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(71) Applicant: **Stora Enso Oyj**
00101 Helsinki (FI)

(72) Inventor: **Grendas, Mariusz**
91-141 ód (PL)

(74) Representative: **Patpol Kancelaria Patentowa Sp. z o.o.**
Nowoursynowska 162J
02-776 Warszawa (PL)

(54) **A BLANK CONFIGURED TO BE FOLDED INTO AN ENVELOPE**

(57) The disclosure relates to a blank (10) configured to be erected into an envelope (20). The blank (10) comprises a first and a second main panel (A1, A2) configured to form a respective first and a second main wall (1,2), a set (A3) of bottom panels (A3-1,A3-2) configured to form a bottom wall (3), and a set of four side panels (A6, A7, A8, A9) configured to form side walls (6,7) of the envelop (20), wherein each side wall panel (A6, A7, A8, A9) comprises protruding corner portions (A61, A71, A81, A91), and wherein when the bottom panels (A3-1,A3-2) are folded relative to each other and the first and the second main panels (A1,A2) are folded relative to the respective bottom panel (A3-1,A3-2), the protruding corner portions (A61, A71, A81, A91) extend longitudinally (L) from the respective side wall panel (A6,A7,A8,A9) past the bottom wall (3) the envelope (20).

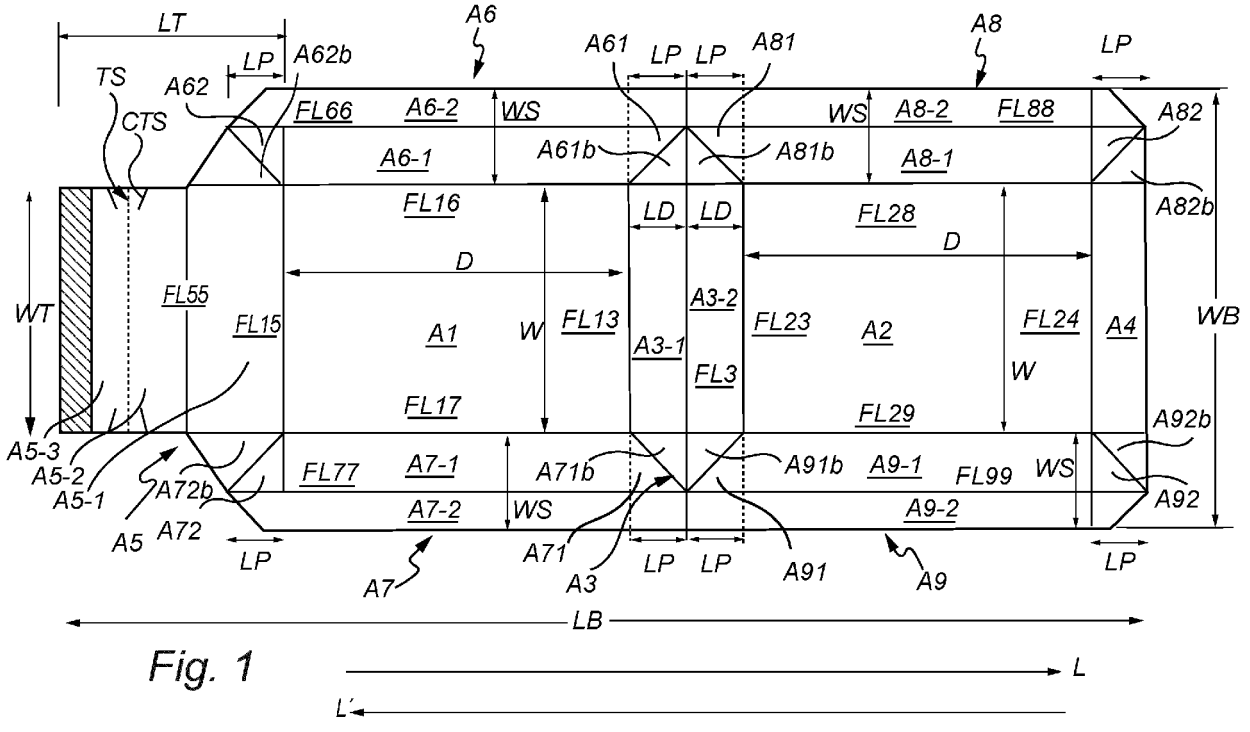

Fig. 1

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Description

Field of invention

[0001] The invention relates to a blank configured to be folded into an envelope. The envelope is especially designed to provide an improved protection of products inside the envelope during transport and handling.

Technical Background

[0002] Nowadays many products, such as e-commerce products, are often delivered in packages and envelopes. Examples of such e-commerce products, delivered in envelopes, are books and electronic products. Some products may be delicate and/or fragile and hence may need to be well protected, as handling during transportation and delivery may otherwise cause defects, such as functional defects or aesthetically un-acceptable defects, to such products.

[0003] Thus, there is a need to provide transportation solution that provides an efficient protection and hence addresses the abovementioned problems.

Summary of invention

[0004] It is an object of the invention to provide a blank configured to be folded into an envelope addressing at least some of the abovementioned problems. In particular, it is an object of the invention to provide a blank, configured to be folded into an envelope, that facilitates provision of an efficient protection to the products, delivered inside such envelope, against any damages e.g. during delivery.

[0005] This object has been achieved by a blank configured to be folded into an envelope. The blank comprises a first and a second main panel configured to form a respective first main wall and a second main wall of the envelope. Each of the first and the second main panel comprises a first and a second oppositely arranged transversally extending edge and a first and a second oppositely arranged longitudinally extending edge. The blank further comprises a set of bottom panels configured to form a bottom wall of the envelope. The bottom panels are arranged one after the other and between the first and the second main panels, as seen along a longitudinal direction and in flat-laid state of the blank. Each respective bottom panel is on one side foldably connected to the first of the two transversely extending edges of the respective first and the second main panel and on the other side to the other bottom panel along a transversely extending internal bottom fold line. The blank further comprises a set of four side panels configured to form side walls of the envelop. Each side panel is arranged at respective longitudinally extending edge of the respective first and the second main panel. Each side wall panel comprises protruding corner portions protruding longitudinally past the respective first transversally extending edges of the first and the second main panels. When the bottom panels are folded relative to each other about the internal bottom fold line and the first and the second main panels are folded relative to the respective bottom panel, the protruding corner portions extend longitudinally from the respective side wall panel past the bottom wall the envelope.

[0006] Thereby, the protruding corner portions of the side panels provide an additional protection to the bottom corners of the envelope, hence protecting a product inside the envelope against any damage, e.g. otherwise caused by the envelope being an unintentionally dropped. The inventive concept provides a simple, user-friendly and economical manner of providing such protection to the bottom corners of the envelope, as no additional separate piece of protective material is required. By "bottom corners" is hereby meant the corner portions near the bottom wall of the envelope at each transverse side of the envelope. These two corner portions are in a sense defined by the bottom panels, the main panels and the respective side panels. In addition, the inventive concept provides a simple and easy-to-fold blank that may conveniently be erected into an envelope shaped package. The blank may be a single-piece which may be cut out from a two-dimensional material. Thereby, the blank may be provided in a simple, cost-effective and user-friendly manner.

