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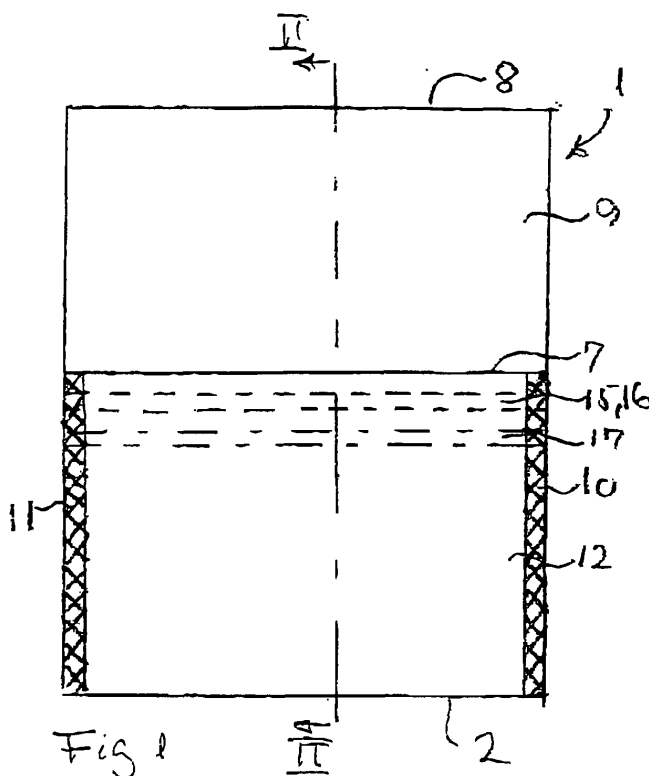
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(54) **Reclosable pouch**

(57) Reclosable pouch (1) of a flexible, heat-sealable packaging material and for packing products (13) such as tobacco and the like, comprising a pair of opposing walls (5, 6). The walls (5, 6) are mutually strongly sealed inner face (3) to inner face (4) by means of side seals (10, 11) along opposite side edges thereof so as to define a pocket (12) for containing the product (13). The pocket (12) has an upper mouth (14) extending between the side seals (10, 11) and providing access to the interior of the

pocket (12) containing the product. The mouth (14) of the pocket is provided with a pair of reclosable, elongated, interengagable fastener strips (15, 16), one (15) of said strips being bonded to the inner face of one of said opposing walls and the other (16) of said strips being bonded to the inner face of the other of said opposing walls. The fastener strips (15, 16) are of a hook and loop fastener system. The mouth (14) may furthermore be provided with a transverse peelable seal (17).



Description

[0001] The present invention relates to a reclosable pouch of a flexible, heat-sealable packaging material and for packing products such as tobacco and the like, comprising a pair of opposing walls mutually strongly sealed inner face to inner face by means of side seals along opposite side edges thereof so as to define a pocket for containing the product and having an upper mouth extending between the side seals and providing access to the interior of the pocket containing the product, the mouth of the pocket being provided with a pair of reclosable, elongated, interengagable fastener strips, one of strips being bonded to the inner face of one of said opposing walls and the other of strips being bonded to the inner face of the other of said opposing walls.

[0002] The phrase heat sealing is here to be understood as any process of joining by applying heat, such as heat sealing by means of heated dies, ultrasonic sealing and high frequency sealing.

[0003] A pouch of the above type is disclosed in EP 1017593 B1, the fastener strips being of the so-called zipper type or rib and groove type wherein one of the strips is provided with a rib intended to mate with a groove in the other strip. Fasteners of the zipper type function by the user forcing the rib into the groove to effect closure of the zipper. This is a fairly complicated operation requiring good eyesight to align the rib in the groove and forcing the rib and the groove into interengagement. Furthermore, fasteners of the zipper type are expensive and a special sealing technique is required to seal the fastener strips together at the edges thereof.

[0004] The object of the present invention is to provide a pouch of the above type eliminating or reducing the above drawbacks of known pouches.

[0005] The pouch is characterised in that the fastener strips are of a hook and loop fastener system. As a result, a more cost-effective reclosable pouch is provided, as the hook and loop fastener system is comparatively inexpensive and easily applicable to the inner faces of the mouth of the pocket. Furthermore, easy opening and especially easy closing of the pouch is obtained, as the user only needs to bring the hook strip and the loop strip together to reclose the pouch.

[0006] According to the invention the fastener strips may be adhesively bonded to the inner faces of the respective opposing walls. The strips may advantageously be bonded to the walls by using strips having a pressure-sensitive adhesive on the sides thereof not being provided with the hooks or loops.

[0007] Furthermore, according to the invention the fastener strips may be bonded to the inner faces of the respective opposing walls by heat sealing.

[0008] Moreover, according to the invention the fastener strips may extend continuously between and preferably into the side seals so as to provide complete closure of the mouth when the fastener strips interengage. However, it should be noted that the fastener strips also

may extend partially between the side seals, eg. are only provided in a central portion of the mouth.

[0009] Additionally, according to the invention the fastener strips may be spaced apart from the upper edges of the pair of opposing side walls so as to provide gripping portions to be gripped for opening the pocket. As a result, the pouch is easily opened by gripping the gripping portions and pulling the gripping portions apart.

[0010] Furthermore, according to the invention the mouth of the pocket is further provided with a transverse, peelable heat seal extending continuously between and preferably also into the side seals. A tight pocket is thus provided preventing moisture and aroma from escaping from the interior of the pocket and preventing air from entering the interior of the pocket.

