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(54) **Wrapper for surrounding at least part of at least one product with reduced material requirement and a blank therefor**

(57) A wrapper (10) for surrounding at least part of at least one product (21) to be received in the wrapper (10), the wrapper (10) comprising a first main panel (1), a first and a second side panel (2, 12) extending from opposite sides of the first main panel (1) and folded with respect thereto so as to surround at least part of the at least one product (21), the wrapper (10) further comprising a first supporting flap (9) connected to the first side panel (2) and folded with respect thereto and a second supporting flap (19) connected to the second side panel (12) and folded with respect thereto, the first and second supporting flap (9, 19) being folded to extend towards each other and being fastened to each other, characterised in that the first supporting flap (9) comprises a first fastening flap (4), in that at least part of the first fastening flap (4) is incorporated into the first supporting flap (9) and/or the first side panel (2), in that the first fastening flap (4) is delimited and separated from the first supporting flap (9) and/or the first side panel (2) respectively along part of its circumference by a first cut (6) and is foldable from the first supporting flap (9) and/or the first side panel (2) respectively along a first bottom folding line (5) to extend towards the second supporting flap (19) and at least partly overlap it, the first bottom folding line connecting parts of the first circumferential cut (6) on opposite sides of the first fastening flap (4) and in that the first fastening flap (4) is fastened to the second supporting flap (19) with the aim of providing a second main panel (11) on a side of the wrapper (10) opposite the first main panel (1).

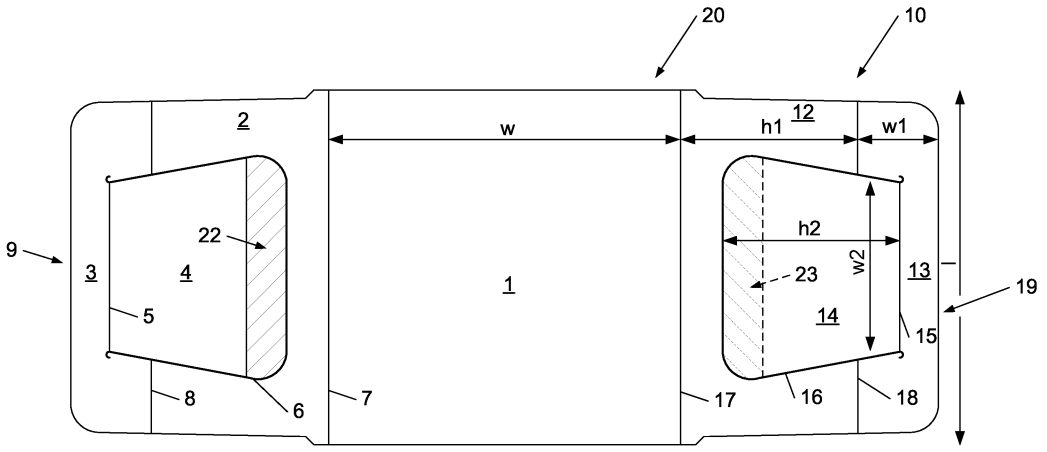

Fig. 1

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Description

[0001] The present invention relates to a wrapper for surrounding at least part of at least one product to be received in the wrapper, according to the preamble of the first claim.

[0002] Such a wrapper is known from GB-A-2.198.709 which discloses a carton forming blank which is capable of being erected to permit product to be loaded therein. The blank comprises a first and a second parallel folding line which define a panel therebetween which forms a base of the sleeve upon erection of the blank, the base serving to bear the load of product loaded thereon. The blank also comprises third and fourth folding lines which extend parallel to each other and to the first and second folding lines. The third folding line is laterally spaced from the first folding line to define therebetween a first side panel. The fourth folding line is laterally spaced from the second folding line to define therebetween a second side panel. A first and second supporting flap are defined between the third and the fourth folding lines and adjacent side edges of the blank. The third and fourth flaps are foldable towards each other into overlapping relation, upon erection of the first and the second side panels, thus completing the formation of the carton wrapper.

[0003] The wrapper disclosed in WO/1998/050284 comprises a top, a base and a pair of oppositely disposed side walls interconnecting the top and the base. The base comprises a pair of panels, each of the panels extending from a side wall and folded with respect thereto along a folding line. The panels overlap each other and the inner face of a first panel is fastened to an outer face of the second panel by panel interlocking means for securing together the first and second panels in their overlapping relationship. The panel interlocking means comprise flaps delimited by a cut and a folding line to provide a keel structure between adjacent rows of products to minimise the relative movement between adjacent products.

[0004] Wrappers of the kind described in GB-A-2.198.709 and in WO/1998/050284 are well-known for enclosing products of different sorts and dimensions. The products can be enclosed separately, in a row, in a square or stacked, allowing purchasing and/or handling the product in bulk. Wrappers are often preferred above boxes because they allow to display the product contained in the wrapper to the customer. As described in WO/1998/050284, the wrappers often contain means for positioning the products in the wrapper, to avoid that the products shift back and forth in the wrapper.

[0005] The wrappers disclosed in GB-A-2.198.709 and in WO/1998/050284 however have the disadvantage that the amount of material used in constructing the wrapper is considerably large.

[0006] There is thus a need for a wrapper which may be made of a reduced amount of material.

[0007] Accordingly, it is the object of the present invention to provide a wrapper for which a smaller amount of material is needed.

[0008] This is achieved according to the present invention with a wrapper for surrounding at least part of the at least one product showing the technical features of the characterising portion of the first claim.

