(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 May 2013 (10.05.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/064375 A1

(51) International Patent Classification:
B65D 75/58 (2006.01) *B65D 75/62* (2006.01)

(21) International Application Number:
PCT/EP2012/070606

(22) International Filing Date:
18 October 2012 (18.10.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11187803.9 4 November 2011 (04.11.2011) EP

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*

(54) Title: FLOW WRAP PACKAGING

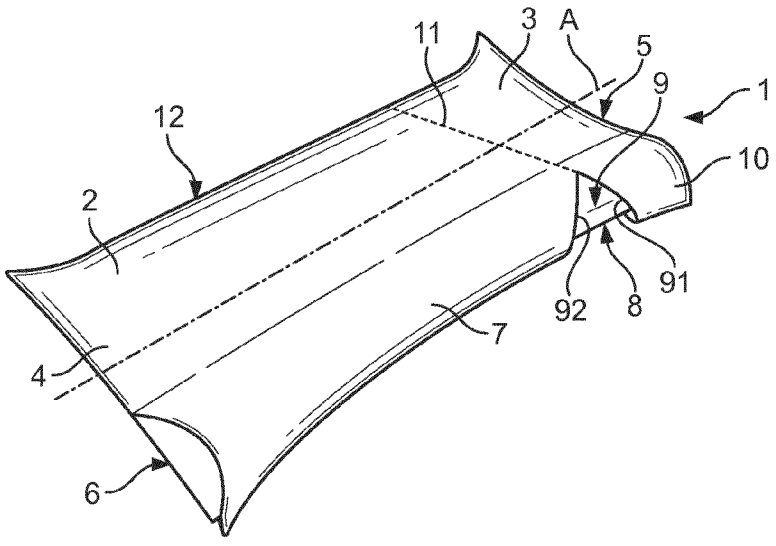

FIG. 1

(57) Abstract: The invention is directed to a sealed packaging (1, 100, 110) for food products (P), such as confectionery products like candy bars or ice cream bars, preferably having a substantially cuboid form and comprising a flow wrap (2), wherein the flow wrap (2) is closed by end seals (3, 4) at two opposed ends (5, 6) and a fin seal (7) extending in a longitudinal direction of the packaging (1, 100, 110) between the two end seals (3, 4), wherein the fin seal (7) is provided at a lateral side (8) of the packaging (1, 100, 110), wherein an opening aid (9) is provided in the fin seal (7), and wherein the opening aid (9) extends into a tear-line (11) which diagonally traverses at least one of a front and rear wall (F, R) of the packaging (1, 100, 110).

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Flow Wrap Packaging

Field of the Invention

The invention relates to sealed packaging for food products, such as confectionery products like candy bars or ice cream bars, comprising a flow wrap being closed by at least one end seal as well as a fin seal.

Background of the Invention

In the prior art, many packages are known such as candy bars or the like, being made of a flow wrap. Several ways of opening the packaging is also known wherein it can be either opened by using the end seal pattern or the long fin seal pattern to initiate the tear. Such opening is however neither controlled nor intuitive. Further, such conventional packaging does not guarantee access to the product via a full wide opening as the opening is not controlled. Consequently, such packaging opens in a random fashion often leading to contact between the fingers of the consumer and the product.

Further, conventional packaging renders it difficult to access the product without damaging the product, since the consumer needs to press onto the outer surface of the packaging surrounding the product in order to gain access. Therefore, the product may get crushed and thus damaged by the pressure and/or starts to melt if said product is heat-sensitive.

EP 0 957 743 A1, for instance, shows a package for candy bars including a cut which extends into the seal and

constitutes a weak spot in the foil material, wherein the said weak spot forms the starting point of a tear. To open the package the longitudinal seal is gripped by two hands which are moved away from each other so that the package tear starts from the cut which results in separated parts of the package.

US 4,290,526 shows a tubular wrapper-type container. The package includes a section extending around the package towards the seal seam thereof, which section is adapted to break or tear to open the package and expose the contents thereof. The section can extend at an acute angle to the longitudinal axis of the seal seam being arranged at the rear side of the package, or it can extend in a V-shaped outline on the front side. The section of the seal seam between the ends of the section at the rear side of the package can serve as a hinge that connects the two parts of the package being torn apart.

JP 2002-193276 A2 shows an easy-to-open packaging bag including an opening starting part provided in a thermally adhered but-seam part. Furthermore, it also includes a cut line which extends in a slanting direction from the opening starting part towards both the side ends of the bag and crosses the folding parts.

Summary of the Invention

The present invention aims to improve on the above-mentioned drawbacks, and an object thereof is to provide a packaging which allows a simple and intuitive opening as well as a "mess-free" consumption of the product.

The object is to be accomplished by means of the independent claims. The dependent claims advantageously study further the central idea of the invention.

According to a first aspect of the invention, there is provided a sealed packaging for food products, such as confectionery products like candy bars or ice cream bars, preferably having a substantially cuboid form and comprising a flow wrap, wherein the flow wrap is closed by end seals at two opposed ends and a fin seal extending in a longitudinal direction of the packaging between the two end seals, wherein the fin seal is provided at (i.e. extends along) a lateral side of the packaging, wherein an opening aid is provided in the fin seal, and wherein the opening aid extends into a tear-line which diagonally traverses at least one of a front and rear wall of the packaging, i.e. in a direction so as to approach one of the end seals.

By means of the packaging according to the invention, an intuitive opening feature is provided as the consumer merely needs to grasp the fin seal in a region close to the opening aid to open the packaging in a simple and convenient manner. Therefore, the fin seal is placed at one of the lateral sides of the packaging when facing the product and thus enables an opening feature which can be easily located and used in an intuitive way. Further, the packaging as claimed allows for a "mess-free" application. This comes about since said packaging is easy to open which avoids damage to the product during opening since there is no need to press directly onto the product via the packaging. Further, the tear-line provides a feature for a controlled and thus clean opening of the packaging.

The packaging may further comprise at least a further tear-line, wherein the additional tear-line extends from a region of the lateral side close to where the previous tear-line ends (i.e. a lateral side being opposite to the lateral side having the fin seal and opening aid), and the additional tear-line diagonally traverses at least one of the front and rear wall of the packaging in a direction so that all tear-lines approach the same end seal, and wherein the tear-lines are arranged such that they do not cross each other. It is thus possible to open the packaging step by step according to the consumer's needs while there is no need to press onto the product to force it towards the opening. Further, product integrity is ensured until the end of the consumption as the product is only uncovered to an extent complying with the consumer's needs.

Preferably, the tear-line diagonally traverses both the front and rear wall of the packaging, i.e. in a direction so as to approach said one of the end seals, and the tear-lines on both sides of the packaging preferably extend in parallel to each other. It is thus possible to provide a full wide opening of the packaging to allow a comfortable access to the product to be consumed.

The opening aid may be provided in the fin seal so as to be closer to one of the end seals being a first end seal; in this regard, the tear-lines preferably diagonally traverse the packaging so as to approach the end seal being opposite to the first end seal.

In this regard, the tear-lines traversing respectively the front wall and the rear wall of the packaging preferably do not merge at a lateral side of the packaging being

opposite to the lateral side having the fin seal thus forming a non-merging portion at a periphery of the packaging being able to hold the packaging together in one piece when the tear-line is used to open the packaging. Similarly, the additional tear-lines traversing respectively the front wall and the rear wall of the packaging preferably merge at the lateral side next to the non-merging portion of the previous tear-line. In addition, they preferably do not merge at the opposite lateral side thus forming a further non-merging portion at a periphery of the packaging being able to hold the packaging in one single piece when the tear-lines are used to open the packaging.

It is thus possible to open the packaging step by step in a controlled manner during the whole consumption of the product. Due to several opening steps, the invention provides an easy access to the product via a wide opening wherein the opening steps may correspond to the bite needs of the consumer; one bite may correspond to one opening step. The number of transversal opening sections (i.e. tear-lines) is thus not limited. The opening feature is thus controlled and is also continuous so as to avoid remnant material when consuming the product. The first opening is initiated by the opening aid and further opening steps are initiated by pulling the gripper member or remnant wrapping material. Throughout consumption the packaging is not removed in one step due to the non-merging portions at the end of each of the tear-lines. It is thus possible to continuously open the product step by step and according to the consumer's rate of consumption, thus giving an easy and wide access to the product.

Further, the plurality of tear-lines avoids contamination of both the product and the consumer's fingers through the controlled opening steps until the end of the consumption. As the opening of said packaging is directed toward the end of the product step by step, there is no need to press onto the product via the packaging to access the product.

