

Description

This invention relates generally to the manufacture of flexible pouches for dispensing purposes and, more specifically, to a system and method of pre-forming a discharge spout in a filled and peripherally sealed pouch for improving the functioning of such spout as well as to a pouch material having a preformed discharge spout.

In the manufacture of flexible pouches for dispensing purposes wherein the pouch includes a dispensing spout or internal channel through the spout upon rupture or tear removal of a discharge spout terminal end portion of the package and squeezing of the package, there exists the fabrication difficulty of so forming and peripherally heat sealing the package so that the relatively narrow discharge spout passageway through the sealed package area will be reliably present when it is desired to use the pouch contents.

Such dispensing packages are well known in the art, and are illustrated in prior U.S. patents, as Kaplan Re. 24,251 or Carlisle 3,878,977, among others. One of the most successful of these pouch packages is that marketed under the U.S. trademark "SPOUT-PAK" and shown in Jamison U.S. Patent 4,491,245. The dispensing pouch there shown is especially characterized by a tortuous, serpentine and reversely curved discharge passageway which is highly effective to control discharge of the package contents while simultaneously providing drip-free characteristics.

U.S. Patent No. 2,826,025 discloses a machine for making and filling sealed packages. As can be seen from Figure 1, two strips 1 and 2 of suitable packaging material are fed between pairs of guiderollers 7 and downwardly over guiderollers 8, the two strips 1 and 2 being thus brought into opposed side by side relation to each other and guided toward the sealing mechanism a. The sealing mechanism includes two crimping and sealing blocks 12, each having a recess 13 in its face which is surrounded on three sides by corrugated or serrated rim 14.

It will be seen that in the manufacture of pouches, containing fluid contents, as various comestibles on the order of mustard, ketchup, syrup, or other liquids and viscous materials as lotions, alcohol, wine, paint, etc., when the package is fabricated from peripherally sealed face-to-face contacting sheets of web material, typically multi-layer laminates including diverse gas and liquid barrier materials as polymer-coated or laminated metal foil and the like with suitable printed indicia, it is important that upon rupture of a terminal portion of a discharge passageway as by tearing off a corner part of the package, the ready discharge of the contents may be effected and that

the discharge passage defined through the sealed pouch sheets from the main supply of the contents be readily opened by separation of the unsealed webs therealong upon applied pressure to the contents portion of the pouch so that the contents will flow from the supply area of the pouch outwardly through the much narrower spout passageway without hindrance.

The importance of proper flow upon pouch squeezing dispensing pressure is vital to the success of all pouches of the type contemplated, and especially significant in the provision of a unique complex and reliable pouch such as the aforesaid "SPOUT-PAK" pouch wherein the discharge passageway has a serpentine and reversely directed configuration, as a failure in the opposing pouch walls defining the spout passageway to properly distend or flex under fluid pressure would render the package virtually useless and undesirable to the consumer or other user.

In the conventional fabrication of pouches of any given type and especially those having discharge spouts therein, it is customary to advance a pair of webs of the packaging material which, as noted, are of a selected flexible laminate having heat seal characteristics and which may contain desired printing indicia and the like, and, at appropriate downstream locations, whether by rotary or reciprocating die means, the facing webs will be peripherally sealed except for a small marginal area between the overlying and confronting webs and the spout area defined in the seal pattern. Thereafter, the package will be filled through the unsealed marginal area and this area finally sealed to confine the package contents therewithin and the finished, filled pouch severed from the advancing web material.

Alternatively, as is known, a single web of packaging material may be advanced in planar form to a position whereat the web is longitudinally folded about a center line as it advanced thereby to convert the flat web into a C-fold configuration with one-half of the web overlying and coextensive with the other half of the web.

The package will thus be sealed about three marginal edges, one including the spout passageway, with the fourth side being defined at least by the aforesaid fold line, with similar filling and closing techniques.

Such procedures generally of forming pouch packages and filling the same are well known in the art and include vertical form-and-fill machines, horizontal machines, and the like.

In any event, after the film or web material is folded or disposed with the two sides of the potential package in face-to-face relation, and especially with relatively small sizes of certain pouch packages, the film has a tendency to stick or tack

together in the narrow area thereof defining the discharge passageway, as a substantial area of the confronting webs are sealed on either side thereof as compared with the contents-receiving reservoir of the pouch wherein only a relatively limited peripheral sealing occurs.

With the narrow and tortuous channel of the unsealed discharge passageway being present in a large sealed area of the pouch and with the seals closely defining the passageway, the contacting but unsealed faces of the web defining the passageway are also capable of receiving a modest amount of heat from the sealing dies closely thereadjacent on the lateral sides at the spout area as well as slightly pressed face-to-face relation as the sealing dies effect bonding pressure on the web material immediately adjacent to the spout zone.

The present invention is directed to a pouch forming, filling and sealing apparatus including means for advancing a pair of confronting lengths of flexible web material from which the pouch will be formed, for peripherally sealing said web material to each other to define therebetween a product supply area and a discharge passageway extending therefrom toward the peripheral edge of said web material, and filling the pouch in the product supply area, characterized by passageway pre-forming means capable of displacing and stretching the web material in a configuration corresponding to said discharge passageway prior to forming, filling and sealing said pouch, whereby unwanted blockage and sealing of the discharge passageway is prevented during pouch manufacture.

Further, the invention relates to a method of pre-forming a spout in a peripherally sealed flexible pouch to preclude unwanted blockage thereof during pouch sealing, said method being characterized by the steps of advancing confronting lengths of said web material toward pouch forming, filling and sealing stations so as to form a discharge passageway within the seal, said discharge passageway extending from the filled pouch toward the peripheral edge of said pouch, and prior to the web material reaching said stations, displacing a portion of said web material from the plane thereof and stretching the same into a configuration corresponding to that of said discharge passageway.

Also, this invention relates to pre-formed displaced zone pouch material for fabrication into a fluent comestible container having a dispensing spout including a substantially planar sheet of flexible and heat sealable material, said sheet being characterized in that an area thereof is physically normally displaced from the plane of the material while in unstressed condition, said displaced area comprising a partial potential spout length including three serially connected length portions extending

respectively in a first direction, in a second direction extending in a generally rearward direction with respect to said first direction, and a third portion extending again in generally said first direction, whereby upon fabrication of said material into a said pouch, pressure applied to said material generally in the plane thereof during pouch fabrication, wherein said displaced areas are brought into confronting relation, will not cause unwanted blocking of said displaced area.

By the invention herein, the respective webs of the pouch are initially each pre-distended slightly and thereby stretched in the area defining the discharge spout passageway or internal channel, whereby the likelihood or tendency of the webs to rack or adhere together in the critical passageway zone is substantially obviated.

