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

(11) **EP 2 778 086 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
19.04.2017 Bulletin 2017/16

(21) Application number: **13158638.0**

(22) Date of filing: **11.03.2013**

(51) Int Cl.:
B65D 5/498 *(2006.01)* ***B65D 5/50*** *(2006.01)*
B65D 5/54 *(2006.01)* ***B65D 77/04*** *(2006.01)*

(54) **Packaging assembly to accommodate at least two items**

Verpackungsanordnung für mindestens zwei Elemente

Ensemble de conditionnement pour au moins deux objets

(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 MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(43) Date of publication of application:
17.09.2014 Bulletin 2014/38

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EP 2 778 086 B1

Description

[0001] The present invention relates to the field of packaging assemblies and in particular to packaging assemblies adapted to accommodate at least two drug delivery devices, such like injection devices.

Background and Prior Art

[0002] Drug delivery devices for setting and dispensing a single or multiple doses of a liquid medicament are as such well-known in the art. Generally, such devices have substantially a similar purpose as that of an ordinary syringe.

[0003] Drug delivery devices, in particular pen-type injectors have to meet a number of user-specific requirements. For instance, with patient's suffering chronic diseases, such like diabetes, the patient may be physically infirm and may also have impaired vision. Suitable drug delivery devices especially intended for home medication therefore need to be robust in construction and should be easy to use. Furthermore, manipulation and general handling of the device and its components should be intelligible and easy understandable. Moreover, a dose setting as well as a dose dispensing procedure must be easy to operate and has to be unambiguous.

[0004] Typically, such devices comprise a housing or a particular cartridge holder, which is adapted to receive a cartridge at least partially filled with the medicament to be dispensed. The device further comprises a drive mechanism, usually having a displaceable piston rod which is adapted to operably engage with a piston of the cartridge. By means of the drive mechanism and its piston rod, the piston of the cartridge is displaceable in a distal or dispensing direction and may therefore expel a predefined amount of the medicament via a piercing assembly, which is to be releasably coupled with a distal end section of the housing of the drug delivery device.

[0005] The medicament to be dispensed by the drug delivery device is provided and contained in a multi-dose cartridge. Such cartridges typically comprise a vitreous barrel sealed in distal direction by means of a pierceable seal and being further sealed in proximal direction by the piston. With reusable drug delivery devices an empty cartridge is replaceable by a new one. In contrast to that, drug delivery devices of disposable type are to be entirely discarded when the medicament in the cartridge has been completely dispensed or used-up.

[0006] Drug delivery devices may also comprise conventional syringes, in particular pre-filled syringes that are intended for single use. Moreover, injection-based treatment of patients may require to make use of different pharmaceutical substances or medicaments to be injected or dispensed by different injection devices or drug delivery devices, respectively.

[0007] Typically, at the beginning of a therapy a first medicament may have to be administered before a second medicament should be used later on. In many cases, the two medicaments to be administered sequentially are commercially distributed as a treatment kit, in which first and second medicaments to be delivered by respective first and second drug delivery devices mutually complement. Since the two medicaments together with respective drug delivery devices are mutually correlated it is only natural, that said kit consisting of at least two medicaments and drug delivery devices is commercially distributed in form of a common packaging assembly.

[0008] Providing at least two different drug delivery devices in a common packaging assembly may be confusing to the end user or patient. In particular with self-medication or home treatment the patient himself has to correctly identify the particular drug delivery device which is to be used initially. Even though the packaging assembly may be provided with respective instructions about general usage of first and second drug delivery devices, the patient himself, for whichever reason, may disregard or misunderstand respective instructions. Hence, there is a certain risk, that the two drug delivery devices are mixed up and that they are used in an inappropriate way.

[0009] Document US 2012/0085678 A1 discloses a packaging box body having a bottom board, side boards, and bending flaps; and a cushioning material. There, a restrainer is formed at least on one of the bending flaps and a restrain portion is formed at a side surface section of the cushioning material. Document US 2009/0014353 A1 describes a battery supply system comprising a display tray, an outer box and at least one inner box.

Objects of the invention

[0010] It is therefore an object of the present invention to improve patient safety and to reduce a risk of health for medical treatment making use of multiple medicaments and respective drug delivery devices. It is a particular aim of the present invention to provide an intuitive and unequivocal approach to instruct a user in regard of the order of usage of at least two drug delivery devices provided in a common packaging assembly. Respective instructive means should be easy to implement in a cost efficient way.

Summary of the Invention

[0011] In a first aspect the invention relates to a packaging assembly to accommodate at least two items according to claim 1. The packaging assembly comprises an inner packaging to accommodate a first item, such as a drug delivery device, e.g. a pen-type injector or a prefilled syringe. Additionally, the packaging assembly comprises an outer packaging to accommodate a second item and to accommodate the inner packaging. Typically, the second item also comprises a drug delivery device, e.g. a second drug delivery device.

[0012] The inner packaging comprises a bottom portion as well as a first sidewall portion and a second sidewall portion. First and second sidewall portions extend

along opposite sides of the bottom portion.

[0013] Furthermore, the inner packaging comprises at least one front face extending between an end of the first sidewall portion, the second sidewall portion and the bottom portion. Typically, the outer shape and contour of the inner packaging is confined by the first and second sidewall portions, the bottom portion and the at least one front face extending there between. Moreover, first and second sidewall portions may be integrally formed with the bottom portion.

[0014] The inner packaging further comprises at least one fixing flap portion extending as an extension of the bottom portion and extending beyond the front face of the inner packaging. The at least one fixing flap portion extends outwardly, hence in a direction opposite to the interior of the inner packaging. The at least one foldable fixing flap portion is adapted to engage with an outer packaging that is in turn adapted to receive the packaging. Mutual engagement of the packaging's fixing flap portion with the outer packaging is typically obtainable when the inner packaging is disposed inside the outer packaging.

[0015] The outer packaging comprises a bottom portion with folded flap portions to form and to provide oppositely located longitudinal front faces of the outer packaging, a first sidewall portion and a second sidewall portion extending along opposite sides of the bottom portion, wherein the front faces extend between longitudinal end sections of first and second sidewall portions, wherein:

i) the outer packaging's first sidewall portion comprises at least one folded flap portion overlapping with a folded flap portion of the outer packaging's second sidewall portion or directly overlapping and engaging with the second sidewall portion to contribute to one of the front faces of the outer packaging, or

ii) wherein inwardly folded flap portions of the first and second sidewall portions of the outer packaging are attached to an inside of the flap portions of the bottom portion of the outer packaging.

[0016] At least one fixing flap portion of the inner packaging abuts and positively engages with at least one of the foldable flap portions of at least one outer packaging's sidewall portion. The first and second sidewall portions of the inner packaging may be folded or bended along folding axes extending between and separating the bottom portion from the first and second sidewall portions. Typically, these folding lines or folding axes extend substantially parallel to each other to form a cubic-shaped packaging. The at least one front face comprises a surface normal extending substantially parallel to these folding lines or folding axes.

[0017] The at least one foldable fixing flap portion of the inner packaging is adapted to positively engage with an interior structure of the outer packaging so as to assemble and to fix the inner packaging to and into the outer packaging without the necessity of adhesively attaching the inner packaging to the outer packaging. By making use of the foldable fixing flap portion, a well-defined, irreversible and non-releasable interconnection of the inner packaging inside the outer packaging can be attained, in particular when the inner packaging is completely inserted into the surrounding outer packaging.

[0018] In this way, the packaging assembly is adapted and particularly suitable to provide a nested arrangement of an inner packaging and an outer packaging. By means of the at least one foldable flap portion, the inner packaging can be non-reversibly attached and fixed to the interior of the outer packaging. With an alternative solution it is however also conceivable, that the foldable flap portion allows for a non-destructive removal of the inner packaging from the outer packaging.

[0019] Typically, the at least one fixing flap portion of the inner packaging is adapted to positively engage with inside facing sidewall portions, in particular with an inside facing portion of a front face of the outer packaging featuring a stepped or recessed section, by way of which the bottom portion's foldable flap portion can be fixed or clipped to the outer packaging in a hooking manner.

[0020] According to another embodiment, the inner packaging comprises a first and a second fixing flap portion extending from opposite ends of the bottom portion and/or extending from oppositely located front faces of the inner packaging. Typically but not necessarily, the bottom portion, as well as first and second sidewall portions of the inner packaging are of rectangular geometry. By providing first and second fixing flap portions at opposite sides of the bottom portion, the inner packaging may engage with both opposite ends or with both oppositely located front faces with corresponding end faces of the exterior packaging.

[0021] It is generally to be mentioned here, that the front faces of the inner packaging denotes an arbitrary side face of the inner packaging that is adapted and designed to engage with a corresponding side face of the outer packaging.

[0022] In a typical embodiment, the foldable fixing flap portions are provided at a longitudinal end of respective bottom and/or sidewall portions of the inner packaging. Hence, the front face, which may be formed or constituted by mutually overlapping flap portions of the sidewall portions is located at a longitudinal end of the elongated and substantially rectangular inner packaging.