[0009] Thereto, in the wrapper of this invention, the first supporting flap comprises a first fastening flap, at least part of the first fastening flap is incorporated into the first supporting flap and/or the first side panel, the first fastening flap is delimited and separated from the first supporting flap and/or the first side panel respectively by a first cut which extends along part of the circumference of the first fastening flap, and which is foldable from the first supporting flap and/or the first side panel respectively along a first bottom folding line which connects parts of the first cut on opposite sides of the first fastening flap, which first fastening flap extends towards the second supporting flap, at least partly overlaps it and is fastened to the second supporting flap thus forming a second main panel on a side of the wrapper opposite the first main panel. In that way a closed wrapper is provided which surrounds at least part of a product received in it in circumferential direction of the wrapper.

[0010] The inventors have found that in constructing a wrapper where the first fastening flap is incorporated into the first supporting flap and/or the first side panel respectively and folded therefrom to form a second main panel which is fastened to the remainder of the wrapper, the first fastening flap may function either as a top panel or a bottom panel of the wrapper. Thus the need to provide an additional panel forming the bottom or top wall can at least partly be dispensed with, as a consequence of which a reduced amount of material suffices for constructing the wrapper according to the invention. In this respect, the inventor has found that the material cost may be reduced with at least 10%, often at least 20%, sometimes even 25%. The wrapper according to the invention can thus be made substantially cheaper and its environmental cost can be decreased as well.

[0011] The first fastening flap is loose from the first side panel along the first circumferential cut and foldable along the first bottom folding line towards the second supporting flap. In case the first fastening flap is incorporated into the first side panel, the folding of the first fastening flap out of the first side panel results in a first opening in the side panel of the wrapper according to the invention. Without wanting to be bound by any theory, the inventor believes that the presence of the first opening affects the load bearing capacity of the wrapper to a minimum extent only. The inventors have namely observed that the load bearing capacity of the wrapper is mainly provided by the first or the second main panel i.e. the panel carrying the product and that the contribution of the first and second side panel to the load bearing capacity is considerably smaller. Thus, the presence of one or more openings in one or both side panels affects the load bearing capacity to a minimum extent only.

[0012] The inventors have further found that the first opening allows the product contained in the wrapper to

be more visible than in the state of the art wrapper, thus creating a marketing advantage as compared to the state of the art wrapper.

[0013] The first opening can be dimensioned in order to allow protrusion of part of a first product contained in the wrapper, thus providing means to more or less fix the position of the product in the wrapper. Thus, extra tools such as, for example the panel interlocking means for positioning the products in the wrapper as described in WO/1998/050284,can be dispensed with.

[0014] According to a preferred embodiment of this invention, the wrapper is characterised in that the second supporting flap comprises a second fastening flap, which similar to the first fastening flap is incorporated into the second supporting flap and/or the second side panel, and is delimited and separated from the second supporting flap and/or the second side panel respectively along part of its circumference by a second cut and foldable from the second supporting flap and/or the second side panel respectively along a second bottom folding line to extend towards the first supporting flap and at least partly overlap it, the second bottom folding line connecting parts of the second circumferential cut on opposite sides of the second fastening flap and in that the second supporting flap is fastened to the first supporting flap. The second fastening flap may, in addition to the first fastening flap, function either as a top panel or a bottom panel supporting the product received in the wrapper.

[0015] The opening left open by cutting out the second fastening flap out of the side panels allows for a better positioning of the products in the wrapper since the products can now protrude from both sides of the wrapper through the first and second openings which also favours the visibility of the products contained in the wrapper.

[0016] The present invention also relates to a blank for a wrapper for surrounding at least part of at least one product to be received in the wrapper comprising a first main panel, a first and a second side panel extending from opposite sides of the first main panel, the wrapper further comprising a first supporting flap connected to the first side panel and a second supporting flap connected to the second side panel. The first embodiment of the blank is characterised in that the first supporting flap comprises a first fastening flap, in that the first fastening flap is incorporated into the first supporting flap and/or the first side panel, in that the first fastening flap is delimited with respect to the first supporting flap and/or the first side panel respectively by a first cut extending along part of the circumference of the first fastening flap and a first bottom folding line connecting different parts of the first circumferential cut.

[0017] A second preferred embodiment of the blank for a wrapper for surrounding at least part of at least one product to be received in the wrapper is characterised in that the second supporting flap comprises a second fastening flap, in that the second fastening flap is incorporated into the second supporting flap and/or the second side panel, in that the second fastening flap is delimited with respect to the second supporting flap and/or the second side panel respectively by a second cut extending along part of the circumference of the second fastening flap and a second bottom folding line connecting parts on opposite sides of the second circumferential cut.

[0018] Other details and advantages of the wrapper according to the invention will become apparent from the enclosed figures and description of preferred embodiments of the invention.

[0019] Figure 1 shows a preferred embodiment of a blank for a wrapper according to the invention.

[0020] Figure 2 shows a preferred embodiment of the wrapper according to the invention, wrapped around six cylindrical products.

[0021] Figure 3 shows a preferred embodiment of the blank according to the invention for a wrapper with positioning means.

[0022] Figure 4 shows a preferred embodiment of the wrapper with positioning means of figure 3.

[0023] The preferred embodiment of the wrapper 10 according to this invention shown in figure 2 and 4 comprises a substantially rectangular first main panel 1. However, the first main panel 1 can have any form deemed appropriate by the person skilled in the art, for example polygonal. Whether the first main panel 1 is used as top or bottom wall is not critical to the invention.

[0024] The wrapper 10 further comprises a first side panel 2 extending from a first side of the first main panel 1 and folded with respect thereto to extend in upright direction and a second side panel 12 extending from a second side of the first main panel 1 opposite the first side and folded with respect thereto to extend in upright direction. Folding of the first and second side panel 2, 12 with respect to the first main panel may be done along a rounded edge, or by means of a first and second folding line 7, 17 respectively. The side panels 2, 12 may both have the same or a different length l and the same or a different height h1, this is however not critical to the invention and may be adapted dependent on the product contained in the wrapper 10 and the desired "look" for the wrapper 10. In the embodiments shown the side panels 2, 12 extend along the entire first and second sides of the wrapper 10 and thus the length l is identical to the length of the entire first and second side of the first main panel 1. Preferably, the side panels 2, 12 both have a rectangular or trapezoidal shape, however the shape of the side panels 2, 12 is not critical to the invention and may be, but must not need to be, the same.

