(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 393 832 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
03.07.2024 Bulletin 2024/27

(21) Application number: **23150065.3**

(22) Date of filing: **02.01.2023**

(51) International Patent Classification (IPC):
B65D 1/26 *(2006.01)* ***B65D 25/36*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B65D 25/36; B65D 2565/385

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(71) Applicant: **PACCOR Packaging GmbH**
40468 Düsseldorf (DE)

(72) Inventors:
- **DROBEK, Krzysztof**
40-282 Katowice (PL)
- **CAUNEGRE, Yves**
40140 Soustons (FR)

(74) Representative: **König Szynka Tilmann von Renesse**
Patentanwälte Partnerschaft mbB Düsseldorf
Mönchenwerther Straße 11
40545 Düsseldorf (DE)

Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) BLANK FOR A PACKAGING SHELL OF A CUP PACKAGING, METHOD FOR PRODUCING A BLANK, CUP PACKAGING HAVING A PACKAGING SHELL, AND METHOD FOR SEPARATING THE CUP PACKAGING AND THE PACKAGING SHELL

(57) The invention relates to a blank (1) for a packaging shell (2) of a cup packaging (3), the cup packaging (3) having a base (33), a rim (30) opposite the base and a wall between the base (33) and the rim (30), the blank (1) being suitable for encasing the wall (34) in order to form the packaging shell (2); the blank (1) having:
• a planar carrier material (4) having a first periphery and diametrically opposite a second periphery, as well as an upper periphery and diametrically opposite a lower periphery, wherein the peripheries at least substantially delimit the carrier material (4);
• the planar carrier material (4) having a front side and a back side,
• a first connection portion (13) assigned to the first periphery (7) and disposed between the upper periphery (9) and the lower periphery (10);
• a second connection portion (14) assigned to the second periphery (8) and disposed between the upper periphery (9) and the lower periphery (10), provided for connecting to the first connection portion (13);
• a separation section (15) disposed between the connection portions (13,14) and at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein the separation section (15) comprises
• a central separation portion (16) and
• an upper separation portion (17) arranged above the central separation portion (16) and between the central separation portion (16) and the upper periphery (9) and
• a lower separation portion (18) arranged below the central separation portion (16) and between the central separation portion (16) and the lower periphery (10),
• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the front side of the planar carrier material (4), at least one front incision (19) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the back side of the planar carrier material (4), at least one back incision (20) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein the central separation portion (16) has at least one opening (21).

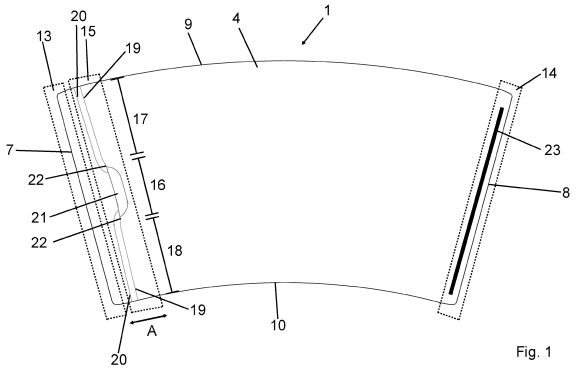


Fig. 1

EP 4 393 832 A1

Description

[0001] The invention relates to a blank for a packaging shell of a cup packaging. The invention likewise relates to a cup packaging having a packaging shell. The invention furthermore relates to a method for separating a cup packaging from a packaging shell and to a method for producing a blank.

[0002] A blank according to the prior art such as WO 2020/245148 has a perforation having a plurality of incisions and a plurality of predetermined separation portions substantially from the lower periphery up to the upper periphery. The perforation can be considered to have three perforation portions. The central perforation portion has an engagement incision by way of which the entire perforation at the predetermined separation portions thereof can be manually split, in particular when the blank is attached to or disposed on, respectively, a cup packaging. WO 2020/245148 especially suggests that the incisions of the three perforation portions are configured so as to overlap along the height of the cup packaging because this is intended to facilitate the engagement incision being accessed from below.

[0003] It is disadvantageous in the prior art that there is an increased complexity in terms of production because the overlaps of the incisions have to be precisely manufactured. There is furthermore the risk that the perforation is too easily and/or unintentionally split because the overlap in the region of the engagement incision already leads to a strong notching effect in the carrier material even upon simple contact, for example during the transportation of the cup packaging.

[0004] Against this background the invention is based on the object of proposing a blank for a packaging shell of a cup packaging, as well as a cup packaging having a packaging shell produced from a blank, wherein the stabilization of the blank during use as a packing shell can be ensured and an easy and reliable separation is ensured, while at the same time the blank as well as the cup packaging is environmentally friendly disposable. In addition, the blank should be easy to stack or transport, respectively, as well as easy to feed to a machine and to be stored in the latter for attaching to a cup packaging. The invention is furthermore based on the object of developing a method by way of which a packaging shell from a blank on a cup packaging can be easily separated from the cup packaging and a method for producing a blank.

[0005] This object is achieved by a blank for a packaging shell of a cup packaging, the cup packaging having a base, a rim opposite the base and a wall between the base and the rim, the blank being suitable for encasing the wall in order to form the packaging shell; the blank having:

- a planar carrier material having a first periphery and diametrically opposite a second periphery, as well as an upper periphery and diametrically opposite a lower periphery, wherein the peripheries at least substantially delimit the carrier material;
- the planar carrier material having a front side and a back side,
- a first connection portion assigned to the first periphery and disposed between the upper periphery and the lower periphery;
- a second connection portion assigned to the second periphery and disposed between the upper periphery and the lower periphery, provided for connecting to the first connection portion;
- a separation section disposed between the connection portions and at least partially extending from the lower periphery to the upper periphery,
- wherein the separation section comprises
  - a central separation portion, and
  - an upper separation portion arranged above the central separation portion and between the central separation portion and the upper periphery, and
  - a lower separation portion arranged below the central separation portion and between the central separation portion and the lower periphery,
- wherein each of the upper separation portion and the lower separation portion has, on the front side of the planar carrier material, at least one front incision in the carrier material at least partially extending from the lower periphery to the upper periphery,
- wherein each of the upper separation portion and the lower separation portion has, on the back side of the planar carrier material, at least one back incision in the carrier material at least partially extending from the lower periphery to the upper periphery,
- wherein the central separation portion has at least one opening.

[0006] The blank provides the advantage that the blank can be easily and reliably separated from a cup packaging in particular because of the at least one front incision and the at least one back incision. The combination of the at least one front incision and the at least one back incision can provide a material weakness, simplifying the separation of the separation section. Thus, the separation section can be easily separated by hand and/or by machine. Hence, the separation of the blank can be guaranteed. Therefore, the blank can be separated from the residual material of the cup packaging such that an environmental-friendly disposal can be achieved. Consequently, the blank can contribute to the environmental protection. Simultaneously, the stabilization of the blank during use as a packing shell can be ensured. In addition, the blank can minimize the risk of injury on the blank. Also, the blank can be easy to stack or transport, respectively, as well as easy to feed to a machine and to be stored in the latter for attaching to a cup packaging.

[0007] The cup packaging addressed by the invention

can be typically thermo-formed products from plastic materials, equipped with a closed base, an open rim opposite. The rim can be designed as a flange, preferably a radially protruding flange. The flange can be used for closing with a lid. Between the rim and the base a closed, encircling wall can be provided that can be suitable to be encased or covered, respectively, by way of a packaging shell. The base and/or the rim can radially project in an encircling manner, while the wall can represent a recess for receiving the blank or the packaging shell, respectively.

[0008] The packaging shell can be formed from a blank which is typically wound around the wall. Ends of the blank can be adhesively bonded in or at, respectively, connection portions and/or to the wall.

[0009] The blank for the packaging shell preferably can have a planar carrier material which can be produced at least from pulp, cellulose, cardboard, paper, recycled material, wastepaper, plastics material, metal and/or similar, or combinations therefrom, respectively. The carrier material can be coated and/or can be produced in layers and/or from various materials/primary products. The carrier material along the face thereof can also in regions/portions have various materials/primary products and/or layers; in particular, at least one connection portion (or else both) can be configured in a manner different from that of the remaining carrier material.

[0010] The blank can be preferably at least substantially quadrangular. In the case of conical, i.e. frustoconical, cup packagings the blank can alternatively or additionally be in the shape of an annular portion. The blank can be typically configured so as to be planar, able to be spread out in a planar manner and/or able to be spread out in planes.

[0011] The blank can be preferably configured so as to be integral. The primary material for the blank can be typically present in the form of sheets and/or wound on rolls, wherein the blank can be preferably punched and/or cut out from said primary material.

[0012] The blank, besides at least or exactly four peripheries, typically can have at least one or exactly one front side and one rear side. The peripheries, the front side and the rear side moreover typically entirely can delimit the blank in terms of the volume of the latter. The peripheries preferably can delimit the blank, or the carrier material, respectively, at least substantially in a planar manner. The peripheries can be preferably, at least substantially and/or in portions, configured so as to be linear, curved, rectilinear and/or arcuate and/or in the transition to the respective next/preceding periphery can have rounded corners, for example. In particular, two peripheries can be at least substantially arcuate and two peripheries can be at least substantially rectilinear, wherein one of the rectilinear peripheries, for example centrically, can contain an arcuate protrusion or a tab, respectively.

