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(54) **Method and apparatus for the individual packaging of products, and respective individually packaged product**

(57) The present invention relates to a method (1) for the individual packaging of products (5), a machine (2) which applies the method (1) and a respective individual package (3) for products (5). The method (1) and the machine (2) allow to obtain, in a fully automated manner, a package (3) provided with a closure seal (21) which can have any shape and size.

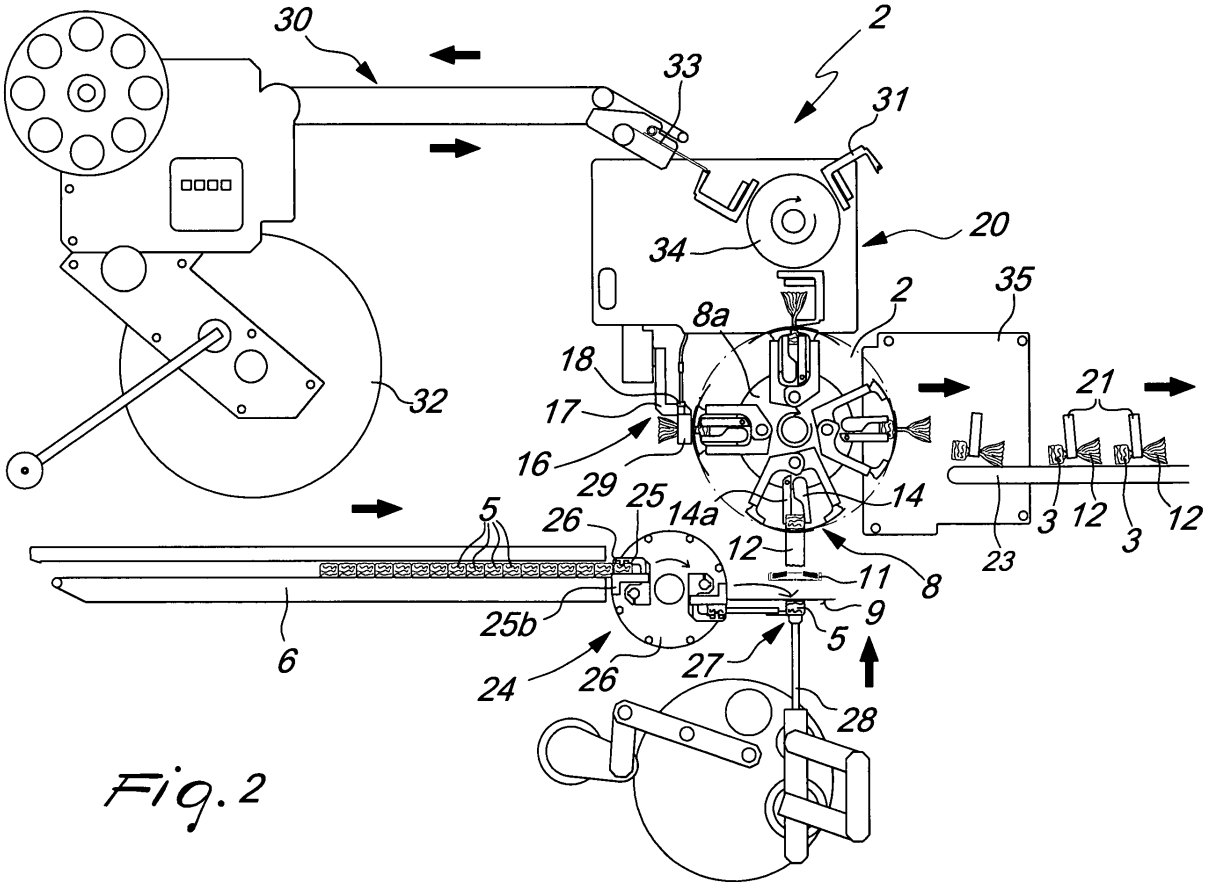

Fig. 2

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Description

[0001] The present invention relates to a method for the individual packaging of products, to a machine for performing the method, and to a respective individual package for products.

[0002] In the field of product wrapping, the technology is known which allows to package each individual product by means of a respective wrapper which surrounds it, said wrapper being fastened closed by means of adhesive labels and/or adhesives which are distributed appropriately.