[0011] According to the invention the peelable seal may be provided above the fastener strips when seen from the interior of the pocket and spaced apart from the upper edges of the pair of opposing walls so as to provide gripping portions to be gripped for opening the pocket.

[0012] However, preferably the peelable seal is provided below the fastener strips when seen from the interior of the pocket, whereby pocket retains the desired tightness until the first opening thereof when the user breaks the peelable seal.

[0013] Moreover, according to the invention peelable seal is provided by means of a stripe of an ethylene vinyl acetate (EVA)-based coating or a peel lacquer provided on the inner face of at least one of the walls. The EVA-based stripe may be a hot melt adhesive or applied either as a suspension or a solution.

[0014] Finally, according to the invention one of the side walls may be extended to form a flap extending above the upper edge of the other of walls and adapted to be folded onto the pocket at or adjacent the mouth. A pouch is thus provided having the design commonly known as a tobacco pouch design.

[0015] The invention will now be explained in detail below with reference to the drawing(s), in which

Fig. 1 is a view of an embodiment of a pouch of the present invention,

Fig. 2 is a cross-sectional view of the pouch of Fig. 1,

Fig. 3 is an enlarged view of the encircled portion III in Fig. 2 in the closed and sealed position of the pouch,

Fig. 4 is a sectional view corresponding to Fig. 3 in the open of the position of the pouch,

Fig. 5 is a sectional view of the pouch when folded.

Fig. 6 is a side view illustrating a first method of applying fastener strips to a continuous sheet and forming pouches,

Fig. 7 is a plane view of Fig. 6,

Fig. 8 is a side view illustrating a second method of applying fastener strips to a continuous sheet and forming pouches,

Fig. 9 is a plane view of Fig. 8,

Fig. 10 is a side view illustrating a third method of applying fastener strips to a continuous sheet and forming pouches, and

Fig. 11 is a plane view of Fig. 10.

[0016] Figs. 1-5 illustrate a pouch 1 according to the present invention. The pouch 1 is formed of a rectangular sheet of a flexible, heat-sealable material. The sheet of material is folded onto itself inner face 3 to inner face 4 along a bottom fold 2 to form a front wall 5 and a rear wall 6. The front wall 5 has an upper edge 7 and the rear wall 6 has an upper edge 8. In the embodiment shown the sheet of material is folded so that the rear wall 6 extends above the upper edge 7 of the front wall 5 and thus forms a flap 9 having an upper edge 8. It should be noted that the sheet of material may also be folded in such a manner that the upper edges of the front wall and of the rear wall coincide in a front view of the pouch.

[0017] The front wall 5 and the rear wall 6 are mutually heat-sealed inner face to inner face 4 by means strong side seals 10, 11 along edges thereof to define a pocket 12 for containing the product 13 such as tobacco. The pocket 12 has an upper mouth 14 extending between the side seals 10, 11 and providing access to the interior of the pocket 12 containing the product. A pair of reclosable, elongated, inter-engagable fastener strips 15, 16 of a hook and loop fastener system is provided in the mouth 14, one of said strips 15 being provided with loops and bonded to the inner face of the rear wall and the other of said strips 16 being provided with hooks bonded to the inner face of the front wall 5. The fastener strip 16 provided with hooks is spaced apart from the upper edge 7 of the front wall 5 and the fastener strip 15 provided with loops is spaced apart from the upper edge 8 of the rear wall 6 or flap 9 to provide gripping portions to be gripped for opening the pocket.

[0018] In the embodiment shown the fastener strips 15, 16 extend continuously between and into the side seals 10, 11. It should, however, be noted that the fastener strips 15, 16 may extend over a smaller portion of the walls, eg. only the central portions thereof.

[0019] The fastener strips 15, 16 may be adhesively bonded to the respective walls by being provided with an adhesive such as a pressure-sensitive adhesive. Optionally, the fastener strips 15, 16 may be bonded to the walls 5, 6 by heat sealing.

[0020] Fastener strips of the hook and loop system are *inter alia* available from the company of 3M.

[0021] The mouth 14 of the pocket 12 is further pro-

vided with a transverse, peelable heat seal 17 extending between and also into the side seals 10, 11. The peelable seal 17 is arranged below the fastener strips 15, 16 when seen from the interior of the pocket 12. The peelable 17 may be provided by means of a stripe of peel lacquer or hot melt adhesive applied to the inner face of the front wall 5 or the rear wall 6.

[0022] As shown in Fig. 5, the pouch is folded at the mouth 14, whereby the upper portion of the front wall 5 is folded onto itself and the flap 9 is folded onto the back of the rear wall 6 and attached thereto by means of a pressure-sensitive adhesive tape 18, as commonly used in tobacco pouches.

[0023] As described above, the pouch is formed of a single sheet of material folded along a bottom fold. However, a pouch according to the invention may be also formed of two separate sheets of material heat-sealed inner face to inner face along a bottom seal.

[0024] The sheet material for forming the pouch may be any suitable heat-sealable, flexible material such as *inter alia* a film of polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PETP), metallised PETP, or a number of laminates, eg. PP/PE, PETP/PE. PETP/metallised PETP/PE, metallised, co-extruded, oriented polypropylene (coex-OPP)/PE, co-extruded OPP/metallised PETP/PE. Further, the pouch may be a so-called paper insert pouch, ie. having a sheet of paper arranged between two polymer sheets of for instance PE.