This may be accomplished in a variety of ways as, for example, by the application of requisite fluid or mechanical pressure to the web or webs as pre-forming step just prior to being brought into overlying face-to-face relationship with pouch formation product filling and final sealing thereof with severance of the pouch from the web.

While this distension or displacement of the spout zone can be effected as the film is continuously moving, it is preferable from a die and fabrication standpoint to effect the same while the film material is stopped in intermittent motion, thereby permitting the use of a simple relatively planar die assembly and ready association with conventional pouch forming equipment.

The displacement or distension is not rigid so as, to be in the nature of a molded and deformed area, but is rather just slightly stretched out of the original plane of the web, and freely flexible back theretoward as is a common property of the thin pouch material.

Further features and advantages of the invention will become more apparent from the following description of preferred embodiments thereof taken together with the accompanying drawings, wherein:

Fig. 1 is a perspective view of a dispensing pouch of a preferred form including a tortuous discharge spout or passageway including reversely directed portions;

Fig. 2 is a perspective view of one plate and die member in pre-forming the spout in a pouch wall;

Fig. 3 is a perspective view of a cooperating forming pressure supply plate used with the plate of Fig. 2;

Fig. 4 is a fragmentary view in cross-section illustrating action of the plates of Figs. 2 and 3 on a length of pouch web;

Fig. 5 is similar to Fig. 4 and disclosing a modified form thereof;

Fig. 6 is similar to Fig. 5 and disclosing a further modified form thereof;

Fig. 7 is a generally diagrammatic view of the invention as incorporated in a conventional vertical pouch form-and-fill machine;

Fig. 8 is a diagrammatic view of the modified form of the invention seen in Fig. 6; and

Fig. 9 is a fragmentary side elevation of the forming element of Figs. 6 and 8.

With reference to Fig. 1, there is illustrated a pouch of the type which is preferably subjected to the preforming operations of the instant invention in fabrication of the pouch, and especially in which fabrication techniques are or have been hitherto difficult as noted above. More particularly, the pouch 10 corresponds to that shown in the aforesaid Jamison U. S. patent No. 4,491,245 and is typically defined by a pair of confronting lengths of web material 12, 14 which may be either separate sheets or a single large or wide web longitudinally folded in half, and wherein the webs are peripherally sealed as by heat sealing about the entire periphery of the pouch package as indicated at 16, whereby the two confronting webs are in sealed relation to each other and are leak proof with respect to the pouch contents until access is desired. While illustrated in accordance with the pouch of the aforesaid Jamison U. S. patent, it will be evident that the invention herein is applicable to other pouches.

The pouch 10 includes within the sealed boundary 16 the primary product supply area at 18 within which is received the product to be dispensed, such as a generally liquid comestible or non-comestible on the order of syrup, mayonnaise, ketchup, wine, creams, adhesives, and the like. The pouch further includes an unsealed tortuous dispensing spout passageway between the webs 12, 14 at 20, which specifically includes an initial passageway portion 22 communicating with supply 18, an intermediate passageway portion 24 which is reversely directed from the initial passageway 22 back toward the primary product area 18, and finally the terminal discharge passageway portion 26 which is again reversely directed with respect to the intermediate portion 24 to lead outwardly toward the sealed package periphery.

Suitable rupture-facilitating means including indicia, notching, or a score line is indicated at 28 in usual manner, whereby in use, the corner portion of the pouch is readily torn or cut away by the user along the line 28 thereby to remove a sealed area from the terminal portion of the passageway 26 and permit the pouch contents within the portion 18 to be expressed through the passageway upon the application of digital pressure to the pouch supply at 18. Upon pressure being applied to the contents, the same will flow through the passageway 20 for

appropriate dispensing.

As disclosed in some detail in the aforesaid Jamison U. S. patent, the tortuous and reversely angled passageway 20 effects a highly reliable self-sealing to prevent unwanted drippage or leakage of the pouch upon relaxation of squeezing pressure notwithstanding the fact that the package may include further contents or remaining contents in the pouch product supply area 18.

In the generally conventional fabrication of pouches by disposition of confronting webs between suitable seal means so as to effect a peripheral pouch seal as at 16 with an unsealed contents receiving portion 18 and a spout or discharge passageway at 20, and especially with the highly effective spout configuration including the tortuous and reversely curved portions shown in Fig. 1, hitherto it has been a problem to fabricate such a pouch in that there is a tendency for the opposing film material, usually a polymer-foil laminate, to adhere together along the rather narrow discharge passageway 20. Should this occur in the fabrication thereof, upon use of the pouch, pressure applied to the area 18 would not result in sufficient opening of the passageway 20 to permit contents to be freely or fully expressed therethrough. It will be seen that while no significant difficulty was encountered in unwanted sealing of the opposed pouch walls in the product-receiving area 18, that by virtue of the relatively narrow unsealed area defining the tortuous discharge passageway 20 as compared with the sealed area 16 therearound as applied by usual sealing dies, not only was the unsealed area of the ultimate passageway relatively small and narrow, but also sealing pressures and temperatures would be quite proximate to the potential passageway and enhance the unintended and unwanted tacking or sealing of the potential passageway to result in unwanted blockage at the time of use.

Such is obviated by the pre-forming technique of the instant invention. In the fabrication of pouches, specifically pouches of the type contemplated herein, it is conventional to advance confronting faces of sealable webs between die members which appropriately close upon the confronting webs and seal a desired peripheral zone therearound, while leaving a portion of the periphery unsealed until product is introduced into the pouch area 18, and thereafter finally sealing the pouch. In so doing, web material is conventionally fed vertically on well known "form-and-fill" machines, or alternatively, advanced horizontally across the table area in a generally similar form of filling wherein product will be introduced laterally of the web rather than longitudinally of the machine direction of feed.

The invention herein is readily utilized with either vertical or horizontal package forming equip-

ment. The utilization of the subject pre-forming system is especially valuable in cooperation with formation of the unique tortuous and reversely directed spout passageway in a pouch of the type shown in Fig. 1, and achieves most important benefits in the manufacture of such packages.

To this end, each web 12, 14 which will be subsequently disposed in confronting relation for appropriate peripheral sealing, pouch filling, and final sealing, is initially directed through a pre-forming station at which the ultimately formed spout portion at 20 is given pretreatment in the separate web before package formation.

A preferred means therefor is seen in Figs. 2 and 3 which cooperatively define a set of forming dies acting on the web material prior to the pouch filling and closing station, and the cooperation of the dies seen in Figs. 2 and 3 in acting on a web is seen in Fig. 4. Thus, there is shown in Fig. 2 a plate member 30 which includes a pre-forming die portion 32 as an insert element secured to the main plate as by screws or like means 34. In this manner, the die insert 32 may be replaced when worn, or in the alternative, may be readily altered to provide specific and varying configuration relationships for differing discharge passageways.

