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

(11) EP 1 640 276 A1

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 158(3) EPC

(43) Date of publication:
**29.03.2006 Bulletin 2006/13**

(21) Application number: **99908973.3**

(22) Date of filing: **17.03.1999**

(51) Int Cl.:
***B65C 9/36*** *(1968.09)*

(86) International application number:
**PCT/ES1999/000065**

(87) International publication number:
**WO 2000/055049 (21.09.2000 Gazette 2000/38)**

(84) Designated Contracting States:
**DE ES IT**

(71) Applicant: **Dibal, S.A.**
**48160 Derio,**
**Vizcaya (ES)**

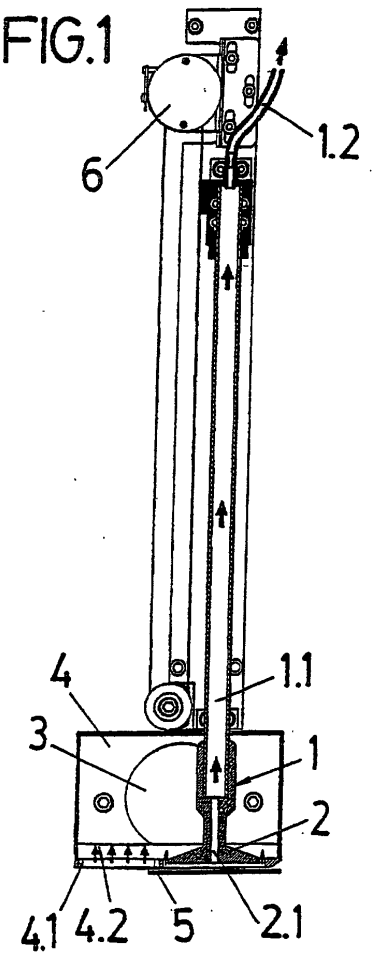
(72) Inventor: **LAISECA INCHAURRONDO, Pedro,**
**Astintze Kalea, 24**
**E-48160 Derio, Vizcaya (ES)**

(74) Representative: **Esteban Perez-Serrano, Maria Isabel**
**UDAPI & Asociados**
**Patentes y Marcas**
**Explanada, 8**
**28040 Madrid (ES)**

# (54) MECHANICAL LABEL APPLICATOR

(57) The invention relates to an applicator (1) inserted into an air intake housing (4) fitted with a lateral axial extractor (3) and an elastic (4.1) perforated (4.2) plate and a groove (4.3.) in which a slight negative pressure is produced that holds the borders of the label (5). Another radial air extraction (1.1) is effected by a vacuum pump through the cylinder of the applicator (1) and the axle (2.1) of the elastic part (2) inserted in the lower end thereof. The central part of the label (5) is also held by the negative pressure generated on its inner side.

FIG.1




EP 1 640 276 A1

## Description

### OBJECT OF THE INVENTION

**[0001]** The invention expounded herein comprises a mechanical label applicator, from among those applicators of adhesive labels which include label positioning means in air extraction circuits, for the purpose of supporting these up to their final placement.

**[0002]** Said invention is characterised in that the applicator is of special construction, being mounted at the extremity of the floor of an air intake enclosure and being provided with a punched elastic plate, as well as a cylinder with an axial perforation, through which are produced the suction and retention of the label by pressure reduction, said cylinder being motor-driven and guided from the label collecting position up to another lower one of label placement.

### BACKGROUND OF THE INVENTION

**[0003]** The mechanical means of applying self-adhesive labels are many and all have to cater for the difference in height of the containers, conventionally fed via a conveyor belt, whilst the individual labels are obtained, also in standard practice, from a conveniently unwound reel or bandolier.

**[0004]** In certain cases the label supporting means employs the reduction in pressure produced by sucking air from the inside face of the label itself and, afterwards, different procedures permit the placing of the label, either by interrupting the air flow with the subsequent risk of warping the label and positioning it unevenly, or else by reversing the air flow and the subsequent propelling or blowing of the label against the opposing container surface.