[0003] This production technology allows to obtain packages which differ almost exclusively in the color and quality of the wrapper or at the most in the adhesive label that is applied.

[0004] Such adhesive label can be a sort of small stamp, which is pasted onto the outer surface of the wrapper, or a band which surrounds the packaged product; in each of these cases, the format of the label is forced by packaging requirements (it must comply with the units intended to apply it in known packaging lines).

[0005] Labels other than the cited stamps and bands are generally applied manually by assigned personnel, with an evident increase in costs and possible inaccuracies. In certain cases, the application of labels having particular shapes (especially in food products) has the advantage of giving assurance to the buyer that the product has not been opened previously and/or tampered with (label as a closure seal of guarantee).

[0006] The aim of the present invention is to provide a method for the individual packaging of products which allows the simple application of adhesive labels of any shape and size.

[0007] Another object of the present invention is to provide a machine which applies this method in a fully automated manner.

[0008] Another object of the present invention is to provide an individual package for products which is provided with an adhesive label which can constitute a tamper-evident seal.

[0009] Another object of the present invention is to provide a method for the individual packaging of products, a machine which applies said method and a respective individual package for products which have low costs, are relatively simple to provide in practice, and are safe in application.

[0010] This aim and these and other objects, which will become better apparent hereinafter, are achieved by the present method for the individual packaging of products, which consists in: arranging the individual products on a feed line; taking each product from the feed line and arranging it proximate to a wrapping unit with the interposition of packaging material between the product and the portion of the unit that faces it; moving the product towards said unit, thus bringing it into contact with said packaging material which will wrap around it, constituting a partial wrapper; coupling the product and its partial wrapper to said unit by means of grip elements of said unit; directing the grip element that supports the product and its partial wrapper toward a closure station, with consequent fastening for closure of the open part of the wrapper by means of guillotine assemblies; directing the grip element that supports the product and its wrapper, monolithically with the respective guillotine assemblies, toward a station for applying a seal, consequently applying an adhesive flap around the portion of the wrapper that is clamped by said guillotine assemblies; freeing the packaged product from the guillotine assemblies; directing the grip element of said unit toward an output line, and opening the grip element, releasing the packaged product onto said line.

[0011] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a method for individually packaging products, of a machine that applies said method, and of a respective individual package for products, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a functional block diagram which describes the method according to the invention;

Figure 2 is a partially sectional schematic side view of a machine which applies the method according to the invention;

Figure 3 is a front view of a possible embodiment of an individual product package obtained by means of the method according to the invention;

Figure 4 is a front view of a possible embodiment of an individual product package obtained by means of the method according to the invention;

Figure 5 is a front view of a possible embodiment of an individual product package obtained by means of the method according to the invention.

[0012] With reference to the figures, the reference numeral 1 generally designates a method for the individual packaging of products, the reference numeral 2 generally designates a machine which applies the method 1, and the reference numeral 3 designates a respective individual product package.

[0013] The method 1 provides for a sequence of consecutive steps which initially entail arranging 4 individual products 5 on a feed line 6: the line 6 can be constituted by a conveyor belt, on which the individual products 5 are aligned and distributed according to the production requirements.

[0014] In the specific case, the products 5 can be chocolates, candy or small food products in general; the method 1 might in any case be applied also to gadgets, toys or articles of various kinds.

[0015] It is then necessary to pick 7 each product 5 from the feed line 6 and arrange it proximate to a wrapping unit 8 with the interposition of suitable packaging material 9 between the product 5 and the portion of the unit 8 that

faces it. It is then necessary to move 10 the product 5 toward the unit 8, bringing it into contact with the packaging material 9, which will wrap around it, constituting a partial wrapper.

[0016] It is important to point out that during the translational motion of the product 5 toward the unit 8 (a situation in which the product 5 rests with its base on the packaging material 9), the product 5 and the material 9 pass through a shaping enclosure 11 in order to flatten and arrange ("stretch") the material 9 along the outer surface of the product 5 so that free flaps 12 protrude with respect to the top of the product 5 so as to constitute the partial wrapper.

[0017] When the product 5, with its partial wrapper, reaches the unit 8, it has to be rigidly coupled 13 to the unit 8 by means of specific grip elements 14.