[0013] The first periphery on the carrier material can be diametrically opposite the second periphery; the lower periphery on the carrier material can be diametrically opposite the upper periphery. Diametrically opposite can mean that the peripheries in relation to the carrier material substantially can represent external regions having the carrier material therebetween. In the preferred case, for example for a frustoconical cup packaging, the upper periphery can be longer than the lower periphery, in particular also longer than the first and the second periphery.

[0014] The blank preferably can have two or more connection portions. The connection portions can have in each case one portion of the carrier material including corresponding parts of the front side and the rear side. In the simplest case, a connection portion can be merely a theoretically delimited part of the carrier material including the front side and the rear side and not visible on the blank. The connection portions can be preferably provided for connecting, for example in a planar manner, in particular for adhesively bonding to one another and/or to another item such as the cup packaging or the wall, respectively. Defined connection faces or adhesive-bonding faces, respectively, can be provided by the connection portion. By way of example, the area to be printed can be conjointly delimited here, and printing costs can be saved. Moreover, provided can be a flexibility in terms of different diameters of cup packagings, for example in the case of variations resulting from the construction or from tolerances.

[0015] The first connection portion can be assigned to the first periphery, i.e. in that said first connection portion can be adjacent to said first periphery, for example. The second connection portion can be assigned (or adjacent) to the second periphery. Both connection portions here can be disposed between the upper periphery and the lower periphery and can be preferably adjacent to the upper and/or the lower periphery. In other words, the connection portions on the carrier material can be disposed so as to be diametrically opposite, as can be the first and the second periphery. The connection portions transversely and/or orthogonally to the assigned/next periphery preferably can have a width of 1 to 20 mm, preferably 2 to 15 mm, furthermore preferably 3 to 10 mm, in particular 7 +/- 2 mm, and/or a spacing from the assigned/next periphery and/or from the upper and/or the lower periphery of 1 to 5 mm, preferably 2 to 4 mm, furthermore preferably 3 +/- 0.5 mm.

[0016] The separation section can be disposed between the connection portions as well as between the upper and the lower periphery. The separation section can extend at least substantially from the lower periphery to the upper periphery. In other words, the separation section can be disposed substantially along the height of the cup packaging having the packaging shell formed from the blank. This can enable the separation section to be easily torn open and the packaging shell to be separated from the cup packaging in a defined, rapid manner.

[0017] The separation section comprises the central separation portion, the upper separation portion, and the lower separation portion. The central separation portion, the upper separation portion, and the lower separation

portion can define the separation section and thereby can define the region, where the blank can be separated. The upper separation portion is arranged above the central separation portion. In other words, the upper separation portion can be arranged closer to the upper periphery than the central separation portion. The lower separation portion is arranged below the central separation portion. In other words, the lower separation portion can be arranged closer to the lower periphery than the central separation portion. The central separation portion, the upper separation portion and the lower separation portion can be separated from each other in the direction from the upper periphery to the lower periphery. Alternatively, the central separation portion, the upper separation portion and the lower separation portion can overlap. The upper separation portion can overlap with the central separation portion and/or the lower separation portion can overlap with the central separation portion.

[0018] The at least one front incision can be arranged on the front side of the planar carrier material. In other words, the at least one front incision can be arranged on the outside of the blank, when the blank can be formed to a packaging shell. The at least one front incision can be a material thinning in the blank. The at least one front incision can be a material removal. The at least one front incision can be half cut.

[0019] The at least one back incision can be arranged on the back side of the planar carrier material. In other words, the at least one back incision can be arranged on the inside of the blank, when the blank can be formed to a packaging shell. The at least one back incision can be a material thinning in the blank. The at least one back incision can be a material removal. The at least one back incision can be a half cut.

[0020] The at least one opening can be a material recess. The at least one opening can be configured for a manual use, in particular such that the blank can be removed from a cup packaging by hand. The at least one opening can be an interruption in the blank. The at least one opening can be an engagement portion which can be used for manual or mechanical separation of the separation section. The at least one opening can be an engagement portion which can trigger the separation of the separation section. The at least one opening can have a width of 5 mm in a direction from the first periphery to the second periphery.

[0021] The separation section can tear as a result of a notching effect which can facilitate the tearing of the carrier material at one end of the separation section, when the carrier material can be at least in part stressed for tension in a planar direction. The separation section can form in particular a local material weakness according to which the separation section can be exposed to greater forces than the surrounding carrier material when the carrier material can be impinged with a force.

[0022] At least partially extending from the lower periphery to the upper periphery can mean that the at least one front incision and the at least one back incision can extend only over a part of the distance from the lower periphery to the upper periphery. Alternatively or additionally, at least partially extending from the lower periphery to the upper periphery can mean that the at least one front incision and the at least one back incision can extend substantially in the direction from the lower periphery and the upper periphery. Alternatively or additionally, at least partially extending from the lower periphery to the upper periphery can mean that the at least one front incision and the at least one back incision can comprise a shape which mostly extends in the direction from the lower periphery and the upper periphery.

[0023] In an embodiment the separation section can comprise at least one cut and/or at least one perforation through the carrier material, wherein the at least one cut and/or the at least one perforation can connect the at least one front incision of the upper separation portion to the at least one opening and/or to the upper periphery, and/or wherein the at least one cut and/or the at least one perforation can connect the at least one front incision of the lower separation portion to the at least one opening, and/or to the lower periphery.

[0024] In this way, a weak point can be implemented in the blank such that a lower force can be mandatory to separate the separation section. In other words, a triggering point can be implemented to simplify the separation. By connecting the at least one front incision of the upper separation portion to the at least one opening and/or to the upper periphery by the at least one cut and/or the at least one perforation, and/or by connecting the at least one front incision of the lower separation portion to the at least one opening, and/or to the lower periphery by the at least one cut and/or the at least one perforation multiple trigger points can be established. The at least one cut and/or the at least one perforation can form an already separated part and can trigger the separation in two portions for example in the lower separation portion and the central separation portion.

[0025] The at least one cut can be a material separation in the blank. The at least one cut can be a material recess in the blank.

[0026] The at least one perforation can be a discontinuous material separation in the blank. The at least one perforation can be formed by multiple material recess in the blank, for example by holes aligned in a row.

[0027] Connecting the at least one front incision of the upper separation portion to the at least one opening and/or to the upper periphery by the at least one cut and/or the at least one perforation and/or connecting the at least one front incision of the lower separation portion to the at least one opening, and/or to the lower periphery by the at least one cut and/or the at least one perforation can mean that the at least one cut and/or the at least one perforation can form a connection. In other words, without the at least one cut and/or the at least one perforation the lower separation portion, the upper separation portion, the at least one opening, the lower periphery and/or to the upper periphery can be separated from each other.

[0028] The at least one front incision of the upper separation portion can be connected to the at least one opening and/or to the upper periphery. The connection can be established by the at least one cut or the at least one perforation or a combination of the at least one cut and the at least one perforation.

[0029] The at least one front incision of the lower separation portion can be connected to the to the at least one opening and/or to the lower periphery. The connection can be established by the at least one cut or the at least one perforation or a combination of the at least one cut and the at least one perforation.

[0030] In an embodiment the at least one front incision of the upper separation portion and the at least one back incision of the upper separation portion can be spaced apart in a direction from the first periphery to the second periphery, and/or the at least one front incision of the lower separation portion and the at least one back incision of the lower separation portion can be spaced apart in a direction from the first periphery to the second periphery.

[0031] In doing so, the stabilization of the blank during use as a packing shell can be ensured, while at the same an easy separation of the blank can be guaranteed. Thus, the environment can be protected.

[0032] The at least one front incision and the at least one back incision can be spaced apart in a direction from the first periphery to the second periphery can mean that the at least one front incision and the at least one back incision are spaced apart in the direction of rotation when the blank can be formed to a packaging shell. The at least one front incision and the at least one back incision can be spaced apart such that the at least one front incision and the at least one back incision can have no point of contact.

[0033] In an embodiment the at least one front incision of the upper separation portion and the at least one back incision of the upper separation portion can be spaced apart at least 2 mm, in particular at least 3 mm, and/or the at least one front incision of the lower separation portion and the at least one back incision of the lower separation portion can be spaced apart at least 2 mm, in particular at least 3 mm.

[0034] In doing so, the stabilization of the blank during use as a packing shell can be ensured, while at the same time an easy separation of the blank can be guaranteed. Thus, the environment can be protected. In addition, the at least one front incision and the at least one back incision can be produced easily and cheaply, such that the blank can be very cheap.

[0035] In an embodiment the depth of the at least one front incision and the at least one back incision of the upper separation portion and/or of the lower separation portion can be the same.

[0036] In this way, the force distribution on the separation section can be uniform during a separation. Hence, the separation can be simple and controllable. Therefore, a good separation can be ensured leading to an environmentally friendly blank.

[0037] The depth of the at least one front incision and/or the at least one back incision can be the distance from the surface of the blank to the point of the at least one front incision and/ or the at least one back incision furthest away from the surface of the blank. The depth can extend in a direction perpendicular to the surface of the blank and contrary to the normal vector of the surface of the blank.

