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(54) **Pack for paper handkerchiefs**

(57) The invention relates to pack of paper handkerchiefs. The pack of the proposed invention can allow for a dual dispensing of the tissues: dispensing of folded tissue or dispensing of tissues automatically unfolding during the dispensing. The pack is conveniently used in extreme conditions, or by people having reduced finger mobility.

The present invention presents a pack having a dis-

pensing orifice and a closure means (7) (such as a flap) that is hingedly connected to the pack and also has an unconnected peripheral (18) portion. In a closed position, the closure means (7) covers the dispensing orifice and overlaps the edge of that orifice by at least 2mm along said unconnected peripheral portion (18).

The present invention also proposes a process for manufacturing such packs.

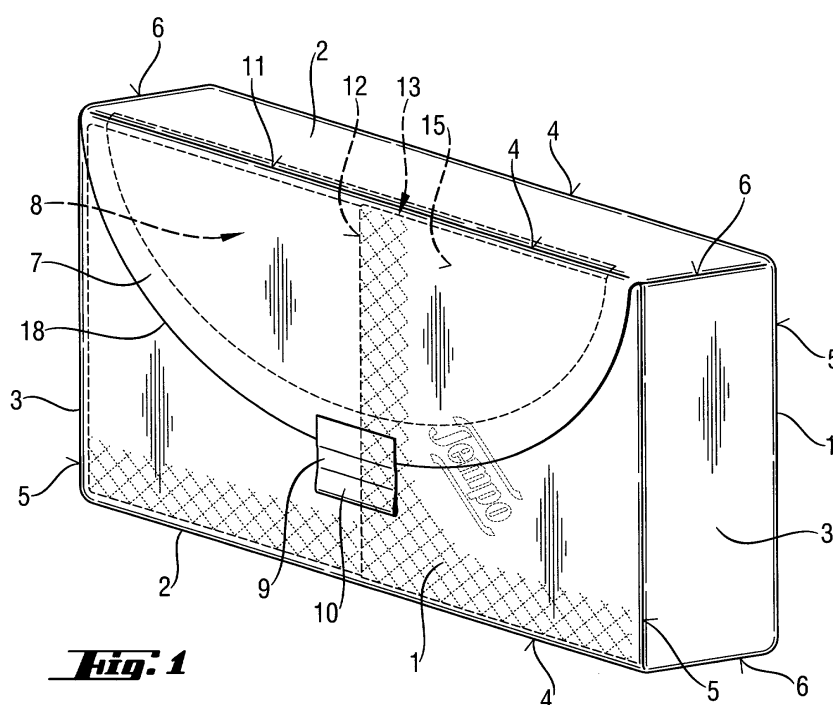


Fig. 1

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Description

Field of Invention

[0001] The invention relates to pack of paper handkerchiefs. The invention describes a pack of paper handkerchiefs that provides an optimum hygienic protection of the handkerchiefs in the pack while allowing for a easy, convenient dispensing of the handkerchiefs. The above advantages are in particular delivered by a closure mean such as a flap or panel able to cover the dispensing opening in a overlapping way. Further, the shape, size and positioning of the dispensing orifice has been specifically designed for delivering the intended benefits. Furthermore, the folding of the handkerchiefs in the pack has been selected to synergistically work together with the above features to deliver an enhanced convenience of use and of dispensing.

Background of the Invention

[0002] The use of paper handkerchiefs has become increasingly popular over the years and they are nowadays present in everyone's pocket or purse. Paper handkerchiefs are usually sold as pocket size packs or tabletop boxes. The present invention focuses on packs of paper handkerchiefs that are intended to be carried in one's pocket or purse or bag i.e. the shape and size of the packs being generally adapted to fit one's pocket. Packs are usually of parallelepipedic shape with dimensions of about 110mm x 55mm x 20mm, although a significant variation around these observed dimensions can be found pending of the manufacturer of the packs. Packs are usually intended to carry between 5 and 15 single paper handkerchiefs, most usually 10.

[0003] Paper handkerchiefs are generally intended for single use. Paper handkerchiefs are in most instances used to collect nasal fluid expelled from the human nose, that is of particular importance during the rhinitis / allergy / cold season. However, more broadly, paper handkerchiefs are also used to collect and absorb other fluids such as tears, sweat, or even used a cleaning aid to wipe and/or absorb splashes or liquid stains from a variety of substrate. In a sense, paper handkerchiefs are becoming the favorite handy multipurpose absorbing, wiping and cleaning aid, which everybody has at arm-reach.

[0004] Convenience of use is a key desired characteristic of paper handkerchiefs:

- Packs of paper handkerchiefs expected to be carried around in a pocket, bag or purse, without breaking apart or loosing their shape. The material of the pack, usual a flexible plastic film, has to be resistant enough, without being too rigid (this would reduce its convenience to carry in a trousers pocket for example).

- Packs of paper handkerchiefs are expected to protect the paper handkerchiefs from various contaminations: Dirt, dust, diverse fluid, and microbiological contamination are in the environment where packs are carried or stored. It is expected that the paper handkerchiefs in the packs will be protected from most, if not all, the contamination. It is also expected that the packs will continue to protect the handkerchiefs after the first use of the pack and its first opening.

- Packs are expected to enable an easy and convenient dispensing of the handkerchiefs: In that respect the material of the pack has to be strong enough to not deform or break during dispensing, while the dispensing opening of the pack must be adequately dimensioned. Furthermore the position of the opening must allow to grab the handkerchiefs and remove it from the pack in an easy way, for all people.

[0005] For the best understanding of the available prior art, it is needed to know that paper handkerchief packs are usually, but not always, parallelepipedic. Parallelepipedic packs comprise 3 groups of pairs of panels and 3 groups of 4 identical edges. For the purpose of this document, the groups of panels are called: front panel (the panel of largest area size), side panels (the panels of intermediate area size), and end panels (panels of smallest area size). The groups of edges are so called "long edges", "intermediate edges" or "small edges", according to their length.

Prior art

[0006]

- The Procter & Gamble company successfully commercializes under the TEMPO® brand pocket size paper handkerchiefs. Those are usually sold in bundles of 8 to 42 packs. Each pack usually contains 10 handkerchiefs. The most usual packs are wrapped by a piece of plastic film shaped and sealed to form a substantially parallelepipedic pack having approximate dimensions of 110mm x 55mm x 20mm. Packs of smaller or larger dimensions exist or can be contemplated. The dispensing opening of these packs is located at one end of one of a front panel (or side), including one intermediate pack edge. A pre-perforated area can be broken to create an opening and a flap articulated over a hinge parallel to, or located on an intermediate pack edge. The opening is of a substantially half circle shape. The piece of material covering initially the opening creates a flap that can alternatively close or open the dispensing orifice. The flap can be maintained in the closed position by a resealable tape bridging in a temporary way the flap and the front panel. The reseal tape has one end not presenting any adhe-

sive (so called "dry end") enabling for an easy gripping and operation of the tape and of the closure flap.

[0007] In EP 0475 463 B1, H. Focke describes a pack for paper handkerchiefs with a re-seal tape partially or fully covering a closure flap. The elements of the opening device (flap, re-seal tape and orifice) are located in the width of the front panel. The same document also describes a pack which opening device is located on the side panel, with the reseal tape being positioned partly on the front panel.

[0008] In EP 0961 736, Muller et al. describe a pack with a closure flap located on the side panel. The flap partly overlaps with the side panel of the pack. Slits are present in the film to delineate a dispensing orifice smaller than the side panel. A reseal tape is provided to reclose the flap over the dispensing orifice.

[0009] In a substantial similar way, Focke and Wach describe in EP 0401 621 a pack that dispensing opening is located on the side panel and delineated by severance cuts. The cuts can be extended to the front panel. In this embodiment, the dispensing orifice comprises portions of both front and side panels and the hinge of the flap located on the front panel.

[0010] Focke and Mathews also substantially describe this latest embodiment in DE 39 20 065 A1.

[0011] DE 31 00 286 A1, describe a pack with a flap able to overlap fully the dispensing orifice. The dispensing orifice is located at one end of a front panel, close to an intermediate pack edge. The hinge of the flap coincides with an intermediate pack edge.

[0012] In DE 39 11 779 A1, Focke and Liedtke describes a pack that reseal tape overlaps the dispensing orifice in the front panel. The dispensing orifice of the front panel seems to allow for the gripping of a handkerchief in the pack. The flexibility of the film seems to enable the removal of the handkerchief in the opening created along an intermediate pack edge corresponding to the hinge of the flap.

[0013] In EP 0 553 660 B1, H. Focke describes a pack that has a dispensing orifice in the front panel. A flap overlaps the dispensing orifice. The overlapping part of the flap is created by a Z-fold in the one piece of film material constituting the pack, after appropriate cutting. The hinge of the flap is located along one intermediate pack edge. The defined size of the one piece of material limits the extend of the overlapping zone of flap around the dispensing orifice.

[0014] In WO 98/06369 and corresponding US 6 015 045, Joseph et al describe a pack for hygienic articles having a re-closable flap overlapping a dispensing orifice. An additional material is used to create the overlap of the flap around the dispensing opening. The hinge of the flap is located along the intermediate pack edge, opening in the front panel.

[0015] EP 0 607 724 B1 and its equivalent US 55 24 759, by Herzberg describe a pack having a dispensing

orifice located in the front panel and reclosable by a non-overlapping flap. A particular fold of the tissues in the pack is foreseen to enhance the dispensing.