[0018] Advantageously, each grip element 14 must clamp the product 5 and its partial wrapper, modulating both the closure speed and the force with which it acts: in this manner, there is no risk of damaging the outer surface of the products 5, which in certain cases (for example chocolates) are extremely delicate.

[0019] The grip element 14 that supports the product 5 and its partial wrapper must then be directed 15 toward a closure station 16, consequently fastening shut the open part 12 of the wrapper by means of suitable guillotine assemblies 17.

[0020] According to one of the possible embodiments of the method 1 which is of particular practical interest, the guillotine assemblies 17 can be functionally associated with a heat-sealing element 18 for the mutual stable coupling of the portions 12 of packaging material 9 which face each other and are clamped by the guillotine assemblies 14: for this purpose, it is possible to use a material 9 of the heat-sealing type or to arrange on one of the surfaces of said material a small amount of hot-melt adhesive. By utilizing this heat-sealing step 18 also, the package 3 of the product 5 has a safer and more stable closure.

[0021] At this point it is necessary to direct 19 the grip element 14, which supports the product 5 and its wrapper, rigidly with the respective guillotine assemblies 17, toward a station 20 for applying a seal 21.

[0022] The arrangement of the seal 21 consists in applying an adhesive label (adhesive flap) around the portion of the wrapper 12 previously given a neck-like shape and clamped by the guillotine assemblies 17.

[0023] This adhesive label (adhesive flap) is arranged around said "neck" of packaging material 9 arranged above the product 5, with the function of allowing immediate identification of the package 3 (and therefore of the packaged product 5), at the same time ensuring that the package is not tampered with, since any previous opening would entail the breakage of the seal 21.

[0024] After applying the seal 21, it is necessary to release 22 the packaged product 5 (package 3) by opening the guillotine assemblies 17 and to direct the grip element 14 of the unit 8 toward an output line 23, onto which the package 3 can be released after the opening of the grip element 14.

[0025] A possible embodiment of a machine 2 for the individual packaging of products 5 is of the type which comprises a line 6 for feeding the products 5, an assembly for supplying the packaging material 9 (which is not shown in the figure but is constituted by any of the known assemblies used by traditional packaging machines).

[0026] The machine 2 differs from known ones due to the particular structure of the assembly designed for the individual wrapping of the products 5. The machine 2 in fact comprises a station 24 for picking an individual product 5 from the feed line 6: the station 24 is arranged downstream of the line 6 and is constituted by at least one grip device 25, which is associated with a base 26 which can move with respect to the frame of the machine 2 from a configuration in which it is aligned with the line 6 to a configuration in which it is aligned with the wrapping unit 8.

[0027] The grip device 25 comprises a pair of flanges 25a and 25b which are pivoted to the base 26: these flanges 25a and 25b can be oriented from a first configuration for aligning their grip ends with an individual product 5 which arrives from the line 6 to a second configuration in which they are rotated (synchronously) by an angle of substantially 180° in order to arrange the grip device 25 in alignment with the wrapping unit 8.

[0028] The grip device 25, in the second configuration, arranges the product 5 within a fixed seat 27 which is arranged below the unit 8: in this configuration in which the product 5 is contained in the seat 27, the packaging material 9, generally already sized into a portion adapted to package one individual product 5, is interposed between the product 5 and the unit 8.

[0029] The wrapping unit 8 is constituted by a rotating base 8a for supporting a plurality of grip elements 14, which comprise a pair of arms 14a and 14b which are pivoted to the unit 8 and can move with respect to each other from a closed configuration, in which one product 5 wrapped with the respective packaging material 9 is accommodated within a compartment formed between the two faces in mutual contact of the respective arms 14a and 14b (which close onto each other like a vice, placing in contact two mutually opposite faces), to an open configuration, in which the faces are spaced. In order to ensure gentle removal of the product 5 with the partial wrapper, thus avoiding any deformations of the product 5 which would make it unsuitable for sale, the pair of arms 14a and 14b comprises interposed shock-absorbing means.

[0030] It should be noted that according to an embodiment of particular practical interest, a shaping enclosure 11 for conveying the product is provided between the packaging material 9, which is arranged above the product 5 that is present in the fixed seat 27, and the grip elements 14; the enclosure 11 is constituted by a sleeve which is shaped substantially complementarily with respect to the product to be packaged and can have de-

formable bristles and/or spatulas along its internal surface. The product 5 therefore can perform a translational motion from the seat 27 toward the respective grip element 14 through the enclosure 11 (so that the material 9 is stretched along the lateral surfaces of the product 5, covering it precisely) by means of a lifting unit 28 provided in the base of the seat 27 and below it.