It will be seen that while the face of the insert 32 is quite generally flush with the face 36 of the primary plate 30, that the insert 32 includes a recessed groove 38 therein which has the configuration of the desired tortuous channel to be provided in the ultimate package at 20 as seen in Fig. 1. To this end, the recessed shallow groove or channel 38 includes an initial leg 40, a reversely directed intermediate portion 42, and a terminal portion 44 which correspond respectively to the ultimate channel or passageway portions 22, 24, 26 in the finished pouch of Fig. 1. It will be seen that the groove 38 stops short of the outer periphery of the die plate 30 which in the preferred embodiments, substantially conforms to the overall dimensions of the ultimate pouch, inasmuch as the ultimate terminal area at the periphery of the pouch will be sealed in peripheral seal 16 to preclude any leakage from the pouch prior to removal of a corner portion of the pouch at 28 to permit utilization of the terminal spout portion 26.

Cooperating with the die plate 30 is a like air pressure die plate 50 which similarly has a removable insert 52 which may be secured thereto as required in known manner, as by machine screws 54. The die plate 52, as indicated in phantom lines and as also seen in the side elevational view of Fig. 4, is relieved at its rear face to define with plate 50 a plenum chamber for gaseous fluid as air at 56. As seen in Fig. 3, the face of insert 52 is provided with a plurality of apertures as at 58 which communicate with chamber 56, while a tubular connection

diagrammatically shown at 60 extends from the chamber to a suitable fluid pressure source 62, which may be air or other gas. Air is preferable, as it maybe supplied quite clean and presents no contamination difficulty with the web thereat which forms the interior of the ultimate package.

It is not necessary to have the substantial multiplicity of ports 58 as shown, as only a few would suffice. It is only necessary that the location of the ports be such that the same correspond to the location of the groove 38 in the insert 32 of companion die plate 30.

As is evident from Fig. 4, in operation, a length of web material as at 12 or 14 is introduced between the separated plates 30 and 50, after which the two are caused to relatively approach each other whereupon admission of air pressure into chamber 56 acts through the ports 58 in the insert 52 to distend or slightly stretch the pouch material 12 or 14 so as to cause the same to be forced into and conform to the groove 38 in the die insert plate 32. Depending upon the laminate material employed for the packaging film and its thickness, suitable air pressure is provided to effect the desired deflection as indicated.

While a stretching operation of the type shown with respect to the tortuous groove 38 may be effected with respect to only a single web of the two-web laminate, it is preferable to effect simultaneous distention in forming a spout pattern on both webs 12, 14 in mirror relation and prior to the further sealing and filling of the pouch package.

With this slight stretching effected in the spout area, upon downstream peripheral sealing of the pouch and especially the relatively large areas of the pouch material proximate the tortuous spout passageway, there will be no likelihood of unwanted or adverse tackiness and connection between the laminates 12, 14 in the unsealed spout area. As a consequence, upon ultimate consumer utilization of the pouch, and removal of the tear-away portion along line 28, the package contents will express properly through the tortuous passage 20 without difficulty, while the package will yet retain its no-drip features as recited in the aforesaid Jamison U. S. patent.

It is important to observe that only a very slight pre-stretching is effected by virtue of the quite shallow groove 38, whereby the webs will be virtually in contact at the spout area at the downstream seal station yet will resist unwarranted tacking in the spout zone. There is no deep groove distension whatever that might tend to form a defined semicircular half-tube, for example.

The pre-forming technique of the invention herein may be applied, at any convenient upstream point in the formation of the pouch and filling thereof by otherwise generally conventional tech-

niques.

Thus, in Fig. 7 there is diagrammatically illustrated the essential arrangement of a standard vertical form-and-fill apparatus wherein webs 12, 14 respectively defining the opposed pouch walls are separately fed from supply rolls thereof in downwardly converging relation toward a conventional filling and sealing station F/S whereat between intermittent advance of the webs, opposed suitable seal die plates of well known form as at 70, 70 are actuated inwardly to close upon the opposed web 12, 14 about a product filling tube F, whereupon the two webs are sealed about all sides except for a peripheral zone permitting reception therethrough of the filling tube and whereupon in timed relation a product supply is dispensed into the pouch. Thereafter, upon the next intermittent downward actuation of the webs, the pouch moves to the lower position shown, whereat conventional seal and sever bars 75 approach each other to seal off the remaining unsealed zone in which the filler tube F had been located and sever the now-completed and filled pouch from the pouch being formed thereabove.

Such equipment is well known in the art for forming and making bags or pouches in the general manner, whether vertical or horizontal format, and need not be described further, as the same do not form part of the invention herein. In the present invention, the pre-forming station PF is disposed above the initial pouch sealing dies 70, and as indicated includes a die plate as at 30 associated with each web 12, 14 respectively, the said dies having the insert 32 with the desired configuration of the reversely curved tortuous passageway 38 as seen in Fig. 3.

The cooperating pressure plates 50 are conveniently associated in the central zone between the webs 12, 14 and may be carried as by a suitably configured central member 80, whereby during intermittent operation of the apparatus, the webs 12, 14 are respectively clamped by the plates 30, 50 as seen in Fig. 4, and air introduced through a similar line 60 associated with the respective plates 50 thereby to distend the webs in the manner described and as seen in Fig. 4. The filling tube F may extend through the carrier block 80 or may extend laterally into usual and conventional position beneath the block 80 as may be desired and which forms no part of the present invention.

The physical displacement of the film material from the ordinary plane of the webs 12, 14 by the applied pressure is in absolute terms very slight as noted above. Furthermore, the film distention may even be so slight as to be virtually inconspicuous in the filled package, or indeed the film-material may even restore to a substantially flat condition depending upon relative pressure conditions within

the package during and after formation. In any event, preforming techniques as applied to the complex tortuous configuration of the spout 20 by the appropriate groove 38 and pressure applying means as by compressed air or mechanical pressure insures high reliability of the ultimate package and that inadvertent blocking or sealing of the discharge spout passage wear channel will not occur.

While in the form of the invention shown in Figs. 2-4, air is employed as the pressure fluid to effect the displacement of the web into the die groove 38, a liquid pressure medium as water or oil may be utilized in lieu thereof. Thus, in order to prevent obviously undesirable escape of the liquid medium or contamination of the web, a modified insert 52a is associated with the pressure plate 50 as seen in Fig. 5, wherein a resilient band or diaphragm of material as rubber 84 is provided in the insert 52a in lieu of the open ports 58 as in the insert 52. Thus, liquid pressure in the chamber 56 will act upon the flexible and resilient diaphragm 84 to effect the requisite displacement and stretching of the film 12 or 14 into the groove cavity 38 in the plate 30. While structurally more complex than the preferred embodiment, for given pouch materials or dimensions the same may be useable.