[0007] By "extend longitudinally" is hereby meant extending along a direction at least having a major component along, more preferably being essentially parallel to, and most preferably being parallel to the longitudinally extending edges of the first and the second main panel. By "extend transversally" is hereby meant extending along a direction at least having a major component along, more preferably being essentially parallel to, and most preferably being parallel to the transversely extending edges of the first and the second main panel. It may also be noted that the longitudinally extending edges of the first and the second main panel at least have a major component along, more preferably being essentially parallel to, and most preferably being parallel to a longitudinal direction. It may also be noted that the transversally extending edges of the first and the second main panel at least have a major component along, more preferably being essentially parallel to, and most preferably being parallel to a transversal direction extending orthogonally to the longitudinal direction.

[0008] The blank may further comprise a top panel configured to form a top wall of the envelope. The top panel may be foldably connected to the second transversely extending edge of the first main panel and may extend longitudinally therefrom, as seen in a flat-laid state of the blank. Hence, the top wall may close the envelope and may hence even more protect the product, inside the envelope. The top panel preferably forms part of the single-piece blank.

[0009] The top panel is configured to be folded relative to the first main panel about the second transversely ex-

tending edge of the first main panel and to extend longitudinally along the second main wall of the envelope. In other words, when the bottom panels are folded relative to each other about the internal bottom fold line, the main panels are folded relative to the respective bottom panel and the top panel is folded relative to the first main panel about the second transversely extending edge of the first main panel, at least a portion of the top panel may extend longitudinally along the second main wall of the envelope. Thereby, the top panel may conveniently be folded relative to the first main panel about the second transversely extending edge. The portion of the top panel extending longitudinally along the second main wall of the envelope may provide extra protection to the second main wall of the envelope by providing an additional layer on the second main wall of the envelope. Moreover, the portion of the top panel extending longitudinally along the second main wall of the envelope may be used to attach an attachment portion of said portion of the top panel extending longitudinally along the second main wall to the second main wall, such as be adhesively attaching the attachment portion to an outside surface of the second main wall.

[0010] Each side panel may further comprise protruding corner portions protruding longitudinally past the respective second transversally extending edges of the first and the second panels. When the top panel is folded relative to the first main panel about the second transversely extending edge of the first main panel, the protruding corner portions may extend longitudinally from the respective side wall panel past the top wall the envelope. In other words, when the bottom panels are folded relative to each other about the internal bottom fold line, the first and second panels are folded relative to the respective bottom panel and the top panel is folded relative to the first main panel about the second transversely extending edge of the first main panel, the protruding corner portions may extend longitudinally from the respective side wall panel past the top wall the envelope. Thereby the single-piece blank may comprise protruding corner portions also close to the top wall. Thereby the protruding corner portions of the side panels may provide further additional protection to goods inside the envelope also at the upper corners of the envelope. This in turn provides a simple, user-friendly and economical manner of providing such additional protection to the upper corners of the envelope. By "upper corners" is hereby meant the corners near the top wall of the envelope.

[0011] When the bottom panels are folded relative to each other about the internal bottom fold line and the first and the second main panels are folded relative to the respective bottom panel, the side panels of the first main panel may be arranged to be connected to the side panels of the second main panel, thereby forming side walls of the envelope. Thereby, the side walls of the envelope may protect the product, delivered inside the envelope, from opposite sides. In addition, the side walls of the envelope may be formed in a simple, user friendly and convenient manner.

[0012] A portion of the side panels of the first main panel may be attached to a portion of the side panels of the second main panel. Thereby, by attaching the portion of the side panels of the first main panel to the of the side panels of the second main panel, the side walls of the envelope may be closed. Thereby, the product, delivered inside the envelope, may not drop out of the envelope from the opposite sides of the envelope. Preferably an inside surface of the portion of the side panels of the first main panel is attached to an inside surface of the portion of the side panels of the second main panel such that an outwardly extending fin is formed. Hence, the portion of the side panels may provide additional protection to opposite sides of the envelope e.g. against any damages.

[0013] The top wall may be configured to be attached, preferably adhesively attached, to the second main wall of the envelope. Thereby, by attaching the top wall to the second main wall of the envelop, the top wall of the envelope may be closed in a simple, user-friendly and convenient manner. Thereby, the product, delivered inside the envelope, may not drop out of the envelope from the upper portion of the envelope i.e. the portion of the envelope near the top wall. The adhesive attachment may e.g. be provided by the provision of a glue, such as a hot melt glue, or by an adhesive strip. The adhesive strip may have two adhesive sides or may have one adhesive side and may be glued to the second main wall or to the top panel. The adhesive strip may be provided with a non-sticky protective layer which is configured to be removed just before the envelope is about to be closed. The adhesive strip may be positioned at the intended position during manufacture of the blank or just before the envelope is about to be closed. In one preferred embodiment, the adhesive strip is a double-sided adhesive tape being pre-attached to the blank during manufacture of the blank using a first adhesive side and with the second adhesive side being covered by a non-sticky layer which is to be removed just before the envelope is about to be closed.

[0014] The portions of the side panels of the first main panel and the side panels of the second main panel may be adhesively attached to each other. Thereby, the top wall and/or the portions of the side panels may be attached in a simple, user-friendly and cost-effective manner. This may easily be done by one person i.e. no extra support or help is required. The adhesive attachment may e.g. be provided by the provision of a glue, such as a hot melt glue, or by an adhesive strip. The adhesive strip may have two adhesive sides or may have one adhesive side and may be glued to the second main wall or to the top panel. The adhesive strip may be provided with a non-sticky protective layer which is configured to be removed just before the envelope is about to be closed. The adhesive strip may be positioned at the intended position during manufacture of the blank or just before the envelope is about to be closed. In one preferred embodiment, the adhesive strip is a double-sided

adhesive tape being pre-attached to the blank during manufacture of the blank using a first adhesive side and with the second adhesive side being covered by a non-sticky layer which is to be removed just before the envelope is about to be closed.

[0015] A width of the side panels along the transversally extending edges of the first and the second main panels may be within a range of 20% to 50% of a width of the first and the second main panels. This facilitates provision of a fair volume to material ratio in combination with an efficient protection of the goods inside.

[0016] A length of the protruding corner portions, along the longitudinally extending edges of the first and the second main panel may be within a range of 10% to 30% of a length of the first and the second main panels. This facilitates provision of a fair volume to material ratio in combination with an efficient protection of the goods inside.

[0017] A width of the top panel along the second transversely extending edge of the first main panel may be within a range of 30% to 100% of the width of the first and the second main panels. This facilitates provision of a fair volume to material ratio in combination with an efficient protection of the goods inside.

