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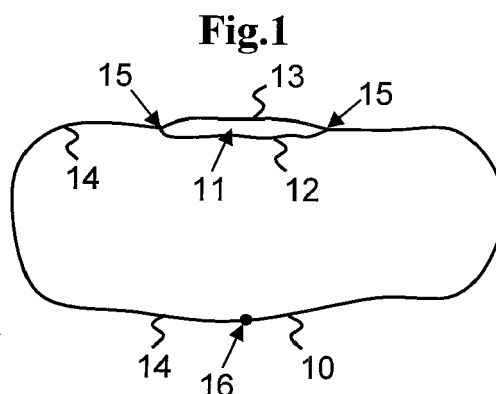
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(54) **A vented bag and a method of manufacturing same**

(57) A bag, and a method for manufacturing the bag, where the bag includes an inner sheet (12) and an outer sheet (13), where the inner sheet (12) includes a semi-permeable barrier part (19) enabling venting of gas from the bag, where the inner sheet (12) and outer sheet (13) are connected by at least two seaming lines (27) forming a venting tube (11) between the inner sheet (12), outer

sheet (13), and seaming lines (27), where the venting tube (11) includes an opening (17) to free-air in at least one end of the venting tube (11), where edges of at least one of the inner sheet (12) and outer sheet (13) are connected to form the bag, and where the bag-forming connection are provided remotely from the venting tube (11).



## Description

### FIELD OF THE INVENTION

**[0001]** The present invention relates to packaging and, more particularly, but not exclusively to bags for packaging powders.

### BACKGROUND

**[0002]** When a bag for packaging is filled with powder or a similar material it is also filled with air or a similar gas that should be vented from the bag before shipment. There are several methods for producing or installing a venting valve in the bag. A simple venting valve is a tube formed along one side of the bag. For several reasons the tube should be formed in the upper side of the bag, when the bag is compressed to vent the trapped air, when the bag is shipped and stored. For other reasons the upper side of the bag should be arranged for quality printing. There is thus a need for addressing these contradicting needs as well as other issues associated with the prior art.

### SUMMARY

**[0003]** A bag comprising: an inner sheet and an outer sheet; wherein said inner sheet comprises a semi-permeable barrier part; wherein said inner sheet and outer sheet are connected by at least two seaming lines forming a venting tube between said inner sheet, outer sheet, and seaming lines; wherein said venting tube comprises an opening to free-air in at least one end of said venting tube; and wherein edges of at least one of said inner sheet and outer sheet are connected to form a bag; said bag-forming connection provided remotely from said venting tube.

**[0004]** It may be that the venting tube is formed remotely from edges of at least one of said inner sheet and said outer sheet parallel to said venting tube.

**[0005]** It may be that the venting tube is formed remotely from bag-forming connection, said bag-forming connection forming a bag by connecting said edges of said inner sheet and said edges of said outer sheet.

**[0006]** It may be that the venting tube is formed with said bag-forming connection in opposing side of said bag.

**[0007]** It may be that the inner sheet and said outer sheet are made from different materials.

**[0008]** It may be that at least one of said different materials is a Polyethylene compound.

**[0009]** It may be that at least one of said different materials is a Polyethylene compound comprising Calcium Carbonate.

**[0010]** It may be that the inner sheet and said outer sheet have an overlapping area, and wherein said overlapping area is larger than said venting tube.

**[0011]** It may be that the outer sheet, at said overlapping area, includes an area transparent to view, and

wherein said area transparent to view is printed on the side facing said inner sheet.

**[0012]** It may be that the bag additionally comprises a printed area, wherein said printed area is protected by said inner sheet from materials internal to said inner sheet, and wherein said printed area is protected by said outer sheet from materials external to said outer sheet.

**[0013]** It may be that the edges of said inner sheet are connected to form an inner bag, and wherein edges of said outer sheet are connected to form an outer bag.

**[0014]** It may be that the said edges of said inner bag are not connected with said edges of said outer bag.

**[0015]** Further according to another aspect of the present invention there is provided a method for producing a bag the method comprising: providing an inner sheet comprising a semi-permeable barrier part; providing an outer sheet; connecting said inner sheet and said outer sheet along at least two seaming lines, forming a venting tube between said inner sheet, outer sheet, and seaming lines, wherein said venting tube comprises an opening to free-air in at least one end of said venting tube; connecting edges of at least one of said inner sheet and outer sheet to form a bag; and wherein said bag-forming connection are formed remotely from said venting tube.

**[0016]** It may be that the method additionally comprises forming said venting tube remotely from edges of said inner sheet and said outer sheet, said edges being parallel to said venting tube.

**[0017]** It may be that the method additionally comprises forming said inner sheet and said outer sheet from different materials.

**[0018]** It may be that the method additionally comprises providing an overlapping area between said inner sheet and said outer sheet; wherein said overlapping area is larger than said venting tube.

**[0019]** It may be that the method according additionally comprises: providing said outer sheet with an area transparent to view; and printing said area transparent to view on the side facing said inner sheet.

**[0020]** It may be that the method additionally comprises: connecting edges of said inner sheet to form an inner bag; and connecting edges of said outer sheet to form an outer bag.

**[0021]** It may be that the bag-forming connections are at least one of: provided remotely from said venting tube; and connected separately of each other.

