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

(11) EP 1 035 032 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
13.09.2000 Bulletin 2000/37

(51) Int. Cl.[7]: **B65D 75/52**, B65B 61/18

(21) Application number: **99200637.9**

(22) Date of filing: **05.03.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(71) Applicant:
SOCIETE DES PRODUITS NESTLE S.A.
1800 Vevey (CH)

(72) Inventor: **Sjöberg, Elisabeth**
S-22731 Lund (SE)

(74) Representative:
Vuille, Roman et al
Avenue Nestlé 55
1800 Vevey (CH)

(54) Snack package with protective cover

(57) The invention relates to a hygienic package suitable for liquid or wet snack food. The package of the invention comprising a sheet of flexible material arranged to form a hermetically closed pouch (2) for the product, the pouch having a first end (20); and a protective member (3) extending from the first end (20), a certain distance along the pouch (2), the protective member surrounding circumferentially the pouch so as to form a protective barrier on the surface of the pouch in the region intended to be opened for releasing the product.

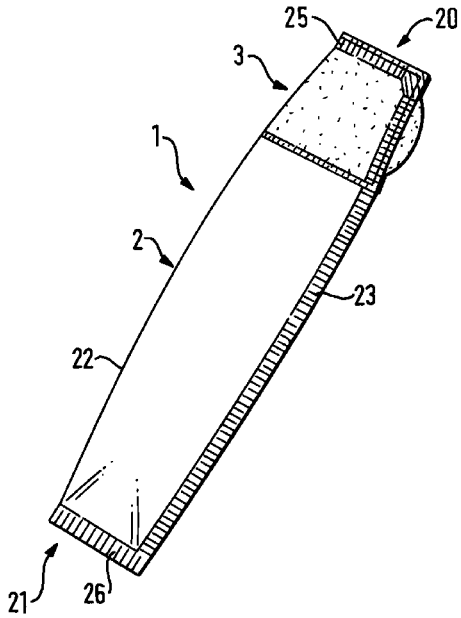

FIG.1

EP 1 035 032 A1

Description

[0001] The present invention relates to flexible packages for snack food items, especially, packages for drinkable or squeezable liquid food products that can be directly put to lips for consuming the food contained therein.

[0002] Liquid or wet food savoury snack food items such as milk-based, creamy products, sweet drinks, cereal or vegetable-based products, are air sensitive food that tends to rapidly become spoiled by microbiological growth if not packaged in proper conditions. Liquid and wet food of this type is usually packaged in pouch or bags manufactured from flexible film material having oxygen-barrier properties. Examples of suitable materials include metal foils, thermoplastic films and combinations thereof.

[0003] In recent years, there has been a trend toward consumption of liquid and squeezable food products packaged in long stick-shaped flexible packages that can be eaten, at any time of the day, anywhere, just by opening the package, squeezing it while putting it to lips. There is potentially a large variety of food capable of being eaten or drunk this way. The food can provide a well balanced, nourishing snack or meal which satisfies the consumer's hunger and which tastes good even for products at conservative room temperature.

[0004] However, the consumer deserves to have a hygienic contact to the food product at the time he decides to drink or eat it. As the packages are mainly intended to be used as snack products, in various conditions during daytime, it is very possible that the external state of the package dedicated to go into the mouth does not give good hygienic guarantees. It is a major obstacle against the commercial development of this type of food products.

[0005] The present invention overcomes the deficiencies of the present state of the art and satisfies the needs discussed above. One of the main objects of the invention is to provide a package, adapted to snack food products which goes to the mouth; the package delivering the food product in satisfying hygienic conditions.

[0006] For that, the present invention is a package for a snack food product comprising

at least one sheet of flexible material arranged to form a hermetically closed pouch for the product, the pouch having a first end;

a protective member extending from the first end a certain distance along the pouch, the protective member surrounding circumferentially the pouch so as to form a protective barrier on the surface of the pouch in the region intended to be opened for releasing the product.

[0007] Therefore, the pouch remains well protected against spoilage, dirt, etc., until the consumer decides to eat or drink the food product contained within the package. The protective member also guarantees to the consumer the freshness of the food product. The protective member can also prevent from accidental or intentional opening of the pouch without real intention to consume the food product.

[0008] Preferably, the protective member is a flexible mono- or multi-layer having moisture- and air-barrier properties.

[0009] In a preferred embodiment, the sheet of the pouch comprises an external surface onto which the protective member is sealed to form with the pouch a hermetically closed pocket in the region intended to be opened for releasing the product. A tight seal permits to ensure that the package has not been manipulated beforehand. It is also an economical and simple way of manufacturing the package of the invention by the commonly known packaging techniques in the flexible packaging area.

[0010] Another important feature of the invention is to provide a protective member with a peelable connection to the pouch. Therefore, the protection can be easily and rapidly released from the pouch when decision has been made to eat or drink the product. The protection release can also be made separately from the opening of the pouch itself so if the protection of the opening is accidentally made, the pouch is maintained tight.

[0011] The invention also relates to the method of manufacturing the package of the invention, which comprises:

applying on a flat sheet a protective member so as to form a hermetically closed flat pocket,

feeding the sheet in a forming-filling-sealing device to make the package.

[0012] The advantages and specific features of this invention will become apparent from the following detailed description, which, taken in conjunction with the drawings, discloses preferred embodiments of the present invention.