[0018] A length of the top panel along the first and the second longitudinally extending edge of the first and the second main panel may be within a range of 30% to 60% of the length of the first and the second main panels. This facilitates provision of a fair volume to material ratio in combination with an efficient protection of the goods inside.

[0019] A length of the bottom panels along the longitudinally extending edges of the first and the second main panels may be within a range of 10% to 30% of the length of the first and the second main panels. This facilitates provision of a fair volume to material ratio in combination with an efficient protection of the goods inside. The length of the bottom panels along the longitudinally extending edges of the first and the second main panels may be the same as the length of the protruding corner portions, along the longitudinally extending edges of the first and the second main panel.

[0020] The internal bottom fold line may bisect the bottom wall of the envelope. Thereby, the set of bottom panels of the blank may have the same length along the longitudinally extending edges of the first and the second main panels.

[0021] The blank may be formed of a paper-based material. The paper-based material may provide desired robustness and durability. The paper-based material may easily be folded and cut. Some examples of paper-based materials are paperboard, cardboard or corrugated cardboard.

[0022] The invention may also in short be said to relate to a blank configured to be erected into an envelope. The blank comprises a first and a second main panel configured to form a respective first and a second main wall, a set of bottom panels configured to form a bottom wall, and a set of four side panels configured to form side walls of the envelop, wherein each side wall panel comprises protruding corner portions, and wherein when the bottom panels are folded relative to each other and the first and the second main panels are folded relative to the respective bottom panel, the protruding corner portions extend longitudinally from the respective side wall panel past the bottom wall the envelope.

[0023] Generally, all terms used in the claims are to be interpreted according to their ordinary meaning in the technical field, unless explicitly defined otherwise herein. All references to "a/an/the [element, device, component, means, step, etc]" are to be interpreted openly as referring to at least one instance of said element, device, component, means, step, etc., unless explicitly stated otherwise. The steps of any method disclosed herein do not have to be performed in the exact order disclosed, unless explicitly stated.

Brief description of the drawings

[0024] 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.

Figure 1 illustrates a plan view of a blank intended to be folded and erected into an envelope.

Figure 2 illustrates a perspective view of an envelope in a flat-laid state prior to inserting a product into the envelope.

Figure 3 illustrates a perspective view of a closed envelope, subsequent to the envelope being erected and subsequent to a product being inserted into the envelope.

Figures 4-5 illustrate two respective perspective views of the envelope, shown in figure 3, while being opened.

Detailed description of preferred embodiments

[0025] Figure 1 shows a blank 10 configured to be folded into an envelope 20. The blank 10 is preferably a single-piece blank 10. The blank 10 may be cut out from a two-dimensional material. However, it should be noted that the blank 10 need not be a single-piece blank 10. The blank 10 may be formed of a paper-based material, such as paperboard, cardboard or corrugated cardboard. The blank 10 may be formed of a different material which is sufficiently rigid but still foldable. A length LB of the blank 10, shown in figure 1, may be in a range of 10 to 70 cm. A width WB of the blank 10, shown in figure 1, may be in a range of 10 to 50 cm. Still in connection with figure 1, the blank 10 comprises a first and a second main panel A1, A2. The first and the second main panel A1, A2 are configured to form a respective first main wall 1 and a second main wall 2 of the envelope 20. Each of the first and the second main panel A1, A2 of the blank

10 comprises a first and a second oppositely arranged transversally extending edge FL15, FL13, FL23, FL24. The transversally extending edge FL15, FL13, FL23, FL24 of the first and the second main panel A1, A2 extend along a width WB of the blank 10. Each of the first and the second main panel A1, A2 of the blank 10 comprises a first and a second oppositely arranged longitudinally extending edge FL16, FL17, FL28, FL29. The longitudinally extending edge FL16, FL17, FL28, FL29 of the first and the second main panel A1, A2 extend along a length LB of the blank 10. A dimension of the first and the second main panel A1, A2 along the longitudinally extending edges FL16, FL17, FL28, FL29 of the first and the second main panel A1, A2 may be in a range of 30% to 40% of the length LB of the blank 10. In other words, a length D of the first and the second main panel A1, A2 may be in a range of 30% to 40% of the length LB of the blank 10. A dimension of the first and the second main panel A1, A2 along the transversally extending edges FL13, FL15, FL23, FL24 of the first and the second main panel A1, A2 may be in a range of 60% to 90% of the width WB of the blank 10. In other words, a width W of the first and the second main panel A1, A2 may be in a range of 60% to 90% of the width WB of the blank 10. The first and the second main panel A1, A2 may be identical i.e. may have the same shape and size. The first and the second main panel A1, A2 need not be identical. For instance, the second main panel A2 may have slightly shorter length D than the first main panel A1.

[0026] Still in connection with figure 1, the blank 10 further comprises a set A3 of bottom panels A3-1, A3-2. The set A3 of bottom panels A3-1, A3-2 are configured to form a bottom wall 3 of the envelope 20. Figure 1 shows that the bottom panels A3-1, A3-2 are arranged one after the other and between the first and the second main panels A1, A2 as seen along a longitudinal direction L and as seen in a flat-laid state of the blank. Figure 1 further shows that each respective bottom panel A3-1, A3-2 is on one side foldably connected to the first of the two transversely extending edges FL13, FL23 of the respective first and the second main panel A1, A2. Figure 1 further shows that each respective bottom panel A3-1, A3-2 is on the other side foldably connected to the other bottom panel A3-1, A3-2 along a transversely extending internal bottom fold line FL3. The internal bottom fold line FL3, shown in figure 1, bisects the set A3 of bottom panels A3-1, A3-2, such that the bottom panels A3-1, A3.2 have identical lengths LD. The internal bottom fold line FL3 need not bisect the set A3 of bottom panels A3-1, A3-2. A length LD of the bottom panels A3-1, A3-2 along the longitudinally extending edges FL16, FL17, FL28, FL29 of the first and the second main panels A1, A2 may be within a range of 10% to 30% of the length D of the first and the second main panels A1, A2. For instance for an envelope configured to be used, when the product to be delivered by the envelope is a thick book, the length LD of the bottom panels A3-1, A3-2 along the longitudinally extending edges FL16, FL17, FL28, FL29 of the first and the second main panels A1, A2 may be about 30% of the length D of the first and the second main panels A1, A2.