[0023] According to another embodiment the at least one fixing flap portion is integrally formed or connected with the bottom portion of the inner packaging. Hence, the at least one fixing flap portion may be designed as a longitudinal extension of the bottom portion. Typically, first and second but longitudinally oppositely located fixing flap portions are provided and integrally formed with opposite longitudinal ends of the bottom portion.

[0024] Even though the at least one fixing flap portion extends as an extension of the bottom portion it does not necessarily have to be integrally formed or connected

with the bottom portion of the inner packaging. Instead and according to another embodiment, the at least one fixing flap portion may also be integrally formed with at least one of first and second sidewall portions or with first and/or second flap portions of first and/or second sidewall portions of the inner packaging.

[0025] Depending on the shape, size and geometry of the item or items to be deposited in the inner packaging and/or the outer packaging various flap portions may be additionally or alternatively provided also at a short end section of the bottom portion and/or of the first and/or second sidewall portions of the inner packaging.

[0026] By providing both opposite ends of the bottom portion with first and second fixing flap portions, respectively, opposite ends of the bottom portion of the inner packaging may non-releasably or non-reversibly engage with the outer packaging as soon as the inner packaging is put or inserted into the outer packaging.

[0027] Typically, the longitudinal dimensions of the outer packaging are substantially identical or match with the longitudinal extension of the inner packaging so that the foldable flap portions of the inner packaging's bottom portion are folded upwardly by oppositely located front faces of the outer packaging. In particular, the longitudinal extension of the interior of the outer packaging typically matches with the exterior longitudinal dimensions of the inner packaging's bottom portion plus the thickness of the inner packaging's front faces and the thickness of the bottom portion's foldable flap portions folded upwardly to overlap with and to abut against the inner packaging's front face.

[0028] In an assembly configuration, the foldable fixing flap portions of the inner packaging are typically sandwiched between the inside facing portion of the outer packaging's front face and the exterior portion of the inner packaging's front face. In this way and when longitudinally squeezed between oppositely located inside facing portions of the outer packaging's front faces, the folded fixing flap portions of the inner packaging are effectively hindered to fold downwardly to disengage from the outer packaging.

[0029] Typically, and according to an embodiment the first sidewall portion of the inner packaging comprises at least one foldable flap portion overlapping with a foldable flap portion of the second sidewall portion or directly overlapping with the second sidewall portion of the inner packaging. In this way, the foldable flap portions that are typically unitary or integrally formed with said first and/or second sidewall portions of the inner packaging respectively, are adapted to form or to contribute to the front face of the inner packaging when arranged in an at least partially overlapping configuration.

[0030] According to another embodiment, at least one of first and second sidewall portions of the inner packaging comprises first and second flap portions extending from opposite ends of the respective sidewall portion. Depending on the overall extension and geometry of respective flap portions it may be sufficient, when only the first sidewall portion of the inner packaging is provided with first and second flap portions so that first and second flap portions can be arranged in an overlapping and e.g. two times folded manner with the second sidewall portion. In this configuration, the first and second flap portions of the first sidewall portion may provide or constitute the front face of the inner packaging extending between longitudinal end sections of first and second sidewall portions of the inner packaging.

[0031] In an alternative embodiment, first and second sidewall portions of the inner packaging at least comprise one, either a first or a second flap portion, so that e.g. a first flap portion of the first sidewall portion forms a first front face of the inner packaging and wherein a second flap portion of the second sidewall portion forms a diametrically oppositely located second front face of the inner packaging.

[0032] In a further embodiment, both, first and second sidewall portions of the inner packaging each comprise first and second oppositely located flap portions that mutually overlap to form or to contribute to respective first and second, oppositely located front faces of the inner packaging.

[0033] In general and if not otherwise specified, overlapping portions of the inner packaging, and in particular mutually overlapping flap portions are typically interconnected and fixed to each other, e.g. by means of a glue or an adhesive. Moreover, the entire inner packaging may be formed and provided by a single blank of a sheet material, such like cardboard or a sheet of a plastic material.

[0034] In particular, inner and outer packaging may be made of cardboard or may comprise a plastic material featuring numerous folded portions to form a packaging assembly of box-like shape. When integrating the inner packaging into the outer packaging, e.g. by respectively folding a cardboard or plastic blank, a rather cost- and resource sensitive way of manufacturing can be provided.

[0035] Additionally and according to another embodiment the inner packaging also comprises a lid portion extending along the second sidewall portion. Typically, the lid portion is pivotable along a lid axis or pivot axis extending along the upper end of the second sidewall portion of the inner packaging. In this way, the lid portion can be pivoted in order to selectively provide access to the interior of the inner packaging. Additionally and according to another embodiment, the lid portion also comprises a lateral flap portion overlapping with the first sidewall of the inner packaging.

[0036] When overlapping with the first sidewall of the inner packaging, the flap portion may either positively and releasably engage with the first sidewall portion. Alternatively, it is also conceivable, that the lid portion's lateral flap portion is adhesively attached to a portion of the first sidewall of the inner packaging. The flap portion or the first sidewall portion may further comprise a structurally weakened portion, by way of which an intercon-

nection of the lateral flap portion and the first sidewall portion of the inner packaging may be abrogated or destroyed if required, e.g. for gaining access to the inner packaging's interior.

[0037] Said flap portion of the lid portion may form a lateral end section of the blank of sheet material, of which the inner packaging is made from. An opposite lateral end of the blank may be provided by the first sidewall portion to at least partially overlap with the lid portion's lateral flap portion.

[0038] According to another embodiment, the lid portion also comprises at least a first longitudinal flap portion extending from a longitudinal end thereof and overlapping with at least one of the sidewall's flap portions of the inner packaging. In this way, also the longitudinal flap portion of the lid portion may contribute to the formation of the longitudinal front face of the inner packaging. Hence, the front face as already mentioned above may be formed and provided by the lid portion's first longitudinal flap portion overlapping at least partially with first and/or second flap portions of first and/or second sidewall portions of the inner packaging. By providing such a threefold overlapping configuration at the front face, a rather stable and robust front face of the inner packaging can be provided.

[0039] According to another embodiment, the lid portion of the inner packaging also comprises at least a first longitudinal extension extending from a longitudinal end of its first longitudinal flap portion. Typically, the lid portion extends substantially perpendicular to the adjacently located first flap portion. In a similar way also the first longitudinal extension extends substantially perpendicular to the first longitudinal flap portion of the inner packaging's lid portion. Since folding lines or pivot axes extending between and separating flap portion, lid portion and longitudinal extension align substantially parallel, the first longitudinal extension of the lid portion extends substantially parallel to the lid portion and hence substantially parallel to the bottom portion of the inner packaging.

[0040] Typically, the at least first longitudinal extension of the lid portion at least partially abuts and overlaps with the bottom portion of the inner packaging. Therefore, the lid portion itself may e.g. adhesively attach to the bottom portion. In this way, overall stability of the inner packaging and in particular of its front face can be further enhanced. By means of a rather rigid and stiffened front face, the inner packaging's foldable fixing flap portion may experience a respective mechanical support in a direction parallel to the surface normal of the front face. In this way, the positive engagement of e.g. the upwardly bended foldable fixing flap portions of the inner packaging with the interior or inside facing front face structure of the outer packaging can be stabilized and structurally reinforced.

[0041] Moreover, and according to another embodiment the lid portion of the inner packaging comprises first and second longitudinal flap portions at opposite longitudinal ends thereof. In this way, a rather symmetric configuration of the packaging can be attained. Additionally, first and second longitudinal flap portions of the inner packaging may both comprise first and second longitudinal extensions allowing to fix and to attach both longitudinal end sections of the lid portion directly to the respective longitudinal ends of the inner packaging's bottom portion.

[0042] Alternatively it is also conceivable that the at least first extension of the lid portion does not extend inwardly to engage with the bottom portion of the inner packaging but does extend outwardly from the front face to form or to contribute to the at least one fixing flap portion of the inner packaging.

[0043] According to another embodiment the lid portion of the inner packaging also comprises a foldable or removable strip portion to provide access to the interior of the inner packaging. Since the lid portion may be directly interconnected with the bottom portion, lifting of the lid portion, e.g. by raising the lateral flap portion of the lid portion into an elevated position with regard to the bottom portion may not be attainable. Instead, by providing a foldable or removable strip portion in or on the lid portion, the lid portion itself may provide a frame structure that remains attached to the sidewall portions and/or to the bottom portion of the inner packaging while the foldable or removable strip portion may be folded or torn away for establishing a through opening in the lid portion that allows to remove the item provided in the packaging.

[0044] In a further embodiment, said strip portion may also comprise a gripping flap which at least partially protrudes from one of the first and second sidewall portions of the inner packaging. Having a gripping flap integrally formed with the foldable or at least partially removable strip portion and having the gripping flap at least partially extending from e.g. an upper edge or upper end of first and/or second sidewall portions, the gripping flap and hence the strip portion integrally formed therewith can be easily gripped in order to raise or to fold the strip portion for gaining access to the inner packaging's interior.