[0025] Pouches according to invention may be produced and supplied as pre-made pouches, which are filled with the desired product after opening of the mouth and before producing the peelable seal thereof by heat sealing of the stripe of hot melt adhesive or peel lacquer. Optionally, pre-made pouches may also be supplied with closed fastener strips and heat-sealed, peelable seals. In this instance, the pouch has an open side or bottom through which the pouch is filled, whereupon the open side or bottom is heat-sealed.

[0026] The pouch according to the invention may also be produced and filled on horizontal pouch-making, -filling and -closing machines or on vertical form, fill and seal machines. Dependent on the machine used, the pouches may be filled through the mouth, an open side or an open bottom thereof as described above.

[0027] Furthermore the fastener strips may be bonded to the sheet material prior to the production of the pouch, ie. the sheet material is supplied with the fastener strips applied thereto. Optionally the fastener strips may be applied to the sheet material during the production of the pouch, as described below. Similarly, the stripe of hot melt adhesive or peel lacquer may be applied to the sheet material prior to the production of the pouch or during the production thereof.

[0028] Figs. 6 and 7 illustrate a first method of applying the fastener strips to the inner face of a continuous sheet of a heat-sealable material. The continuous sheet 19 is supplied from a sheet supply reel 20 and passes around a sheet roller 21, the inner face 22 of the sheet facing

away from the roller.

[0029] A continuous loop strip 32 is supplied from a loop strip supply reel 23. The loop strip 32 is provided with a pressure-sensitive adhesive on the side opposite the loops, the adhesive being covered by a removable backing film.

[0030] Correspondingly, a continuous hook strip 33 is supplied from a hook strip supply reel (not shown in Figs. 6 and 7). The hook strip 33 is provided with a pressure-sensitive adhesive on the side opposite the hooks, the adhesive being covered by a removable backing film.

[0031] From the loop strip supply reel 23 the loop strip 32 passes around a loop strip roller 24, the adhesive of the strip facing away from the roller and the backing of the adhesive having been removed from the strip. Correspondingly, from the hook strip supply reel the hook strip passes around a hook strip roller (not shown), the adhesive of the strip facing away from the roller and the backing of the adhesive having been removed from the strip.

[0032] The loop strip roller 24 and the hook strip roller are arranged adjacent to the sheet roller 21 and force the loop strip and hook strip into engagement with the inner face 22 of the sheet 19 on the sheet roller 21 to bind the strips to the inner face of the sheet.

[0033] Furthermore, the loop strip roller 24 and the hook strip roller are arranged and designed so as to guide the respective strips into engagement with the sheet at such transverse positions of the sheet that they are mutually aligned by a subsequent, longitudinal folding of the sheet inner face to inner face, as explained below.

[0034] In Figs. 6 and 7, via a set of rollers 25 the sheet 19 with the strips bonded to the inner thereof is supplied to a so-called folding triangle 26 of a pouch-making machine 27. The folding triangle 26 inclines upwardly and tapers in downstream direction. The folding triangle 26 initiates a downward folding of the sheet to form a longitudinal fold 28 at an apex 31 of the folding triangle 26. In the transverse direction the apex 31 of the folding triangle 26 is positioned substantially centrally between the strips bonded to the sheet, as it appears from Fig. 7.

[0035] As seen in Fig. 7, from the folding triangle 26 the folded sheet passes between vertical guide rollers 29 providing mutual engagement between the strips 32, 33 and into a heat sealing machine station 30. In the heat sealing station 30 the side seals of a series of pouches are formed. Subsequently, the pouches formed are mutually separated, the strips are disengaged, the pouches are inverted and the pouches are filled through the mouths thereof.

[0036] As can be seen when comparing Figs. 6 and 7 to Figs. 1-5, the pouches formed and filled substantially correspond to that shown in Figs. 1-5.

[0037] In Figs. 6 and 7 the sheet with the strips applied to the inner face thereof is supplied to a partially shown horizontal pouch-making machine 27. However, the sheet with the strips bonded thereto may instead be supplied to any pouch-making machine or pouch-making-

filling- and closing machine including a vertical form, fill and seal machine.

[0038] Figs. 8 and 9 illustrate a second method of applying fastener strips to the inner face of a continuous sheet of heat-sealable material. The sheet 19 is supplied from a sheet supply reel 20 and passes around a sheet roller 34. The continuous fastener strips 32, 33 are supplied from a loop strip supply reel 23 and a hook strip supply reel 35, respectively, and pass around a loop strip roller (not shown) and a hook strip roller 37, respectively, after the backing film thereof has been removed. The loop strip roller and the hook strip roller 37 are arranged adjacent the sheet roller 34 and force the adhesive of the loop strip 32 and the hook strip 33, respectively, against the inner face 22 of the sheet 19 to bond the strips thereto.

[0039] Via a set of rollers 38, the sheet 19 with the strips 32, 33 bonded thereto is supplied to a folding triangle 39 of a pouch-making machine 40. The folding triangle 39 inclines downwardly and tapers in downstream direction. The folding triangle 39 initiates an upward folding of the sheet to form a longitudinal fold 41 at a lower apex 42 of the folding triangle 39.

[0040] From the folding triangle 39 the sheet with the strips bonded thereto passes between vertical guide rollers 29, the fold 41 facing downwards. The guide rollers 29 provide mutual engagement between the strips 32, 33. From the guide rollers 29 the sheet passes into a heat sealing machine station 30 for forming the side seals of a series of pouches, as described above with reference to Figs. 6 and 7.

