

Description

The present invention relates to a continuous flexible belt which displays two opposing walls and longitudinal upper and lower edges and which incorporates a number of consecutively arranged packaging blanks each with a bottom section at the aforementioned lower edge and two bonding zones arranged transversely in relation to the longitudinal direction of the belt which form the side closures of the packaging blank and a vertical slot arranged between the bonding zones of two adjacent packaging blanks. The invention also relates to a device for the filling of packaging blanks arranged in a continuous flexible belt at a filling station with guide devices for opening the packaging blanks as well as a method of filling and a method of opening such packaging blanks.

From the US Patent No. 3.559.874 there is known a continuous flexible belt displaying the characteristics cited in the previous section. Furthermore, this belt, similarly consisting of bag elements, is equipped with an internal longitudinal guide loop at its upper edge, which communicates with the interior of the lower part of the bag elements. The guide loop guides the bag elements on a mandrel arranged at a filling station for the bag elements. In order to fill the bag elements a knife is mounted atop the mandrel to cut the loop into two halves which are then separated sidewardly with respect to each other by means of a pair of endless belts which carry the same between them and a hopper situated in the middle. After filling the bag elements with a product through the hopper, the two upper edges of the bag elements are united and welded together, the remains of the guide loops are cut away and the individual bag elements are separated from each other by tearing them loose from each other. The arrangement is complicated. The velocity of feeding the bag elements must be coordinated with the one of the pair of endless belts. During filling, the weight of the bag elements is carried by forces acting at right angles to gravity, i.e. tangential forces acting in the surface plane of the bag elements by means of the pair of endless belts pressing towards each other. Also, during filling, the individual bag elements openings can not be of for example square shape without causing high stresses in the material. The separation of the remains of the guide loops necessitates the action of a cutting element.

British Patent No. 1.509.639 describes a device for filling bag-shaped packagings of fabric material which are advanced by means of two drive belts in engagement with the outer sides of the packaging belt. The packagings are opened by means of a linkage mechanism and attendant interacting guide devices. The device is complicated and does not satisfy present-day demands for low costs of packaging different kinds of articles. At all events, the device is not suitable for packaging in bags of plastic material which are arranged in the form of a continuous belt.

One purpose of the present invention is to achieve a continuous belt of packaging blanks which permits the use of a simplified device for filling the packaging blanks in a simple and reliable manner, particularly packaging blanks of a plastic material.

This is achieved through the present invention in that the continuous belt incorporates two principally opposing strip sections which extend in the longitudinal direction of the belt at its aforementioned upper edge and which are demarcated from the packaging blanks by means of a tear initiation, either formed in advance or in conjunction with filling, in each wall arranged parallel to the aforementioned upper edge, whereby each strip section is provided with a continuous suspension device for interacting with the packaging blank opening guide devices arranged at a filling station for filling the packaging blanks, in addition to which the belt is provided with a horizontal slot in both walls either formed in advance or in conjunction with the filling operation, arranged on either side of the aforementioned vertical slot and between the packaging blanks and the suspension devices, whereby two adjacent horizontal slots are arranged at a distance from each other.

The simplified device according to the invention is characterized in that the guide devices consist of two adjacent guide bars arranged in the same plane for interacting with the specified belt, whereby the guide bars display end sections which are situated in the vicinity of each other and centre sections which are situated at a distance from each other, these centre sections being arranged to separate the strip sections of the belt from each other in conjunction with the opening of the packaging blanks, whereby the desired material or object is placed in the packaging blanks.

The invention is described in greater detail in the following with reference to the drawings, where

Fig. 1 shows a side view of a longitudinal cross-section of a continuous belt according to the present invention,

Fig. 2 shows the belt as in Fig. 1 from above as it is advanced in a filling station,

Fig. 3 shows a cross-section through the belt at the line III—III in Fig. 4,

Fig. 4 shows schematically from above a device for handling a belt as in Fig. 1 from magazine to finished packagings,

Fig. 5 shows a cross-section through a belt and guide devices according to another version of the invention,

Fig. 6 shows a cross-section through a belt and guide devices according to a third version of the invention, and where

Fig. 7 shows a cross-section through a belt and guide devices according to a fourth version of the invention.