FIG. 1 is a perspective view of a package of the invention with its protective member thereon;

FIG. 2 is a perspective view of a package of the invention after the protective member has been removed for consumption;

FIG. 3 is a close-up elevational view of the top of the package of FIG. 1;

FIG. 4 is a cross-sectional view taken along lines IV-IV of FIG. 3;

FIG. 5 is a cross-sectional view similar to FIG. 4 but

without the protective member;

FIG. 6 is a perspective view of the rear side of the package of the invention with its protective member thereon, according to a second embodiment;

FIG. 7 is a perspective view of the front side of the package of the invention after the protective member has been removed for consumption, according to the second embodiment of FIG. 6;

FIG. 8 is a close-up elevational view of the top of the package of FIG. 6;

Fig. 9 is a cross-sectional view taken along lines IX-IX of FIG. 8;

FIG. 10 is a view of a step of manufacturing the package of the invention;

FIG. 11 is a view of a second step of manufacturing the package of the invention.

[0013] FIG. 1 illustrates in schematic fashion a snack food package of the invention. The package, identified by reference numeral 1, comprises a pouch 2 constructed from a single sheet of flexible material in accordance with known industry practice, such as by feeding roll stock over a former in a form-fill-seal apparatus. However, the pouch could also be made of the assembly of several sheets of flexible material without departing from the scope of the present invention.

[0014] The pouch comprises a first end 20 and a second opposite end 21 longitudinally delimiting the pouch. According to the invention, a protective member 3 covers the first end of the pouch and longitudinally extends along a certain length along the pouch. The pouch is made of a single folded sheet along a longitudinal side fold 22. As illustrated in FIG. 4, the sheet defines two side edges 23a, 23b united to form a permanent seam 23, extending longitudinally substantially from the first end 20 to the second end 21 of the pouch. The seam 23 protrudes along an exterior longitudinal side of the pouch opposed to the side fold 22. The sheet also has transversally oriented end edges, which are assembled to form a first permanent transversal seam 25 and a second transversal permanent seam 26.

[0015] The pouch comprises a printed tear-off line 28 oriented along the whole width of the pouch in the vicinity of the first end, as best shown in FIG. 2 and FIG. 3. In alignment with the tear-off line is located a small notch 29 provided partly in the longitudinal side seam 23 so as to provide a suitable tearing start. It must be noted that the tear-off line 28 is not a line of weakness provided in the film material itself, but merely a printed indication of the direction of opening the pouch. However, the direction of the line takes into account the normal orientation of the material. The orientation of the tear-off line could also be slightly different depending on the specific orientation of the packaging material.

[0016] FIG. 3 and FIG. 4 show details of the protective member 3, which covers the tip of the pouch. The protective member 3 forms a cover surrounding circumferentially the pouch 2. The protective member is preferably sealed on the external surface of the sheet, which forms the pouch. The protective member has a substantially rectangular configuration which surrounds the pouch and ends laterally by two side edges 31, 32 connected on the pouch surface with peelable longitudinal sealing cords 40, 41. Similarly, the protective member extends longitudinally along the pouch to ends by two opposite transversal edges 33, 34, spaced apart one another, and attached to the pouch surface with peelable transversal sealing cords 42,43. Therefore, the sealing cords 40, 41, 42, 43 define the limits of a hermetically closed pocket 5. The side edge 31 of the protective member extends by a tongue 35 protruding outwardly which permits the protective member to be easily removed by tearing-off the peelable connections.

[0017] FIG. 5 shows the pouch after the protective member has been removed. The permanent seams 23, 25, 26 are formed by using any of a variety of methods known in the art including heat welding the two surfaces of the sheet together, or uniting the surfaces by applying a sealant or permanent adhesive therebetween. As known to those skilling in the art, the choice of a sealing method is based on the composition of the sheet material. Heat sealing is usually least expensive, least time consuming, and therefore preferred.

[0018] In accordance with the preferred aspect of the invention, the protective member is sealed along the peelable sealing cords 40, 41, 42, 43. These cords are also formed by using any of a variety of methods known in the art including heat welding the surface of the protective member onto the surface of the sheet, or uniting them by applying a sealant or releasable adhesive therebetween. Of course, the sealing cords allow the protective member 3 to be easily removed from the pouch 2 without damage to the pouch itself. In particular, the strength of the peelable sealing cords has to be lower than the strength of the permanent seams of the pouch so as to maintain the integrity of the seams and prevent any accidental lack of food product from the pouch.

[0019] It is preferred that the connection of the protective member be waterproof. As the food product covers a variety of shelf-stable food products, it is also preferred that the connection can withstand a range of temperatures for sterilisation or pasteurisation of the pouch. More preferably, the connection must withstand a temperature ranging up to 135 ° C. Indeed, it is important that no water comes into the pocket 5 otherwise it would loose its hygienic properties.

[0020] FIG. 6 to 9 presents a second possible embodiment of the invention. In this embodiment, the pouch 2 comprises a front side 50 and a rear side 51. As best illustrated in FIG. 9, the pouch further com-

prises two side edges 23a, 23b united to form a permanent seam 23 located substantially along the rear side 51 of the pouch. The permanent seam 23 forms a flap of the flexible material, which is folded against the exterior surface of the pouch rear side 51.

[0021] The protective member 3 also forms a cover surrounding the circumference of the pouch. The protective member has two side edges 31, 32 connected to the external surfaces of the respective side edges 23a, 23b of the pouch by means of peelable connections 40, 41 . Similarly, the protective member comprises two opposite transversal edges 33, 34 attached to the pouch exterior surface with circumferential peelable connections 42, 43. As for the previously described embodiment, the peelable connections 40, 41, 42, 43 make a similar closed continuous attachment to the pouch so as to define a tight pocket 5. The main benefit of this embodiment resides in respecting the usual location of the flap, substantially in the middle of the rear side of the package, therefore, minimising the risks of cutting the mouth compared to a side positioned seam as in the previous embodiment. However, the longitudinal position of the seam 23 can vary with respect to the lateral folds of the pouch. Therefore, the seam may also be off-centred with respect to the theoretical middle line of the rear side 23 so as to be closer to one of the lateral folds of the pouch

[0022] In general, it is preferred that the protective member does not extend the all length of the pouch essentially for economical and practical reasons. However, the length of the protective member must also be sized to cover the effective portion of the pouch, which is intended to be put into the mouth. Therefore, the protective member extends longitudinally along a length comprised between 1:10 to 1:2 of the total length of the pouch.

