(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 159 426 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
**05.04.2023 Bulletin 2023/14**

(21) Application number: **20937495.8**

(22) Date of filing: **27.05.2020**

(51) International Patent Classification (IPC):
***B31B 70/81*** *(2017.01)* ***B65D 30/22*** *(2006.01)*
***B65B 61/18*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
**B31B 70/81; B65B 61/18; B65D 29/00**

(86) International application number:
**PCT/ES2020/070350**

(87) International publication number:
**WO 2021/240027 (02.12.2021 Gazette 2021/48)**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
**BA ME**
Designated Validation States:
**KH MA MD TN**

(71) Applicant: **Montpart Sanchez, José Luis**
**08319 Dosrius (Barcelona) (ES)**

(72) Inventor: **Montpart Sanchez, José Luis**
**08319 Dosrius (Barcelona) (ES)**

(74) Representative: **Herrero & Asociados, S.L.**
**Cedaceros, 1**
**28014 Madrid (ES)**

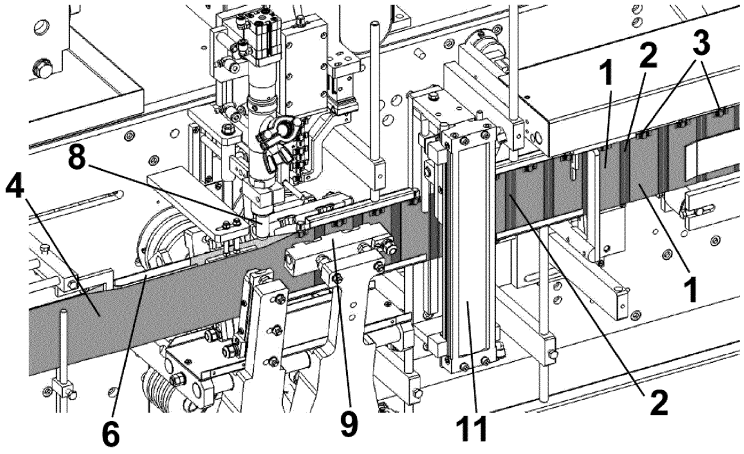
(54) **PACKAGING FOR PRODUCTS AND MACHINE FOR MANUFACTURING SAID PACKAGING**

(57) The packaging for products comprises a string of containers (1), each container (1) comprising a closure element (3).

The machine for manufacturing said packaging comprises an opener (6) for forming a space to be filled with a product; a dosing nozzle (8) for dosing the product into said space; a feeder (5) of closure elements (3); welding jaws (9) for welding the closure element (3) and edges defining a container (1) on the packaging; and a cutting unit (11) for separating the containers (1) from the packaging, forming a string of containers (1).

A new type of packaging is achieved, which combines the advantages of an envelope-type packaging with packaging with a closure element and, in addition, allows to be sold in the form of a string.

**FIG. 9**




EP 4 159 426 A1

## Description

**[0001]** The present invention relates to a packaging for products and a machine for manufacturing such packaging.

## Background to the invention

**[0002]** Different types of packaging are available on the market, each adapted to a specific and determined use.

**[0003]** For example, there are known envelope-type packs which do not include any type of closure, and which open through a weakened area of the envelope. Such envelope-type packs can be manufactured and sold separately or as a string of several packs.

**[0004]** A packaging commonly referred to as "Doypack®" is also known on the market, which is usually used as a single-use packaging for granular or liquid products and has the characteristic that it includes a closure element.

**[0005]** This closure element is usually of the type known as a "Zipper®", which is commonly used for powder, granular, hygiene, cleaning or food products. This type of closure is a snap closure along a line.

**[0006]** In addition, this type of packaging may, if desired, comprise a nozzle formed in the packaging itself and closed by a cap.

**[0007]** In order to achieve maximum packaging productivity, automatic packaging machines are used, comprising a dosing station for dosing a product into the packaging and a sealing station where the filled container is sealed.

**[0008]** When using "Doypack®" containers, the presence of the closure element makes the packaging operation more difficult, and it is always necessary to deliver the containers to the machine with the closure element open, with the consequent problem that this entails, since during production the closure element can remain closed.

**[0009]** However, there is no known envelope-type packaging on the market that has a closure element and is provided to users in a string.

## Description of the invention

**[0010]** Therefore, an objective of the present invention is to provide a new packaging which can be manufactured forming a string of containers and which has a closure element for each container.

**[0011]** With the packaging and the machine of the invention, the aforementioned disadvantages are solved, with other advantages that will be described below.

**[0012]** According to a first aspect, the present invention relates to a packaging for products, comprising a string of containers, wherein each of said containers comprises a closure element.