[0041] As described above, Figs. 6, 7 and Figs. 8, 9 disclose substantially the same method of applying the strips to the inner face of the sheet in the sense that the strips are applied before folding is initiated, the significant differences, between Figs. 6, 7 and Figs. 8, 9 being the orientation of the folding triangle and the folding direction of the sheet.

[0042] Figs. 10 and 11 illustrate a third method of applying fastener strips to the inner face of a continuous sheet of a heat-sealable material and whereby which the loop strips 32 and the hook strips 33 are brought into mutual engagement before being bonded to the inner face of the sheet 19.

[0043] The sheet is supplied from a sheet supply reel 20 to a set of rollers 25. From the set of rollers 25 the sheet passes below a folding triangle 26 similar to that shown in Figs. 6 and 7.

[0044] The loop strip 32 and the hook strip 33 are supplied from a respective loop strip supply reel 43 and a hook strip supply reel 44 and guided into mutual engagement by means of guide means (not shown) arranged below the folding triangle 26. Before or immediately after the loops of the loop strip are made to engage the hooks of the hook strips, the backing film of the strips is removed. Thus, the adhesive of the strips faces the inner face of the sheet being folded by means of the folding triangle 26 and adheres thereto when the sheet passes the apex 31 of the folding triangle 26 and the vertical

guide rollers 29, the guide rollers 29 forcing the adhesive of the strips into engagement with opposing inner face portions of the sheet 19.

[0045] Subsequently, the folded sheet with the mutually engaging strips passes through the heat sealing station 30 in which side seals are formed, as previously described with reference to Figs. 6 and 7.

List of reference numerals

[0046]

- | | |
|----|----------------------------------|
| 1 | pouch |
| 2 | bottom fold |
| 3 | inner side of front wall |
| 4 | inner side of rear wall |
| 5 | front wall |
| 6 | rear wall |
| 7 | upper edge of front wall 5 |
| 8 | upper edge of rear wall 6 |
| 9 | flap |
| 10 | side seal |
| 11 | side seal |
| 12 | pocket |
| 13 | product |
| 14 | mouth |
| 15 | fastener strip with loops |
| 16 | fastener strip with hooks |
| 17 | peelable seal |
| 18 | pressure-sensitive adhesive tape |
| 19 | continuous sheet |
| 20 | sheet supply reel |
| 21 | sheet roller |
| 22 | inner face of continuous sheet |
| 23 | loop strip supply reel |
| 24 | loop strip roller |
| 25 | a set of rollers |
| 26 | folding triangle |
| 27 | pouch-making machine |
| 28 | longitudinal fold |
| 29 | vertical guide rollers |
| 30 | heat sealing station |
| 31 | apex of the folding triangle |
| 32 | continuous loop strip |
| 33 | continuous hook strip |
| 34 | sheet roller |
| 35 | hook strip supply reel |
| 36 | |
| 37 | hook strip roller |
| 38 | set of rollers |
| 39 | folding triangle |
| 40 | pouch-making machine |
| 41 | longitudinal fold |
| 42 | apex |
| 43 | loop strip supply reel |
| 44 | hook strip supply reel |

Claims

- | | |
|----|---|
| 5 | 1. Reclosable pouch (1) of a flexible, heat-sealable packaging material and for packing products (13) such as tobacco and the like, comprising a pair of opposing walls (5, 6) mutually strongly sealed inner face (3) to inner face (4) by means of side seals (10, 11) along opposite side edges thereof so as to define a pocket (12) for containing the product and having an upper mouth (14) extending between the side seals (10, 11) and providing access to the interior of the pocket (12) containing the product, the mouth (14) of the pocket being provided with a pair of reclosable, elongated, inter-engagable fastener strips (15, 16), one of said strips being bonded to the inner face of one of said opposing walls and the other of said strips being bonded to the inner face of the other of said opposing walls, characterised in that the fastener strips (15, 16) are of a hook and loop fastener system. |
| 10 | |
| 15 | 2. Pouch according to claim 1, wherein the fastener strips (15, 16) are adhesively bonded to the inner faces (3, 4) of the respective opposing walls (5, 6). |
| 20 | |
| 25 | 3. Pouch according to claim 1, wherein the fastener strips (15, 16) are bonded to the inner faces (3, 4) of the respective opposing walls (5, 6) by heat sealing. |
| 30 | |
| 35 | 4. Pouch according to any one of the preceding claims, wherein the fastener strips (15, 16) extend continuously between and preferably into the side seals (10, 11). |
| 40 | |
| 45 | 5. Pouch according to any one of the preceding claims, wherein the fastener strips are spaced apart from the upper edges (7, 8) of the pair of opposing walls (5, 6) so as to provide gripping portions to be gripped for opening the pocket. |
| 50 | |
| 55 | 6. Pouch according to any one of the preceding claims, wherein the mouth (14) of the pocket (12) further is provided with a transverse, peelable heat seal (17) extending continuously between and preferably also into the side seals (10, 11). |
| | |
| | 7. Pouch according to claim 6, wherein the peelable seal (17) is provided above the fastener strips (15, 16) when seen from the interior of the pocket and being spaced apart from the upper edges (7, 8) of the pair of opposing walls (5, 6) so as to provide gripping portions to be gripped for opening the pocket. |
| | |
| | 8. Pouch according to claim 6, wherein the peelable seal (17) is provided below the fastener strips (15, 16) when seen from the interior of the pocket. |