[0023] FIG. 10 and 11 shows a preferred manner to manufacture the snack food package of the invention. The sheet material 6, for example is fed from roll stock 7 and placed in a flat configuration. Protective members 36, 39 are then applied onto the surface of the sheet material so that hermetically closed flat pockets are attached tightly to the sheet surface. It is essential that no air be entrapped within the pocket to prevent any risk of burst during following sterilisation of the package. Preferably, the protective pockets are heat sealed to the sheet surface by an adapted heat-sealing device. A continuous, peelable connection 4 is made so. The connection has a substantially rectangular shape lining the edges of the protective member and forming connected sealing cords 40, 41, 42, 43.

[0024] In an advantageous mode, two protective members are simultaneously disposed in an adjacent position onto the flat sheet surface. Therefore, the two protective members can be treated as one single sheet, which is so welded along two separate sets of sealing cords. Then, the sheet is cut apart during the subsequent forming-filling-sealing operation.

[0025] FIG. 11 illustrates the vertical forming-filling-sealing device 8 used as a preferred example for making the snack food package of the invention. The sheet is fed over a former shoulder arrangement 80 to align the sheet in a tubular configuration. The tube is filled by gravity by a dosing system (not shown) with food product through a "marine collar" 81. The two longitudinal edges of the sheet are welded together to form the longitudinal seam by a vertical heating plate 82 (thermal heated or by electrical impulse). At the end of the F-F-S device, the transversal seams are welded two-by-two and divided by a horizontal heating-cutting device 83. It is apparent to those skilled in the art that depending on the relative rotational configuration of the longitudinal welding device 82, it is possible to either manufacturing the embodiment of FIG. 1 to 5 or the embodiment of FIG. 6 to 9.

[0026] The illustration of FIG. 11 is given as a processing example. However, as known to those skilled in the art, the choice of a filling-sealing method is based on the composition of the sheet material and the filled product. For example, a horizontally oriented device could replace the vertically oriented device for products, which comes in the form of substantially solid unitary elements.

[0027] In the present case, the sheet material is preferably chosen among multi-layered packaging materials. Suitable materials include metallic foils, thermoplastic films, papers and combinations thereof. More preferably, the sheet material is a coextruded laminate comprising OPP (external)/Aluminium/Polypropene (internal). OPP especially means oriented polypropene. Examples of laminate thickness distribution are 20/9/30-70 microns. The protective member is also preferably a mono- or multi-layer such as coextruded OPP/Polyethene, which gives a peelable seal when directly applied onto the pouch material.

[0028] The protective member can also be an adhesive label surrounding the tip of the pouch, forming an airtight protection; the label comprising, internally, a releasable adhesive to allow an easy removal.

[0029] Although the invention has been described in connection with a number of preferred embodiments, it is not so limited. Numerous variations within the scope of the appended claims will be apparent to those skilled in the art.

Claims

1. Package for a snack food product comprising

a sheet of flexible material arranged to form a hermetically closed pouch (2) for the product, the pouch having a first end (20);

a protective member (3) extending from the first end (20), a certain distance along the pouch (2), the protective member surrounding circum-

ferentially the pouch so as to form a protective barrier on the surface of the pouch in the region intended to be opened for releasing the product.

2. Package for a snack food product according to claim 1, wherein the sheet comprises an external surface onto which the protective member (3) is sealed to form with the pouch (2) a hermetically closed pocket (5) in the region intended to be opened for releasing the product.

3. Package for snack food product according to claim 1 or 2, wherein the protective member (3) comprises a peelable connection to the pouch.

4. Package for snack food product according to claim 3, wherein the protective member (3) comprises a connection being capable of withstanding a range of temperatures for sterilisation or pasteurisation of the pouch containing the product.

5. Package for snack food product according to any of claims 1 to 4, wherein the pouch (2) comprises a tear-off line (28) in the vicinity of the first end (20) which is entirely covered by the protective member (3).

6. Package for snack food product according to any of claims 1 to 5, wherein the protective member (3) extends longitudinally along a length comprised between 1:10 to 1:2 of the total length of the pouch.

7. Package for snack food product according to any of claims 1 to 6, wherein the sheet of the pouch comprises two side edges (23a, 23b) united in a permanent seam (23) extending longitudinally substantially from the first end (20) to a second end (21) of the pouch so as to form a flap of the flexible material protruding from the seam along an exterior side of the pouch; the protective member being longitudinally attached to the pouch along the exterior surface of the flap by peelable sealing cords (40, 41), and being transversally attached to the pouch with peelable sealing cords (42, 43).

8. Package for snack food product according to any of claims 1 to 6, wherein , the pouch comprises two side edges (23a, 23b) united to form a permanent seam (23) located substantially along the rear side (51) of the pouch; the protective member having two side edges (31, 32) connected to the external surfaces of the respective side edges (23a, 23b) of the pouch by means of peelable connections (40, 41) and, comprising two opposite transversal edges (33, 34) attached to the pouch exterior surface with circumferential peelable connections (42, 43).

