



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 386 843 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
04.02.2004 Bulletin 2004/06

(51) Int Cl.7: **B65C 9/18, B65C 9/14**

(21) Application number: **03014466.1**

(22) Date of filing: **01.07.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(72) Inventor: **De Polo, Giuliano**
31015 Conegliano, (Prov. of Treviso) (IT)

(74) Representative: **Modiano, Guido, Dr.-Ing. et al**
Modiano & Associati,
Via Meravigli, 16
20123 Milano (IT)

(30) Priority: **30.07.2002 IT PD20020057**

(71) Applicant: **ACQUA MINERALE SAN BENEDETTO**
S.p.A.
I-30037 Scorze' (Prov. of Venezia) (IT)

(54) **Pad for label transfer rollers in container labeling systems**

(57) A pad for label transfer rollers in container labeling systems at least for regions having a cylindrical contour, the pad being of the type that comprises a plate-like body (12, 112) made of plastics with raised mutually opposite rear edges (13, 113) for insertion in a suitable

complementarily shaped undercut seat (14) of the roller (11), a front surface (15, 115) that is contoured so as to protrude from a rolling band (16) of the roller (11), and through holes (17, 117) that constitute the endings of a vacuum system; the pad has its front surface (15, 115) at least partially knurled.

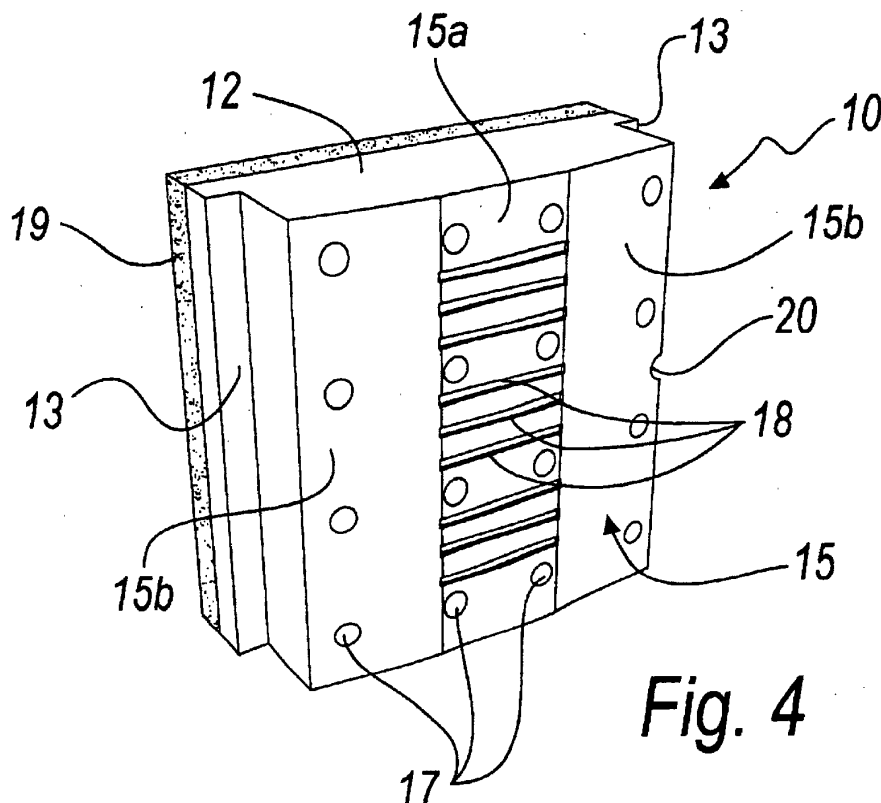


Fig. 4

Description

[0001] The present invention relates to a pad for label transfer rollers in container labeling systems at least for regions having a cylindrical contour.

[0002] The pad is used adequately, for example, in systems for labeling bottles for beverages.

