before or specific mechanisms relating to the use of package.

[0005] Sometimes a package is designed to hold a plurality of items of a consumer goods of the same kind or type where the user only uses one or a few items at a time. Some such packages allow the user to take the products from an opening in the top, which provides an easy package to manufacture. However, even if such a package often is provided with some kind of reclosure mechanism, it in practice usually ends up always being left open and if it falls over, the belongings of the package may spill out. Therefore, there is a need of a package which is easy to close between usage and that offers a user-friendly method for reaching the goods without risking spilling out the goods.

[0006] Thus, there is still a need for a package and corresponding blank adequately addressing at least some of the design criteria mentioned above.

Summary of invention

[0007] It is an object of the invention to provide a solution that addresses at least some of the design criteria described above, namely, to provide a package which is user-friendly, easy to stack during transport and blocks the goods from falling out. Preferably, the package should be easy to prepare and use of adhesive should be kept at a minimum. Therefore, a blank configured to be erected to form a package is provided according to the present disclosure. Preferred variants of the blank will be evident from the dependent claims and from the description.

[0008] More specifically, according to a first aspect of the present disclosure, there is provided a blank configured to be erected to form a package. The blank comprises, as seen in a flat-laid state of the blank,

a first side wall panel having an opening, or a portion configured to be removed to form said opening,
two end wall panels being oppositely arranged at and foldably connected to a respective one of two oppositely arranged transversally extending sides of the first side wall panel,
a second side wall panel being foldably connected to one of the two end wall panels at a transversally extending side thereof being opposite to the first side wall panel,
a first bottom panel being foldably connected to the second side wall panel along a longitudinally extending side of the second side wall panel, the first bottom panel having an aperture formed in the first bottom panel at a distance from the second side wall panel,
a closing panel being foldably connected to the first bottom panel along a longitudinally extending side thereof being opposite to the second side wall panel, the closing panel being configured to extend alongside an inside surface of the first side wall panel, and
a second bottom panel connected to the first side wall panel along a longitudinally extending side of the first side wall panel, the second bottom panel being configured to be positioned underneath the first bottom panel when the blank is erected to form the package and at least partly form a bottom of the package underneath the aperture in the first bottom panel.

[0009] The first bottom panel is configured to be folded relative to the second side wall panel between a non-actuated position and an actuated position. The first bottom panel is folded upwardly into an interior of the package when folded towards the actuated position compared to being in the non-actuated position.

[0010] In the non-actuated position, the closing panel is configured to at least partly cover the opening in the first side wall panel and thereby block goods inside the package from being removed from the package through the opening.

[0011] In the actuated position, the upward folding of the first bottom panel relative to the non-actuated position provides an upward displacement of the closing panel alongside the inside surface of the first side wall panel, thereby leaving the opening at least partly exposed and exposed to an extent being greater than when the first bottom panel is in the non-actuated position and thereby allow goods inside the package to be removed from the package through the opening.

[0012] By such a blank, the closing panel partly covers the opening and provides a block such that the goods inside the package may not fall out through the opening when the first bottom panel and thereby also the closing panel is in the non-actuated position. This ensures that even if the package were dropped or knocked over, the

closing panel would at least counter-act and preferably prevent goods from falling out of the opening. In the actuated position of the first bottom panel, the closing panel is moved upwards such that it is displaced alongside the inside surface of the first side wall panel. This results in that the opening is at least partly exposed such that the opening allows goods to be removed from the package. Thus, the closing panel blocks goods when the package is not used and allows removal of goods when the closing panel is actuated, and thereby the risk of spilling goods is minimized. The actuated position also provides an easy way to remove goods from the package.

[0013] The aperture allows goods to reach the opening by providing a way through the first bottom panel and pass the closing panel, such that it ends up in a space between the first bottom panel and the second bottom panel, and between the first side wall panel and the closing panel. When the first bottom panel is actuated, goods at the aperture will fall through the aperture and be possible to remove from the package. As the aperture is located at a distance from the second side wall panel, the aperture will be lifted when the first bottom panel is actuated. Thereby, goods will not continue to fall out of the aperture and towards the opening. Thus, only goods located at the aperture at the start of the displacement towards the actuated position are able to reach the opening, goods not located at the aperture will remain safely in the package. This facilitates a controlled removal of a limited number of goods at a time.

[0014] The first bottom panel is displaceable between the non-actuated position where it acts as one of the bottom panels and the actuated position where it separates goods originally positioned above the aperture from the rest of the goods.

[0015] The non-actuated position may be described as a resting position of the package, which is the natural, as in when the blank is erected and filled with goods and in which position the filled package is stored.

[0016] When the blank is folded into the package, the second bottom panel is positioned underneath the first bottom panel such that the first bottom panel ends up on the inside of the package. Thereby goods inside the package are allowed to be in contact with a portion of the second bottom panel directly through the aperture in the first bottom panel.

[0017] When the blank is initially folded into a package there may be an opening and/or there may be a portion of the blank being configured to be removed to form said opening, preferably through tear-lines allowing the portion to be easily removed. The portion may be designed to be fully removed or to be hinged to a side allowing the portion to be folded away from the opening during use and folded back in front of the opening when the package is not used.

[0018] It should be noted that the direction referred as transversally extending sides of the first and second side wall panel will result in a height of the package when it is erected from the blank.

[0019] The blank is preferably made of a paper-based material, e.g., a material based on paper or paperboard. Paper-based material may provide a lightweight package. Paper-based material may be produced in an environmentally friendly manner and may be recycled in a simple manner. Paper-based material may provide a blank that is easy to transport and handle before the blank is formed to the package. It may be noted that the blank may be made of other materials. It may be noted that the blank as a whole may be made of paper-based material. It may be noted that the blank need not to be made of the same material through-out. The blank may be made of a paper-based material coated or laminated with a polymer-based coating, such as a thermoplastic material, on one or both sides thereof. Such coating may be heat-sealable and/or provide a desired tightness, i.e., barrier properties, such as being waterproof, water resistant, grease proof, grease resistant, food safe, etc.

[0020] With foldably connected is herein meant that the two panels are connected to each other and that the connection is preferably provided with a fold line between the two panels such that the blank is weakened at this line in the sense of facilitating a folding manoeuvre when folding the package. The fold lines may e.g., be a so-called crease line, a perforation, or a partial cut-line, depending upon the kind of paper-based material from which the blank is cut.

[0021] The closing panel is foldably connected to the first bottom panel such that it extends alongside the inside surface of the first side wall panel when the blank is erected into the package. Thereby, the closing panel partly provides an extra wall section at the first side wall of the package. It may be noted that it is preferred that the closing panel extends an upward distance past the opening also when the first bottom panel is in the non-actuated positions such that the closing panel may slide upwardly alongside the inside surface of the first side wall without risking getting caught on an upper edge of the opening.

[0022] The second bottom panel may be provided with an actuation opening, or a foldable actuation flap, allowing the first bottom panel to be manoeuvred towards the actuated position.

[0023] By providing an actuation opening to the second bottom panel the user is allowed to push directly on the first bottom panel, which may facilitate the movement of the first bottom panel and the closing panel between the non-actuated position and the actuated position. In other words, the actuation opening allows the user to actuate only the first bottom panel and the closing panel without necessarily displacing the second bottom panel.

[0024] A shortest distance between on one hand the actuation opening or actuation flap, and on the other hand the first side wall panel, may be smaller than half a distance between the first and second side wall panels when the blank is folded into said package.