9. Package for snack food product according to any of the preceding claims, wherein the protective member (3) is a flexible mono- or multi-layer having moisture- and air-barrier properties.

10. Method of manufacturing the package for snack food product according to any of claims 1 to 9 wherein it comprises:

applying on a flat sheet (6) a protective member (3) so as to form a hermetically closed flat pocket (5),

feeding the sheet (6) in a forming-filling-sealing device (10) to make the package.

10. Method of manufacturing the package for snack food product according to claim 10, wherein, protective member (3) is applied to the flat sheet (6) by heat sealing a continuous, peelable connection (4).

11. Method of manufacturing the package for snack food product according to claim 10 or 11, wherein two protective members (3a, 3b) are disposed in an adjacent position onto the flat sheet surface (6).

12. Method of manufacturing the package for snack food product according to any of claims 10 to 12, wherein the sheet (6) is fed continuously in the forming-filling-sealing (10) device from a roll stock (7).

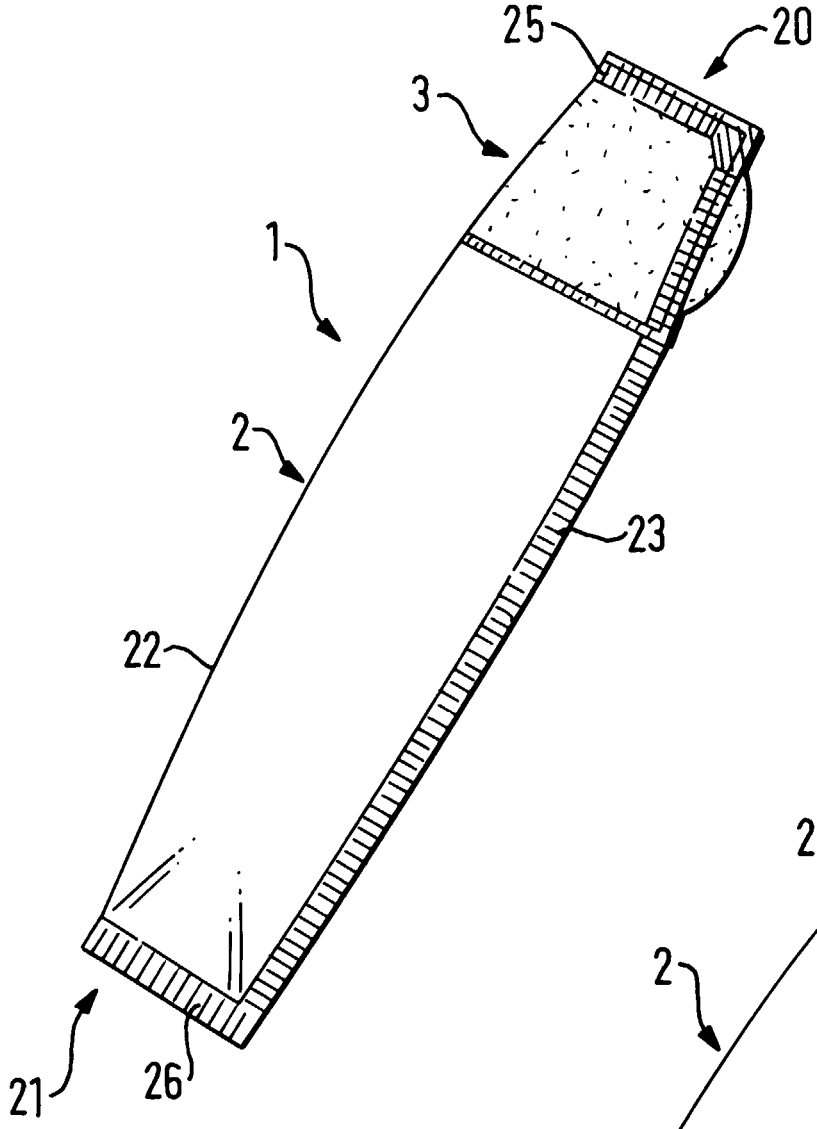