[0016] In EP 0544 156 B1, filed on 13 November 1992, H. Focke describes a pack of folded paper handkerchiefs having an orifice in the front panel. The tissues are folded and position in the pack in such a way that a border (edge) of a tissue coincides with the dispensing orifice.

[0017] In DE 35 42 999 A1, filed on 5.12.1995 by Schickedanz (now merged into/part of The Procter & Gamble company), H. Pohl describes a pack which flap is constituted by an oversized reseal tape, covering a dispensing orifice as well the surrounding panel. A tissue edge appears through the dispensing hole.

[0018] The reseal tape requires a complex adhesive distribution to insure the functionality of the break-out portion.

[0019] In European application EP 01129421, not yet published, Goepfert and Buschkiel describe a pack having a flap hingedly connected to a side panel. The shape and size of the non-overlapping flap are specifically designed to enhance the hygienic protection of the handkerchiefs while maximizing the convenience of dispensing.

[0020] Altogether, numerous pack designs are intended to allow a easy access to the paper handkerchiefs as well as a satisfactory protection of the tissues inside the pack. These attempts are however limited by cost, complexity or technical constraints during the manufacture of the packs (for example, the use a single initial piece of material). Furthermore, in most cases the attempts have resulted in the minimization of the size of the dispensing orifice in order to protect unused tissue inside the packs. This hygienic consideration has been detrimental to the convenience of use: grabbing the tissue inside the pack is an operation that may be uneasy to some of the users. Further, the grabbing and dispensing may be just un-achievable in extreme conditions (i. e. wearing gloves, rigidity of the finger articulation due to cold...) or un-achievable to people with reduced finger- or hand- mobility or visual impairment (elderly people, for example).

[0021] Similarly dispensing orifices of reduced size allow only one single grabbing option as for the removal of tissue from the pack.

[0022] There is a need to handkerchiefs packs having maximized orifice, fully enabling the convenience of dispensing of handkerchiefs.

[0023] There is need for a pack offering an enhanced level of tissue protection inside the pack.

[0024] There is a need to packs of handkerchiefs offering both an enhanced protection of the tissues and an easy / convenient tissue dispensing.

[0025] There is a need for pack offering a dual dispensing capability: dispensing of a folded tissue or dispensing of a tissue that unfolds automatically while being removed from the pack.

[0026] There is a need for a pack permitting the dispensing in the most extreme conditions (wearing gloves, cold fingers) or by people with reduced hand- or finger-mobility such elderly or disabled people.

[0027] There is a need for a pack with an improved ability to remain in good shape while being carried around in a pocket a purse or a bag.

[0028] The present invention describes a pack fulfilling the above desired characteristics.

Summary of the Invention

[0029] The present invention describes a pack generally used for storing a stack of paper handkerchiefs.

[0030] The invention presents the advantages of enhancing both the protection of the handkerchiefs and the convenience of dispensing of the handkerchiefs. The invention also presents the possible advantage of proposing a pack that has an enhanced stability, further increasing its convenience to use. The pack of the proposed invention allows for a dual dispensing of the tissues: dispensing of folded tissue or dispensing of tissues automatically unfolding during the dispensing. Last, the pack is conveniently used in extreme conditions or by people having reduced finger mobility.

[0031] The present invention presents a pack having a dispensing orifice and a closure mean (such as a flap) that is hingily connected to the pack and also has an unconnected peripheral portion. In a closed position, the closure mean covers the dispensing orifice and overlaps the edge of that orifice by at least 2mm along said unconnected peripheral portion.

[0032] In another embodiment of the invention, the position of the dispensing orifice is selected to include both a part of a front panel and a part of a long pack edge.

[0033] In another embodiment the size of the dispensing orifice has been preferably selected to have an area between 500 square mm and 3000 square mm, thus allowing for an optimum convenience of use in the most extreme conditions.

[0034] In another embodiment, the folding of the tissues inside the pack has been optimized to enhance the convenience of use and allow for dual dispensing option: one tissue edge coincides with the opening orifice (allowing the tissue to be removed unfolded), and no tissue edge coincides with the partially open long edge of the pack (allowing the tissue to be removed folded).

[0035] By one further aspect, the convenience of use is further enhanced by a providing a reseal functionality of the closure means, for example as a reseal tape, with a grip of high rigidity, created by a U-fold of the tape material.

[0036] The present invention also describe a process permitting to produce the packs of handkerchiefs offering most, if not all, the desired benefits.

[0037] All documents cited are, in relevant part, incorporated herein by reference; the citation of any docu-

ment is not to be construed as an admission that it is prior art with respect to the present invention.

Brief Description of the Drawings

[0038]

Figure 1 is a general overview of a pack of paper handkerchiefs and shows the most important features of such packs.

Figure 2 shows a paper handkerchief, presented laying substantially flat and unfolded.

Figure 3 shows a folded paper handkerchief. Many other folding configurations are possible.

Figure 4 and figure 5 each represent one particular pack of the present invention. In figure 5 a tissue is represented inside the pack.

Figure 6 represent a pack of tissue and more particularly highlights the construction of the re-seal tape according to one embodiment of the present invention.

Figure 6a shows a detailed view of the reseal tape.

Figure 7 shows a particular embodiment in which a secondary piece of material forms the peripheral edge of the dispensing orifice and the overlap.

Figure 7a shows a particular view of the pack of figure 7.

Figure 8 shows a particular embodiment of the invention in which the closure means, in the form of a flap, comprise a portion having reseal functionality.

Figure 9 shows a pack of the present invention having no end panels, the front and back panels being joined together to seal the ends of the pack. The pack of figure 9 is not a fully parallelepipedic pack but has long, intermediate and short edges.

Figure 10 show a particular embodiment of the invention, with a specific shape of the closure means and dispensing orifice, the overlap and a particular shape of the reseal tape.

Detailed Description of the Invention

Definitions:

[0039] Figure 1 shows and defines, for the purpose of this documents:

- The front panels (1), defined as the panel of largest area. A pack has 2 front panels. For simplicity in this document, the reference to "the" front panel of the pack indicates the one panel comprising the dispensing orifice or part of it.
- The side panels (2) defined as the panels having an intermediate size (area) between the front and the end panels. A pack has 2 side panels.
- The end panels (3), defined as the panels of smallest area. A pack has 2 end panels.
- The long pack edges (4), defined as the edge between 2 front panels and corresponding to the longest edge of the pack. A pack has 4 long edges.
- The intermediate pack edges (5), defined as the pack edges between a front and a side panel and corresponding to the edges of intermediate length between the long and the short edges. A pack has 4 intermediate edges.
- The short edges (6) defined as the shortest pack edges and corresponding to the edges linking a side and an end panel. A pack has 4 short edges.
- The flap or closure means (7) is a piece of material movable between a close and an open position, and able to cover at least partially the dispensing orifice. The flap articulates around a hinge (11) that is connected to a pack panel or pack edge. The periphery of the closure mean (7) then has a "connected portion" (articulating around a hinge (11)) and an "unconnected portion" (18). The unconnected peripheral portion (18) is not permanently connected to the pack.
- The dispensing orifice (8), is the aperture through which the tissues can be grabbed and possibly removed from the pack during the dispensing operation.
- The reseal tape (9), or reseal piece (19), is a piece of material able to lock the flap in the closed position and re-open at the users need to enable the dispensing operation. The reseal tape can be a separate piece of material as in fig 1 and 10 for example or a piece of the closure means (flap) as in figure 8. The reseal tape bridges the flap and a front panel. It is usually, but not always, quasi permanently glued and sealed to the flap and comprises an adhesive surface able to stick in a temporary manner onto the front panel. The reseal piece or reseal tape can have various design (cf figure 1 and 10).
- The grip zone (10) of the reseal tape (also called dry zone or dry edge) is free of any adhesive on its outer surface and enables the user to grab the reseal tape and operate it.

The other figures also define and show:

[0040] The seal (20) of the front and back panels in the embodiment of figure 9. In this embodiment, no end panels are present but the front and back panels are joined together by the seal (20) to seal the pack.

- The handkerchief surfaces (15) and edge (12), as well as the U-fold (13) of the handkerchief in a particular folding configuration.
- Alternatives possible embodiments of the present invention, in particular figures 4 and 10 show a specific design of the closure mean (7), of the dispensing orifice (8), of the reseal tape (9) and of the grip zone (10).
- In figure 9, a pack of the present invention is shown that is not a parallelepipedic pack: the pack has no short edges nor end panels. The front and back panels are joined together in a sealing zone (20). The pack has long edges (4), intermediate edges (5), and short edges (6).

[0041] For the purpose of the present invention, the following terms and wording are used interchangeably, and with the same meaning:

- Grip zone, grip edge, dry zone or dry edge.
- Handkerchiefs, paper handkerchiefs or tissues
- Film, flexible film, wrapping material, to describe the material constituting the majority of the pack.
- Pocket pack, pack or container for tissues to describe a receptacle for tissues/handkerchiefs insuring the protection of a stack of tissues contained therein.
- Flap or closure mean, to describe the piece of material covering at least partially the dispensing orifice.
- Dispensing orifice, orifice or dispensing aperture,
- Overlap or overhang: in the present invention both describe the part of the flap that covers part of a pack panel in addition to covering the dispensing orifice.