[0025] By positioning the actuation opening at a shortest distance that is less than half the distance, it results in that the actuation opening is positioned closer to the

first side wall panel than the second side wall panel when the blank is folded into the package. Thus, the actuation opening will be closer to the first side wall panel, which results in that the first bottom panel can be pushed at a part that is closer to the first side wall panel. By pushing the first bottom panel in such way, it is facilitated to give the closing panel a comparably large upwardly displacement along the inside surface of the first side wall panel. Thereby, a comparably large part of the opening may be exposed in the actuated position.

[0026] The aperture in the first bottom panel may be located at a longitudinally extending edge portion being located opposite to the second side wall panel.

[0027] By locating the aperture opposite to the second side wall panel it will be positioned adjacent to the opening when the blank is folded to the package. This ensures an efficient operation when removing goods from the package. It also facilitates separation between the items to be removed from the package from the items intended to be left inside the package since the first bottom panel will, when moved towards the actuated position, be angled upwardly such that the portion close to the first side wall will be at a greater height than the portion close to the second side wall and thereby any items not positioned above the aperture will by gravity fall downwardly and away from the aperture such that only the items originally positioned above the aperture will remain on the inner surface of the second bottom panel underneath the aperture.

[0028] The longitudinally extending edge portion may be located directly at the folding line between the first bottom panel and the closing panel or the longitudinally extending edge portion may be located such that there is an edge of material along the extension of the first bottom panel between the longitudinally extending edge portion and the closing panel.

[0029] The distance between the aperture and the second side wall panel may be at least half of the distance between the first and second side wall panels when the blank is folded into said package.

[0030] With the distance being at least half of the distance, the position of the aperture is further defined such that the aperture is located closer to the first side wall panel and thereby a controlled or selective removal of an intended number of items of the goods is facilitated.

[0031] The opening may be located at a bottom edge portion of the first side wall panel. Thereby, the opening will be located at the bottom of the package when folded from the blank. By locating the opening at the bottom, the necessary movement to remove goods from the package may be reduced. Thus, the removal of goods from the package is further facilitated.

[0032] The bottom edge portion may be located directly at the folding line between the first side wall panel and the second bottom panel, or the bottom edge portion may be located such that there is an edge of material extending along the first side wall between the bottom edge portion and the second bottom panel. Directly at the folding line will facilitate removal of the goods from the package, and provision of an edge may be used to provide an improved control of the removal of the goods from the package.

[0033] The opening may be at an end portion of the first side wall panel as seen along a longitudinal direction.

[0034] By positioning the opening at the end portion, the movement required to remove goods from the package may be further facilitated. With the opening being positioned at the end portion, goods may be removed by actuating the first bottom panel and thereby also the closing panel and tilting the package towards the opening.

[0035] The end portion may be located adjacent to one of the transversally extending sides of the first side wall panel.

[0036] The blank may further comprise a third bottom panel and a fourth bottom panel foldably connected to a respective longitudinal extending side of respective one of the two end panels.

[0037] With the third and fourth bottom panel, the stability of the bottom of the package may be further increased. By including the third and fourth bottom panel also the stability of the two end panels may be further increased and thus the stability of full package may be further increased.

[0038] The third bottom panel is preferably configured to be attached to the second bottom panel and the fourth panel is preferably configured to be attached to the first bottom panel via a respective, diagonally foldable connection panel, thereby preferably forming an inwardly collapsible self-erecting bottom.

[0039] The provision of an inwardly collapsible self-erecting bottom allows the package to be pre-assembled and the bottom can be folded inwardly when the package is in a collapsed position. Allowing the package to be collapsed flat increases the space-efficiency when the package is unused and is in a collapsed position compared to leaving the package in an erected position. Furthermore, with a pre-assembled bottom the user may save time during packaging process.

[0040] The side and end wall panels form a set of main panels which are, as seen along the longitudinal direction, arranged in the order of; one of the two end wall panels, the first side wall panel, the other end wall panel, and the second side wall panel, or any cyclic permutation thereof.

[0041] In other words, which of the side and end wall panels that forms the outer panels is irrelevant as long as the described order of panels are used when producing the package. In other word, it is irrelevant where the cut for the side and end wall panels are. Thus, the flexibility of design for the blank may be increased.

[0042] The blank may further comprise an attachment flap being foldably connected to a first outer, transversally extending side of the set of main panels and being configured to be connected to a second, opposite the first, outer, transversally extending side of the set of main panels such that a closed loop of side and end wall panels

is formed.

[0043] The attachment flap allows the blank to be pre-assembled by connecting the attachment flap to the other free end with adhesive or other suitable means. Thereby, the packages may be transported in a pre-assembled state which is time-efficient when packaging the packages with goods.

[0044] It should be noted that the attachment flap may be foldable connected to any of the set of main panels depending on which order these are arranged and where the cut is. As an example, the attachment flap may be foldably connected to a transversally extending side of the second side panel, opposite of the end wall panel. Thereafter, the attachment flap may be configured to be connected to the transversally extending side of the end wall panel.

[0045] The blank may further comprise one or more, preferably a plurality of, top panels configured to form a top of the package, preferably a closed top.

[0046] The provision of top panels may be advantageous as it may be used to prevent goods from spilling out through the top of the package. There may be a top panel foldably connected to each of the set of main panels.

[0047] According to a second aspect of the present disclosure there is provided a method for selectively allowing goods inside a package to be removed from the package, wherein the package is folded from a blank according to the first aspect.

[0048] The method comprises:

moving the first bottom panel upwardly from the non-actuated position to the actuated position such that the closing panel is moved upwardly alongside the inside surface of the first side wall panel, thereby leaving the opening at least partly exposed and thereby allowing goods inside the package to be removed from the package through the opening, and
moving the first bottom panel downwardly from the actuated position to the non-actuated position such that the closing panel is moved downwardly alongside the inside surface of the first side wall panel, thereby at least partly covering the opening and thereby blocking goods inside the package from being removed from the package through the opening.

[0049] Moving the first bottom panel downwardly may be performed by releasing the first bottom panel and allowing it to move downwardly due to gravity and/or due to remaining spring effect in the fold line.

[0050] The advantages of the various features have been discussed above with reference to the blank and those advantages are equally applicable with reference to the above method according to the second aspect. Also, the various variants discussed with reference to the blank are equally applicable to the above method according to the second aspect.

[0051] According to a third aspect of the present disclosure there is provided a method of providing a package configured to selectively allowing goods inside a package to be removed from the package. The method comprises:

providing blank according to the first aspect,
optionally pre-assembling the blank into a collapsed package,
providing a package by folding the blank into a package or raising the optionally pre-assembled, collapsed package,
filling goods inside the package and closing the package,
transporting the filled package to a site of use,
optionally removing the optional portion configured to be removed from said opening in the first side wall panel, and
moving the first bottom panel upwardly and downwardly as defined in in the second aspect to selectively allow goods inside a package to be removed from, and be retained in, respectively, the package.

[0052] It may be noted that since the goods inside the package may be removed through the opening, it is possible to use a top that the user of the package typically does not open and therefore the top of the package may remain closed from the point in time where the goods was filled into the package until the package is recycled. However, the top may also be designed such that the user may easily open it e.g., in case the user wants to remove all or a large fraction of the goods at a single occasion or re-filling the package with goods. Such an easily openable top is preferably reclosable such that the intended functionality of facilitating selective removal of goods is resumed.

[0053] The pre-assembling step may, but need not, be performed at a location being distinctly separate from the location where the collapsed package is raised and filled, since the collapsed package is fairly space efficient during transport.

[0054] The advantages of the various features have been discussed above with reference to the blank and those advantages are equally applicable with reference to the above method according to the third aspect. Also, the various variants discussed with reference to the blank are equally applicable to the above method according to the third aspect.