**[0013]** According to a preferred embodiment, the closure element is a cap, for example a screw cap.

**[0014]** Advantageously, these containers are separated from each other by die-cut lines.

**[0015]** In addition, each container is preferably formed from a film that defines an envelope, and the closure elements are welded to said film.

**[0016]** According to a second aspect, the present invention relates to a machine for manufacturing packaging for products as described above, comprising:

- an opener to form a space to be filled with a product;
- a dosing nozzle for dosing the product into said space;
- a sealing element feeder;
- welding jaws for welding the closure element and edges defining a container in the packaging; and
- a cutting unit that separates the containers from the packaging, forming a string of containers.

**[0017]** According to a preferred embodiment, the packaging is formed from a film defining the plurality of containers, and said opener being longitudinally movable along said film.

**[0018]** Furthermore, said dosing nozzle is advantageously movable between an initial position and a dosing position, and said closure element feeder is movable between an initial position and a feeding position.

**[0019]** According to a preferred embodiment, the closure element feeder comprises a clamp that can be placed in a retaining position, where it retains the closure elements, or in a releasing position, where it allows the release of one of the closure elements.

**[0020]** In addition, the welding jaws are advantageously movable between an open and a closed position, the welding being carried out in the closed position.

**[0021]** The present invention provides a new type of packaging, which combines the advantages of envelope-type packaging with packaging provided with a closure element and, in addition, allows it to be marketed in the form of a string.

**[0022]** In addition, the machine according to the present invention allows the packaging to be manufactured on a single machine with high productivity.

## Brief description of the drawings

**[0023]** For a better understanding of what has been explained above, drawings are included in which, schematically and only as a non-limiting example, a practical case of embodiment is shown.

Figure 1 is a frontal view of a packaging according to the present invention, forming a string of containers for a product joined together by die-cut lines; and Figures 2 to 9 are perspective views of the manufacturing steps of the packaging according to the present invention.

Description of a preferred embodiment

**[0024]** As shown in figure 1, the packaging according to the present invention comprises a plurality of containers 1 in the form of an envelope forming a string, each container 1 being separated by a die-cut line 2 allowing the containers 1 to be separated from each other before use.

**[0025]** Each container 1 comprises a closure element 3, such as a cap, which allows the container 1 to be opened and closed a plurality of times.

**[0026]** Each container 1 is formed from a film 4, which is folded lengthwise, and its side edges and top are welded to said closure element 3, as will be explained below to form said containers 1.

**[0027]** The method for manufacturing this packaging with the machine according to the present invention is described below.

**[0028]** First, the film 4 is placed folded lengthwise into two parts, as shown in figure 1.

**[0029]** In this position, between the film 4 there is an opener 6 and a bar 7, which separates the two parts of the film 4 from each other.

**[0030]** The machine comprises a nozzle 8, which will subsequently deliver a product into the containers 1 of the packaging, and welding jaws 9 which will weld the film 4 to form the containers 1.

**[0031]** In the position shown in figure 2, the nozzle 8 is in the standby position, i.e. in its raised position, and the welding jaws 9 are open.

**[0032]** The machine further comprises a feeder 5 provided with a clamp 10, which feeds caps for its placement, which in figure 2 is also in its raised standby position.

**[0033]** In figure 3, the opener 6 moves forward, the welding jaws 9 start to close, the nozzle 8 starts to descend and the clamp 10 holds a cap 3.

**[0034]** Then, as shown in figure 4, the nozzle 8 is inserted between the opener 6 to start dosing the product and a feeder flap 5 is lowered, the clamp 10 holding a cap 3.

**[0035]** In the position shown in figure 5, the nozzle 8 doses the product and the clamp 10 lowers the cap 3. At the same time, the feeder flap 5 closes to prevent the next cap 3 from falling.

**[0036]** As shown in figure 6, in the next stage, the clamp 10 places the cap 3 in the final position, just above the film 4. In addition, the welding jaws 9 approach each other in this area, the nozzle 8 rises after dosing and the opener 6 returns to its starting position.

**[0037]** Then, as shown in figure 7, the welding jaws 9 are closed, welding the cap 3 to the film 4 and making the welds that form the envelope-shaped container 1. Once the welding has been completed, the clamp 10 is opened by releasing the cap 3, which will be held in position, and the welding jaws 9 begin to open.

**[0038]** As shown in figure 8, the clamp 10 then reaches its initial position to clamp another cap 3 and the welding jaws 9 open to their initial position, ending a cycle.

**[0039]** In this position, the machine moves one step forward to start the next cycle, which will be carried out in the same way as described above.