In a slightly different form of the invention as seen in Fig. 6, rather than utilize air pressure to displace the film, a flexible mold member 100 of resilient material, as rubber or elastomeric material, may be provided in the form of a simple rectangular member 100 of sufficient area to embrace the spout zone. The same need not have the specific tortuous form of the ultimate passageway 20. As indicated in Fig. 8 and as shown in comparison to the other forms of the invention in Fig. 6, the elastomeric element 100 is supported by a base member 102 in position to be associated with complementary formed grooves 38 into like opposed dies 30a, 30b, which are mirror images having like complementary insert plates 32 therein. Thus, as seen in Fig. 8, when the die plates 30a, 30b approach each other at an intermittent point in web advance, the same clamp about the central resilient mold element 100 thereby to distend and displace the film 12, 14 into each respective groove 38 as indicated in Fig. 6 thereby to achieve the same stretching effect on the respective webs. At the reopening of the plates 30a, 30b, the now distended web advances downwardly for conventional filling and sealing operations much as in the instance of the Fig. 7 equipment, as will be evident.

While it is possible to form the rubber element 100 into the exact tortuous form of passageway 20, it is preferable not to do so, as closing of the dies 30a, 30b, will effect the required slight stretching into grooves 38, while the excess rubber-like ma-

material pressed against the webs outside of the groove will prevent any ridging or creasing of the material at the groove edges.

Claims

1. A pouch forming, filling and sealing apparatus including means for advancing a pair of confronting lengths of flexible web material (12, 14) from which the pouch (10) will be formed, for peripherally sealing said web material (12, 14) to each other to define therebetween a product supply area (18) and a discharge passageway (26) extending therefrom toward the peripheral edge of said web material (12, 14), and filling the pouch (10) in the product supply area (18), characterized by passageway pre-forming means (30, 50; 30a, 30b) capable of displacing and stretching the web material (12, 14) in a configuration corresponding to said discharge passageway (26) prior to forming, filling and sealing said pouch (10), whereby unwanted blockage and sealing of the discharge passageway (26) is prevented during pouch manufacture.
2. The apparatus of claim 1, characterized in that said pre-forming means (30, 50; 30a, 30b) includes die plate means (30; 30a, 30b) having a groove (38) therein corresponding in configuration to the passageway (26) to be formed, and means (58, 84, 100) capable of displacing and stretching said web material (12, 14) into said groove (38) prior to formation of said pouch (10).
3. The apparatus of claim 2, characterized by fluid pressure means (56) associated with the web displacing means (84) for stretching said web material (12, 14).
4. The apparatus of claim 2 or 3, characterized by a resilient member (84, 100) of greater volume than said passageway, and said web displacing means (58, 84, 100) being capable of stretching said web material (12, 14) about said member (100) and forcing the material (12, 14) into the groove (38) in the die plate means (30; 30a, 30b).
5. The apparatus of claim 4, characterized in that said web displacing means (58, 84, 100) is capable of exerting fluid pressure on the surface of said web material (12, 14) through the intermediary of said resilient member (84).
6. The apparatus of any of the preceding claims 2-5, characterized in that said die plate means (30; 30a, 30b) has a substantially planar surface with a shallow groove of tortuous configuration therein over which said web material (12, 14) is to be received, the web displacing means (58, 84, 100) being capable of applying pressure to said web material (12, 14) overlying said groove (38) with the die plate means (30; 30a, 30b).
7. The apparatus of claim 6, characterized by a die insert (32) on said die plate means (30; 30a, 30b), said insert (32) having said groove (38) therein.
8. The apparatus of any of the preceding claims 2-7, characterized in that the groove (38) in said die plate means (30; 30a, 30b) is of tortuous configuration including a first portion (22), a second reversely directed portion (24) connected thereto, and a third again reversely directed portion (26) connected to said second portion (24).
9. The apparatus of claim 8, characterized in that said first portion (22) of the groove (38) in the die plate means (30; 30a, 30b) commences inwardly of said plate margins and extends theretoward, the second groove portion (24) extending reversely from said first portion (22), and the third groove portion (26) extending reversely from said second groove portion (24) back toward a margin of said die plate.
10. The apparatus of any of the preceding claims, characterized in that said web-displacing means (58, 84, 100) includes an overlying plate (50) having an internal manifold chamber (56) capable of holding a pressurized gas, and a plurality of ports (58) communicating said pressurized gas from said chamber (56) to the face of said plate (30).
11. The apparatus of any of the preceding claims 1-9, characterized in that said web-displacing means (58, 84, 100) includes an overlying plate (50) having means (56, 84) for applying fluid pressure therethrough to displace said web material (12, 14) into said groove (38).
12. The apparatus of claim 11, characterized in that said overlying plate (50) includes an internal manifold chamber (56) capable of holding a pressurized liquid, and a flexible diaphragm (84) forming a portion of the face of said plate (50), and wherein the liquid pressure in said chamber (56) being capable of distending said diaphragm (84) outwardly to displace said web material (12, 14) into said tortuous groove (38).



terial pressed against the webs outside of the groove will prevent any ridging or creasing of the material at the groove edges.

