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(54) PACKAGING ASSEMBLY

(57) A packaging assembly (1) comprising a carousel (2) provided with a plurality of work stations arranged in succession; the carousel (2) comprises a grip station (3), in which respective grip elements (4) receive at least one individual product (P) with the interposition of a covering sheet (A); the carousel (2) further comprises a covering and folding station (6) provided with handling tabs for the flaps (B) of the sheet (A) that protrude from the product (P), and a station (7) for delivering the product (P) to an output line (8); the carousel (2) comprises, according to the invention, a station (9) for shaping the covering sheet (A) at least partially wrapped around a product (P); the shaping station (9) comprises at least one detachable cutting device (10) that delimits a predefined contour and at least one respective abutment (11); the covering sheet (A) at least partially wrapped around a product (P) is interposable, for its shaping, between the cutting device (10) and the respective abutment (11); the shaping station (9) is suitable for accommodating a plurality of different cutting devices (10) that have different shapes and are installed one at a time.

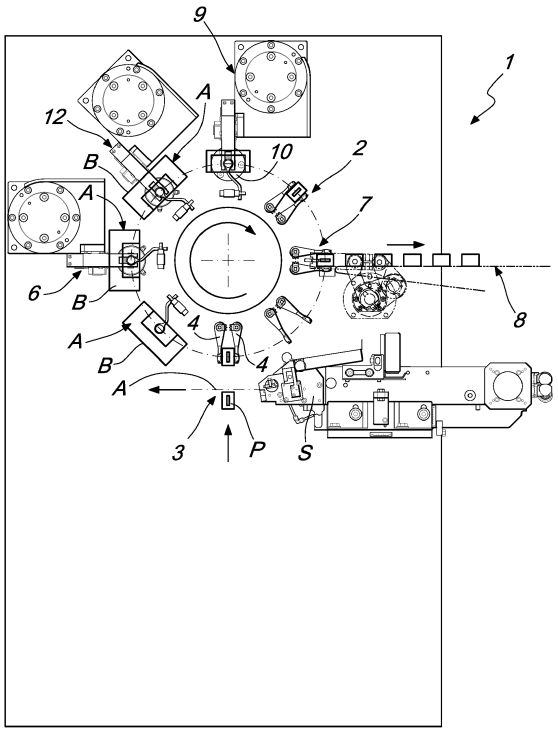

Fig. 1

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Description

[0001] The present invention relates to a packaging assembly.

[0002] Some products, such as chocolates, candy, pastries, confectionery or rotisserie or delicatessen items, are offered for sale in individual wrappings.

[0003] The purpose of this type of packaging is to preserve the organoleptic characteristics of the product and also to avoid possible contaminations arising from direct contact with the outside environment.

[0004] Like all packaging, furthermore, the wrapping also seeks the goal of protecting the product in order to avoid damage thereto as a consequence of direct contact with other products or with the environment.

[0005] It is specified that the packaging ever more frequently performs additional functions that are extremely important for the commercial success of the product contained therein: first of all, the package must be such as to make the product easily identifiable to the eyes of customers who know it already; furthermore, the package must be such as to rouse the curiosity of a potential client who does not know the product, leading him/her to purchase it (the package must be attractive in order to encourage the potential user to make the purchase).

[0006] The problem that occurs with machines designed to package products of the type listed previously is predominantly linked to limited versatility.

[0007] A machine designed for the provision of a specific packaging in fact is unlikely to be convertible to a package of a different type and format.

[0008] This means that it is very difficult for the owner of said machine to diversify his production (for example by providing mutually different packagings for the same products or the same packaging for products having different shape and/or dimensions).

[0009] However, it is evident that this need is instead strongly felt, since it is increasingly frequent to resort to advertising campaigns in which the packaging of the product performs a fundamental role and in which it may be necessary to combine it with various formats and types of product.

[0010] Likewise, in an attempt to rekindle the interest of the public in an already known product, it might be useful to propose a new packaging for it, in order to set up a new advertising campaign centered on it.