**[0040]** Furthermore, as shown in figure 9, the machine according to the present invention comprises a cutting unit 11, which has the function of making the die-cut lines 2 separating the containers 1 of a string from each other and, when manufacturing a string packaging of a suitable number of containers 1, such as, for example, 8, 10 or 12 containers, cuts the film to separate two adjacent strings from each other.

**[0041]** Although reference has been made to a specific embodiment of the invention, it is obvious to a person skilled in the art that the packaging and machine described are susceptible to numerous variations and modifications, and that all the details mentioned can be replaced by technically equivalent ones, without departing from the scope of protection defined by the appended claims.

**Claims**

1. Packaging for products, comprising a string of containers (1), **characterized in that** each of said containers (1) comprises a closure element (3).

2. Packaging for products according to claim 1, wherein said closure element (3) is a cap.

3. Packaging for products according to claim 1, wherein said containers (1) are separated from each other by die-cut lines (2).

4. Packaging for products according to claim 1 or 3, wherein each container (1) is formed from a film (4) defining an envelope.

5. Packaging for products according to claim 4, wherein the closure elements (3) are welded to said film (4).

6. Machine for manufacturing a packaging for products according to any one of the previous claims, **characterized in that** it comprises:

   - an opener (6) to form a space to be filled with a product;
   - a dosing nozzle (8) for dosing the product into said space;
   - a feeder (5) of closure elements (3);
   - welding jaws (9) for welding the closure element (3) and edges defining a container (1) on the packaging; and
   - a cutting unit (11) which separates the containers (1) from the packaging, forming a string of containers (1).

7. Machine for manufacturing a packaging according

to claim 6, wherein the packaging is formed from a film (4) defining the plurality of containers (1) and said opener (6) is longitudinally movable along said film (4).

**8.** Machine for manufacturing a packaging according to claim 6, wherein said dosing nozzle (8) is movable between an initial position and a dosing position.

**9.** Machine for manufacturing a packaging according to claim 6, wherein the feeder (5) of closure elements (3) is movable between an initial position and a feeding position.

**10.** Machine for manufacturing a packaging according to claim 6 or 9, wherein the feeder (5) of closure elements (3) comprises a clamp (10) which can be placed in a retaining position, where it retains the closure elements (3), or in a releasing position, where it allows the release of one of the closure elements (3).

**11.** Machine for manufacturing a packaging according to claim 6, wherein the welding jaws (9) are movable between an open position and a closed position, the welding being carried out in the closed position.