[0045] The packaging assembly features a nested arrangement of the inner and the outer packaging. When opening the outer packaging, only the second drug delivery device is directly accessible to be used while the first drug delivery device remains packed and sealed by the inner packaging contained in the outer packaging. Such an interleaved configuration of inner and outer packaging provides an intuitive approach to indicate to a user, that the second drug delivery device should be used prior to the first drug delivery device, which is separately packed by the inner packaging.

[0046] When opening the outer packaging there is only one, namely the second drug delivery device of a plurality of drug delivery devices, which is ready to use. The user may then intuitively take the second drug delivery device. Hence, a risk of interchanging first and second drug delivery devices can be reduced, simply by wrapping the first drug delivery device in a separate inner packaging.

[0047] In a preferred embodiment, the inner packaging is adapted to completely enclose the first drug delivery

device. Additionally, the outer packaging is adapted to accommodate and to receive the second drug delivery device in a configuration, in which the second drug delivery device is ready to use. Preferably, when assembled in the outer packaging, the second drug delivery device can be free of any further packaging means.

[0048] The inner packaging is positively engageable with the interior of the outer packaging by means of the inner packaging's fixing flap portions. Typically, the inner volume of the outer packaging is adapted and configured in accordance with the outer dimensions of the inner packaging in such a way, that the inner packaging can be completely fitted into the outer packaging in such a way, that the fixing flap portions of the inner packaging, in particular of its bottom portion, are folded by e.g. oppositely located front faces of the outer packaging.

[0049] Moreover, the inside facing portion of the outer packaging's front faces typically comprise a somewhat uneven or recessed structure so as to positively engage with the free end of the inner packaging's fixing flap portions. Typically, the fixing flap portions are folded upwardly, towards the lid portion upon insertion of the inner packaging into the outer packaging. Upon reaching a mutual abutment configuration of the inner packaging's bottom portion with the outer packaging's bottom portion, the upwardly bended fixing flap portions of, e.g. the inner packaging's bottom portion may relax and bend outwardly and may thus engage with e.g. a lower edge of at least one flap portion extending along the inside portion of the outer packaging's front face. This engagement may further be accompanied and may coincide with an audible click-like noise indicating to a user, that inner and outer packaging mutually engaged.

[0050] The outer packaging may comprise a somewhat similar overall geometry compared to the inner packaging except that the outer packaging's lateral dimensions are substantially larger than respective lateral dimensions of the inner packaging since the outer packaging is adapted to receive both, the inner packaging as well as a second item, such like a second drug delivery device.

[0051] Consequently, the outer packaging also comprises a bottom portion, a first sidewall portion and a second sidewall portion, wherein said sidewall portions extend along opposite sides of the bottom portion. Moreover, the outer packaging's first sidewall portion comprises at least one foldable flap portion overlapping with a foldable flap portion of the outer packaging's second sidewall portion. Alternatively, said foldable flap portion of the outer packaging's first sidewall portion may also directly overlap and engage with the second sidewall portion to form a front face of the outer packaging.

[0052] Additionally, the at least one inner packaging's foldable fixing flap portion abuts and engages with the interior of said front face of the outer packaging and with the at least one foldable flap portion of at least one outer packaging's sidewall portion.

[0053] Typically, the at least one foldable flap portion provided at a longitudinal end of at least one of first and second outer packaging's sidewall portions is located at a predefined distance from a longitudinal end of the outer packaging's bottom portion. In this way, the folded flap portions of at least one of the outer packaging's first and second sidewall portions form an inwardly extending protrusion or protruding structure on the inside facing portion of the outer packaging's front face. The size or the thickness of this inward facing protrusion typically corresponds to the thickness of the sheet material the packaging, and hence first and second sidewall portions are made of.

[0054] Especially when first and second sidewall portions both comprise foldable flap portions overlapping and forming the front face, the size or thickness of these inwardly facing protrusions may be about twice the thickness of the sheet material, the outer packaging is made of. The at least one foldable fixing flap portion of the inner packaging's comprises such a geometry, that it snugly fits into the recessed structure formed between the outer packaging's bottom portion and the inside facing protrusion provided and formed by overlapping flap portions of first and/or second sidewall portions of the outer packaging.

[0055] Typically, the inner packaging comprises two fixing flap portions located on opposite ends of the inner packaging's bottom portion. In this way, the inner packaging can be inserted into the outer packaging by folding both fixing flap portions upwardly to engage with respective recessed portions of the inside wall structure of the outer packaging.

[0056] Here, it is of particular benefit when the fixing flap portions feature a pre-defined flexibility or flexural strength. Hence, an upwardly directed folding or bending of the fixing flaps may occur against a restoring force. As soon as the fixing flap coincide with a recessed wall structure of the outer packaging the fixing flap may relax into said recesses and may non-releasably engage with the outer packaging's recessed structure.

[0057] According to a further embodiment, a first drug delivery device is arranged in the inner packaging while a second drug delivery device is arranged in the outer packaging. In order to prevent a damage of first and/or second drug delivery devices, at least one or even both drug delivery devices may be detachably fixed in the inner packaging and in the outer packaging, respectively. Here, the inner packaging as well as the outer packaging may comprise and feature respective fixing members, such like clamps, clips or fixing straps.

[0058] According to a further embodiment, at least one of the first and second drug delivery devices comprises an injection device containing an injectable medicament. The drug delivery devices may comprise a pre-filled syringe or may further comprise a pen-type injector, e.g. a disposable pen-type injector intended to be discarded after a single use or after repeated usage.

[0059] Typically, at least one of the first and second drug delivery devices is at least partially filled with a med-

icament to be dispensed by the respective drug delivery device. In particular, the drug delivery device may comprise a prefilled syringe having a medicament or a respective pharmaceutical active substance provided therein. In an alternative embodiment the drug delivery device may also comprise an inhaler, e.g. pre-filled with a medicament.

[0060] Alternatively, it is even conceivable, that one of first and second drug delivery devices is designed and comprises a reusable pen-type injector, wherein a cartridge filled with a medicament is removably and interchangeably arranged in a respective device.

[0061] According to another embodiment, an inside-facing wall portion of the outer packaging is provided with a label. The label may comprise and provide operation instructions of the first and/or the second drug delivery device as well as instructions regarding the sequential use of first and second drug delivery devices. Additionally, the label may be indicative about the order, in which the first and second drug delivery devices are to be used. Moreover, the label may be indicative of an opening procedure for opening the inner packaging.

[0062] In still another embodiment, also an outside-facing wall portion of the inner packaging may be provided with a label. This label attached to the inner packaging may be indicative to the user, that it is the second drug delivery device which is to be used prior to opening the inner packaging and hence prior to make use of the first drug delivery device located therein.

[0063] Additionally, inner and outer packagings may also be provided with visually perceptible indicators by way of which the order of use of first and second drug delivery devices can be intuitively communicated to a user. Hence, the second drug delivery device and the inner packaging may distinguish by their colour and/or by surface finish. Moreover, the outer circumference of the second drug delivery device may comprise a roughness distinguishing from the roughness of the inner packaging.

[0064] In this way, the inner packaging and the second drug delivery device may also be distinguishable in a tactile way. Consequently, even persons suffering impaired vision may unequivocally distinguish the inner packaging and the second drug delivery device.

[0065] According to another embodiment, the first drug delivery device is actually arranged in the inner packaging and the second drug delivery device is actually arranged in the outer packaging. Even though the packaging assembly is just designed to receive first and second drug delivery devices in inner and outer packagings, respectively, the packaging assembly may be readily equipped with respective drug delivery devices when commercially distributed to medical staff or patients.

[0066] The term "drug" or "medicament", as used herein, means a pharmaceutical formulation containing at least one pharmaceutically active compound,

wherein in one embodiment the pharmaceutically active compound has a molecular weight up to 1500 Da and/or is a peptide, a proteine, a polysaccharide, a vaccine, a DNA, a RNA, an enzyme, an antibody or a fragment thereof, a hormone or an oligonucleotide, or a mixture of the above-mentioned pharmaceutically active compound,

wherein in a further embodiment the pharmaceutically active compound is useful for the treatment and/or prophylaxis of diabetes mellitus or complications associated with diabetes mellitus such as diabetic retinopathy, thromboembolism disorders such as deep vein or pulmonary thromboembolism, acute coronary syndrome (ACS), angina, myocardial infarction, cancer, macular degeneration, inflammation, hay fever, atherosclerosis and/or rheumatoid arthritis,

wherein in a further embodiment the pharmaceutically active compound comprises at least one peptide for the treatment and/or prophylaxis of diabetes mellitus or complications associated with diabetes mellitus such as diabetic retinopathy,

wherein in a further embodiment the pharmaceutically active compound comprises at least one human insulin or a human insulin analogue or derivative, glucagon-like peptide (GLP-1) or an analogue or derivative thereof, or exendin-3 or exendin-4 or an analogue or derivative of exendin-3 or exendin-4.