Overlapping closure mean

[0042] The function of the closure mean or flap of the subject pack is (1) to allow the best protection to the tissues inside the pack and (2) to allow for a convenient opening and re-closure operation.

In most currently marketed products, the flap barely covers the dispensing orifice. In most cases, the tearing of a pre-perforated line in the pack material creates the flap. No overhang of the flap extending over the dispensing orifice is provided. Also, very often, the pressure of the folded tissues inside the pack (on the internal face of the pack) is sufficient to actually not allow the flap to cover entirely the dispensing orifice after the first opening of the pack. Only after the removal of the second or third tissue from the pack can the flap, associated with the flexibility of the pack material, be brought in coincidence with the edge of the orifice.

[0043] One can understand easily that a large flap covering all the dispensing orifice and extending over it to create an overlap on one of the panel, is extremely beneficial for the protection of the tissues inside the

pack.

[0044] However such a large overlap implies additional and significant material cost and also presents the technical difficulty of requiring a particular process and/or a secondary material providing for the flap or overlap. WO98/06369 uses for that purpose an additional piece of material whereas EP 0553 660 creates a Z-fold in the material to create the overlap. DE 35 42 999A1 uses an over-dimensioned re-seal tape for that purpose.

[0045] It has been surprisingly found in the present invention that a very large overlap is not needed to leverage the desired hygienic benefits. On contrary the inventors have found that an overlap of at least 2mm is sufficient for the hygienic protection of the tissues.. An overlap of 5mm or more is foreseen as a preferred embodiment of the invention, most preferably 10mm or more and even more preferably 20mm or more. Below 2mm around the edge of the orifice, the overlap does not allow for a good protection of the tissues, allowing dust or other unwanted bodies to get in contact with the tissues. One has found that the usage conditions would trigger in this case a folding of the flap, which would expose the tissues to the environment, thus promoting contamination.

[0046] These above preferred embodiments relate to the minimum dimension of the overlap. The overlap dimension can also be limited in its maximum dimension primarily to further enhance convenience (i.e. avoid unwanted fold of the flap in use) and to reduce the cost of the material. one could envision a flap covering the entire front panel as an embodiment of the invention, however it has been found that the maximum dimension of the overlap is best when less 30mm, most preferably and respectively less than 20mm and less than 10mm.

[0047] Similarly, is has been found that the overlap is preferentially present around the entire periphery of the dispensing orifice to insure the best protection (i.e. along the entire unconnected peripheral portion (18) of the closure means (7)).

[0048] Along the hinge of the flap (so called "connected peripheral portion of the closure means"), one can consider, for the purpose and the clarity of this document, that the overlap is always present: Per construction, the area extending radially from the orifice edge and coinciding with the hinge, is always covered by the pack material. By extension of language, one says that the "overlap" exists, as the functionality of having a tight hygienic closure always exists in this area. In other words, the connected peripheral portion of the closure means (7) always provides per construction a substantially tight protection of the content of the pack.

[0049] Along the unconnected peripheral portion (18) of the closure mean (7), it has been found that, an overlap of 2mm or more provides best protection of the content of the pack

[0050] The overlap (overhang) is measured radially from the edge of the dispensing orifice (in any straight portion of the edge of the dispensing orifice, the overlap

is measured perpendicularly to that edge).

[0051] It has been found that the overlap (or overhang) of the flap on to a panel creates a zone of increased structural resistance in the pack when closed. This property is to be linked to an increased shape stability of the pack during the transportation in bag or pocket, without creating unnecessary rigidity. That quality has been found highly appreciated by the consumers.

10 Size, position and shape of the dispensing orifice:

[0052] European patent application EP 01129421 describes a dispensing orifice of a particular shape allowing for very good dispensing while protecting the tissues. It has been found that particular and different shape and positioning of the dispensing orifice may similar or a even enhanced benefits. That particular execution is show in Figure 5. It combines the benefits of an oval centrally located orifice on the front panel with the convenience of the grabbing of the tissue by the edge. Located centrally the major part of the orifice is easy to spot and reach, even with gloves or by impaired people. Extending up and including part of a long pack edge, the orifice allows to grab a tissue from the side, which is in some case the preferred way of dispensing by people with reduced finger mobility (for example elderly people).

[0053] The substantial extension of the orifice in a direction parallel to the long edge of the pack brings additional convenience.

[0054] It has been found that the relative proximity of the dispensing orifice to the pack edge provides for a easier dispensing: It is possible, but not essential, that the peripheral edge of the dispensing orifice coincides with pack edge. However the flexibility provided by the tissue inside the pack and by the nature of the packing film allows for a certain distance between the peripheral edge of the dispensing orifice and the pack edge. Preferably that distance should not be greater than 6mm, more preferably 3 most preferably 0mm. In these foreseen values, the benefit of dispensing convenience is maximized.

[0055] It has been found that an optimum orifice dimension exists: Too large, the orifice will increase the risk of contamination; too small the orifice would not allow for a convenient tissue dispensing. The optimum dimension, measure as in terms of surface area, has been found to be between 500 and 3000 square millimeters (sqmm), preferably between 700 sqmm and 2500 sqmm, most preferably between 1000 sqmm and 2000sqmm, even more preferably between 1200sqmm and 1800sqmm.

[0056] Altogether the shape of the orifice is designed to maximize convenience of dispensing and to maximize the protection of the tissues.

[0057] Figure 4 and 5 describe two possible combinations of a flap overlapping the front panel and an optimum dispensing orifice size, location and shape, ac-

cording to the present invention.

Folding of the tissues inside the pack

[0058] Selecting the most appropriate folding of the tissue and orientation inside the pack can further enhance the dispensing convenience.

[0059] Tissues, usually substantially rectangular, have two surfaces (15) and 4 tissue edges (12). The tissues are generally folded in a way that creates one area with multiple free tissue edges (12) and one area presenting a U-fold (13). In a U-fold area, no tissue free edge is present parallel to the U-fold.

[0060] It has been found that a tissue edge coinciding with the dispensing orifice and preferably extending transversally to the primary direction of the opening (for example the longest axis of the substantially oval opening in figure 5), enhances the convenience of use: In such a configuration, the user is able to slip his finger (even covered by a glove) under the tissue edge (12). The users has then an easy grab of the tissue and a facilitated removing of the tissue from the pack by a simple movement of translation in a direction substantially orthogonal to the general plan of the front panel. In the same movement the user can unfold the tissue, still using one single hand (this operation is referred to as "unfolded dispensing").

[0061] Additionally it has been surprisingly found that the convenience of the "unfolded dispensing" can be further improved: When the folding of the tissue in the pack is made in such a way that the use can fit his finger under the tissue edge (and grab the tissue) coming from the left side, it has been shown most of the users recognize a significant additional convenience. Statistically most users grab the pack of tissue with their right hand while grabbing the tissue with their left hand. A configuration providing a open-grip of the tissue on the left side is therefore preferred.

[0062] In another embodiment of this invention the folded tissues are positioned inside the pack in such a way that no tissue free edge (12) having a direction substantially parallel to a pack long edge coincides with the dispensing orifice along the hinge zone of the flap. In other word, only tissue U-folds (13) appears thru the dispensing orifice edge along the flap hinge. Net, this particular configuration allow to grab and remove a full tissue in one movement without having the tissue unfolding during the said movement. This feature is also called "folded dispensing".

Dual dispensing

[0063] By combining two of the above features the pack of figure 4 or 5, with the tissues appropriately folded inside, allows for both "folded dispensing" and "unfolded dispensing" together, giving more choice and convenience to the user. This property is referred to as "dual dispensing".

[0064] Figure 5 shows a pack with a tissue folded inside. The tissue edge (12) appears through the dispensing orifice and can be grabbed by the user. Alternatively the user can grab the U-fold (13) to remove the tissue from the pack.

Re-seal tape with a U-folded dry zone

[0065] The non-permanent closure of the flap over the front panel is, in one embodiment of the present invention, secured via the use of a reseal tape (9) presenting a dry zone (10). The dry zone allowing a good grip of the reseal tape, is made by a same piece of tape that is folded on itself in a U-fold (16). The internal faces of the U-folded (16) dry zone (10) are sealed together.

The dry zone part of the reseal tape is more rigid, in comparison to a regular, single layer, non U-folded reseal tape.

It is been found that the above described construction of the reseal tape (9) present a much better convenience of use and an easier grip of the dry zone (10) by the users, more particularly by those users with impaired finger mobility or in extreme conditions (wearing gloves, cold fingers...).

[0066] The reseal functionality of the present invention can be achieved by a separate piece of material (so called re-seal tape). Alternatively the closure mean or flap can comprise an extension having reseal functionality, as shown in figure 8. Dry-edge or grip zone can be provided as well as adequate adhesive to enable the reseal of the flap.

[0067] The reseal functionality can be provided by adequate adhesive on the reseal tape of reseal zone. Alternatively, adhesive can be provided along a portion of the unconnected portion of the peripheral edge of the closure means. Even more preferably the adhesive is located along the entire unconnected portion of the peripheral edge of the closure means.

Process of making:

[0068] In another aspect the present invention relates to the process of making a pack of paper handkerchiefs. The problem of creating a pack according to the present invention is to provide for the overlapping zone between the flap and the front panel.

[0069] The present invention solves this problem by substantially proposing 2 routes for achieving the desired overlap.