[0027] Still in connection with figure 1, the blank 10 further comprises a top panel A5. The top panel A5 may be configured to form a top wall 5 of the envelope 20. Figure 1 shows that the top panel A5 is foldably connected to the second transversely extending edge FL15 of the first main panel A1. The top panel A5 may extend longitudinally L' from the transversely extending edge FL15 of the first main panel A1 as seen in a flat-laid state of the blank 1. Figure 1 shows that the longitudinal direction L' extends opposite to the longitudinal direction L. The top panel A5 may comprise a set of sub top panels A5. The set of sub top panels A5 may be arranged one after the other as seen along the direction L' extending opposite the longitudinal direction L. The set of sub top panels A5 may comprise a set of fold lines arranged in between each two sub top panels A5 of the set of sub top panels A5. The fold lines, arranged in between each two sub top panels A5, may extend in parallel with the transversally extending edge FL15 of the first main panel A1. The top panel A5 may further comprise a tear strip TS. The tear strip TS may extend in parallel with the transversely extending edge FL15 of the first main panel A1. The tear strip TS may be arranged at a distance from a transversally extending outer edge of the top panel A5. The distance may be in a range of 1 to 10 cm. The tear strip TS may be arranged at a distance from the transversally extending edge FL15 of the first main panel A1 such that the tear strip TS is positioned alongside the second main panel A2, and preferably at distance down on to the second main panel A2. The distance between the top wall 5 and the tear strip TS may be 1 to 20 cm. The top panel A5 may comprise a set of tear strips TS. The set of tear strips TS may be arranged at different distances from the transversally extending outer edge of the top panel A5. As shown in figure 1, the top panel A5 of the blank 10 may comprise perforations or cut lines CTS near the tear strip TS. The perforations or cut lines CTS may be formed in a manner which per se is known in the art. The perforations or cut lines CTS are provided to facilitate tearing of the tear strip TS.

[0028] Figure1 shows that the top panel A5 comprises three sub top panels A5-1, A5-2 and A5-3. The three sub top panels A5-1, A5-2 and A5-3, shown in figure 1, are arranged one after the other. The three sub top panels A5-1, A5-2 and A5-3, shown in figure 1, extend longitudinally L' from the second transversely extending edge FL15 of the first main panel A1. The first A5-1 of the three sub top panels A5-1, A5-2 and A5-3, shown in figure 1, is foldably connected to the second transversely extending edge FL15 of the first main panel A1. Figure 1 further shows that the second sub top panel A5-2 is, on one side, foldably connected to the first sub top panel A5-1 along a fold line FL55. Figure 1 shows that the fold line FL55 extend in parallel with the second transversely extending edge FL15 of the first main panel A1. Figure 1 further shows that the second sub top panel A5-2 is, on the other

side, connected to the third sub top panel A5-3 along a tear strip TS.

[0029] Still in connection with figure 1, a length LT of the top panel A5 along the first and the second longitudinally extending edge FL16, FL17, FL28, FL29 of the first and the second main panel A1, A2 may be within a range of 30% to 60% of the length D of the first and the second main panels A1, A2. For instance, when the product, to be delivered by the envelope 20, is a thick book, the length LT of the top panel A5 may be 60% of the length D of the first and the second main panels A1, A2. A width WT of the top panel A5 along the second transversely extending edge FL15 of the first main panel A1 may be within a range of 30% to 100% of the width W of the first and the second main panels A1, A2. The top panel A5 and/or the set of sub top panels A5 may have various shapes. The first sub top panel A5-1 may e.g. have a width being different from the width of the second and third sub top panels A5-2, A5-3. The second and third sub top panels A5-2, A5-3 may, but need not, have similar shapes. Figure 1 shows that the first sub top panel A5-1 has a truncated diamond shape. Figure 1 shows that the second and third sub top panels A5-2 and A5-3 have rectangular shapes. The sub top panels A5-1, A5-2, A5-3 may have other shapes. For instance, the second and third sub top panel A5-2 and A5-3 may have trapezoidal shapes. In the case of trapezoidal shapes, the top panel A5 or the sub top panels A5 may have a varying width along the second transversely extending edge FL15 of the first main panel A1. Such varying width of the top panel A5 or the sub top panels A5, along the second transversely extending edge FL15 of the first main panel A1, is preferably still within the range of 30% to 100% of the width W of the first and the second main panels A1, A2.

[0030] Still in connection with figure 1, the blank 10 may further comprise an additional panel A4. The additional panel A4 may be configured to form a protective inner layer of the top wall 5. Figure 1 shows that the additional panel A4 is on one side foldably connected to the second transversely extending edge FL24 of the second main panel A2. Figure 1 shows that the additional panel A4 extends longitudinally L from the second transversely extending edge FL24 of the second main panel A2. The additional panel A4 may have the same width as the top panel A5. Preferably, the length of the additional panel A4 as seen along the longitudinal direction L is slightly shorter than the length of the top wall 5. Figure 1 shows that the additional panel A4 has the same width as the sub top panel A5-1 along the second transversely extending edge FL24 of the second main panel A2.

[0031] Still in connection with figure 1, the blank 10 further comprises a set of four side panels A6, A7, A8, A9. The set of four side panels A6, A7, A8, A9 are configured to form side walls 6, 7 of the envelope 20. Figure 1 shows that each side panel A6, A7, A8, A9 is arranged at respective longitudinally extending edge FL16, FL17, FL28, FL29 of the respective first and the second main panel A1, A2. Each side panel A6, A7, A8, A9 may comprise a set of sub side panels. Each side panel A6, A7, A8, A9 need not comprise a set of sub side panels. Figure 1 shows that each side panel A6, A7, A8, A9 comprises two sub side panels i.e. an inner sub side panel and an outer sub side panel. Figure 1 shows that the side panel A6 comprises two sub side panels A6-1 and A6-2, wherein A6-1 is an inner sub side panel and A6-2 is an outer sub side panel. Figure 1 shows that the sub side panels A6-1 and A6-2 are arranged one after the other with the inner sub side panel A6-1 being foldably connected to the first longitudinally extending edge FL16 of the first main panel A1. Figure 1 further shows that the sub side panels A6-1 and A6-2 are foldably connected to each other along a longitudinally extending fold line FL66. Figure 1 shows that the side panel A7 comprises two sub side panels A7-1 and A7-2, wherein A7-1 is an inner sub side panel and A7-2 is an outer sub side panel. Figure 1 shows that the sub side panels A7-1 and A7-2 are arranged one after the other with the inner sub side panel A7-1 being foldably connected to the second longitudinally extending edge FL17 of the first main panel A1. Figure 1 further shows that the sub side panels A7-1 and A7-2 are foldably connected to each other along a longitudinally extending fold line FL77. Figure 1 shows that the side panel A8 comprises two sub side panels A8-1 and A8-2, wherein A8-1 is an inner sub side panel and A8-2 is an outer sub side panel. Figure 1 shows that the sub side panels A8-1 and A8-2 are arranged one after the other with the inner sub side panel A8-1 being foldably connected to the first longitudinally extending edge FL28 of the second main panel A2. Figure 1 further shows that the sub side panels A8-1 and A8-2 are foldably connected to each other along a longitudinally extending fold line FL88. Figure 1 shows that the side panel A9 comprises two sub side panels A9-1 and A9-2, wherein A9-1 is an inner sub side panel and A9-2 is an outer sub side panel. Figure 1 shows that the sub side panels A9-1 and A9-2 are arranged one after the other with the inner sub side panel A9-1 being foldably connected to the second longitudinally extending edge FL29 of the second main panel A2. Figure 1 further shows that the sub side panels A9-1 and A9-2 are foldably connected to each other along a longitudinally extending fold line FL99.