[0031] At least one respective guillotine assembly 17 for clamping the portion 12 of the packaging material 9 that protrudes from the top of the product 5 is arranged in the peripheral region of the path of the grip elements 14 during the rotation of the rotating base 8a that supports them.

[0032] In turn, the guillotine assembly 17 comprises at least one pair of mutually opposite rotating laminas 29, the facing ends of which have a V-shaped flared portion. When the laminas 29 of one assembly 17 move mutually closer, the facing ends (which can be mutually partially superimposed) delimit, between the vertices of the V-shaped flared portions, the portion 12 of the packaging material 9 that protrudes upward with respect to the top of the product 5.

[0033] According to an embodiment of particular practical interest, the rotating laminas 29 are four and are coupled to each other two by two in parallel conditions (substantially one on the other): in this manner, the laminas 29 delimit and clamp the portion 12 along two mutually parallel planes and the area comprised between said two planes is therefore particularly well clamped.

[0034] Moreover, the guillotine assembly 17 can comprise a heat-sealing element 18 which is aligned at least with part of the portion 12 that lies proximate to the portion delimited by the laminas 29 (in particular by acting, if there are four laminas 29, on the area comprised between the two planes). The heat-sealing element 18 therefore affects part of the portion 12 for the stable closure of the packaging material 9 around the product 5. For this purpose, the material 9 is appropriately chosen of a heat-sealing type; if the choice falls on a material 9 having different characteristics, it is possible to arrange on one of its surfaces a small amount of hot-melt adhesive which ensures its optimum reaction with respect to the heat-sealing element 18, allowing safer and more stable closure.

[0035] The station 20 for placing a seal is arranged along the peripheral region of the path of the grip elements 14 during the rotation of the rotating base 8a that supports them, after the guillotine assembly 17 along said path, and is constituted by a line 30 for feeding adhesive flaps (which constitute the seal 21), a pair of rotating levers 31 for the individual picking of the flaps (seals 21) and the subsequent arrangement of the flap (seal 21) in the portion 12 proximate to the region clamped by the at least one guillotine assembly 17.

[0036] The line 30 for supplying adhesive flaps (seals 21) comprises a roll 32 for storing the flaps arranged side-by-side (seals 21) on a supporting tape, a plate 33 for guiding the tape in output from the roller 32, and at least one element (the levers 31) for removing the adhesive flaps (seals 21) from the surface of the tape, which is aligned with the output end of the plate 33.

[0037] Said element is indeed constituted by the pair of rotating levers 31, the grip end of which has a shape and size which are substantially complementary to those of the respective flap (seal 21).

[0038] The tape can slide both on the upper surface and on the lower surface of the plate 33 and in fact rotates around the output end thereof: in this manner, the flaps (seals 21) arranged on its surface tend to separate (the radius of curvature of the tape around the output end of the plate is very small and the flaps separate easily from its surface) and can be removed easily by the pair of levers 31.

[0039] The at least one removal element is rigidly coupled to a carousel 34, which can rotate from a loading configuration, in alignment with the guiding plate 33 of the levers 31, to a deposition configuration, in alignment with the portion 12 which is comprised within the guillotine assembly 17 and is associated with the unit 8.

[0040] The levers 31 comprise internal channels which lead to a series of holes distributed on the grip end: said internal channels are associated with a pneumatic circuit in partial vacuum.

[0041] More specifically, according to an embodiment of particular practical interest, the rotating carousel 34 is constituted by a substantially cylindrical hermetic hollow element, which is provided with ducts for free circulation which lead to the channels of the respective levers 31 and with a channel for connection to a suction apparatus which ensures that partial vacuum is maintained: by means of the holes provided at the end of the levers 31 it is thus possible to retain the flaps (seals 21).

[0042] A station 35 for expulsion along a removal line 23 of the packaged product 3 is arranged on the peripheral region of the path of the grip elements 14 during the rotation of the rotating base 8a which supports them, after the station 20 along said path.

[0043] The individual package 3 for the product 5 obtained by following the method 1 is of the type that comprises an external enclosure 36 made of the packaging material 9 and one internal product 5.