**[0022]** Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. The materials, methods, and examples provided herein are illustrative only and not intended to be limiting. Except to the extent necessary or inherent in the processes themselves, no particular order to steps or stages of methods and processes described in this disclosure, including the figures, is intended or implied. In many cases the order of process steps may vary without changing the purpose or effect of the

methods described.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0023]** Embodiments of the invention are herein described, by way of example only, with reference to the accompanying drawings. With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of several embodiments of the present invention only, and are presented in order to provide what is believed to be a useful and readily understood description of the principles and conceptual aspects of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for an understanding of the invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the invention may be embodied in practice.

**[0024]** In the drawings:

Fig. 1 is a simplified illustration of a cut through a vented bag;

Fig. 2 a simplified top side view of the vented bag;

Fig. 3 is a simplified side view of the vented bag with its outer sheet removed;

Fig. 4 is a simplified illustration of a cut across the width of the vented bag;

Fig. 5 is a simplified side view of a detail of the vented bag;

Figs. 6A, 6B, 6C, 6D, and 6E are simplified illustrations of steps in the process of manufacturing a vented bag;

Fig. 7 is a simplified illustrations of a side view of the vented bag open;

Fig. 8 is a simplified illustration of a view of a body part of the vented bag, including a semi-permeable barrier part;

Fig. 9 is a simplified illustration of a view of an outer sheet of the vented bag;

Fig. 10 is a simplified illustration of a cut of the outer sheet, connected with the body part, creating venting tube in between

Fig. 11 is a simplified illustration of a cut of a vented bag made of the body part and the outer sheet;

Fig. 12 is a simplified illustration of a view of an inner sheet of a vented twin-bag, including a semi-perme-

able barrier part;

Fig. 13 is a simplified illustration of a view of an outer sheet of a vented twin-bag, including print area;

Fig. 14 is a simplified illustration of a side view of the inner sheet and the outer sheet of the vented twin-bag, connected at seaming lines forming venting tube;

Fig. 15 is a simplified illustration of a side cut through the vented twin-bag;

Fig. 16 is a simplified illustration of a detail of Fig. 15;

Fig. 17 is a simplified illustration of a side view of the vented twin-bag closed; and

Fig. 18 is a simplified illustration of a side view of the vented twin-bag open.

#### DETAILED DESCRIPTION

**[0025]** The present embodiments comprise a bag, particularly a bag for packaging powders, which can be vented in the packaging line, and a method for manufacturing such bags. Vented bags according to embodiments of the present invention may be better understood with reference to the following drawings and accompanying description.

**[0026]** Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments or of being practiced or carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein is for the purpose of description and should not be regarded as limiting.

**[0027]** In this document, an element of a drawing that is not described within the scope of the drawing and is labeled with a numeral that has been described in a previous drawing has the same use and description as in the previous drawings. Similarly, an element that is identified in the text by a numeral that does not appear in the drawing described by the text, has the same use and description as in the previous drawings where it was described.

**[0028]** The drawings in this document may not be to any scale. Different Figs. may use different scales and different scales can be used even within the same drawing, for example different scales for different views of the same object or different scales for the two adjacent objects.

**[0029]** Reference is now made to Fig. 1, which is a simplified illustration of a cut through a vented bag 10, according to one embodiment of the present invention.

**[0030]** As seen in Fig. 1, vented bag 10 includes a venting tube (or pipe) 11 made by and between an inner sheet 12 and an outer (external) sheet 13 joined together and with body 14 at seam lines 15. Inner sheet 12 is at least partly formed as a semi-permeable barrier enabling the emission of gaseous matter (such as air) from vented bag 10 through venting tube 11, typically withholding the content of bag 10, typically a powder.

**[0031]** The vented bag 10, as well as any of its parts such as body 14, inner sheet 12, and outer sheet 13, can be made of any suitable material such as paper or plastic material such as polyethylene.

**[0032]** Inner sheet 12 and outer sheet 13 may be joined in seam lines 15 by any appropriate means of joining, such as adhesive matter, glue, stitching, soldering, heat seal, fusion, etc. Fusion can be implemented by heat, laser, ultrasound, electrofusion, etc.

**[0033]** Body 14 may be a sheet, typically extending from both sides of seam lines 15 and joined at joining line 16 at the back, or bottom, side of bag 10.

**[0034]** Fig. 1 shows a cut across the width of vented bag 10 laid down on a horizontal surface with the upper side including the venting tube 11 oriented horizontally. It is noted that it is advantageous to have venting tube 11 located in the top (upper) side of bag 10 to eliminated liquids on the floor from penetrating into bag 10 through venting tube 11.

**[0035]** Reference is now made to Fig. 2, which is a simplified top side view of vented bag 10, according to one embodiment of the present invention. Fig. 2 shows body 14, outer sheet 13 and seam lines 15. Fig. 2 shows the openings 17 of venting tube 11. Fig. 2 shows the upper side of bag 10, which includes venting tube 11, openings 17 and a printed area 18. It is noted that it is advantageous to have printed area 18 located in the top (upper) side of bag 10, which is exposed for view. It is therefore appreciated that it is advantageous to have printed area 18 located over venting tube 11. As seen in Fig. 1, print area 18 is located substantially in the middle of the sheet of body 14, or, alternatively, print area 18 is located remotely from the edges of the sheet of body 14 or, alternatively, print area 18 is located remotely from the joining line 16 connecting the edges of body 14.

**[0036]** Reference is now made to Fig. 3, which is a simplified side view of vented bag 10 with outer sheet 13 removed, according to one embodiment of the present invention. Fig. 3 shows body 14, inner sheet 12 and seam lines 15. As seen in Fig. 3, inner sheet 12 includes a semi-permeable barrier part 19 and optionally a non-permeable part 20. As seen in Fig. 3, inner sheet 12 includes the semi-permeable barrier part 19 in the middle of inner sheet 12, and two non-permeable parts 20 at both sides of inner sheet 12.