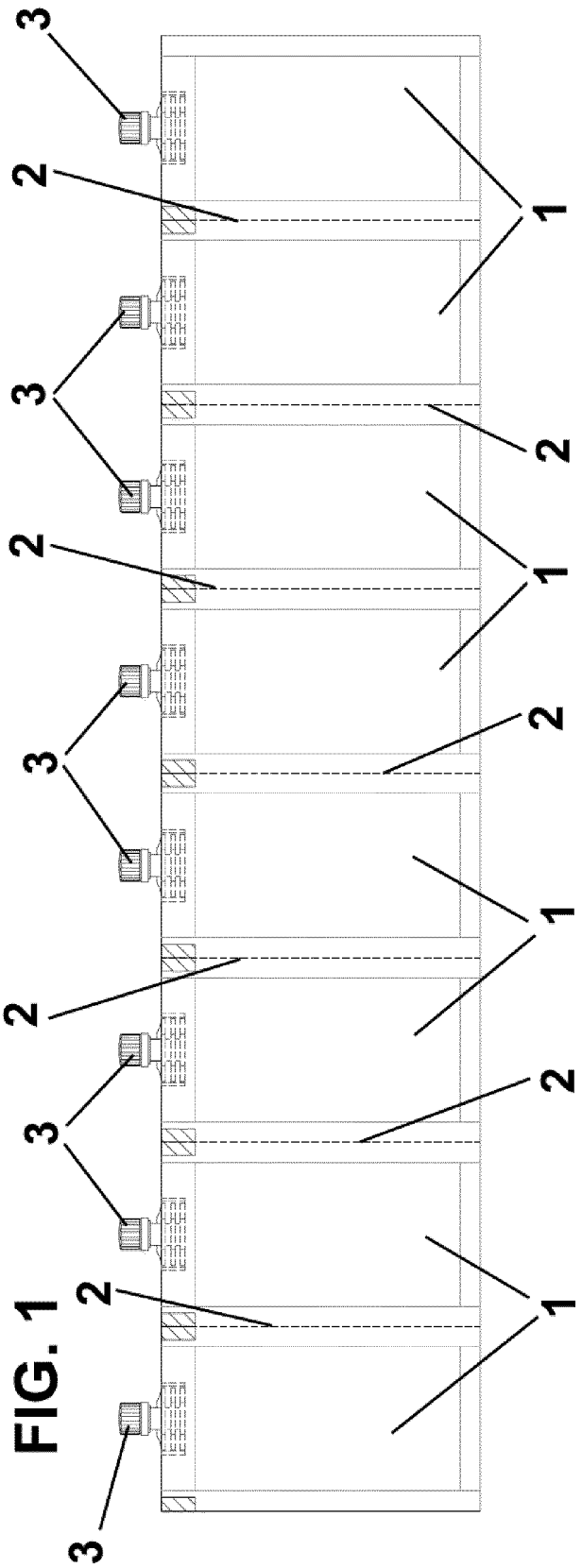



FIG. 1

FIG. 2

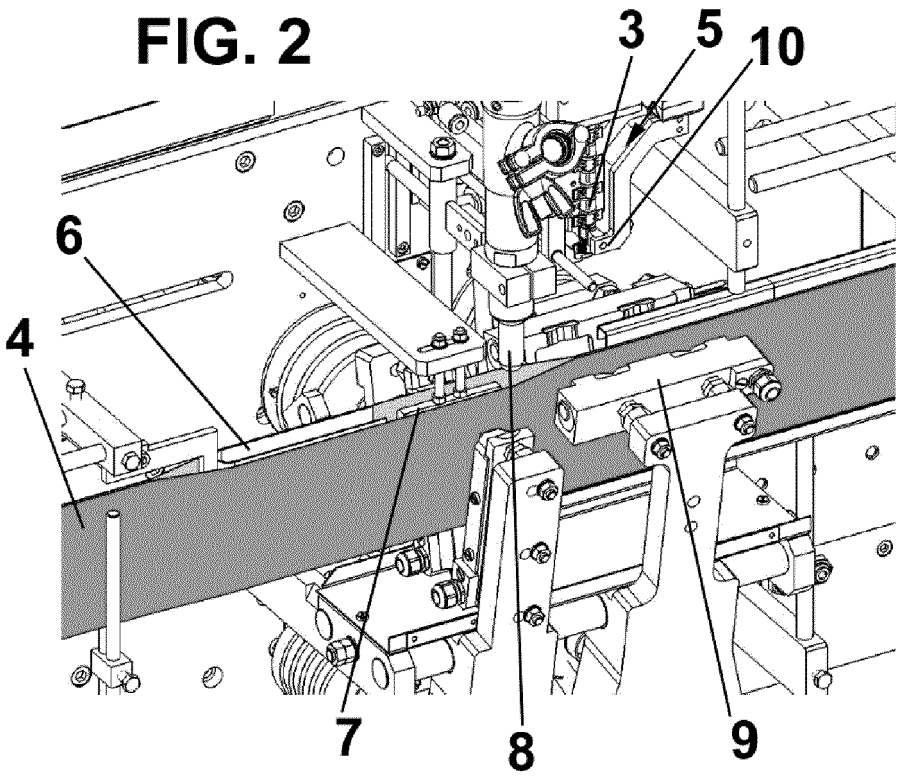



FIG. 3