With reference to Fig. 1, a section of a continuous belt 1, which incorporate a number of consecutively arranged packaging blanks 2, is

shown. The belt has been formed by folding a broader material belt along its centreline 3 to form the bottom section 4 of the packaging blanks, the said bottom section being folded inward as shown in Fig. 1 during formation of the lower edge 38 of the belt. The opposing walls 5, 6 obtained through folding are joined to each other at regular intervals to form the bonding zones 7, 8 which extend at right angles to the bottom section 4 of the packaging blanks. The bonding zones, which can be formed by welding or gluing, or by any other suitable means, demarcate each packaging blank laterally and extend from the bottom section 4 to an upper point which is situated at a predetermined distance from the upper edge 9 of the belt. The continuous belt also incorporates two longitudinal strip sections 10, 11 which comprise the upper areas of the wall formed through folding and which are demarcated from the packaging blanks by a longitudinal perforation 12 in each wall or other tear initiation which extends principally through the aforementioned upper point in the bonding zones. The perforation 12 consequently demarcates the packaging blanks at the top and defines the position of their openings 13.

Arranged in or between the bonding zones 7, 8 are vertical slots 14, whereby each slot 14 may be interrupted by one or more bridges 15 which hold the packaging blanks in a line after each other. Further, horizontal slots 16 are arranged in the area for the boundary between the packaging blanks and the upper strip sections 10, 11, i.e. according to the version disclosed in line with the horizontal perforation 12, whereby these horizontal slots 16 are located adjacent to the vertical slots 14 and joined to them in the form of a T. As will be evident from Fig. 1 two adjacent horizontal slots 16 are arranged at a distance from each other. The slots are arranged in both walls 5, 6 as also is the perforation 12.

The two strip sections are both provided with suspension devices which in the version disclosed consists of sections of the walls 5, 6, folded and welded to form longitudinal tunnels 17, 18 of predetermined size.

The aforementioned suspension devices, which are continuous, are arranged to interact with special guide devices in the form of two guide bars or guide arms 19, 20 arranged in the same horizontal plane over which the suspension devices easily slide as the belt is advanced. An arrangement incorporating such guide devices is shown schematically in Figs. 2 and 4. A continuous belt 1 is advanced from a magazine 21 in the version shown in Fig. 1 over a roller 22 to a filling station 23 which incorporates the aforementioned guide devices in the form of two guide bars 19, 20 arranged in the same horizontal plane which extend through the tunnels of the strip sections. Viewed in the direction of travel, the bars display parallel end sections 24, 25 which are located upstream and situated in close proximity to each other and which open into centre sections 26, 27 which are situated at a predetermined

distance from each other and which are partially parallel. Alternatively, they may be completely arc-shaped. The end sections 28, 29 located downstream are similarly parallel and situated in close proximity to each other. Situated in the area for the end sections 28, 29 are, in the version disclosed, two interacting welding jaws 30, 31 for sealing the packaging blanks after they have been filled at the filling station. The two bars 19, 20 are stationary and are supported by a stand (not shown) at their end sections 28, 29 situated downstream, whereby the transition sections between the bars and the two vertical parts of the stand are arranged with sharp edges to form cutting devices 32 for cutting open the tunnels of the strip sections as the belt 1 is advanced. The arrangement also incorporates two opposing guide rollers 33, 34 which bring about such a change in the feed direction of the strips in relation to each other and to the belt that they are torn loose from the belt and from the filled packaging blanks which are collected at a receiving station. From the guide rollers 33, 34 the two strip sections are brought together over guide rollers 35, 36 and collected on a common take-up roller 37 which is arranged to be driven by a drive device (not shown) in the direction indicated by the arrow. The continuous belt is consequently advanced through driving of the take-up roller 37, whereby the strip sections are accordingly pulled forward over the two guide bars which are arranged to guide the strip sections away from each other at the same time as the packaging blanks are opened so that each blank can be filled with the desired material or object. Opening is made possible, i.e. without damaging the packaging blanks, by the presence of the horizontal slots 16 whose length is chiefly the same as, or slightly more than, the distance between the two bars at their centre sections. The bridges 15 can be severed by means of a suitable cutting device at the filling station as has taken place in the version according to Fig. 2 or at another suitable point situated downstream.

A supporting belt or conveyor belt 45, which primarily extends from the filling station, supports the packaging blanks with their contents. The finished packagings are subsequently received on a conveyor belt 46 which carries the packagings to a receiving station for packing or other handling.