**[0037]** According to one embodiment of the present invention the semi-permeable barrier part 19 is made of a porous material such as a micro-perforated polyethylene sheet. However, any perforated sheet or mesh may be adequate for the semi-permeable barrier part 19. The

semi-permeable barrier part 19 is made in a manner that enables gaseous matter such as air to escape from vented bag 10 when the bag is compressed, but does not enable the powder contained in the bag to escape. For example, the perforation holes are smaller than the size of the powder grains.

**[0038]** According to one embodiment of the present invention the entire inner sheet 12 is made of a micro-perforated polyethylene sheet and the non-permeable parts 20 are created by printing over these parts so as to close or seal the perforation holes.

**[0039]** Reference is now made to Fig. 4, which is a simplified cut through vented bag 10, according to one embodiment of the present invention. Fig. 4 shows a cut across the width of vented bag 10 laid down on a horizontal surface with the upper side including the venting tube 11 oriented horizontally.

**[0040]** Fig. 4 shows body 14, outer sheet 13 and inner sheet 12 including semi-permeable part 19, and non-permeable parts 20 as well as pipe 11 between outer sheet 13 and inner sheet 12. As seen in Fig. 4, pipe 11 has an opening 21 to the environment (e.g. free air). Opening 21 is typically located at the end of pipe 11, and optionally at both ends.

**[0041]** Reference is now made to Fig. 5, which is a simplified side view of a part of vented bag 10, according to one embodiment of the present invention. Fig. 5 shows the part of vented bag 10 encircled and designated in Fig. 4 by numeral 22.

**[0042]** Fig. 5 shows the edges of outer sheet 13 and inner sheet 12 and pipe 11 between outer sheet 13 and inner sheet 12. The edge of inner sheet 12 shown in Fig. 5 includes a non-permeable part 20 and an edge of the semi-permeable part 19. Fig. 5 also shows gaseous material (e.g. air) designated by numeral 23, escaping from the inner part of vented bag 10 (designated by numeral 24), through the semi-permeable part 19 of inner sheet 12 and along pipe 11 between outer sheet 13 and inner sheet 12, (including pipe 11 between outer sheet 13 and non-permeable part 20) to the environment (designated by numeral 25).

**[0043]** Reference is now made to Fig. 6A, Fig. 6B, Fig. 6C, Fig. 6D, and Fig. 6E, which are simplified illustrations of steps in the process of manufacturing a vented bag 10, according to a one embodiment of the present invention.

**[0044]** Fig. 6A shows body 14 as viewed from the external side, on which print area 18 is printed. As shown in Fig. 6A, outer sheet 13 is a part of body 14 which also includes optional opening cuts 26. As seen in Fig. 6A, print area 18 is located substantially in the middle of the sheet of body 14, or, alternatively, print area 18 is located remotely from the edges of the sheet of body 14.

**[0045]** Fig. 6B shows inner sheet 12, which includes semi-permeable barrier part 19 and non-permeable parts 20. Non-permeable parts 20 are typically printed or painted or otherwise covered with a material that prevents the opening of pipe 11 between inner sheet 12 and outer

sheet 13 from being closed when vented bag 10 sealed after it is filled.

**[0046]** Fig. 6C shows inner sheet 12, including semi-permeable barrier part 19 and non-permeable parts 20, fastened over the inner (not printed) side of body 14 by joining (e.g. by gluing or fusion) at seaming lines 27 (as described above).

**[0047]** Fig. 6D shows vented bag 10 as viewed from the bottom when laid horizontally with the printed side upwards. Fig. 6D shows body 14 folded along folding lines 28 of Fig. 6C, and fastened along seaming lines 29 and 30. Seaming line 29 closes together edges of body 14, designated in Fig. 6C by numerals 31. Seaming line 30 closes the bottom of vented bag 10 (when standing vertically for filling). Seaming lines 29 and 30 from vented bag 10 with an opening side designated by numeral 32.

**[0048]** Fig. 6E shows vented bag 10 from the opposite side of Fig. 6D, showing the optional opening cuts 26 creating openings 17 of tube 11 and print area 18.

**[0049]** It is appreciated that vented bag 10 of Figs. 6A-6E is advantageous in that tube 11 is located at about the middle of the sheet making body 14 (Fig. 6C) and thus, when body 14 is folded and stitched along seaming lines 29 and 30 to make vented bag 10 seaming line 29 is located at the opposite side of tube 11. This arrangement enables quality printing over the part of body 14 where tube 11 is located. This arrangement also enables placing vented bag 10 horizontally with tube 11 in the top side and seaming line 29 in the bottom side.

**[0050]** Reference is now made to Fig. 7, which is a simplified side view of an open vented bag 10, according to one embodiment of the present invention. Fig. 7 shows vented bag 10 open at opening 33 (corresponding to opening side 32), before it is filled and the opening is closed. Fig. 7 shows venting tube 11 between inner sheet 12 and outer sheet 13, semi-permeable barrier part 19 in inner sheet 12, and openings 34 of venting tube 11. The openings 34 of the venting tube (or pipe) 11 are marked with a dotted line to designate that other than at openings 34 the outer sheet 13 and the body 14 are joined at their edges at these places.

**[0051]** Reference is now made to Fig. 8, which is a simplified view of a body part 35 including a semi-permeable barrier part 36, and to Fig. 9, which is a simplified view of an outer sheet 37, according to one embodiment of the present invention.