[0011] The aim of the present invention is to solve the problems described above, by proposing a packaging assembly that is suitable to provide packagings of a different shape.

[0012] Within this aim, an object of the invention is to propose a packaging assembly that is suitable to work on products having different shape and dimensions, albeit within a range of predefined formats.

[0013] Another object of the invention is to propose a suitable packaging assembly that allows to protect effectively the product against contact and potential contamination on the part of the outside environment.

[0014] A further object of the present invention is to provide a suitable packaging assembly with modest costs, which is relatively simple to provide in practice and safe in application.

[0015] This aim and these objects are achieved by a packaging assembly of the type comprising a carousel provided with a plurality of work stations arranged in succession, comprising a grip station, in which respective grip elements receive at least one individual product with the interposition of a covering sheet, a covering and folding station provided with handling tabs for the flaps of said sheet that protrude from said product, and a station for delivering said product to an output line, characterized in that it comprises a station for shaping said covering sheet at least partially wrapped around a said product, said shaping station comprising at least one detachable cutting device that delimits a predefined contour and at least one respective abutment, said covering sheet at least partially wrapped around a said product being interposable, for its shaping, between said cutting device and the respective abutment, said shaping station being suitable for accommodating a plurality of different cutting devices that have different shapes and are installed one at a time.

[0016] Further characteristics and advantages of the invention will become better apparent from the description of a preferred but not exclusive embodiment of the suitable packaging assembly according to the invention, illustrated by way of nonlimiting example in the accompanying drawings, wherein:

Figure 1 is a front view of a packaging assembly according to the invention;
Figure 2 is a partially sectional side view of the assembly of Figure 1;
Figure 3 is a top view of the assembly of Figure 1.

[0017] With reference to the figures, the reference numeral 1 generally designates a packaging assembly.

[0018] The packaging assembly 1 comprises a carousel 2 which is provided with a plurality of work stations arranged in succession.

[0019] In its input area, the carousel 2 comprises a grip station 3 in which respective grip elements 4 receive at least one individual product P with the interposition of a covering sheet A.

[0020] The grip elements 4 can be orientable in order to facilitate the positioning of the product P and of the sheet A within which it is partially wrapped according to the configuration that is most suitable for the subsequent steps of the wrapping process.

[0021] The product P arrives at the grip station 3 of the carousel 2 radially, from the outside inward, by means of appropriate transfer means. Along its path, the product P intercepts the sheet A, which is dispensed by a respective unit 5 along a direction that is transverse with respect to the path of the product P. In this manner, the grip elements 4 receive the product P partially wrapped in the

sheet A, determining a first step of the wrapping of the product P.

[0022] The carousel 2 further comprises a covering and folding station 6, which is provided with movement tabs for the flaps B of the sheet A that protrude with respect to the product P.

[0023] The carousel 2 further comprises a station 7 for delivering the product to an output line 8.

[0024] According to the invention, the carousel 2 further comprises a station 9 for shaping the covering sheet A, when the latter is at least partially wrapped around a product P.

[0025] The shaping station 9 comprises at least one detachable cutting device 10, which delimits a predefined contour and at least one respective abutment 11.

[0026] The covering sheet A (which arrives at the shaping station 9 at least partially wrapped around a respective product P) is interposed, for its shaping, between the cutting device 10 and the respective abutment 11.

[0027] The cutting device 10 and its abutment 11 have a mutual relative approach/spacing motion in order to clamp the sheet and cut it (by virtue of the action of the cutting part of the device 10).

[0028] The shaping station 9 according to the invention is suitable to accommodate a plurality of different cutting devices 10 which have a different shape and are installed one at a time.

[0029] The cutting devices 10 can be replaced with others in a simple and rapid manner.

[0030] According to a particular embodiment of unquestionable practical interest, the cutting devices 10 can validly comprise at least one die-cutter: each die-cutter can be coupled detachably to the respective device 10.

[0031] In this case, the abutment 11 has a breadth that exceeds the contour of the respective die-cutter, for correct and complete resting of the cutting edge thereof, with the interposition of the covering sheet A.