[0044] The package 3 differs from known ones in that the product 5 has its base which rests on a substantially central portion of the material 9 (which is already prepared in the size adapted to complete packaging); the outermost regions of the material 9 instead rest on the lateral surfaces of the product 5 so as to protrude upward from them with an upper tuft 37. An adhesive flap surrounds the portion 12, constituting the closure seal 21.

[0045] Advantageously, the internal surface of the material 9, at the portion 12, can be mutually heat-sealed by means of the heat-sealing element 18 which acts directly on the material 9 (heat-sealing it) or on a layer of hot-melt adhesive arranged beforehand on the surface of the material 9.

[0046] Positively, the adhesive flap (seal 21) compris-

es variously shaped areas 38 which bear drawings and lettering and can therefore be used to give a distinctive and characteristic appearance to the entire package 3.

[0047] It has thus been shown that the invention achieves the intended aim and objects.

[0048] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0049] All the details may further be replaced with other technically equivalent ones.

[0050] In the exemplary embodiments shown, individual characteristics, given in relation to specific examples, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

[0051] Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subj ect of a disclaimer.

[0052] In practice, the materials used, as well as the shapes and dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

[0053] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A method for the individual packaging of products, which consists in:

   - arranging (4) individual products (5) on a feed line (6);
   - taking (7) each product (5) from the feed line (6) and arranging it proximate to a wrapping unit (8) with the interposition of packaging material (9) between the product (5) and the portion of the unit (8) that faces it;
   - moving (10) the product (5) towards said unit (8), thus bringing it into contact with said packaging material (9) which will wrap around it, constituting a partial wrapper;
   - coupling (13) the product (5) and its partial wrapper to said unit (8) by means of grip elements (14) of said unit (8);
   - directing (15) the grip element (14) that supports the product (5) and its partial wrapper toward a closure station (16), with consequent fastening for closure of the open part of the wrapper by means of guillotine assemblies (17);
   - directing (19) the grip element (14) that supports the product (5) and its wrapper, monolithically with the respective guillotine assemblies (17), toward a station (20) for applying a seal (21), consequently applying an adhesive flap around the portion (12) of the wrapper that is clamped by said guillotine assemblies (17);
   - freeing (22) the packaged product from the guillotine assemblies (17), directing the grip element (14) of said unit (8) toward an output line (23), and opening the grip element (14), releasing the packaged product (3) onto said line (23).

2. The method according to claim 1, **characterized in that** during the translational motion of the product (5) toward the unit (8), while it is in contact with the packaging material (9), the product (5) and the material (9) pass through a shaping enclosure (11) in order to arrange the packaging material (9) along the outer surface of the product (5) so that the free flaps protrude with respect to the top of said product (5) so as to constitute said partial wrapper.

3. The method according to claim 1, **characterized in that** said grip element (14) clamps said product (5) and its partial wrapper in a controlled manner, modulating both the closure speed and the force with which it acts.

4. The method according to claim 1, **characterized in that** said guillotine assemblies (17) are functionally associated with a heat-sealing element (18) for the mutual stable coupling of the portions of packaging material (9) which face each other and are clamped by said guillotine assemblies (17).

5. A machine for the individual packaging of products (5) of the type which comprises a line (6) for feeding the products (5), an assembly for supplying the packaging material (9), an assembly for wrapping each individual product (5), **characterized in that** it comprises a station (24) for removing an individual product (5) from said supply line (6), which is arranged downstream of said line (6) and is constituted by at least one grip device (25), which is associated with a base (26) which can move with respect to the frame of said machine (2) from a configuration of alignment with said line (6) to a configuration of alignment with a wrapping unit (8), which is constituted by a rotating base (8a) for supporting a plurality of grip elements (14), at least one respective shaping enclosure (27) for conveying the product (5), associated with the respective packaging material (9), from said grip device (25) to the grip elements (14) of said unit (8) and at least one respective guillotine assembly (17) for clamping the portion (12) of packaging material that protrudes from the top of said product (5), a station (20) for arranging a seal (21) which is constituted by a line (30) for feeding adhesive flaps, a pair of levers (31) which can rotate to individually remove said flaps and subsequently arrange said flap in the por-

tion (12) of packaging material (9) proximate to the portion that is clamped by the at least one guillotine assembly (17), and a station (35) for expulsion on a line for removal of the packaged product (3).