**[0052]** Semi-permeable barrier part 36 is typically created by pressing a plurality of pins against the sheet making body part 35. Semi-permeable barrier part 36 is typically at about the middle of body part 35.

**[0053]** Outer sheet 37 is typically wider than the width of the venting tube (designated by lines 38). Outer sheet 37 is typically transparent and printed area 39 is typically printed on the inner side. Anti-adhesive parts 40 are also painted, or printed or otherwise applied to the inner side of outer sheet 37. It is appreciated that outer sheet 37 and body part 35 are joined together along seaming lines 38, along the edges 41 of outer sheet 37, and optionally

between the edges 41 and seaming lines 38. It is appreciated that print area 39 is located between outer sheet 37 and body part 35. As seen in Fig. 8, print area 39 is located substantially in the middle of the sheet of outer sheet 37 and/or body part 35, or, alternatively, print area 39 is located remotely from edges 41.

**[0054]** Reference is now made to Fig. 10, which is a simplified cut of outer sheet 37 connected with body part 35 creating venting tube 42 in between, and to Fig. 11, which is a simplified cut of a vented bag 43 made of body part 35 and outer sheet 37, according to one embodiment of the present invention.

**[0055]** As shown in Fig. 11, the edges 44 of body part 35 are connected at seaming line 45, at the opposite side of print area 39.

**[0056]** It is appreciated that the content of vented bag 43 is typically abrasive, and therefore the environment of vented bag 43 is also abrasive. It is therefore advantageous to protect print area 39 from both the inside and the outside of vented bag 43 by locating print area 39 between outer sheet 37 and body part 35. It is noted print area 39 can be viewed through the transparent outer sheet 37.

**[0057]** It is appreciated that the width of outer sheet 37 can be as wide as needed for print area 39 and as much as the width of body part 35.

**[0058]** Reference is now made to Fig. 12, which is a simplified view of an inner sheet 46 of a dual-vented bag 47 (shown in Fig. 15), and to Fig. 13, which is a simplified view of an outer sheet 48 of dual-vented bag 47, according to one embodiment of the present invention.

**[0059]** As seen in Fig. 12, inner sheet 46 includes a semi-permeable barrier part 49, and as seen in Fig. 13, outer sheet 48 includes a print area 50. It is also noted that print area 50 is located substantially in the middle of the sheet of outer sheet 48, or, alternatively, print area 39 is located remotely from edges 54 of outer sheet 48.

**[0060]** Reference is also made to Fig. 14, which is a simplified side view of inner sheet 46 and outer sheet 48 connected according to one embodiment of the present invention.

**[0061]** As seen in Fig. 14, inner sheet 46 and outer sheet 48 are connected at seaming lines 51 (also shown in Fig. 12) forming venting tube 52 in between.

**[0062]** Reference is also made to Fig. 15, which is a simplified side cut through vented bag, and to Fig. 16, which is a simplified illustration of a detail of Fig. 15, according to one embodiment of the present invention.

**[0063]** As seen in Fig. 15, vented bag 47 is created by joining together edges 53 of inner sheet 46 at seaming line 54, and by joining together edges 55 of outer sheet 48 at seaming line 56. It is noted that edges 53 of inner sheet 46 are joined separately from edges 55 of outer sheet 48. Thus forming a 'bag within a bag' (or 'vented twin-bag'), where the two bags are joined in seaming lines 51 forming venting tube 52 in-between.

**[0064]** Fig. 16 shows a detail of Fig. 15 around seaming line 54. As seen in Fig. 16, a seaming line such as seam-

ing line 54 is typically created by joining, or connecting, an overlapping area of two sheets, such as by overlapping edges 53 of inner sheet 46. This manner of joining, or connecting, shown for seaming line 54 is typical for seaming lines described herein. Joining, or connecting two sheets or edges of the same sheet can be done using any appropriate means such as adhesive matter, glue, stitching, soldering, heat-sealing, fusion, etc. Fusion can be implemented by heat, laser, ultrasound, electrofusion, etc.

**[0065]** It is appreciated that the 'bag within a bag' structure of vented bag 47 enables the use of different materials for the inner bag and the outer bag.

**[0066]** For example, the outer bag can be made from a material transparent to view and thus the print area 50 can be printed on the inner side of the outer sheet 48 to protect it from abrasive content and environment.

**[0067]** Alternatively or additionally, the inner bag and/or the outer bag can be made from a paper-like material, from environmental-friendly material, from compound polyethylene, from a sheet containing polyethylene and a filler material such as mineral powder, for example Calcium Carbonate, etc. Such compound polyethylene is typically not absorbing water.

**[0068]** Alternatively or additionally, the inner bag and/or the outer bag can be made from a rough (not smooth) material to prevent the clinging of the inner and outer sides of venting tube 52 and improve airflow through venting tube 52.

**[0069]** For example sheet 44 of the inner bag of Fig. 15 can be made of 80 micron thick polyethylene sheet and sheet 48 of the outer bag of Fig. 15 can be made of 80 micron thick paper-like sheet including 50% polyethylene and 50% filler material such as Calcium Carbonate.

**[0070]** Reference is now made to Fig. 17, which is a simplified side view of vented twin-bag 57, according to one embodiment of the present invention.

**[0071]** Vented twin-bag 57 is similar to vented bag 47 of Fig. 15. As shown in Fig. 17, vented twin-bag 57 includes an inner bag 58 and an outer bag 59 joined at seam lines (not shown in Fig. 17, similar to seam lines 51 of Figs. 12-15) thus creating a tube (or pipe) 60 between. Tube 60 includes an opening 61 to the environment in at least one end.