[0032] It is specified furthermore that if multiple different and mutually interchangeable cutting devices 10 are available, at least one of said cutting devices 10 has a contour that substantially corresponds to the contour of the product to be packaged and dimensions that are larger than those of said product.

[0033] In this manner, the sheet A, once wrapping has been completed, is arranged in such a manner as to reproduce contour that is similar to the contour of the product but larger.

[0034] More generically, again if multiple different and mutually interchangeable cutting devices 10 are available, at least one of them has a contour the shape of which is chosen preferably among a polygon, a flower, a heart, an animal, a portion of a circle, a star, a card suit, a means of transport, an egg, a toy, an instrument, a tool and the like.

[0035] In this manner it is possible to provide a wrapping that has a particular contour, with shapes that can resemble aspects of the advertising campaign associated with the product P or in any case can be attractive for the potential buyer.

[0036] This type of wrapping also lends itself to the provision of merchandising related to a given theme: the contours of the wrappings of the products P in fact can have a profile that resembles one of the elements of the reference theme.

[0037] With particular reference to a constructive solution of unquestionable interest in practice and in application, the carousel 2 can further comprise a station 12 for the stable coupling of the flaps B of the covering sheet A that protrude with respect to the product P.

[0038] The need to provide a stable coupling between the flaps B of the sheet A is due to the increasingly frequent demand for isolation and segregation of the product in order to reduce the risk of contamination thereof by the outside environment.

[0039] The stable coupling of the flaps B can be obtained by heat-sealing, adhesive bonding and the like.

[0040] It should be specified that the coupling station 12 comprises two mutually opposite pressers 13 for the clamping of the flaps B of the covering sheet A that are mutually juxtaposed.

[0041] If a layer of adhesive material (glue, adhesive tape and the like) is interposed between the flaps B, the mutual clamping of the flaps B is sufficient to ensure their stable joining.

[0042] Said adhesive material is of the type suitable to ensure stable grip even at room temperature: in particular, a cross-linking of the adhesive material occurs which stably couples the flaps B between which it is interposed.

[0043] It is specified that in some cases the coupling station 12 can validly comprise at least one heater, arranged proximate to the contact surface of at least one of the two pressers 13.

[0044] In this manner, the heated surface, by abutting during compression against at least one of the mutually opposite flaps B of the covering sheet A, facilitates the mutual heat-sealing of the flaps B.

[0045] It is specified that direct heat-sealing of the flaps B (when the sheet A for example is made of thermoplastic material) may occur or may facilitate the adhesion of a heat-activatable adhesive (which softens above a certain temperature, acquiring the ability to adhere to the sheet A stably when it has returned again to ambient temperature).

[0046] It is deemed useful to point out that at least one of the stations 6, 9, 12 comprises a blade for cutting at least one edge of the covering sheet A.

[0047] The incision produces a notch which constitutes an easy opening line for the packaged product.

[0048] It is specified therefore that the packaged product therefore is also easy to open even though a stable coupling of the flaps B is provided.

[0049] According to a particularly efficient embodiment, the shaping station 9 can comprise a suction circuit 14, through which the waste generated at each cut of the edges of the flaps B that protrude from the cutting device 10 is aspirated: in this manner, the operation of the as-

sembly 1 according to the invention is particularly efficient and the accumulation of waste trimmings (removed from the sheet A) is avoided.

[0050] Advantageously, the present invention solves the problems presented earlier, proposing a packaging assembly 1 that is suitable to provide packagings having a different shape.

[0051] By replacing the cutting devices 10 it is in fact possible to provide wrappers having a shape and dimensions substantially of any kind.

[0052] Conveniently, the packaging assembly 1 is suitable to operate on products having a different shape and dimensions, albeit within a range of predefined formats. Cutting devices 10 having a shape and dimensions suitable for any product A that is within the operating dimensions of the assembly 1 can in fact be provided.

[0053] Effectively, the packaging assembly 1 allows to protect effectively the product P from contact and potential contamination on the part of the outside environment by virtue of the coupling of the flaps B of the sheet A provided by the station 12.