9. Pouch according to any one of the claims 4-6, wherein the peelable seal (17) is provided by means of a stripe of an ethylene vinyl acetate (EVA)-based coating or a peel lacquer provided on the inner face of one of the walls (5, 6). 5
10. Pouch according to any one of the preceding claims, wherein one (6) of the side walls (5, 6) is extended to form a flap extending above the upper edge (7) of the other of said walls (5, 6) and adapted to be folded onto the pocket (12) at or adjacent the mouth (14). 10

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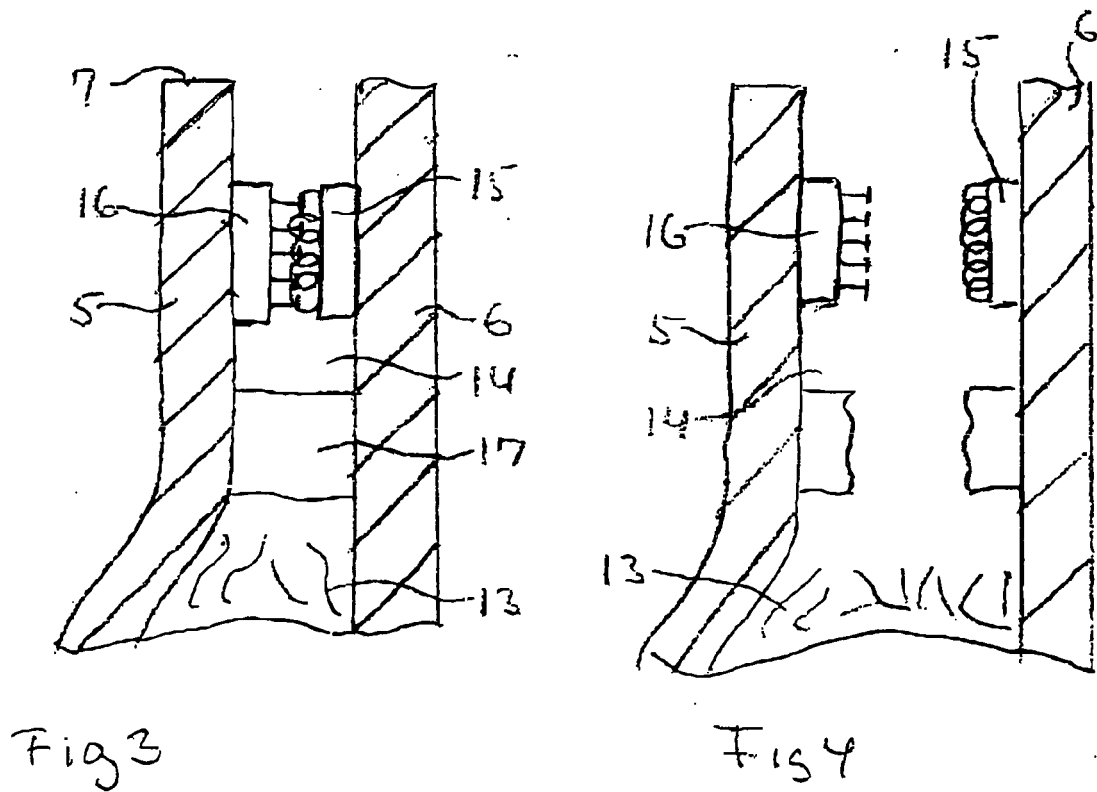