[0032] Still in connection with figure 1, a width WS of the side panels A6, A7, A8, A9 along the transversally extending edges FL13, FL15, FL23, FL24 of the first and the second main panels A1, A2 may be within a range of 20% to 50% of a width W of the first and the second main panels A1, A2. A width of the outer sub side panels A6-2, A7-2, A8-2, A9-2 along the transversally extending edges FL13, FL15, FL23, FL24 of the first and the second main panels A1, A2 may be in a range of 40% to 60% of the width WS of the side panels A6, A7, A8, A9. For instance, when the product, to be delivered by the envelope, is fragile, the width of the side panels A6, A7, A8, A9 may be 50% of the width W of the first and the second main panels A1, A2. In addition, the width of the outer

sub side panels A6-2, A7-2, A8-2, A9-2 of the side panels A6, A7, A8, A9 may be 60% the width WS of the side panels A6, A7, A8, A9.

[0033] Each side wall panel A6, A7, A8, A9 comprises protruding corner portions A61, A71, A81, A91. The protruding corner portions A61, A71, A81, A91 protrude longitudinally past the first transversally extending edges FL13, FL23 of the first and the second main panels A1, A2. Figure 1 further shows that each side panel A6, A7, A8, A9 further comprises protruding corner portions A62, A72, A82, A92. The protruding corner portions A62, A72, A82, A92 protrude longitudinally past the second transversally extending edges FL15, FL24 of the first and the second panels A1, A2. The protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 shown in figure 1 have a triangular shape. The protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 may have other shapes. Irrespectively of if the protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 are triangular or have any other shape, preferably, the protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 have a shape such that the length LP by which they protrude from the respective side panel A6, A7, A8, A9 along the longitudinal direction L increases with increasing distance from the main panels A1, A2 as seen along the transverse direction. A maximum length LP of the protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92, along the longitudinally extending edges FL16, FL17, FL28, FL29 of the first and the second main panel A1, A2 may be within a range of 10% to 30% of a length D of the first and the second main panels A1, A2. In the preferred embodiments with a protruding length LP increasing with increased transverse distance from the first and second main panels A1, A2 and as exemplified with the triangular corner portions A61, A62, A71, A72, A81, A82, A91, A92, the distance LP is positioned at the outer, as seen along the transverse direction, edge of the corner portions A61, A62, A71, A72, A81, A82, A91, A92. For instance, when the product, to be delivered by the envelope 20, is fragile, the length LP, also referred to as the outer length LP, of the protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 may be 30% of the length D of the first and the second main panels A1, A2. It may also be noted that the provision of protruding corner portions A61, A62, A71, A72, A81, A82, A91, A92 protruding longitudinally past the first and second transversally extending edges FL13, FL23, FL15, FL24, in combination with their shape with a protruding length LP increasing with increased transverse distance from the first and second main panels A1, A2, in a sense also defines connection panels A61b, A62b, A71b, A72b, A81b, A82b, A91b, A92b located between the protruding corner portions A61, A62, A71, A72, A81, A82, A1, A92 and the bottom panels A3-1, A3-2 respectively the top panel A5-1. As shown in figure 1, the connection panels A61 b, A62b, A71b, A72b, A81b, A82b, A91b, A92b have in the preferred embodiment a triangular shape. The provision of connection panels makes it possible to provide a closed envelope 20. It is conceivable to remove the material in the area such that there are no such connection panels. In such a case, it is still possible to provide the cushion effect achieved by the provision of the protruding corner portions A61, A62, A71, A72, A81, A82, A1, A92, but there is a risk that a small gap is formed in the corner formed by the bottom panel A3 and the side walls A6, A7, A8, A9 when the envelope 20 is erected to receive the goods.

[0034] Figure 2 shows a perspective view of an envelope 20, prior to inserting a product into the envelope 20. The envelope 20, shown in figure 2, is formed by folding the blank 10, shown in figure 1, into an envelope 20. It may be noted that the envelope 20 is in a flat-laid state. Figure 2 shows that the first and the second main panels A1, A2 are folded relative to the respective bottom panel A3-1, A3-2. Figure 2 shows that when first and the second main panels A1, A2 are folded relative to the respective bottom panel A3-1, A3-2, the side panels A6, A7 of the first main panel A1 are arranged on the side panels A8, A9 of the second main panel A2. Figure 2 shows that the first and the second main panels A1, A2 are folded relative to the internal bottom fold line FL3 of the bottom panel A3-1, A3-2 of the envelope 20. Figure 2 further shows that a portion of the side panels A6, A7 of a first main panel A1 is attached to a portion of the side panels A8, A9 of a second main panel A2. In other words, figure 2 shows that outer sub side panels A6-2, A7-2 of the first main panel A1 is attached to outer sub side panels A8-2, A9-2 of the second main panel A2. Figure 2 shows that the outer sub side panels A6-2, A7-2, A8-2, A9-2 of the envelope 20 protrude outwardly. The outer sub side panels A6-2, A7-2, A8-2, A9-2 may be adhesively attached to each other. For instance, the outer sub side panels A6-2, A7-2, A8-2, A9-2 may be attached by hot-melt glue or by double-sided tape. The outer sub side panels A6-2, A7-2, A8-2, A9-2 may be attached to each other in any other manner which per se is known in the art.

[0035] Figure 3 shows a perspective view of an envelope 20 in an erected state. The envelope 20, shown in figure 3, has been provided by erecting the envelope 20, shown in figure 2. Figure 3 shows that the bottom panels A3-1, A3-2 are being folded relative to each other about the internal bottom fold line FL3 from a flat-laid state where they almost abut each other inside to inside to an erected state where they almost extend in a common plane. Figure 3 further shows that the first and the second main panels A1, A2 are folded relative to the respective bottom panel A3-1, A3-2. As shown in figure 3, when the bottom panels A3-1, A3-2 are folded relative to each other about the internal bottom fold line FL3 and the first and the second main panels A1, A2 are folded relative to the respective bottom panel A3-1, A3-2, the protruding corner portions A61, A71, A81, A91 extend longitudinally L from the respective side wall panel A6, A7, A8, A9 past the bottom wall 3 the envelope 20.

[0036] Figure 3 further shows that the top panel A5 is folded relative to the first main panel A1 about the second

transversely extending edge FL15 of the first main panel A1. Figure 3 further shows that the sub top panel A5-1 is folded relative to first main panel A1 and about the second transversely extending edge FL15 of the first main panel A1. Figure 3 further shows that the sub top panels A5-2, A5-3 are folded relative to the sub top panel A5-1 and about the fold line FL55. The additional panel A4 may be folded relative to the second main panel A2 along the fold line FL24. The protective wall, formed by the additional panel A4, may be arranged under, or alternatively expressed inside, the sub top wall A5-1, formed by the sub top panel A5-1. The protective wall and the sub top wall A5-1 may jointly close an opening of the envelope 20. The protective wall and the sub top wall A5-1 need not completely close the opening of the envelope 20. It is preferred that the opening is at least closed to such an extent that goods is prevented from falling out of the envelope. In one embodiment, the opening is completely closed.