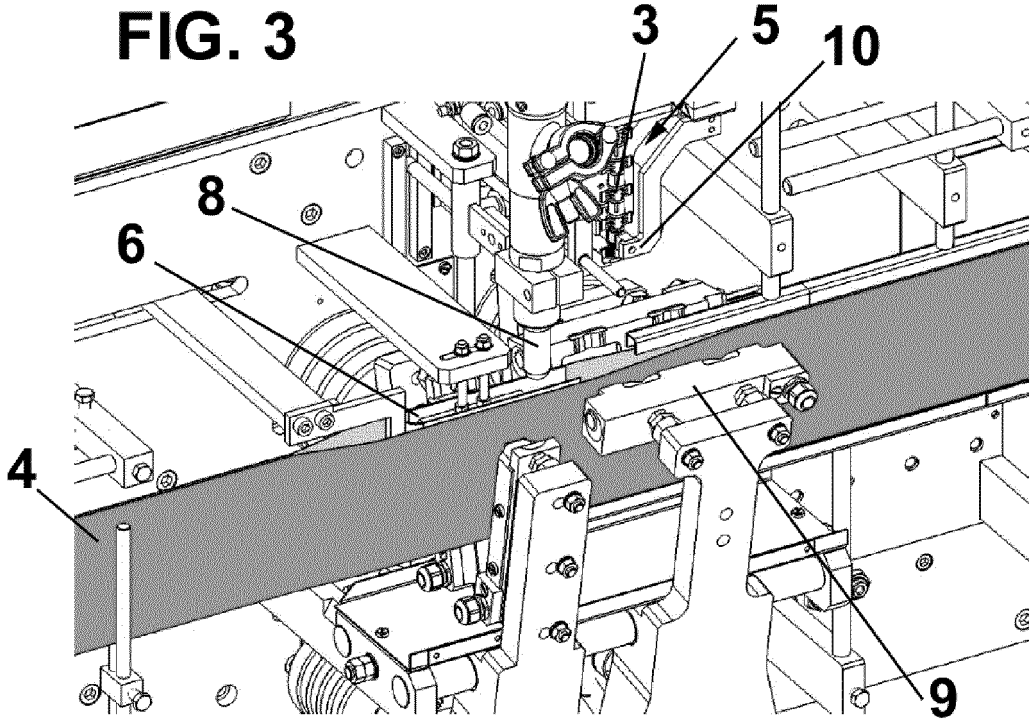


FIG. 4

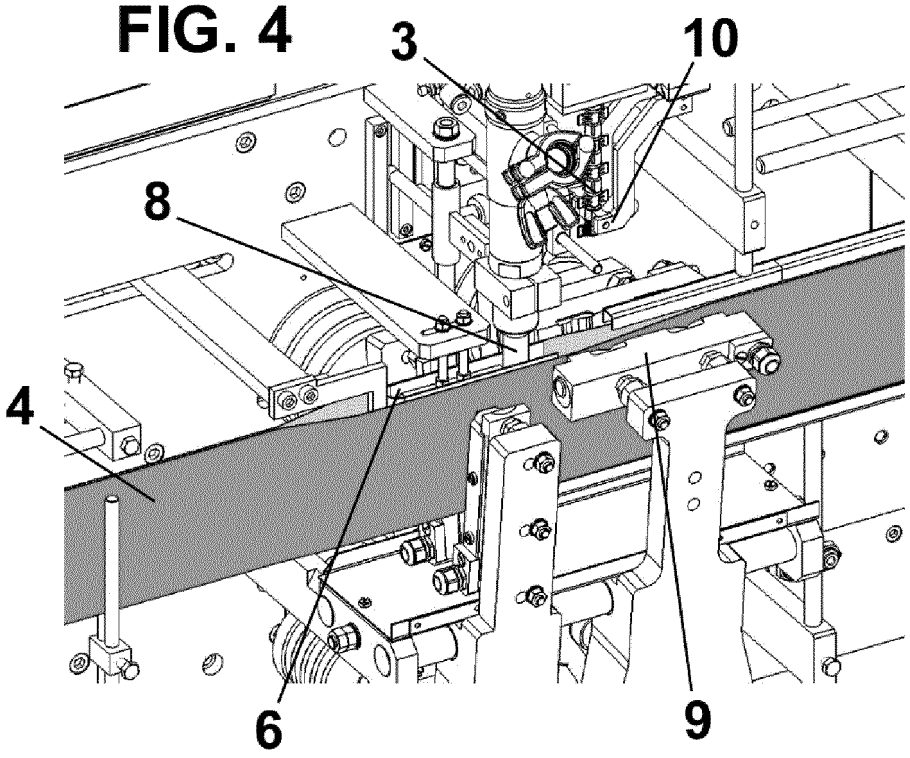



FIG. 5