The horizontal slots 16 are formed in advance in the walls at the same time as the vertical slots 14. Alternatively, at least the horizontal slots can be formed in the wall before opening and filling of the packaging blanks, e.g. in close proximity thereto or after the belt has left its magazine 21. Lateral folding of the angular sections between the horizontal and vertical slots will thus be avoided as the belt is advanced, particularly if it is advanced horizontally, unless upper uniting bridges are used.

In the version disclosed the length of the centre sections 26, 27 of the bars is such that a packaging blank 2 can be held fully open between them. If

desired, these centre sections 26, 27 can nevertheless be extended so that two or more packaging blanks can be opened simultaneously. The belt can be advanced intermittently or continuously, whereby in the latter case the filling device follows the movement of the belt in the filling station. The filling device may incorporate a funnel, e.g. when the material that is to be packaged is in liquid form or in free-running particle form. Alternatively, it may consist of mechanical transfer arms or a conveyor belt. Filling can of course also be carried out manually.

The supporting function of the tunnel of the strip sections can also be achieved with other forms of suspension devices. In Fig. 5 these are shown in the form of thicker material 39 with a circular cross-section, whereby the guide devices are modified in a corresponding manner to receive these thicker parts of the material, i.e. guide tubes 40 or guide rails with a downward-facing longitudinal slot, whereby the thicker material runs smoothly and without friction inside the tube or rail.

Instead of folding a material belt to form the belt of the packaging blanks it can be formed from two smaller material belts which are placed together and welded, glued or joined in some other manner along an edge to form the bottom sections of the packaging blanks.

The belt of packaging blanks consists of a flexible material which has surfaces which can be welded by heat sealing or which can be glued together or which can be joined in some other manner. A suitable plastic or a laminate which incorporates a suitable plastic layer can be used as the weldable material.

The disclosed guide devices 19, 20 are stationary and completely fixed. The same function of opening the packaging blanks can nevertheless be achieved by means of two straight and movably arranged guide bars which are situated in the same horizontal plane. The guide bars may hereby be capable of parallel lateral movement to outer positions in order to open the packaging blanks or else they may be pivotally journaled at their ends situated downstream so that their free ends can swing out to outer positions in order to open the packaging blanks.

Fig. 6 shows an alternative version of the belt as in Fig. 1, in that the tunnels of the strip sections, instead of folding the walls outward, are formed by separate strips 41 of material which are fixed to the outside of one of the belt walls and to the inside of the other wall.

Fig. 7 shows an alternative version of the belt and guide devices as in Fig. 5, in that the thicker material of the strip sections instead of being formed by the walls consists of separate round pieces 42 of material which are fixed to the outside and the inside of the belt, whereby the guide devices consist of rails 43 with a downward-facing slot. In the three latter versions (Figs. 5, 6 and 7) there is also an upper bridge 44 arranged in the vertical slot in the vicinity of the

horizontal slot. An upper bridge of this kind is principally easily breakable so that it breaks as a result of the force to which it is subjected when the walls of the belt are forced away from each other in the filling station.

Claims

1. A continuous, flexible belt which displays two opposing walls (5, 6) and longitudinal upper and lower edges and which incorporates a number of consecutively arranged packaging blanks (2) each with a bottom section (4) at the aforementioned lower edge and two bonding zones (7, 8) arranged transversely in relation to the longitudinal direction of the belt which form the side closures of the packaging blank and a vertical slot (14) arranged between the bonding zones (7, 8) of two adjacent packaging blanks, characterized in that the belt (1) incorporates two strip sections (10, 11) arranged opposite each other which extend in the longitudinal direction of the belt at its aforementioned upper edge and which are demarcated from the packaging blanks (2) by a tear initiation (12), arranged in each wall (5, 6) parallel with the aforementioned upper edge, in that each strip section (10, 11) is provided with a continuous suspension device (17, 18) for interacting with the packaging blank opening guide devices (19, 20) arranged at a filling station for filling the packaging blanks, and in that the belt is provided with a horizontal slot (16) in both walls, arranged on either side of the aforementioned vertical slot and between the packaging blanks and the suspension devices, whereby two adjacent horizontal slots (16) are arranged at a distance from each other.

2. A belt as in Claim 1, characterized in that the suspension devices consist of tunnels (17, 18).

3. A belt as in Claim 1, characterized in that the suspension devices consist of thicker material (39).

4. A belt as in any of the foregoing Claims, characterized in that two packaging blanks (2) situated adjacent to each other are joined by means of one or more bridges (15, 44).