With one unique wrapping material

[0070] In a first embodiment, a piece of primary material, generally a soft flexible plastic film, is cut and folded and sealed in a way that creates the flap overlap: If compared to a non overlapping flap option, the original material needs to be of increased dimensions. Rolls of material with increased width generally provide that ex-

tended dimension. The comparatively increased material provide for sufficient area to create the overlapping flap. By cutting a piece of material having a larger width, the folding can be adjusted to create an overlap of at least 5mm between the flap and the front panel. Optionally a reseal tape is added to the flap, with the permanent sealing to the flap and the non-permanent/closable adhesive facing the front panel. This execution has been benefit to represent a relatively simple solution to the problem but is technically complex, as it requires in most instance a production line able to handle raw materials of increased width. Selecting the right cutting and folding configuration in order to achieve the desired overlap, preferably along the entire periphery of the dispensing orifice, requires visualizing and understanding the desired benefits. The number of cutting and folding options is quasi infinite and a careful selection among those was necessary to achieve the transcription of the desired benefits into the functional tri-dimensional pack of the present invention.

With a secondary material

[0071] In a second embodiment, a secondary piece of material is used. During the manufacturing process, a step of cutting and attaching or joining the secondary material onto the primary material is additionally foreseen. That process steps can occur before, during or after the formation of the 3-dimensional pack by folding. Preferably that process step is executed before the folding, i.e. the secondary material is attached on a substantially flat primary material.

[0072] In one sub-embodiment, the secondary material is preferably the same material as the primary material. As previously described the overlap creates a zones of high stability in the pack, helping it shape to remain stable during use and transportation. It is however contemplated, in another sub-embodiment, to use a secondary material of higher strength, higher caliper or higher rigidity in order to increase further the gain in pack stability created by the overlap.

[0073] In one sub-embodiment, for example illustrated by figure 5, the secondary piece of material (17), once in place on the newly formed pack forms a flap (8) that is hingedly connected to one of the panel (1), preferably along a pack edge (11). More preferably the hinge is parallel to a long pack edge, most preferably the hinge is substantially co-located with a long pack edge. One can foresee that the hinge has substantially the same dimension as the long pack edge, thus maximizing the dimension of the flap.

Attaching the insert outside or inside the pack.

[0074] This other embodiment, the secondary material can be sealed to the side of the primary material forming the outside or the inside of the pack.

Closure mean as a continuous piece of material

[0075] In this sub-embodiment, the secondary material is preferably continuous, not presenting holes, perforations, slits or indentations.

[0076] In another sub-embodiment of the present invention, shown in figure 7, the secondary piece of material (17) constitutes the edge of the dispensing orifice, i.e. a shape, preferably a hole is cut out of the secondary material. The secondary material (17) is positioned and sealed onto the primary material, for example onto the front panel (1). A selected area of the primary material forms the flap (7) whereas the secondary material forms the portion of the panel overlapping the flap as well as the dispensing orifice (8) per se.

[0077] In WO 98/06369 and corresponding US 6 015 045, a retaining band is used to delineate an aperture in a pack of hygienic articles. The selection of the present invention to a overlap of at least 2mm to overcome the technical issue of creating an enhanced barrier against contamination, is however not described nor substantiated in this document.

Examples:

[0078] In the above-described examples (cf in particular figures 4, 5, 7, 8,9,10) of possible pack configuration of the present invention, the material (primary and secondary material where applicable) is a soft flexible film having the characteristics suitable for the standard manufacture of handkerchief packs. For example the film can be a polyethylene/polypropylene film having a thickness between 25 and 50 micrometers and able to be thermo-sealed at a temperature in the range of 120-200 degrees Celsius. The sealing operations are executed by a combination of thermo sealing and gluing. The re-seal tape is polypropylene material with a permanent adhesive in one end and a re-seal able adhesive on the other end. The tissues can be of any commonly used material for making paper handkerchiefs (such as Tempo®) and their folding can be as shown in figure 3 or in the referenced documents. All other operations are as commonly practiced by paper handkerchief manufacturers and packers.

[0079] While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

Claims

1. A pack of paper handkerchiefs

- having long, intermediate and short edges, said long edges being longer than said intermediate edges, said short edges being shorter than said intermediate edges
- having a dispensing orifice delimited by its peripheral edge, and
- having a closure means, such as a flap, said closure means covering at least said dispensing orifice, and said closure means having a connected peripheral portion and an unconnected peripheral portion
- said closure means being permanently connected to said pack by said connected peripheral portion