**[0005]** The applicant is unaware of the existence of mechanical label applicators, motor-driven and guided, which run from the floor plane of the label suction and retention chamber up to the surface of the container to be labelled, suitably positioned underneath the label retaining vent.

### DESCRIPTION OF THE INVENTION

**[0006]** The invention object of the present specification is related with a mechanical label applicator, from among those adhesive label applicators which have the means for positioning of the labels previously individualised and coming from a bandolier, which are located in air extraction circuits, for the purpose of supporting the latter by pressure reduction until their final placement, especially from among those means of support which have a flat, punched surface, of size according to the format of the label to be supported.

**[0007]** This invention is characterised in a special construction of the applicator, mounted at the extremity of the floor of an air intake enclosure and provided with a general air extractor, side-mounted, and also occupied by a punched elastic plate, in such a way that the continuous, main air stream passes over the opposite side of this floor, into a lower chamber of the enclosure which houses the lower extremity of the applicator and which is linked with the end of the elastic plate, in the coupling groove of which is produced a small drop in pressure which retains the borders of the label.

**[0008]** Thus once the air extraction current is set up through the cylinder on the end of which is fitted the elastic piece, both of which come with a common axial perforation, the suction and retention are produced of the main, central part of the label also through the pressure reduction effect thereon.

**[0009]** The cylinder is motor-driven and guided, from the flush position of the label piece, with the elastic piece inserted behind it, to another, lower position of placement of the label on the pertinent object, which is conventionally pull-carried and positioned underneath by the conveyor belt.

### DESCRIPTION OF THE DRAWINGS

**[0010]** In order to complete the description being made and to assist in a better understanding of the characteristics of the invention, the present specification is accompanied by a set of drawings forming an integral part thereof, in which, by way of illustration and not restrictively, the following is shown:

Figure 1 shows the applicator, frontally sectioned, in its label suction position.

Figure 2 shows the same applicator, moved underneath and ready to apply the label.

### PREFERRED EMBODIMENT OF THE INVENTION

**[0011]** In the light of the foregoing exposition, the present invention relates to a mechanical label applicator, from among those applicators which include means for placing individual adhesive labels obtained from a reel or bandolier, which are located in air extraction circuits, for the purpose of supporting these by pressure reduction up to their final placement, which have a flat, punched surface, of a size according to the format of the label to be retained; essentially characterised in that the applicator (1) is incorporated within an air intake enclosure (4), fitted with a standard side axial extractor (3), as well as with an elastic plate (4.1), punched (4.2) and having a groove (4.3) for attachment of the applicator (1), in which a small pressure drop is produced which retains the borders of the label (5).

**[0012]** The axial extraction (1.1) of air, by a standard vacuum pump, not shown in the figure, is carried out through the elastic duct (1.2), via the applicator (1) cylinder it is done before along the shaft (2.1) of the elastic piece (2) inserted in the lower end of the applicator (1),

the retention of the central part of the label (5) also be achieved by the pressure drop produced on the inside face thereof.

**[0013]** The cylinder is motor-driven (6) and guided (7), its feed head (1.3), joined to the pulling means (8) of the motor (6), being pulled from the flush position of the label piece up to its lower placement position of the label (5) on the pertinent object (9) beneath.

**[0014]** This description is not extended further on the clear understanding that any expert in this matter should have sufficient information to appreciate the scope of the invention and the advantages stemming therefrom, as well as how to proceed to its reproduction.

**[0015]** It is further understood that, if they do not alter the essential nature of the invention, both the variation in the materials and the form, size and disposition of the elements are capable of variation within the same characterisation.

**[0016]** The terms employed in the course of the description and the significance of the latter must always be considered in a non-restrictive manner.

## Claims

1. Mechanical label applicator, from among those which have means of positioning individual adhesive labels obtained from a reel or bandolier, which are lodged in air extraction circuits, for the purpose of retaining these by pressure reduction up to their final placement, which have a flat, punched surface of size according to the format of the label to be retained, which has an air intake enclosure (4), fitted with a standard axial extractor (3), side mounted, essentially **characterised in that** this enclosure (4) incorporates:

   - and elastic plate (4.1), punched (4.2) and having a groove (4.3) for attaching the applicator (1), in which a small pressure drop is produced which retains the borders of the label (5),
   - an axial extraction (1.1) of air, through the cylinder of the applicator (1) itself and of the shaft (2.1) of the elastic piece (2) inserted on its lower end, which is performed by means of a vacuum pump, through the elastic duct (1.2), the retention of the central part of the label (5) being achieved by the pressure reduction produced on the inside face thereof.