5. A belt as in Claim 4, characterized in that one or more bridges (15) are arranged in the vicinity of the lower edge (38) of the belt.

6. A belt as in Claim 4, characterized in that one or more bridges (44) are arranged in the vicinity of the aforementioned horizontal slot (16).

7. A belt as in Claim 6, characterized in that the aforementioned bridge or bridges (44) adjacent to the horizontal slot (16) can easily be broken in conjunction with the opening of the packaging blanks.

8. A belt as in any of the foregoing Claims, characterized in that the aforementioned slots (14, 16) in both walls (5, 6) are in the shape of a T.

9. A belt as in any of the foregoing Claims, characterized in that the horizontal part (16) of every slot is arranged in line with the aforementioned tear initiations (12).

10. A device for filling packaging blanks

desired, these centre sections 26, 27 can nevertheless be extended so that two or more packaging blanks can be opened simultaneously. The belt can be advanced intermittently or continuously, whereby in the latter case the filling device follows the movement of the belt in the filling station. The filling device may incorporate a funnel, e.g. when the material that is to be packaged is in liquid form or in free-running particle form. Alternatively, it may consist of mechanical transfer arms or a conveyor belt. Filling can of course also be carried out manually.

The supporting function of the tunnel of the strip sections can also be achieved with other forms of suspension devices. In Fig. 5 these are shown in the form of thicker material 39 with a circular cross-section, whereby the guide devices are modified in a corresponding manner to receive these thicker parts of the material, i.e. guide tubes 40 or guide rails with a downward-facing longitudinal slot, whereby the thicker material runs smoothly and without friction inside the tube or rail.

Instead of folding a material belt to form the belt of the packaging blanks it can be formed from two smaller material belts which are placed together and welded, glued or joined in some other manner along an edge to form the bottom sections of the packaging blanks.

The belt of packaging blanks consists of a flexible material which has surfaces which can be welded by heat sealing or which can be glued together or which can be joined in some other manner. A suitable plastic or a laminate which incorporates a suitable plastic layer can be used as the weldable material.

The disclosed guide devices 19, 20 are stationary and completely fixed. The same function of opening the packaging blanks can nevertheless be achieved by means of two straight and movably arranged guide bars which are situated in the same horizontal plane. The guide bars may hereby be capable of parallel lateral movement to outer positions in order to open the packaging blanks or else they may be pivotally journaled at their ends situated downstream so that their free ends can swing out to outer positions in order to open the packaging blanks.

Fig. 6 shows an alternative version of the belt as in Fig. 1, in that the tunnels of the strip sections, instead of folding the walls outward, are formed by separate strips 41 of material which are fixed to the outside of one of the belt walls and to the inside of the other wall.

Fig. 7 shows an alternative version of the belt and guide devices as in Fig. 5, in that the thicker material of the strip sections instead of being formed by the walls consists of separate round pieces 42 of material which are fixed to the outside and the inside of the belt, whereby the guide devices consist of rails 43 with a downward-facing slot. In the three latter versions (Figs. 5, 6 and 7) there is also an upper bridge 44 arranged in the vertical slot in the vicinity of the

horizontal slot. An upper bridge of this kind is principally easily breakable so that it breaks as a result of the force to which it is subjected when the walls of the belt are forced away from each other in the filling station.

Claims

1. A continuous, flexible belt which displays two opposing walls (5, 6) and longitudinal upper and lower edges and which incorporates a number of consecutively arranged packaging blanks (2) each with a bottom section (4) at the aforementioned lower edge and two bonding zones (7, 8) arranged transversely in relation to the longitudinal direction of the belt which form the side closures of the packaging blank and a vertical slot (14) arranged between the bonding zones (7, 8) of two adjacent packaging blanks, characterized in that the belt (1) incorporates two strip sections (10, 11) arranged opposite each other which extend in the longitudinal direction of the belt at its aforementioned upper edge and which are demarcated from the packaging blanks (2) by a tear initiation (12), arranged in each wall (5, 6) parallel with the aforementioned upper edge, in that each strip section (10, 11) is provided with a continuous suspension device (17, 18) for interacting with the packaging blank opening guide devices (19, 20) arranged at a filling station for filling the packaging blanks, and in that the belt is provided with a horizontal slot (16) in both walls, arranged on either side of the aforementioned vertical slot and between the packaging blanks and the suspension devices, whereby two adjacent horizontal slots (16) are arranged at a distance from each other.