[0055] The invention may also in short be referred to as relating to a blank configured to be erected to form a package, the blank comprising a first side wall panel having an opening, two end wall panels, a second side wall panel, a first bottom panel having an aperture, a closing panel, and a second bottom panel, wherein the first bottom panel is configured to be displaced between a non-actuated and an actuated position, wherein in the non-actuated position the closing panel is configured to cover the opening in the first side wall panel, and wherein in the actuated position, the upward folding of the first bottom panel provides an upward displacement of the clos-

ing panel, thereby leaving the opening at least partly exposed allowing goods to be removed through the opening.

[0056] It may be noted that the use of first, second, third, fourth, fifth, etc. are mainly to be seen as labels facilitating reading and that it does not necessarily mean that there need to be all the intervening numbers of portions or panels present. However, to facilitate reading, we have consistently used the numbering first, second, third, fourth, etc., as labels, and in a sense based on an embodiment including all conceivable portions.

[0057] Further scope of applicability of the present disclosure will become apparent from the detailed description given below. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the disclosure, are given by way of illustration and that various changes and modifications within the scope of the disclosure will become apparent to those skilled in the art from this detailed description.

[0058] Hence, it is to be understood that the present disclosure is not limited only to the particular parts of the blank, the package, or the steps of the methods described since the actual implementation of such device and method may vary and further parts or steps may be provided.

Brief description of the drawings

[0059] The invention will by way of example be described in more detail with reference to the appended schematic drawings, which shows a presently preferred embodiment of the invention.

Fig. 1 discloses a blank for forming a package.
Fig. 2A discloses a bottom view of a closed package.
Fig. 2B discloses a side view of a closed package.
Fig. 3A-3C discloses a sequence for transferring a package between a non-actuated state and an actuated state.
Fig. 4 discloses a method for removing goods from the package.
Fig. 5 discloses a method of providing a package.

Detailed description of preferred embodiments

[0060] Fig. 1 shows a blank 1. The blank 1 is configured to be erected into a package 200 as shown in Figs. 2A-3C. The blank 1 is designed to allow the removal of a controlled amount of goods from an opening 12, which will be further described with reference to the figures.

[0061] Turning to Fig. 1, an embodiment of the blank 1 will be described. The blank 1 comprises a first side wall panel 10 having a portion 11 configured to be removed to form the opening 12. The purpose of the opening 12 will be further described in connection to Fig. 3A-3C. Alternatively, the portion 11 may be omitted and the opening 12 may be present in the blank 1 already before the blank 1 is folded to form the package 2.

[0062] Two end wall panels 20, 21 are oppositely arranged at and foldably connected to a respective one of two oppositely arranged transversally extending sides 13, 14 of the first side wall panel 10. A second side wall panel 30 is foldably connected to one of the two end wall panels 20 at a transversally extending side 22 thereof being opposite to the first side wall panel 10. The side and end wall panels 10, 30, 20, 21 form a set of main panels which are, as seen along the longitudinal direction L, arranged in the order of; one of the two end wall panels 21, the first side wall panel 10, the other end wall panel 20, and the second side wall panel 30. However, it should be noted that anyone of the side and end wall panels 10, 30, 20, 21 may be located as an outer panel as long as the above indicated order is followed.

[0063] With foldably connected is meant that the two panels are connected to each other such that they may be folded relative to each other. Preferably the connection is provided with a fold line between the two panels such that the blank 1 preferably is weakened at or along this line, thereby facilitating a folding manoeuvre when forming the package 200.

[0064] The blank 1 further comprises an attachment flap or attachment panel 93. The attachment flap 93 is foldably connected to a transversally extending side 34 of the second side panel 30, opposite of the end wall panel 20. The attachment flap 93 is configured to be connected to the transversally extending side 26 of the end wall panel 21, such that, when erecting the blank 1 into the package 200, a closed loop of side and end wall panels is formed. The attachment flap 93 may be connected to the end wall panel 21 with an adhesive. However, it should be noted that the attachment flap 93 may be foldable connected to any of the set of main panels 10, 30, 20, 21 depending on where the cut is.

[0065] The blank 1 further comprises a plurality of top panels 96. In this embodiment, four top panels 96 are configured to form a top 296 of the package 200, preferably a closed top. The top panels 96 prevent goods from spilling out through the top of the package 200. The blank 1 and package 200 may be designed such that when the package 200 is filled with goods, the top 296 of the package may be closed and need not be opened until the package 200 is emptied and is ready to be recycled. The top 296 may e.g., alternatively, or complementary thereto be designed such that it may be opened and be securely closed again to allow a user to remove several items from the package 200 at the same time or re-filling the package with goods.

[0066] The blank 1 further comprises a first bottom panel 40 and a second bottom panel 60. The first bottom panel 40 is foldably connected to the second side wall panel 30 along a longitudinally extending side 32 of the second side wall panel 30. The first bottom panel 40 has an aperture 44 formed in the first bottom panel 40 at a distance from the second side wall panel 30. The aperture 44 will be further described together with the opening 12 of the first side wall panel 10 in connection to Fig. 3A-

3C. The second bottom panel 60 is foldably connected to the first side wall panel 10 along a longitudinally extending side 17 of the first side wall panel 10. The second bottom panel 60 is configured to be positioned underneath the first bottom panel 40 when the blank 1 is erected to form the package 200. The second bottom panel 60 is configured to form a bottom of the package 200 at least partly underneath the aperture 44. The second bottom panel 60 is in the disclosed embodiment provided with an actuation opening 62 allowing direct contact with the first bottom panel 40 when the blank 1 is folded into the package 200. The actuation opening 62 is e.g., formed by cutting away a piece of material in the second bottom panel 60. Alternatively, the piece of material in the bottom panel 60 is not completely cut away such that there instead is formed an actuation flap. The actuation opening 62 or actuation flap is located at a shortest distance d1 between on one hand the actuation opening 62 or actuation flap, and on the other hand the first side wall panel 10, is smaller than half a distance d2 between the first 10 and second 30 side wall panels when the blank 1 is folded into said package 200. This results in that the actuation opening 62 or actuation flap is positioned closer to the first side wall panel 10 than the second side wall panel 30 when the blank 1 is folded into the package 200.

[0067] The blank 1 further comprises a third bottom panel 70 and a fourth bottom panel 80. The third bottom panel 70 is foldably connected to a longitudinal extending side 23 of one of the two end panels 20. The fourth bottom panel 80 is foldably connected to a longitudinal extending side 24 of the other one of the two end panels 21. The third bottom panel 70 is configured to be attached to the second bottom panel 60 and the fourth panel 80 is configured to be attached to the first bottom panel 40 via a respective, diagonally foldable connection panel 90, 91, thereby forming an inwardly collapsible self-erecting bottom. The inwardly collapsible self-erecting bottom allows the package 200 to be pre-assembled and the bottom can be folded inwardly when the package 200 is in a collapsed position.

[0068] The blank 1 further comprises a closing panel 50 that is foldably connected to the first bottom panel 40 along a longitudinally extending side 42 thereof, the longitudinally extending side 42 being opposite to the second side wall panel 30. The closing panel 50 is configured to extend alongside an inside surface 16 of the first side wall panel 10, such that it at least partly covers the opening 12 of the first side wall panel 10, when the blank 1 is folded into the package 200.

[0069] The aperture 44 of the first bottom panel 40 and the opening 12 of the first side wall panel 10, as well as the positions of these will be disclosed in more details in the following.