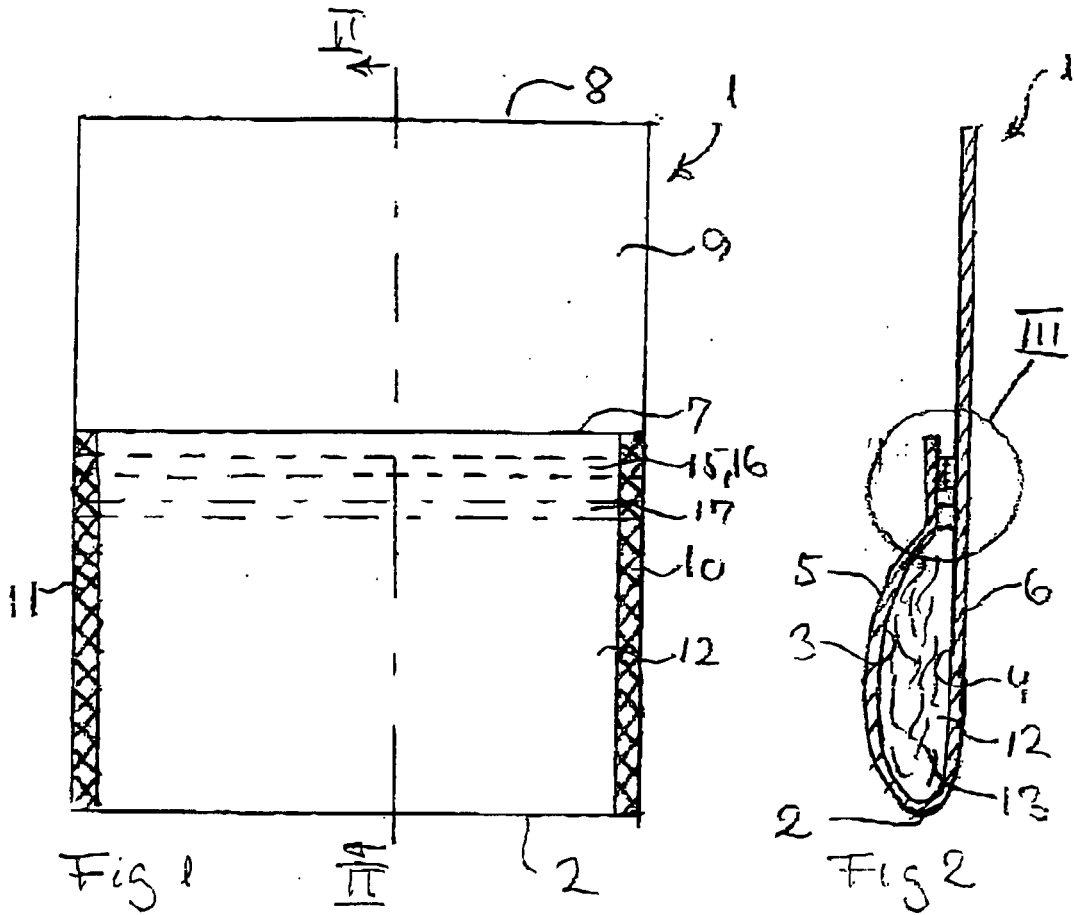
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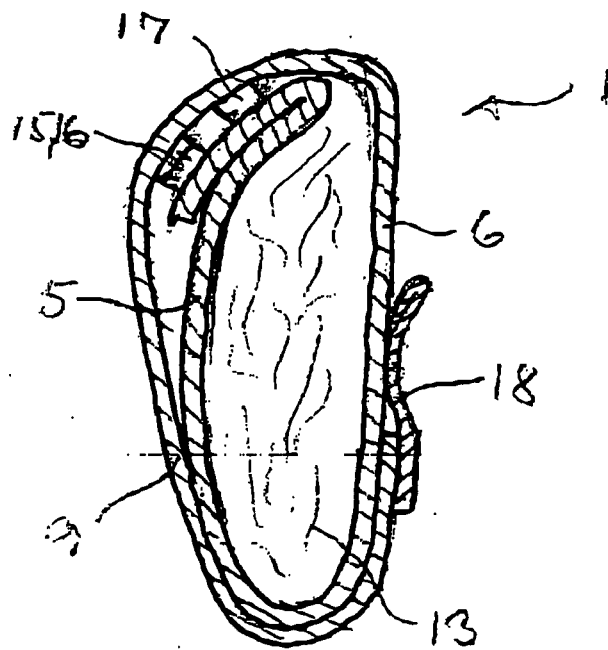
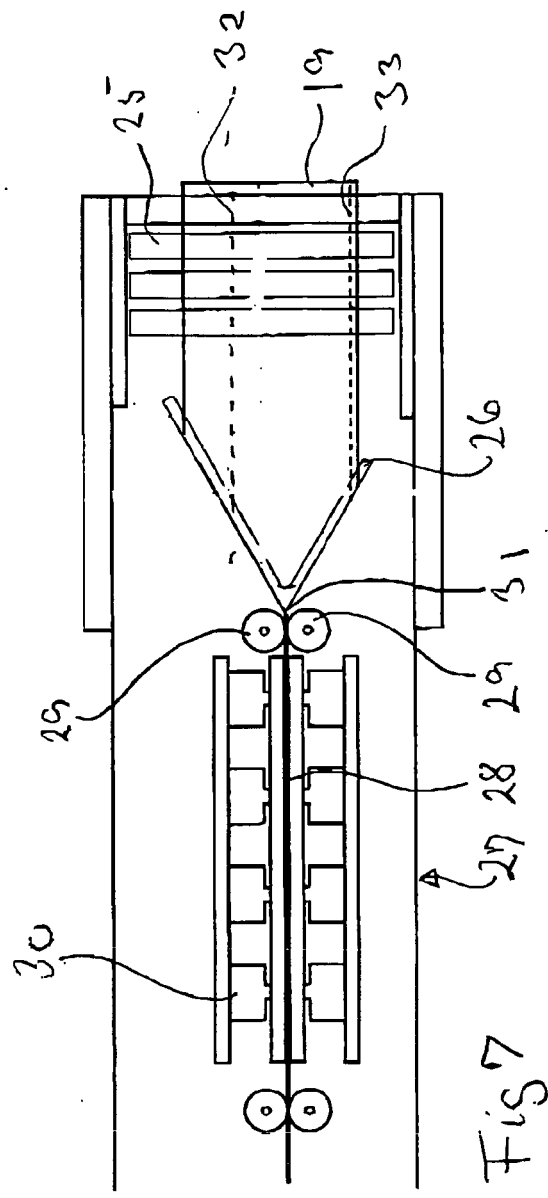
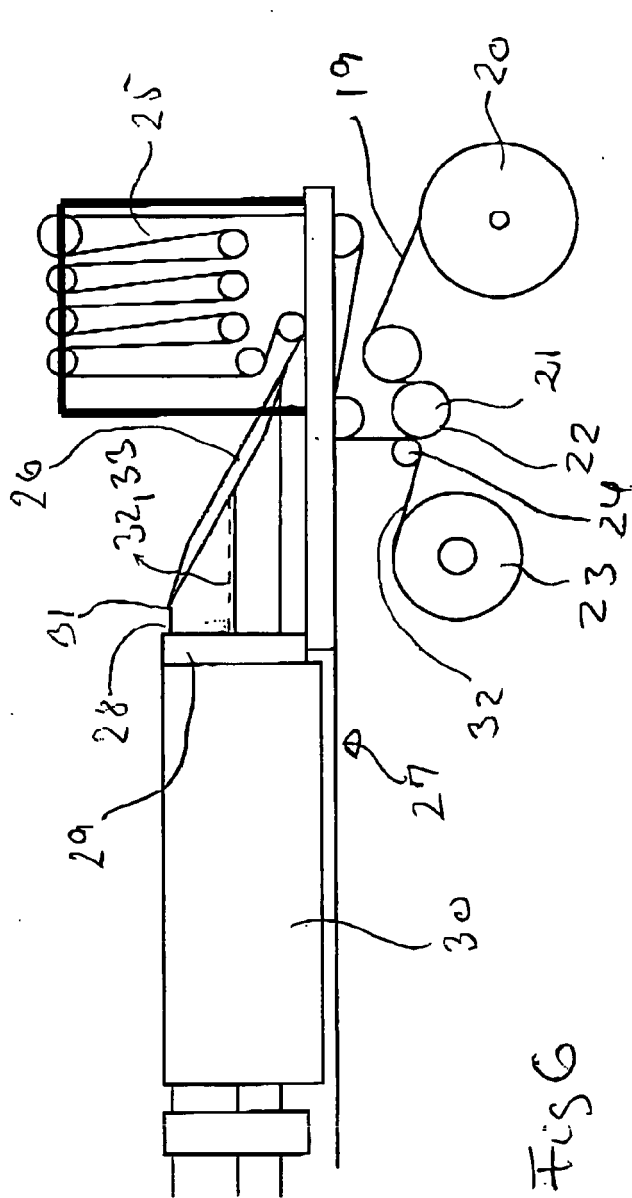
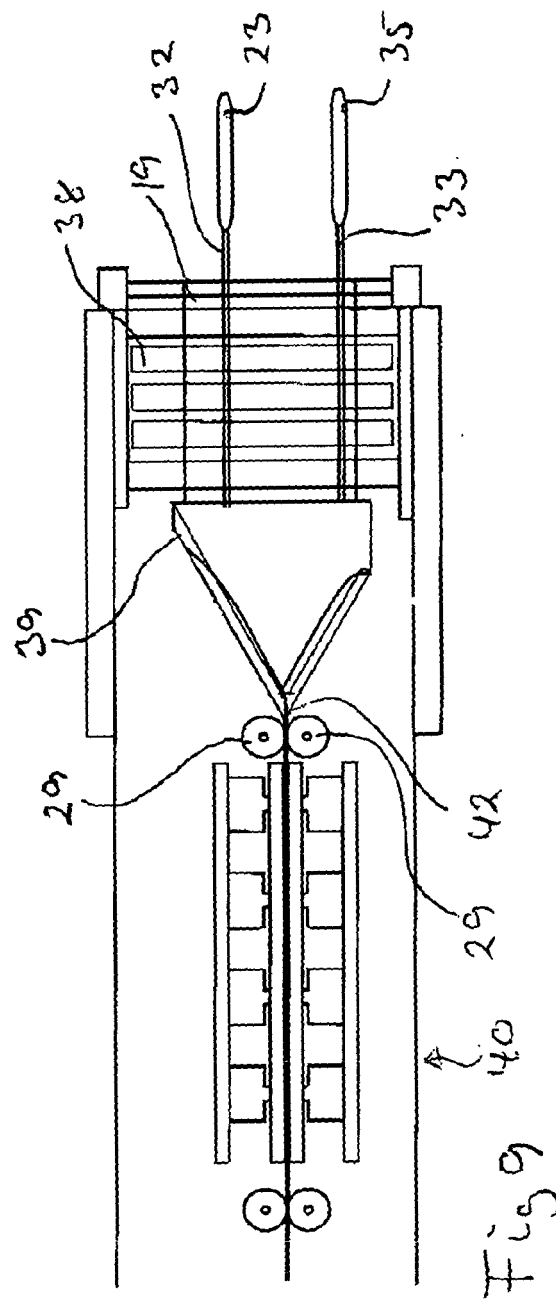