[0025] The wrapper 10 further comprises a first supporting flap 9 connected to the first side panel 2 and a second supporting flap 19 connected to a second side panel 12. The first supporting flap 9 is folded with respect to the first side panel 2 and the second supporting flap 19 is folded with respect to the second side panel 12. Folding of the first and second supporting flap 9, 19 with respect to the first and second side panel 2, 12 may be done along a rounded edge, or by means of a third and fourth folding line 8, 18 respectively. Either only the first

supporting flap 9 may be present or the first and the second supporting flap 9, 19 may be both present, depending on the desired characteristics for the wrapper 10.

[0026] According to a preferred embodiment of the invention the first supporting flap 9 comprises a first fastening flap 4 which is incorporated into the first side panel 2. The first fastening flap 4 is delimited and separated from the first side panel 2 along part of its circumference by a first cut 6. Parts on opposite sides, which may be end parts of the cut or not, of the first circumferential cut 6 are connected by a first bottom folding line 5 so that the first fastening flap 4 is foldable from the first side panel 2 in order to extend towards the second supporting flap 19. The first fastening flap 4 is then fastened to the second supporting flap 19 in order to provide the wrapper 10 with a second main panel 11 on a side of the wrapper 10 opposite the first main panel 1.

[0027] Similarly, the second supporting flap 19 of the invention comprises a second fastening flap 14 incorporated into the second side panel 12. The second fastening flap 14 is separated from the second side panel 12 along part of its circumference by a second cut 16. Parts on opposite sides of the second circumferential cut 16, which may be end parts of the cut or not, are connected by a second bottom folding line 15 so that the second fastening flap 14 is foldable from the second side panel 12 and extends towards the first supporting flap 9.

[0028] According to another embodiment of the invention the first fastening flap 4 is incorporated into the first supporting flap 9. The first fastening flap 4 is delimited and separated from the first supporting flap 9 along part of its circumference by the first cut 6. Parts on opposite sides of the first circumferential cut 6, which may be end parts of the cut or not, are connected by a first bottom folding line 5 so that the first fastening flap 4 is foldable from the first supporting flap 9 in order to extend towards the second supporting flap 19. The first fastening flap 4 is then fastened to the second supporting flap 19 in order to provide the wrapper 10 with a second main panel 11 on a side of the wrapper 10 opposite the first main panel 1, thus providing the wrapper with an overall width w.

[0029] Similarly, the second supporting flap 19 comprises a second fastening flap 14 incorporated into the second supporting flap 19. The second fastening flap 14 is separated from the second supporting flap 19 along part of its circumference by a second cut 16. Parts of the second circumferential cut 16, which may be end parts of the cut or not, are connected by a second bottom folding line 15 so that the second fastening flap 14 is foldable from the second supporting flap 19 and extends towards the first supporting flap 9.

[0030] Whether the first fastening flap is incorporated into the first side panel 2 and/or supporting flap 9 is not critical to the invention but depends on the characteristics of the product 21 to be contained in the wrapper 10 and the desired characteristics for the wrapper 10. Either only the first fastening flap 4 may be present or the first fastening flap 4 and the second fastening flap 14 may be present, also depending from the desired characteristics for the wrapper 10.

[0031] In a preferred embodiment the first and second fastening flaps 4, 14 are both trapezoidal and have the same dimensions, a height h2 and an overall width w2, the height h2 allowing the first and the second fastening flap 4, 14 to at least partly overlap each other in order to allow that the inner face of a fastening area 23 of the first or second fastening flap 4, 14 can be fastened to an outer face of a fastening area 22 of the other one of the first or second fastening flap 4, 14.

[0032] In a further preferred embodiment the first and second bottom folding lines 5, 15 connect the opposing end parts of the first and second circumferential cut 6, 16. This is however not critical to the invention. The bottom folding line 4, 14 can, for example, connect any two opposing parts of the circumferential cut 4, 14 if desired by the manufacturer.

[0033] In the preferred embodiment of the invention the second fastening flap 14 is fastened to the first fastening flap 4.

[0034] In a preferred embodiment, the first supporting flap 9 comprises a first bottom flap 3, which extends from the first side panel 2 along at least part of the length of the first side panel 2 along a rounded edge or along the third folding line 8 and along the second main panel 11 over at least part of a distance between the first and second side panel 2, 12. Similarly, the second supporting flap 19 preferably comprises a second bottom flap 13 which extends from the second side panel 12 along at least part of the length of the second side panel 12 along a rounded edge or along the fourth folding line 18 and along the second main panel 11 over at least part of the distance between the first and second main panel 1, 11. It also possible to provide only one of the supporting flaps 9, 19 with a bottom flap.

[0035] The width w1 of the bottom flap 3, 13 is not critical to the invention but will usually be adapted to the height h2 of the fastening flaps 4, 14, the envisaged load bearing capacity of the wrapper 10 and the circumstances in which the wrapper 10 is to be used since the bottom flap 3, 13 provides the wrapper 10 with extra support for the product 21 contained in the wrapper 10.

[0036] The fastening flaps 4, 14 can be fastened to each other or to the opposing bottom flap 3, 13. Preferably the fastening is done by gluing, but any other means known to the person skilled in the art may be used as well. The extent of overlap is not critical to the invention as long as a sufficient load bearing capacity for the wrapper 10 is obtained and a minimum risk that the fastening of the fastening flaps 4, 14 loosens, is reached in the envisaged circumstances of use.