When having more than one tear-line, the entirety of the tear-lines forms a zigzag pattern on the front and/or the rear wall of the packaging thus allowing the continuous and controlled opening over parts of or the whole packaging.

Preferably, the transverse axis of the packaging being perpendicular to the lateral side having the fin seal and the respective tear-line enclose an (acute) angle of less than 80°, preferably less than 60°. Due to the predefined angle, a wide opening can be defined depending on the type of the product to be consumed as well as its dimensions.

The non-merging portion preferably extends from the respective lateral side over less than 20%, preferably less than 10%, more preferably less than 5% of the total width of the packaging. It is thus possible to provide a non-merging portion which is both big and strong enough to avoid the packaging being torn apart in separate pieces while still providing a wide opening of the packaging to easily access the product to be consumed.

The portion of the fin seal extending between the opening aid and one of the end seals (preferably the end seal being closer to the opening aid) preferably is a gripper member designed to initiate opening of the packaging, thus enhancing an intuitive and easy opening of packaging.

The width of the fin seal is preferably greater than or equal to the thickness of the packaging. Hence, it is possible to fold back the fin seal to wrap at least the (adjacent) lateral side portion of the packaging having said fin seal. The side fin seal can thus be easily hidden for aesthetic reasons while still being easily accessible in an intuitive way. Further, the respective lateral side of the package can be printed by printing the fin seal. The imprint may, for instance, also comprise an opening instruction.

The opening aid preferably is a notch being provided (e.g. cut) in the fin seal. Preferably, the notch has a triangular shape or form.

Further, the extension of the tear-line into the fin seal may form a first edge of the opening aid. The other (second) edge of the opening aid preferably extends from the tear-line so as to diverge from the first edge of the opening aid; i.e. extends in a direction so as to approach a transverse axis crossing the geometrical center of the packaging. As the tear-line extends into a side portion of the opening aid, the packaging can be easily opened and the opening aid as well as the tear-line can be easily provided into the flow wrap in one single step.

The tear-line preferably is a pre-cut pattern, more preferably a laser score line. As the opening pattern is done through a pre-cut, the opening location can be precisely defined.

Further features, advantages and objects of the present invention would come apparent for the skilled person when

reading the following detailed description of embodiments of the present invention, when taking in conjunction with the figures of the enclosed drawings.

Brief Description of the Drawings

Figure 1 shows a perspective view of a packaging according to the invention.

Figure 2a shows a front view of a packaging according to a first embodiment of the invention in a closed condition.

Figure 2b shows a top view of the packaging according to figure 2a.

Figure 3a shows a front view of the packaging according to figure 2a having the fin seal being unfolded.

Figure 3b shows a top view of the packaging according to figure 3a.

Figure 4 shows a front view of the packaging according to figure 2a in an opened condition.

Figure 5a shows a front view of a packaging according to a second embodiment of the invention.

Figure 5b shows a top view of the packaging according to figure 5a.

Figure 6a shows a front view of the packaging according to figure 5a having the fin seal being unfolded.

Figure 6b shows a top view of the packaging according to figure 6a.

Figure 7 shows a front view of the packaging according to figure 5a in an open condition after a first opening step.

Figure 8 shows a front view of the packaging according to figure 5a in an open condition after a second opening step.

Figure 9 shows a front view of a packaging according to a third embodiment of the invention.

Figure 10 shows a perspective view of the packaging according to figure 6a including the initial gripping condition of the hands for opening the packaging.

Figure 11 shows a perspective view of the packaging according to figure 7 including the gripping condition of the hands.

Figure 12 shows a perspective view of the packaging according to figure 8 showing the gripping condition of the hands.

Detailed Description of the Invention

Figure 1 shows an embodiment of the packaging 1 according to the invention. The packaging 1 according to the embodiments has a substantially cuboid form but the invention is not limited thereto as is described herein.

The packaging 1 comprises a flow wrap 2 which preferably consists of a flexible plastic material; a foil sheet or aluminum sheet, or a metalized foil material, or the like materials commonly used for consumable packaging. The flow wrap 2 is closed by end seals 3, 4 at two opposed ends 5, 6 (preferably at the narrow short lateral sides) as well as a fin seal 7 extending in a longitudinal direction of the packaging 1 between the two end seals 3, 4 to completely seal the packaging 1, preferably in an air-tight manner, thus forming a sealed packaging 1. The packaging 1 is adapted to be used with food products like candy bars (e.g. chocolate bars or chocolate-type bars or similar items) or other products which are to be consumed piece by piece like ice-cream bars or other chilled products and the like; the food products P are placed in the packaging 1 according to the invention as can be seen in figure 4, for instance, and are sealably wrapped by the flow wrap 2.

Also, with respect to figures 2a, 2b, 3a, 3b and 4 (showing a first embodiment of the invention), the fin seal 7 is provided at one of the lateral sides 8, 12 (preferably the narrow long lateral sides) of the packaging 1, said lateral side is in the following also referred to as first lateral side 8. The lateral side 12 being opposite to the first lateral side 8 is in the following also referred to as second lateral side 12.

It is noted that the invention is not limited to a packaging having two opposed end seals and the fin seal extending between these two end seals. In case the packaging 1 has, for instance, a triangular form, it can also be arranged in a different way as will be described later on with respect to another embodiment of the invention.

The width W of the fin seal 7 is preferably greater than or equal to the thickness T of the packaging 1 such that the fin seal 7 can be folded back to wrap around at least said (first) lateral side portion 8 of the packaging 1 having said fin seal 7 as can be seen in figure 2b. Preferably, the ratio of the total width of the packaging 1 to the width W of the fin seal 7 is about 1/20 to 1/1, preferably 1/1,5.

As can be clearly seen in figures 1, 2a and 3a, an opening aid 9 is provided in the fin seal 7. In a preferred embodiment, the opening aid 9 is provided in the fin seal 7 so as to be closer to one of the end seals; being the first end seal 3 in the depicted embodiments. That is to say that in the latter case the opening aid 9 is provided in the fin seal 7 in a region being off-centered with respect to a geometrical center C of the packaging 1 and in a direction of a longitudinal axis A of the packaging 1. In other words, the opening aid 9 can be provided in a region between one of the end seals (first end seal 3) as well as a transverse axis (not shown) crossing the geometrical center C of the packaging 1 and being in parallel to the first end seal 3, the opening aid 9 thus being closer to the first end seal 3 with respect to the geometrical center C of the packaging 1.

The opening aid can be a notch 9 being provided (e.g. cut) in the fin seal 7. Preferably, the notch 9 may have a triangular form but can also have any other form for enhancing an initial opening of the packaging 1 and providing an intuitively operable opening means.

A portion of the fin seal 7 extending between the opening aid 9 and one of the end seals 3, 4, preferably the end seal (the first end seal 3 in the depicted embodiments) being closer to the opening aid 9 than the other end seal (the second end seal 4 in the depicted embodiments) can be used as a gripper member 10 to enable a consumer to grip the gripper member 10 by his fingers (as also shown in figure 10) and thus to initiate an easy and intuitive opening of the packaging 1. As the fin seal 7 is provided at a side of the packaging 1, the consumer, when facing the packaging 1, can easily locate the opening feature and intuitively realizes to grasp the gripper member 10 to open the packaging 1.

As can be seen in figures 2a and 3a, the opening aid 9 passes into, i.e. extends into a tear-line 11 which diagonally traverses at least one of a front wall F and rear wall R of the packaging 1. That is to say that the tear-line starting from the opening aid 9 transversely and diagonally extends across the packaging 1 on the respective side (front or rear wall F, R) or on both the front wall F and the rear wall R thereof. The tear-line thus diagonally traverses at least one or both of the front and rear wall F, R of the packaging 1, wherein in case tear-lines 11 traverse both the front and rear wall F, R, the tear-lines 11 on both sides of the packaging 1 preferably extend in parallel to each other (in front view). In the latter case, the product to be consumed is

exposed in an identical way with respect to the front and rear wall F, R of the packaging 1.

In a preferred embodiment, the tear-line 11 preferably diagonally traverses the packaging 1 so as to approach the end seal (second end seal 4) being opposite to the first end seal 3. How far the tear-line 11 approaches the second end seal 4 depends on the inclination angle of the tear-line 11 as is described herein.

The tear-line 11 preferably is a pre-cut pattern, most preferably a laser-score line to allow a controlled opening of the packaging 1 once the opening is initiated by grabbing and pulling the packaging 1, particularly the gripper member 10.