[0037] Still in connection with figure 3, when the top panel A5 is folded relative to the first main panel A1 about the second transversely extending edge FL15 of the first main panel A1, the top panel A5 may extend longitudinally L on or alongside the second main wall 2 of the envelope 20. Figure 3 shows how the sub top panels A5-1, A5-2 may extend longitudinally L on the second main wall 2 of the envelope 20. The top wall 5 of the envelope 20 may be attached to the second main wall 2 of the envelope 20. Figure 3 shows that the top wall 5 of the envelope 20 is attached to the second main wall 2 of the envelope 20. The top wall 5 of the envelope 20 may be adhesively attached, such as by hot-melt glue or by double-sided tape. The top panel 5 may be attached to the second main wall 2 of the envelope 20 in any other manner which per se is known in the art. As shown in figure 3, when the top panel A5 is folded relative to the first main panel A1 about the second transversely extending edge FL15 of the first main panel A1, the protruding corner portions A62, A72, A82, A92 extend longitudinally L' from the respective side wall panel A6, A7, A8, A9 past the top wall 5 the envelope 20.

[0038] Figures 4-5 show two respective perspective views of the envelope 20, shown in figure 3, while being opened. Figure 4 shows a tear strip TS of the envelope 20 being torn off. The tear strip TS may conveniently be torn off by grabbing the tear strip TS from one side and ripping the tear strip TS away. Figure 5 shows that the tear strip TS is completely torn off and top wall 5 the envelope 20 is opened, with the additional panel 4 still partly covering the opening. Figure 5 shows that the third sub top wall 5-3 is still attached on the second main wall 2. Figure 5 shows that the second sub top wall 5-2 has been released from the second main wall 2 of the envelope 20.

[0039] Even though it is preferred that the blank is designed in accordance with the disclosure in the detailed disclosure of preferred embodiments and the appended drawings, it should be noted that a specific preferred embodiment of a specific component does not necessarily have to be combined with a specific embodiment of another component. Thus, advantages associated with a specific embodiment, including one or more features, of a specific component may be accomplished even though the other components are designed in accordance with the more general disclosure under the summary of the invention rather than being defined in accordance with the specific embodiment disclosed in the detailed description.

[0040] 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.

[0041] 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.

[0042] It may e.g. be noted that the specific combination of the first guiding tab provided on or associated with the same panel as the one being provided with the locking flap, as e.g. shown in figure 1, is a preferred combination but that it is possible that e.g. the first guiding tab may be associated with the side wall panel and the locking flap may be provided on the end panel.

Claims

1. A blank (10) configured to be folded into an envelope (20), the blank (10) comprising:

a first and a second main panel (A1, A2) configured to form a respective first main wall (1) and a second main wall (2) of the envelope (20), each of the first and the second main panel (A1, A2) comprising a first and a second oppositely arranged transversally extending edge (FL15, FL13, FL23, FL24) and a first and a second oppositely arranged longitudinally extending edge (FL16, FL17, FL28, FL29),

a set (A3) of bottom panels (A3-1, A3-2) configured to form a bottom wall (3) of the envelope (20), wherein the bottom panels (A3-1, A3-2) are arranged one after the other and between the first and the second main panels (A1, A2), as seen along a longitudinal direction (L) and in a flat-laid state of the blank (1), and wherein each respective bottom panel (A3-1, A3-2) is on one side foldably connected to the first of the two transversely extending edges (FL13, FL23) of the respective first and the second main panel

(A1, A2) and on the other side to the other bottom panel (A3-1, A3-2) along a transversely extending internal bottom fold line (FL3),
a set of four side panels (A6, A7, A8, A9) configured to form side walls (6, 7) of the envelop (20), wherein each side panel (A6, A7, A8, A9) is arranged at respective longitudinally extending edge (FL16, FL17, FL28, FL29) of the respective first and the second main panel (A1, A2),
wherein each side wall panel (A6, A7, A8, A9) comprises protruding corner portions (A61, A71, A81, A91) protruding longitudinally past the respective first transversally extending edges (FL13, FL23) of the first and the second main panels (A1, A2), and
wherein when the bottom panels (A3-1, A3-2) are folded relative to each other about the internal bottom fold line (FL3) and the first and the second main panels (A1, A2) are folded relative to the respective bottom panel (A3-1, A3-2), the protruding corner portions (A61, A71, A81, A91) extend longitudinally (L) from the respective side wall panel (A6, A7, A8, A9) past the bottom wall (3) the envelope (20).

2. The blank (10) according to claim 1, further comprising a top panel (A5) configured to form a top wall (5) of the envelope (20), wherein the top panel (A5) is foldably connected to the second transversely extending edge (FL15) of the first main panel (A1) and extends longitudinally (L') therefrom, as seen in a flat-laid state of the blank (1).

3. The blank (10) according to claim 2, wherein the top panel (A5) is configured to be folded relative to the first main panel (A1) about the second transversely extending edge (FL15) of the first main panel (A1) and to extend longitudinally (L) along the second main wall (2) of the envelope (20).

4. The blank (10) according to claim 2 or 3, wherein each side panel (A6, A7, A8, A9) further comprises protruding corner portions (A62, A72, A82, A92) protruding longitudinally past the respective second transversally extending edges (FL15, FL24) of the first and the second panels (A1, A2), and
wherein when the top panel (A5) is folded relative to the first main panel (A1) about the second transversely extending edge (FL15) of the first main panel (A1), the protruding corner portions (A62, A72, A82, A92) extend longitudinally (L') from the respective side wall panel (A6, A7, A8, A9) past the top wall (5) the envelope (20).

5. The blank (10) according to any one of the preceding claims, wherein when the bottom panels (A3-1, A3-2) are folded relative to each other about the internal bottom fold line (FL3) and the first and the second main panels (A1, A2) are folded relative to the respective bottom panel (A3-1, A3-2), the side panels (A6, A7) of the first main panel (A1) are arranged to be connected to the side panels (A8, A9) of the second main panel (A2), thereby forming side walls (6, 7) of the envelope (20).

6. The blank according to claim 5, wherein a portion of the side panels (A6, A7) of the first main panel (A1) is attached to a portion of the side panels (A8, A9) of the second main panel (A2), preferably by an inside surface of the portion of the side panels (A6, A7) of the first main panel (A1) being attached to an inside surface of the portion of the side panels (A8, A9) of the second main panel (A2) such that an outwardly extending fin is formed.

7. The blank (10) according to any one of the claims 2-6, wherein the top wall (5) is configured to be attached, preferably adhesively attached, to the second main wall (2) of the envelope (20).

8. The blank (10) according to claim 6 or 7, wherein the portions of the side panels (A6, A7) of the first main panel (A1) and the side panels (A8, A9) of the second main panel (A2) are adhesively attached to each other.