[0038] In an embodiment the depth of the at least one front incision and/or the at least one back incision of the upper separation portion and/or of the lower separation portion can be 35 % - 90 %, in particular 50 % - 75 %, of the thickness of the planar carrier material.

[0039] If the depth of the at least one front incision and the at least one back incision of the upper separation portion and/or of the lower separation portion can be 35 % - 90 % of the thickness of the planar carrier material, the at least one front incision and the at least one back incision can provide a very reliable material weakness. Hence, a good separation of the separation section can be guaranteed so that the blank can be environmentally friendly.

[0040] If the depth of the at least one front incision and the at least one back incision of the upper separation portion and/or of the lower separation portion can be 50 % - 75 % of the thickness of the planar carrier material, the stability of the blank used as a packaging shell can be very good. At the same time the separation can be ensured, so that the blank can be environmentally friendly.

[0041] In an embodiment the at least one front incision of the upper separation portion can form a larger angle with the first periphery closer to the at least one opening than closer to the upper periphery, and/or the at least one front incision of the lower separation portion can form a larger angle with the first periphery closer to the at least one opening than closer to the lower periphery.

[0042] In this way, the separation of the separation section can be simplified. The at least one opening can be the starting point for the separation of the separation section. Hence the at least one front incision of the upper separation and/or the at least one front incision of the lower separation can trigger the separation closer to the at least one opening in an easy way, because the larger angle closer to the at least one opening can result in a better force transmission. The at least one blank can thus be easily separated from a cup packaging. Hence, the blank can be environmental-friendly.

[0043] The at least one front incision of the upper separation can form a larger angle with the first periphery closer to the at least one opening than closer to the upper periphery can mean that a tangent of the at least one front incision of the upper separation can form a larger angle with the first periphery closer to the at least one opening than closer to the upper periphery.

[0044] The at least one front incision of the lower separation portion can form a larger angle with the first pe-

riphery closer to the at least one opening than closer to the lower periphery can mean that a tangent of the at least one front incision of the lower separation portion can form a larger angle with the first periphery closer to the at least one opening than closer to the lower periphery.

[0045] The at least one front incision of the upper separation can form a larger angle with the first periphery closer to the at least one opening than closer to the upper periphery can mean that the shape of the at least one front incision of the upper separation can comprise a larger amount in the direction from the first periphery to the second periphery closer to the at least one opening than closer to the upper periphery.

[0046] The at least one front incision of the lower separation portion can form a larger angle with the first periphery closer to the at least one opening than closer to the lower periphery can mean that the shape of the at least one front incision of the lower separation portion can comprise a larger amount in the direction from the first periphery to the second periphery closer to the at least one opening than closer to the lower periphery.

[0047] In an embodiment the back side of the carrier material in the first connection portion can be provided for adhesively bonding to the front side of the carrier material in the second connection portion.

[0048] In this way, the blank can be easily fixed to a cup packaging so as to configure a packaging shell, while at the same time a residue of the adhesive can be prevented on the outside of the blank formed into a packaging shell. Thus, the customer friendliness and the handling can be improved.

[0049] Alternatively, the front side of the carrier material in the second connection portion can be provided for adhesively bonding to the back side of the carrier material in the first connection portion. Alternatively, a reversed adhesive bonding of the connection portions can also be possible. For example, the front side and/or the rear side can be correspondingly pretreated for adhesive bonding, for example by cleaning, degreasing, napping and electrical charging, etc., and/or can comprise an adhesive. It can thus be achieved that the blank can be easily fixed to a cup packaging so as to configure a packaging shell.

[0050] In an embodiment an adhesive can be applied to the back side of the carrier material in the first connection portion and/or to the front side of the carrier material in the second connection portion, wherein in particular the adhesive can have a width of 5 - 9 mm.

[0051] In this way, forming the blank into a packaging shell can be simplified. In addition, the application of an adhesive can be very easy such that the blank can be easy to produce and thus cheap. If the adhesive can have a width of 5 - 9 mm the blank can form a very stable packaging shell.

[0052] In an embodiment the separation section, in particular the upper separation portion, the central separation portion and/or the lower separation portion, can be disposed next to the first connection portion.

[0053] When the blank can be formed into a packaging shell the first connection portion can be connected to the second connection portion. Hence, the packaging shell can be more stable in the region of the connected first connection portion and the second connection portion. Thus, the more stable region of the packaging shell can improve the separation of the separation section, if the separation section, in particular the upper separation portion, the central separation portion and/or the lower separation portion, can be disposed next to the first connection portion. Hence, the separation of the packaging shell can be improved by the blank such that the blank can be environmentally friendly and efficient.

[0054] Next preferably can mean that the spacing from the connection portions corresponds to at most twice the width of the connection portion, preferably to the single width or half the width of the connection portion, said width being in particular transverse to the first periphery. In particular when the separation section can lie close to the first connection portion, a practical technical effect can be achieved as a result of the blank being connected to the packaging shell at both connection portions, wherein the packaging shell in this instance can be substantially cup-shaped. Specifically, the packaging shell in the region of the connection portions can have substantially double the thickness of the single carrier material and can be thus reinforced. Therefore, the packaging shell in the region of the connection portions cannot adapt that much to the curvature of the wall. This can have an effect on the directly surrounding carrier material, because a more intense curvature around the wall of the cup packaging can have to be applied by said carrier material. When at least the central separation portion can be also disposed in the directly surrounding carrier material, and in particular when the at least one opening in the carrier material can be disposed beside the first connection portion, the central separation portion, in particular the at least one opening, can be easier to engage. This can facilitate the manual engagement.

[0055] According to another aspect of the invention the above-mentioned object is solved by a method for producing a blank, in particular a blank according to the invention, comprising the steps:

- Providing a blank with a carrier material,
- cutting at least one opening into a separation section on the carrier material,
- cutting at least one front incision in the separation section of the carrier material on the front side of the planar carrier material above and underneath the at least one opening,
- cutting at least one back incision in the separation section of the carrier material on the back side of the planar carrier material above and underneath the at least one opening,
- in particular providing an adhesive on a periphery of the carrier material.

[0056] The method provides the advantage that the blank can be produced in an easy, reliable, and cheap way. The produced blank can provide the advantage that the blank can be easily and reliably separated from a cup packaging in particular because of the at least one front incision and the at least one back incision. The combination of the at least one front incision and the at least one back incision can provide an extreme material weakness, simplifying the separation of the separation section. Thus, the separation section can be easily separated by hand and/or by machine. Hence, the separation of the blank can be guaranteed. Therefore, the blank can be separated from the residual material of the cup packaging such that an environmental-friendly disposal can be achieved. Consequently, the produced blank can contribute to the environmental protection. Simultaneously, the stabilization of the blank during use as a packing shell can be ensured. In addition, the blank can minimize the risk of injury on the blank. Also, the blank can be easy to stack or transport, respectively, as well as easy to feed to a machine and to be stored in the latter for attaching to a cup packaging.

[0057] According to another aspect of the invention the above-mentioned object is solved by a cup packaging having a base, a rim opposite the base and a wall between the base and the rim, and a packaging shell, wherein the packaging shell is disposed in an encircling manner around the wall between the base and the rim wherein the packaging shell is made of a blank according to the invention.

[0058] The cup packaging provides the advantage that the different materials of the cup packaging can be easily and reliably separated from each other in particular because of the at least one front incision and the at least one back incision. The combination of the at least one front incision and the at least one back incision can provide an material weakness, simplifying the separation of the separation section. Thus, the separation section can be easily separated by hand and/or by machine. Hence, the separation of the cup packaging can be guaranteed. Therefore, the different materials of the cup packaging can be separated such that an environmental-friendly disposal can be achieved. Consequently, the cup packaging can contribute to the environmental protection. Simultaneously, the stabilization of the cup packaging during use can be ensured because of the packing shell.

[0059] In particular, the packaging shell can at least be substantially formed from this blank in that the blank can be placed in an encircling manner onto the wall and can be adhesively bonded to itself. The advantages of the blank apply in an analogous manner to the cup packaging having the packaging shell from the blank. The cup packaging having the packaging shell can withstand even forceful contact during transportation without the separation section being separated, and also be easily manually released from the packaging shell by means of the separation section.

[0060] One preferred cup packaging can have a height of the cup of 50 to 250 mm, preferably 75 to 200 mm, furthermore preferably 100 to 150 mm, in particular 125 +/- 20 mm. A height of 85 mm +/- 5 mm can also be advantageous. The wall across the cup height, or along the direction, respectively, can have a height of approx. 0.1 up to 10 mm less than the height of the cup, preferably approx. 2 mm.

[0061] A base protrusion on the base can have a height of 0.1 up to 5 mm, and a flange protrusion on the encircling flange can have a height of 0.1 up to 5 mm.

[0062] The base, in particular including the base protrusion, can have a diameter of 20 to 250 mm, preferably 30 to 200 mm, furthermore preferably 50 to 150 mm, in particular 100 +/- 20 mm.