**[0072]** The outer bag 59 is made of paper or a plastic sheet such as polyethylene. When closed, the outer bag 59 completely sealed and is impermeable to fluids. The outer bag 59 also provides the carrying strength for transportation and handling of the vented twin-bag 57.

**[0073]** The inner bag 58 is made of paper or a plastic sheet such as polyethylene and includes a semi-permeable part 62 within the part of inner bag 58 that is a part of tube 60. Optionally, inner bag 58 also includes within the part of inner bag 58 that is a part of tube 60 one or more non-permeable parts 63. From a side view, inner bag 58 looks like the bag illustrated in Fig. 3.

**[0074]** Reference is now made to Fig. 18, which is a simplified side view of an open vented twin-bag 57, ac-

cording to one embodiment of the present invention. Fig. 18 shows vented twin-bag 57 open at opening 64, before it is filled and the opening is closed (as shown in Fig. 17B). The openings 61 of the venting tube (or pipe) 60 are marked with a dotted line to designate that other than at openings 61 the outer bag (or sheet) 59 and the inner bag (or sheet) 58 are joined at their edges at that place.

**[0075]** It is appreciated that certain features of the invention, which are, described in the context of different embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention, which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable sub-combination.

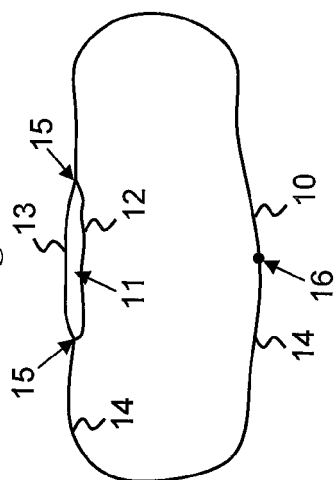
**[0076]** Although the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art. Accordingly, it is intended to embrace all such alternatives, modifications and variations that fall within the spirit and broad scope of the appended claims. In addition, citation or identification of any reference in this application shall not be construed as an admission that such reference is available as prior art to the present invention.

## Claims

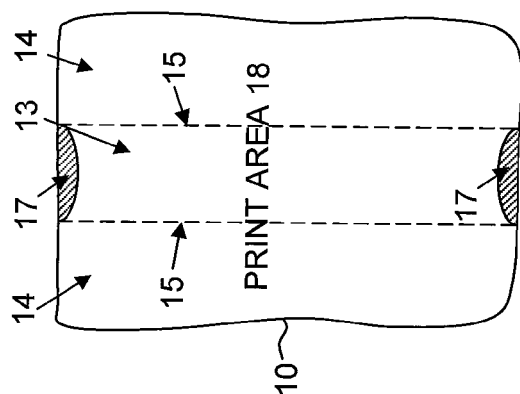
1. A bag comprising: an inner sheet and an outer sheet; wherein said inner sheet comprises a semi-permeable barrier part; wherein said inner sheet and outer sheet are connected by at least two seaming lines forming a venting tube between said inner sheet, outer sheet, and seaming lines; and wherein said venting tube comprises an opening to free-air in at least one end of said venting tube; **characterized in that** edges of at least one of said inner sheet and outer sheet are connected to form a bag; said bag-forming connection provided remotely from said venting tube.
2. The bag according to claim 1 wherein said venting tube is formed according to at least one of:
  - remotely from edges of at least one of said inner sheet and said outer sheet parallel to said venting tube;
  - remotely from bag-forming connection, said bag-forming connection forming a bag by connecting said edges of said inner sheet and said edges of said outer sheet; and
  - with said bag-forming connection in opposing side of said bag.
3. The bag according to any of claims 1 and 2. wherein said inner sheet and said outer sheet are made from different materials.

4. The bag according to any of claims 1 to 3. wherein said inner sheet and said outer sheet have an overlapping area, and wherein said overlapping area is larger than said venting tube.
5. The bag according to any of claims 1 to 4. wherein said outer sheet, at said overlapping area, includes an area transparent to view, and wherein said area transparent to view is printed on the side facing said inner sheet.
6. The bag according to any of claims 1 to 5. additionally comprising a printed area, wherein said printed area is protected by said inner sheet from materials internal to said inner sheet, and wherein said printed area is protected by said outer sheet from materials external to said outer sheet.
7. The bag according to any of claims 1 to 6. wherein edges of said inner sheet are connected to form an inner bag, and wherein edges of said outer sheet are connected to form an outer bag.
8. The bag according to claim 7. wherein said edges of said inner bag are not connected with said edges of said outer bag.
9. A method for producing a bag the method comprising:
- providing an inner sheet comprising a semi-permeable barrier part;
- providing an outer sheet;
- connecting said inner sheet and said outer sheet along at least two seaming lines, forming a venting tube between said inner sheet, outer sheet, and seaming lines, wherein said venting tube comprises an opening to free-air in at least one end of said venting tube; and
- connecting edges of at least one of said inner sheet and outer sheet to form a bag;
- characterized in that** said bag-forming connection are formed remotely from said venting tube.
10. The method according to claim 9 wherein said venting tube is formed remotely from edges of said inner sheet and said outer sheet, said edges being parallel to said venting tube.
11. The method according to any of claims 9 and 10, wherein said inner sheet and said outer sheet are made of different materials.
12. The method according to any of claims 9 to 11, additionally comprising:
- providing an overlapping area between said inner sheet and said outer sheet;
- wherein said overlapping area is larger than said venting tube.
13. The method according to any of claims 9 to 12, additionally comprising:
- providing said outer sheet with an area transparent to view;
- printing said area transparent to view on the side facing said inner sheet.
14. The method according to any of claims 9 to 13, additionally comprising:
- connecting edges of said inner sheet to form an inner bag; and
- connecting edges of said outer sheet to form an outer bag.
15. The method according to any of claims 9 to 14, wherein said bag-forming connections are at least one of:
- provided remotely from said venting tube; and
- connected separately of each other.