9. The blank (10) according to any one of the preceding claims, wherein a width (WS) of the side panels (A6, A7, A8, A9) along the transversally extending edges (FL13, FL15, FL23, FL24) of the first and the second main panels (A1, A2) is within a range of 20% to 50% of a width (W) of the first and the second main panels (A1, A2).

10. The blank (10) according to any one of the claims 4-9, wherein a length (LP) of the protruding corner portions (A61, A62, A71, A72, A81, A82, A91, A92), along the longitudinally extending edges (FL16, FL17, FL28, FL29) of the first and the second main panel (A1, A2) is within a range of 10% to 30% of a length (D) of the first and the second main panels (A1, A2).

11. The blank (10) according to any one of the claims 2-10, wherein a width (WT) of the top panel (A5) along the second transversely extending edge (FL15) of the first main panel (A1) is within a range of 30% to 100% of the width (W) of the first and the second main panels (A1, A2).

12. The blank (10) according to any one of the claims 2-11, wherein a length (LT) of the top panel (A5) along the first and the second longitudinally extending edge (FL16, FL17, FL28, FL29) of the first and the second main panel (A1, A2) is within a range of

30% to 60% of the length (D) of the first and the second main panels (A1, A2).

13. The blank (10) according to any one of the preceding claims, wherein a length (LD) of the bottom panels (A3-1, A3-2) along the longitudinally extending edges (FL16, FL17, FL28, FL29) of the first and the second main panels (A1, A2) is within a range of 10% to 30% of the length (D) of the first and the second main panels (A1, A2).

14. The blank (10) according to any one of the preceding claims, wherein the internal bottom fold line (FL3) bisects the bottom wall (3) of the envelope (20).

15. The blank (10) according to any one of the preceding claims, wherein the blank (10) is formed of a paper-based material.

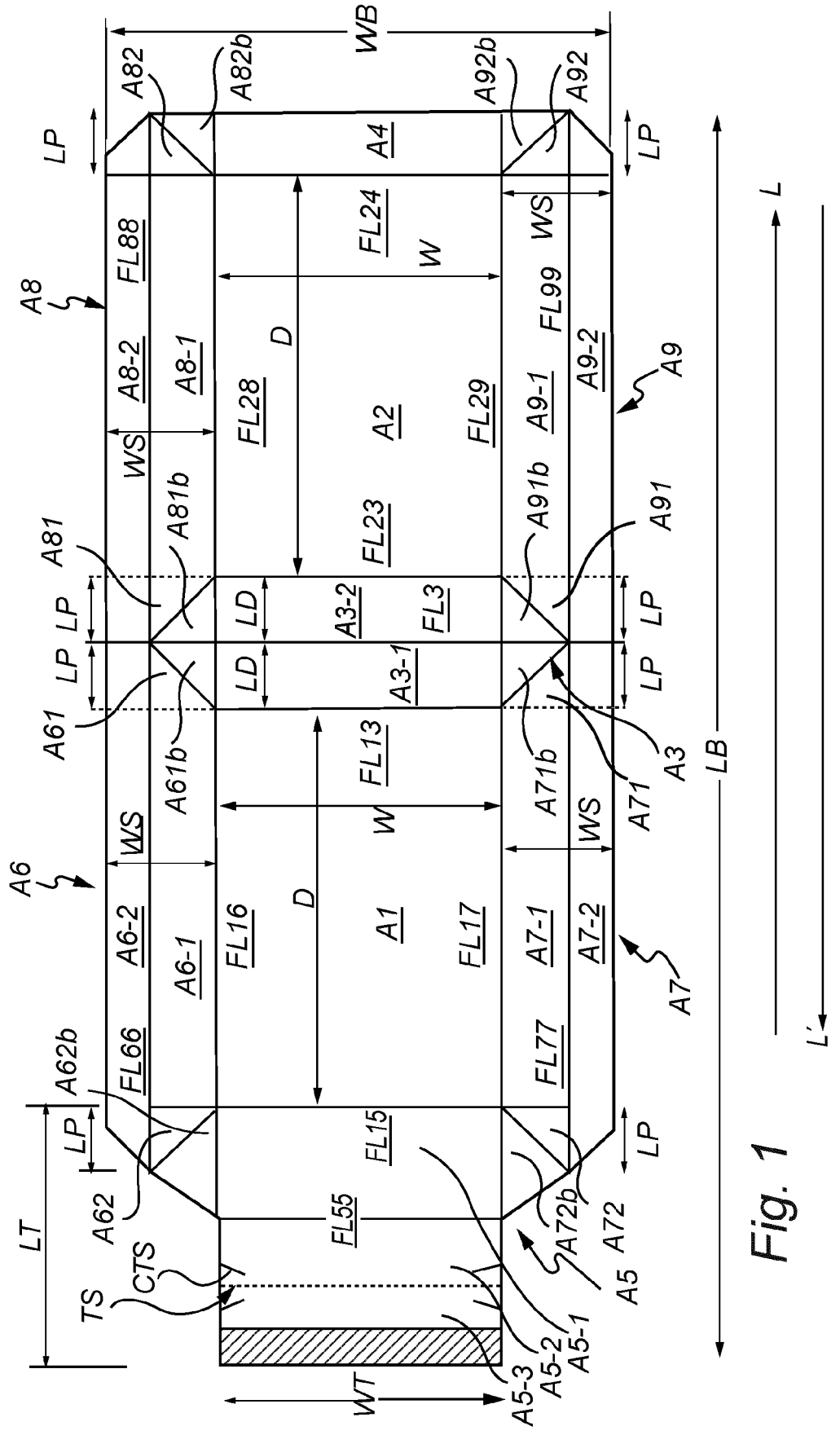
WB
A82
A82b
A92b
A92
LP
A4
FL24
W
WS
FL88
FL99
A8
A8-2
A8-1
D
A9-2
A9
FL28
A2
FL29
A9-1
A81b
A91b
A81
A91
FL23
LD
A3-2
FL3
A3-1
A61
A61b
A71b
A71
A3
LB
L
A6
A6-2
A6-1
FL16
A1
FL17
A7-1
A7-2
A7
FL13
A62b
FL66
FL77
A62
FL15
FL55
A72b
A72
A5
LT
TS
CTS
A5-1
A5-2
A5-3
WT
L'