[0063] The flange, in particular including the flange protrusion, preferably can have a diameter of 30 to 375 mm, preferably 45 to 300 mm, furthermore preferably 75 to 225 mm, in particular 150 +/- 30 mm.

[0064] The flange preferably can have an internal diameter, or an opening in the flange preferably can have a diameter, respectively, of 25 to 370 mm, preferably 40 to 295 mm, furthermore preferably 70 to 220 mm, in particular 145 +/- 30 mm.

[0065] In the simplest case of a substantially cylindrical cup packaging, the wall in relation to the base can have an angle of 90°. In order for the cup packaging to be able to be inserted into one another, stacked and/or easy to handle, the wall can however be preferably configured so as to be conical, i.e. said wall tapers from the top to the bottom, or from the flange to the base, respectively. This can be achieved in that the wall is frustoconical. An angle between the wall and the base of preferably 70° up to 90°, furthermore preferably of 80° up to 88°, particularly preferably of 82° up to 86°, and in particular of 84° +/- 1 ° can be provided.

[0066] The correlation between the aforementioned angle and the design embodiment of the cup can be derived from the trigonometric consideration of the radial widening across the height of the wall and the height of the wall orthogonal in relation to the base. Accordingly, the tangent of the angle can be equal to the height of the wall divided by the radial widening.

[0067] In an arcuate blank, the aforementioned angle can be derived in a similar manner. Here, the tangent of the angle can be equal to the height divided by the difference between the lengths of the upper periphery and of the lower periphery in relation to twice the number pi. The angle, but twice in terms of size, can be likewise found between the first and the second periphery on the blank, as long as the peripheries can extend in a rectilinear manner at least in portions.

[0068] The angle can also be found with the aid of considering the centres of the circles of the upper and the lower peripheries. The centre of the circle of the upper periphery and/or of the lower periphery can moreover typically lie outside the blank, in particular wherein the lower periphery can be disposed closer to the centre of the circle than the upper periphery. The upper periphery

and the lower periphery typically can have the same centre of the circle.

[0069] In an embodiment the blank can be adhesively bonded to itself, in that two connection faces and/or the connection portions of the blank can be adhesively bonded to one another, and/or in that the blank can be fixed to the cup packaging at least substantially by way of a form-fit between the flange and the base and/or can be not adhesively bonded to the cup packaging.

[0070] In this way, there can be no adhesive bond between the different materials of the cup packaging. Hence, the separation of the different materials can be simplified such that the cup packaging is very environmentally friendly.

[0071] The blank can thus be held on the cup packaging only in that the blank can be adhesively bonded to one another in two mutually remote connection faces on the blank and/or the connection portions can be adhesively bonded to one another. The adhesively bonded blank, in particular the packaging shell, can be fastened to the cup packaging solely by way of a form-fit, in particular because the flange and/or the base can form a protrusion, or the wall can form a recess, respectively. When the blank can be adhesively bonded only to itself, or the packaging shell cannot be adhesively bonded to the cup packaging, respectively, the separation of the cup packaging and the packaging shell/blank can be very easily performed because the packaging shell/blank may already be released from the cup packaging in the case of a very low force. An adhesive bonding of the cup packaging and the blank/packaging can interfere here. Additionally, this can save resources because in this instance only one adhesive-bonding step instead of two adhesive bonding steps can be required in the production of the cup packaging.

[0072] According to another aspect of the invention the above-mentioned object is solved by a method for separating a cup packaging , in particular a cup packaging according to the invention; from a packaging shell, wherein the cup packaging has at least a base, a rim, a wall between the base and the rim, as well the packaging shell, wherein the packaging shell is disposed in an encircling manner around the wall, wherein the packaging shell has a separation section, said method comprising the following steps:

a. providing the cup packaging having the packaging shell disposed thereon, and at least one unseparated separation section; and
b. compressing, in particular crushing, the cup packaging having the packaging shell;

wherein the compressing or crushing, respectively, preferably takes place by way of at least two converged faces of a press, having the cup packaging disposed therebetween, and preferably initiates, or can initiate, respectively, splitting of the separation section.

[0073] The method provides the advantage that a cup packaging can be separated in a reliable manner such that the different materials can be recycled appropriately. Hence, the method can contribute to the environmental protection.

[0074] To this end, the method or the press, respectively, has to be correspondingly configured and/or operated. The method according to the invention can be designed such that said method can already be carried out in an arbitrary waste collection vehicle of a public waste collection company. Presses having two convergeable faces can be typically already in such waste collection vehicles. But the two convergeable faces of the press can also be the two hand surfaces of a human being or a tabletop and the handsurface of a human being. The presses need not be in a public waste collection vehicle but could be in a waste plant. The two convergeable surfaces of the press can also be of neighboring objects that simply by their weight or by weight of material placed further above them, can converge, for example if the cup packaging according to the invention can be in the bottom of a pile or can be in a plastic sack together with other material. Moreover, the cup packaging cannot mandatorily have to have, but preferably can have a blank with the features of Claim 1 but the generic blank can also be sufficient, for example. It has been specifically recognized by the method according to the invention that the separation of the cup packaging and the packaging shell cannot only be carried out manually, for example by way of an engagement in the at least one opening of the separation section, but also in a mechanized manner by the compressing or crushing, respectively, as described. The design embodiment of the separation section and/or of the blank or other features cannot necessarily be relevant.

[0075] For example, it can be relevant that the separation section can burst when the cup packaging is deformed/compressed/crushed. It can also be typically relevant that the packaging shell is not too firmly connected to the cup packaging, for example in that said packaging shell cannot be adhesively bonded to the cup packaging.

[0076] In an embodiment the cup packaging in step b. can be at least partially, in particular at least substantially, compressed or crushed, respectively, along or parallel to, respectively, a direction from the base to the rim.

[0077] In this way the separation can be ensured in an easy way. Hence, the environmental friendliness is increased.

[0078] In particular, the direction from the rim to the base can be aligned so as to be at least substantially orthogonal to the base and/or to the rim. When the crushing or compressing, respectively, of the cup packaging partially can take place in the direction of the height of the cup packaging, the packaging shell can specifically bulge outwards and tear open along the separation section.

[0079] The invention will be explained in more detail hereunder by means of figures which illustrates only exemplary embodiments of the invention and which in par-

ticular is only substantially or partially true to scale, respectively. In the figures:

Fig. 1 shows a blank in a plan view;

Fig. 2 shows the blank in a plan view;

Fig. 3 shows an enlarged section of Fig. 1;

Fig. 4 shows a cup packaging according to the invention having a packaging shell of in a lateral view;

Fig. 5 shows a first method according to the invention in a schematic view; and

Fig. 6 shows a second method according to the invention in a schematic view.

[0080] Fig. 1 shows a blank 1 in a plan view. The blank 1 is for a packaging shell 2 of a cup packaging 3, wherein the cup packaging 3 has a base 33, a rim 30 opposite the base 33 and a wall 34 between the base 33 and the rim 30. The blank 1 is suitable for encasing the wall 34 in order to form the packaging shell 2. The blank 1 has a planar carrier material 4 having a first periphery 7 and diametrically opposite a second periphery 8, as well as an upper periphery 9 and diametrically opposite a lower periphery 10, wherein the peripheries 7,8,9,10 at least substantially delimit the carrier material 4. The planar carrier material 4 has a front side and a back side. A first connection portion 13 is assigned to the first periphery 7 and disposed between the upper periphery 9 and the lower periphery 10. A second connection portion 14 is assigned to the second periphery 8 and disposed between the upper periphery 9 and the lower periphery 10, provided for connecting to the first connection portion 13. A separation section 15 is disposed between the connection portions 13, 14 and at least partially extending from the lower periphery 10 to the upper periphery 9.

[0081] The separation section 15 comprises a central separation portion 16 and an upper separation portion 17 arranged above the central separation portion 16 and between the central separation portion 16 and the upper periphery 9. The separation section 15 comprises a lower separation portion 18 arranged below the central separation portion 16 and between the central separation portion 16 and the lower periphery 10. Each each of the upper separation portion 17 and the lower separation portion 18 has, on the front side of the planar carrier material 4, a front incision 19 in the carrier material 4 at least partially extending from the lower periphery 10 to the upper periphery 9. Each of the upper separation portion 17 and the lower separation portion 18 has, on the back side of the planar carrier material 4, a back incision 20 in the carrier material 4 at least partially extending from the lower periphery 10 to the upper periphery 9. The central separation portion 16 has an opening 21.

[0082] The separation section 15 comprises two cuts 22 through the carrier material 4. The two cuts 22 connect the front incisions 19 of the upper separation portion 17 and the lower separation portion 18 to the opening 21.

[0083] Fig. 2 shows the blank in a plan view. The blank shown in Fig. 2 is similar to the blank shown in Fig. 1 so that the same elements are marked with the same reference signs. The separation section 15 comprises four cuts 22 through the carrier material 4. The four cuts 22 connect the front incision 19 of the upper separation portion 17 to the opening 21 and to the upper periphery 9.

[0084] Further, the four cuts 22 connect the front incision 19 of the lower separation portion 18 to the opening 21 and to the lower periphery 10.

[0085] Alternatively, instead of four cuts 22 perforations through the carrier material could be used or a combination of cuts 22 and perforations.