2. A belt as in Claim 1, characterized in that the suspension devices consist of tunnels (17, 18).

3. A belt as in Claim 1, characterized in that the suspension devices consist of thicker material (39).

4. A belt as in any of the foregoing Claims, characterized in that two packaging blanks (2) situated adjacent to each other are joined by means of one or more bridges (15, 44).

5. A belt as in Claim 4, characterized in that one or more bridges (15) are arranged in the vicinity of the lower edge (38) of the belt.

6. A belt as in Claim 4, characterized in that one or more bridges (44) are arranged in the vicinity of the aforementioned horizontal slot (16).

7. A belt as in Claim 6, characterized in that the aforementioned bridge or bridges (44) adjacent to the horizontal slot (16) can easily be broken in conjunction with the opening of the packaging blanks.

8. A belt as in any of the foregoing Claims, characterized in that the aforementioned slots (14, 16) in both walls (5, 6) are in the shape of a T.

9. A belt as in any of the foregoing Claims, characterized in that the horizontal part (16) of every slot is arranged in line with the aforementioned tear initiations (12).

10. A device for filling packaging blanks



arranged in a continuous, flexible belt, as defined in Claim 1, at a filling station with guide devices for opening the packaging blanks, characterized in that the guide devices consist of two adjacent guide bars (19, 20) arranged in the same plane for interacting with the belt, in that the guide bars display end sections (24, 25) which are situated in the vicinity of each other, and centre sections (26, 27) which are situated at a distance from each other, these centre sections (26, 27) being arranged to separate the strip sections (10, 11) of the belt from each other in conjunction with the opening of the packaging blanks (2), whereby the desired material or object is placed in the packaging blanks.

11. A device as in Claim 10, characterized in that the guide devices consists of bars or tubes (19, 20) for insertion in their own suspension devices in the belt, the said suspension devices being in the form of tunnels (17, 18).

12. A device as in Claim 10, characterized in that the guide devices consist of tubes or rails (40, 43) with a downward-facing longitudinal slot (46) and with an internal space for the reception of its own suspension device in the belt, the said suspension device being in the form of thicker material (39).

13. A device as in Claim 10, characterized in that it incorporates a driven device (37) for the collection of separated strip sections (10, 11) from the belt during simultaneous advancement of the belt past the filling station.

14. A device as in any of Claims 10—13, characterized in that the guide devices are stationary.

15. A device as in any of Claims 10—13, characterized in that the guide devices are capable of movement.

16. A device as in any of Claims 10—15, characterized in that the guide devices are arranged in the same horizontal plane.

17. A method of filling packaging blanks arranged in a continuous, flexible belt, as defined in Claim 1, characterized in that the belt (1) is pulled forward during interaction with the packaging blank opening guide devices (19, 20), which are in engagement with the aforementioned suspension devices (17, 18; 39), in that the packaging blanks (2) thus opened are filled and closed, and in that the aforementioned strip sections (10, 11) are removed from the packaging blanks (2) at the aforementioned tear initiations (12) by means of two opposing guide means (33, 34), which change the feed direction of the strip sections (10, 11) sidewardly in such a relation to each other and to the belt that they are torn loose at the tear initiation (12).

18. A method of opening packaging blanks arranged in a continuous, flexible belt according to Claim 17, characterized in that the belt (1) is pulled forward by means of a take-up roller (37).

Patentansprüche

1. Ein biegsames Endlosband, das zwei gegenüber voneinander liegenden Seitenwänden (5, 6)

und obere und untere Längskanten hat und das auch eine Anzahl von aneinandergereihten flächigen Verpackungsmaterialstücken (2) enthält, jedes mit einem Bodenstreifen (4) an der vorgenannten unteren Längskante mit zwei quer zur Längsrichtung des Bandes liegenden Verbindungsbereichen (7, 8), die die Seitenverschlüsse des flächigen Verpackungsmaterialstücks bilden, und auch einen zwischen den Verbindungsbereichen (7, 8) zweier angrenzenden flächigen Verpackungsmaterialstücke angeordneten Senkrechtschlitz (14) enthält, dadurch gekennzeichnet, dass das Endlosband (1) zwei hauptsächlich zueinandergerichtete Längsstreifen (10, 11) enthält, die sich entlang der vorgenannten oberen Längskante und in Längsrichtung des Endlosbandes erstrecken und durch eine in jeder Seitenwand (5, 6) angeordnete und parallel zur vorgenannten oberen Längskante verlaufende Abreisslinie (12) gegen die flächigen Verpackungsmaterialstücke abgegrenzt ist, dass jeder Längsstreifen (10, 11) mit einer kontinuierlichen Aufhängsvorrichtung (17, 18) versehen ist zwecks Zusammenwirken mit Führungsvorrichtungen (19, 20), die des Verpackungsmaterialstück öffnen, und die an einer Befüllstation zur Befüllung der flächigen Verpackungsmaterialstücke angeordnet sind, und dass das Endlosband in beiden Wänden mit einem beidseitig des vorgenannten Senkrechtschlitzes und zwischen den flächigen Verpackungsmaterialstücken und den Aufhängsvorrichtungen angeordneten Waagrechtschlitz (16) versehen ist, wobei zwei nebeneinander liegende Waagrechtschlitz (16) mit einem Abstand voneinander angeordnet sind.