Claims

1. A pouch forming, filling and sealing apparatus including means for advancing a pair of confronting lengths of flexible web material (12, 14) from which the pouch (10) will be formed, for peripherally sealing said web material (12, 14) to each other to define therebetween a product supply area (18) and a discharge passageway (26) extending therefrom toward the peripheral edge of said web material (12, 14), and filling the pouch (10) in the product supply area (18), characterized by passageway pre-forming means (30, 50; 30a, 30b) capable of displacing and stretching the web material (12, 14) in a configuration corresponding to said discharge passageway (26) prior to forming, filling and sealing said pouch (10), whereby unwanted blockage and sealing of the discharge passageway (26) is prevented during pouch manufacture.
2. The apparatus of claim 1, characterized in that said pre-forming means (30, 50; 30a, 30b) includes die plate means (30; 30a, 30b) having a groove (38) therein corresponding in configuration to the passageway (26) to be formed, and means (58, 84, 100) capable of displacing and stretching said web material (12, 14) into said groove (38) prior to formation of said pouch (10).
3. The apparatus of claim 2, characterized by fluid pressure means (56) associated with the web displacing means (84) for stretching said web material (12, 14).
4. The apparatus of claim 2 or 3, characterized by a resilient member (84, 100) of greater volume than said passageway, and said web displacing means (58, 84, 100) being capable of stretching said web material (12, 14) about said member (100) and forcing the material (12, 14) into the groove (38) in the die plate means (30; 30a, 30b).
5. The apparatus of claim 4, characterized in that said web displacing means (58, 84, 100) is capable of exerting fluid pressure on the surface of said web material (12, 14) through the intermediary of said resilient member (84).
6. The apparatus of any of the preceding claims 2-5, characterized in that said die plate means (30; 30a, 30b) has a substantially planar surface with a shallow groove of tortuous configuration therein over which said web material (12, 14) is to be received, the web displacing means (58, 84, 100) being capable of applying pressure to said web material (12, 14) overlying said groove (38) with the die plate means (30; 30a, 30b).
7. The apparatus of claim 6, characterized by a die insert (32) on said die plate means (30; 30a, 30b), said insert (32) having said groove (38) therein.
8. The apparatus of any of the preceding claims 2-7, characterized in that the groove (38) in said die plate means (30; 30a, 30b) is of tortuous configuration including a first portion (22), a second reversely directed portion (24) connected thereto, and a third again reversely directed portion (26) connected to said second portion (24).
9. The apparatus of claim 8, characterized in that said first portion (22) of the groove (38) in the die plate means (30; 30a, 30b) commences inwardly of said plate margins and extends theretoward, the second groove portion (24) extending reversely from said first portion (22), and the third groove portion (26) extending reversely from said second groove portion (24) back toward a margin of said die plate.
10. The apparatus of any of the preceding claims, characterized in that said web-displacing means (58, 84, 100) includes an overlying plate (50) having an internal manifold chamber (56) capable of holding a pressurized gas, and a plurality of ports (58) communicating said pressurized gas from said chamber (56) to the face of said plate (30).
11. The apparatus of any of the preceding claims 1-9, characterized in that said web-displacing means (58, 84, 100) includes an overlying plate (50) having means (56, 84) for applying fluid pressure therethrough to displace said web material (12, 14) into said groove (38).
12. The apparatus of claim 11, characterized in that said overlying plate (50) includes an internal manifold chamber (56) capable of holding a pressurized liquid, and a flexible diaphragm (84) forming a portion of the face of said plate (50), and wherein the liquid pressure in said chamber (56) being capable of distending said diaphragm (84) outwardly to displace said web material (12, 14) into said tortuous groove (38).



13. The apparatus of any of the preceding claims, characterized in that said die plate means is one of a pair of die plates (30a, 30b) each having a groove (38) therein in mirror image relation, whereby the said die plates (30a, 30b) are employed with respective separate web material portions to form separate displacements therein for subsequent mirror-image association in forming said pouch (10).
14. The apparatus of claim 13, characterized by an elastomeric member (100) interposed between said die plates (30a, 30b) having an area at least as great as that of said grooves (38), said respective web material portion lying between each said plate (30a, 30b) and said elastomeric member (100), and said elastomeric member (100) being capable of stretching said web material (12, 14) and displacing the same into said grooves (38) upon closure of said plates (30a, 30b).
15. A method of pre-forming a spout in a peripherally sealed flexible pouch to preclude unwanted blockage thereof during pouch sealing, said method being characterized by the steps of advancing confronting lengths of said web material (12, 14) toward pouch forming, filling and sealing stations so as to form a discharge passageway (26) within the seal, said discharge passageway extending from the filled pouch (10) toward the peripheral edge of said pouch, and prior to the web material (12, 14) reaching said stations, displacing a portion of said web material (12, 14) from the plane thereof and stretching the same into a configuration corresponding to that of said discharge passageway (26).
16. The method of claim 15, characterized in that said displacing step moves said web material (12, 14) only slightly out of the plane of the remaining portion of the web material (12, 14) prior to pouch formation.
17. The method of claim 15 or 16, characterized by the step of displacing mirror image portions of said passageway configuration into confronting lengths of said web material (12, 14) prior to pouch formation therefrom.
18. The method of claim 16 or 17, characterized in that said displacing step is effected by the application of fluid pressure.
19. The method of claim 16 or 17, characterized in that said displacing step is effected by the application of pressure by a resilient member (100).
20. Pre-formed displaced zone pouch material (12, 14) for fabrication into a fluent comestible container (10) having a dispensing spout (26) including a substantially planar sheet (12, 14) of flexible and heat sealable material, said sheet (12, 14) being characterized in that an area thereof is physically normally displaced from the plane of the material while in unstressed condition, said displaced area comprising a partial potential spout length (26) including three serially connected length portions extending respectively in a first direction (40), in a second direction (42) extending in a generally rearward direction with respect to said first direction (40), and a third portion (44) extending again in generally said first direction (40), whereby upon fabrication of said material (12, 14) into a said pouch (10), pressure applied to said material (12, 14) generally in the plane thereof during pouch fabrication, wherein said displaced areas are brought into confronting relation, will not cause unwanted blocking of said displaced area.
21. The pre-formed displaced zone pouch material of claim 20 characterized in that said sheet material (12, 14) is a polymeric film.
22. The pre-formed displaced zone pouch material of claim 21 characterized in that said polymeric film (12, 14) is a multilayer laminate.
23. The pre-formed displaced zone pouch material of claim 21 or 22 wherein said polymeric film is imprinted with indicia on the side of said film toward which said displaced area extends.
24. The pre-formed displaced zone pouch material of claim 20 characterized in that said sheet material (12, 14) is slightly stretched to form said displaced area.
25. The pre-formed displaced zone pouch material of claim 20 characterized in that said sheet material (12, 14) is disposed in face-to-face relation with a like said sheet (12, 14) with the said displaced area of each said sheet in confronting relation to define said dispensing spout (26).