[0086] The front incision 19 of the upper separation portion 17 and the back incision 20 of the upper separation portion 17 are spaced apart in a direction A from the first periphery to the second periphery. In addition, the front incision 19 of the lower separation portion 18 and the back incision 20 of the lower separation portion 18 are spaced apart in a direction A from the first periphery to the second periphery.

[0087] The front incision 19 of the upper separation portion 17 and the back incision 20 of the upper separation portion 17 are spaced apart at least 2 mm. Alternatively, they could be space apart 3 mm. The front incision 19 of the lower separation portion 18 and the back incision 20 of the lower separation portion 18 are spaced apart at least 2 mm. Alternatively, they could be space apart 3 mm.

[0088] The depth of the front incisions 19 and the back incisions 20 of the upper separation portion 17 and of the lower separation portion 18 are the same. The depth of front incisions 19 and the back incisions 20 of the upper separation portion 17 and of the lower separation portion 18 are 35 % - 90 % of the thickness of the planar carrier material 4. The depth could also be 50 % - 75 % of the thickness of the planar carrier material 4.

[0089] Fig. 3 shows an enlargement of the opening 21 and the front incision 19 of the upper separation portion of Fig. 1. As can be seen in Fig. 3, the front incision 19 of the upper separation portion forms a larger angle α with the first periphery closer to the opening 21 than closer to the upper periphery 9. The angle α with the first periphery closer to the opening 21 is about 90°, while the angle α with the first periphery closer to the upper periphery 9 is about 0°. In addition, the front incision 19 of the lower separation portion 18 forms a larger angle α with the first periphery closer to the opening 21 than closer to the lower periphery 10.

[0090] Referring to Fig. 2 the back side of the carrier material 4 in the first connection portion 13 is provided for adhesively bonding to the front side of the carrier material 4 in the second connection portion 14. An adhesive 23 is applied to the front side of the carrier material 4 in the second connection portion 14. Alternatively, the ad-

hesive 23 can be applied to the back side of the carrier material 4 in the first connection portion 13. The adhesive 23 has a width of 5 - 9 mm.

[0091] The separation section 15, in particular the upper separation portion 17, the central separation portion 16 and/or the lower separation portion 18, is disposed next to the first connection portion 13.

[0092] In Fig. 4, the packaging shell 2 of Fig. 2 is attached to a cup packaging 3. The cup packaging 3 has a flange 30 having a round opening 31 for attaching a lid 32 not illustrated, a base 33, as well as a wall 34 between the flange 30 and the base 33. The base 33 as well as the wall 34 are closed such that a fluid content can also be filled into the cup packaging 3 through the opening 31 and stored in the cup packaging 3. The blank 1 is disposed in an encircling manner on the wall 34. It is to be noted here that the separation section 15 lies next to the first connection portion 13. The first connection portion 13 and the second connection portion 14 are connected by an adhesive 23. As a result, the first connection portion 13 is reinforced by the second connection portion 14. Consequently, the first connection portion 13 does not adapt to the frustoconical, convex wall 34 in the same manner as the carrier material 4 between the connection portions 13, 14. As a result, the opening 21 in the separation section 15 is slightly spread apart. This means that the carrier material 4 which was originally directly opposite the opening 21 and separated at the latter is mutually diverged in portions, this resulting in a gap for easier engagement being configured.

[0093] Moreover, the packaging shell 2 is not adhesively bonded to the cup packaging 3. Rather, the blank 1 is adhesively bonded only to itself so as to configure the packaging shell 2. The packaging shell 2 is held on the cup packaging 3 by way of a form-fit because the wall 34 is radially recessed in relation to the periphery of the base 33, or a base protrusion 48, respectively, and the flange 30, or a flange protrusion 47, respectively, and because the packaging shell 2 is disposed so as to be tightly wound on/onto the wall 34. The packaging shell 2 is thus fixed between the flange 30 and the base 33 by way of a form-fit.

[0094] The cup packaging 3 of Fig. 4 has a height 35 of 90 mm. The wall 34 above the beaker height, or along the direction 35, respectively, has a height 36 of 86 mm. The base protrusion 48, or the base 33, respectively, has a height 37 of 2 mm, and the flange protrusion 47, or the flange 30, respectively has a height 38 of 2 mm. The base 33 has a diameter 39 of 56 mm including the double width 41 of the base protrusion 48 of 1 mm. Without the base protrusion 48, the base 33 has a diameter 45 of 54 mm. In relation to the base 33 the flange 30 has a "significantly" larger diameter 40 of 80 mm, this including the double width 42 of the flange protrusion 47 of 5 mm. Without the flange protrusion 47, and not taking into account the wall 34 which is only 0.2 mm thick, the flange 30 has an internal diameter, or the opening 31 in the flange 30 has a diameter 43 of 80 mm, respectively. The angle 44 of the wall in relation to the base in the exemplary embodiment is 84° +/- 1°.

[0095] Fig. 5 shows a first method according to the invention shortly before a cup packaging 3 is compressed. It is illustrated that one upper face 49 of two faces 49, 50 of a press in a direction 52 can converge in parallel with the lower face 50, said direction 52 in principle corresponding to the direction 35, or being disposed parallel to the latter, respectively. The cup packaging 3 standing on the base 33 thereof is disposed between the two faces 49, 50, said cup packaging 3 moreover having a packaging shell 2. The packaging shell 2 is produced from a blank 1, has a separation section 15 and is not adhesively bonded to the cup packaging 3. By way of the method, the cup packaging 3 of Fig. 4 can be separated from the packaging shell 2 thereof in that the separation section 15, is completely split because the separation section 15 "bursts" under a large deformation of the cup packaging 3.

[0096] Fig. 6 shows a second method according to the invention which substantially corresponds to the method of Fig. 5. Deviating therefrom, the cup packaging 3 by way of the wall 34 thereof, or the packaging shell 2 disposed thereon, respectively, substantially bears on the lower face 50. In this method, the cup packaging 3 can only be partially compressed and crushed in one direction, thus only by way of one directional component along the direction 35, from the flange 30 towards the base 33, or from the base 33 towards the flange 30. Nevertheless, this method can also typically separate packaging shells 2 with a separation section 15, and/or packaging shells 2 that are not adhesively bonded to the wall 34, respectively, from the wall 34 or from the cup packaging 3, respectively.

Claims

1. Blank (1) for a packaging shell (2) of a cup packaging (3), the cup packaging (3) having a base (33), a rim (30) opposite the base (33) and a wall (34) between the base (33) and the rim (30), the blank (1) being suitable for encasing the wall (34) in order to form the packaging shell (2); the blank (1) having:

    • a planar carrier material (4) having a first periphery (7) and diametrically opposite a second periphery (8), as well as an upper periphery (9) and diametrically opposite a lower periphery (10), wherein the peripheries (7,8,9,10) at least substantially delimit the carrier material (4);
    • the planar carrier material (4) having a front side and a back side,
    • a first connection portion (13) assigned to the first periphery (7) and disposed between the upper periphery (9) and the lower periphery (10);
    • a second connection portion (14) assigned to the second periphery (8) and disposed between

the upper periphery (9) and the lower periphery (10), provided for connecting to the first connection portion (13);
• a separation section (15) disposed between the connection portions (13, 14) and at least partially extending from the lower periphery (10) to the upper periphery (9),

characterized in that

• the separation section (15) comprises

• a central separation portion (16) and
• an upper separation portion (17) arranged above the central separation portion (16) and between the central separation portion (16) and the upper periphery (9) and
• a lower separation portion (18) arranged below the central separation portion (16) and between the central separation portion (16) and the lower periphery (10),

• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the front side of the planar carrier material (4), at least one front incision (19) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the back side of the planar carrier material (4), at least one back incision (20) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein the central separation portion (16) has at least one opening (21).

2. Blank (1) according to Claim 1, **characterized in that** the separation section (15) comprises at least one cut (22) and/or at least one perforation through the carrier material (4),

wherein the at least one cut (22) and/or the at least one perforation connects the at least one front incision (19) of the upper separation portion (17) to the at least one opening (21) and/or to the upper periphery (9), and/or
wherein the at least one cut (22) and/or the at least one perforation connects the at least one front incision (19) of the lower separation portion (18) to the at least one opening (21), and/or to the lower periphery (10).

3. Blank (1) according to one of the preceding claims, **characterized in that** the at least one front incision (19) of the upper separation portion (17) and the at least one back incision (20) of the upper separation portion (17) are spaced apart in a direction (A) from the first periphery to the second periphery, and/or
the at least one front incision (19) of the lower separation portion (18) and the at least one back incision (20) of the lower separation portion (18) are spaced apart in a direction (A) from the first periphery to the second periphery.

4. Blank (1) according to Claim 3, **characterized in that** the at least one front incision (19) of the upper separation portion (17) and the at least one back incision (20) of the upper separation portion (17) are spaced apart at least 2 mm, in particular at least 3 mm, and/or
the at least one front incision (19) of the lower separation portion (18) and the at least one back incision (20) of the lower separation portion (18) are spaced apart at least 2 mm, in particular at least 3 mm.