6. The machine according to claim 5, **characterized in that** said at least one grip device (25) of said removal station (24), which is associated with a base (26) which can move with respect to the frame of said machine (2), comprises a pair of flanges (25a, 25b) which are pivoted to said base (26) and whose ends are aligned, in said first configuration of alignment with said line (6), with a single product (5) which arrives from said line (6), said flanges (25a, 25b) being able to rotate synchronously through an angle of substantially 180° in order to arrange the grip device (25) in said second configuration for alignment with said unit (8) for wrapping an individual product (5).

7. The machine according to claim 6, **characterized in that** said grip device (25), in said second configuration, arranges the product (5) within a fixed seat (27) of the machine (2) which is arranged below the grip elements (14) of the individual product (5) of said unit (8), the packaging material (9) being interposed between said product (5) in said seat (27) and said grip elements (14).

8. The machine according to claim 7, **characterized in that** said shaping enclosure (11) for conveying the product (5) is interposed between the packaging material (9), arranged above the product (5) that is present in said fixed seat (27), and said grip elements (14) for gripping said unit (8) and is constituted by a sleeve which is substantially shaped complementarily to the product (5) to be packaged, said product (5) being movable from said seat (27) toward the respective grip element (14) through said enclosure (11) by means of a lifting unit (28) which is provided in the base of said seat (27).

9. The machine according to claim 5, **characterized in that** said grip elements (14) of said unit (8) comprise two arms (14a, 14b) which are pivoted to said unit (8) and can move mutually from a closed configuration, in which a product (5) wrapped with the respective packaging material (9) is accommodated within a compartment which is formed between the two mutually contacting faces of the respective arms (14a, 14b), to an open configuration, in which said faces are spaced, shock-absorbing means being interposed between said pair of arms (14a, 14b).

10. The machine according to claim 5, **characterized in that** said guillotine assembly (17) comprises at least one pair of mutually opposite rotating laminas, the facing ends of which are provided with a V-shaped flared portion, said facing ends being mutually superimposable, delimiting between the vertices of said V-shaped flared portions the portion (12) of packaging material (9) which protrudes upward with respect to the top of said product (5).

11. The machine according to claim 10, **characterized in that** said rotating blades are four and are mutually coupled in pairs in a parallel configuration, said laminas delimiting and clamping the portion (12) of packaging material (9) that protrudes from the product (5) along two mutually parallel planes.

12. The machine according to claims 10 and 11, **characterized in that** said guillotine assembly (17) comprises a heat-sealing element (18), which is aligned at least with part of the portion (12) of packaging material (9) that protrudes from the product (5) and lies proximate to the part delimited by said facing ends, said heat-sealing element (18) affecting part of said portion (12) for the stable closure of the packaging material (9) around said product (5).

13. The machine according to claim 5, **characterized in that** said line (30) for feeding adhesive flaps comprises a roll (32) for storing the flaps arranged side-by-side on a supporting tape, a plate (33) for guiding said tape in output from the roll (32), said tape being able to slide both on the upper surface and on the lower surface of said plate (33) by turning around its output end, at least one element, the levers (31), for removing said adhesive flaps from the surface of the tape, which is aligned with the output end of the plate (33), said element being constituted by two rotating levers (31) whose grip end is shaped and sized substantially complementarily with respect to the respective flap.

14. The machine according to claim 13, **characterized in that** said at least one removal element is rigidly coupled to a carousel (34) which can rotate from a loading configuration, in which it is aligned with said guiding plate (33), to a deposition configuration, which is aligned with the portion (12) of packaging material (9) which is comprised within said guillotine assembly (17).

15. The machine according to claim 5, **characterized in that** said levers (31) comprise internal channels which lead to a series of holes which are distributed on the grip end, said channels being associated with a pneumatic circuit in partial vacuum.

16. The machine according to claim 15, **characterized in that** said rotating carousel (34) is constituted by a substantially cylindrical hermetic hollow element, which is provided with free circulation ducts which lead to the channels of the respective levers (31) and

with a channel for connection to a suction apparatus.