2. Ein Endlosband gemäss Patentanspruch 1, dadurch gekennzeichnet, dass die Aufhängsvorrichtungen aus Kanälen (17, 18) bestehen.

3. Ein Endlosband gemäss Patentanspruch 1, dadurch gekennzeichnet, dass die Aufhängsvorrichtungen aus dickerem Material (39) bestehen.

4. Ein Endlosband gemäss einem der vorgenannten Patentansprüche, dadurch gekennzeichnet, dass zwei nebeneinander liegende flächige Verpackungsmaterialstücke (2) durch einen oder mehrere Stege (15, 44) miteinander verbunden sind.

5. Ein Endlosband gemäss Patentanspruch 4, dadurch gekennzeichnet, dass ein oder mehrere Stege (15) in der Nähe der unteren Längskante (38) des Endlosbandes angeordnet sind.

6. Ein Endlosband gemäss Patentanspruch 4, dadurch gekennzeichnet, dass eine oder mehrere Stege (44) in der Nähe des vorgenannten Waagrechtschlitzes (16) angeordnet sind.

7. Ein Endlosband gemäss Patentanspruch 6, dadurch gekennzeichnet, dass der oder die vorgenannten Stege (44) in der Nähe des Waagrechtschlitzes (16) im Zusammenhang mit dem Öffnen der flächigen Verpackungsmaterialstücke leicht aufgebrochen werden können.

8. Ein Endlosband gemäss einem der vorgenannten Patentansprüche, dadurch gekennzeichnet, dass die vorgenannten Schlitz (14, 16)



in den beiden Wänden (5, 6) die Form eines T haben.

9. Ein Endlosband gemäss einem der vorgenannten Patentansprüche, dadurch gekennzeichnet, dass der waagrechte Teil (16) jedes Schlitzes in den vorgenannten Abreisslinien (12) fluchtet.

10. Eine Vorrichtung zum Befüllen von in einem Endlosband gemäss Patentanspruch 1 angeordneten flächigen Verpackungsmaterialstücken an einer Befüllungsstation mit Führungsvorrichtungen zum Öffnen der flächigen Verpackungsmaterialstücke, dadurch gekennzeichnet, dass die Führungsvorrichtungen aus zwei in der Nähe von einander und auf gleicher Ebene liegenden Führungsschienen (19, 20) zwecks Zusammenwirken mit dem Endlosband bestehen, dass die Führungsschienen in der Nähe von einander angeordnete Endbereiche (24, 25) und auf gewissem Abstand von einander angeordnete Mittenbereiche (26, 27) aufweisen, wobei diese Mittenbereiche (26, 27) so angeordnet sind, dass sie die Längsstreifen (10, 11) des Endlosbandes im Zusammenhang mit dem Öffnen der flächigen Verpackungsmaterialstücke (2) voneinander trennen, so dass die gewünschten Verpackungsgüter in die Verpackungsmaterialstücke eingelegt werden können.

11. Eine Vorrichtung gemäss Patentanspruch 10, dadurch gekennzeichnet, dass die Führungsvorrichtungen aus Stangen oder Rohren (19, 20) zur Einführung in den zugeordneten Aufhängungsvorrichtungen des Endlosbandes bestehend, wobei genannte Aufhängungsvorrichtungen als Kanäle (17, 18) ausgeführt sind.