5. Blank (1) according to one of the preceding claims **characterized in that** the depth of the at least one front incision (19) and the at least one back incision (20) of the upper separation portion (17) and/or of the lower separation portion (18) are the same.

6. Blank (1) according to one of the preceding claims **characterized in that** the depth of the at least one front incision (19) and/or the at least one back incision (20) of the upper separation portion (17) and/or of the lower separation portion (18) is 35 % - 90 %, in particular 50 % - 75 %, of the thickness of the planar carrier material (4).

7. Blank (1) according to one of the preceding claims **characterized in that** the at least one front incision (19) of the upper separation portion forms a larger angle (α) with the first periphery closer to the at least one opening (21) than closer to the upper periphery (9), and/or
the at least one front incision (19) of the lower separation portion (18) forms a larger angle (α) with the first periphery closer to the at least one opening (21) than closer to the lower periphery (10).

8. Blank according to one of the preceding claims, **characterized in that** the back side of the carrier material (4) in the first connection portion (13) is provided for adhesively bonding to the front side of the carrier material (4) in the second connection portion.

9. Blank according to one of the preceding claims, **characterized in that** an adhesive (23) is applied to the back side of the carrier material (4) in the first connection portion (13) and/or to the front side of the carrier material (4) in the second connection portion, wherein in particular the adhesive (23) has a width of 5 - 9 mm.

10. Blank according to one of the preceding claims,

characterized in that the separation section (15), in particular the upper separation portion (17), the central separation portion (16) and/or the lower separation portion (18), is disposed next to the first connection portion (13).

11. Method for producing a blank (1), in particular a blank (1) according to one of the preceding claims, comprising the steps:

- Providing a blank (1) with a carrier material (4),
- cutting at least one opening (21) into a separation section (15) on the carrier material (4),
- cutting at least one front incision (19) in the separation section (15) of the carrier material (4) on the front side of the planar carrier material (4) above and underneath the at least one opening (21),
- cutting at least one back incision (20) in the separation section (15) of the carrier material (4) on the back side of the planar carrier material (4) above and underneath the at least one opening (21),
- in particular providing an adhesive (23) on a periphery of the carrier material (4).

12. Cup packaging (3) having a base (33), a rim (30) opposite the base (33) and a wall (34) between the base (33) and the rim (30), and a packaging shell (2), wherein the packaging shell (2) is disposed in an encircling manner around the wall (34) between the base (33) and the rim (30), **characterized in that** the packaging shell (2) is made of a blank (1) according to any one of claims 1 to 10.

13. Cup packaging (3) according to Claim 11, **characterized in that** the blank (1) is adhesively bonded to itself, **in that** two connection faces and/or the connection portions (13, 14) of the blank (1) are adhesively bonded to one another, and/or **in that** the blank (1) is fixed to the cup packaging (3) at least substantially by way of a form-fit between the flange (30) and the base (33) and/or is not adhesively bonded to the cup packaging (3).

14. Method for separating a cup packaging (3), in particular a cup packaging according to claim 12 or 13; from a packaging shell (2), wherein the cup packaging (3) has at least a base (33), a rim (30), a wall (34) between the base (33) and the rim (30), as well the packaging shell (2), wherein the packaging shell (2) is disposed in an encircling manner around the wall (34), wherein the packaging shell (2) has a separation section (15), said method comprising the following steps:

a. providing the cup packaging (3) having the packaging shell (2) disposed thereon, and at least one unseparated separation section (15); and
b. compressing, in particular crushing, the cup packaging (2) having the packaging shell (2);

wherein the compressing or crushing, respectively, preferably takes place by way of at least two converged faces (49, 50) of a press (51), having the cup packaging (3) disposed therebetween, and preferably initiates, or can initiate, respectively, splitting of the separation section (15).

15. Method according to Claim 12, **characterized in that** the cup packaging (3) in step b. is at least partially, in particular at least substantially, compressed or crushed, respectively, along or parallel to, respectively, a direction (35) from the base (33) to the rim (30).

Amended claims in accordance with Rule 137(2) EPC.

1. Blank (1) for a packaging shell (2) of a cup packaging (3), the cup packaging (3) having a base (33), a rim (30) opposite the base (33) and a wall (34) between the base (33) and the rim (30), the blank (1) being suitable for encasing the wall (34) in order to form the packaging shell (2); the blank (1) having:

- a planar carrier material (4) having a first periphery (7) and diametrically opposite a second periphery (8), as well as an upper periphery (9) and diametrically opposite a lower periphery (10), wherein the peripheries (7,8,9,10) at least substantially delimit the carrier material (4);
- the planar carrier material (4) having a front side and a back side,
- a first connection portion (13) assigned to the first periphery (7) and disposed between the upper periphery (9) and the lower periphery (10);
- a second connection portion (14) assigned to the second periphery (8) and disposed between the upper periphery (9) and the lower periphery (10), provided for connecting to the first connection portion (13);
- a separation section (15) disposed between the connection portions (13, 14) and at least partially extending from the lower periphery (10) to the upper periphery (9),

characterized in that

- the separation section (15) comprises
  - a central separation portion (16) and
  - an upper separation portion (17) arranged above the central separation portion (16)

and between the central separation portion (16) and the upper periphery (9) and
• a lower separation portion (18) arranged below the central separation portion (16) and between the central separation portion (16) and the lower periphery (10),

• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the front side of the planar carrier material (4), at least one front incision (19) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein each of the upper separation portion (17) and the lower separation portion (18) has, on the back side of the planar carrier material (4), at least one back incision (20) in the carrier material (4) at least partially extending from the lower periphery (10) to the upper periphery (9),
• wherein the central separation portion (16) has at least one opening (21).

2. Blank (1) according to Claim 1, **characterized in that** the separation section (15) comprises at least one cut (22) and/or at least one perforation through the carrier material (4),

wherein the at least one cut (22) and/or the at least one perforation connects the at least one front incision (19) of the upper separation portion (17) to the at least one opening (21) and/or to the upper periphery (9), and/or
wherein the at least one cut (22) and/or the at least one perforation connects the at least one front incision (19) of the lower separation portion (18) to the at least one opening (21), and/or to the lower periphery (10).

3. Blank (1) according to one of the preceding claims, **characterized in that** the at least one front incision (19) of the upper separation portion (17) and the at least one back incision (20) of the upper separation portion (17) are spaced apart in a direction (A) from the first periphery to the second periphery, and/or
the at least one front incision (19) of the lower separation portion (18) and the at least one back incision (20) of the lower separation portion (18) are spaced apart in a direction (A) from the first periphery to the second periphery.

4. Blank (1) according to Claim 3, **characterized in that** the at least one front incision (19) of the upper separation portion (17) and the at least one back incision (20) of the upper separation portion (17) are spaced apart at least 2 mm, in particular at least 3 mm, and/or
the at least one front incision (19) of the lower separation portion (18) and the at least one back incision (20) of the lower separation portion (18) are spaced apart at least 2 mm, in particular at least 3 mm.

5. Blank (1) according to one of the preceding claims **characterized in that** the depth of the at least one front incision (19) and the at least one back incision (20) of the upper separation portion (17) and/or of the lower separation portion (18) are the same.

6. Blank (1) according to one of the preceding claims **characterized in that** the depth of the at least one front incision (19) and/or the at least one back incision (20) of the upper separation portion (17) and/or of the lower separation portion (18) is 35 % - 90 %, in particular 50 % - 75 %, of the thickness of the planar carrier material (4).

7. Blank (1) according to one of the preceding claims **characterized in that** the at least one front incision (19) of the upper separation portion forms a larger angle (α) with the first periphery closer to the at least one opening (21) than closer to the upper periphery (9), and/or
the at least one front incision (19) of the lower separation portion (18) forms a larger angle (α) with the first periphery closer to the at least one opening (21) than closer to the lower periphery (10).

8. Blank according to one of the preceding claims, **characterized in that** the back side of the carrier material (4) in the first connection portion (13) is provided for adhesively bonding to the front side of the carrier material (4) in the second connection portion.

9. Blank according to one of the preceding claims, **characterized in that** an adhesive (23) is applied to the back side of the carrier material (4) in the first connection portion (13) and/or to the front side of the carrier material (4) in the second connection portion, wherein in particular the adhesive (23) has a width of 5 - 9 mm.

10. Blank according to one of the preceding claims, **characterized in that** the separation section (15), in particular the upper separation portion (17), the central separation portion (16) and/or the lower separation portion (18), is disposed next to the first connection portion (13).

11. Cup packaging (3) having a base (33), a rim (30) opposite the base (33) and a wall (34) between the base (33) and the rim (30), and a packaging shell (2), wherein the packaging shell (2) is disposed in an encircling manner around the wall (34) between the base (33) and the rim (30), **characterized in that** the packaging shell (2) is made of a blank (1) according to any one of claims 1 to 10.

12. Cup packaging (3) according to Claim 11, **characterized in that** the blank (1) is adhesively bonded to itself, **in that** two connection faces and/or the connection portions (13, 14) of the blank (1) are adhesively bonded to one another, and/or **in that** the blank (1) is fixed to the cup packaging (3) at least substantially by way of a form-fit between the flange (30) and the base (33) and/or is not adhesively bonded to the cup packaging (3).