2. Mechanical label applicator according to claim 1, **characterised in that** the applicator (1) cylinder is motor-driven (6) and guided (7), its feed head (1.3), joined to the pulling means (8) of the motor (6), being pulled from the flush position of the label piece up to its lower placement position of the label (5) on the pertinent object (9) underneath.

FIG.1

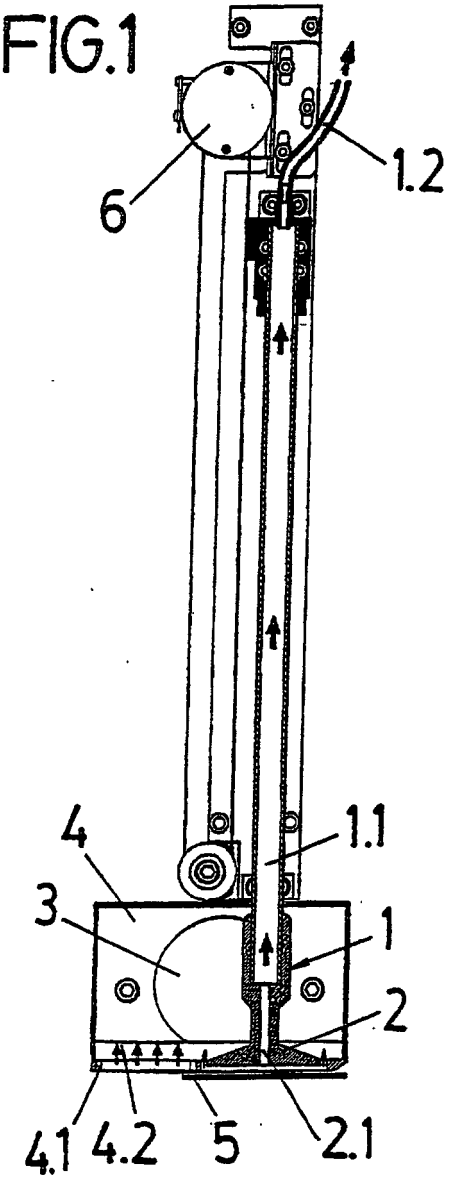
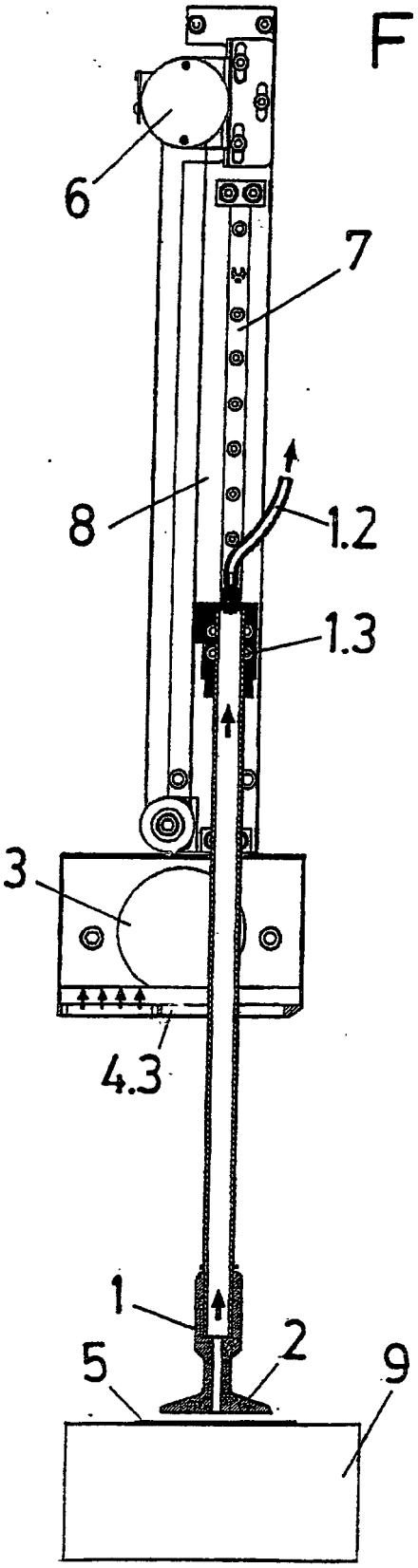