[0070] The aperture 44 is located at a longitudinally extending edge portion 46 that is located opposite to the second side wall panel 30. The longitudinally extending edge portion 46 is in the disclosed embodiment located directly at a folding line between the first bottom panel 40 and the closing panel 50 such that when the blank 1 is folded into the package 200 the aperture 44 is located directly in connection with the first side wall panel 10. The aperture 44 is furthermore located at a distance d3 from the second side wall panel 30 that is at least half of the distance d2 between the first 10 and second 30 side wall panels when the blank 1 is folded into said package 200. This results in that the aperture is located closer to the closing panel 50 than the second side wall panel 30.

[0071] The opening 12 is located at a bottom edge portion 18 of the first side wall panel 10. The bottom edge portion 18 is located next to the second bottom panel 60 and located at an end portion 19 of the first bottom panel 10 as seen along a longitudinal direction L. In this embodiment, the opening 12 is located in the corner between the second bottom panel 60 and the end wall panel 21, at the folding lines. This results in that the opening 12 is located at the bottom of the package 200 when erected from the blank 1. The positions of the opening 12 and the aperture 44 will be adjacent to each other when the blank 1 is folded into the package 200.

[0072] Turning to Fig. 2A and Fig. 2B, the package 200 erected from the blank 1 is disclosed. Fig. 2A illustrates the package 200 with the first side wall panel 10 up, to illustrate how the bottom 260 is assembled. The first bottom panel 40 is arranged underneath the second bottom panel 60 such that the actuation opening 62 is covered by the first bottom panel 40 and such that the aperture 44 is covered by the second bottom panel 60. Thereby, a full or closed bottom 260 is achieved. The connection panels 90, 91 are connected to a respective panel of the first 40 and the second 60 bottom panels, locking the bottom 260 together with adhesives. As can be seen in the drawings, the actuation opening 62 allows direct contact with the first bottom panel 40.

[0073] The opening 12 is covered by the portion 11 waiting to be opened for allowing access to goods inside the package 200. As can be seen in Fig. 2B, the opening will be in a bottom corner of the first side wall panel 40, as the package is in a natural position. As the top panels 96 form the top 296 of the package, the only access to the goods when the package 200 is filled and closed is through the opening 12. The top 296 of the package 200 may be provided with a tear structure 98 that allows the top 296 to be opened. The tear structure 98 has weakened sections configured to be tear lines that facilitates opening up the top 296 of the package 200.

[0074] The sequence described in Fig. 3A to 3C, where goods is removed from the package will be disclosed in more detail in the following. In Fig. 3A, the portion 11 is opened such that the opening 12 is uncovered. The portion 11 is hingedly attached to the first side wall panel 10, allowing the portion 11 to be closed again. However, as can be seen the opening 12 is still covered by the closing panel 50 such that the closing panel 50 thereby blocks goods from being removed from the opening 12 of the first side wall panel 10.

[0075] Turning to Fig. 3B, the user can displace the

first bottom panel 40 between a non-actuated position and an actuated position. In Fig. 3A and 3B, the first bottom panel 40 is in the non-actuated position, while in Fig. 3C the first bottom panel 40 is in the actuated position. In the non-actuated position, the closing panel 50 is configured to at least partly cover the opening 12 in the first side wall panel 10 and thereby block goods inside the package 200 from being removed from the package 200 through the opening 12. By applying pressure through the actuation opening 62 towards the first bottom panel 40, the first bottom panel 40 is displaced between the non-actuated position and the actuated position. The first bottom panel 40 is folded upwardly into an interior of the package 200 when folded towards the actuated position compared to being in the non-actuated position. In Fig. 3C, the first bottom panel 40 can be seen in the actuated position, where the upward folding of the first bottom panel 40 relative to the non-actuated position provides an upward displacement of the closing panel 50 alongside the inside surface 16 of the first side wall panel 10, thereby leaving the opening 12 at least partly exposed and exposed to an extent being greater than when the first bottom panel 40 is in the non-actuated position and thereby allow goods inside the package 200 to be removed from the package 200 through the opening 12. In the enlarged view, the joint displacement of the first bottom panel 40 and the closing panel 50 is illustrated. As can be seen by the illustration the opening 12 is exposed when the closing panel 50 is displaced.

[0076] Some of the details of the package 200 that facilitates the operation described above will be described in the following. The actuation opening 62 allows the user to actuate only the first bottom panel 40 and the closing panel 50 without necessarily displacing the second bottom panel 60. When the actuation opening 62 is located at the shortest distance d1 that is smaller than half the distance d2 between the first 10 and second 30 side wall panels, the actuation opening 62 will be closer to the first side wall panel 10. This results in that the first bottom panel 40 can be pushed at a part that is closer to the first side wall panel 10. By pushing the first bottom panel 40 in such way, the closing panel 50 has a comparably large upwardly displacement along the inside surface 16 of the first side wall panel 10. Thereby, a comparably large part of the opening 12 will be at least partly covered in the non-actuated position and a comparably large part of the opening 12 will be at least partly exposed in the actuated position.

[0077] The aperture 44 allows goods to reach the opening 12 by providing a way through the first bottom panel 40, such that it ends up in a space between the first bottom panel 40 and the second bottom panel 60. When the first bottom panel 40 is actuated, goods at the aperture 44 will fall through the aperture 44 and be possible to remove from the package 200 since the movement of the first bottom panel 40 also moves the closing panel 50 upwardly and away from the opening 12. As the aperture 44 is located at a distance from the second side wall panel 30, the aperture 44 will be lifted when the first bottom panel 40 is actuated and the bottom panel 40 will lean downwardly towards the second side wall panel 30. Thereby, goods will not continue to fall out of the aperture 44 and towards the opening 12. Thus, only goods located at the aperture 44 at the start of the displacement towards the actuated position have a tendency to reach the opening 12, whereas goods not located at the aperture 44 will have a tendency to remain safely in the package 200. This provides a design of the package 200 which results in that a limited number of goods can be removed at a time.

[0078] When the pressure exerted by the user on the first bottom panel 40 is released, the first bottom panel will return to the non-actuated position due to the force of gravity. Thereby, the closing panel 50 will once again at least partly cover the opening 12 and provide a block such that the goods inside the package 200 does not fall out through the opening 12.

[0079] Turning to Fig. 4, a method for selectively allowing foods inside the package 200 to be remove from the package 200, when the package 200 is folded from the blank 1, is illustrated. The method 100 comprises moving 110 the first bottom panel 40 upwardly from the non-actuated position to the actuated position such that the closing panel 50 is moved upwardly alongside the inside surface 16 of the first side wall panel 10, thereby leaving the opening 12 at least partly exposed and thereby allowing goods inside the package 200 to be removed from the package 200 through the opening 12.

[0080] The method 100 further comprises moving 120 the first bottom panel 40 downwardly from the actuated position to the non-actuated position such that the closing panel 50 is moved downwardly alongside the inside surface 16 of the first side wall panel 10, thereby at least partly covering the opening 12 and thereby blocking goods inside the package 200 from being removed from the package 200 through the opening 12.

[0081] Turning to Fig. 5, a method 300 of providing a package 200 configured to selectively allowing goods inside a package 200 to be removed from the package 200 is illustrated. The method comprises

providing 310 a blank 1, optionally, pre-assembling 320 the blank 1 into a collapsed package 200, and
providing 330 a package 200 by folding the blank 1 into a package 200 or raising the optionally pre-assembled, collapsed package 200.

[0082] The method further comprises filling 340 goods inside the package 200 and closing the package 200.

[0083] The method further comprises transporting 350 the filled package 200 to a site of use.