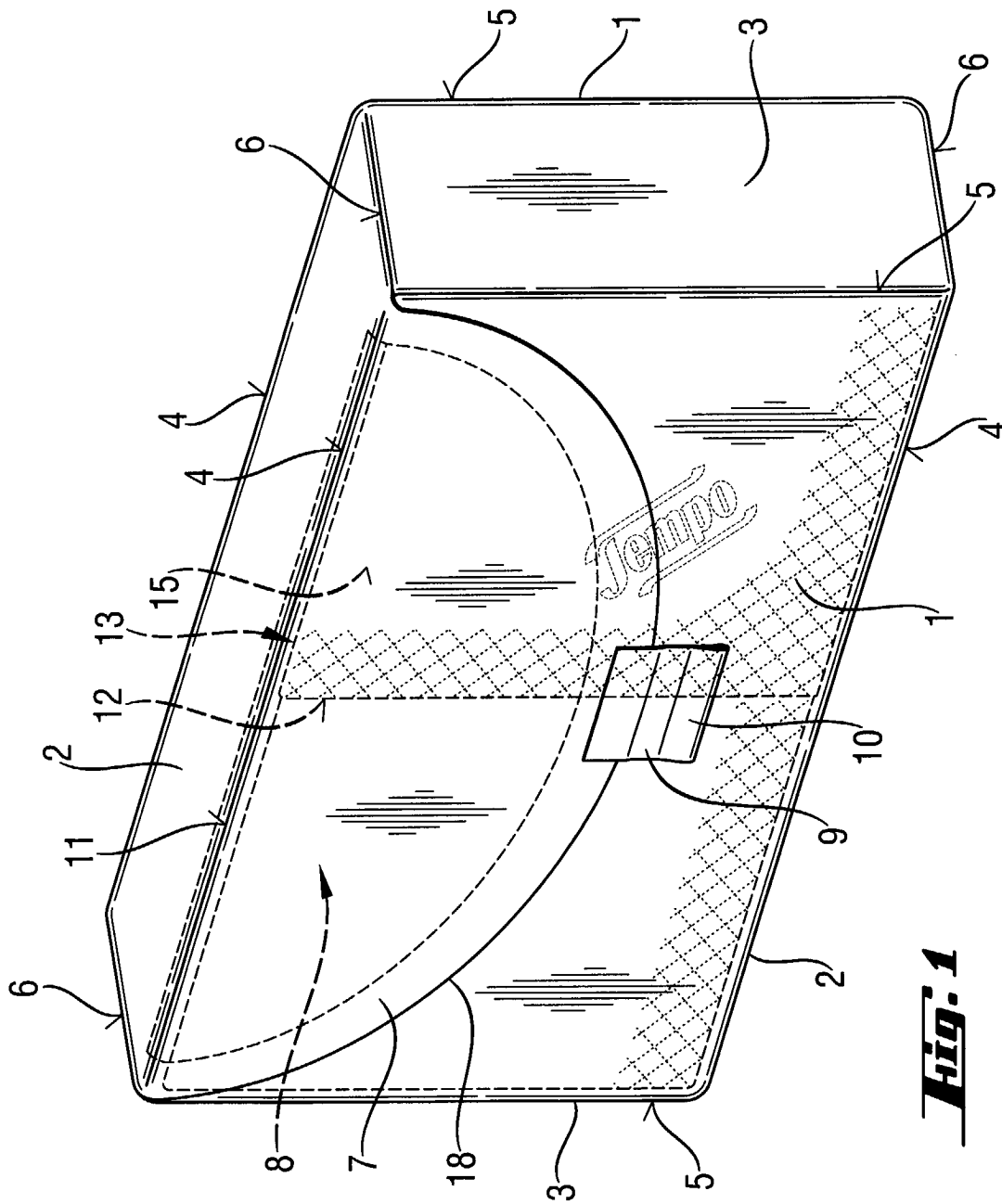
characterized in that

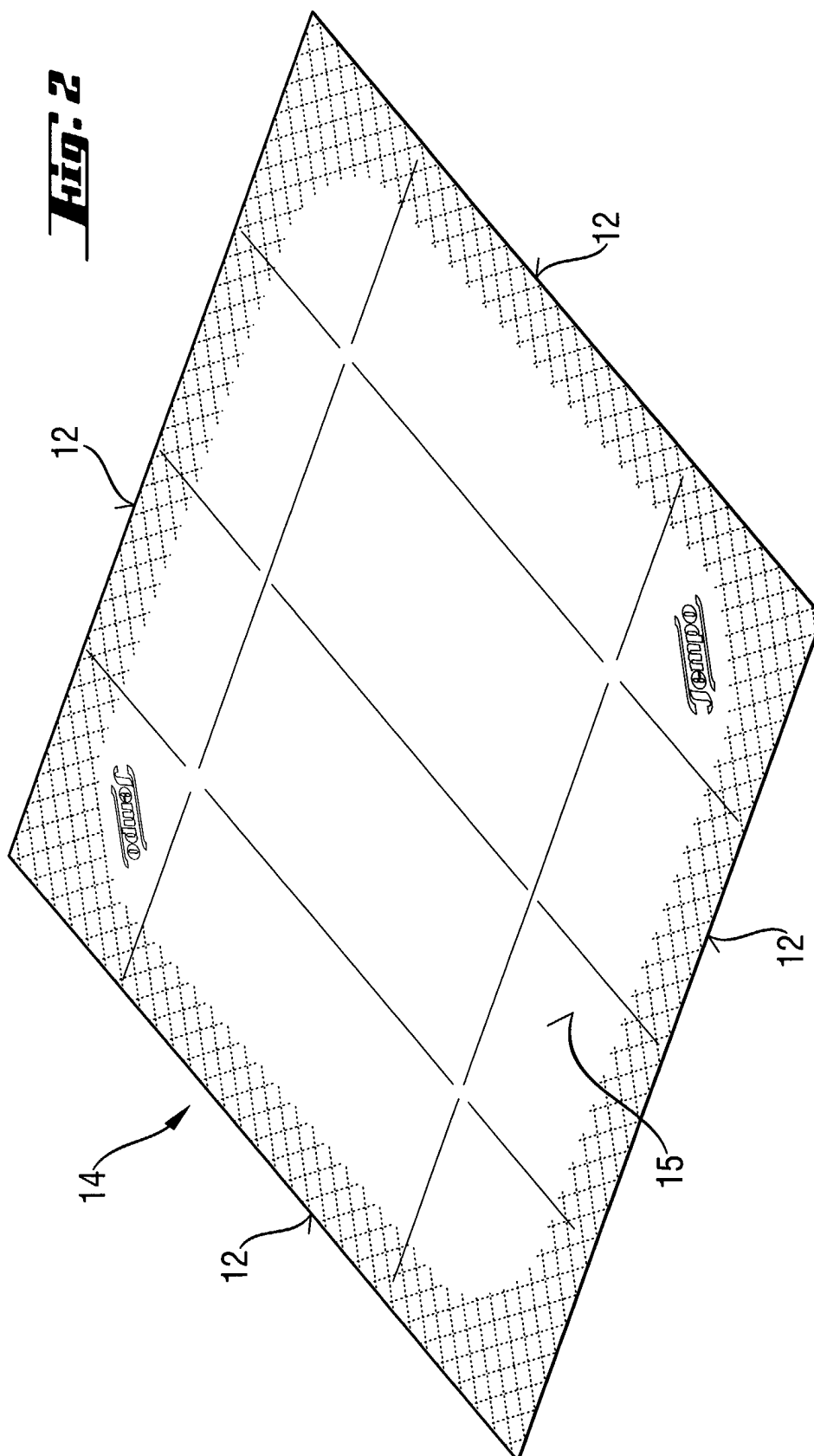
said closure means extends beyond said peripheral edge of said dispensing orifice by 2mm or more all along said unconnected peripheral portion of said closure means

2. The pack of claim 1 further **characterized in that** said closure means is reclosable after the first dispensing.
3. The pack of any of the preceding claims, further **characterized in that** said dispensing orifice has an area dimension of more than 500 sqmm and less than 3000 sqmm.
4. The pack of any of the preceding claims, wherein said paper handkerchiefs are delimited by a peripheral edge, further **characterized in that** said paper handkerchiefs are folded and positioned in said pack in such a way that one portion of said peripheral edge of said paper handkerchief coincides with said dispensing orifice.
5. The pack of any of the preceding claims further **characterized in that** said handkerchiefs are folded and positioned in said pack in such a way that no portion of said handkerchief edge simultaneously satisfies both
 - said portion of handkerchief edge is positioned parallel to a long edge of said pack and
 - said portion of handkerchief edge is in coincidence with said orifice.
6. The pack of any of the preceding claims, further **characterized in that** one portion of said peripheral edge of said dispensing orifice is at a distance of less than 6mm of at least one of said pack-edges.
7. The pack of any of the preceding claims, further **characterized in that** said closure means comprises a resealable tape comprising a grip end and is

able to maintain said closure mean in a position covering said dispensing orifice, and **in that** said grip end comprises a part of said resealable tape partially folded on itself.

8. The process of making a pack of paper handkerchiefs according to any of claims 1-7, having an internal side and an external side, comprising the steps of
 - a- Providing a primary soft film as package material,
 - b- Cutting, folding and sealing said package material to construct said pack
 - c- Optionally, providing a reseal tape material, cutting and attaching said reseal tape material to said pack
9. The process of claim 8 **characterized in that** said process step a- includes the sub-steps of
 - a1- Providing a secondary material
 - a2- Cutting said secondary material in the desired shape to form said closure means
 - a3- Attaching said secondary material to said primary soft film to provide said package material.
10. The process of claim 8 **characterized in that** said process step a- includes the sub-steps of
 - a1- Providing a secondary material
 - a2- Cutting said secondary material in the desired shape to form said dispensing orifice including said peripheral edge of said dispensing orifice
 - a3- Attaching said secondary material to said primary soft film to provide said package material.
11. The process of claim 9 or 10 further **characterized in that** Said secondary material is attached to said external side of said pack.
12. The process of claim 9 or 10 further **characterized in that** Said secondary material is attached to said internal side of said pack.
13. The process of any of the claims 10-12 further **characterized in that** said secondary material completely forms said peripheral edge of said dispensing orifice.