FIG. 1

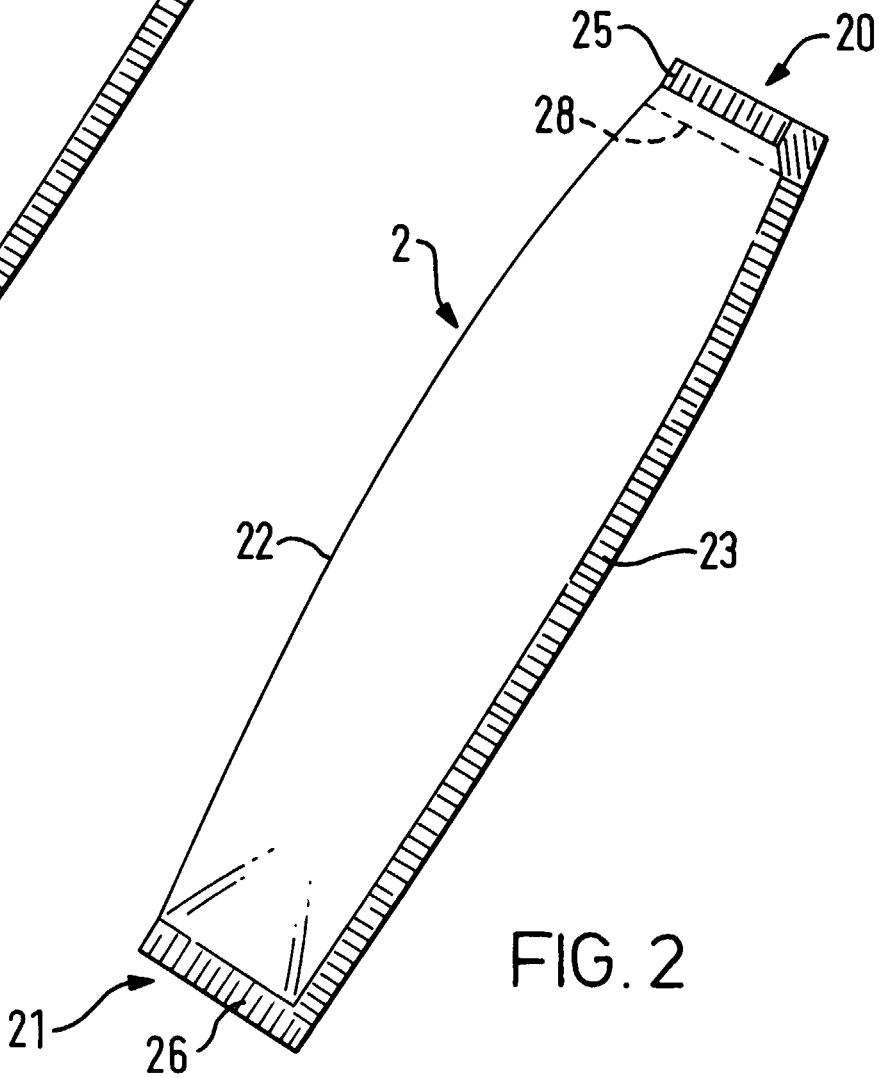

FIG. 2

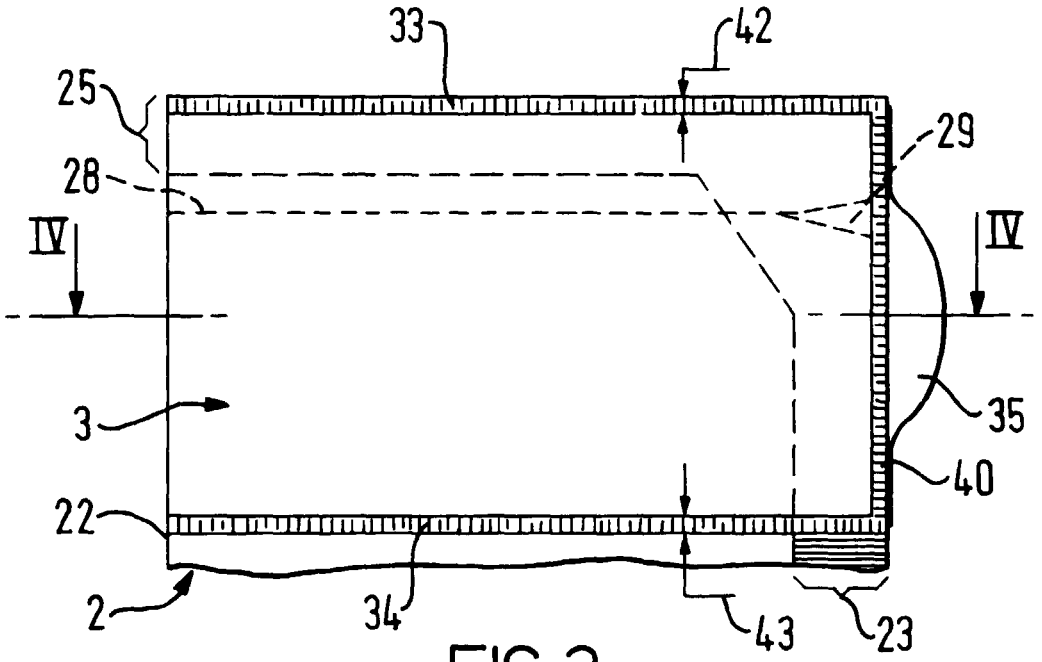

FIG. 3

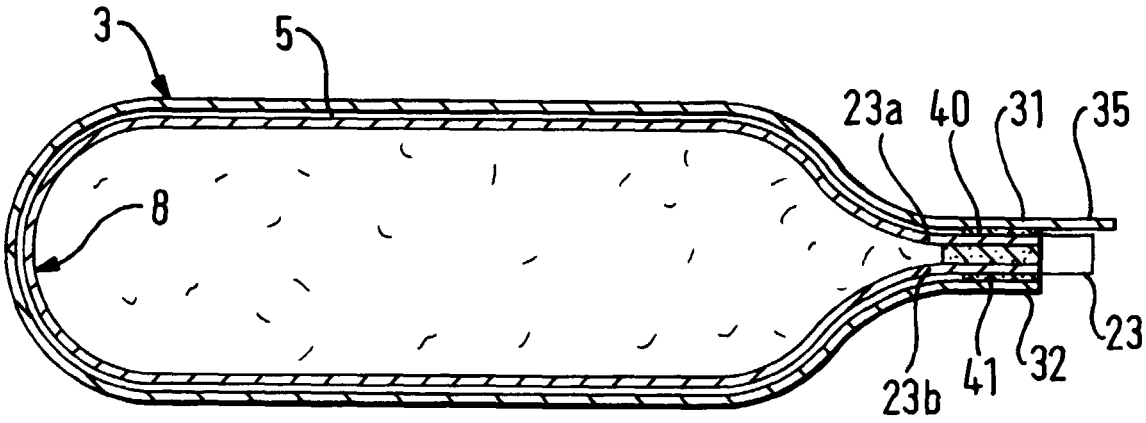

FIG. 4

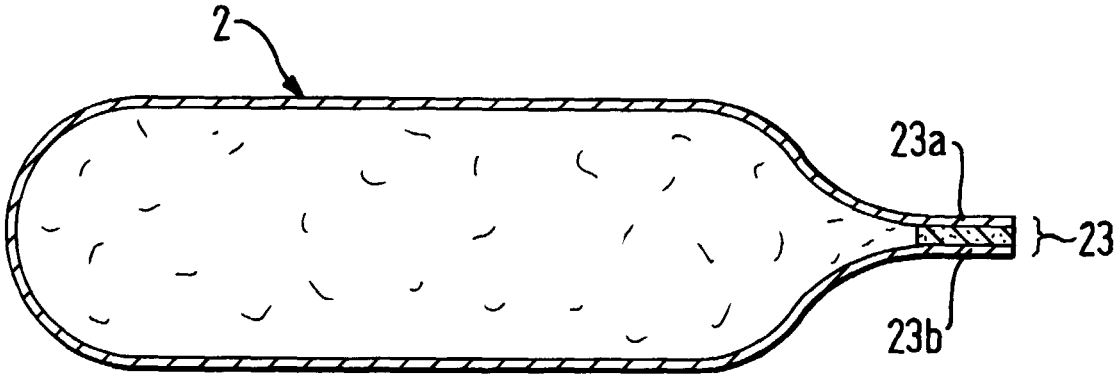

FIG. 5

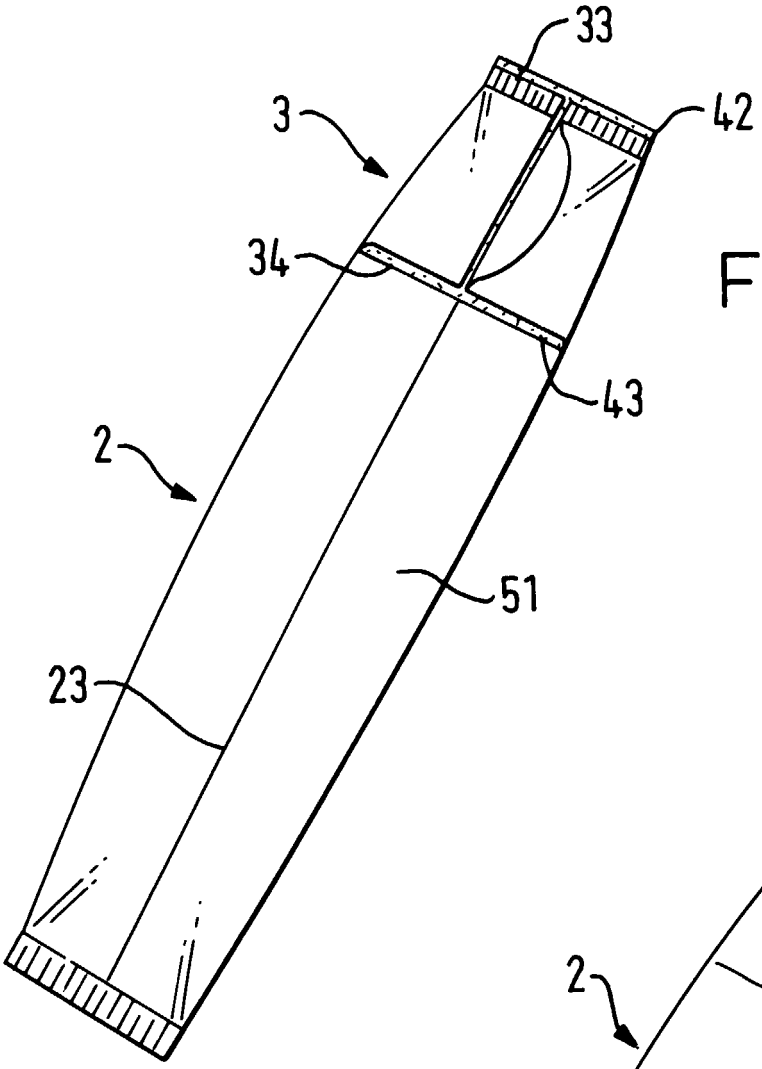

FIG. 6

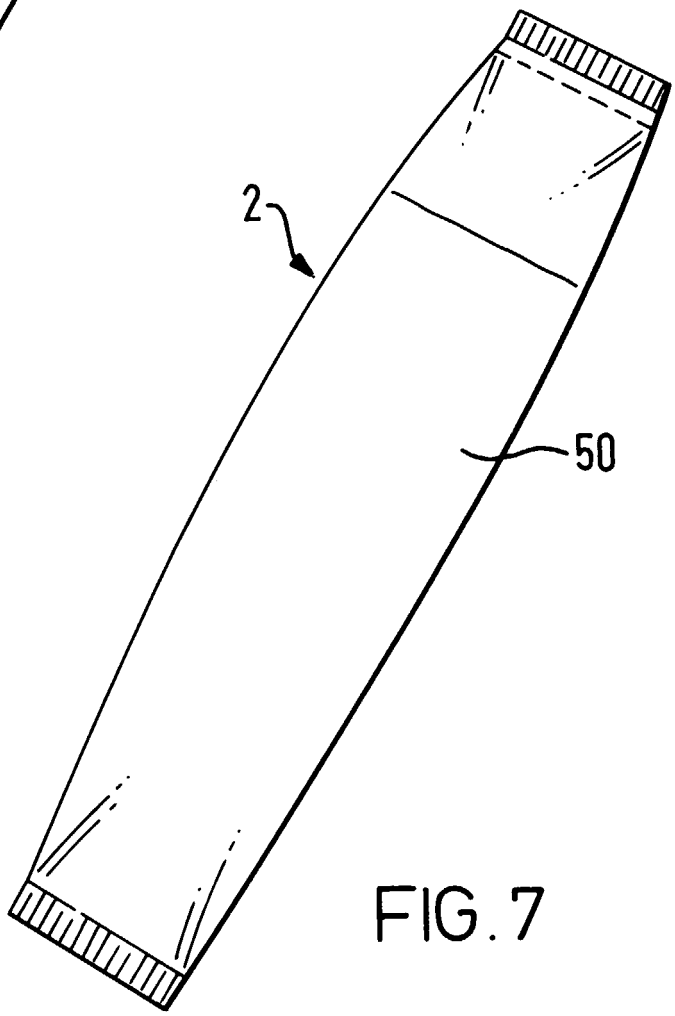

FIG. 7

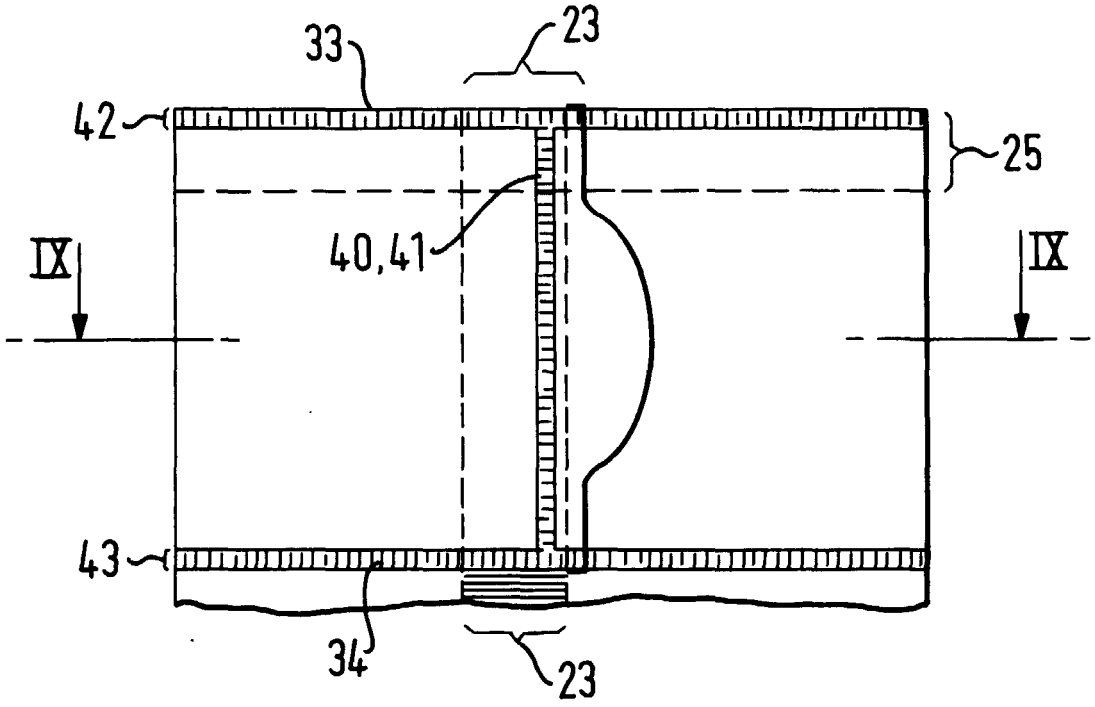

FIG. 8

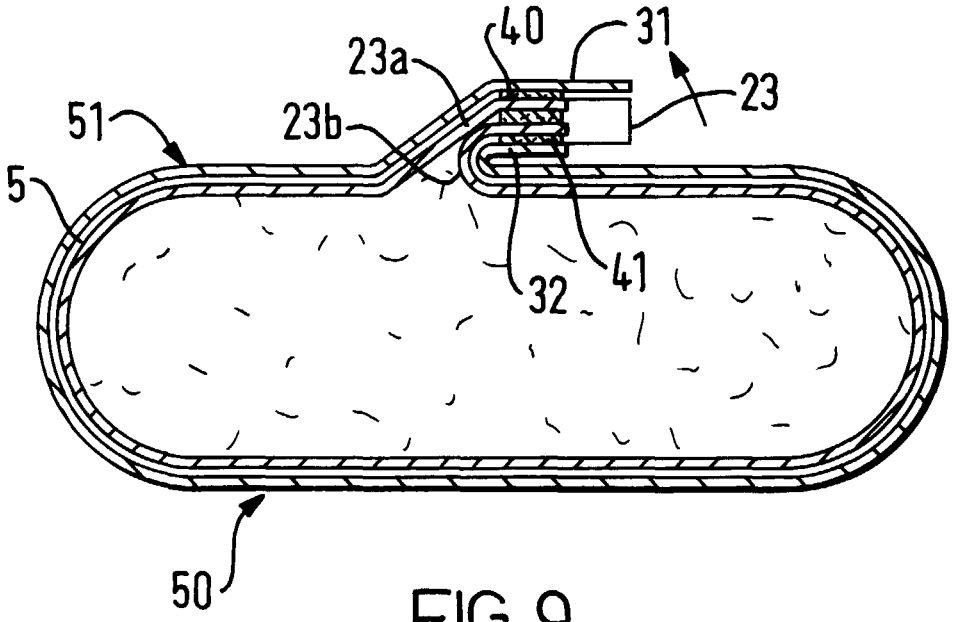

FIG. 9

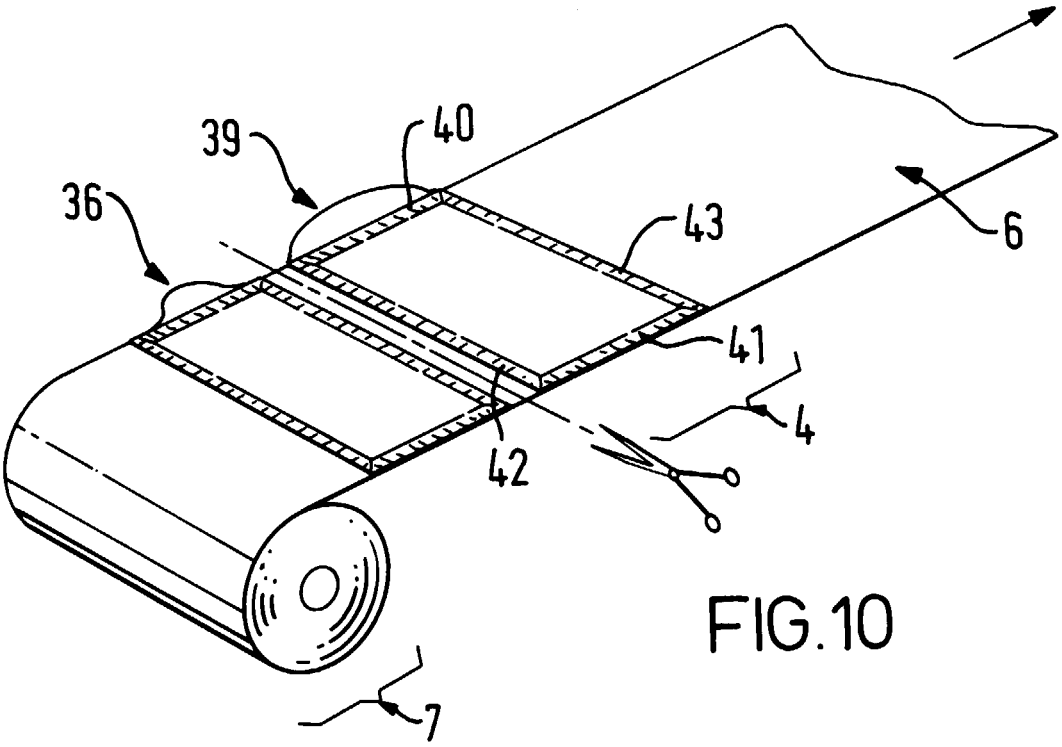

FIG.10

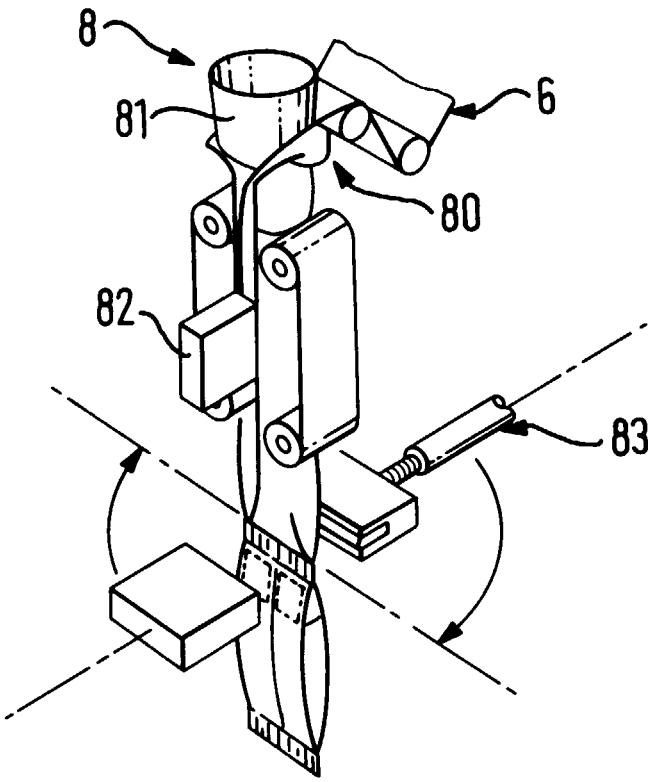

FIG.11

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 20 0637