12. Eine Vorrichtung gemäss Patentanspruch 10, dadurch gekennzeichnet, dass die Führungsvorrichtungen auf Rohren oder Schienen (40, 43) mit abwärts gerichtetem Längsschlitz (46) und einem Hohlraum zur Aufnahme der zugeordneten am Endlosband angebrachten Aufhängungsvorrichtung in Form von dickerem Material (39) bestehen.

13. Eine Vorrichtung gemäss Patentanspruch 10, dadurch gekennzeichnet, dass sie eine angebrachte Vorrichtung (37) zum Aufwickeln der abgetrennten Langstreifen (10, 11) des Endlosbandes während des gleichzeitigen Vorschubs des Endlosbandes hinter der Befüllstation umfasst.

14. Eine Vorrichtung gemäss einem der Patentansprüche 10—13, dadurch gekennzeichnet, dass die Führungsvorrichtungen stationär angeordnet sind.

15. Eine Vorrichtung gemäss einem der Patentansprüche 10—13, dadurch gekennzeichnet, dass die Führungsvorrichtungen beweglich angeordnet sind.

16. Eine Vorrichtung gemäss einem der Patentansprüche 10—15, dadurch gekennzeichnet, dass die Führungsvorrichtungen in der gleichen Horizontalebene angeordnet sind.

17. Ein Verfahren zum Befüllen von in einem biegsamen Endlosband gemäss Patentanspruch 1 angeordneten flächigen Verpackungsmaterialstücken, dadurch gekennzeichnet, dass das End-

losband (1) vorwärts gezogen wird während eines Zusammenwirkens mit dem zum Öffnen der Verpackungsmaterialstücke vorgesehenen Führungsvorrichtungen (19, 20), wobei diese mit vorgenannten Aufhängungsvorrichtungen (17, 18, 39) im Eingriff stehen, dass die Verpackungsmaterialstücke (2), somit geöffnet, gefüllt und geschlossen werden, und dass die vorgenannten Längsstreifen (10, 11) in den vorgenannten Abreisslinien (12) mit Hilfe zweier gegenüber von einander angeordneten Führungsmittel (33, 34) von den Verpackungsmaterialstücken abgetrennt werden, indem die Führungsmittel die Vorschubrichtung der Längsstreifen (10, 11) seitlich so im Verhältnis zueinander und zum Endlosband ändert, dass sie entlang der Abreisslinie (12) abgerissen werden.

18. Ein Verfahren zum Öffnen von in einem biegsamen Endlosband angeordneten flächigen Verpackungsmaterialstücken gemäss Patentanspruch 17, dadurch gekennzeichnet, dass das Endlosband (1) durch eine Aufnahmerolle (37) vorgezogen wird.

Revendications

1. Bande souple continue qui présente deux parois opposées (5, 6) et des bords longitudinaux supérieur et inférieur et qui comporte un certain nombre d'ébauches d'emballage (2) arrangées les unes à la suite des autres, chacune avec une partie de fond (4) au bord inférieur prémentionné et deux zones de liaison (7, 8) disposées transversalement par rapport à la direction de la bande, qui forment les fermetures latérales de l'ébauche d'emballage, et une fente verticale (14) arrangée entre les zones de liaison (7, 8) de deux ébauches d'emballage adjacentes, caractérisée en ce que la bande (1) comprend deux parties en bandelettes (10, 11) arrangées en face l'une de l'autre, qui s'étendent dans la direction longitudinale de la bande à son bord supérieur prémentionné et qui présentent une démarcation par rapport aux ébauches d'emballage (2) par une amorce de rupture (12), arrangées dans chaque paroi (5, 6) parallèlement au bord supérieur prémentionné, en ce que chaque partie en bandelette (10, 11) est munie d'un dispositif de suspension continu (17, 18) pour coopérer avec des dispositifs (19, 20) de guidage de l'ouverture des ébauches d'emballage, arrangés en un poste de remplissage pour remplir les ébauches d'emballage, et en ce que la bande est munie d'une fente horizontale (16) dans les deux parois, disposée de l'une et de l'autre côté de la fente verticale prémentionnée et entre les ébauches d'emballage et les dispositifs de suspension, deux fentes horizontales adjacentes (16) étant placées à distance l'une de l'autre.

2. Bande suivant la revendication 1, caractérisée en ce que les dispositifs de suspension consistent en tunnels (17, 18).

3. Bande suivant la revendication 1, caractérisée en ce que les dispositifs de suspension sont en une matière plus épaisse (39).