Patentansprüche

1. Vorrichtung zum Formen, Füllen und Verschweißen von Beuteln mit Einrichtungen zum Transport eines Paares gegenüberliegender Längen flexiblen Bahnmaterials (12, 14), aus



- denen ein Beutel (10) zu formen ist, zum Verschweißen des Bahnmaterials (12, 14) am Umfang miteinander, so daß dazwischen ein Produktzuführbereich (18) und ein sich von diesem in Richtung des Umfangsrandes des Bahnmaterials (12, 14) erstreckender Austrittskanal (26) gebildet werden, und zum Füllen des Beutels (10) im Produktzuführbereich (18), gekennzeichnet durch eine Einrichtung (30, 50; 30a, 30b) zum Vorformen des Kanals, die in der Lage ist, das Bahnmaterial (12, 14) in einer dem Austrittskanal (26) entsprechenden Konfiguration vor dem Formen, Füllen und Verschweißen des Beutels (10) in der Weise zu verdrängen und zu dehnen, daß unerwünschtes Blockieren und Verschweißen des Kanals (26) während der Herstellung des Beutels verhindert wird.
2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Vorformungseinrichtung (30, 50; 30a, 30b) eine Formplatteneinrichtung (30; 30a, 30b) mit einer darin ausgeformten Rinne (38) besitzt, deren Konfiguration der dem zu formenden Kanal (26) entspricht, sowie eine Einrichtung (58, 84, 100), die in der Lage ist, das Bahnmaterial (12, 14) vor der Bildung des Beutels (10) in die Rinne (38) zu verdrängen und zu dehnen.
 3. Vorrichtung nach Anspruch 2, gekennzeichnet durch eine mit der Bahnverdrängungseinrichtung (84) in Verbindung stehende Flüssigkeits-Druckeinrichtung (56) zur Dehnung des Bahnmaterials (12, 14).
 4. Vorrichtung nach Anspruch 2 oder 3, gekennzeichnet durch ein elastisches Element (84, 100) mit einem größeren Volumen als das des Kanals, wobei die Bahnverdrängungseinrichtung (58, 84, 100) in der Lage ist, das Bahnmaterial (12, 14) um das Element (100) zu dehnen und das Material (12, 14) in die Rinne (38) in der Formplatteneinrichtung (30; 30a, 30b) zu pressen.
 5. Vorrichtung nach Anspruch 4, dadurch gekennzeichnet, daß die Bahnverdrängungseinrichtung (58, 84, 100) in der Lage ist, die Oberfläche des Bahnmaterials (12, 14) über die Zwischenwirkung des elastischen Elements (84) mit Flüssigkeitsdruck zu beaufschlagen.
 6. Vorrichtung nach einem der vorhergehenden Ansprüche 2 bis 5, dadurch gekennzeichnet, daß die Formplatteneinrichtung (30; 30a, 30b) eine im wesentlichen ebene Oberfläche mit einer darin ausgebildeten flachen Rinne von gewundener Konfiguration besitzt, über der das Bahnmaterial (12, 14) aufzubringen ist, wobei die Bahnverdrängungseinrichtung (58, 84, 100) in der Lage ist, mit der Formplatteneinrichtung (30; 30a, 30b) Druck auf das die Rinne (38) bedeckende Bahnmaterial (12, 14) auszuüben.
 7. Vorrichtung nach Anspruch 6, gekennzeichnet durch einen Formeinsatz (32) auf der Formplatteneinrichtung (30; 30a, 30b), wobei die Rinne (38) in den Einsatz (32) eingeformt ist.
 8. Vorrichtung nach einem der vorstehenden Ansprüche 2 bis 7, dadurch gekennzeichnet, daß die Rinne (38) in der Formplatteneinrichtung (30; 30a, 30b) von gewundener Konfiguration ist, welche einen ersten Abschnitt (22), einen zweiten daran anschließenden, in Gegenrichtung verlaufenden zweiten Abschnitt (24) und einen mit dem zweiten Abschnitt (24) verbundenen, erneut in Gegenrichtung verlaufenden dritten Abschnitt (26) enthält.
 9. Vorrichtung nach Anspruch 8, dadurch gekennzeichnet, daß der erste Abschnitt (22) der Rinne (38) in der Formplatteneinrichtung (30; 30a, 30b) einwärts der Plattenränder beginnt und sich daraufzuerstreckt, der zweite Rinnenabschnitt (24) in umgekehrter Richtung ab dem ersten Abschnitt (22) verläuft und der dritte Rinnenabschnitt (26) in umgekehrter Richtung ab dem zweiten Rinnenabschnitt (24) zurück in Richtung eines Randes der Formplatte verläuft.
 10. Vorrichtung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Bahnverdrängungseinrichtung (58, 84, 100) eine Deckplatte (50) mit einer inneren Verteilerkammer (56) enthält, welche ein Druckgas aufnehmen kann und über eine Vielzahl von Öffnungen (58) das Druckgas aus der Kammer (56) auf die Fläche der Platte (30) leitet.
 11. Vorrichtung nach einem der vorhergehenden Ansprüche 1 bis 9, dadurch gekennzeichnet, daß die Bahnverdrängungseinrichtung (58, 84, 100) eine Deckplatte (50) mit einer Einrichtung (56, 84) zur Druckbeaufschlagung mittels derselben enthält, um das Bahnmaterial (12, 14) in die Rinne (38) zu verdrängen.
 12. Vorrichtung nach Anspruch 11, dadurch gekennzeichnet, daß die Deckplatte (50) eine interne Verteilerkammer (56), welche eine druckbeaufschlagte Flüssigkeit aufnehmen kann, sowie eine flexible Membran (84) enthält, welche einen Teil der Fläche der Platte (50) bildet,



wobei der Flüssigkeitsdruck in der Kammer (56) in der Lage ist, die Membran (84) nach außen zu dehnen, so daß das Bahnmaterial (12, 14) in die gewundene Rinne (38) verdrängt wird.

13. Vorrichtung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Formplatteneinrichtung aus einem Paar von Formplatten (30a, 30b) gebildet ist, wobei in jeder eine Rinne (38) in spiegelbildlicher Beziehung zueinander ausgeformt ist, wobei die Formplatten (30a, 30b) für jeweils getrennte Bahnmaterialabschnitte verwendet werden, so daß darin getrennte Hohlformen zur späteren spiegelbildlichen Verbindung bei der Bildung des Beutels (10) geformt werden.

14. Vorrichtung nach Anspruch 13, dadurch gekennzeichnet, daß zwischen den Formplatten (30a, 30b) ein elastomeres Element (100) mit einer mindestens so großen Fläche wie diejenige der Rinnen (38) angeordnet ist, wobei der entsprechende Bahnmaterialabschnitt zwischen jeweils der Platte (30a, 30b) und dem elastomeren Element (100) angeordnet ist, und wobei das elastomere Element (100) in der Lage ist, das Bahnmaterial (12, 14) zu dehnen und dieses bei Schließen der Platten (30a, 30b) in die Rinnen (38) zu verdrängen.

15. Verfahren zur Vorformung einer Tülle in einen am Umfang verschweißten flexiblen Beutel zur Vermeidung des unerwünschten Blockierens der Tülle während des Verschweißens des Beutels, wobei dieses Verfahren durch folgende Schritte gekennzeichnet ist: Transport gegenüberliegender Längen des Bahnmaterials (12, 14) zu Beutelform-, -füll- und -verschweißstationen, so daß ein Austrittskanal (26) innerhalb der Schweißnaht eingeformt wird, wobei der Austrittskanal vom gefüllten Beutel (10) aus zum Umfangsrand des Beutels verläuft, und wobei bevor das Bahnmaterial (12, 14) diese Stationen erreicht, ein Teil des Bahnmaterials (12, 14) aus seiner Ebene verdrängt und dieser zur einer Konfiguration entsprechend derjenigen des Austrittskanals (26) gedehnt wird.