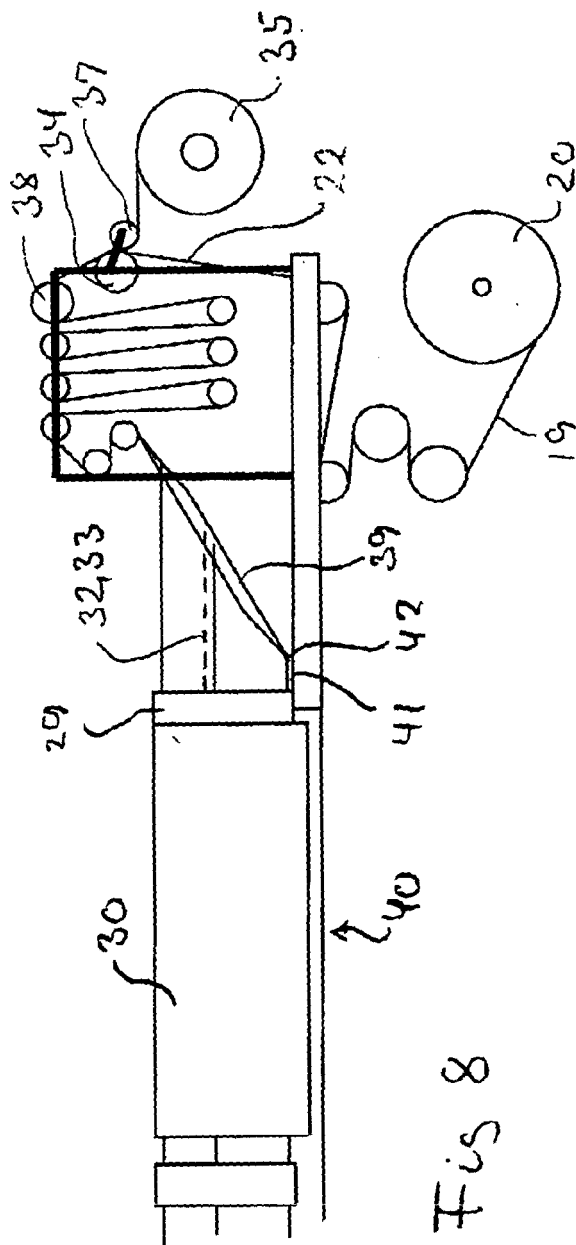
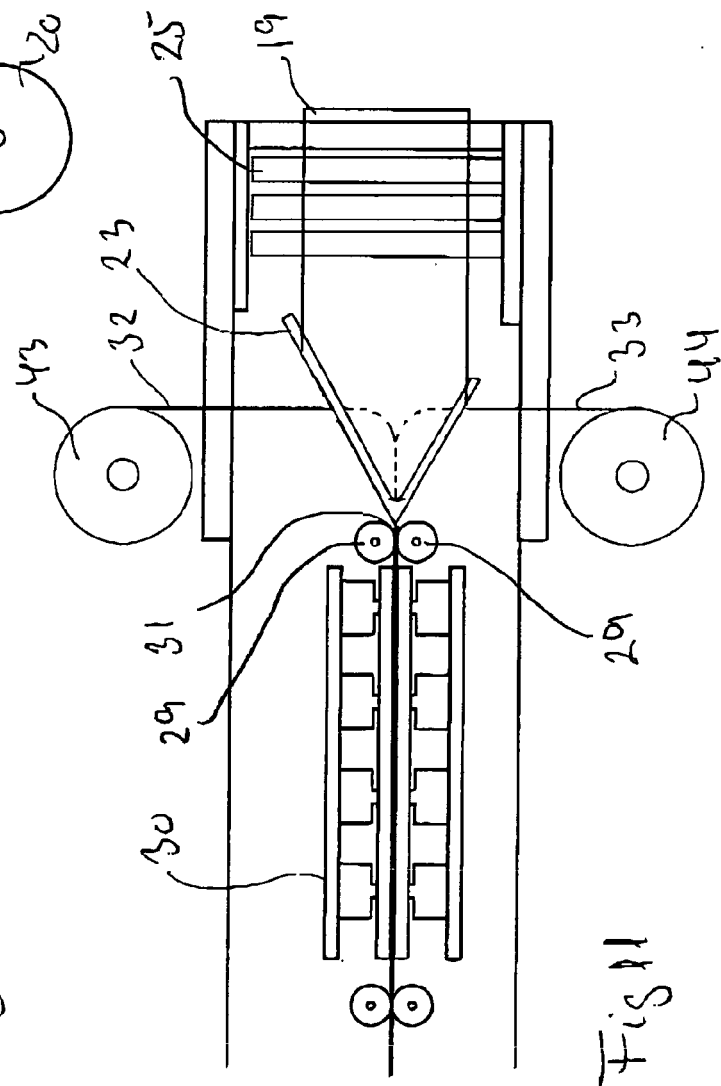
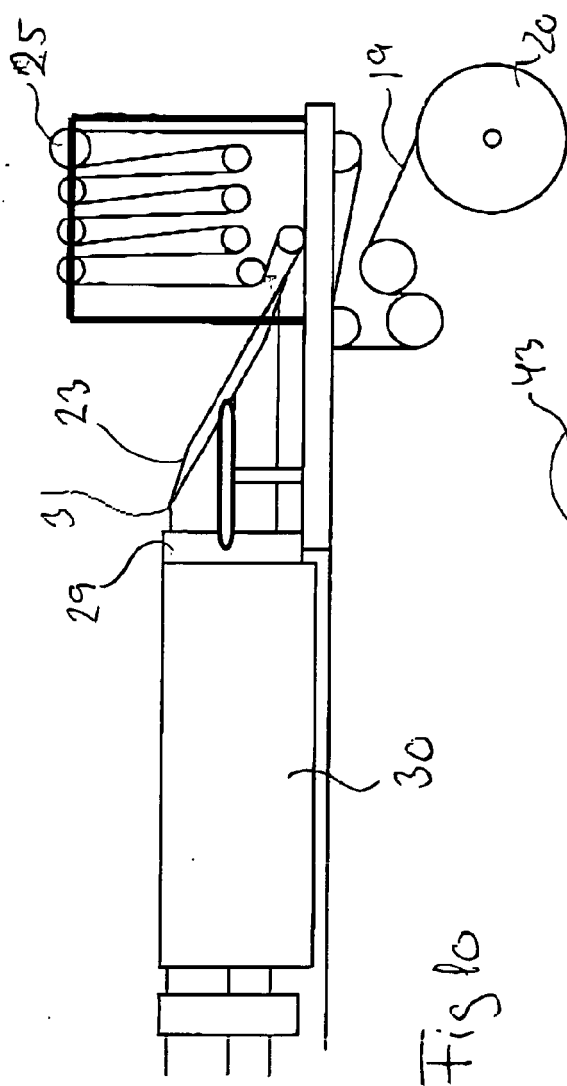


Fig 5









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**ANNEX TO THE EUROPEAN SEARCH REPORT
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