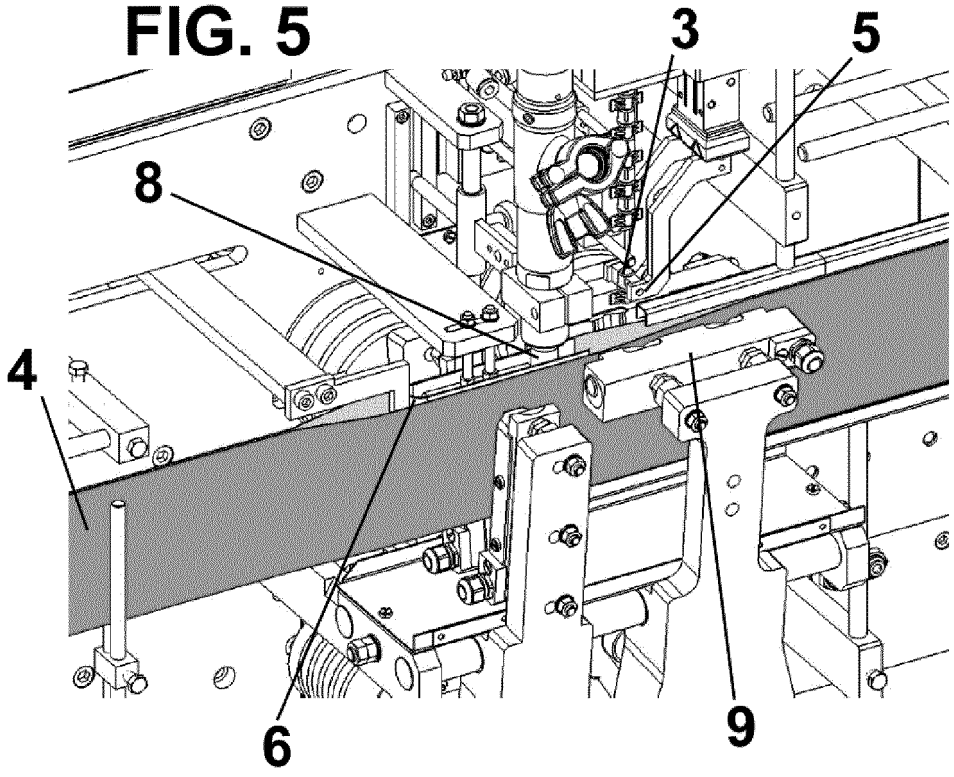


FIG. 6

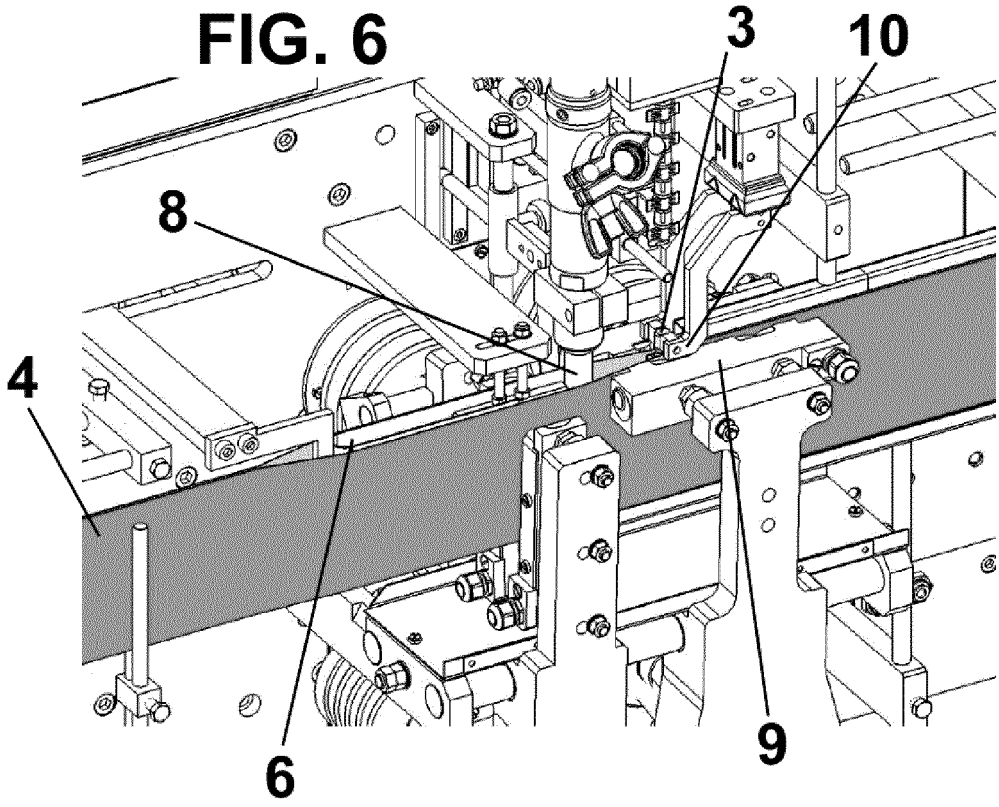



FIG. 7

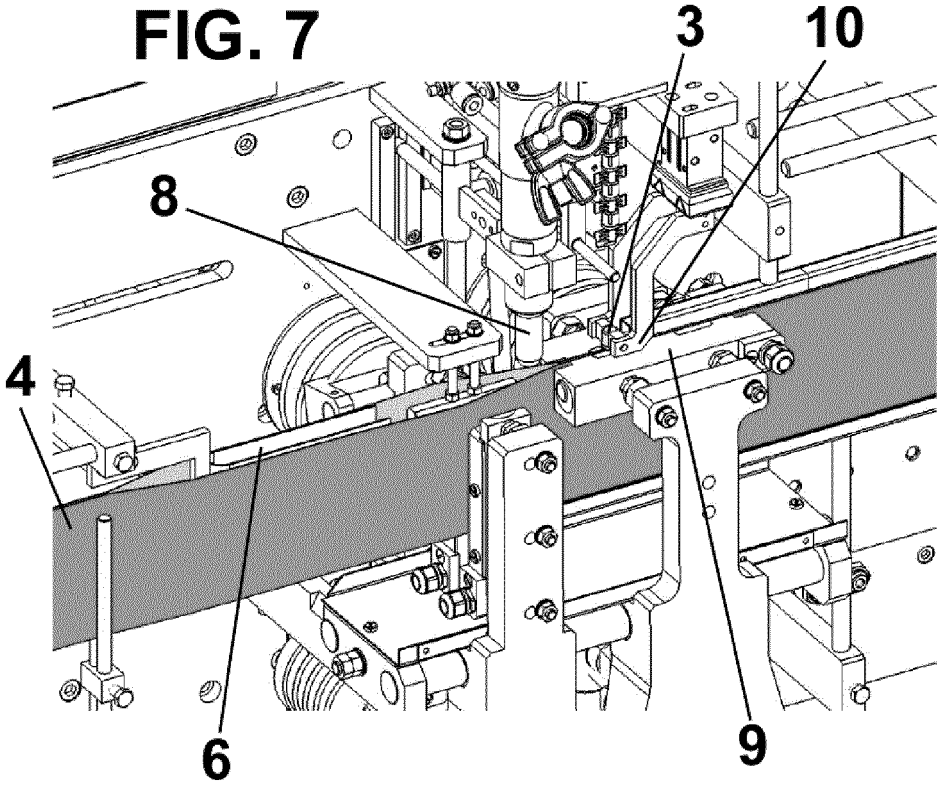