[0037] The first and second fastening flap 4, 14 can have any shape deemed suitable by the person skilled in the art and can for example be triangular, rectangular or polygonal and can even be delimited by more than one folding line and/or cut as long as the folding lines and/or cuts allow the first and second fastening flap 4,

14 to be foldable to form the second main panel 11.

[0038] In a preferred embodiment of the invention the first and second fastening flaps 4, 14 are folded outwards of the wrapper 10 along respectively the third and fourth folding line 8, 18 to extend towards each other, thus forming the second main panel 11. However the first and second fastening flaps 4, 14 can also be folded inwards along the third and fourth folding line 8, 18 of the wrapper 10 to extend towards each other and form the second main panel 11. The second embodiment may be difficult in practice. In other words, the latter is less favourable for the automation of a process where the wrapper 10 is folded mechanically around at least part of the product (s) 21.

[0039] In an alternative preferred embodiment according to the invention the first and second bottom folding line 5, 15 of the first and second fastening flap 4, 14 are comprised in the first and second bottom flaps 3, 13 respectively as is shown in Fig. 1 and 2.

[0040] In a further alternative preferred embodiment according to the invention the first and second bottom folding line 5, 15 of the first and second fastening flap 4, 14 coincide with the third and fourth folding line 8, 18 and at least partially overlap therewith.

[0041] In a another alternative preferred embodiment the bottom folding line 5, 15 of the first and second fastening flap 4, 14 respectively is comprised in respectively the first 2 and second side panel 12. The first fastening flap 4 then preferably comprises a fifth folding line 5 overlapping the third folding line 8 when folded outwards to extend towards the first supporting flap 9 and/or the second fastening flap 14 then preferably comprises a sixth folding line 15 overlapping the fourth folding line 18 when folded outwards to extend towards the second supporting flap 19. In this embodiment, when the inner fastening area 23 of a fastening flap is fastened to the outer fastening area 22 of another fastening flap, there is no need for a first and second bottom flap 3, 13. In that case the first and second bottom flap 3, 13 can be dispensed with.

[0042] Of course the positioning of the first and the second supporting flap 9, 19 may be the same or different, but preferably is the same, because of the easier production of the wrapper 10.

[0043] In another preferred embodiment the wrapper 10 contains a plurality of fastening flaps 4, 14. The fastening flaps 4, 14 are then positioned next to each other along the length l of the wrapper 10. In the preferred embodiment of this invention the fastening flaps 4, 14 have the same dimensions, but since this is not critical to the invention they may have different dimensions. This embodiment allows for the protrusion of more than one product 21 contained in the wrapper 10 thus allowing for the positioning of more than one product 21. By providing a plurality of first and/or second fastening flaps 4, 14 in the top or bottom panel 11, the load of the products contained in the wrapper 10 can be divided over the different flaps 4, 14. If the total load is divided over the different flaps 4, 14 in the wrapper 10, the need for an additional panel forming the bottom wall can further be dispensed with.

[0044] Preferably for each column of products 21 on top of each other contained in the wrapper 10, a fastening flap 4, 14 is provided so that the products 21 of a stack of single products 21 can each protrude out of the opening left open by the fastening flaps 4, 14 and can be positioned as described above. In that way for each stack a pair of fastening flaps 4, 14 is provided to bear the load originating from that stack. A preferred embodiment of this invention with one layer of products 21 is shown in Fig. 2 where two rows of cylindrical products 21 are contained in the wrapper 10 according to the invention, with a fastening flap 4, 14 provided for each product 21.

[0045] If however additional interlocking of the products 21 in the wrapper 10 is necessary, due to the nature of the product 21 or when for example the fastening flaps 4, 14 are incorporated into the supporting flap 9, 19 and no openings are available in the side panel 2, 12 for positioning the products 21 in the wrapper 10, additional interlocking means 24, 25 known to the person skilled in the art may be provided in the wrapper 10.

[0046] In a further preferred embodiment of the wrapper 10 of the invention, the first and/or second fastening flap 4, 14 comprises at least one interlocking flap 25, the interlocking flap 25 extending upwards from any one side of the first and/or second fastening flap 4, 14. The interlocking flap 25 for example extends from a side of the fastening flap 4, 14 opposing the bottom folding line 5, 15 so that the interlocking flap 25, in upright position separates different products 21 of the wrapper 10 in order to provide an even better positioning of the products 21 in the wrapper 10.

[0047] A further preferred embodiment of the wrapper 10 of the invention comprises means for tightening the wrapper 10 around at least part of the product 21.

[0048] In a preferred embodiment of the tightening means of the wrapper 10 of the invention the first and/or the second supporting flap 9, 19 comprises at least one recess. More preferably, the recess are positioned in pairs, each member of a pair being positioned opposite in width-direction to the other member of the pair respectively in the third and fourth folding line 8, 18 or in the first and second bottom folding line 5, 15. This way the wrapper can be tightened around the product by pulling the recesses towards each other. By providing the wrapper 10 with tightening means the automation of the wrapping of the wrapper 10 around at least part of the product 21 is facilitated and a better packaging of the product 21 is obtained.

[0049] In a first embodiment of the wrapper 10 of the invention, the wrapper 10 fully surrounds the product 21, as is for example shown in Fig. 2.