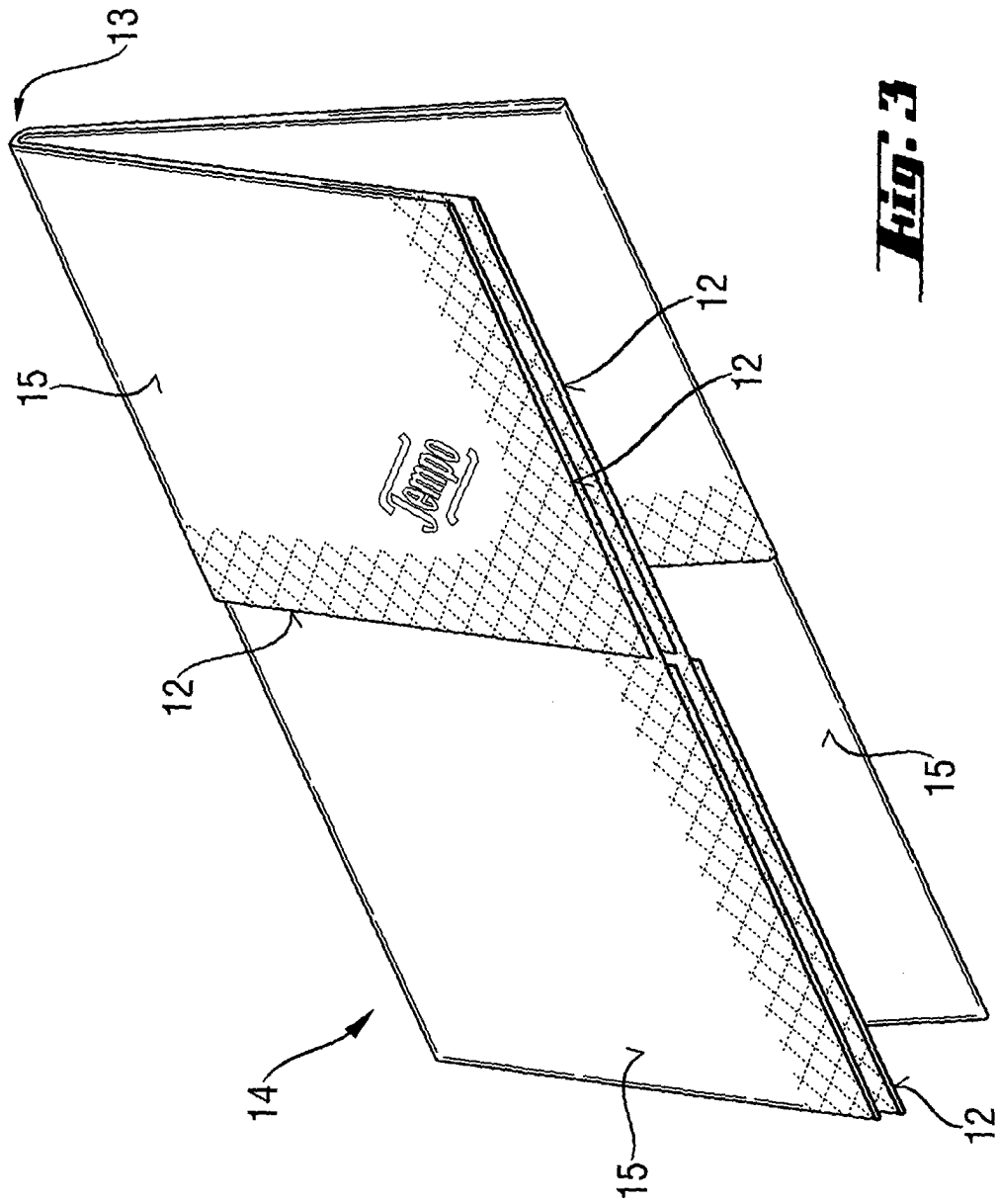


Fig. 3

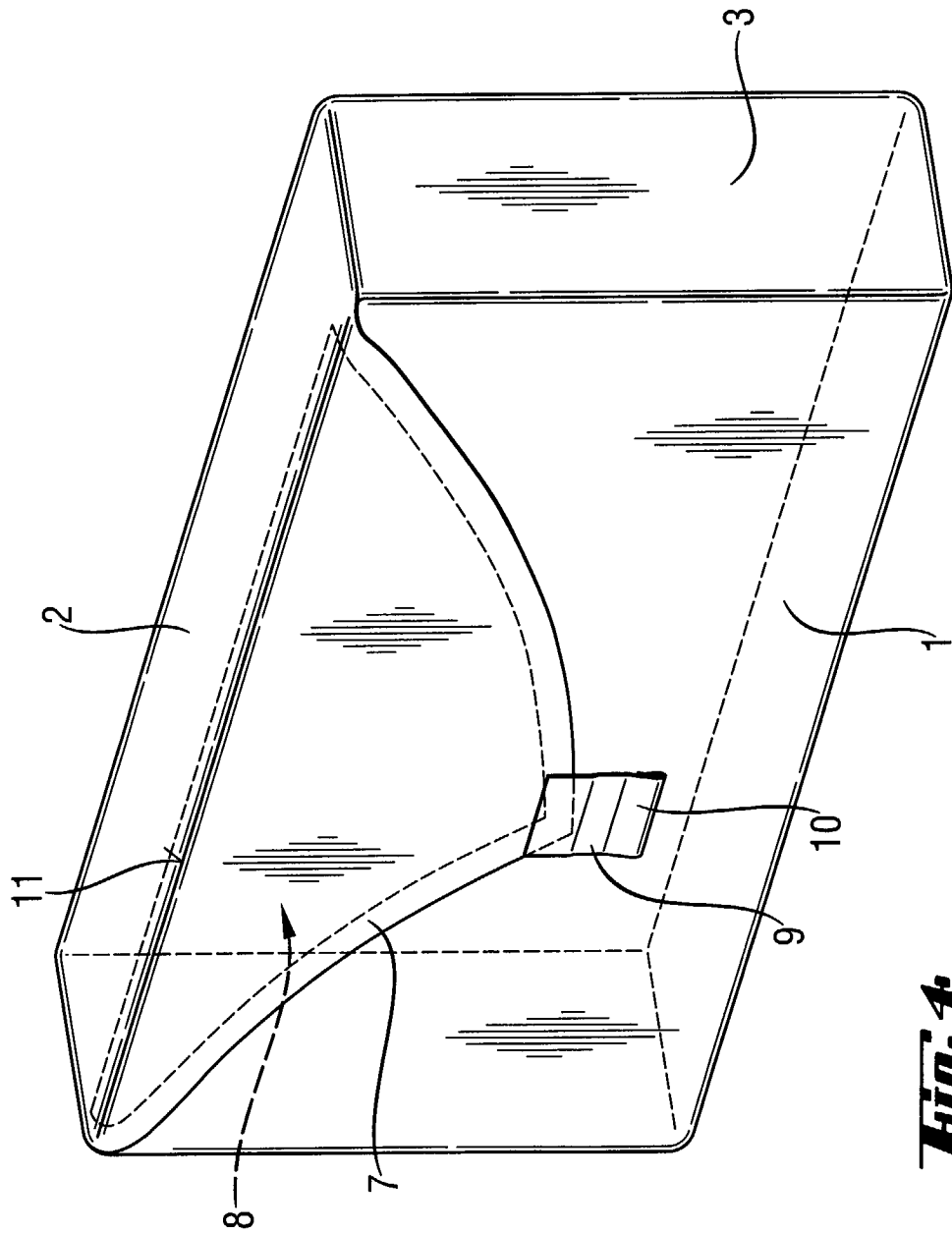
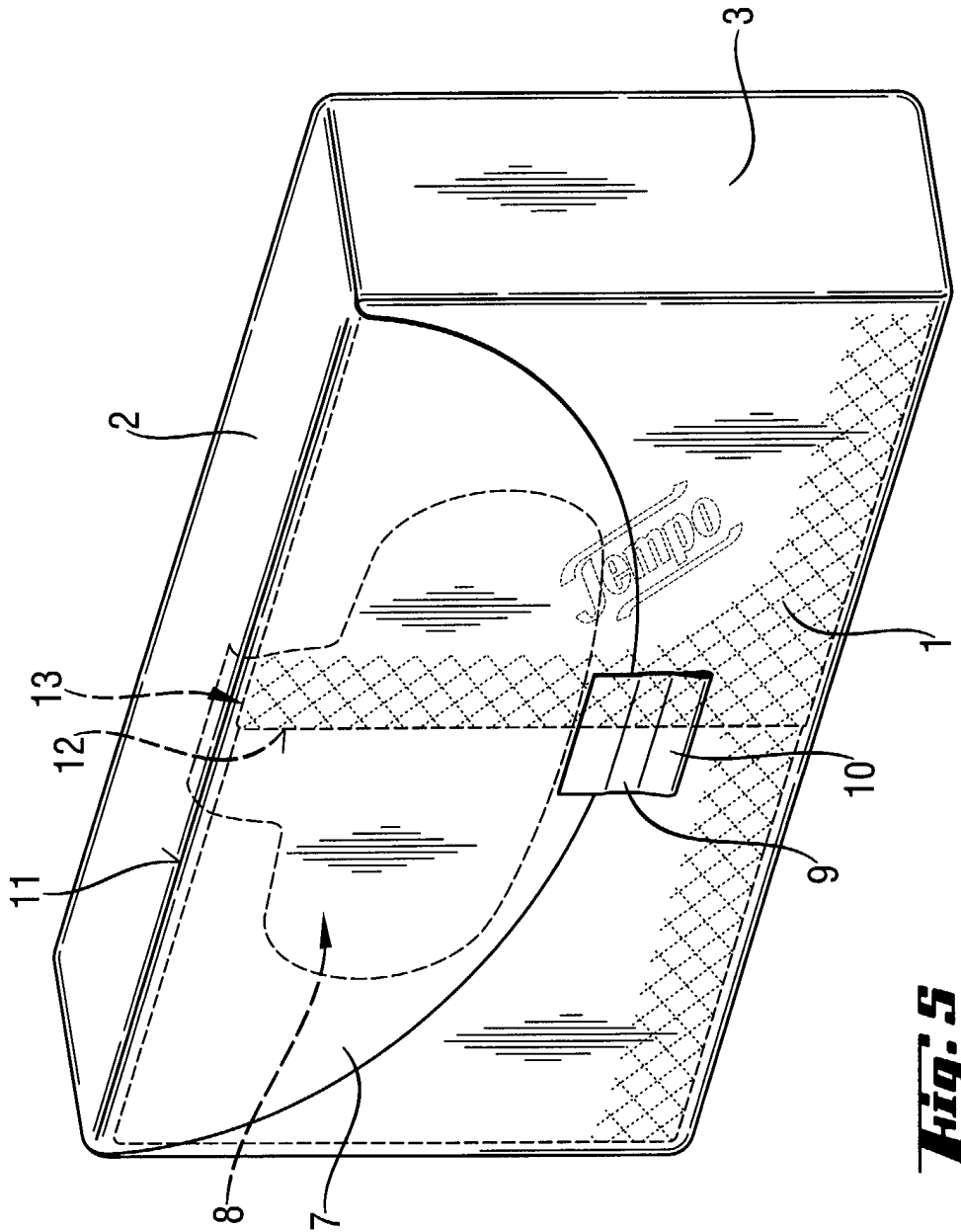