16. Verfahren nach Anspruch 15, dadurch gekennzeichnet, daß das Bahnmaterial (12, 14) in dem Verdrängungsschritt nur geringfügig aus der Ebene des verbleibenden Teils des Bahnmaterials (12, 14) vor der Bildung des Beutels verdrängt wird.

17. Verfahren nach Anspruch 15 oder 16, gekennzeichnet durch den Schritt der Verdrängung

spiegelbildlicher Abschnitte der Kanalkonfiguration in gegenüberliegenden Längen des Bahnmaterials (12, 14) vor der Bildung des Beutels aus denselben.

18. Verfahren nach Anspruch 16 oder 17, dadurch gekennzeichnet, daß der Verdrängungsschritt durch die Beaufschlagung mit Flüssigkeitsdruck erfolgt.

19. Verfahren nach Anspruch 16 oder 17, dadurch gekennzeichnet, daß der Verdrängungsschritt durch Druckbeaufschlagung mittels eines elastischen Elements (100) erfolgt.

20. Vorgeformtes Beutelmateriale (12, 14) mit einer Verdrängungszone für die Herstellung eines Behälters (10) für flüssige Speisen mit einer Spendertülle (26), welcher eine im wesentlichen ebene Folie (12, 14) aus flexiblem und heißsiegelfähigem Material enthält, wobei die Folie (12, 14) dadurch gekennzeichnet ist, daß ein Bereich davon im unbelasteten Zustand physikalisch in senkrechter Richtung aus der Materialebene verdrängt ist, wobei der verdrängte Bereich eine zusammengesetzte Tüllenlänge (26) umfaßt, welche drei in Reihe verbundene Längenabschnitte enthält, die sich jeweils in einer ersten Richtung (40), in einer zweiten im wesentlichen relativ zur ersten Richtung (40) rückwärts gerichteten Richtung (42) und in einer dritten wiederum im wesentlichen in der ersten Richtung (40) gerichteten Richtung (46) erstrecken, wobei durch den während der Verarbeitung des Materials (12, 14) zu diesem Beutel (10) auf das Material (12, 14) im wesentlichen in dessen Ebene ausgeübten Druck während der Herstellung des Beutels, bei der die verdrängten Bereiche in eine einander gegenüberliegende Lage gebracht werden, keine unerwünschte Blockierung des Verdrängungsbereichs verursacht wird.

21. Vorgeformtes Beutelmateriale mit einer Verdrängungszone nach Anspruch 20, dadurch gekennzeichnet, daß das Folienmaterial (12, 14) eine Polymerfolie ist.

22. Vorgeformtes Beutelmateriale mit einer Verdrängungszone nach Anspruch 21, dadurch gekennzeichnet, daß die Polymerfolie (12, 14) ein Mehrlagenschichtstoff ist.

23. Vorgeformtes Beutelmateriale mit einer Verdrängungszone nach Anspruch 21 oder 22, wobei die Polymerfolie auf der Seite der Folie mit Markierungen bedruckt ist, in deren Richtung sich der verdrängte Bereich erstreckt.



24. Vorgeformtes Beutelmateriel mit einer Verdrängungszone nach Anspruch 20, dadurch gekennzeichnet, daß das Folienmaterial (12, 14) geringfügig gedehnt ist, um den Verdrängungsbereich zu bilden.
25. Vorgeformtes Beutelmateriel mit einer Verdrängungszone nach Anspruch 20, dadurch gekennzeichnet, daß das Folienmaterial (12, 14) in einer gegenüberliegenden Beziehung mit einer entsprechenden Folie (12, 14) so angeordnet ist, daß der Verdrängungsbereich jeder der gegenüberliegenden Folien die Spendertülle (26) begrenzt.

Revendications

1. Appareil de mise en forme, de remplissage et de scellement de poches, comprenant un dispositif destiné à faire avancer une paire de tronçons en regard d'une matière souple (12, 14) en nappe continue à partir de laquelle la poche (10) doit être formée, de manière que la matière (12, 14) en nappe continue soit soudée périphériquement sur elle-même et délimite, entre les tronçons, une zone (18) d'alimentation en produit et un passage d'évacuation (26) partant de cette zone vers le bord périphérique de la matière (12, 14) en nappe, et à remplir la poche (10) dans la zone (18) d'alimentation en produit, caractérisé par un dispositif (30, 50 ; 30a, 30b) destiné à préformer un passage, capable de déplacer et d'allonger la matière (12, 14) en nappe à une configuration correspondant à celle du passage d'évacuation (26) avant la mise en forme, le remplissage et le scellement de la poche (10), si bien qu'un bouchage indésirable et un scellement du passage d'évacuation (26) sont empêchés au cours de la fabrication de la poche.
2. Appareil selon la revendication 1, caractérisé en ce que le dispositif (30, 50 ; 30a, 30b) de mise en forme préalable comporte une plaque à matrice (30 ; 30a, 30b) ayant une gorge (38) dont la configuration correspond à celle du passage (26) à former, et un dispositif (58, 84, 100) capable de déplacer et d'allonger la matière (12, 14) en nappe dans la gorge (38) avant la formation de la poche (10).
3. Appareil selon la revendication 2, caractérisé par un dispositif (56) à fluide sous pression associé au dispositif (84) de déplacement de la matière en nappe et destiné à étirer la matière (12, 14) en nappe.
4. Appareil selon la revendication 2 ou 3, caractérisé par un organe élastique (84, 100) de volume supérieur à celui du passage, et par le fait que le dispositif (58, 84, 100) de déplacement de nappe peut étirer la matière (12, 14) en nappe autour dudit organe (100) et chasser la matière (12, 14) dans la gorge (38) de la plaque à matrice (30 ; 30a, 30b).
5. Appareil selon la revendication 4, caractérisé en ce que le dispositif (58, 84, 100) de déplacement de nappe peut exercer, à la surface de la matière (12, 14) en nappe, une pression due à un fluide par l'intermédiaire de l'organe élastique (84).
6. Appareil selon l'une quelconque des revendications précédentes 2 à 5, caractérisé en ce que la plaque à matrice (30 ; 30a, 30b) a une surface sensiblement plane ayant une gorge peu profonde de configuration sinueuse sur laquelle la matière (12, 14) en nappe est destinée à être logée, le dispositif (58, 84, 100) de déplacement de nappe pouvant appliquer une pression à la matière en nappe (12, 14) placée sur la gorge (38) avec la plaque à matrice (30 ; 30a, 30b).
7. Appareil selon la revendication 6, caractérisé par un élément rapporté de matrice (32) placé sur la plaque à matrice (30 ; 30a, 30b), cet élément rapporté (32) ayant ladite gorge (38).
8. Appareil selon l'une quelconque des revendications précédentes 2 à 7, caractérisé en ce que la gorge (38) de la plaque à matrice (30 ; 30a, 30b) a une configuration sinueuse comportant une première partie (22), une seconde partie (24) de sens inverse et qui lui est raccordée, et une troisième partie (26) ayant encore un sens inverse et qui est raccordée à la seconde partie (24).
9. Appareil selon la revendication 8, caractérisé en ce que la première partie (22) de la gorge (38) formée dans la plaque à matrice (30 ; 30a, 30b) commence à l'intérieur des marges de la plaque et s'étend vers celles-ci, la seconde partie de gorge (24) ayant une orientation inverse de celle de la première partie (22), et la troisième partie de gorge (26) ayant un sens inverse de celui de la seconde partie de gorge (24) et revenant vers une marge de la plaque à matrice.
10. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que le dispositif (58, 84, 100) de déplacement de