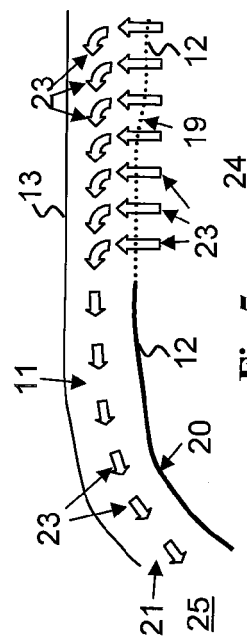
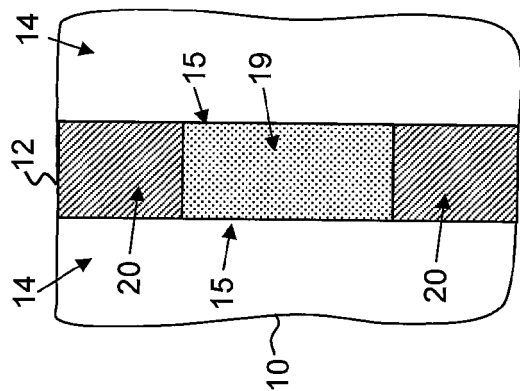
**Fig.1**



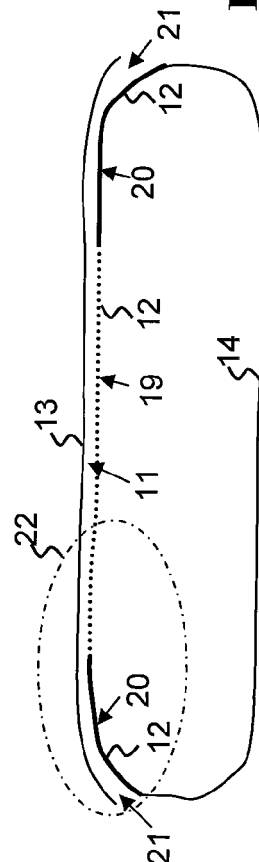
**Fig.2**



**Fig.3**

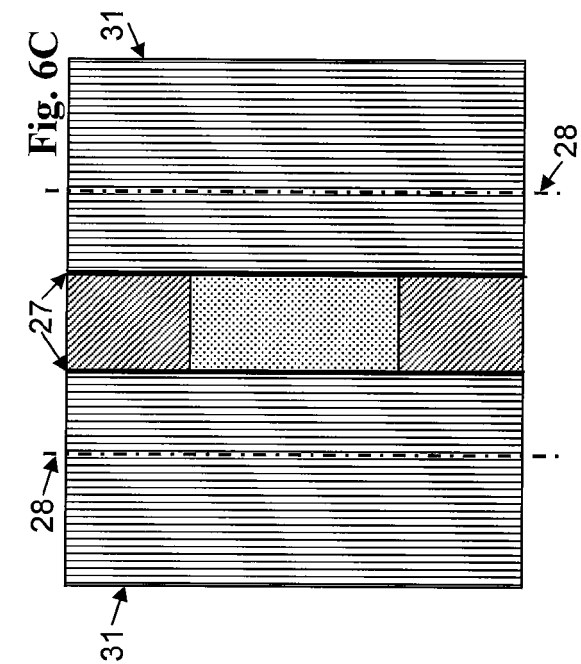
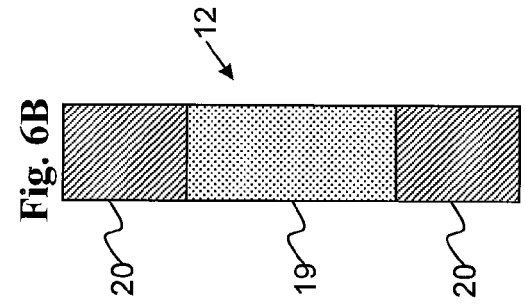
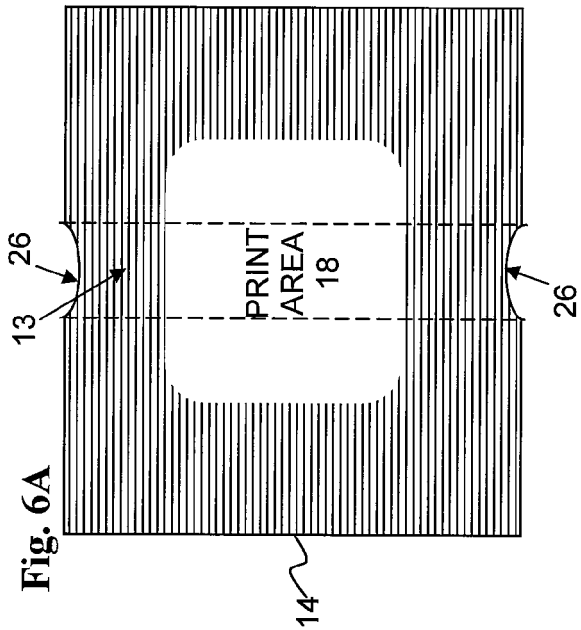