FIG. 8

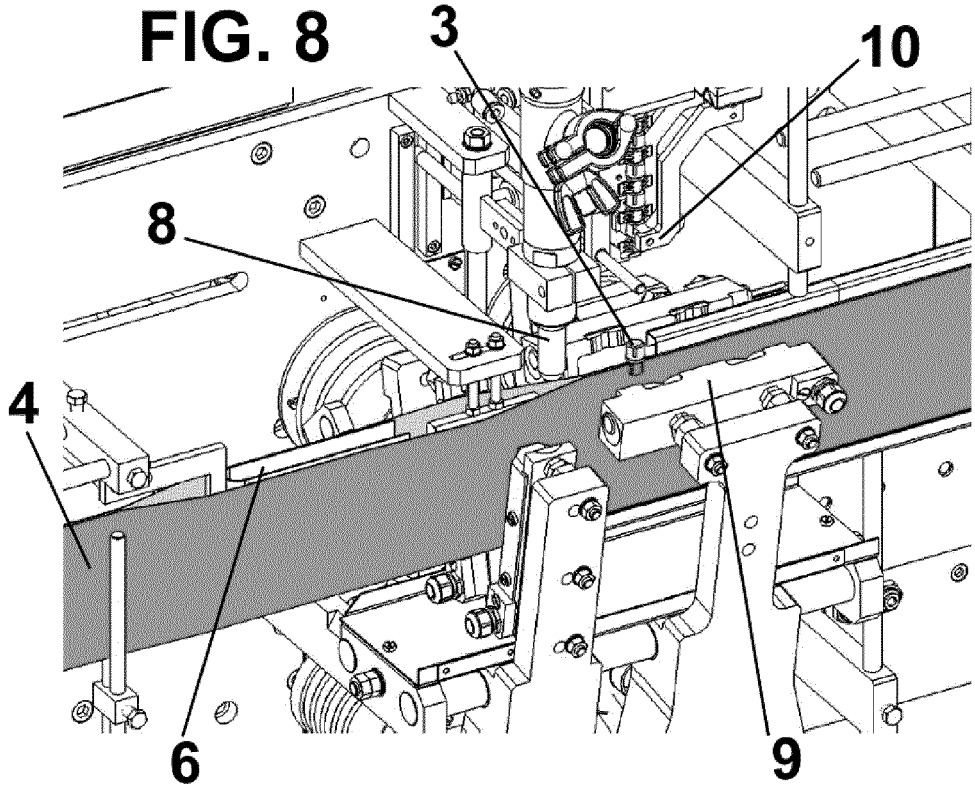
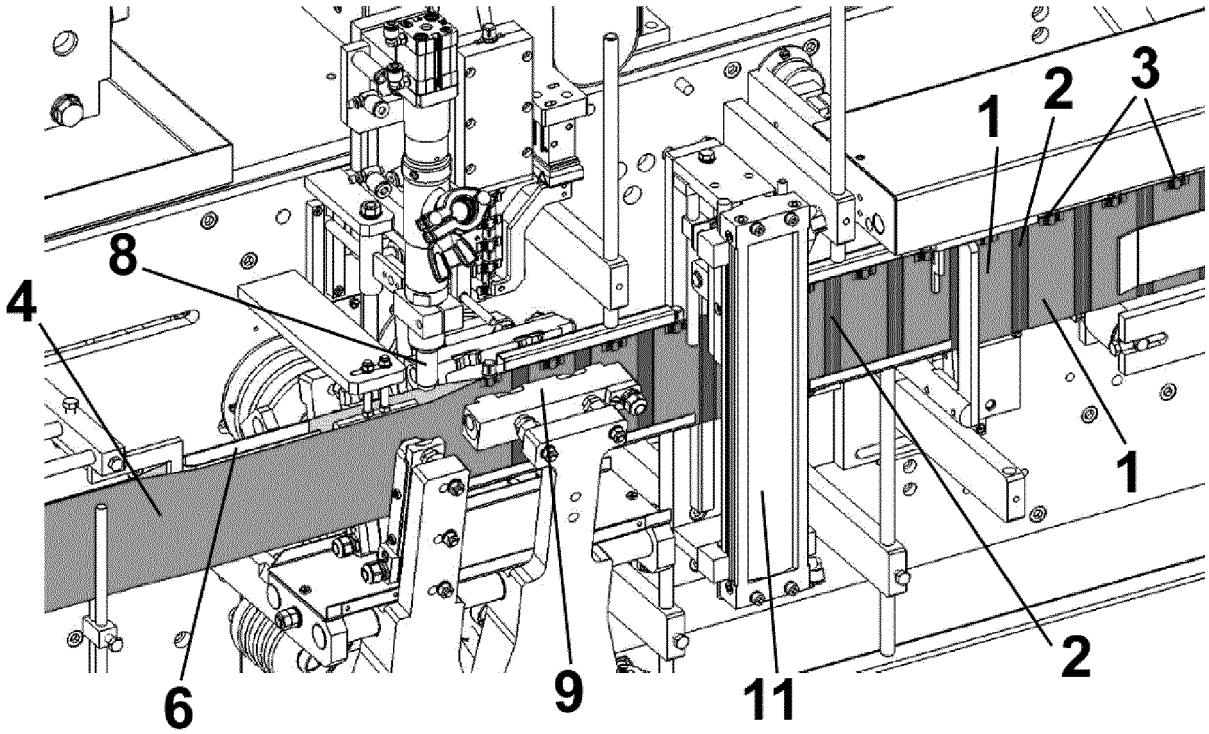