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION
X	GB 805 983 A (HERMORION) * the whole document *	1-3,6, 9-11,13	B65D75/52 B65B61/18
A		4,5,7,8	
A	US 3 659 777 A (KANADA ET AL.) 2 May 1972 (1972-05-02) * abstract; figures *	1,2,6,8, 10-12	
A	US 5 425 583 A (WILD) 20 June 1995 (1995-06-20) * abstract; figures *	1,10	
A	FR 2 716 169 A (SOCOPLAN) 18 August 1995 (1995-08-18) * abstract; figures *	1,10	

TECHNICAL FIELDS SEARCHED

B65D
B65B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 August 1999	Gino, C

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 20 0637

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-08-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 805983 A		NONE	
US 3659777 A	02-05-1972	NONE	
US 5425583 A	20-06-1995	DE 4240540 A	09-06-1994
		AT 153959 T	15-06-1997
		CN 1091388 A,B	31-08-1994
		DE 4244843 C	15-07-1999
		DE 59306656 D	10-07-1997
		DK 600502 T	13-10-1997
		EP 0600502 A	08-06-1994
		ES 2105055 T	16-10-1997
		GR 3023759 T	30-09-1997
		JP 2690263 B	10-12-1997
		JP 7002259 A	06-01-1995
FR 2716169 A	18-08-1995	FR 2716098 A	18-08-1995

EPO FORM P0459

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