[0084] The method further comprises, optionally removing 360 the optional portion 11 configured to be removed from said opening 12 in the first side wall panel 10, and

moving 370 the first bottom panel 10 upwardly and down-

wardly as discussed above to selectively allow goods inside a package 200 to be removed from, and be retained in, respectively, the package 200.

[0085] The pre-assembling step may, but need not, be performed at a location being distinctly separate from the location where the collapsed package is raised and filled, since the collapsed package is fairly space efficient during transport.

[0086] It is contemplated that there are numerous modifications of the embodiments described herein, which are still within the scope of the invention as defined by the appended claims.

[0087] Additionally, variations to the disclosed embodiments can be understood and effected by the skilled person in practicing the claimed invention, from a study of the drawings, the disclosure, and the appended claims. In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measured cannot be used to advantage.

Claims

1. A blank (1) configured to be erected to form a package (200), the blank comprising, as seen in a flat-laid state of the blank (1);

a first side wall panel (10) having an opening (12), or a portion (11) configured to be removed to form said opening (12),
two end wall panels (20, 21) being oppositely arranged at and foldably connected to a respective one of two oppositely arranged transversally extending sides (13, 14) of the first side wall panel (10),
a second side wall panel (30) being foldably connected to one of the two end wall panels (20, 21) at a transversally extending side (22) thereof being opposite to the first side wall panel (10),
a first bottom panel (40) being foldably connected to the second side wall panel (30) along a longitudinally extending side (32) of the second side wall panel (30), the first bottom panel (40) having an aperture (44) formed in the first bottom panel (40) at a distance from the second side wall panel (30),
a closing panel (50) being foldably connected to the first bottom panel (40) along a longitudinally extending side (42) thereof being opposite to the second side wall panel (30), the closing panel (50) being configured to extend alongside an inside surface (16) of the first side wall panel (10), and
a second bottom panel (60) foldably connected to the first side wall panel (10) along a longitudinally extending side (17) of the first side wall panel (10), the second bottom panel (60) being configured to be positioned underneath the first bottom panel (40) when the blank (1) is erected to form the package (200) and at least partly form a bottom of the package (200) underneath the aperture (44) in the first bottom panel (40),
wherein the first bottom panel (40) is configured to be folded relative to the second side wall panel (30) between a non-actuated position and an actuated position, wherein the first bottom panel (40) is folded upwardly into an interior of the package (200) when folded towards the actuated position compared to being in the non-actuated position,
wherein in the non-actuated position the closing panel (50) is configured to at least partly cover the opening (12) in the first side wall panel (10) and thereby block goods inside the package (200) from being removed from the package (200) through the opening (12),
wherein, in the actuated position, the upward folding of the first bottom panel (40) relative to the non-actuated position provides an upward displacement of the closing panel (50) alongside the inside surface (16) of the first side wall panel (10), thereby leaving the opening (12) at least partly exposed and exposed to an extent being greater than when the first bottom panel (40) is in the non-actuated position and thereby allow goods inside the package (200) to be removed from the package (200) through the opening (12).

2. The blank (1) according to claim 1, wherein the second bottom panel (60) is provided with an actuation opening (62), or a foldable actuation flap, allowing the first bottom panel (40) to be manoeuvred towards the actuated position.

3. The blank (1) according to claim 2, wherein a shortest distance (d1) between on one hand the actuation opening (62) or actuation flap, and on the other hand the first side wall panel (10), is smaller than half a distance (d2) between the first (10) and second (30) side wall panels when the blank (1) is folded into said package (200).

4. The blank (1) according to any one of the preceding claims, wherein the aperture (44) in the first bottom panel (40) is located at a longitudinally extending edge portion (46) being located opposite to the second side wall panel (30).

5. The blank (1) according to any one of the preceding claims, wherein the distance (d3) between the aperture (44) and the second side wall panel (30) is at least half of half a distance (d2) between the first (10)

and second (30) side wall panels when the blank (1) is folded into said package (200).

6. The blank (1) according to any one of the preceding claims, wherein the opening (12) is located at a bottom edge portion (18) of the first side wall panel (10).

7. The blank (1) according to any one of the preceding claims, wherein the opening (12) is at an end portion (19) of the first side wall panel (10) as seen along a longitudinal direction (L).

8. The blank (1) according to any one of the preceding claims, the blank (1) further comprising a third bottom panel (70) and a fourth bottom panel (80) foldably connected to a respective longitudinal extending side (23, 24) of respective one of the two end panels (20, 21).

9. The blank (1) according to claim 8, wherein the third bottom panel (70) is configured to be attached to the second bottom panel (60) and the fourth panel (80) is configured to be attached to the first bottom panel (40) via a respective, diagonally foldable connection panel (90, 91), thereby forming an inwardly collapsible self-erecting bottom.

10. The blank (1) according to any one of the preceding claims,
wherein the side and end wall panels (10, 30, 20, 21) form a set of main panels which are, as seen along the longitudinal direction (L), arranged in the order of; one of the two end wall panels (21), the first side wall panel (10), the other end wall panel (20), and the second side wall panel (30), or any cyclic permutation thereof.

11. The blank (1) according to claim 10, the blank (1) further comprising an attachment flap (93) being foldably connected to a first outer, transversally extending side (34) of the set of main panels (10, 30, 20, 21) and being configured to be connected to a second, opposite the first, outer, transversally extending side (26) of the set of main panels (10, 30, 20, 21) such that a closed loop of side and end wall panels is formed.

12. The blank (1) according to any one of the preceding claims, the blank (1) further comprising one or more, preferably a plurality of, top panels (96) configured to form a top (296) of the package (200), preferably a closed top.

13. A method (100) for selectively allowing goods inside a package (200) to be removed from the package (200), the package (200) being folded from a blank (1) according to any one of claims 1-12, the method (100) comprising;
moving (110) the first bottom panel (40) upwardly from the non-actuated position to the actuated position such that the closing panel (50) is moved upwardly alongside the inside surface (16) of the first side wall panel (10), thereby leaving the opening (12) at least partly exposed and thereby allowing goods inside the package (200) to be removed from the package (200) through the opening (12), and
moving (120) the first bottom panel (40) downwardly from the actuated position to the non-actuated position such that the closing panel (50) is moved downwardly alongside the inside surface (16) of the first side wall panel (10), thereby at least partly covering the opening (12) and thereby blocking goods inside the package (200) from being removed from the package (200) through the opening (12).

14. A method (300) of providing a package (200) configured to selectively allowing goods inside a package (200) to be removed from the package (200), the method comprising:
providing (310) a blank (1) according to any one of claims 1-12,
optionally pre-assembling (320) the blank (1) into a collapsed package (200),
providing (330) a package (200) by folding the blank (1) into a package (200) or raising the optionally pre-assembled, collapsed package (200),
filling (340) goods inside the package (200) and closing the package (200),
transporting (350) the filled package (200) to a site of use,
optionally removing (360) the optional portion (11) configured to be removed from said opening (12) in the first side wall panel (10), and
moving (370) the first bottom panel (10) upwardly and downwardly as defined in claim 13 to selectively allow goods inside a package (200) to be removed from, and be retained in, respectively, the package (200).