FIG. 9



# INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2020/070350

A. CLASSIFICATION OF SUBJECT MATTER

**See extra sheet**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B31B, B65D, B65B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES,WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | ES 2193888 A1 (BOSSAR S L) 01/11/2003, description, figures | 1-11 |
| X<br>A | ES 2130929 A1 (VOLPAK SA) 01/07/1999, description, figures 1 to 5 | 1-5<br>6-11 |
| X<br>A | ES 2383405 A1 (VOLPAK S A U) 21/06/2012, description, and figures | 1-5<br>6-11 |
| X<br>A | CN 101137552 A (WATERWERKZ LTD WATERWERKZ LTD) 05/03/2008, description, figures 4 and 5 | 1-5<br>6-11 |
| X<br>A | US 2005261659 A1 (MIZUO TAKAYUKI ET AL.) 24/11/2005, description, figures 1, 2 | 1-5<br>6-11 |

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance.
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure use, exhibition, or other means.
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents , such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 02/02/2021 | **(03/02/2021)** |
| Name and mailing address of the ISA/<br><br>OFICINA ESPAÑOLA DE PATENTES Y MARCAS<br>Paseo de la Castellana, 75 - 28071 Madrid (España)<br>Facsimile No.: 91 349 53 04 | Authorized officer<br>M. Contreras Beramendi<br><br>Telephone No. 91 3495450 |

Form PCT/ISA/210 (second sheet) (January 2015)

## INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2020/070350

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of documents, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | GB 2241487 A (EMZO S A I C) 04/09/1991, description, figures | 1-11 |
| A | ES 2460467 A2 (MESPACK SL) 13/05/2014, description, figures. | 1-11 |

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2020/070350

| Patent document cited in the search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| ES2193888 A1 | 01.11.2003 | NONE | |
| ES2130929 A1 | 01.07.1999 | NONE | |
| ES2383405 A1 | 21.06.2012 | NONE | |
| CN101137552 A | 05.03.2008 | NONE | |
| US2005261659 A1 | 24.11.2005 | NONE | |
| GB2241487 A | 04.09.1991 | NONE | |
| ES2460467 A2 | 13.05.2014 | NONE | |

Form PCT/ISA/210 (patent family annex) (January 2015)

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2020/070350

### CLASSIFICATION OF SUBJECT MATTER

***B31B70/81*** (2017.01)
***B65D30/22*** (2006.01)
***B65B61/18*** (2006.01)