[0067] Insulin analogues are for example Gly(A21), Arg(B31), Arg(B32) human insulin; Lys(B3), Glu(B29) human insulin; Lys(B28), Pro(B29) human insulin; Asp(B28) human insulin; human insulin, wherein proline in position B28 is replaced by Asp, Lys, Leu, Val or Ala and wherein in position B29 Lys may be replaced by Pro; Ala(B26) human insulin; Des(B28-B30) human insulin; Des(B27) human insulin and Des(B30) human insulin.

[0068] Insulin derivates are for example B29-N-myristoyl-des(B30) human insulin; B29-N-palmitoyl-des(B30) human insulin; B29-N-myristoyl human insulin; B29-N-palmitoyl human insulin; B28-N-myristoyl LysB28ProB29 human insulin; B28-N-palmitoyl-LysB28ProB29 human insulin; B30-N-myristoyl-ThrB29LysB30 human insulin; B30-N-palmitoyl-ThrB29LysB30 human insulin; B29-N-(N-palmitoyl-Y-glutamyl)-des(B30) human insulin; B29-N-(N-lithocholyl-Y-glutamyl)-des(B30) human insulin; B29-N-(ω-carboxyheptadecanoyl)-des(B30) human insulin and B29-N-(ω-carboxyheptadecanoyl) human insulin.

[0069] Exendin-4 for example means Exendin-4(1-39), a peptide of the sequence H-His-Gly-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH2.

[0070] Exendin-4 derivatives are for example selected from the following list of compounds:

H-(Lys)4-des Pro36, des Pro37 Exendin-4(1-39)-NH2,
H-(Lys)5-des Pro36, des Pro37 Exendin-4(1-39)-NH2,
des Pro36 Exendin-4(1-39),

des Pro36 [Asp28] Exendin-4(1-39),
des Pro36 [IsoAsp28] Exendin-4(1-39),
des Pro36 [Met(O)14, Asp28] Exendin-4(1-39),
des Pro36 [Met(O)14, IsoAsp28] Exendin-4(1-39),
des Pro36 [Trp(O2)25, Asp28] Exendin-4(1-39),
des Pro36 [Trp(O2)25, IsoAsp28] Exendin-4(1-39),
des Pro36 [Met(O)14 Trp(O2)25, Asp28] Exendin-4(1-39),
des Pro36 [Met(O)14 Trp(O2)25, IsoAsp28] Exendin-4(1-39); or

des Pro36 [Asp28] Exendin-4(1-39),
des Pro36 [IsoAsp28] Exendin-4(1-39),
des Pro36 [Met(O)14, Asp28] Exendin-4(1-39),
des Pro36 [Met(O)14, IsoAsp28] Exendin-4(1-39),
des Pro36 [Trp(O2)25, Asp28] Exendin-4(1-39),
des Pro36 [Trp(O2)25, IsoAsp28] Exendin-4(1-39),
des Pro36 [Met(O)14 Trp(O2)25, Asp28] Exendin-4(1-39),
des Pro36 [Met(O)14 Trp(O2)25, IsoAsp28] Exendin-4(1-39),

wherein the group -Lys6-NH2 may be bound to the C-terminus of the Exendin-4 derivative;

or an Exendin-4 derivative of the sequence
des Pro36 Exendin-4(1-39)-Lys6-NH2 (AVE0010),
H-(Lys)6-des Pro36 [Asp28] Exendin-4(1-39)-Lys6-NH2,
des Asp28 Pro36, Pro37, Pro38Exendin-4(1-39)-NH2,
H-(Lys)6-des Pro36, Pro38 [Asp28] Exendin-4(1-39)-NH2,
H-Asn-(Glu)5des Pro36, Pro37, Pro38 [Asp28] Exendin-4(1-39)-NH2,
des Pro36, Pro37, Pro38 [Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-(Lys)6-des Pro36, Pro37, Pro38 [Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-(Lys)6-des Pro36 [Trp(O2)25, Asp28] Exendin-4(1-39)-Lys6-NH2,
H-des Asp28 Pro36, Pro37, Pro38 [Trp(O2)25] Exendin-4(1-39)-NH2,
H-(Lys)6-des Pro36, Pro37, Pro38 [Trp(O2)25, Asp28] Exendin-4(1-39)-NH2,
H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Trp(O2)25, Asp28] Exendin-4(1-39)-NH2,
des Pro36, Pro37, Pro38 [Trp(O2)25, Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-(Lys)6-des Pro36, Pro37, Pro38 [Trp(O2)25, Asp28] Exendin-4(1-39)-(Lys)6-NH2, H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Trp(O2)25, Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-(Lys)6-des Pro36 [Met(O)14, Asp28] Exendin-4(1-39)-Lys6-NH2,
des Met(O)14 Asp28 Pro36, Pro37, Pro38 Exendin-4(1-39)-NH2,
H-(Lys)6-desPro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-NH2,
H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-NH2,
des Pro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-(Lys)6-des Pro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-Asn-(Glu)5 des Pro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-(Lys)6-NH2,
H-Lys6-des Pro36 [Met(O)14, Trp(O2)25, Asp28] Exendin-4(1-39)-Lys6-NH2,
H-des Asp28 Pro36, Pro37, Pro38 [Met(O)14, Trp(O2)25] Exendin-4(1-39)-NH2,
H-(Lys)6-des Pro36, Pro37, Pro38 [Met(O)14, Asp28] Exendin-4(1-39)-NH2,
H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Met(O)14, Trp(O2)25, Asp28] Exendin-4(1-39)-NH2,
des Pro36, Pro37, Pro38 [Met(O)14, Trp(O2)25, Asp28] Exendin-4(1-39)-(Lys)6-NH2, H-(Lys)6-des Pro36, Pro37, Pro38 [Met(O)14, Trp(O2)25, Asp28] Exendin-4(S1-39)-(Lys)6-NH2,
H-Asn-(Glu)5-des Pro36, Pro37, Pro38 [Met(O)14, Trp(O2)25, Asp28] Exendin-4(1-39)-(Lys)6-NH2;

or a pharmaceutically acceptable salt or solvate of any one of the afore-mentioned Exendin-4 derivative.

[0071] Hormones are for example hypophysis hormones or hypothalamus hormones or regulatory active peptides and their antagonists as listed in Rote Liste, ed. 2008, Chapter 50, such as Gonadotropine (Follitropin, Lutropin, Choriongonadotropin, Menotropin), Somatropine (Somatropin), Desmopressin, Terlipressin, Gonadorelin, Triptorelin, Leuprorelin, Buserelin, Nafarelin, Goserelin.

[0072] A polysaccharide is for example a glucosaminoglycane, a hyaluronic acid, a heparin, a low molecular weight heparin or an ultra low molecular weight heparin or a derivative thereof, or a sulphated, e.g. a poly-sulphated form of the above-mentioned polysaccharides, and/or a pharmaceutically acceptable salt thereof. An example of a pharmaceutically acceptable salt of a poly-sulphated low molecular weight heparin is enoxaparin sodium.

[0073] Antibodies are globular plasma proteins (~150kDa) that are also known as immunoglobulins which share a basic structure. As they have sugar chains added to amino acid residues, they are glycoproteins. The basic functional unit of each antibody is an immunoglobulin (Ig) monomer (containing only one Ig unit); secreted antibodies can also be dimeric with two Ig units as with IgA, tetrameric with four Ig units like teleost fish IgM, or pentameric with five Ig units, like mammalian IgM.

[0074] The Ig monomer is a "Y"-shaped molecule that consists of four polypeptide chains; two identical heavy chains and two identical light chains connected by disulfide bonds between cysteine residues. Each heavy

chain is about 440 amino acids long; each light chain is about 220 amino acids long. Heavy and light chains each contain intrachain disulfide bonds which stabilize their folding. Each chain is composed of structural domains called Ig domains. These domains contain about 70-110 amino acids and are classified into different categories (for example, variable or V, and constant or C) according to their size and function. They have a characteristic immunoglobulin fold in which two β sheets create a "sandwich" shape, held together by interactions between conserved cysteines and other charged amino acids.

[0075] There are five types of mammalian Ig heavy chain denoted by α, δ, ε, γ, and μ. The type of heavy chain present defines the isotype of antibody; these chains are found in IgA, IgD, IgE, IgG, and IgM antibodies, respectively.

[0076] Distinct heavy chains differ in size and composition; α and γ contain approximately 450 amino acids and δ approximately 500 amino acids, while μ and ε have approximately 550 amino acids. Each heavy chain has two regions, the constant region (C_H) and the variable region (V_H). In one species, the constant region is essentially identical in all antibodies of the same isotype, but differs in antibodies of different isotypes. Heavy chains γ, α and δ have a constant region composed of three tandem Ig domains, and a hinge region for added flexibility; heavy chains μ and ε have a constant region composed of four immunoglobulin domains. The variable region of the heavy chain differs in antibodies produced by different B cells, but is the same for all antibodies produced by a single B cell or B cell clone. The variable region of each heavy chain is approximately 110 amino acids long and is composed of a single Ig domain.