Fig. 1

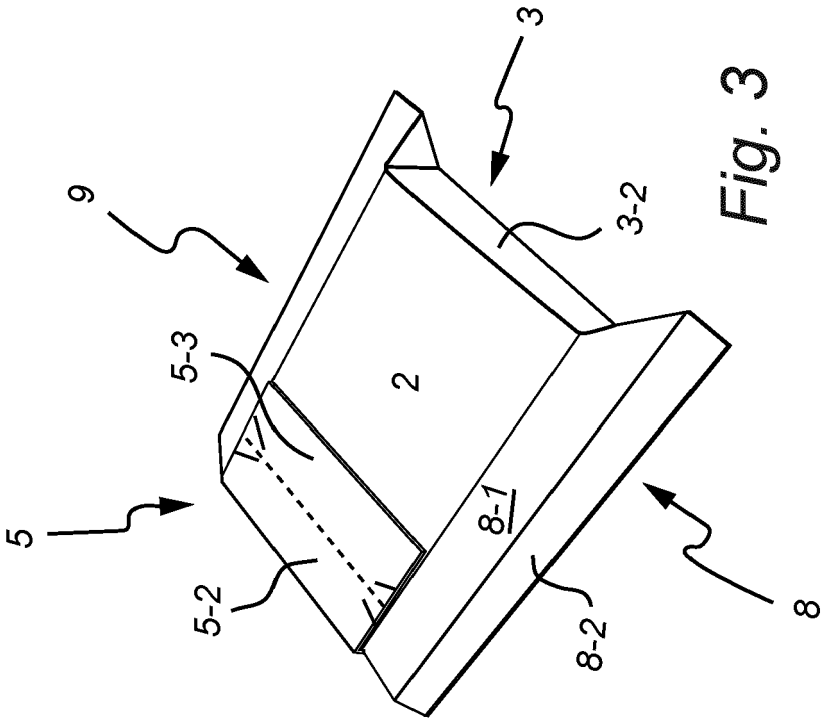

Fig. 3

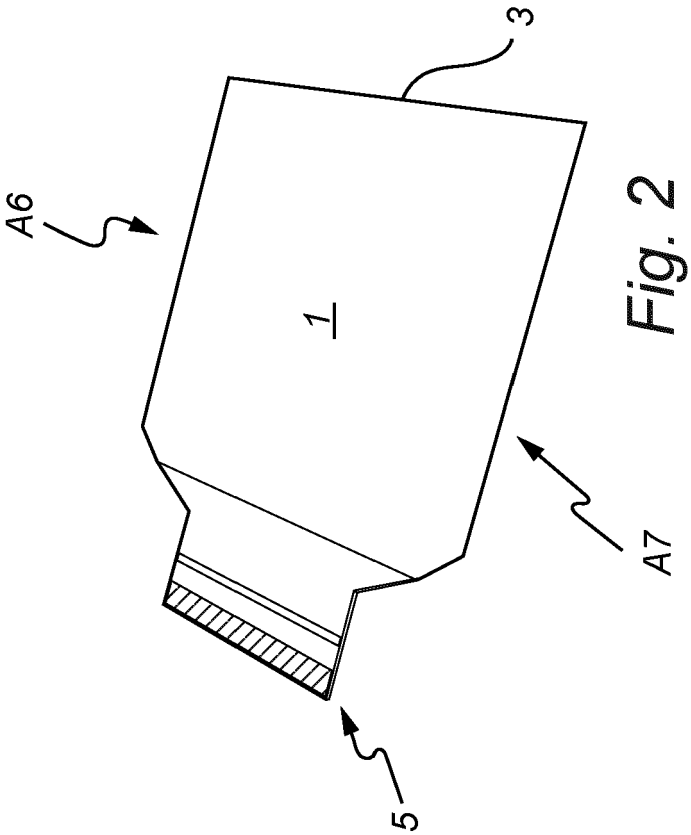

Fig. 2

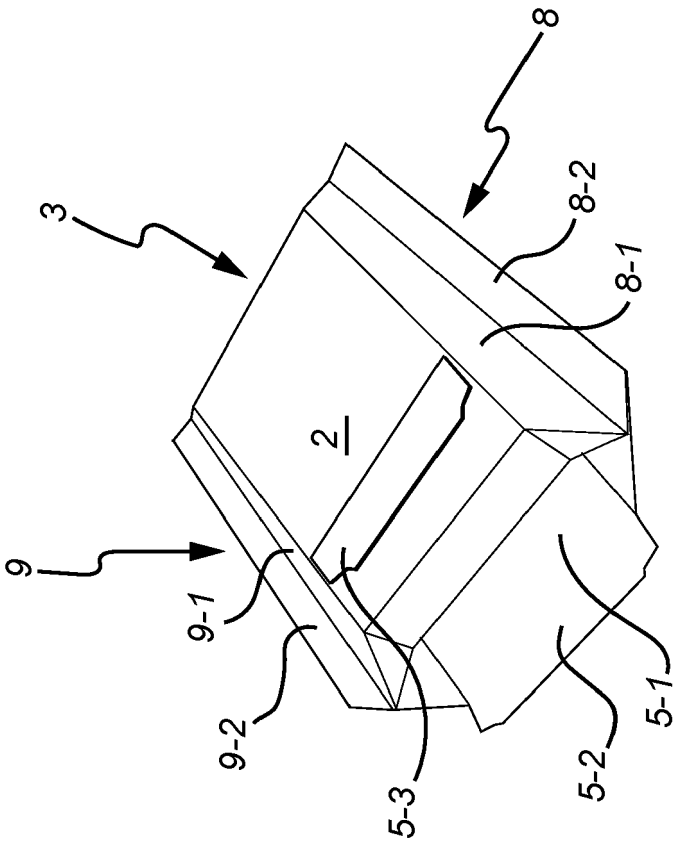

Fig. 5

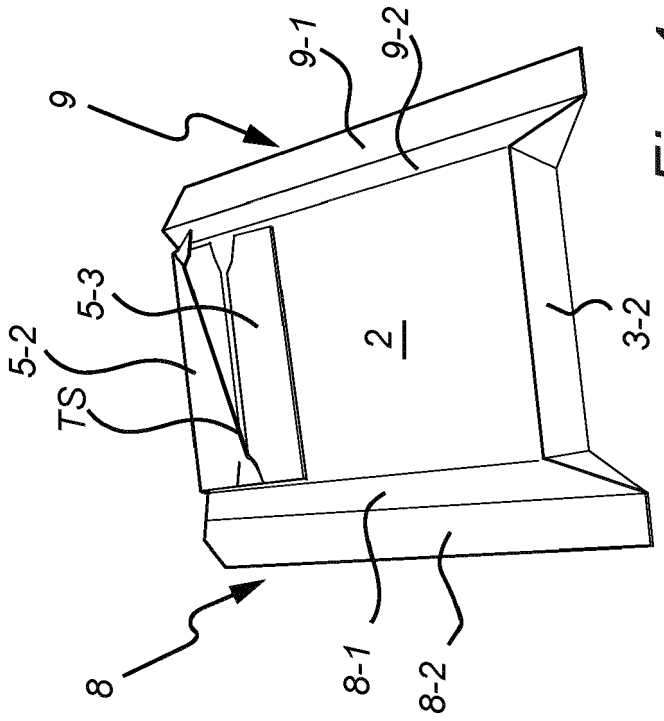

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 20 46 1585

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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X	US 6 820 799 B2 (PAMA ENTPR INC [US]) 23 November 2004 (2004-11-23) * column 6, line 54 - column 8, line 7; figures 1-20 *	1-8,11, 12,14,15	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	7 May 2021	Grondin, David

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07-05-2021

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