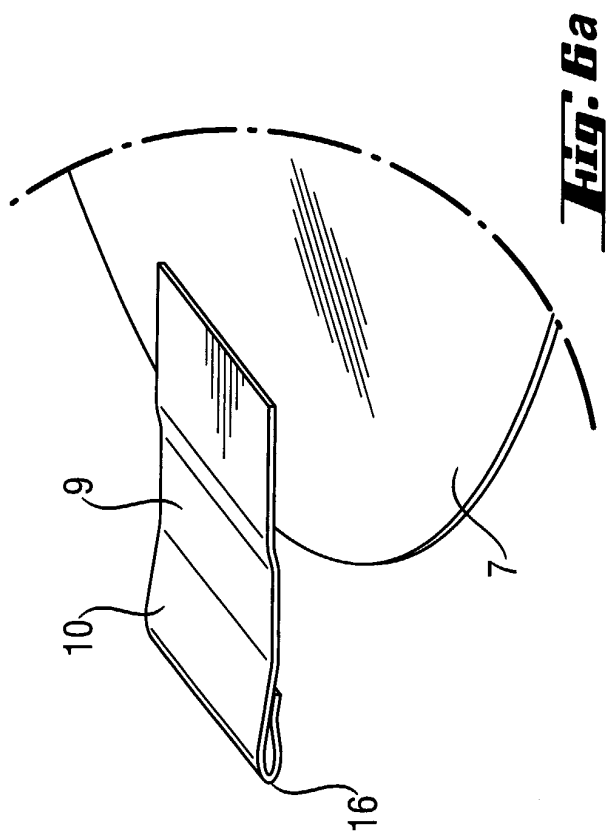
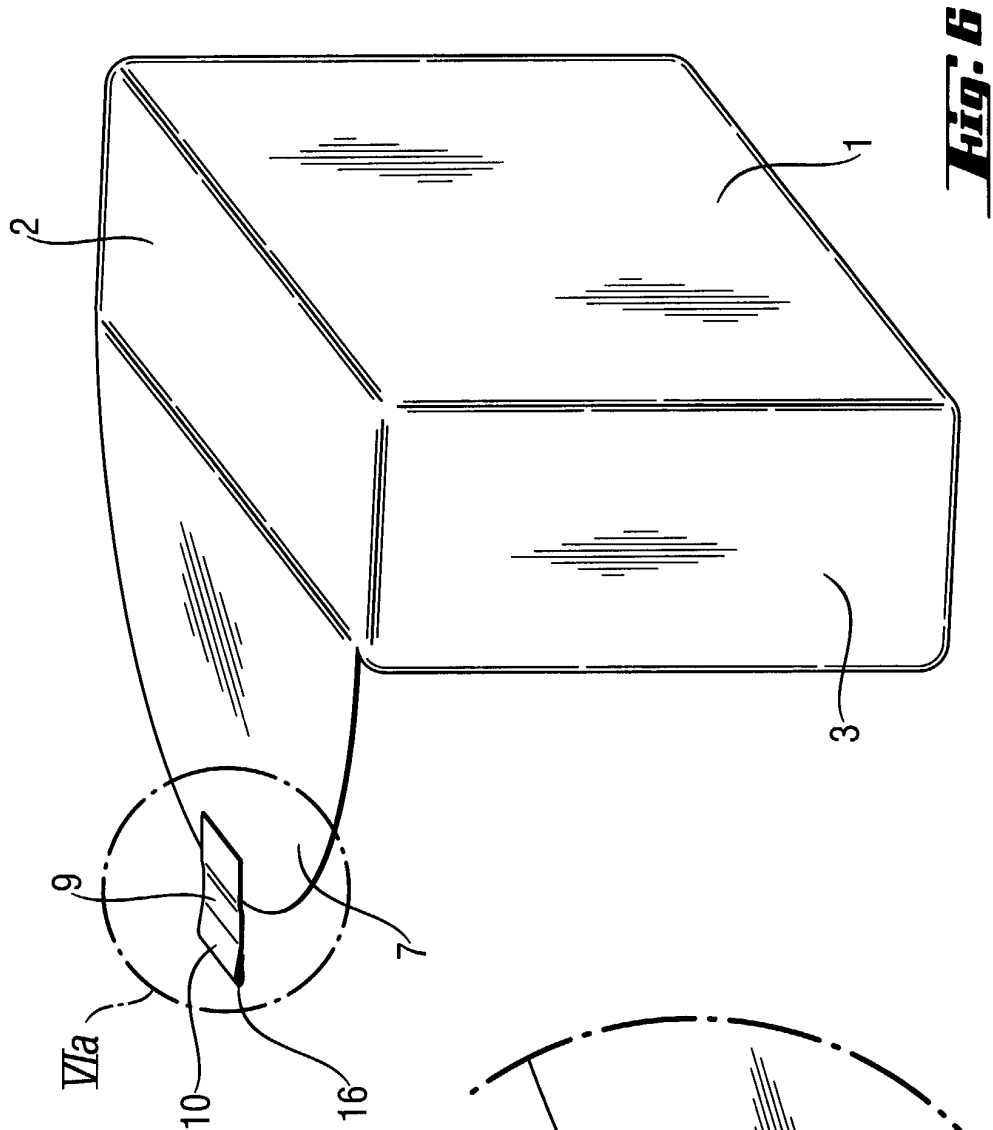
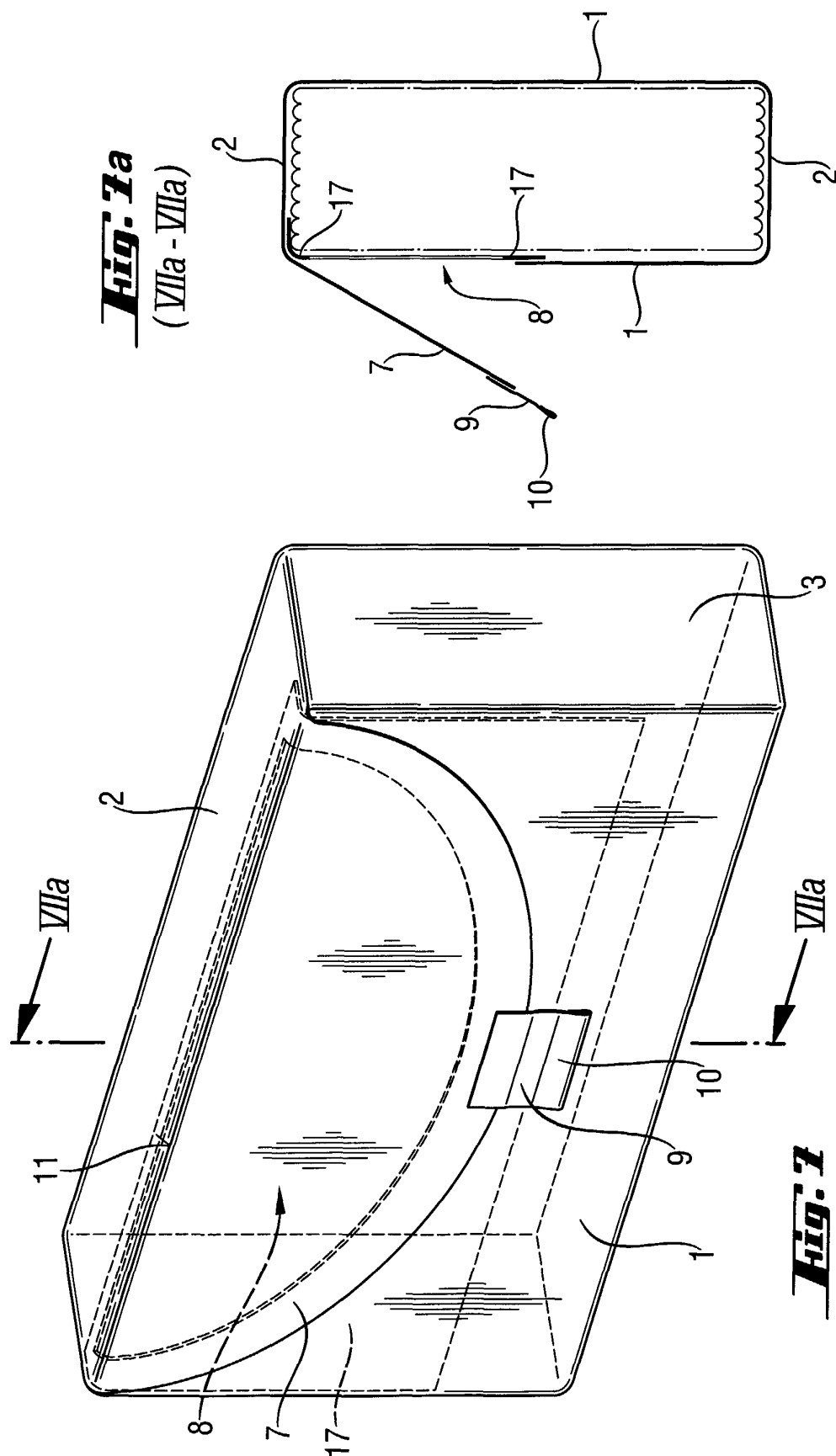