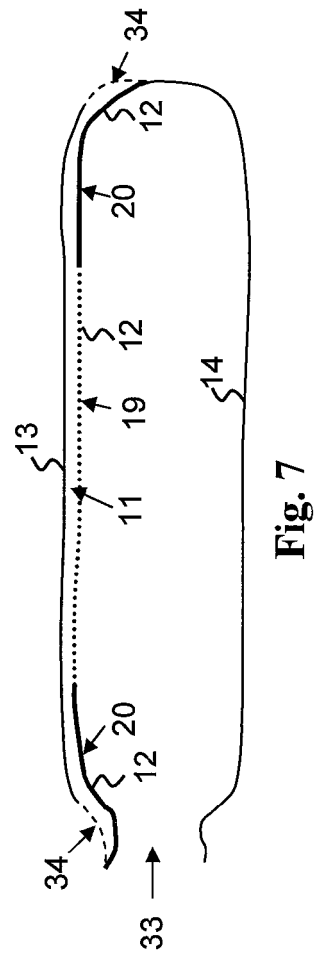
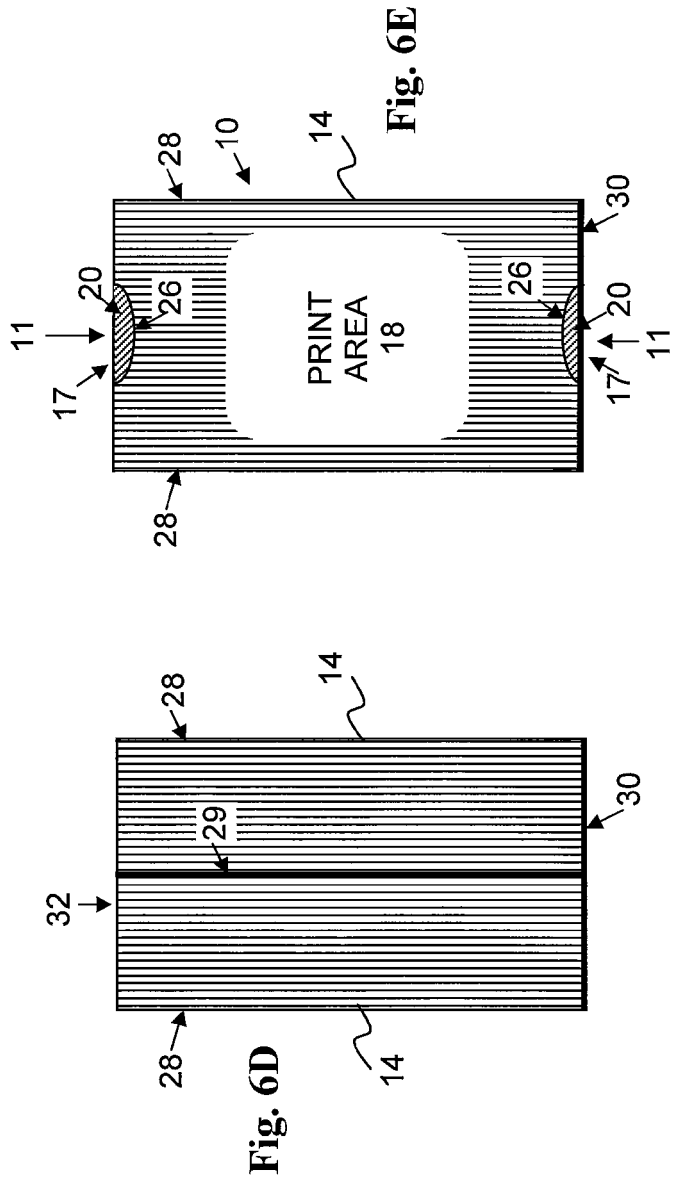
**Fig.5**

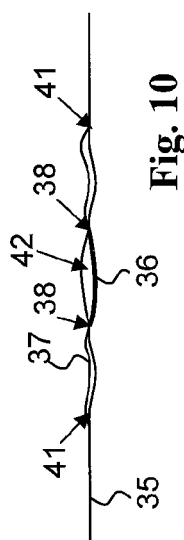
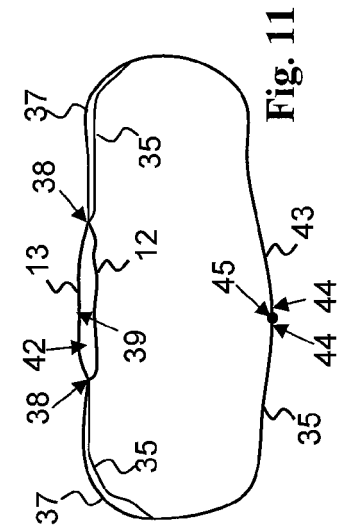
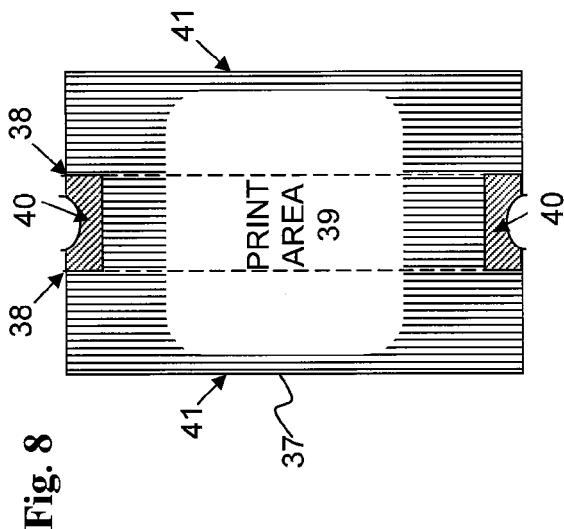
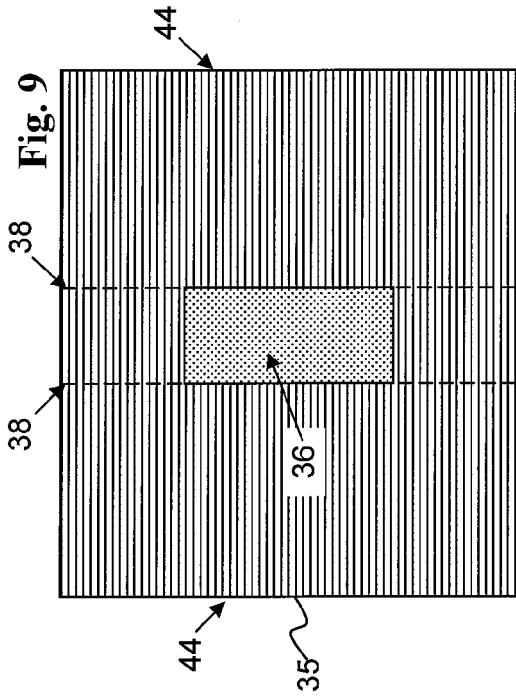