[0077] In mammals, there are two types of immunoglobulin light chain denoted by λ and κ. A light chain has two successive domains: one constant domain (CL) and one variable domain (VL). The approximate length of a light chain is 211 to 217 amino acids. Each antibody contains two light chains that are always identical; only one type of light chain, κ or λ, is present per antibody in mammals.

[0078] Although the general structure of all antibodies is very similar, the unique property of a given antibody is determined by the variable (V) regions, as detailed above. More specifically, variable loops, three each the light (VL) and three on the heavy (VH) chain, are responsible for binding to the antigen, i.e. for its antigen specificity. These loops are referred to as the Complementarity Determining Regions (CDRs). Because CDRs from both VH and VL domains contribute to the antigen-binding site, it is the combination of the heavy and the light chains, and not either alone, that determines the final antigen specificity.

[0079] An "antibody fragment" contains at least one antigen binding fragment as defined above, and exhibits essentially the same function and specificity as the complete antibody of which the fragment is derived from. Limited proteolytic digestion with papain cleaves the Ig prototype into three fragments. Two identical amino terminal fragments, each containing one entire L chain and about half an H chain, are the antigen binding fragments (Fab). The third fragment, similar in size but containing the carboxyl terminal half of both heavy chains with their interchain disulfide bond, is the crystalizable fragment (Fc). The Fc contains carbohydrates, complement-binding, and FcR-binding sites. Limited pepsin digestion yields a single F(ab')2 fragment containing both Fab pieces and the hinge region, including the H-H interchain disulfide bond. F(ab')2 is divalent for antigen binding. The disulfide bond of F(ab')2 may be cleaved in order to obtain Fab'. Moreover, the variable regions of the heavy and light chains can be fused together to form a single chain variable fragment (scFv).

[0080] Pharmaceutically acceptable salts are for example acid addition salts and basic salts. Acid addition salts are e.g. HCl or HBr salts. Basic salts are e.g. salts having a cation selected from alkali or alkaline, e.g. Na+, or K+, or Ca2+, or an ammonium ion N+(R1)(R2)(R3)(R4), wherein R1 to R4 independently of each other mean: hydrogen, an optionally substituted C1-C6-alkyl group, an optionally substituted C2-C6-alkenyl group, an optionally substituted C6-C10-aryl group, or an optionally substituted C6-C10-heteroaryl group. Further examples of pharmaceutically acceptable salts are described in "Remington's Pharmaceutical Sciences" 17. ed. Alfonso R. Gennaro (Ed.), Mark Publishing Company, Easton, Pa., U.S.A., 1985 and in Encyclopedia of Pharmaceutical Technology.

[0081] Pharmaceutically acceptable solvates are for example hydrates.

[0082] It will be further apparent to those skilled in the pertinent art that various modifications and variations can be made to the present invention without departing from the scope of the invention. Further, it is to be noted, that any reference signs used in the appended claims are not to be construed as limiting the scope of the present invention.

Brief description of the drawings

[0083] In the following, an embodiment of the present invention is described by making reference to the drawings, in which:

Fig. 1 shows a top view of a preconfigured blank of sheet material to be folded to form an inner packaging featuring a bottom portion with two oppositely located foldable fixing flap portions,

Fig. 2 is a schematic and perspective illustration during insertion of the inner packaging into an outer packaging, and

Fig. 3 shows an enlarged view of the inner packaging positively engaged and non-removably arranged inside the inner packaging.

Detailed description

[0084] In Fig. 1, a top view of a blank 11 of a sheet material to form an inner packaging 10 is illustrated. The blank 11 and hence the packaging 10 comprises a bottom portion 12 of rather rectangular shape which is laterally sandwiched between a first sidewall portion 14 and a second sidewall portion 16. First and second sidewall portions 14, 16 are foldable along the indicated fold lines separating respective sidewall portions 14, 16 from the bottom portion 12.

[0085] Adjacent to the second sidewall portion 16, there is provided a lid portion 18 featuring an overall size and geometry that substantially matches the size and geometry of the bottom portion 12. As further indicated in Fig. 1, also first and second sidewall portions 14, 16 comprise substantially identical shape and size, so that a rather rectangular shaped or cubic shaped inner packaging 10 can be provided. The lid portion 18 is further integrally formed with a lateral flap portion 15 forming a lateral end of the blank 11.

[0086] When folding first sidewall portion 14, the bottom portion 12, the second sidewall portion 16, the lid portion 18 and the lateral flap portion 15 along the indicated folding lines separating the adjacently located portions 14, 12, 16, 18, 15, the lateral flap portion 15 may at least partially overlap with the first sidewall portion 14. In the present embodiment, said lateral flap portion 15 may be adhesively or releasably attached to the first sidewall portion 14.

[0087] As further indicated in Fig. 1, the two sidewall portions 14, 16 each comprise first and second foldable flap portions 14a, 14b, 16a, 16b at their longitudinal ends. Said flap portions 14a, 14b, 16a, 16b extend beyond the lateral end sections of respective sidewall portions 14, 16. As indicated in Fig. 1, the foldable flap portions 14a, 14b, 16a, 16b are integrally formed with respective first and second sidewall portions 14, 16.

[0088] Additionally, also the lid portion 18 comprises first and second foldable flap portions 18a, 18b. Moreover, said longitudinal flap portions 18a, 18b may further extend into longitudinal extensions 18c, 18b. While the longitudinal flap portions 18a, 18b of the flap portion may substantially form a front face 17 of the packaging, the respective first and second longitudinal extensions 18c, 18b may substantially overlap with an end section of the bottom portion 12. In this way, the lid portion may be directly engaged and fixed to the bottom portion 12.

[0089] Additionally, the oppositely located foldable flap portions 16a, 16b of the second sidewall portion 16 as well as oppositely located and longitudinally separated foldable flap portions 14a, 14b of the first sidewall portion may either at least partially and mutually overlap or may additionally overlap with the longitudinal flap portions 18a, 18b of the lid portion 18.

[0090] By means of the various longitudinal and foldable flap portions 14a, 14b, 16a, 16b, 18a, 18b of first and second sidewall portions, 14, 16 and of the lid portion 18, a rectangular-shaped three-dimensional packaging 10 can be formed, especially by mutually interconnecting overlapping flap portions 14a, 16a, 18a, 14b, 16b, 18b, e.g. by making use of an adhesive.

[0091] Since the lid portion 18 provides and substantially constitutes the longitudinally located front faces 17 by means of its downwardly foldable flap portions 18a, 18b, the lid portion 18 is substantially hindered from folding into a lifted or elevated configuration to provide access to the interior of the packaging 10. However, in order to gain access to the packaging's interior, the lid portion 18 is further equipped with a strip or strap portion 19 featuring a gripping flap 19a extending at least partially from the second sidewall portion 16.

[0092] Additionally and as indicated by the dashed lines 19b, 19c, the strip portion 19 may be at least partially torn away or torn off from the lid portion 18. Here, dashed lines 19b, 19c may represent predetermined breaking structures or respective lines of weakening providing a well-defined and pre-determined breaking and separating of the strip portion 19 from the lid portion 18.

[0093] Furthermore and as becomes apparent from Fig. 2, the inner packaging 10 comprises longitudinally extending foldable fixing flap portions 12a, 12b extending from opposite longitudinal ends of the bottom portion 12 and extending beyond and outwardly from a lower edge of the front face 17. Hence, the fixing flap portions 12, 12b protrude from the front face 17 of the inner packaging 10.

[0094] In the illustrated embodiment the fixing flap portions 12a, 12b are integrally formed as longitudinal extensions of the inner packaging's bottom portion 12. In other embodiments the fixing flap portions may be connected and may be integrally formed with the flap portions 14a, 14b, 16a, 16b, 18a, 18b of the first sidewall portion 14, the second sidewall portion 16 and/or of the lid portion 18.

[0095] A secondary or outer packaging 20 as illustrated in Fig. 2 comprises a rather conventional structure. The packaging 20 features a bottom portion 22 having foldable flap portions 22a, 22b that are adapted to form and to provide oppositely located longitudinal front faces 27 of the outer packaging 20. Attached to the inside of said flap portions 22a, 22b there are attached inwardly folded first and second flap portions of sidewall portions 24, 26. In Fig. 2, only the first foldable flap portion 24a of the first sidewall and the first foldable flap portion 26a of the second sidewall portion 26 are illustrated.

[0096] As further illustrated in Fig. 2, said first flap portions 24a, 26a are adhesively attached to the interior of the upwardly folded flap portion 22a of the bottom portion 22. Additionally, the bottom portion is further provided with oppositely located longitudinal extensions 22c, 22d that extend upwardly or inwardly from an upper end section of the bottom portion's 22 foldable flap portions 22a, 22b. Similar as already described in view of Fig. 1, the outer packaging's 20 second sidewall portion 26 is further connected with a foldable lid portion 28 featuring a lateral

flap portion 25 that is adapted to releasably or non-reversibly engage with the first sidewall portion 24.