A transverse axis V of the packaging 1 is shown in figures 2a and 3a, which transverse axis V is perpendicular to the lateral sides 8, 12, preferably at least the lateral side 8 having the fin seal 7. The transverse axis V as well as the respective tear-line 11 preferably enclose an angle α of less than 80°, more preferably less than 50°. Hence, the tear-line 11 can be adapted to the needs of the consumer in conjunction with the product to be consumed. Dependent on the angle α being chosen, the width or size of the opening O of the packaging 1 can be defined as well as the amount of the product P to be exposed after having opened the packaging 1 along the tear-line 11.

The extension of the tear-line 11 into the fin seal 7 can form a side portion (first edge 91) of the opening aid 9. The other side portion (second edge 92) of the opening aid 9 preferably extends from the tear-line 11 so as to diverge from the first edge 91 of the opening aid 9; i.e.

preferably extends in a direction so as to approach a transverse axis crossing the geometrical center C of the packaging 1, in case the opening aid 9 is provided closer to one of the end seals 3, 4. As the tear-line 11 extends into the precut opening aid 9, an easy opening can be guaranteed without any undesired random opening. The first and second side portions or edges 91, 92 of the opening aid 9 are further arranged such that the opening aid 9 expands to an outside of the fin seal 7 being opposite to the tear-line 11 to further enable an easy location of the intuitively operable opening feature.

The tear-lines 11 traversing respectively the front wall F and rear wall R of the packaging 1 preferably do not merge at a lateral side (the second lateral side 12) of the packaging 1 being opposite to the first lateral side 8 having the fin seal 7 thus forming a non-merging portion N at a periphery of the packaging 1. The non-merging portion N is thus preferably provided in a region in extension of the tear-lines 11 and on an opposite side of a region of the packaging 1 where the tear-lines 11 on both sides F, R of the packaging 1 merge together (and extend into the opening aid 9). The non-merging portion N is able to hold the packaging 1 together in one piece in case the tear-line 11 is used to open the packaging 1. This is clearly depicted in figure 4 where the packaging 1 is not torn apart into separate pieces due to the non-merging portion N such that the two parts 30, 31 of the packaging 1 are still connected by means of the non-merging portion N.

In a preferred embodiment, the non-merging portion N extends from the respective lateral side (the second lateral side 12 in figure 2a) over less than 20%, preferably less than 10%, more preferably less than 5% of

the total width W_{total} of the packaging 1. In other words, the tear-line(s) 11 extend(s) from a lateral side (the first long lateral side 8 in figure 2a), e.g. a side where the tear-lines 11 traversing respectively the front and rear wall F, R of the packaging 1 merge (at the respective side portion), over at least 80%, preferably at least 90%, more preferably at least 95% in a transversal direction with respect to the packaging 1 towards the opposite lateral side (the second lateral side 12 in figure 2a) such that the tear-lines 11 traversing both the front and rear walls F, R of the packaging 1 do not merge at this other opposite lateral side.

As can be seen in figure 4, the product P to be consumed is thus exposed through a wide opening O of the packaging 1 while at the same time the fin seal 7 being placed at one of the sides of the packaging 1 when facing the packaging 1 constitutes an opening feature which is easy to locate and easily and intuitively operable. Due to the controlled and guided opening by means of the tear-line 11 starting from the opening aid 9 of or in the fin seal 7 being arranged at a side (narrow long lateral side 8) of the packaging 1, the package 1 must not be crushed or otherwise squeezed to grip it for somehow opening the packaging 1 such that the product P is not damaged. The diagonal extension of the tear-line 11 allows a wide opening of the packaging 1 according to the needs of the consumer in conjunction with the product P to be consumed.

With respect to figures 5a, 5b, 6a, 6b, 7 and 8, another embodiment of the packaging 100 according to the invention is shown. The packaging 100 according to this embodiment preferably further comprises at least one additional tear-line 20, wherein the invention is not limited thereto. In

fact, the number of additional tear-lines is not limited by the invention. For example, figure 9 shows a third embodiment of the packaging 110 according to the invention having a plurality of (three) additional tear-lines 20, 21, 22.

It is noted that identical features of the respective embodiments are provided with the same reference numerals. What has been described with respect to the first embodiment thus also applies for the embodiments described in the following.

As can be clearly seen in figures 5a and 6a or figure 9, the additional tear-lines 20, 21, 22 extend from a region of the lateral side 12 or 8 of the packaging 100, 110 close to where the previous tear-line ends (e.g. where the non-merging portion N of the previous tear-line 11, 20, 21 is provided), and the additional tear-line 20, 21, 22 diagonally traverses at least one of the front and rear wall F, R of the packaging in a direction so that all tear-lines 11, 20, 21, 22 approach the same end seal (preferably the second end seal 4). That is to say, that the additional tear-lines 20, 21, 22 transversely and diagonally extends across the packaging 1 on one or both the front and rear wall F, R thereof and, in the latter case, preferably in parallel to each other, such that the additional tear-line 20, 21, 22 is inclined to approach one of the end seals 3, 4 (preferably the second end seal 4 being opposite to the first end seal 3). In case there is present more than one tear-line, the tear-lines 11, 20, 21, 22 are arranged such that they do not cross each other (preferably in front view) so that the packaging is not torn apart into separate pieces when the tear-lines 11,

20, 21, 22 are successively used step by step to open the packaging 100, 110 according to the consumer's needs.

In case the tear-lines 11, 20, 21, 22 extend on both sides of the packaging 100, 110, the additional tear-lines 20, 21, 22 traversing respectively the front wall F and the rear wall R of the packaging 100, 110 merge at the lateral side 12 or 8 of the packaging 100, 110 next to the non-merging portion N of the previous tear-line 11, 20, 21, and do not merge at the opposite lateral side 8 or 12 of the packaging 100, 110 thus forming a further non-merging portion N at a periphery of the packaging 100, 110 being able to hold the packaging 100, 110 together in one single piece when the tear-lines 11, 20, 21, 22 are used to open the packaging 100, 110.

In a preferred embodiment, each of the tear-lines 11, 20, 21, 22 extends diagonally from an upper portion of the packaging 1, 100, 110 to a lower portion thereof while a subsequent tear-line 20, 21, 22 having its upper portion close to the region of (i.e. next to) the lower portion of the previous tear-line 11, 20, 21 extends diagonally downwards to distance/diverge from the previous tear-line 11, 20, 21 while the respective upper portion of each of the tear-lines 11, 20, 21, 22 merges, i.e. reaches into the respective lateral side portions 8 or 12 while the respective lower portions of the tear-lines 11, 20, 21, 22 do not merge in a region of or close to the respective lateral side 12 or 8 of the packaging 1, 100, 110, thus forming the non-merging portions N.

With respect to figures 5a, 6a and 9, the transverse axis V of the packaging 100, 110 as well as each of the tear-lines 11, 20, 21, 22 preferably enclose an angle α, β, γ,

δ of less than 80°, more preferably less than 50°. The angles α, β, γ, δ of the respective tear-lines 11, 20, 21, 22 do not need to be identical, but in a preferred embodiment, at least two or all of the angles α, β, γ, δ are identical; i.e. (α = β = γ = δ). For example, the angles α, β of the first tear-lines 11, 20 can be identical and the angles γ, δ of the following tear-lines 21, 22 can be identical but smaller than the first two angles α, β to accommodate the consumer's needs who likes to consume big pieces when first opening the packaging 100, 110 but wants to consume less when the initial hunger is satisfied. Hence, the tear-lines 11, 20, 21, 22 can be adapted to the needs of the consumer in conjunction with the product to be consumed. Dependent on the angles α, β, γ, δ being chosen, the width or size of the opening O of the packaging 100, 110 for each opening step as well as the amount of the product P to be exposed after every single opening step of the packaging 100, 110 along the respective tear-lines 11, 20, 21, 22 can be individually pre-defined.

Hence, when intuitively gripping the packaging 1, 100, 110 at the gripper member 10 (see figure 10) and pulling said gripper member 10 in a direction as indicated by arrow P1 in figure 11 to initiate an opening of a package 1, 100, 110, the packaging 1, 100, 110 will first tear along the first tear-line 11 until it reaches the first non-merging portion N at the end of the first tear-line 11. Then, the consumer can consume the product P which is now exposed from the packaging 1, 100, 110 allowing an easy access to the product P because of a controlled wide opening of the packaging 1. This first opening step may correspond to one or a predefined number of bites as can be seen in figure 11.