17. A single package for a product (5) of the type that comprises an external enclosure (36) made of packaging material (9) and an internal product (5), **characterized in that** said product (5) has its base rested on a substantially central portion of the packaging material (9), the outermost regions of the packaging material (9) resting on the lateral surfaces of the product (5) so as to protrude upward from them, an adhesive flap surrounding the portion (12) that protrudes from the top of the product (5) so as to constitute a closure seal (21).

18. The package according to claim 15, **characterized in that** said adhesive flap comprises variously shaped areas (38) which bear designs and lettering.

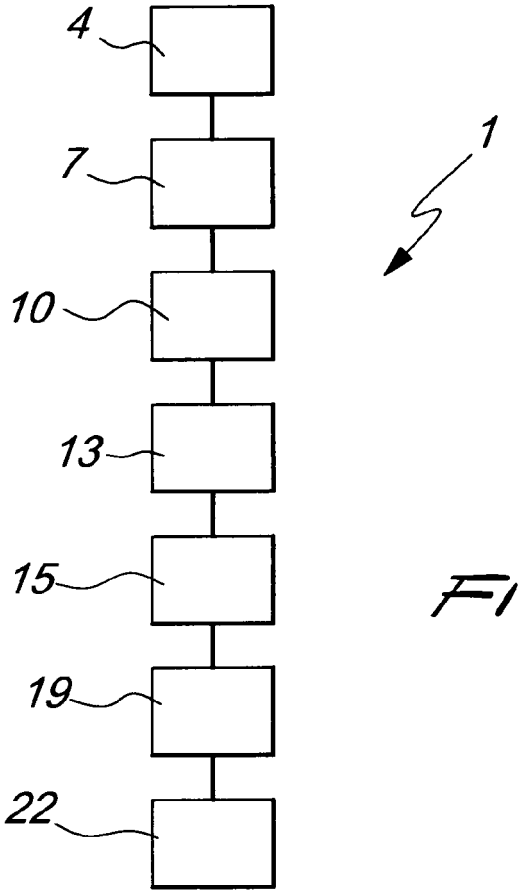

Fig. 1

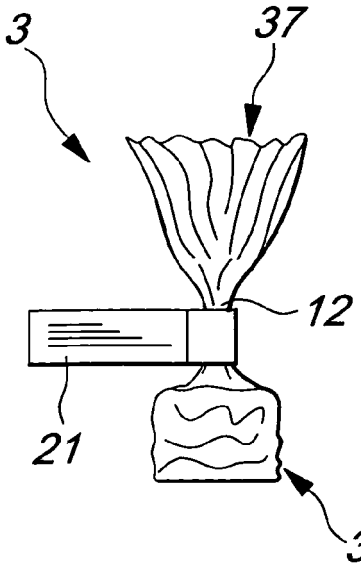

Fig. 3

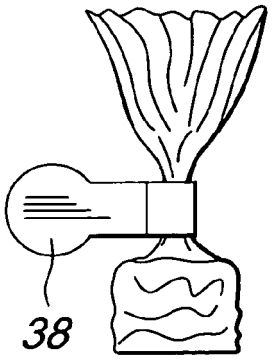

Fig. 4

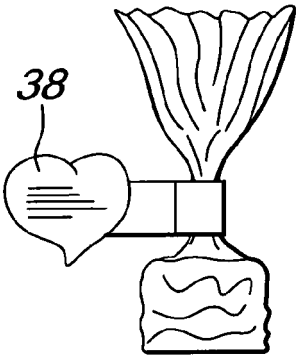

Fig. 5

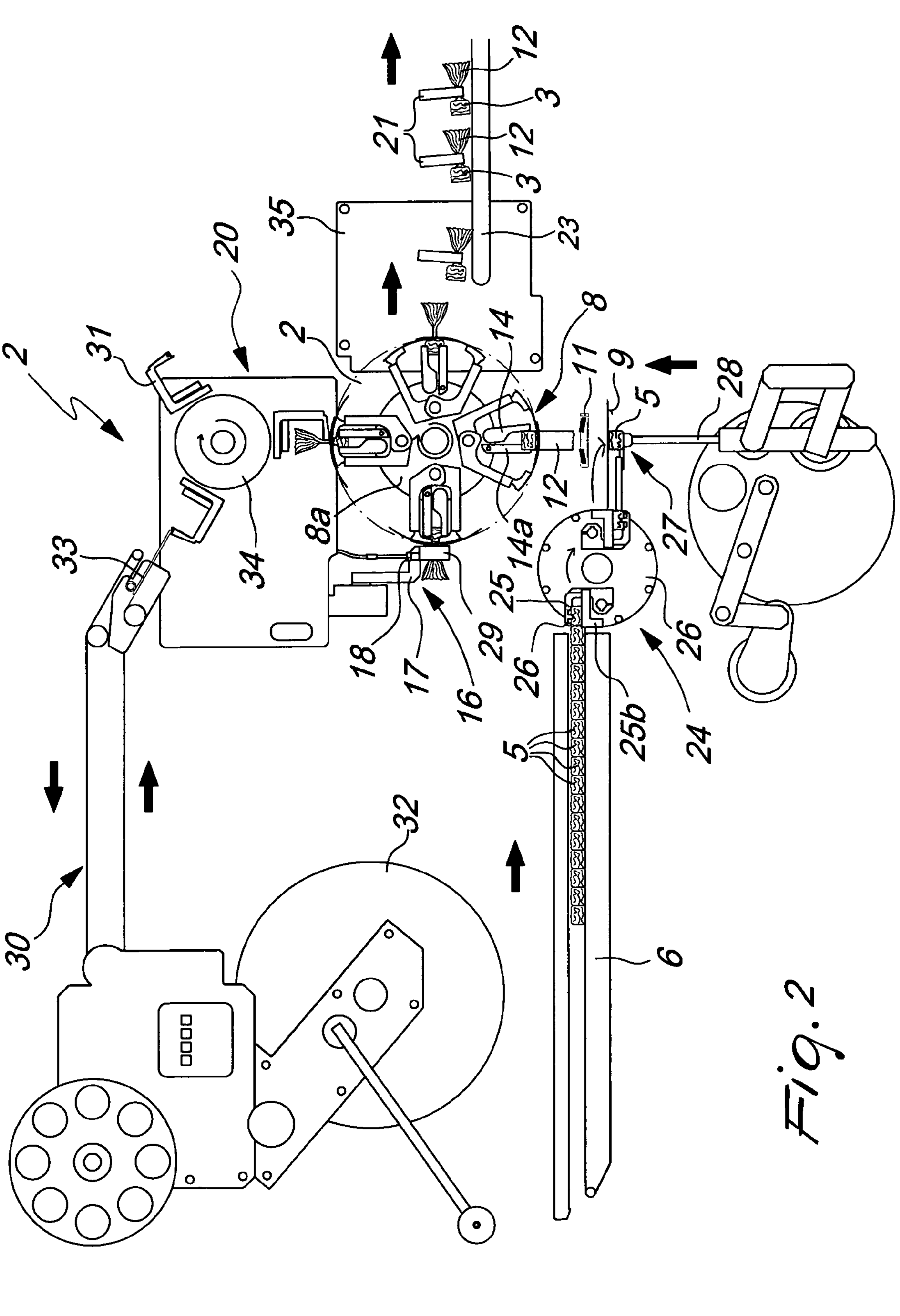
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Fig. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 42 5618

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 199 55 667 A1 (FEODORA CHOCOLADE GMBH & CO [DE] FEODORA CHOCOLADE GMBH & CO KG [DE]) 7 June 2001 (2001-06-07) * column 2, lines 11-35; figures 1,2 *	17	INV. B65B25/00 B65B11/54 B65B51/06
A		1,5	B65D75/18
A	AU 512 395 B (TECHNOKEM PTY LTD) 9 October 1980 (1980-10-09) * claims 1,2; figure 1 *	1,5	
A	GB 2 243 135 A (THURNE ENG CO LTD [GB]) 23 October 1991 (1991-10-23) * page 5, lines 12-16; figure 2 *	17,18	
A	EP 1 671 885 A (FIMA SRL [IT]) 21 June 2006 (2006-06-21) * the whole document *	1,5	

TECHNICAL FIELDS SEARCHED (IPC)

B65B
B65D
B65C

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
The Hague	7 February 2007	Grentzius, Wim

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

European Patent Office

Application Number
EP 06 42 5618

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-16

European Patent Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 06 42 5618

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-16

Method and machine for packaging products

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2. claims: 17,18

Packaged product

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 06 42 5618

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

07-02-2007

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