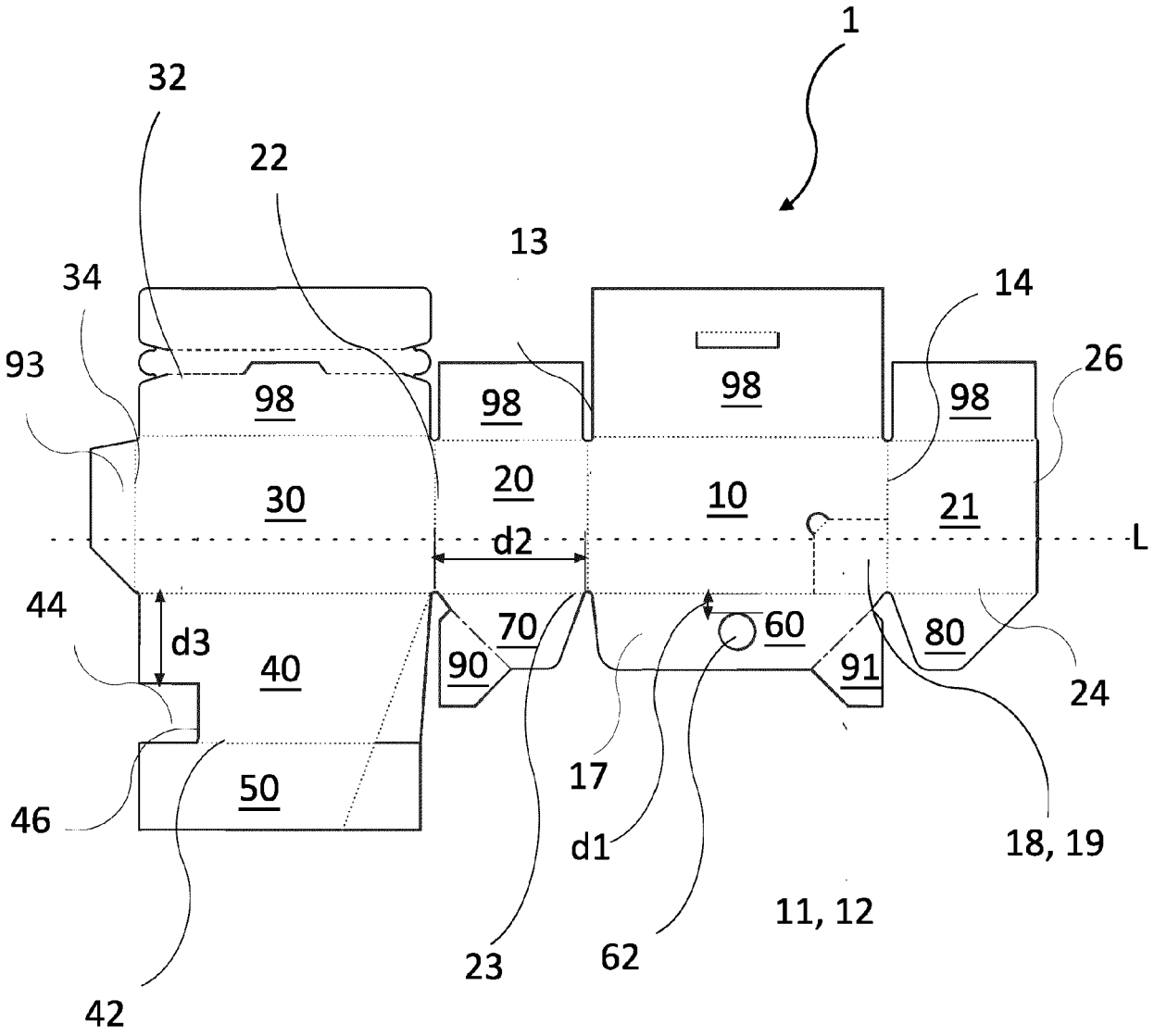
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Fig. 1