13. Method for producing a blank (1) according to one of claims 1 to 10, comprising the steps:

- Providing a blank (1) with a carrier material (4),
- cutting at least one opening (21) into a separation section (15) on the carrier material (4),
- cutting at least one front incision (19) in the separation section (15) of the carrier material (4) on the front side of the planar carrier material (4) above and underneath the at least one opening (21),
- cutting at least one back incision (20) in the separation section (15) of the carrier material (4) on the back side of the planar carrier material (4) above and underneath the at least one opening (21),
- in particular providing an adhesive (23) on a periphery of the carrier material (4).

14. Method for separating a cup packaging (3) according to claim 11 or 12; from a packaging shell (2), wherein the cup packaging (3) has at least a base (33), a rim (30), a wall (34) between the base (33) and the rim (30), as well the packaging shell (2), wherein the packaging shell (2) is disposed in an encircling manner around the wall (34), wherein the packaging shell (2) has a separation section (15), said method comprising the following steps:

a. providing the cup packaging (3) having the packaging shell (2) disposed thereon, and at least one unseparated separation section (15); and
b. compressing, in particular crushing, the cup packaging (2) having the packaging shell (2);

wherein the compressing or crushing, respectively, preferably takes place by way of at least two converged faces (49, 50) of a press (51), having the cup packaging (3) disposed therebetween, and initiates, or can initiate, respectively, splitting of the separation section (15).

15. Method according to Claim 14, **characterized in that** the cup packaging (3) in step b. is at least partially, in particular at least substantially, compressed or crushed, respectively, along or parallel to, respectively, a direction (35) from the base (33) to the rim (30).