To further expose the product P to be consumed, the consumer may initiate the following opening steps by pulling the gripper member 10 or the remnant wrapping material 31 in a direction as indicated by arrow P2 in figure 12 while the whole packaging 100 remains connected. This is clearly depicted in figure 12 where the packaging 1 is not torn apart in separate pieces due to the non-merging portion N such that the three (or more) parts 30, 31, 32 of the packaging 1 are still connected by each of the non-merging portions N of the respective tear-lines 11, 20, 21, 22 which have been used (opened).

The opening feature according to the invention controls the opening of the packaging 1 , 100, 110 along one single path. The invention thus offers the opportunity to continuously open the packaging 1, 100, 110 and expose the product P according to the consumer's needs while at the same time providing an easy access to the product via a wide opening O. Further, the packaging 1, 100, 110 is a "mess-free" application as the packaging 1, 100, 110 renders superfluous the need to press onto the packaging in order to guide the rest of the product P towards and through the opening since the opening steps allow to successively expose the product P step by step. It is thus possible by means of the packaging 1, 100, 110 according to the invention to expose the product P to be consumed by simply pulling the remnant material 31, 32 or gripping member 10 to open the packaging step by step and without applying a pressure onto the product P itself.

The invention, however, is not limited to the size of the packaging 1, 100, 110 and product as well as the number of tear-lines 11, 20, 21, 22. For example, figure 9 shows the

packaging 110 having four tear-lines 11, 20, 21, 22 (at each of the front and rear wall F, R) but the packaging may also have less (at least one) or more tear-lines. It is to be understood that the tear-lines 11, 20, 21, 22 must not cross each other to avoid the packaging 1, 100, 110 being torn into separate pieces.

The entirety of the tear-lines 11, 20, 21, 22 according to the invention preferably forms a zigzag pattern on the front wall F and/or rear wall R of the packaging 100, 110 (i.e. in side view) as can be seen in figures 5a, 6a and 9. When only having two tear-lines 11, 20, as shown in the second embodiment, these tear-lines 11, 20 are arranged in a V-shape. In other words, adjacent tear-lines 11, 20 or 20, 21 or 21, 22 and so on are always arranged in a V-shape, wherein the "V" is alternately open to the lateral side (e.g. the first and second lateral sides 8, 12 according to figure 9) of the packaging 110.

It has already been described above that the packaging is not limited to a rectangular shape. It is also possible that the packaging may have a square, rectangular, triangular or any other shape in side view while the packaging may also have a circular, oval, square or rectangular or any other cross-section in a top view.

In this case, the packaging (e.g. a rectangular packaging 1, 100, 110 as shown in the figures or a triangular shaped packaging as not shown in the figures) also comprises the before-mentioned flow wrap 2 which is closed by at least one end seal 3, 4 and a fin seal 7, the latter extending at and along a lateral side (e.g. 8) of the packaging 1. The opening aid (e.g. notch) 9 is provided in the fin seal 7, preferably close to one of the ends of the fin seal 7

in its longitudinal direction. In case the opening aid 9 is located close to one of the ends of the fin seal 7, the opening aid 9 preferably is at least partially situated outside a respective end seal 3. The opening aid 9 also passes or extends into a tear-line 11 which diagonally traverses at least one of a front and rear wall F, R of the packaging 1, 100, 110 in a direction so as to diverge from an axis V being orthogonal to the longitudinal extension of the fin seal 7 and crossing the starting point S of the tear-line 11. In other words, the tear-line 11 may transversely extend in a slanting direction across the packaging on one or both of the front and rear wall F, R thereof, such that the tear-line 11 is inclined to extend in the direction away from the end of the fin seal 7 having the opening aid 9. The starting point S of the tear-line 11 can be understood as the merging region of both the tear-lines 11 traversing respectively the front and rear wall F, R, as the portion being opposite to the non-merging portion N, or just as the portion of the tear-line closest to the opening aid 9 or being torn first when using the tear-line 11 to open the packaging 1, 100, 110.

The tear-line 11 may thus traverse one or both of the front and rear wall F, R of the packaging 1, 100, 110. In the latter case, the tear-lines traverse both the front and rear wall F, R in a direction so as to diverge from the axis V being orthogonal to the longitudinal extension of the fin seal 7 when the axis V passes the starting point S of the tear-lines 11 (i.e. where the tear-lines merge together or where the opening aid is located or the like). The tear-lines extending on both sides of the packaging 1, 100, 110 preferably extend in parallel to each other.

The tear-lines 11 traversing respectively the front and rear wall F, R of the packaging 1, 100, 110 do not merge at an end thereof being most distanced from the opening aid 9 thus forming a non-merging portion N at a periphery of the packaging 1, 100, 110 being able to hold the packaging 1, 100, 110 together in one single piece when the tear-lines 11 are used for opening the packaging 1, 100, 110.

Further, the rectangular or non-rectangular shaped packages 1, 100, 110 may comprise at least one or more additional tear-lines 20, 21, 22, wherein said additional tear-lines 20, 21, 22 each extend from a region of a lateral side 12, 8 of the packaging 1, 100, 110 close to where the previous tear-line 11, 20, 21 ends. The additional tear-line 20, 21, 22 preferably diagonally traverses at least one of the front and rear wall F, R of the packaging 1, 100, 110 such that the tear-line 20, 21, 22 is inclined to diverge from the previous tear-line 11, 20, 21; i.e. the tear-lines 20, 21, 22 transversely extend in a slanting direction across the packaging 1, 100, 110 on one or both sides thereof such that the tear-line 20, 21, 22 is inclined to diverge from the previous tear-line 11, 20, 21, wherein the tear-lines 20, 21, 22 extending on both sides of the packaging 1, 100, 110 preferably extend in parallel to each other in side view. The tear-lines 11, 20, 21, 22 are arranged such that they do not cross each other. Hence, two adjacent tear-lines 11, 20 or 20, 21 or 21, 22 on one of the front and rear wall F, R are thus arranged in a V-shaped manner such that a plurality of tear-lines 11, 20, 21, 22 forms a zigzag pattern on the front wall F and/or rear wall R of the packaging 1, 100, 110.

The additional tear-lines 20, 21, 22 traversing respectively the front and rear wall F, R of the packaging 1, 100, 110 can merge at a lateral side 8, 12 of the packaging next to the non-merging portion N of the previous tear-line 11, 20, 21. These portions preferably do not merge at an end thereof being most distanced from the non-merging portion N of the previous tear-line 11, 20, 21 thus forming a further non-merging portion N at a periphery of the packaging 1, 100, 110 being able to hold the packaging together in one single piece when the tear-lines 11, 20, 21, 22 are used to open the packaging 1, 100, 110. In case more than one tear-line is provided on one of the front and rear wall F, R, these tear-lines 11, 20, 21, 22 are arranged such that they do not cross each other as already mentioned above.

The invention thus provides a controlled and guided opening of the packaging 1, 100, 110 to open the packaging 1, 100, 110 in several predefined opening steps which can be defined due to the angle and number of tear-lines 11, 20, 21, 22 in conjunction with the size of the packaging 1, 100, 110. The number of transversal opening sections (tear-lines 11, 20, 21, 22) is not limited by the invention. Due to the non-merging portions N, the packaging 1, 100, 110 is not torn apart into separate pieces and thus the invention offers the opportunity to continuously open the product P step by step while the product P must not be pushed to guide the product towards and through the opening and thus not be damaged. Further, contamination of both the product and the consumer's finger can be avoided.

The tear of the opening is initiated by the opening aid or notch 9 placed in the fin seal area which is usually

placed at the back of the product P for aesthetic reasons. According to the invention, the fin seal 7 is placed at one of the sides (lateral side 8 in the depicted embodiments) of the packaging 1, 100, 110 when facing the product P thus enabling an easy and intuitively operable opening feature.

In the following, a method for opening a packaging 100 according to the invention is described with reference to figures 10 to 12.

In a first step, the consumer facing and holding the packaging 100 unfolds the fin seal 7 (see figure 10). By gripping and pulling the gripper member 10 in a direction as indicated by arrow P1 of figure 11, the packaging 100 tears along the first tear-line 11 when the two parts 30, 31 of the packaging 100 are distanced from each other. However, according to a preferred embodiment, as the tear-line 11 does not extend over the whole periphery of the packaging 100 but ends in or better leads into the non-merging portion N close to the narrow long lateral side 12 being opposite to the long lateral side 8 having the fin seal 7, the two parts 30, 31 of the packaging 100 are not separated.

The product P to be consumed is now exposed through the opening O of the packaging 1. The size of the exposed product piece corresponds to one or a predefined number of bites.