[0097] As in particular indicated in the enlarged view according to Fig. 3, the first flap portions 24a, 26a of respective first and second sidewall portions 24, 26 of the outer package 20 form a recessed structure at a lower edge thereof towards the longitudinal end of the outer packaging's 20 bottom portion 22. The depth of the recessed structure, which may feature a wedged shape, is governed by the thickness of the sheet material, of which the sidewalls 24, 26 and their foldable flap portions 24a, 26a are made.

[0098] The recessed structure 30 provided between a lower edge of the first flap portions 24a, 26a of first and second sidewall portions 24, 26 corresponds to the size and shape of the bottom portion's 12 foldable and longitudinally extending fixing flap portions 12a, 12b of the inner packaging 10. As indicated in Fig. 3, the upwardly folded fixing flap portions 12a, 12b of the inner packaging 10 engage with a lower edge of the first foldable flap portion 26a of the second sidewall 26 of the outer packaging 20.

[0099] On the opposite longitudinal end, a corresponding snap-in mechanism is typically provided, so that the inner packaging 10 can be inserted into the outer packaging 20 to attain a positively engaged mutual attachment of the interleaved and nested packagings 10, 20. The upwardly bended foldable fixing flap portions 12a, 12b of the inner packaging's 10 bottom portion 12 engage with the recessed structure 30 in a hooking manner and effectively prevent an uncontrolled release of the inner packaging 10 from the outer packaging 20.

[0100] Since longitudinal dimensions of inner packaging 10 and outer packaging 20 mutually match and correspond to each other in such a way, that the inner packaging is snugly fitted inside the outer packaging 20, an uncontrolled or self-acting release of the inner packaging 10 from the outer packaging 20 can be effectively prevented. In effect, the first packaging 10 can be fixedly attached inside the outer packaging without the use of any adhesives. Moreover, once the inner packaging 10 is connected with the outer packaging 20, a destruction-less release and removal of the inner packaging 10 from the outer packaging 20 can be effectively prevented and may therefore be excluded.

List of Reference Numerals

[0101]

10	packaging
11	blank
12	bottom portion
12a, 12b	fixing flap portion
14	sidewall portion
14a, 14b	flap portion
15	flap portion
16	sidewall portion
16a, 16b	flap portion
17	front face
18	lid portion
18a, 18b	flap portion
18c, 18d	extension
19	strip portion
19a	gripping flap
19b, 19c	breaking structure
20	packaging
22	bottom portion
22a, 22b	flap portion
22c, 22d	extension
24	sidewall portion
24a	flap portion
25	flap portion
26	sidewall portion
26a	flap portion
27	front face
28	lid portion
30	recessed structure

Claims

1. A packaging assembly to accommodate at least two items, comprising:

- an inner packaging (10) to accommodate a first item, and
- an outer packaging (20) to accommodate a second item and to accommodate the inner packaging (10),
- wherein the inner packaging (10) comprises a bottom portion (12), a first sidewall portion (14) and a second sidewall portion (16) extending along opposite sides of the bottom portion (12), at least one front face (17) extending between an end of the first sidewall portion (14), the second side wall portion (16) and the bottom portion (12), and at least one fixing flap portion (12a, 12b) extending as an extension of the bottom portion (12) beyond the front face (17) to engage with an inside of the outer packaging (20),
- wherein the outer packaging (20) comprises a bottom portion (22) with folded flap portions (22a, 22b) to form and to provide oppositely located longitudinal front faces (27) of the outer packaging, a first sidewall portion (24) and a second sidewall portion (26) extending along opposite sides of the bottom portion (22), wherein the front faces (27) extend between longitudinal end sections of first and second sidewall portions (24, 26),

wherein:

i) the outer packaging's (20) first sidewall portion (24) comprises at least one folded flap portion (24a) overlapping with a folded

flap portion (26a) of the outer packaging's (20) second sidewall portion (26) or directly overlapping and engaging with the second sidewall portion (26) to contribute to one of the front faces (27) of the outer packaging (20), or

ii) wherein inwardly folded flap portions (24a, 26b) of the first and second sidewall portions (24, 26) of the outer packaging (20) are attached to an inside of the flap portions (22a, 22b) of the bottom portion (22) of the outer packaging (20),

wherein the at least one inner packaging's fixing flap portion (12a, 12b) abuts and positively engages with at least one of the foldable flap portions (24a, 26a) of at least one outer packaging's (20) sidewall portion (24, 26).

2. The packaging assembly according to claim 1, comprising a first and a second fixing flap portion (12a, 12b) extending from opposite ends of the bottom portion (12) of the inner packaging (10) and/or extending from oppositely located front faces (17) of the inner packaging (10).

3. The packaging assembly according to any one of the preceding claims, wherein the at least one fixing flap portion (12a, 12b) is integrally formed with the bottom portion (12) of the inner packaging (10).

4. The packaging assembly according to any one of the preceding claims, wherein at least one of first and second sidewall portions (14, 16) of the inner packaging (10) comprises first and/or second flap portions (14a, 14b, 16a, 16b) extending from opposite ends of the respective sidewall portions (14, 16).

5. The packaging assembly according to any one of the preceding claims, wherein the inner packaging comprises a lid portion (18) extending along the second sidewall portion (16) of the inner packaging (10).

6. The packaging assembly according to claim 5, wherein the lid portion (18) comprises a lateral flap portion (15) overlapping with the first sidewall portion (14) of the inner packaging (10).

7. The packaging assembly according to claim 4 and one of the claims 5 or 6, wherein the lid portion (18) comprises at least a first longitudinal flap portion (18a) extending from a longitudinal end thereof and overlapping with at least one of the first and second flap portions (14a, 14b, 16a, 16b) of the sidewall portions (14, 16) of the inner packaging (10).

8. The packaging assembly according to claim 7, wherein the lid portion (18) comprises at least a first longitudinal extension (18c, 18d) extending from a longitudinal end of its first longitudinal flap portion (18a) and overlapping with the bottom portion (12) of the inner packaging (10).

9. The packaging assembly according to any one of the preceding claims 5 to 8, wherein the lid portion (18) comprises a foldable or removable strip portion (19) to provide access to the interior of the inner packaging (10).

10. The packaging assembly according to claim 9, wherein the strip portion (19) comprises a gripping flap (19a) at least partially protruding from one of the first and second sidewall portions (14, 16) of the inner packaging (10).

11. The packaging assembly according to any one of the preceding claims, wherein a first drug delivery device is arranged in the inner packaging (10) and wherein a second drug delivery device is arranged in the outer packaging (20).

12. The packaging according to claim 11, wherein at least one of the first and second drug delivery devices comprises an injection device containing an injectable medicament.

Patentansprüche

1. Verpackungsanordnung zur Unterbringung von zumindest zwei Artikeln, umfassend:

- eine innere Verpackung (10) zur Unterbringung eines ersten Artikels und
- eine äußere Verpackung (20) zur Unterbringung eines zweiten Artikels und zur Unterbringung der inneren Verpackung (10),
- wobei die innere Verpackung (10) einen Bodenabschnitt (12), einen ersten Seitenwandabschnitt (14) und einen zweiten Seitenwandabschnitt (16), die sich entlang gegenüberliegender Seiten des Bodenabschnitts (12) erstrecken, zumindest eine Vorderfläche (17), die sich zwischen einem Ende des ersten Seitenwandabschnitts (14), dem zweiten Seitenwandabschnitt (16) und dem Bodenabschnitt (12) erstreckt, und zumindest einen Befestigungslaschenabschnitt (12a, 12b) umfasst, der sich als eine Verlängerung des Bodenabschnitts (12) über die Vorderfläche (17) hinaus erstreckt, um mit einem Inneren der äußeren Verpackung (20) in Eingriff zu gelangen,
- wobei die äußere Verpackung (20) einen Bodenabschnitt (22) mit gefalteten Laschenabschnitten (22a, 22b) zur Bildung und Bereitstellung von gegenüberliegend angeordneten

Längsvorderflächen (27) der äußeren Verpackung, einen ersten Seitenwandabschnitt (24) und einen zweiten Seitenwandabschnitt (26) umfasst, die sich entlang gegenüberliegender Seiten des Bodenabschnitts (22) erstrecken, wobei sich die Vorderflächen (27) zwischen länglichen Endabschnitten des ersten und des zweiten Seitenwandabschnitts (24, 26) erstrecken,
wobei

i) der erste Seitenwandabschnitt (24) der äußeren Verpackung (20) zumindest einen gefalteten Laschenabschnitt (24a) umfasst, der mit einem gefalteten Laschenabschnitt (26a) des zweiten Seitenwandabschnitts (26) der äußeren Verpackung (20) überlappt oder mit dem zweiten Seitenwandabschnitt (26) direkt überlappt und mit diesem in Eingriff steht, um zu einer der Vorderflächen (27) der äußeren Verpackung (20) beizutragen, oder
ii) wobei nach innen gefaltete Laschenabschnitte (24a, 26b) des ersten und des zweiten Seitenwandabschnitts (24, 26) der äußeren Verpackung (20) an einem Inneren der Laschenabschnitte (22a, 22b) des Bodenabschnitts (22) der äußeren Verpackung (20) angebracht sind,

wobei der zumindest eine Befestigungslaschenabschnitt (12a, 12b) der inneren Verpackung an zumindest einem der faltbaren Laschenabschnitte (24a, 26a) zumindest eines Seitenwandabschnitts (24, 26) der äußeren Verpackung (20) anliegt und mit diesem formschlüssig in Eingriff steht.