[0050] In a second embodiment of the wrapper of the invention at least one of the supporting flaps 9, 19, the first or second side wall or the first main panel 11 comprises at least one opening to allow protrusion of at least part of the at least one product 21 there through. In a first

example at least one product 21 protrudes through a bottom flap 3, 13 thus even more firmly positioning the product 21 in the wrapper 10, while the corresponding fastening flap 4, 14 is folded towards the opposing supporting flap 19, 9. In a second example at least one pair of coinciding openings are created in the first and second fastening flap 4, 14 respectively or at least one opening is created in the first main panel 1 to allow protrusion of part of the product 21. This can be used in wrappers 10 for bottles where a bottleneck can protrude through the said openings. Accordingly, the top of the bottleneck can protrude to the inside of the wrapper 10 and to the outside of the wrapper 10 thus creating a "bottle carrier" and a "neckthrough" respectively. In a third example at least one opening is created in the first or second supporting flap 9, 19.

[0051] In a further preferred embodiment the first or the second main panel 1, 11 comprises means to allow carrying the wrapper 26, containing the products 21, for example two holes which are spaced from each other as shown in Fig. 3 and 4.

[0052] Fastening of parts to each other may be achieved by any fastening means known to the person skilled in the art, for example stapling or gluing, although gluing is preferred.

[0053] The blank 20 for the wrapper 10 according to the invention comprises a first main panel 1, a first and a second side panel 2, 12 extending from opposite sides of the first main panel 1, the wrapper 10 further comprising a first supporting flap 9 connected to the first side panel 2 and a second supporting flap 19 connected to the second side panel 12, characterised in that the first supporting flap 9 comprises a first fastening flap 4, in that the first fastening flap 4 is incorporated into the first supporting flap 9 and/or the first side panel 2, in that the first fastening flap 4 is delimited with respect to the first supporting flap 9 and/or the first side panel 2 by a first cut 6 extending along part of the circumference of the first fastening flap 4 and a first bottom folding line 5 connecting end parts of the first circumferential cut 6.

[0054] The blank 20 for the wrapper 10 according to the invention can be further characterised in that the second supporting flap 19 comprises a second fastening flap 14, in that the second fastening flap 14 is incorporated into the second supporting flap 19 and/or the second side panel 12, in that the second fastening flap 14 is delimited with respect to the second supporting flap 19 and/or the second side panel 12 by a second cut 16 extending along part of the circumference of the second fastening flap 14 and foldable from the second supporting flap 19 and/or the second side panel 12 along a second bottom folding line 15 connecting end parts of the second circumferential cut 16 as shown in Fig. 1, 3.

[0055] The blank 20, and therefore the wrapper 10, can be made of any material found suitable by the person skilled in the art, for example: massive cardboard, corrugated cardboard, corrugated plastic or any other material known to the person skilled in the art. All the possible materials can come in different forms of quality, durability and prices. The wrapper 10 can thus be crafted by the person skilled in the art according to the specific properties wanted.

[0056] Since at least one fastening flap 5, 15 is folded towards an opposing side panel 12, 2 the inner side of the fastening flap 5, 15 becomes visible from the outside, as for example can be seen in Fig. 2. If the wrapper 10 is intended to be printed on, for example for marketing purposes, it is inconvenient for this purpose that the inner side is visible for, for example, a customer. Therefore, the blank 20 of the wrapper 10 of this invention is at least partly on both sides printed on, to provide the wrapper with the desired esthetical effect.

Claims

1. A wrapper (10) for surrounding at least part of at least one product (21) to be received in the wrapper (10), the wrapper (10) comprising a first main panel (1), a first and a second side panel (2, 12) extending from opposite sides of the first main panel (1) and folded with respect thereto so as to surround at least part of the at least one product (21), the wrapper (10) further comprising a first supporting flap (9) connected to the first side panel (2) and folded with respect thereto and a second supporting flap (19) connected to the second side panel (12) and folded with respect thereto, the first and second supporting flap (9, 19) being folded to extend towards each other and being fastened to each other, **characterised in that** the first supporting flap (9) comprises a first fastening flap (4), **in that** at least part of the first fastening flap (4) is incorporated into the first supporting flap (9) and/or the first side panel (2), **in that** the first fastening flap (4) is delimited and separated from the first supporting flap (9) and/or the first side panel (2) respectively along part of its circumference by a first cut (6) and is foldable from the first supporting flap (9) and/or the first side panel (2) respectively along a first bottom folding line (5) to extend towards the second supporting flap (19) and at least partly overlap it, the first bottom folding line connecting parts of the first circumferential cut (6) on opposite sides of the first fastening flap (4) and **in that** the first fastening flap (4) is fastened to the second supporting flap (19) with the aim of providing a second main panel (11) on a side of the wrapper (10) opposite the first main panel (1).

2. A wrapper (10) according to claim 1, **characterised in that** the first side panel (2) is folded with respect to the first main panel (1) along a first folding line (7), **in that** the second side panel (12) is folded with respect to the first main panel (1) along a second folding line (17), **in that** the first supporting flap (9) is folded with respect to the first side panel (2) along a

third folding line (8) and **in that** the second supporting flap (19) is folded with respect to the second side panel (12) along a fourth folding line (18).

3. A wrapper (10) according to claim 1 or 2, **characterised in that** the second supporting flap (19) comprises a second fastening flap (14), **in that** the second fastening flap (14) is incorporated into the second supporting flap (19) and/or the second side panel (12), **in that** the second fastening flap (14) is delimited and separated from the second supporting flap (19) and/or the second side panel (12) respectively along at least part of its circumference by a second cut (16) and foldable from the second supporting flap (19) and/or the second side panel (12) respectively along a second bottom folding line (15) to extend towards the first supporting flap (9) and at least partly overlap it, the second bottom folding line connecting parts of the second circumferential cut (16) on opposite sides of the second fastening flap (14) and **in that** the second supporting flap (19) is fastened to the first supporting flap (9).