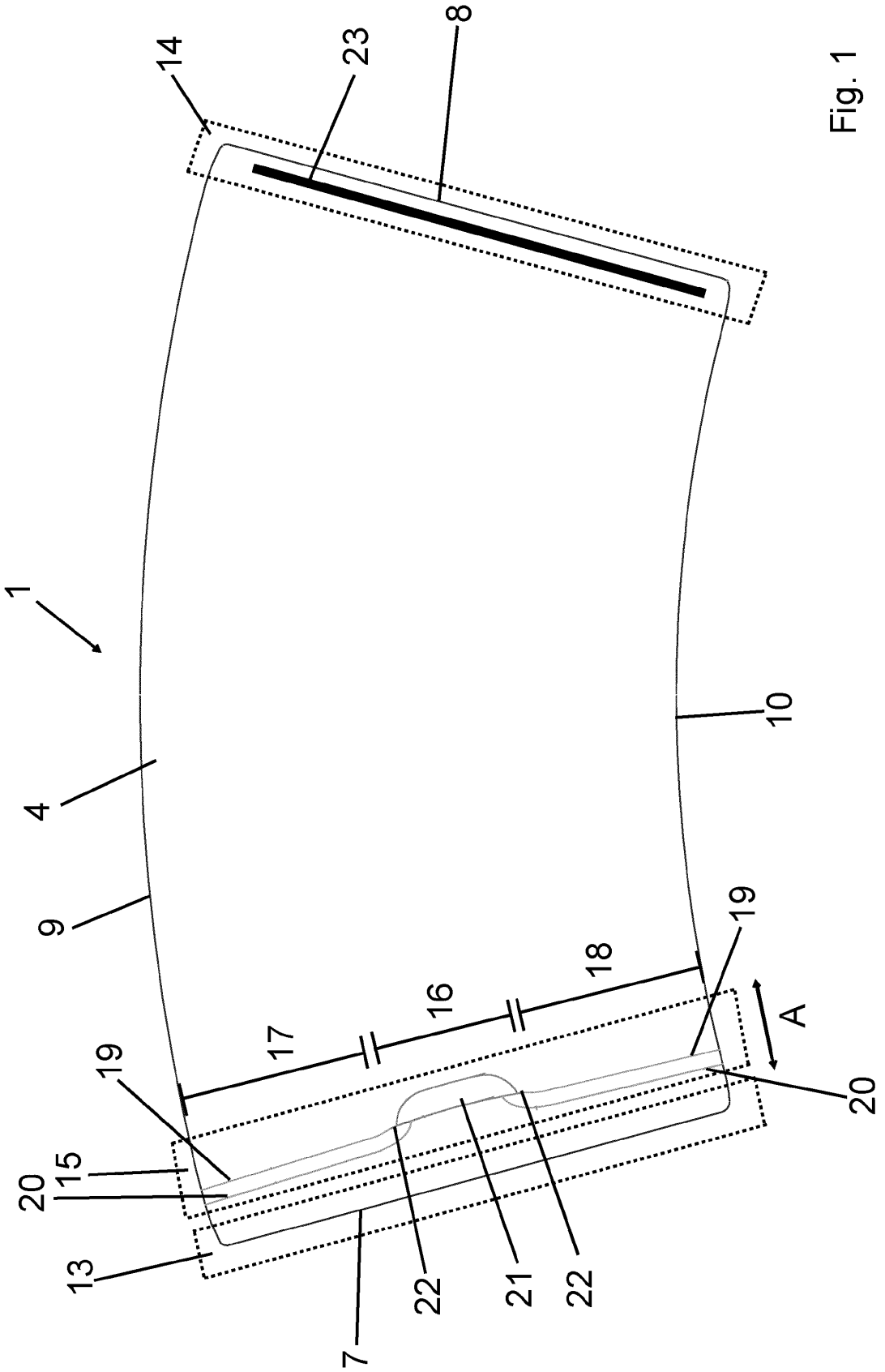


Fig. 1

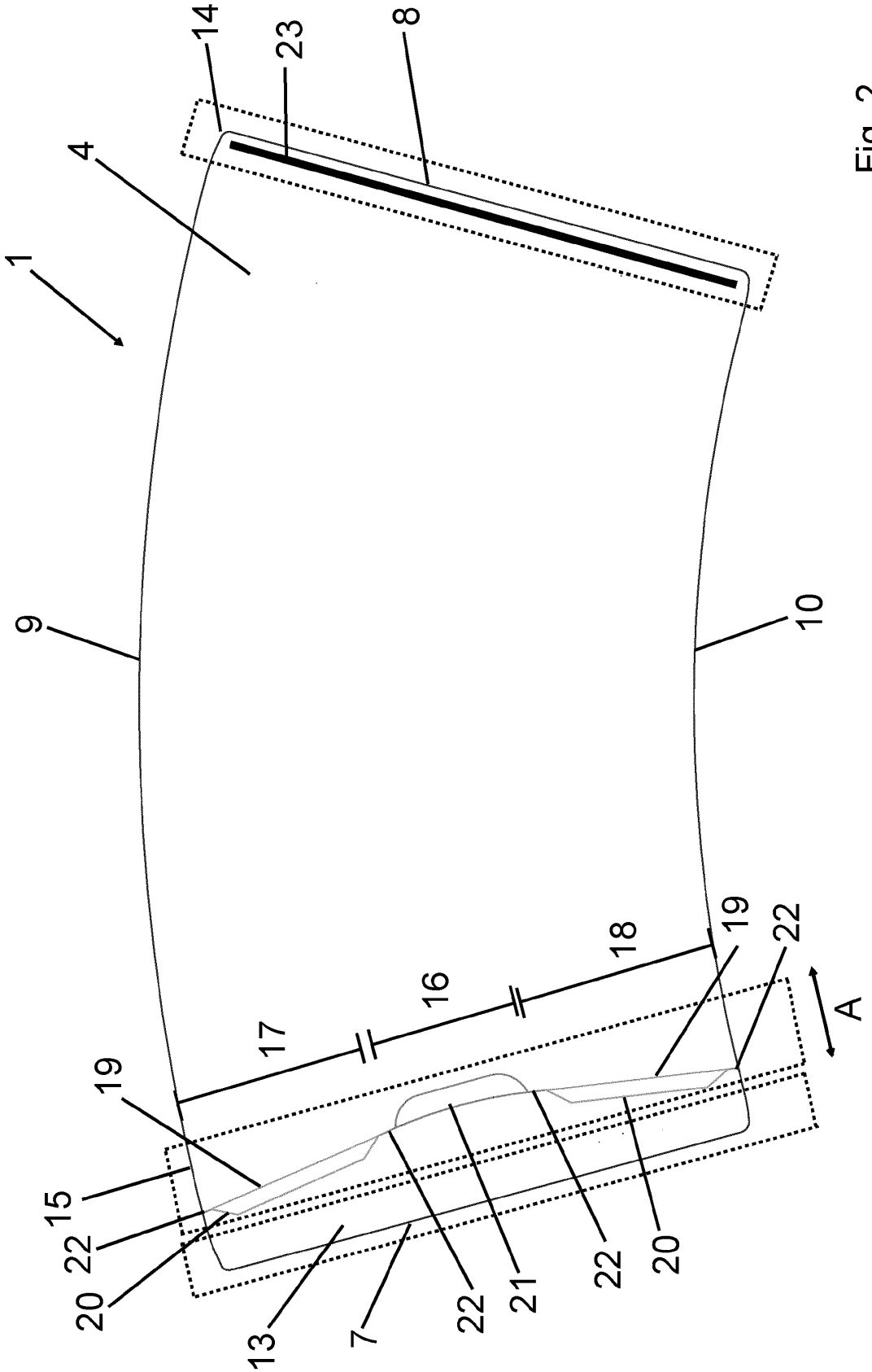


Fig. 2

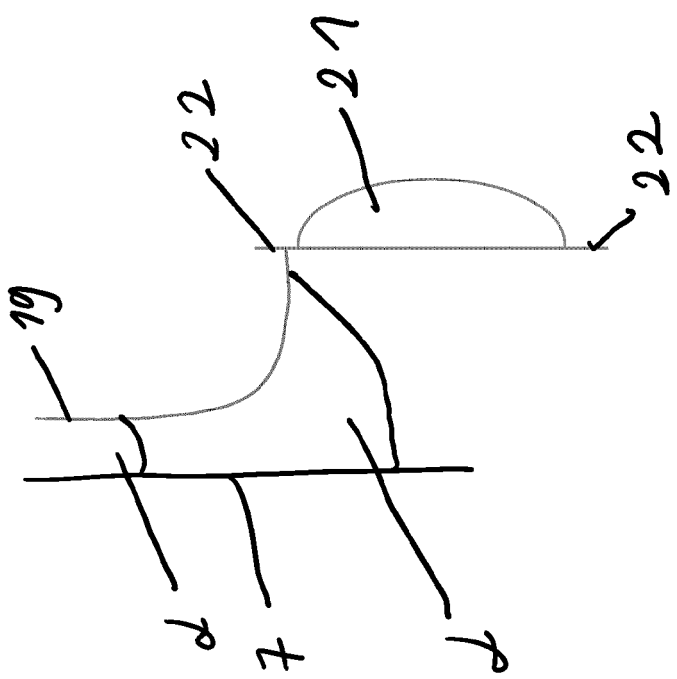


Fig. 3

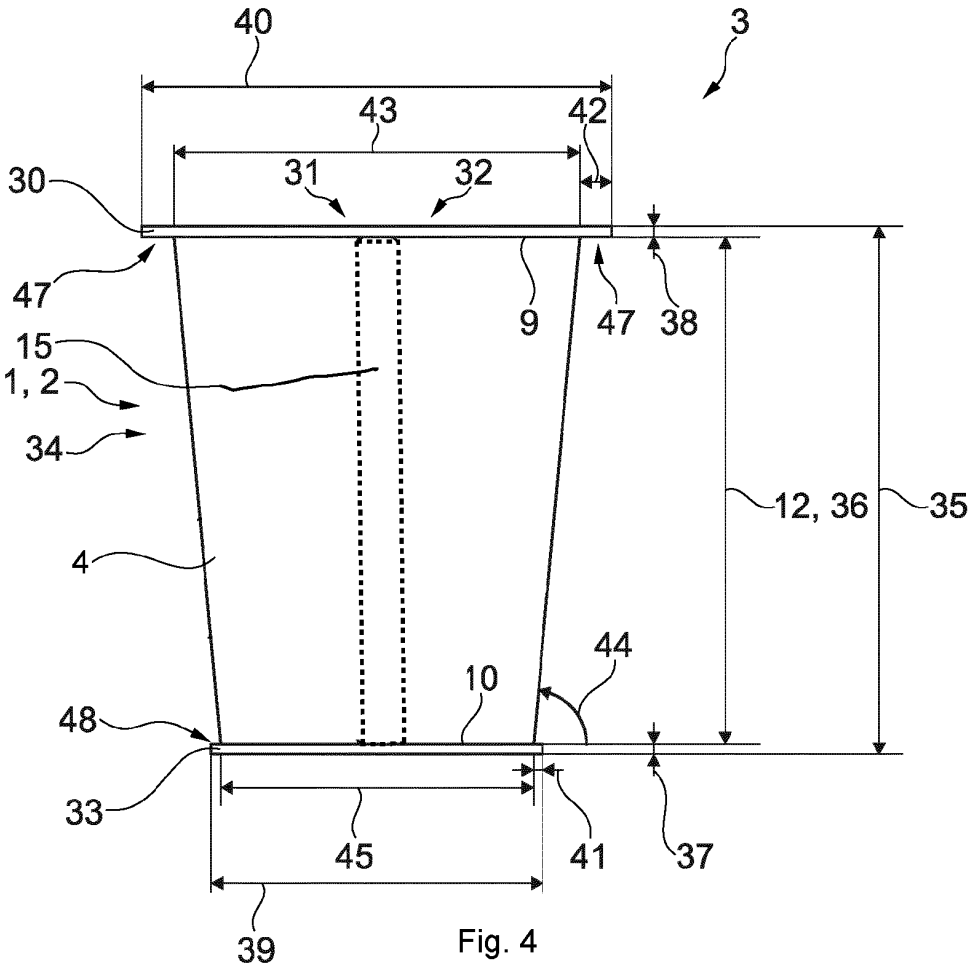


Fig. 4

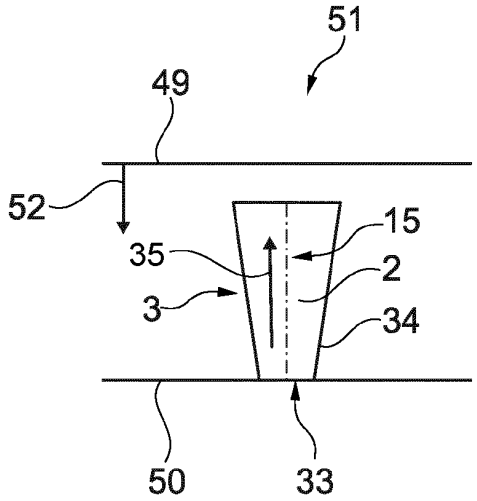


Fig. 5

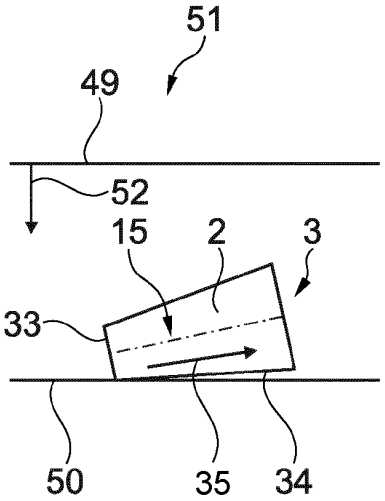


Fig. 6

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 23 15 0065

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	WO 2020/245148 A1 (GREINER PACKAGING AG [CH]) 10 December 2020 (2020-12-10)	14,15	INV.
			B65D1/26
A	* page 12, line 1 - page 16, line 6 * * page 15, lines 4-9 * * page 24, line 14 - page 25, line 13; figures 1-9 *	1-13	B65D25/36
X	WO 2022/180079 A1 (GREINER PACKAGING AG [CH]) 1 September 2022 (2022-09-01)	14,15	
A	* page 31, lines 10-22; figures 1-13 *	1-13	
X	CH 706 124 B1 (RUNDPACK AG [CH]) 30 August 2013 (2013-08-30)	14,15	
A	* paragraph [0071]; figures 1-16 *	1-13	
A	EP 2 838 807 B1 (RUNDPACK AG [CH]) 3 February 2016 (2016-02-03) * paragraphs [0036] - [0050]; figures 1-6 *	1-15	
X	EP 0 444 444 A1 (SCHMIDT C P VERPACKUNG [DE]) 4 September 1991 (1991-09-04) * column 1, lines 45-47 * * column 5, lines 15-32 * * column 6, lines 20-28 * * column 7, line 39 - column 8, line 9; figures 1-6 *	11	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	25 May 2023	Gabrich, Katharina

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)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 15 0065

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.

25-05-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2020245148 A1	10-12-2020	AT 522907 A1	15-03-2021
		CA 3142212 A1	10-12-2020
		EP 3980340 A1	13-04-2022
		US 2022227524 A1	21-07-2022
		WO 2020245148 A1	10-12-2020
WO 2022180079 A1	01-09-2022	NONE	
CH 706124 B1	30-08-2013	AT 506750 A1	15-11-2009
		CH 701274 B1	30-08-2013
		CH 706121 B1	30-08-2013
		CH 706124 B1	30-08-2013
		CZ 307106 B6	17-01-2018
		DE 112009000956 A5	24-02-2011
		DE 112009005505 A5	20-06-2013
		DE 202009018623 U1	01-06-2012
		DE 202009018672 U1	13-09-2012
		DE 202009018673 U1	14-09-2012
		GB 2471252 A	22-12-2010
		GB 2486105 A	06-06-2012
		RU 117894 U1	10-07-2012
		RU 2430000 C1	27-09-2011
		RU 2011123593 A	20-12-2012
		RU 2016134445 A	01-03-2018
		WO 2009130043 A1	29-10-2009
EP 2838807 B1	03-02-2016	AT 512873 A1	15-11-2013
		EP 2838807 A1	25-02-2015
		WO 2013156369 A1	24-10-2013
EP 0444444 A1	04-09-1991	DE 4006224 A1	29-08-1991
		EP 0444444 A1	04-09-1991

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2020245148 A **[0002]**