2. Verpackungsanordnung nach Anspruch 1, umfassend einen ersten und einen zweiten Befestigungslaschenabschnitt (12a, 12b), die sich von gegenüberliegenden Enden des Bodenabschnitts (12) der inneren Verpackung (10) erstrecken und/oder sich von gegenüberliegend angeordneten Vorderflächen (17) der inneren Verpackung (10) erstrecken.

3. Verpackungsanordnung nach einem der vorhergehenden Ansprüche, wobei der zumindest eine Befestigungslaschenabschnitt (12a, 12b) integral mit dem Bodenabschnitt (12) der inneren Verpackung (10) ausgebildet ist.

4. Verpackungsanordnung nach einem der vorhergehenden Ansprüche, wobei der erste und/oder der zweite Seitenwandabschnitt (14, 16) der inneren Verpackung (10) erste und/oder zweite Laschenabschnitte (14a, 14b, 16a, 16b) umfassen, die sich von gegenüberliegenden Enden der jeweiligen Seitenwandabschnitte (14, 16) erstrecken.

5. Verpackungsanordnung nach einem der vorhergehenden Ansprüche, wobei die innere Verpackung einen Deckelabschnitt (18) umfasst, der sich entlang des zweiten Seitenwandabschnitts (16) der inneren Verpackung (10) erstreckt.

6. Verpackungsanordnung nach Anspruch 5, wobei der Deckelabschnitt (18) einen seitlichen Laschenabschnitt (15) umfasst, der mit dem ersten Seitenwandabschnitt (14) der inneren Verpackung (10) überlappt.

7. Verpackungsanordnung nach Anspruch 4 und einem der Ansprüche 5 oder 6, wobei der Deckelabschnitt (18) zumindest einen ersten Längslaschenabschnitt (18a) umfasst, der sich von einem Längsende davon erstreckt und der mit zumindest einem der ersten und zweiten Laschenabschnitte (14a, 14b, 16a, 16b) der Seitenwandabschnitte (14, 16) der inneren Verpackung (10) überlappt.

8. Verpackungsanordnung nach Anspruch 7, wobei der Deckelabschnitt (18) zumindest eine erste Längsverlängerung (18c, 18d) umfasst, die sich von einem Längsende seines ersten Längslaschenabschnitts (18a) erstreckt und mit dem Bodenabschnitt (12) der inneren Verpackung (10) überlappt.

9. Verpackungsanordnung nach einem der vorhergehenden Ansprüche 5 bis 8, wobei der Deckelabschnitt (18) einen faltbaren oder entfernbaren Streifenabschnitt (19) umfasst, um Zugang zum Inneren der inneren Verpackung (10) bereitzustellen.

10. Verpackungsanordnung nach Anspruch 9, wobei der Streifenabschnitt (19) eine Greifklappe (19a) umfasst, die zumindest teilweise vom ersten und/oder zweiten Seitenwandabschnitt (14, 16) der inneren Verpackung (10) hervor ragt.

11. Verpackungsanordnung nach einem der vorhergehenden Ansprüche, wobei eine erste Medikamenten-Verabreichungsvorrichtung in der inneren Verpackung (10) angeordnet ist und wobei eine zweite Medikamenten-Verabreichungsvorrichtung in der äußeren Verpackung (20) angeordnet ist.

12. Verpackungsanordnung nach Anspruch 11, wobei die erste und/oder die zweite Medikamenten-Verabreichungsvorrichtung eine Injektionsvorrichtung umfassen, die ein injizierbares Medikament enthält.

Revendications

1. Ensemble d'emballage destiné à recevoir au moins

deux articles, comprenant :

- un emballage intérieur (10) destiné à recevoir un premier article,
et
- un emballage extérieur (20) destiné à recevoir un deuxième article et à recevoir l'emballage intérieur (10),
- l'emballage intérieur (10) comprenant une partie de fond (12), une première partie de paroi latérale (14) et une deuxième partie de paroi latérale (16) s'étendant le long de côtés opposés de la partie de fond (12), au moins une face avant (17) s'étendant entre une extrémité de la première partie de paroi latérale (14), la deuxième partie de paroi latérale (16) et la partie de fond (12), et au moins une partie de volet de fixation (12a, 12b) s'étendant sous forme de prolongement de la partie de fond (12) au-delà de la face avant (17) de manière à s'engager avec l'intérieur de l'emballage extérieur (20),
- l'emballage extérieur (20) comprenant une partie de fond (22) avec des parties de volet pliées (22a, 22b) pour former et fournir des faces avant longitudinales opposées (27) de l'emballage extérieur, une première partie de paroi latérale (24) et une deuxième partie de paroi latérale (26) s'étendant le long de côtés opposés de la partie de fond (22), les faces avant (27) s'étendant entre des sections d'extrémité longitudinales des première et deuxième parties de paroi latérale (24, 26),

i) la première partie de paroi latérale (24) de l'emballage extérieur (20) comprenant au moins une partie de volet pliée (24a) chevauchant une partie de volet pliée (26a) de la deuxième partie de paroi latérale (26) de l'emballage extérieur (20), ou chevauchant directement et s'engageant avec la deuxième partie de paroi latérale (26) pour contribuer à l'une des faces avant (27) de l'emballage extérieur (20), ou
ii) des parties de volet pliées vers l'intérieur (24a, 26b) des première et deuxième parties de paroi latérale (24, 26) de l'emballage extérieur (20) étant attachées à l'intérieur des parties de volet (22a, 22b) de la partie de fond (22) de l'emballage extérieur (20),

l'au moins une partie de volet de fixation de l'emballage intérieur (12a, 12b) butant contre, et s'engageant positivement avec, au moins l'une des parties de volet pliable (24a, 26a) d'au moins une partie de paroi latérale (24, 26) de l'emballage extérieur (20).

2. Ensemble d'emballage selon la revendication 1, comprenant une première et une deuxième partie de volet de fixation (12a, 12b) s'étendant depuis des extrémités opposées de la partie de fond (12) de l'emballage intérieur (10) et/ou s'étendant depuis des faces avant opposées (17) de l'emballage intérieur (10).

3. Ensemble d'emballage selon l'une quelconque des revendications précédentes, dans lequel l'au moins une partie de volet de fixation (12a, 12b) est formée intégralement avec la partie de fond (12) de l'emballage intérieur (10).

4. Ensemble d'emballage selon l'une quelconque des revendications précédentes, dans lequel au moins l'une des première et deuxième parties de paroi latérale (14, 16) de l'emballage intérieur (10) comprend des première et/ou deuxième parties de volet (14a, 14b, 16a, 16b) s'étendant depuis des côtés opposés des parties de paroi latérale respectives (14, 16).

5. Ensemble d'emballage selon l'une quelconque des revendications précédentes, dans lequel l'emballage intérieur comprend une portion de couvercle (18) s'étendant le long de la deuxième partie de paroi latérale (16) de l'emballage intérieur (10).

6. Ensemble d'emballage selon la revendication 5, dans lequel la partie de couvercle (18) comprend une partie de volet latéral (15) chevauchant la première partie de paroi latérale (14) de l'emballage intérieur (10).

7. Ensemble d'emballage selon la revendication 4 et l'une des revendications 5 ou 6, dans lequel la partie de couvercle (18) comprend au moins une première partie de volet longitudinal (18a) s'étendant depuis une extrémité longitudinale de celle-ci et chevauchant au moins l'une des première et deuxième parties de volet (14a, 14b, 16a, 16b) des parties de paroi latérale (14, 16) de l'emballage intérieur (10).

8. Ensemble d'emballage selon la revendication 7, dans lequel la partie de couvercle (18) comprend au moins une première extension longitudinale (18c, 18d) s'étendant depuis une extrémité longitudinale de sa première partie de volet longitudinal (18a) et chevauchant la partie de fond (12) de l'emballage intérieur (10).

9. Ensemble d'emballage selon l'une quelconque des revendications précédentes 5 à 8, dans lequel la partie de couvercle (18) comprend une partie de bande pliable ou amovible (19) destinée à fournir l'accès à l'intérieur de l'emballage intérieur (10).

10. Ensemble d'emballage selon la revendication 9,

dans lequel la partie de bande (19) comprend un volet de préhension (19a) faisant saillie au moins en partie depuis l'une des première et deuxième parties de paroi latérale (14, 16) de l'emballage intérieur (10).

11. Ensemble d'emballage selon l'une quelconque des revendications précédentes, dans lequel un premier dispositif d'administration de médicaments est disposé dans l'emballage intérieur (10) et dans lequel un deuxième dispositif d'administration de médicaments est disposé dans l'emballage extérieur (20).

12. Ensemble d'emballage selon la revendication 11, dans lequel au moins l'un des premier et deuxième dispositifs d'administration de médicaments comprend un dispositif d'injection contenant un médicament injectable.