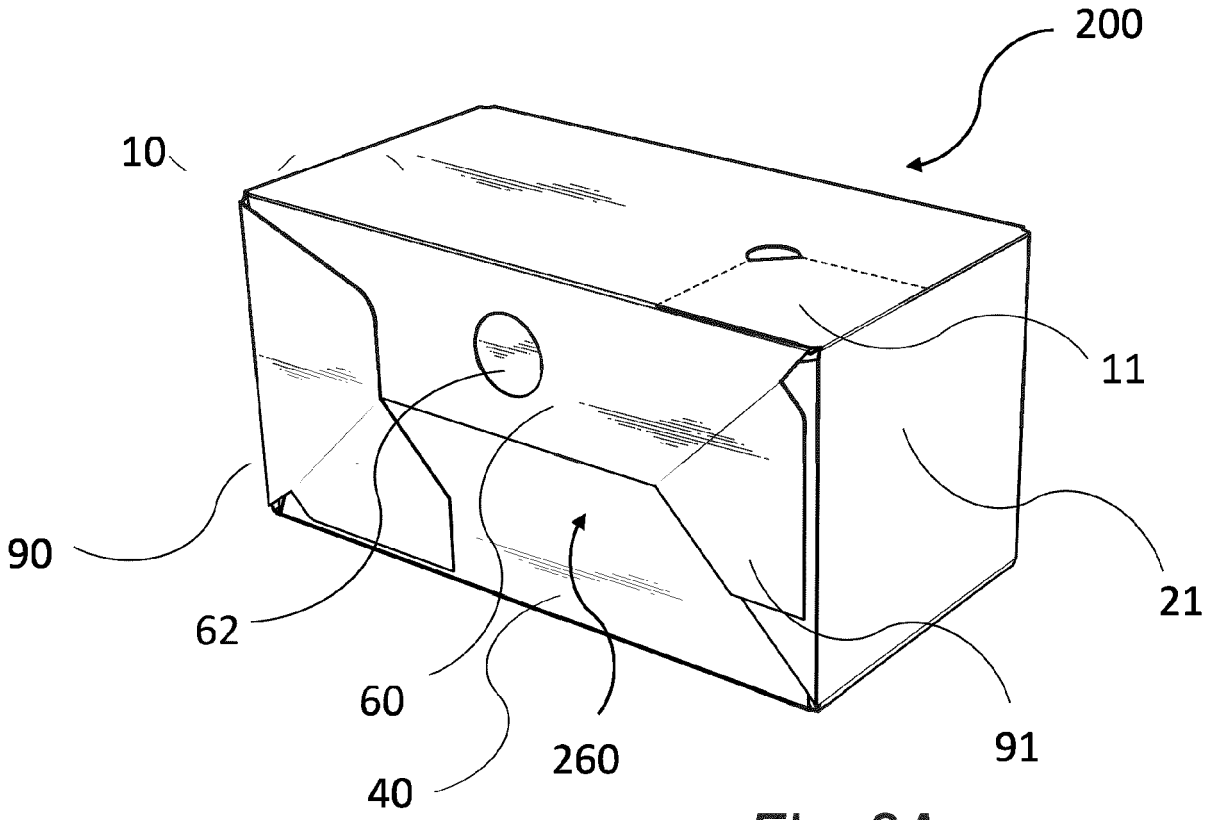

Fig. 2A

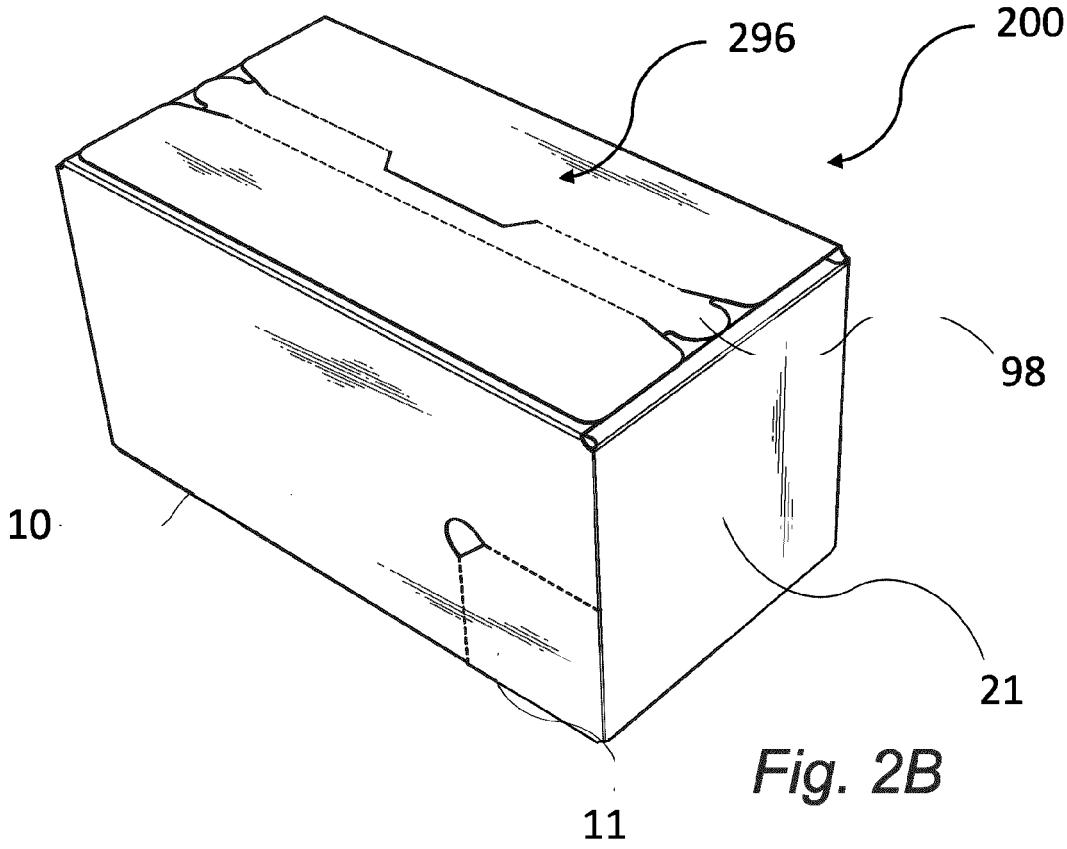

Fig. 2B

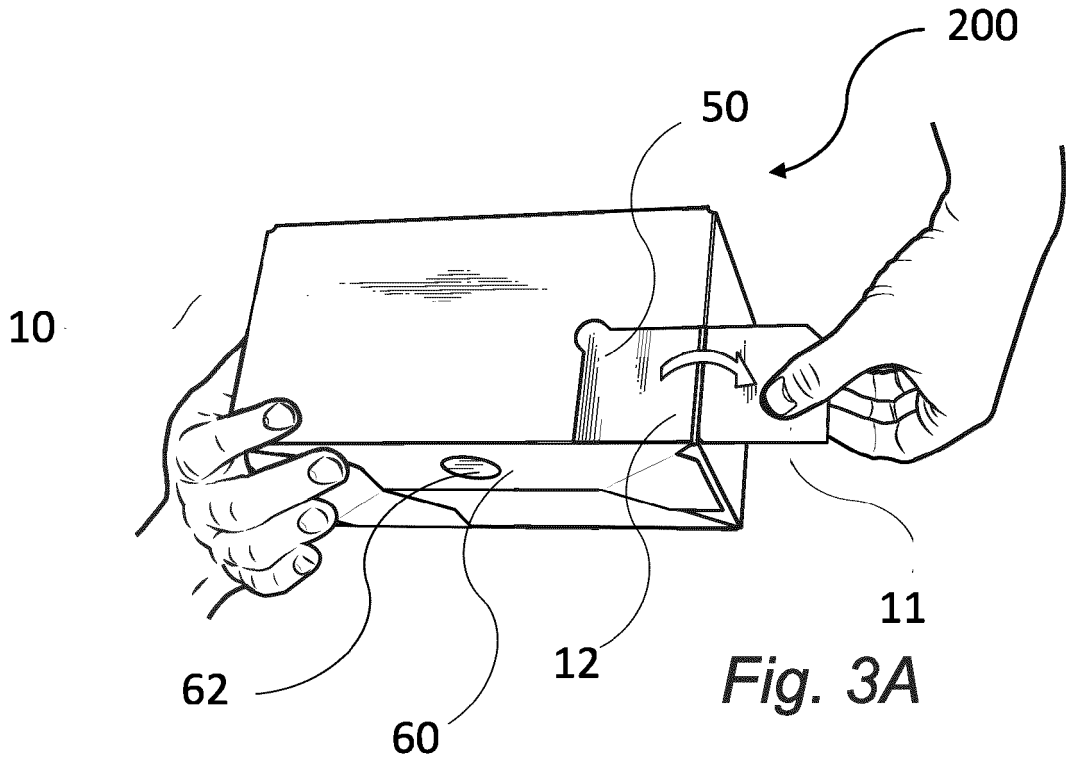

Fig. 3A

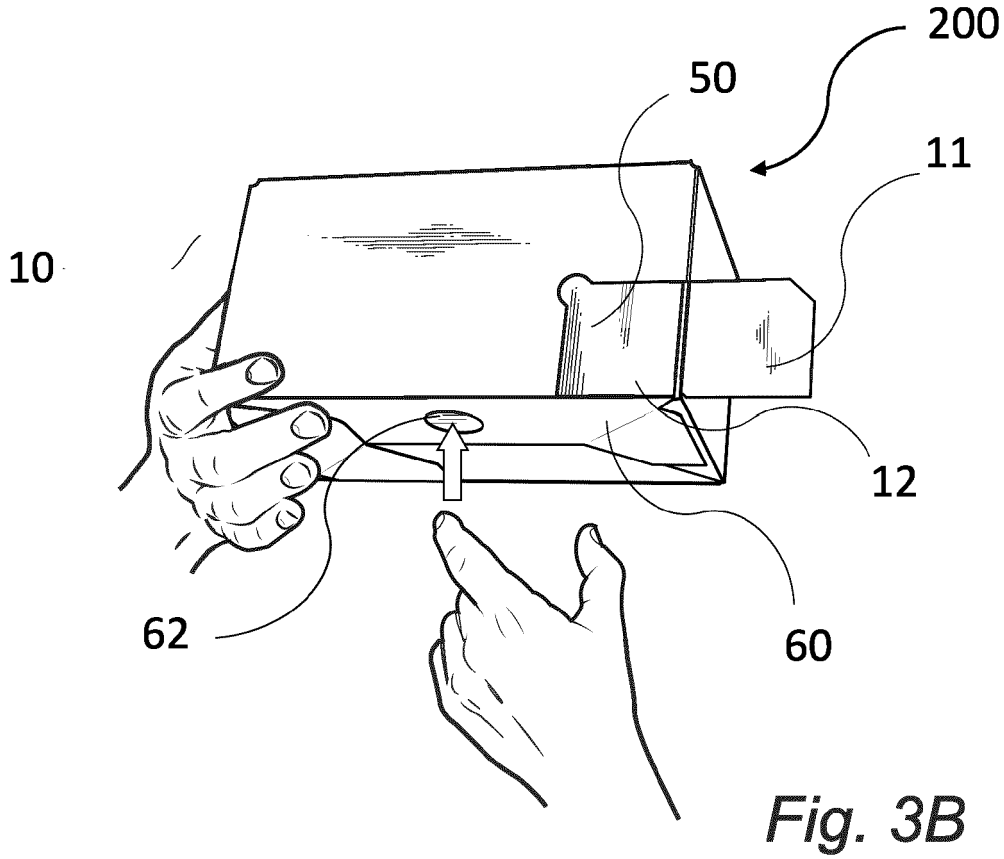

Fig. 3B

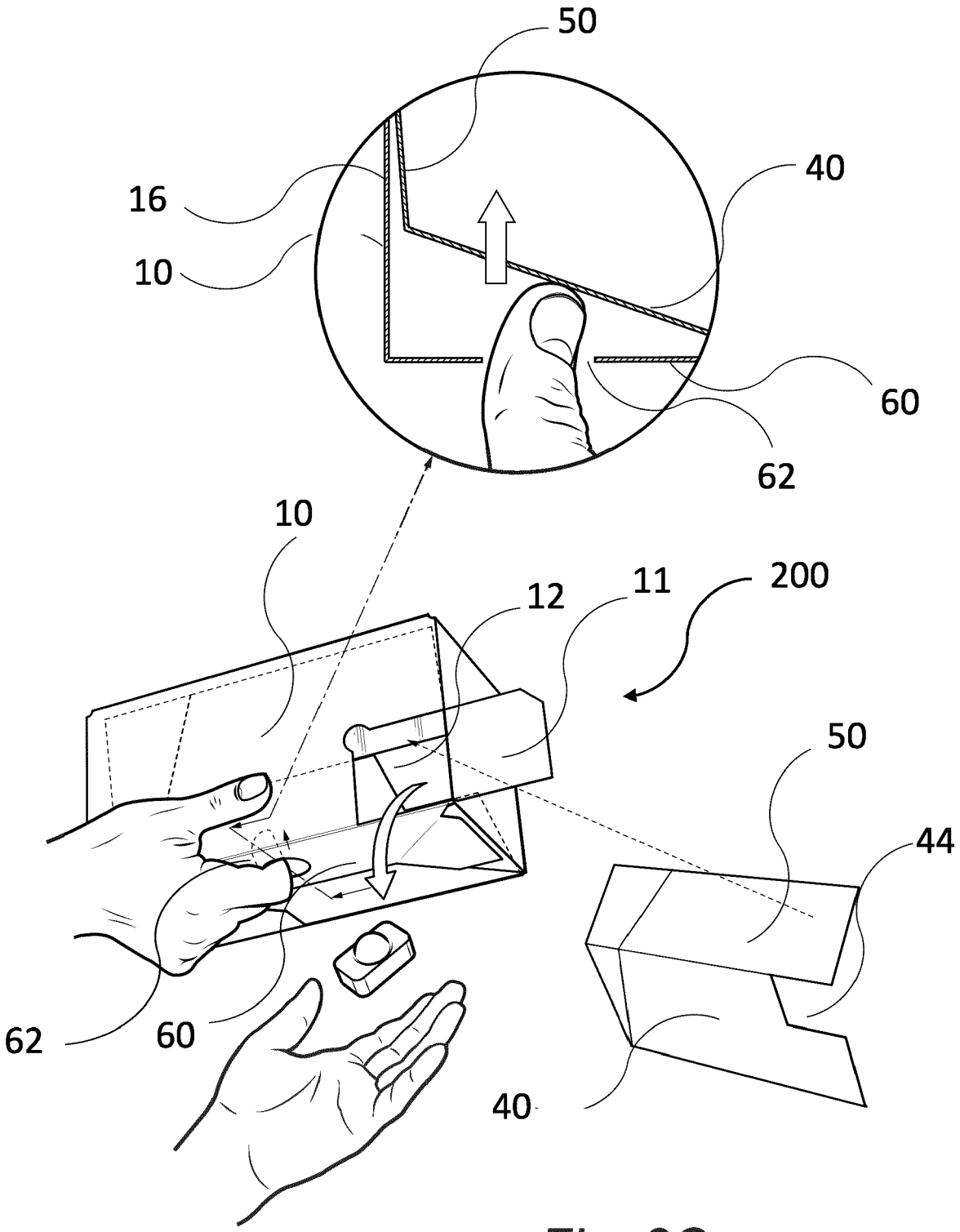

Fig. 3C

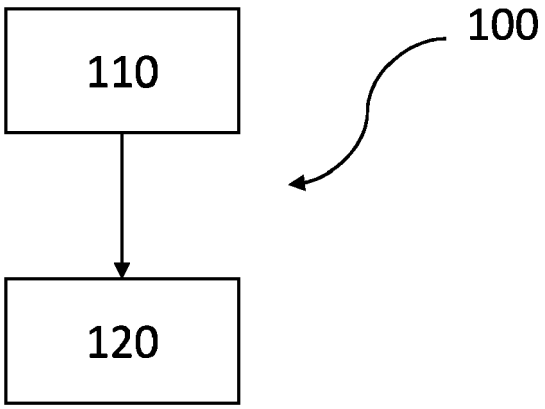

Fig. 4

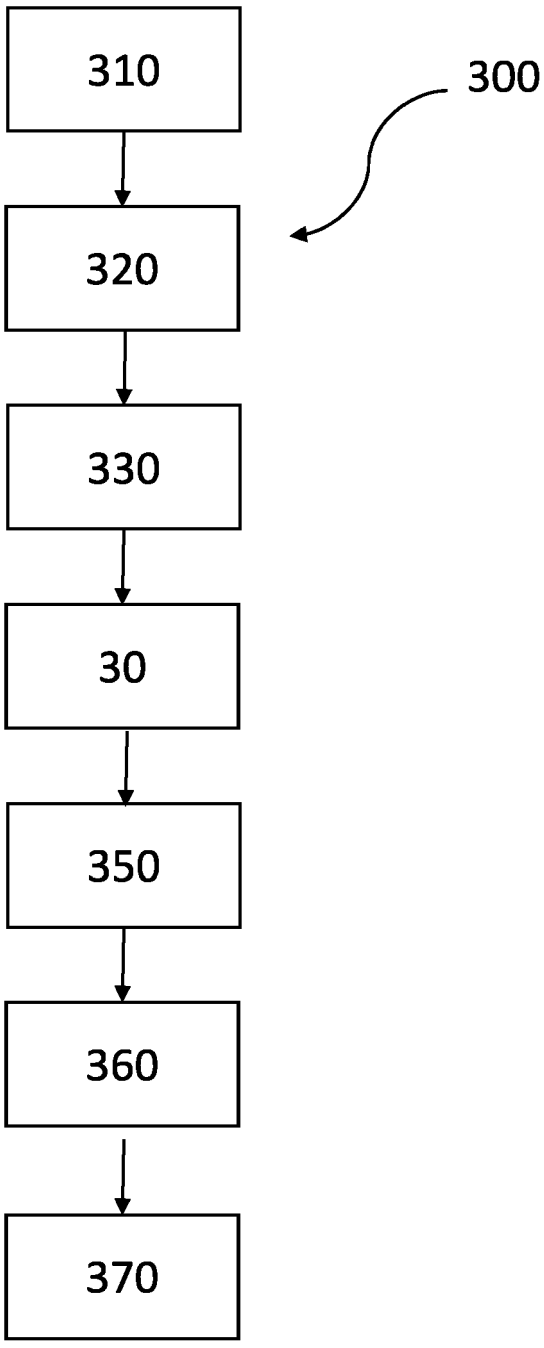

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 23 46 1549

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	DE 201 02 797 U1 (ITALIAANDER GISELA [DE]; ITALIAANDER KURT [DE]) 20 September 2001 (2001-09-20) * figures 1-10 *	1-14	
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B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	23 August 2023	Jervelund, Niels

CATEGORY OF CITED DOCUMENTS

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23-08-2023

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