4. A wrapper (10) according to claim 3, **characterised in that** the first supporting flap (9) further comprises a first bottom flap (3), which extends from the first side panel (2) along at least part of the length of the third folding line (8) and along the second main panel (11) over at least part of a distance between the first and second side panel (2, 12), and **in that** the second supporting flap (19) comprises a second bottom flap (13) which extends from the second side panel (12) along at least part of the length of the fourth folding line (18) and along the second main panel (11) over at least part of the distance between the first and second main panel (1, 11).

5. A wrapper (10) according to claim 3 or 4, **characterised in that** the wrapper (10) comprises a plurality of first and/or second fastening flaps (4, 14).

6. A wrapper (10) according to any one of claims 3 - 5, **characterised in that** the first and second bottom folding line (5, 15) are respectively provided in the first and second side panel (2, 12).

7. A wrapper (10) according to claim 6, **characterised in that** each of the first fastening flaps (4) comprises a fifth folding line, the fifth folding line overlapping the third folding line (8) when folded to extend towards the first supporting flap (9), and **in that** each of the second fastening flaps (14) comprises a sixth folding line, the sixth folding line overlapping the fourth folding line (18) when folded to extend towards the second supporting flap (19).

8. A wrapper (10) according to any one of claims 3 - 5, **characterised in that** the first and second bottom folding line (5, 15) coincide with respectively the third and fourth folding line (8, 18) and at least partially overlap therewith.

9. A wrapper (10) according to any one of claims 3 -5, **characterised in that** the first and second bottom folding line (5, 15) are provided respectively in the first and second bottom flap (3, 13).

10. A wrapper (10) according to any one of claims 3 - 9, **characterised in that** the first and second fastening flaps (4, 14) overlap at least partially in the plane of the second main panel (11).

11. A wrapper (10) according to any one of claims 3 -10, **characterised in that** the first and second fastening flaps (4, 14) are folded outwards of the wrapper (10) along respectively the third and fourth folding line (8, 18) to extend towards each other.

12. A wrapper (10) according to any one of claims 3 -10, **characterised in that** the first and second fastening flaps (4, 14) are folded inwards of the wrapper (10) along respectively the third and fourth folding line (8, 18) to extend towards each other.

13. A wrapper (10) according to any one of claims 1 - 12, **characterised in that** at least a first supporting flap (9) comprises at least one means for tightening the wrapper (10) around at least part of the product (21).

14. A wrapper (10) according to any one of claims 3 -13, **characterised in that** an inner face of the first fastening flap (4) is fastened to an outer face of the second fastening flap (14).

15. A wrapper (10) according to any one of claim 3 - 14, **characterised in that** the first and/or second fastening flap (4, 14) comprises at least one interlocking flap (25), the interlocking flap (25) extending upwards from any one side of the first and/or second fastening flap (4, 14).

16. A blank (20) for a wrapper (10) for surrounding at least part of at least one product (21) to be received in the wrapper (10), according to any one of claims 1 - 13, comprising a first main panel (1), a first and a second side panel (2, 12) extending from opposite sides of the first main panel (1), the wrapper (10) further comprising a first supporting flap (9) connected to the first side panel (2) and a second supporting flap (19) connected to the second side panel (12), **characterised in that** the first supporting flap (9) comprises a first fastening flap (4), **in that** the first fastening flap (4) is incorporated into the first supporting flap (9) and/or the first side panel (2), **in that** the first fastening flap (4) is delimited with respect to

the first supporting flap (9) and/or the first side panel (2) respectively by a first cut (6) extending along part of the circumference of the first fastening flap (4) and a first bottom folding line (5) connecting parts on opposite sides of the first circumferential cut (6).

17. A blank (20) for a wrapper (10) for surrounding at least part of at least one product (21) to be received in the wrapper (10) according to claim 16, **characterised in that** the second supporting flap (19) comprises a second fastening flap (14), **in that** the second fastening flap (14) is incorporated into the second supporting flap (19) and/or the second side panel (12), **in that** the second fastening flap (14) is delimited with respect to the second supporting flap (19) and/or the second side panel (12) respectively by a second cut (16) extending along part of the circumference of the second fastening flap (14) and a second bottom folding line (15) connecting parts on opposite sides of the second circumferential cut (16).

18. A process for surrounding a wrapper (10) according to any one of claims 1 - 15 made from a blank (20) according to claim 16 or 17 around at least part of at least one product (21), **characterised in that** the wrapper (10) is wrapped mechanically around at least part of the product (21).

19. A process for surrounding a wrapper (10) according to any one of claims 13 - 15 made from a blank (20) according to claim 16 or 17 around at least part of at least one product (21), **characterised in that** the wrapper (10) is mechanically tightened around at least part of the product (21) by pulling the tightening means towards each other.