[0054] Validly, the packaging assembly 1 is relatively simple to provide in practice and can be provided with modest costs: these characteristics make it a technical solution that is safe in application.

[0055] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims; all the details may further be replaced with other technically equivalent elements.

[0056] For example, heaters may be arranged also in the covering and folding station 6, so as to provide a preventive heat-sealing or preheating, which are functional to the subsequent stable coupling provided in the station 12 (in which additional heaters may be present).

[0057] 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.

[0058] In practice, the materials used, as well as the dimensions, may be any according to the requirements and the state of the art.

[0059] The disclosures in Italian Patent Application no. 102015000079678 (UB2015A006271), from which this application claims priority, are incorporated herein by reference.

[0060] 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 packaging assembly of the type comprising a carousel (2) provided with a plurality of work stations arranged in succession, comprising a grip station (3), in which respective grip elements (4) receive at least one individual product (P) with the interposition of a covering sheet (A), a covering and folding station (6) provided with handling tabs for the flaps (B) of said sheet (A) that protrude from said product (P), and a station (7) for delivering said product (P) to an output line (8), **characterized in that** it comprises a station (9) for shaping said covering sheet (A) at least partially wrapped around a said product (P), said shaping station (9) comprising at least one detachable cutting device (10) that delimits a predefined contour and at least one respective abutment (11), said covering sheet (A) at least partially wrapped around a said product (P) being interposable, for its shaping, between said cutting device (10) and the respective abutment (11), said shaping station (9) being suitable for accommodating a plurality of different cutting devices (10) that have different shapes and are installed one at a time.

2. The packaging assembly according to claim 1, **characterized in that** said cutting devices (10) comprise at least one die-cutter, each said die-cutter being detachably associable with the respective device (10), said abutment (11) having a width that exceeds the contour of the respective die-cutter for correct and complete resting of the cutting edge thereof, with the interposition of said covering sheet (A).

3. The packaging assembly according to claim 1, **characterized in that** at least one of said cutting devices (10) has a contour that substantially corresponds to the contour of the product (P) to be packaged and larger dimensions than said product.

4. The packaging assembly according to claim 1, **characterized in that** at least one of said cutting devices (10) has a contour the shape of which is chosen preferably among a polygon, a flower, a heart, an animal, a portion of a circumference, a star, a card suit, a means of transport, an egg, a toy, an instrument, a tool and the like.

5. The packaging assembly according to claim 1, **characterized in that** it comprises a station (12) for the stable coupling of the flaps (B) of said covering sheet (A) that protrude with respect to said product (P).

6. The packaging assembly according to claim 5, **characterized in that** said coupling station (12) comprises two mutually opposite pressers (13), for clamping the mutually juxtaposed flaps (B) of said covering sheet (A).

7. The packaging assembly according to claim 6, **characterized in that** said coupling station (12) compris-

es at least one heater, which is arranged proximate to the contact surface of at least one of the two pressers (13), said surface abutting, during compression, against at least one of said mutually opposite flaps (B) of said covering sheet (A).

8. The packaging assembly according to one or more of the preceding claims, **characterized in that** at least one of said stations (6, 9, 12) comprises a blade for cutting into at least one edge of said covering sheet, the notch provided on said sheet (A) by said cut constituting a line for facilitated opening for the packaged product.