**Fig.4**









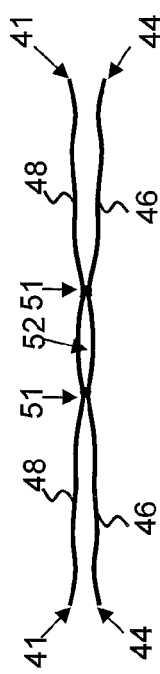
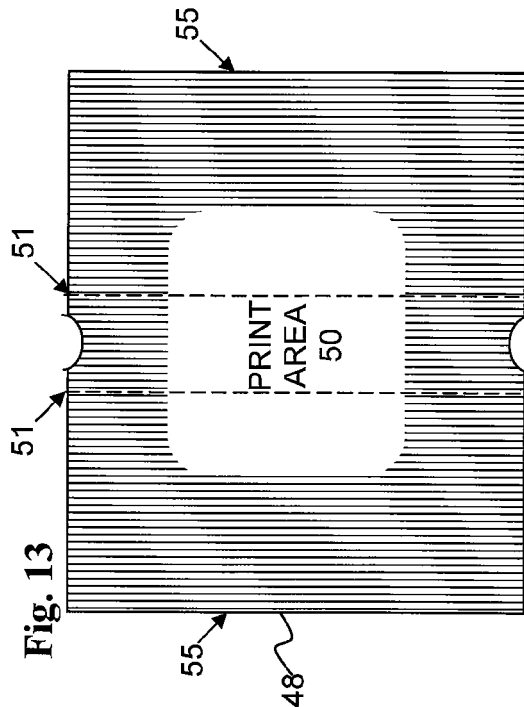
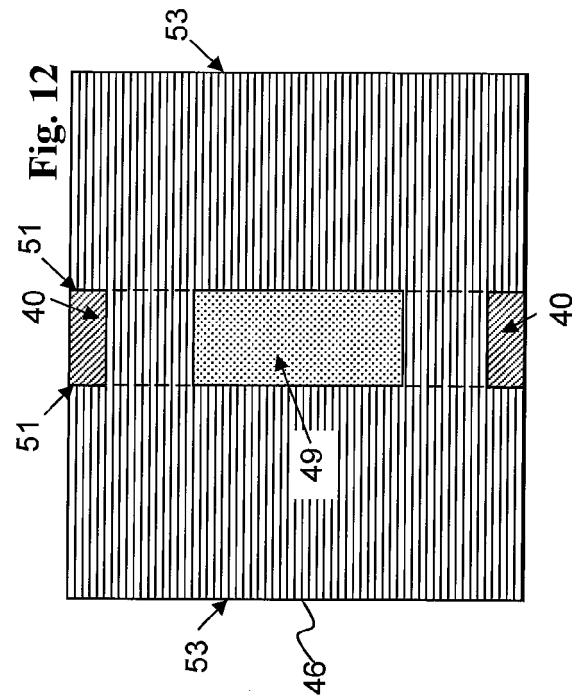


Fig. 14

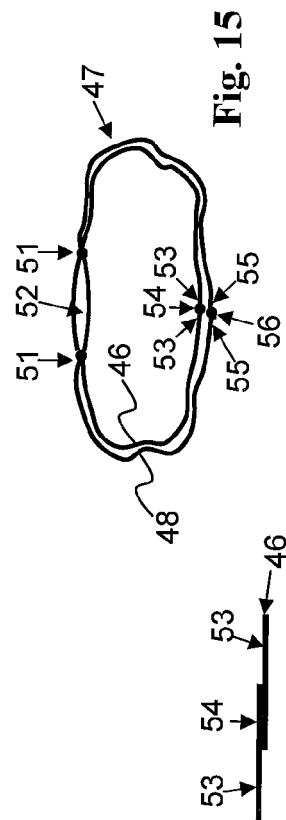


Fig. 15

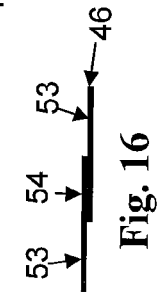


Fig. 16