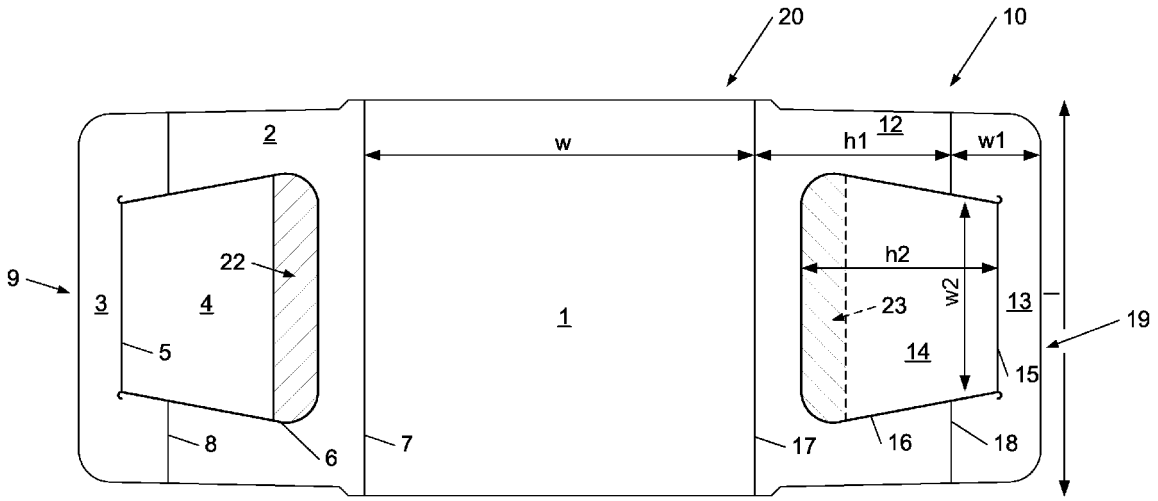

Fig. 1

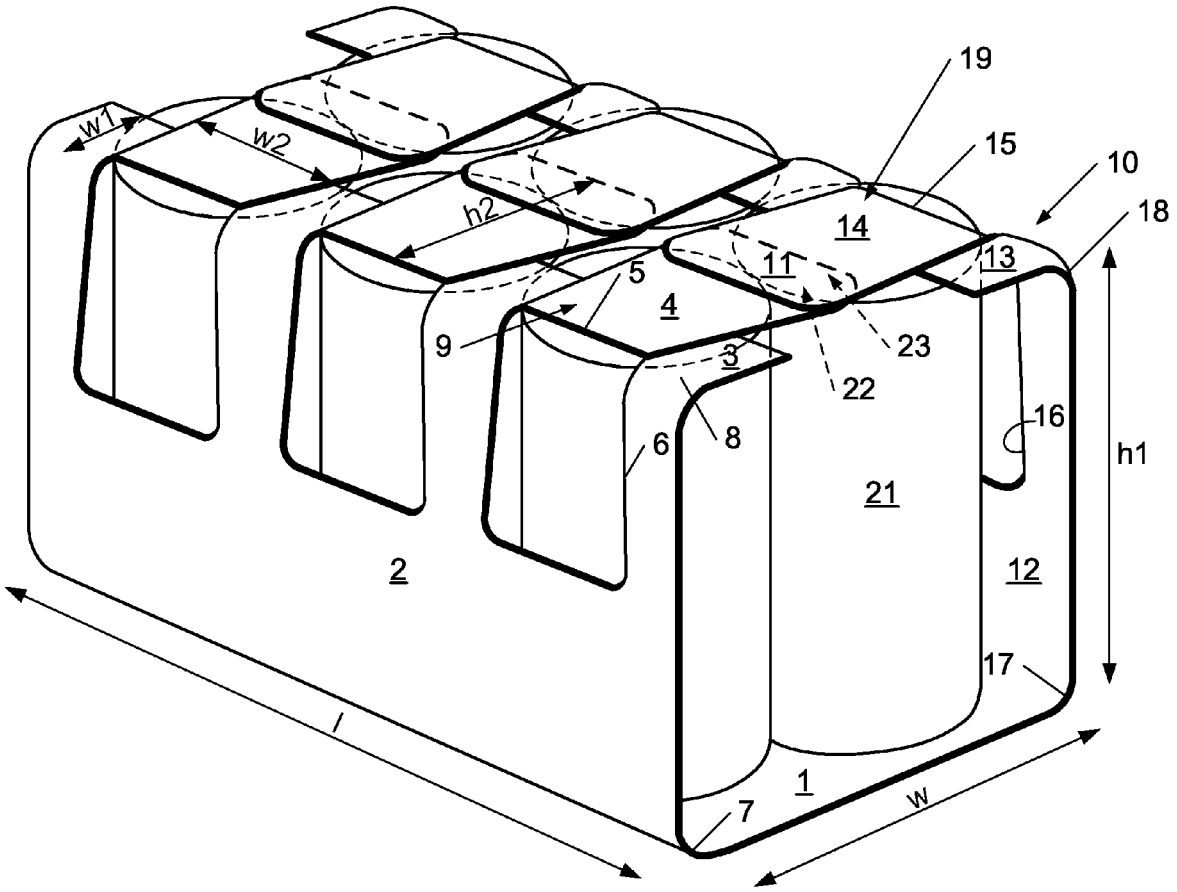

Fig. 2

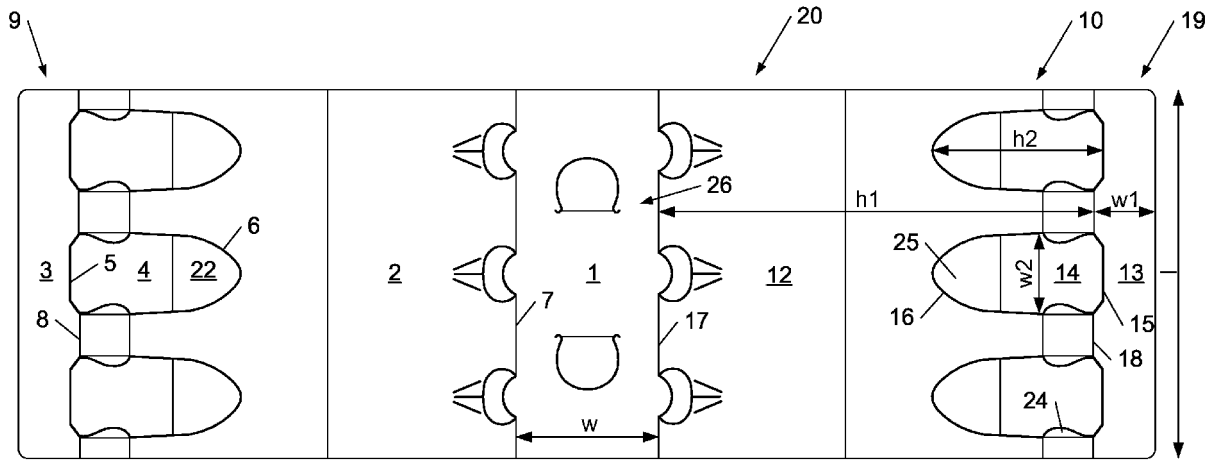

Fig. 3

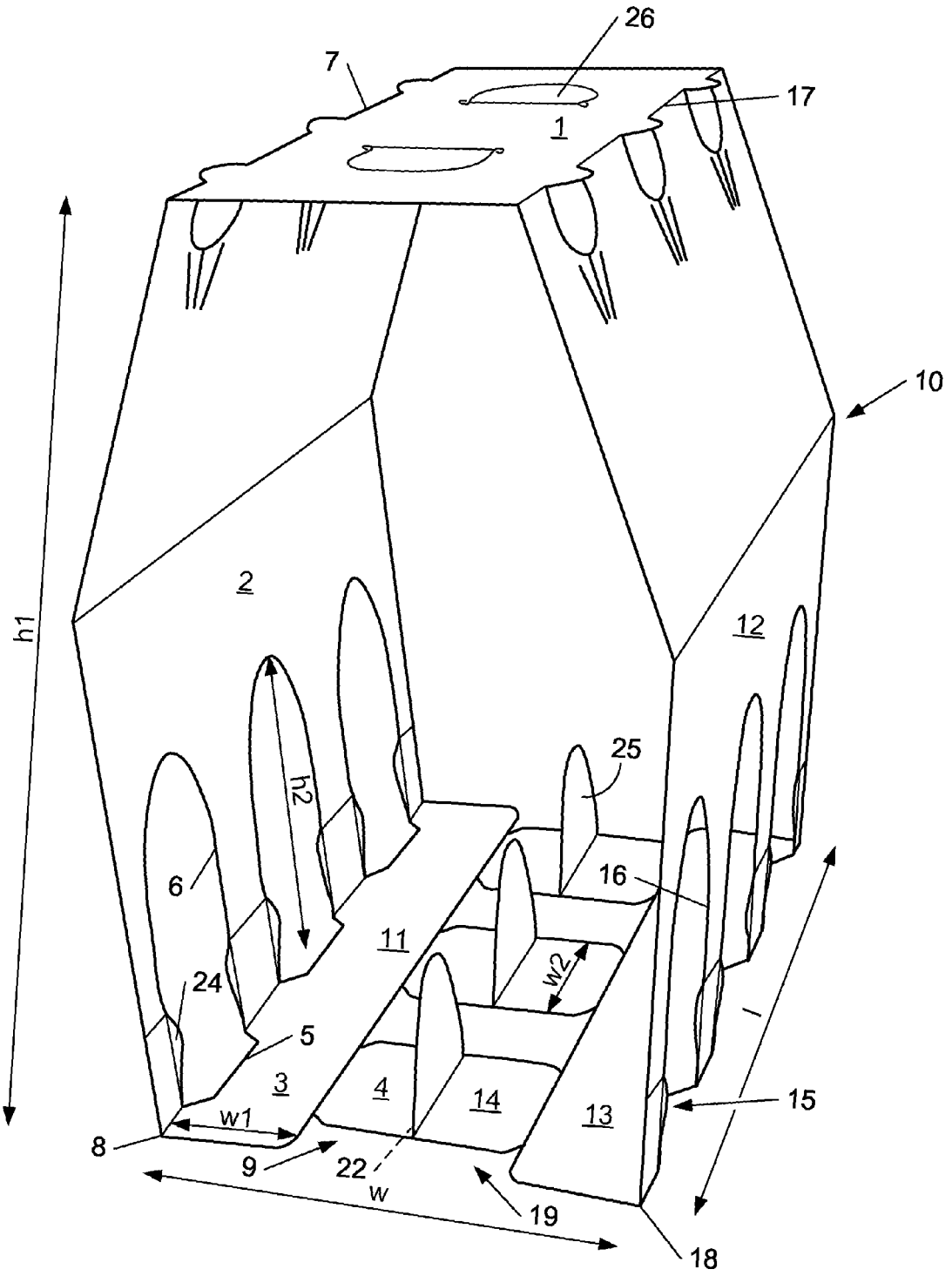

Fig. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 11 1989

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 332 914 A (MEAD CORP) 24 June 1977 (1977-06-24) * page 6, line 15 - page 7, line 3; figures 10-13 * -----	1-14,16, 17	INV. B65D71/00
A	US 3 498 449 A (JOSEPH C. SPERY) 3 March 1970 (1970-03-03) * column 5, line 24 - column 6, line 15; figures 1,3 * -----	1-14,16, 17	
A	EP 0 461 947 A (COMPAGNIE GERVAIS DANONE) 18 December 1991 (1991-12-18) * column 4, line 3 - line 32; figures 4,5 * -----	1-14,16, 17	
			TECHNICAL FIELDS SEARCHED (IPC) B65D

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	12 May 2006	Vesterholm, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

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European Patent Office

Application Number
EP 05 11 1989

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-14,16,17

European Patent Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 05 11 1989

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-14,16,17

   Wrapper and blank which may be made of a reduced amount of material.

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2. claim: 15

   Wrapper with an interlocking flap for separating different products of the wrapper.

   ---

3. claims: 18, 19

   Process for mechanically surrounding a wrapper around a product.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 05 11 1989

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-05-2006

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2332914 A	24-06-1977	NONE	
US 3498449 A	03-03-1970	NONE	
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		DE 69100976 T2	19-05-1994
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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- GB 2198709 A **[0002] [0004] [0005]**
- WO 1998050284 A **[0003] [0004] [0004] [0005] [0013]**