FIG.2



# INTERNATIONAL SEARCH REPORT

Intern ial Application No
PCT/ES 99/00065

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65C9/18 B65C9/36

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)
IPC 7 B65C

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>Y | US 4 124 436 A (PETTIS JR CHARLES R ET AL)<br>7 November 1978 (1978-11-07)<br>column 3, line 50 -column 4, line 44;<br>figures 1-4,7 | 1<br>2 |
| Y | EP 0 837 000 A (ALBERTONI PAOLO ;LUPOLI FRANCESCO (IT)) 22 April 1998 (1998-04-22)<br>abstract; figure 1 | 2 |
| A | EP 0 476 447 A (PRESTEK LTD)<br>25 March 1992 (1992-03-25)<br>column 3, line 32 - line 49<br>column 4, line 3 - line 17<br>column 4, line 52<br>figures 1,2 | 1,2 |

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in 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 such 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 |
|---|---|
| 10 November 1999 | 17. 11. 99 |

| Name and mailing address of the ISA | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Martínez Navarro, A. |

Form PCT/ISA/210 (second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

Intern ial Application No
PCT/ES 99/00065

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | DE 40 36 824 A (LEMKE WOLFGANG) 21 May 1992 (1992-05-21) column 2, line 49 -column 3, line 3; figures | 1 |
| A | EP 0 038 262 A (PILOT SA) 21 October 1981 (1981-10-21) page 4, line 13 - line 30; figures | 1 |
| A | US 5 300 181 A (YAMAGUCHI YASUHIRO) 5 April 1994 (1994-04-05) column 4, line 13 - line 30; figure 1 | 1 |
| A | EP 0 114 622 A (BIZERBA WERKE KRAUT KG WILH) 1 August 1984 (1984-08-01) figures 1,3 | 1 |

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Interr. nal Application No
PCT/ES 99/00065

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 4124436 A | 07-11-1978 | NONE | |
| EP 0837000 A | 22-04-1998 | IT MI962144 A | 16-04-1998 |
| EP 0476447 A | 25-03-1992 | GB 2248051 A | 25-03-1992 |
| | | DE 69105425 D | 12-01-1995 |
| | | DE 69105425 T | 20-07-1995 |
| DE 4036824 A | 21-05-1992 | NONE | |
| EP 0038262 A | 21-10-1981 | FR 2480237 A | 16-10-1981 |
| US 5300181 A | 05-04-1994 | JP 2096318 C | 02-10-1996 |
| | | JP 6099959 A | 12-04-1994 |
| | | JP 7121736 B | 25-12-1995 |
| | | JP 2671237 B | 29-10-1997 |
| | | JP 5112344 A | 07-05-1993 |
| | | JP 2671239 B | 29-10-1997 |
| | | JP 5162729 A | 29-06-1993 |
| | | JP 2671240 B | 29-10-1997 |
| | | JP 5162730 A | 29-06-1993 |
| EP 0114622 A | 01-08-1984 | DE 3301439 A | 19-07-1984 |
| | | AT 26561 T | 15-05-1987 |
| | | CA 1216828 A | 20-01-1987 |
| | | ES 528913 A | 16-11-1984 |
| | | FI 840175 A,B, | 19-07-1984 |
| | | JP 1842762 C | 12-05-1994 |
| | | JP 5047458 B | 16-07-1993 |
| | | JP 59142932 A | 16-08-1984 |
| | | US 4574027 A | 04-03-1986 |

Form PCT/ISA/210 (patent family annex) (July 1992)