4. Bande suivant l'une quelconque des revendi-



cations précédentes, caractérisée en ce que deux ébauches d'emballage (2) adjacentes l'une à l'autre sont reliées au moyen d'un ou de plusieurs ponts (15, 44).

5. Bande suivant la revendication 4, caractérisée en ce qu'un ou plusieurs ponts (15) sont arrangés au voisinage du bord inférieur (38) de la bande.

6. Bande suivant la revendication 4, caractérisée en ce qu'un ou plusieurs ponts (44) sont arrangés au voisinage de la fente horizontale (16) prémentionnée.

7. Bande suivant la revendication 6, caractérisée en ce que le pont ou les ponts (44) prémentionnés, adjacents à la fente horizontale (16) peuvent être facilement rompus à l'ouverture des ébauches d'emballage.

8. Bande suivant l'une quelconque des revendications précédentes, caractérisée en ce que les fentes prémentionnées (14, 16) dans les deux parois (5, 6) sont en forme de T.

9. Bande suivant l'une quelconque des revendications précédentes, caractérisée en ce que la partie horizontale (16) de chaque fente est arrangée en alignement avec les amorces de rupture (12) prémentionnées.

10. Dispositif pour remplir des ébauches d'emballage arrangées en une bande souple continue suivant la revendication 1, en un poste de remplissage avec des dispositifs de guidage pour ouvrir les ébauches d'emballage, caractérisée en ce que les dispositifs de guidage consistent en deux barres de guidage adjacentes (19, 20) arrangées dans le même plan, pour coopérer avec la bande, en ce que les barres de guidage présentent des parties d'extrémité (24, 25) qui sont situées au voisinage l'une de l'autre, et des parties centrales (26, 27) qui sont situées à distance l'une de l'autre, ces parties centrales (26, 27) étant arrangées pour séparer les parties en bandelettes (10, 11) de la bande l'une de l'autre à l'ouverture des ébauches d'emballage (2) pour que la matière ou l'objet voulu soit placé dans les ébauches d'emballage.

11. Dispositif suivant la revendication 10, caractérisé en ce que les dispositifs de guidage consistent en barres ou tubes (19, 20) pour être introduits dans leurs propres dispositifs de suspension dans la bande, les dispositifs de suspension étant en forme de tunnels (17, 18).

12. Dispositif suivant la revendication 10, caractérisé en ce que les dispositifs de guidage consistent en tubes ou rails (40, 43) avec une fente longitudinale (46) dirigée vers le bas et avec un espace intérieur pour la réception de leurs propres dispositifs de suspension dans la bande, le dispositif de suspension étant sous forme d'une matière plus épaisse (39).

13. Dispositif suivant la revendication 10, caractérisé en ce qu'il comprend un dispositif entraîné (37) pour recueillir les parties en bandelettes séparées (10, 11) provenant de la bande pendant l'avancement simultané de la bande devant le poste de remplissage.

14. Dispositif suivant l'une quelconque des revendications 10 à 13, caractérisé en ce que les dispositifs de guidage sont stationnaires.

15. Dispositif suivant l'une quelconque des revendications 10 à 13, caractérisé en ce que les dispositifs de guidage sont capables de mouvement.

16. Dispositif suivant l'une quelconque des revendications 10 à 15, caractérisé en ce que les dispositifs de guidage sont arrangés dans le même plan horizontal.

17. Procédé de remplissage d'ébauches d'emballage arrangées en une bande souple continue, telle que définie dans la revendication 1, caractérisé en ce que la bande (1) est tirée vers l'avant pendant l'interaction avec les dispositifs de guidage (19, 20) ouvrant les ébauches d'emballage, qui sont en coopération avec les dispositifs de suspension (17, 18; 39) prémentionnés, en ce que les ébauches d'emballage (2) ainsi ouvertes sont remplies et fermées et en ce que les parties en bandelettes (10, 11) prémentionnées sont enlevées des ébauches d'emballage (2) à l'endroit des amorces de rupture (12) au moyen de deux moyens de guidage opposées (33, 34) qui changent en direction latérale la direction d'avancement des parties en bandelettes (10, 11) l'une par rapport à l'autre et par rapport à la bande, en sorte qu'elles soient arrachées librement à l'endroit de l'amorce de rupture (12):

18. Procédé pour l'ouverture d'ébauches d'emballage arrangées en une bande souple continue suivant la revendication 17, caractérisé en ce que la bande (1) est tirée vers l'avant au moyen d'un rouleau de reprise (37).

(12)