The consumer can now pack away the packaging 100 enclosing the rest of the product P. At any time, the consumer can then, in a second opening step, grasp and pull again at the gripper member 10 or any other part of the remnant

material 31 in a direction as indicated by arrow P2 of figure 12 to initiate a second opening step. As the parts 30, 31 of the packaging 100 according to the depicted embodiment are connected by means of the non-merging portion N, the applied drag force is transmitted via the non-merging portion N so as to tear the packaging 100 along the second tear-line 20 so as to further open the packaging 100, preferably to allow a predefined number of bites. The amount of uncovering of the product P after each of the opening steps depends on the inclination angle of the tear-line diagonally traversing the packaging wall(s). As the second tear-line 20 also extends in a non-merging portion N, the three parts 30, 31, 32 of the opened packaging 100 are still connected via all the respective non-merging portions N, N. Hence, the consumer can consume the product P in a "mess-free" way and according to his needs without unnecessarily uncovering the product when it is not needed and also avoids applying a force onto the product (via the packaging) to push the product towards and out of the opening.

There may also be provided more than the shown two tear-lines 11, 20 such that the consumer can then, in further opening steps, further open the packaging 100 by simply pulling at the gripper member 10 or any of the remnant material parts 31, 32 of the packaging 100.

Although the present invention has been described with reference to preferred embodiments thereof, many modifications and alternations may be made by a person having ordinary skills in the art without departing from the scope of this invention which is defined by the appended claims. For example, the material of the packaging, its dimensions as well as the relations between

the opening aid and the fin seal, the fin seal and the packaging, and the like as well as the number of tear-lines as well as their angles with respect to a transversal or longitudinal axis or to each other as well as the extension of the tear-lines are not limited by the invention.

In case the packaging has a square shaped body, all narrow lateral sides (i.e. the narrow long and short lateral sides) have the same length. The same applies for an equilateral triangular shaped packaging or a rhomboidal packaging and the like.

It is also noted that the rectangular or cuboid shaped packaging can have its end seals being provided at the narrow long lateral sides while the fin seal extends between said end seals and is provided at one of the narrow short lateral sides.

All features of the embodiments can be combined in any possible way as long as being covered by the scope of the invention as given by the appended claims. It is also to be understood that the method may comprise any of the steps as also described with respect to all of the embodiments, even if not explicitly mentioned again in the description of the method steps.

Claims

1. A sealed packaging (1, 100, 110) for food products (P), such as confectionery products like candy bars or ice cream bars, preferably having a substantially cuboid form and comprising a flow wrap (2), wherein the flow wrap (2) is closed by end seals (3, 4) at two opposed ends (5, 6) and a fin seal (7) extending in a longitudinal direction of the packaging (1, 100, 110) between the two end seals (3, 4),
wherein the fin seal (7) is provided at a lateral side (8) of the packaging (1, 100, 110),
wherein an opening aid (9) is provided in the fin seal (7), and
wherein the opening aid (9) extends into a tear-line (11) which diagonally traverses at least one of a front and rear wall (F, R) of the packaging (1, 100, 110).

2. The packaging (1, 100, 110) according to claim 1, further comprising at least a further tear-line (20, 21, 22),
wherein the additional tear-line (20, 21, 22) extends from a region of the lateral side (12, 8) close to where the previous tear-line (11, 20, 21) ends, and the additional tear-line (20, 21, 22) diagonally traverses at least one of the front and rear wall (F, R) of the packaging (1, 100, 110) in a direction so that all the tear-lines approach the same end seal (3, 4), and
wherein the tear-lines (11, 20, 21, 22) are arranged such that they do not cross each other.

3. The packaging (1, 100, 110) according to any of the preceding claims, wherein the tear-line (11) diagonally traverses both the front and rear wall (F, R) of the packaging (1, 100, 110), and the tear-lines (11, 20, 21, 22) on both sides of the packaging (1, 100, 110) extend in parallel to each other.

4. The packaging (1, 100, 110) according to any of the preceding claims, wherein the opening aid (9) is provided in the fin seal (7) so as to be closer to one of the end seals (3, 4) being a first end seal (3).

5. The packaging (1, 100, 110) according to claim 4, wherein the tear-lines (11, 20, 21, 22) diagonally traverse the packaging (1, 100, 110) so as to approach the end seal (4) being opposite to the first end seal (3).

6. The packaging (1, 100, 110) according to any one of claims 3 to 5, wherein the tear-lines (11) traversing respectively the front wall (F) and the rear wall (R) of the packaging (1, 100, 110) do not merge at a lateral side (12) of the packaging (1, 100, 110) being opposite to the lateral side (8) having the fin seal (7) thus forming a non-merging portion (N) at a periphery of the packaging (1, 100, 110) being able to hold the packaging (1, 100, 110) together in one piece when the tear-line (11) is used to open the packaging (1, 100, 110).

7. The packaging (1, 100, 110) according to claim 6, wherein the additional tear-lines (20, 21, 22) traversing respectively the front wall (F) and the rear wall (R) of the packaging (1, 100, 110) merge at the lateral side (12, 8) next to the non-merging portion (N) of the previous tear-line (11, 20, 21), and do not merge at the opposite lateral side (8, 12) thus forming a further non-merging portion (N) at a periphery of the packaging (1, 100, 110) being able to hold the packaging (1, 100, 110) together in one single piece when the tear-lines (11, 20, 21, 22) are used to open the packaging (1, 100, 110).

8. The packaging (1, 100, 110) according to claim 6 or 7, wherein the non-merging portion (N) extends from the respective lateral side (12, 8) over less than 20%, preferably less than 10%, more preferably less than 5% of the total width (W_{total}) of the packaging (1, 100, 110).

9. The packaging (1, 100, 110) according to any one of claims 2 to 8, wherein the entirety of the tear-lines (11, 20, 21, 22) forms a zigzag pattern on the front and/or the rear wall of the packaging (1, 100, 110).

10. The packaging (1, 100, 110) according to any of the preceding claims, wherein the transverse axis (V) of the packaging (1, 100, 110) being perpendicular to the lateral side (8) having the fin seal (7) as well as the respective tear-lines (11, 20, 21, 22) enclose an angle (α, β, γ, δ) of less than 80°, preferably less than 50°.

11. The packaging (1, 100, 110) according to any of the preceding claims, wherein a portion of the fin seal (7) extending between the opening aid (9) and one of the end seals (3) is a gripper member (10) designed to initiate opening of the packaging (1, 100, 110).

12. The packaging (1, 100, 110) according to any of the preceding claims, wherein the width (W) of the fin seal (7) is greater than or equal to the thickness (T) of the packaging (1, 100, 110), such that the fin seal (7) can be folded back to wrap at least the lateral side (8) portion of the packaging (1, 100, 110) having said fin seal (7).

13. The packaging (1, 100, 110) according to any of the preceding claims, wherein the opening aid is a notch (9) preferably having a triangular form.

14. The packaging (1, 100, 110) according to any of the preceding claims, wherein the extension of the tear-line (11) into the fin seal (7) forms a first edge (91) of the opening aid (9), and wherein a second edge (92) of the opening aid (9) preferably extends from the tear-line (11) so as to diverge from the first edge (91).

15. The packaging (1, 100, 110) according to any of the preceding claims, wherein the tear-line (11, 20, 21, 22) is a precut pattern, preferably a laser score line.