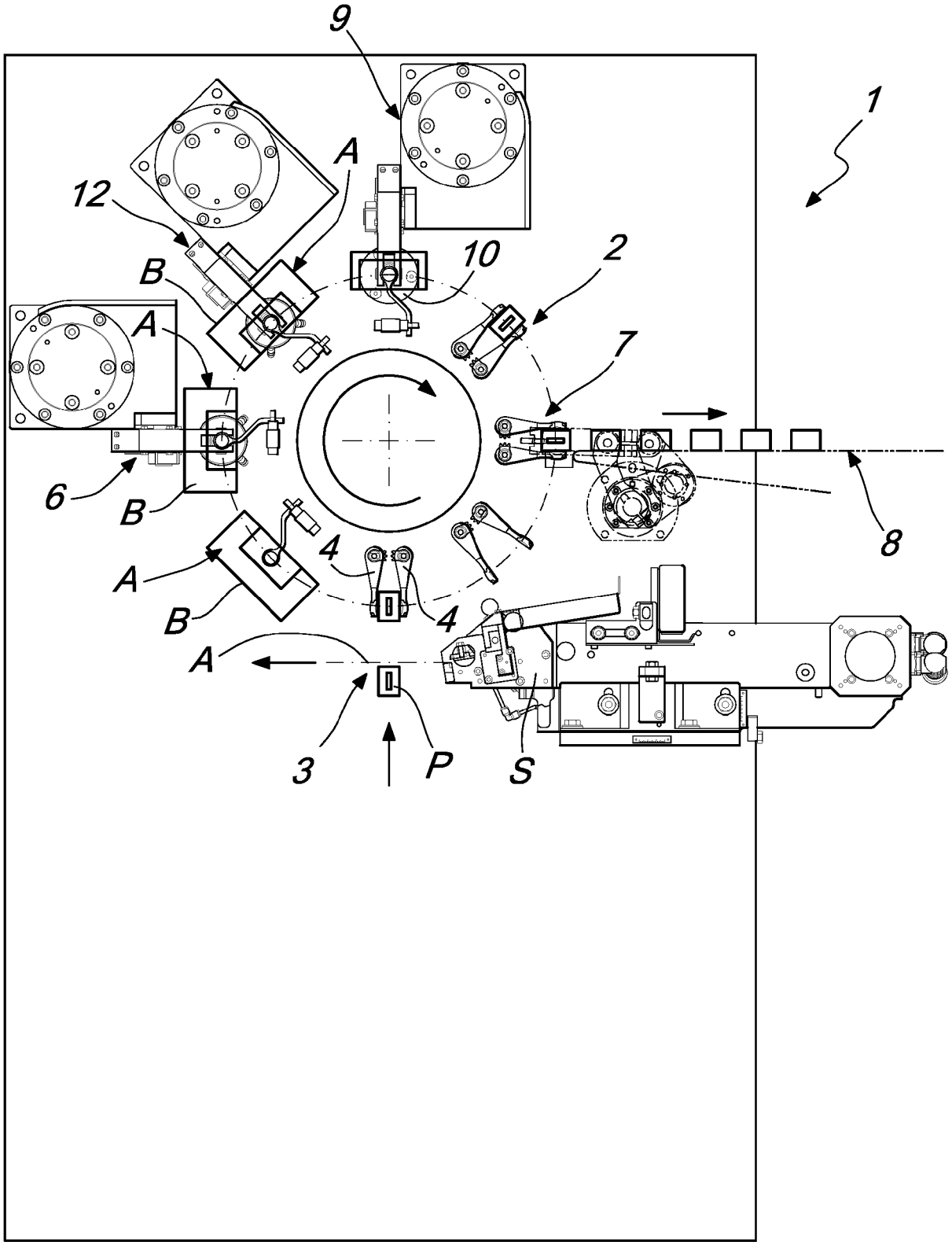

Fig. 1

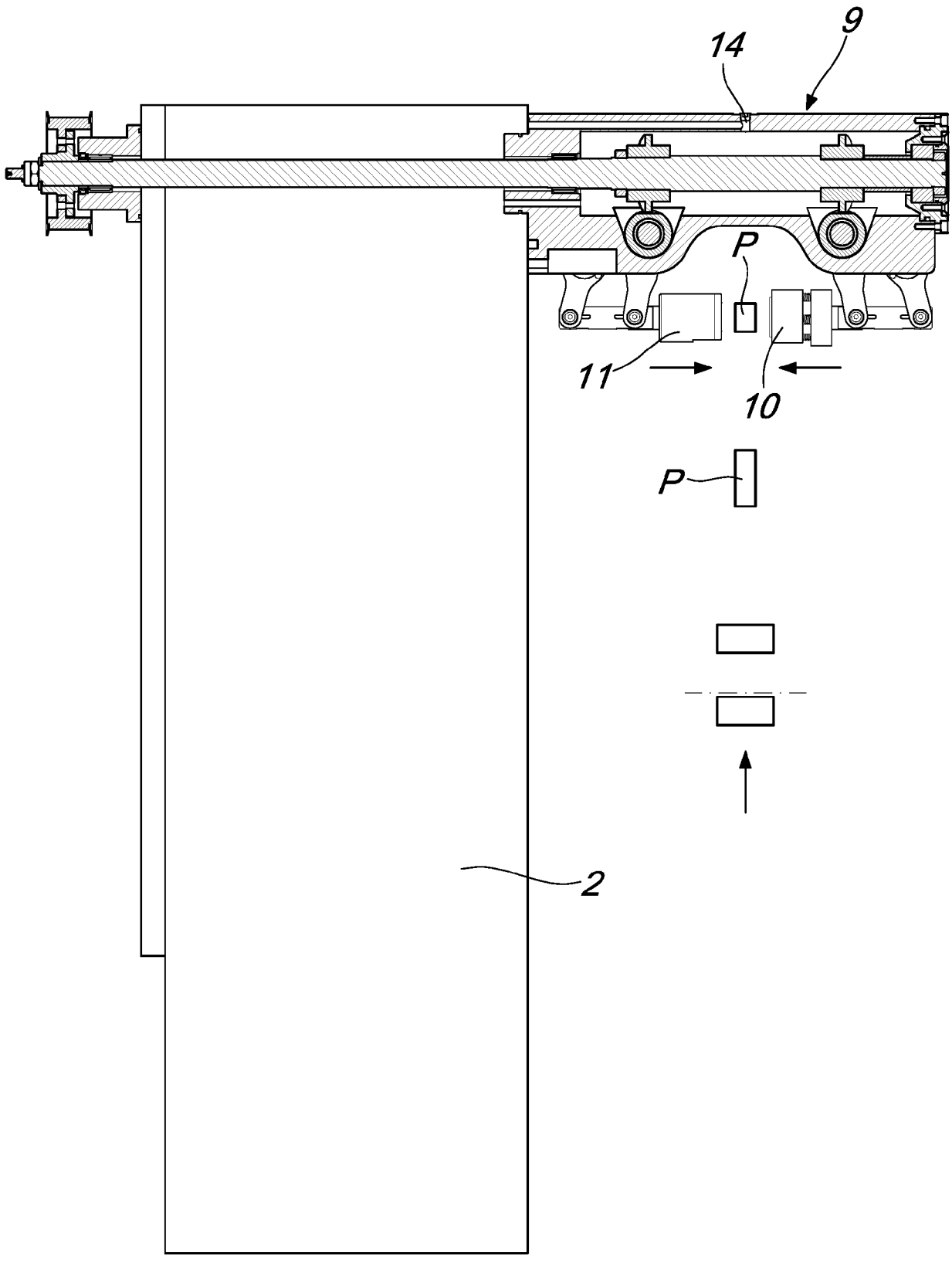

Fig. 2

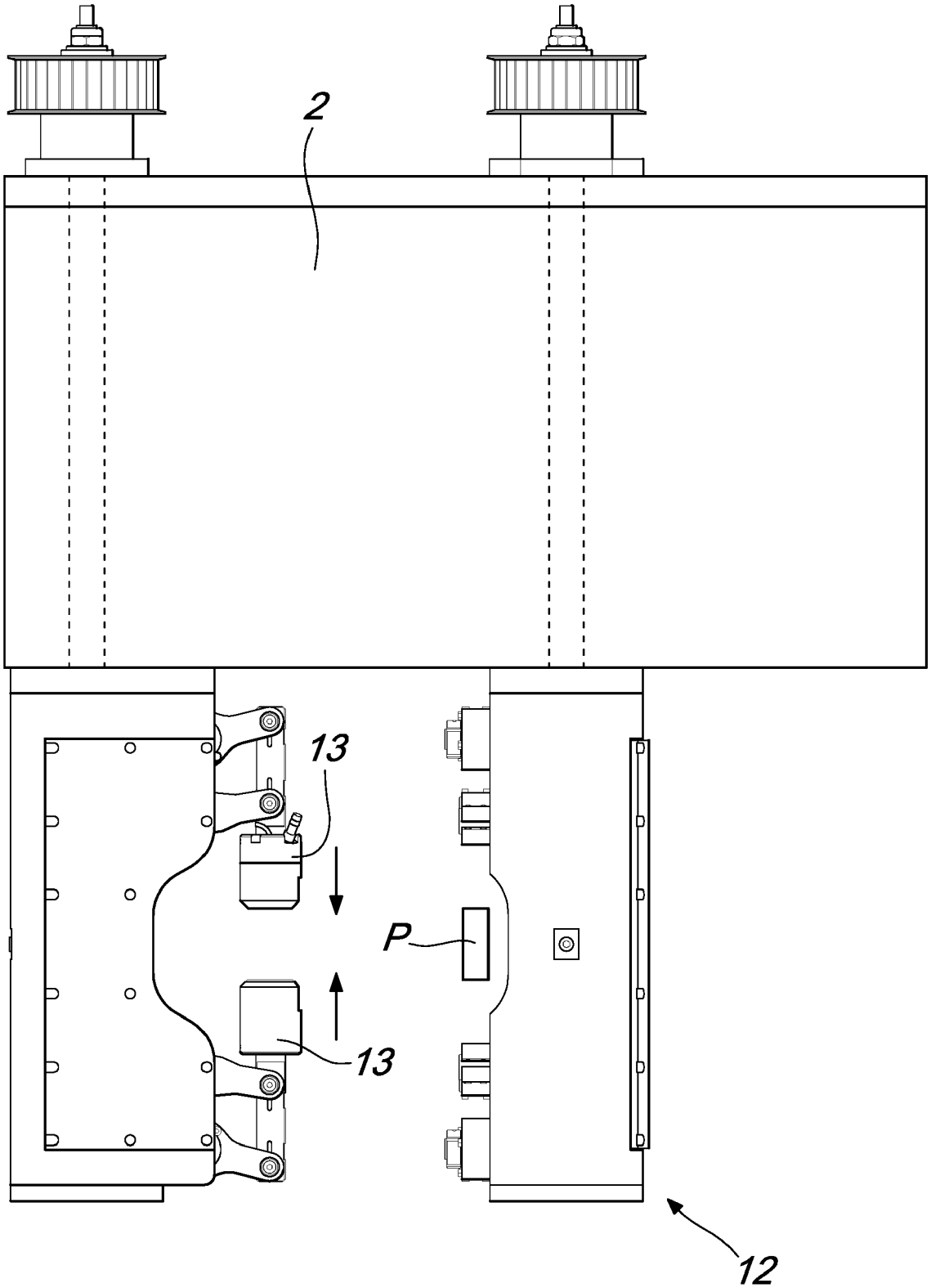

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 16 20 1963

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 196 26 157 A1 (PACTEC VERPACKUNGSMASCHINEN FA [DE]) 2 January 1998 (1998-01-02) * the whole document *	1-8	INV. B65B25/00 B65B11/08
X	WO 2006/111850 A1 (SACMI PACKAGING SPA [IT]; FRABETTI FABIO [IT]; BARALDI LUCA [IT]; GIOV) 26 October 2006 (2006-10-26) * the whole document *	1-8	

TECHNICAL FIELDS SEARCHED (IPC)

B65B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	15 February 2017	Ungureanu, Mirela

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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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
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15-02-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19626157 A1	02-01-1998	DE 19626157 A1	02-01-1998
		EP 0816229 A1	07-01-1998
WO 2006111850 A1	26-10-2006	AT 442990 T	15-10-2009
		EP 1888410 A1	20-02-2008
		WO 2006111850 A1	26-10-2006

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

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT 102015000079678 **[0059]**