- nappe comporte une plaque supérieure (50) ayant une chambre collectrice interne (56) capable de contenir un gaz sous pression, et plusieurs orifices (58) faisant communiquer le gaz sous pression de la chambre (56) à la face de la plaque (30).
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11. Appareil selon l'une quelconque des revendications précédentes 1 à 9, caractérisé en ce que le dispositif (58, 84, 100) de déplacement de nappe comprend une plaque supérieure (50) ayant un dispositif (56, 84) d'application de la pression d'un fluide par l'intermédiaire de la plaque pour le déplacement de la matière (12, 14) en nappe dans la gorge (38).
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12. Appareil selon la revendication 11, caractérisé en ce que la plaque supérieure (50) a une chambre collectrice interne (56) capable de contenir un liquide sous pression, et un diaphragme souple (84) faisant partie de la face de la plaque (50), et dans lequel la pression du liquide présent dans la chambre (56) permet un allongement du diaphragme (84) vers l'extérieur afin que la matière (12, 14) en nappe soit déplacée dans la gorge sinueuse (38).
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13. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que la plaque à matrice fait partie d'une paire de plaques à matrice (30a, 30b) ayant chacune une gorge (38) et qui sont des images spéculaires l'une de l'autre, si bien que les plaques à matrice (30a, 30b) sont utilisées avec des parties séparées respectives de la matière en nappe pour la formation de déplacements séparés permettant une association ultérieure sous forme d'images spéculaires lors de la mise en forme de la poche (10).
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14. Appareil selon la revendication 13, caractérisé par un organe élastomère (100) placé entre les plaques à matrice (30a, 30b) et ayant une surface au moins aussi grande que celle des gorges (38), la partie respective de matière en nappe étant disposée entre chaque plaque (30a, 30b) et l'organe élastomère (100), l'organe élastomère (100) étant capable d'étirer la matière (12, 14) en nappe et de la déplacer dans les gorges (38) après fermeture des plaques (30a, 30b).
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15. Procédé de mise en forme préalable d'un bec d'une poche souple soudée à sa périphérie de manière qu'il ne puisse pas être bouché lors du scellement de la poche, le procédé étant caractérisé par des étapes d'avance de tronçons en regard de matière (12, 14) en nappe vers des postes de mise en forme, de remplissage et de scellement de poche afin qu'un passage (26) d'évacuation soit formé dans la soudure, le passage d'évacuation allant de la poche remplie (10) vers le bord périphérique de la poche et, avant que la matière (12, 14) en nappe n'atteigne lesdits postes, le déplacement d'une partie de la matière (12, 14) en nappe en dehors de son plan et l'étirage de cette matière à une configuration qui correspond à celle du passage d'évacuation (26).
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16. Procédé selon la revendication 15, caractérisé en ce que l'étape de déplacement provoque un déplacement de la matière en nappe (12, 14) seulement légèrement en dehors du plan de la partie restante de la matière en nappe (12, 14) avant la formation de la poche.
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17. Procédé selon la revendication 15 ou 16, caractérisé par une étape de déplacement des parties sous forme d'images spéculaires de la configuration du passage dans les tronçons en regard de la matière (12, 14) en nappe avant la formation de la poche à partir de ces tronçons.
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18. Procédé selon la revendication 16 ou 17, caractérisé en ce que l'étape de déplacement est réalisée par application d'une pression par un fluide.
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19. Procédé selon la revendication 16 ou 17, caractérisé en ce que l'étape de déplacement est réalisée par application d'une pression par un organe élastique (100).
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20. Matière (12, 14) pour poche à zone déplacée préalablement mise en forme, destinée à la fabrication d'un récipient (10) pour aliment comestible fluide, ayant un bec (26) de distribution, comprenant une feuille sensiblement plane (12, 14) d'une matière souple et thermosoudable, la feuille (12, 14) étant caractérisée en ce qu'une zone est normalement déplacée physiquement en dehors du plan de la matière lorsqu'elle n'est pas sous contrainte, la zone déplacée comprenant un tronçon partiel (26) de bec potentiel comportant trois parties de tronçon raccordées en série et disposées respectivement dans une première direction (40), et une seconde direction (42) tournée de façon générale vers l'arrière par rapport à la première direction (40), une troisième partie (44) étant disposée à nouveau dans la première direction de façon générale (40), si bien que, après mise de ladite matière (12, 14) sous forme d'une poche (10), une pression appliquée à ladite matière (12, 14) dans le plan général de
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celle-ci au cours de la fabrication de la poche, pendant laquelle les zones déplacées sont mises en regard, ne provoque pas un bouchage indésirable de la zone déplacée.



21. Matière selon la revendication 20, caractérisée en ce que la matière en feuille (12, 14) est un film polymère. 5
22. Matière selon la revendication 21, caractérisée en ce que le film polymère (12, 14) est un stratifié multicouche. 10
23. Matière selon la revendication 21 ou 22, dans laquelle le film polymère porte des repères imprimés sur le côté du film vers lequel dépasse la zone déplacée. 15
24. Matière selon la revendication 20, caractérisée en ce que la matière en feuille (12, 14) est légèrement étirée pour la formation de la zone déplacée. 20
25. Matière selon la revendication 20, caractérisée en ce que la matière en feuille (12, 14) est disposée en face d'une feuille analogue (12, 14), les zones déplacées des deux feuilles étant en regard afin qu'elles délimitent le bec de distribution (26). 25

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