Fig. 4







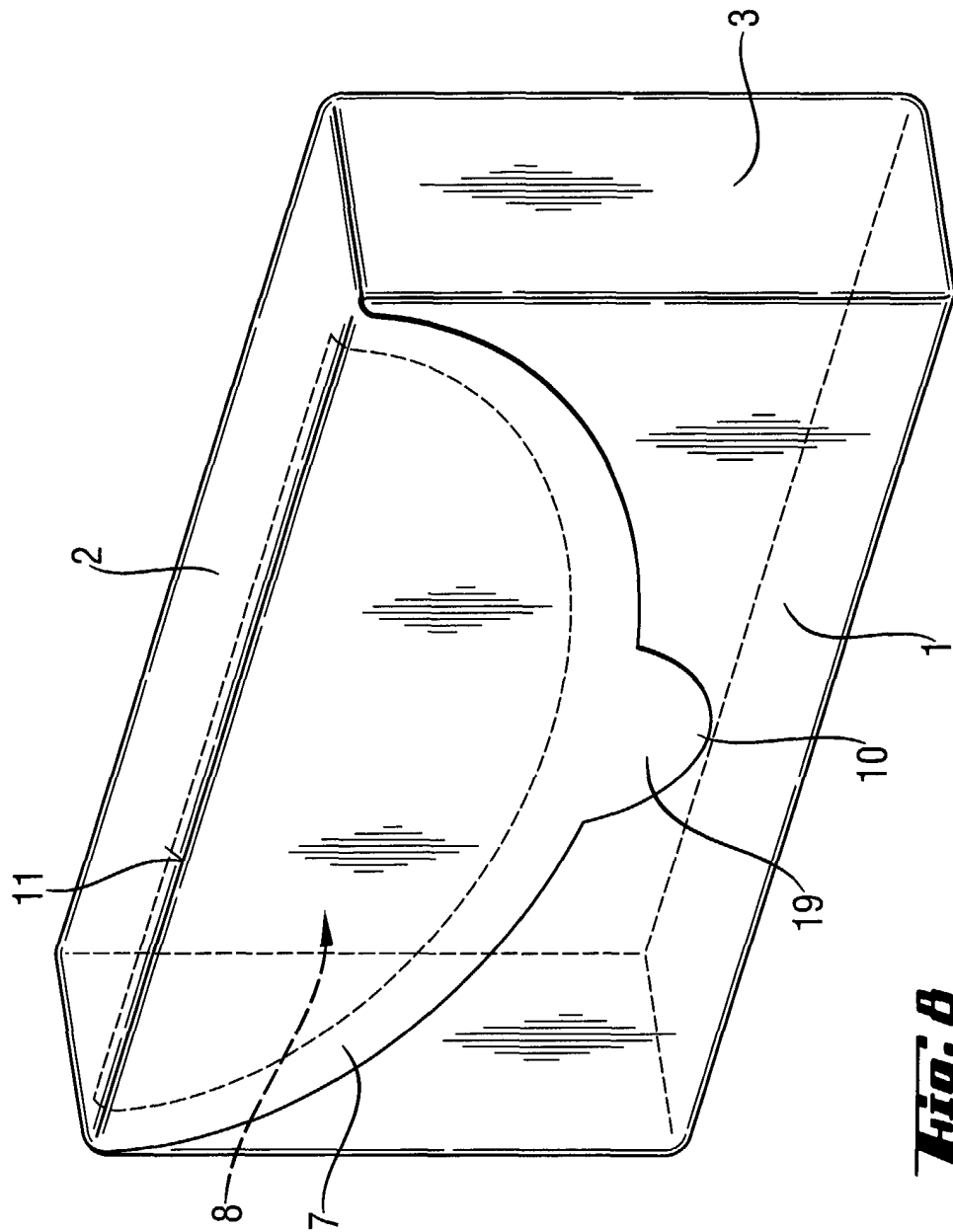


Fig. 8

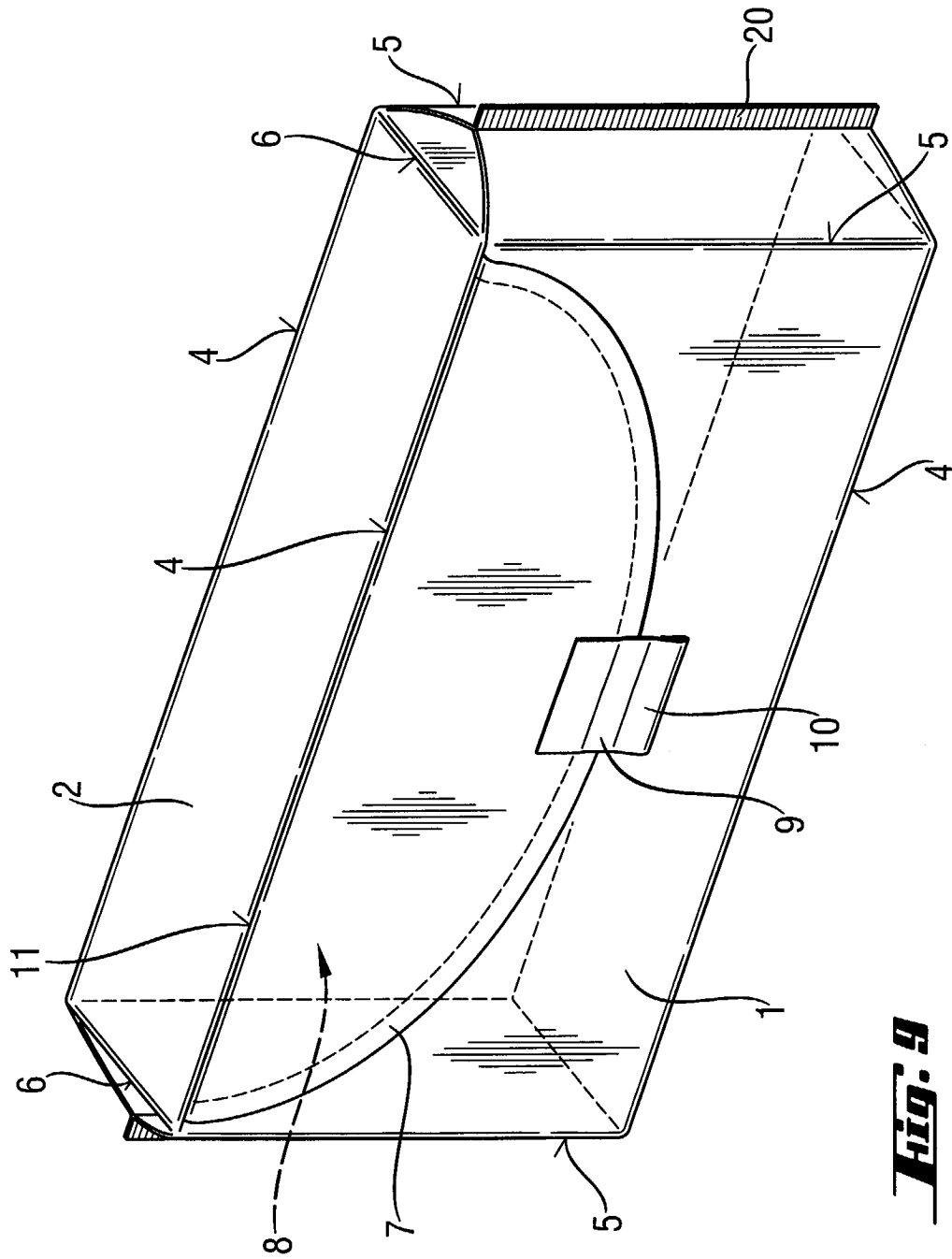
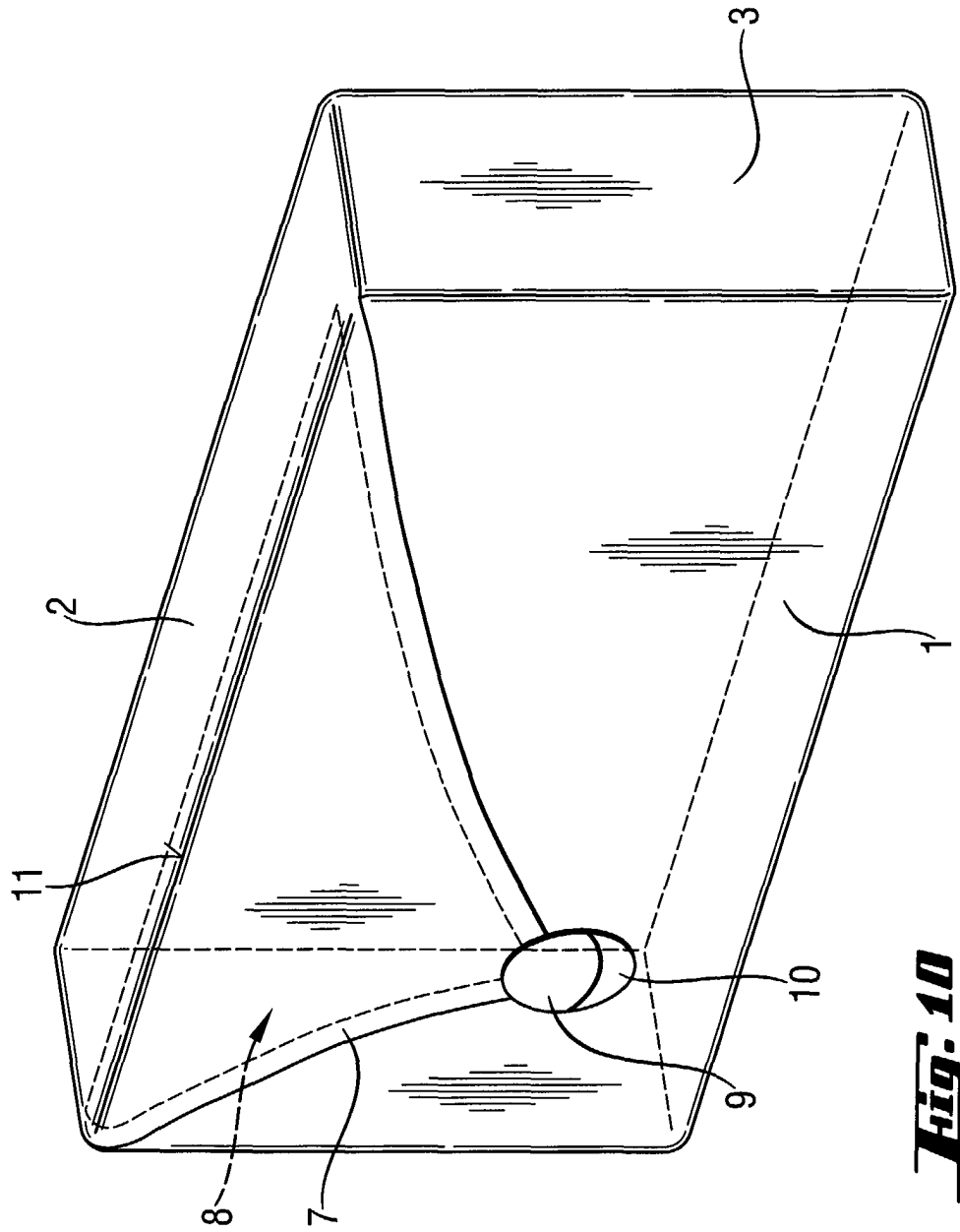


Fig. 9





European Patent
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EUROPEAN SEARCH REPORT

Application Number
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Place of search THE HAGUE		Date of completion of the search 1 September 2003	Examiner Sundell, 0
CATEGORY OF CITED DOCUMENTS		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	
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