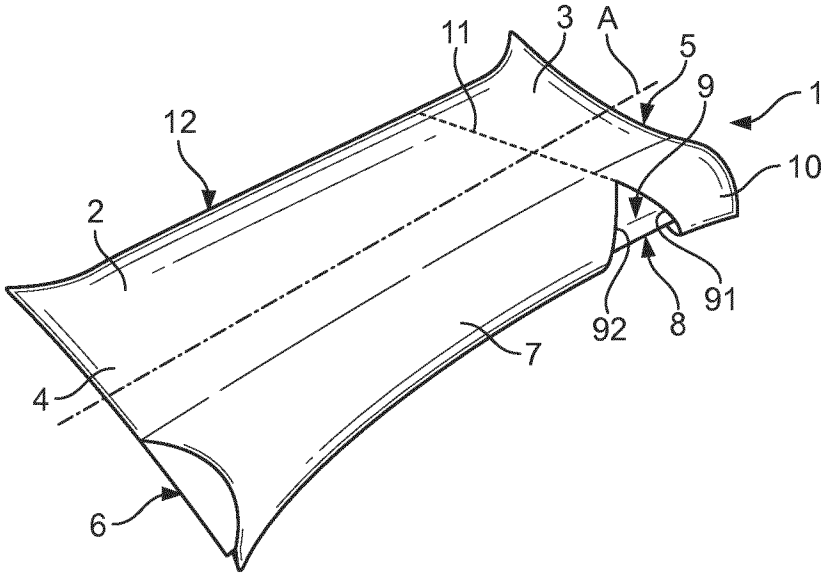

FIG. 1

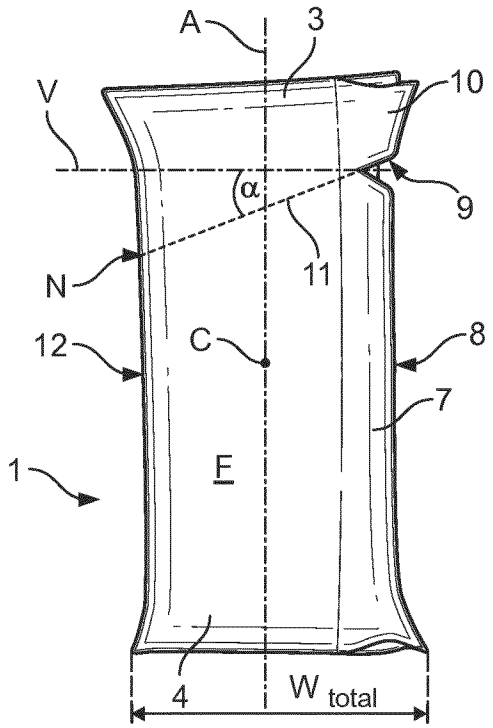

FIG. 2a

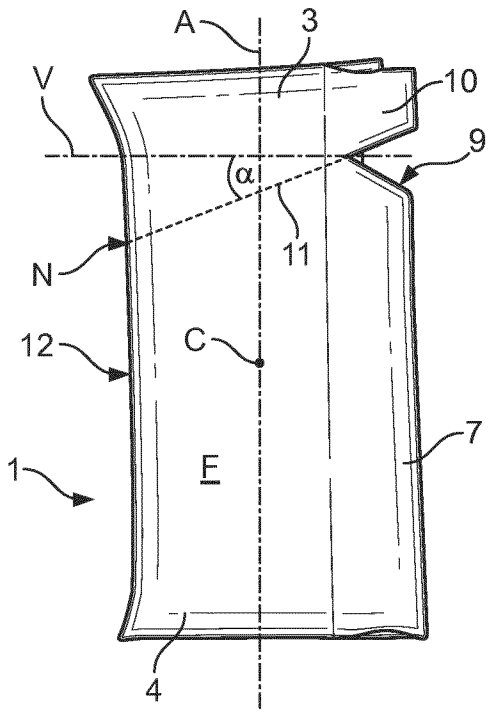

FIG. 3a

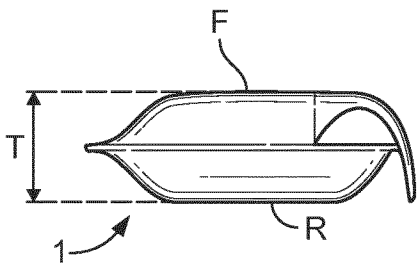

FIG. 2b

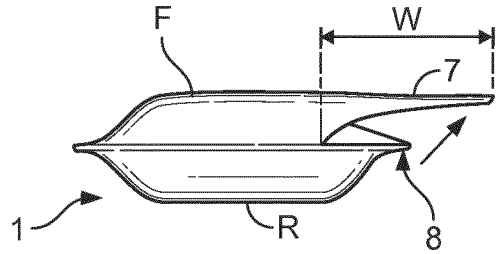

FIG. 3b

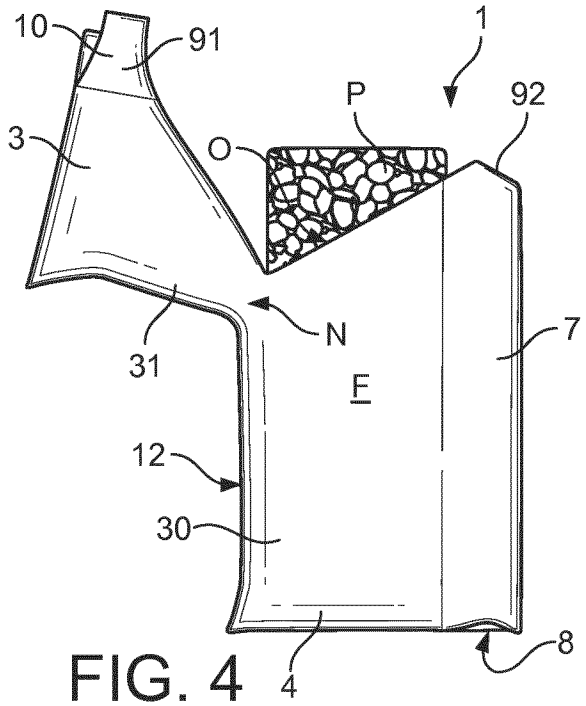

FIG. 4

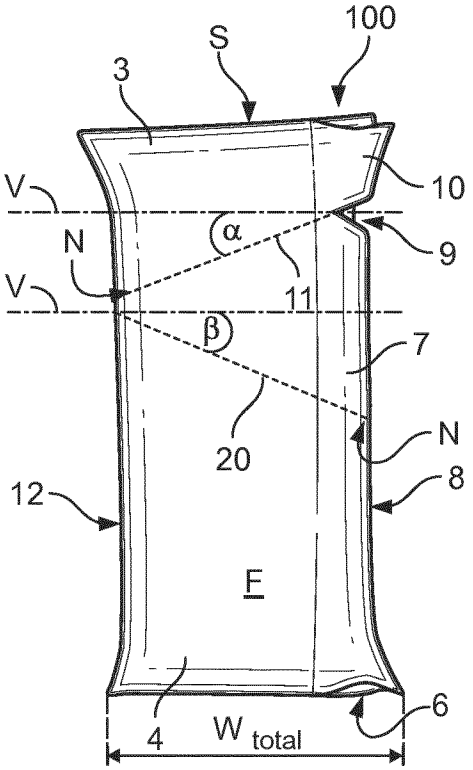

FIG. 5a

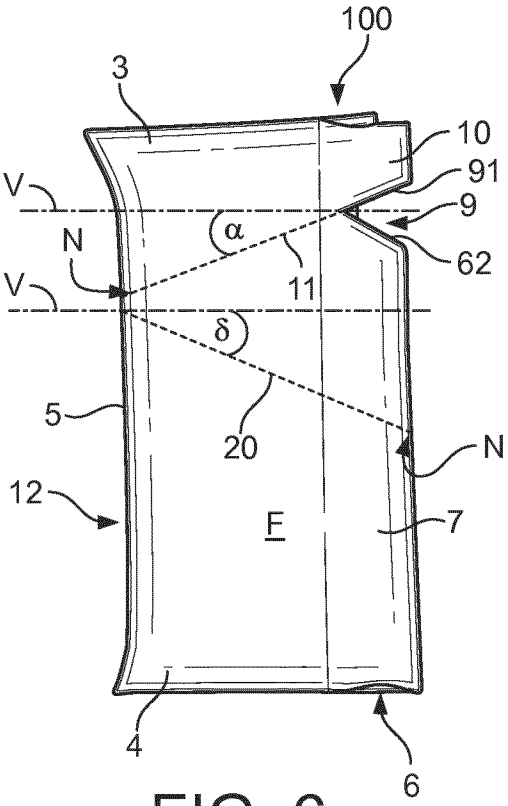

FIG. 6a

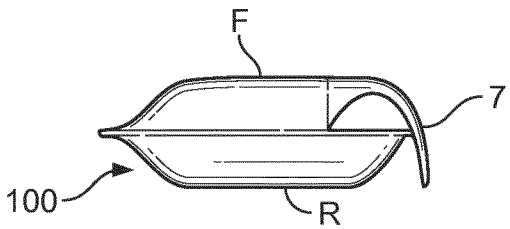

FIG. 5b

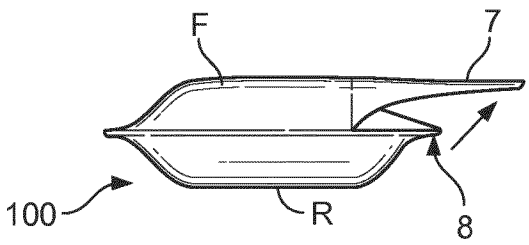

FIG. 6b

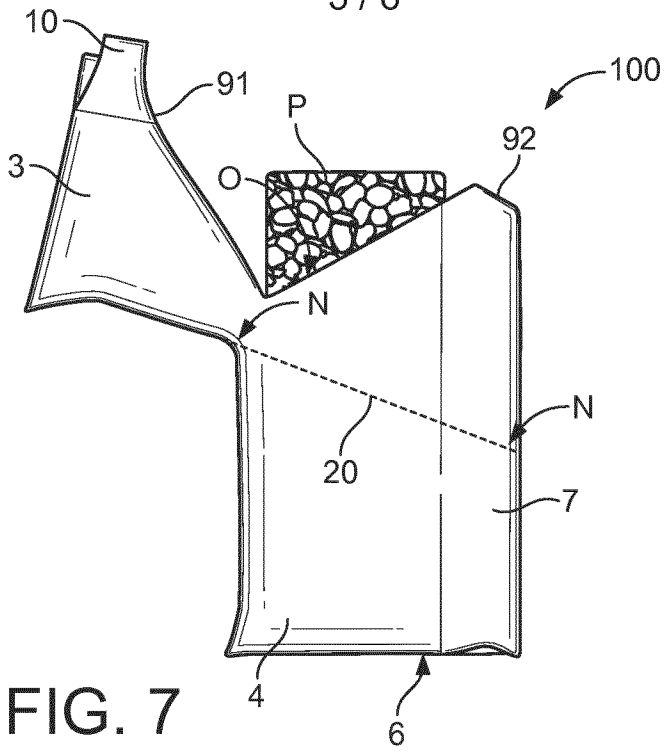

FIG. 7

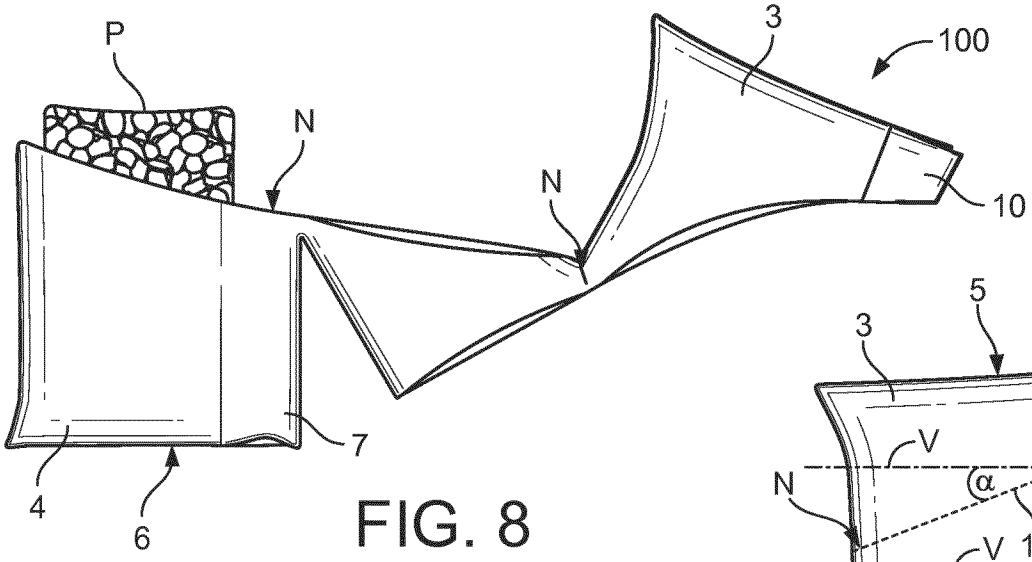

FIG. 8