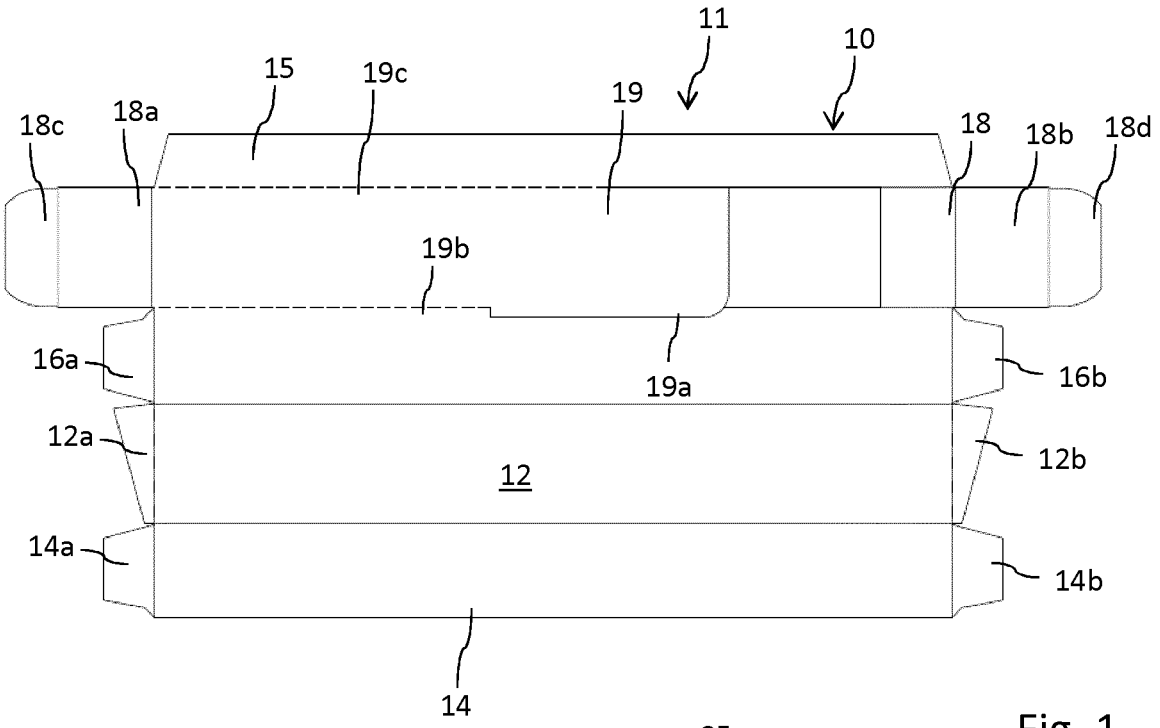
11
10
15
19c
19
18c
18a
18
18b
18d
19b
16a
19a
16b
12a
12
12b
14a
14b
14

Fig. 1

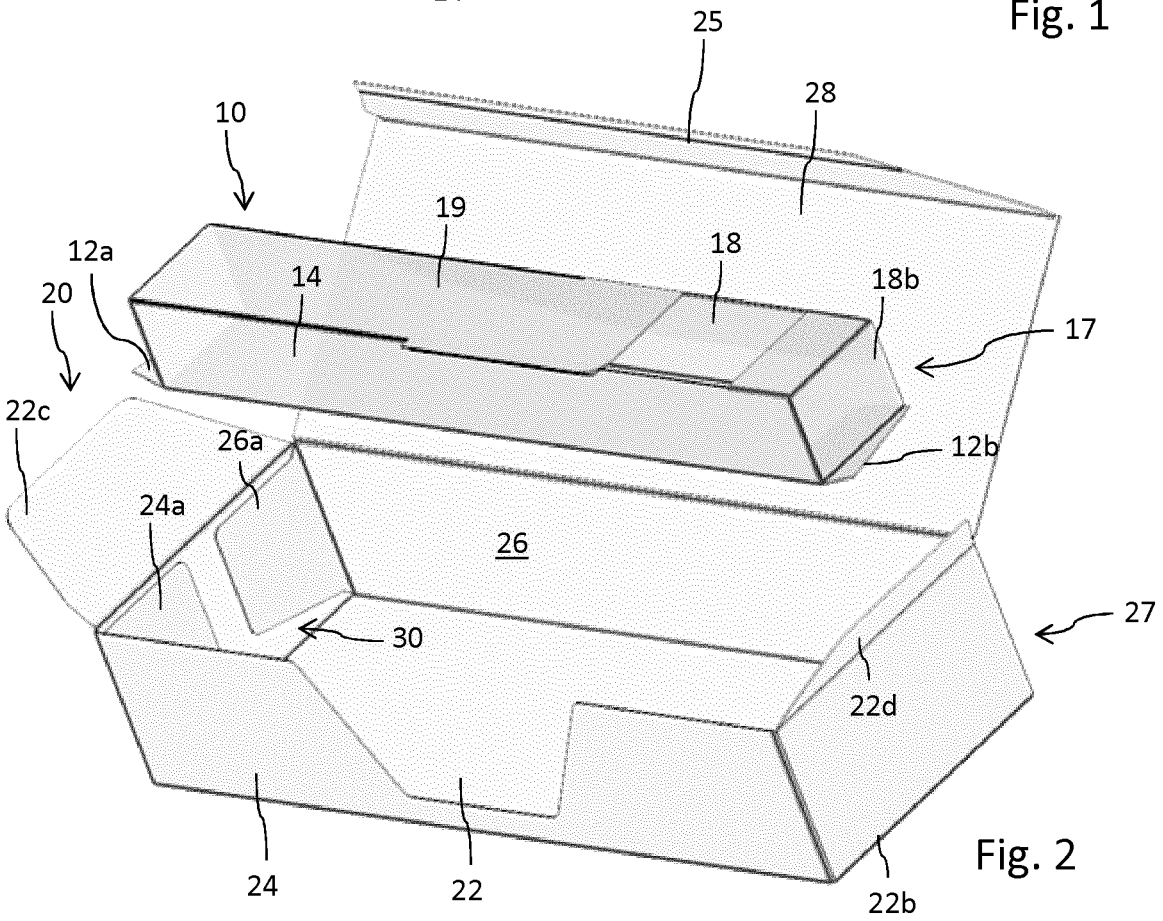
25
28
10
19
12a
18
14
18b
20
17
22c
26a
12b
24a
26
27
30
22d
24
22
22b

Fig. 2

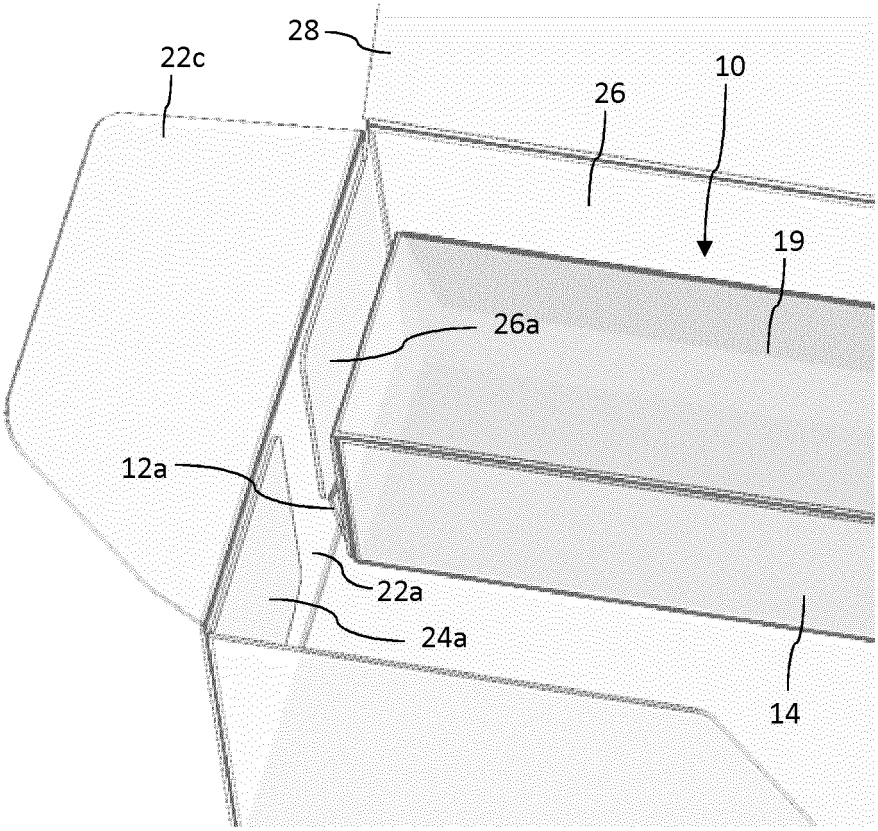

Fig. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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Non-patent literature cited in the description

- Remington's Pharmaceutical Sciences. Mark Publishing Company, 1985 **[0080]**