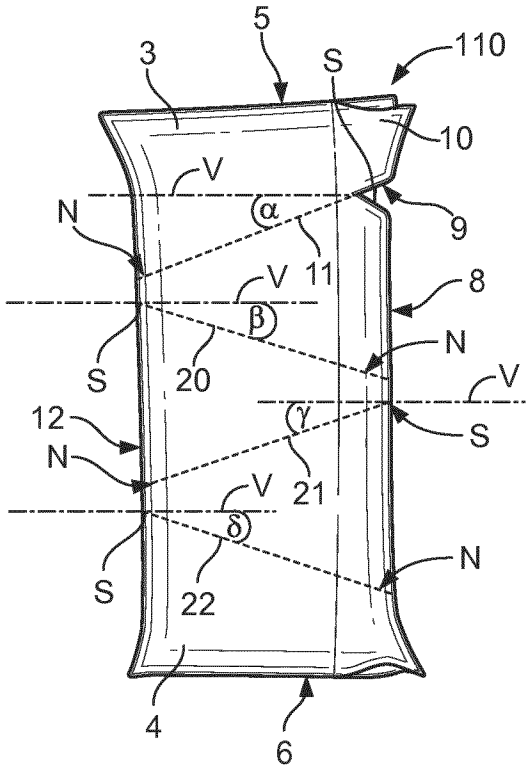

FIG. 9

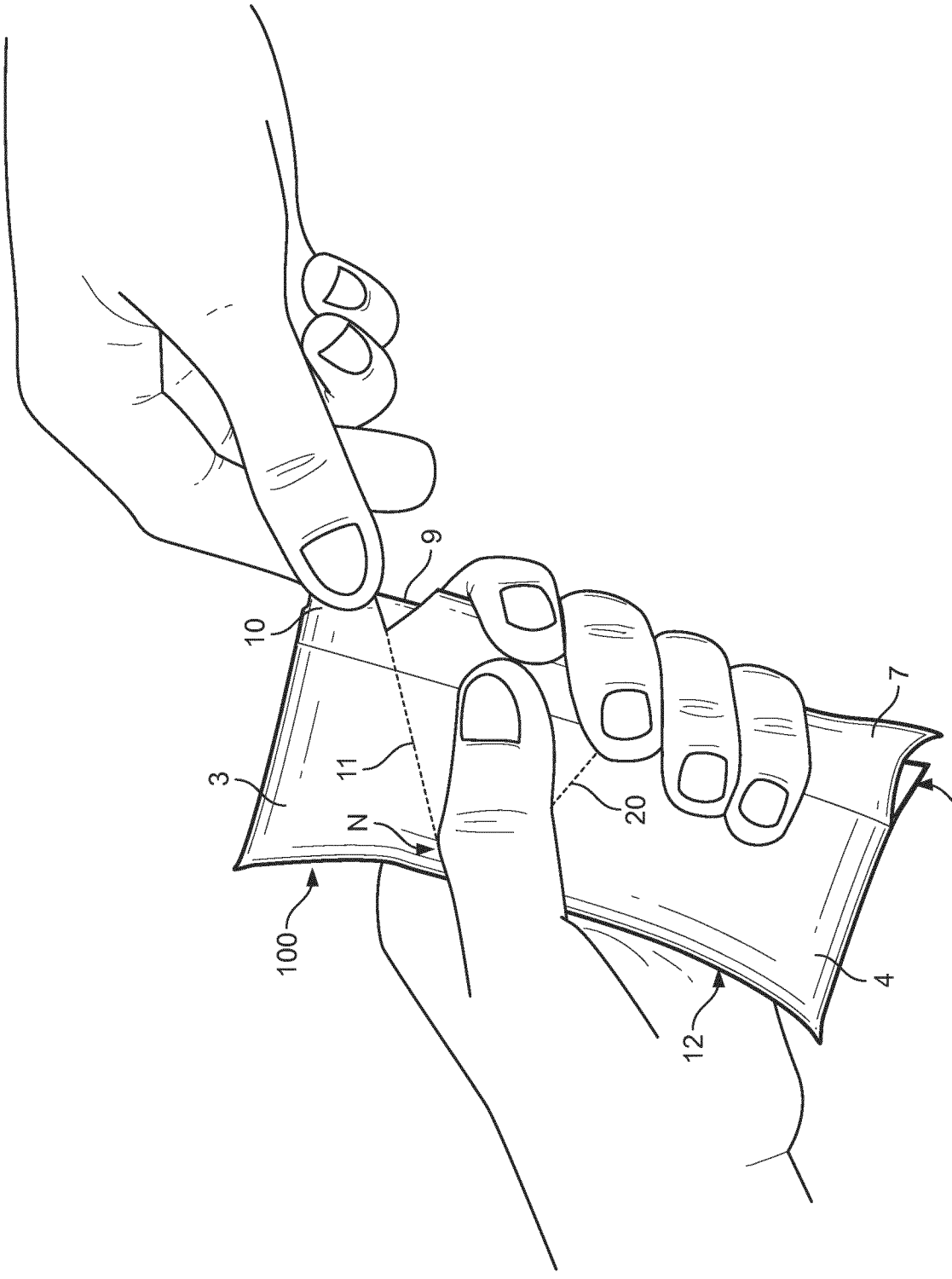

FIG. 10

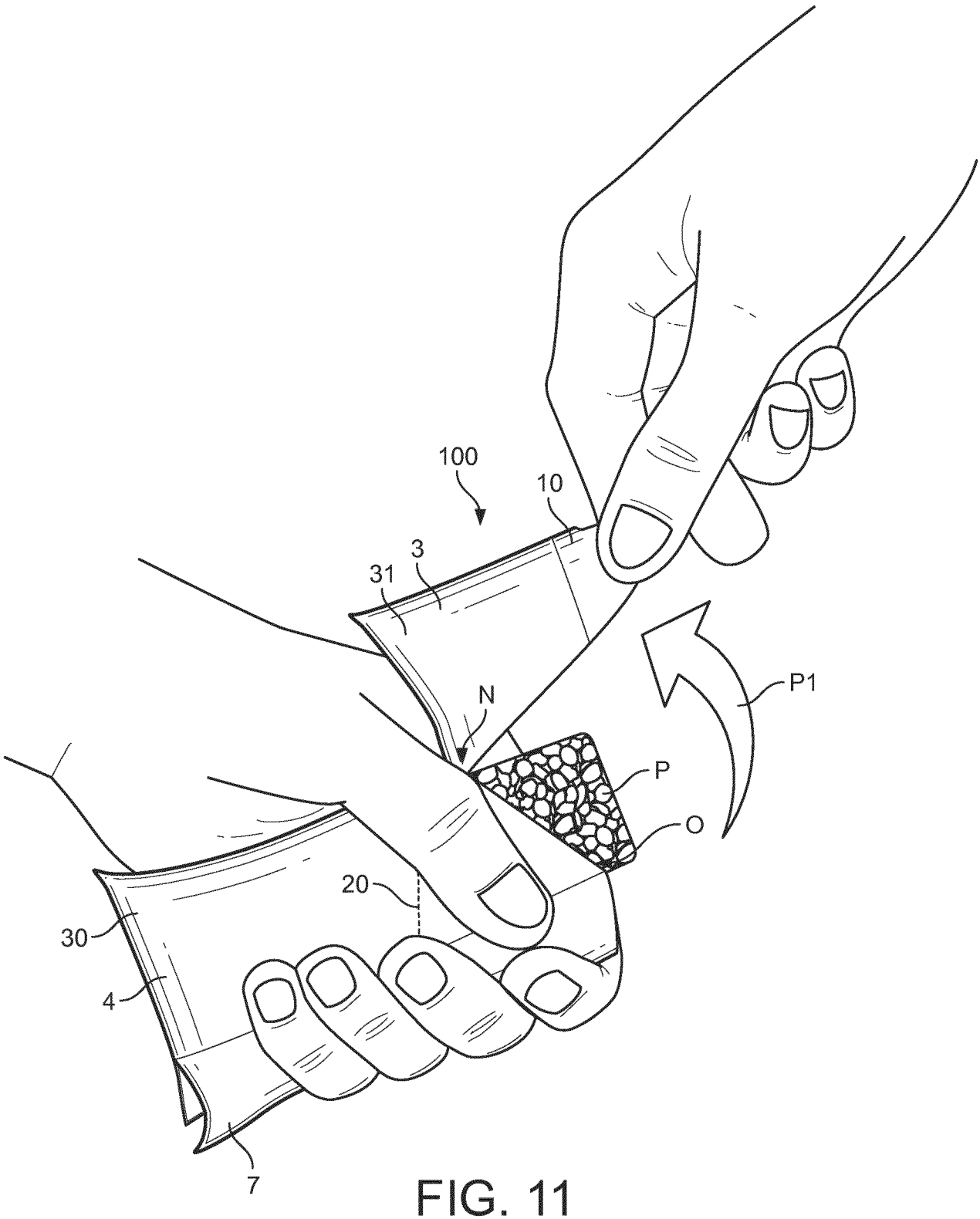

FIG. 11

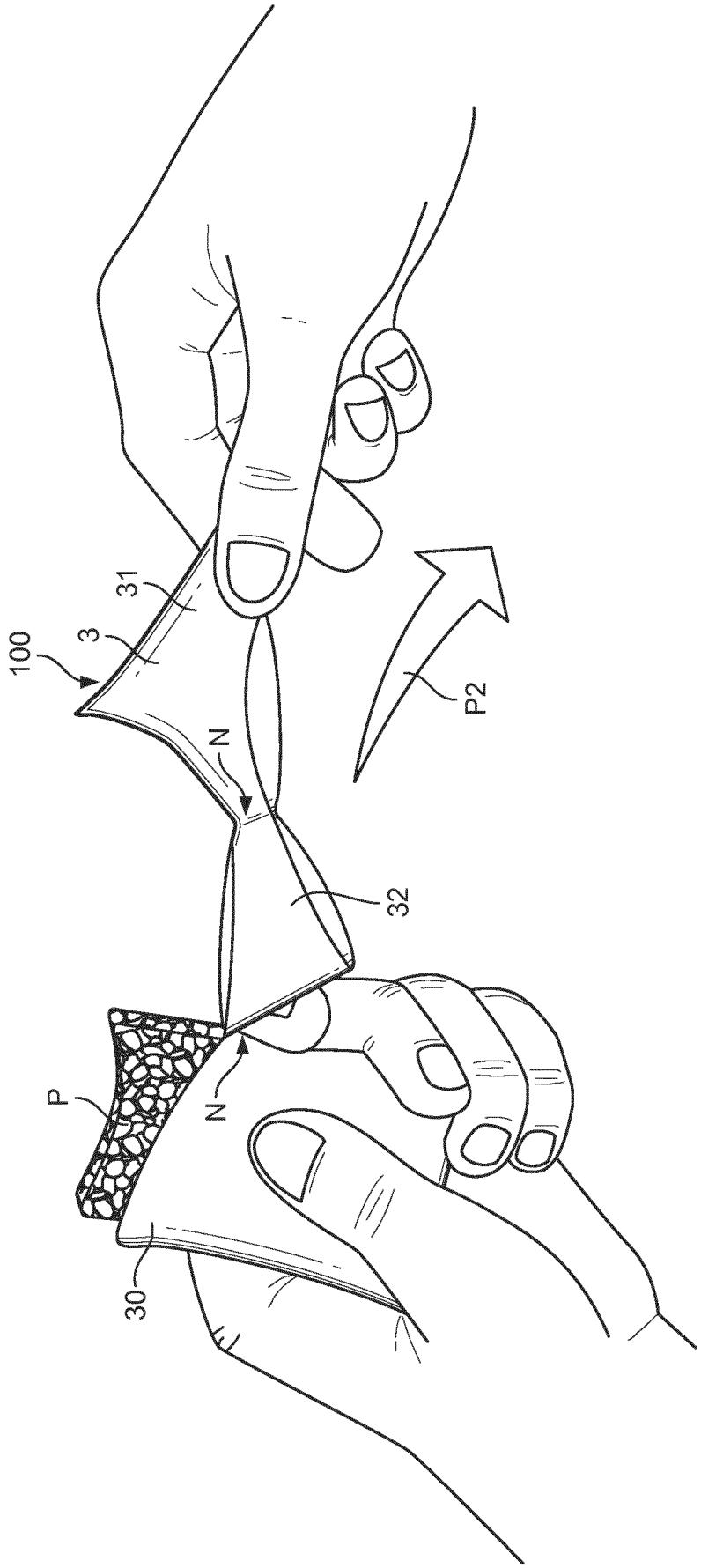

FIG. 12

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/070606

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D75/58 B65D75/62
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 957 043 A1 (MARS ALIMENTAIRE S A [FR]) 17 November 1999 (1999-11-17)	1,3,4, 11,12, 14,15
A	paragraphs [0021] - [0026]; figures 1-27	2,5-10

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A	the whole document	2,5-10, 12

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A	the whole document	2,6-10, 12

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 December 2012	14/12/2012

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Visentin, Mauro

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/070606

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	GB 749 182 A (ROSE BROTHERS LTD) 23 May 1956 (1956-05-23) the whole document	1,15
A	US 2007/131744 A1 (FITZWATER KELLY R [US]) 14 June 2007 (2007-06-14) abstract; figures 1A-1G	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2012/070606

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