[0003] One common type of system currently in use for labeling bottles for beverages and the like is shown schematically in Figures 1 and 2 of the accompanying drawings, and comprises a unit A for feeding labels arranged in succession in a continuous ribbon B unwound from rolls C and fed by rollers D with a rotating blade E for cutting the ribbon B to size.

[0004] Each label F is placed in contact with a transfer roller G, to which it adheres by way of a vacuum system (not shown in the figure), the endings of which are located at the rolling band of said transfer roller.

[0005] The ends of the label F are arranged at pads H1 and H2, which are fixed to the transfer roller G; each pad is constituted by a plate-like body made of plastic material, with mutually opposite raised rear edges for insertion in a suitable complementarily shaped undercut seat of the roller G, a front surface that is contoured so as to protrude from the rolling band of the roller G, and through holes that constitute the endings of the vacuum system.

[0006] At the rear, the pad is provided with a layer made of elastic material.

[0007] Each label F that adheres to the feeder roller G is placed in contact with a paste distribution roller I, which has on its rolling surface a film of paste that is continuously restored and kept uniform.

[0008] In particular, the paste distribution roller I has a knurled rolling surface, and the paste, by way of the presence of a doctor, is placed in the recesses of the knurling.

[0009] Accordingly, on the label F the paste is distributed by spots or regions, depending on the type of knurling that is present on the surface of the paste distribution roller I.

[0010] The transfer roller G brings, by rotating, the label F with the paste into contact with a corresponding bottle L of a rotating carousel M that is part of the bottling system.

[0011] Each bottle L rolls about its own axis, and this movement, combined with the motion of the transfer roller G that is synchronized with it, transfers the label F onto the bottle L.

[0012] Although the use of these labeling systems is now established, such systems entail drawbacks, the most significant one being that the paste applied to the label, although its quantity is limited due to the surface knurling of the paste roller 1, sometimes still dirties the surface of the corresponding pad H1 or H2, causing significant problems in the operation of the entire system for example due to the failed transfer of the label F to the bottle L because the label is retained by the paste

on the pad.

[0013] This entails the need to stop the system to restore correct operation and therefore entails downtimes, with consequent production losses.

[0014] The aim of the present invention is to eliminate the above-mentioned drawbacks of known types of container labeling system at least for regions having a cylindrical contour.

[0015] Within this aim, an object of the invention is to further reduce the downtimes of the operation of the labeling system caused by malfunctions.

[0016] Another object of the present invention is to provide modifications that can be provided and applied easily both in systems that are already in use and in newly manufactured systems.

[0017] This aim and these and other objects that will become better apparent hereinafter are achieved by a pad for label transfer rollers in container labeling systems at least for regions having a cylindrical contour, said pad being of the type that comprises a plate-like body with raised mutually opposite rear edges for insertion in a suitable complementarily shaped undercut seat of the roller, a front surface that is contoured so as to protrude from the rolling band of the roller, and through holes that constitute the endings of a vacuum system, said pad being characterized in that its front surface is at least partially knurled.

[0018] Advantageously, the knurling is of the horizontally elongated parallel type.

[0019] Further characteristics and advantages of the invention will become better apparent from the following detailed description of two embodiments of the pad according to the invention, illustrated by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a schematic view of a known labeling system as described in the introduction;

Figure 2 is an external perspective view of the system of Figure 1;

Figure 3 is a perspective view of a label transfer roller in which pads according to the invention are fitted;

Figure 4 is a front perspective view of a pad according to a first embodiment of the invention;

Figure 5 is a front perspective view of a pad according to a second embodiment of the invention.

[0020] With reference to Figures 3 and 4, a first pad 10 for label transfer rollers 11 (which correspond to the rollers G of Figures 1 and 2) comprises a plate-like body 12 made of plastics, which has a rectangular contour with mutually opposite raised rear edges 13 for insertion in a suitable complementarily shaped undercut seat 14 of the roller 11.

[0021] The body 12 is provided laterally with a semi-cylindrical recess 20 for a pin (not shown) for fixing to the roller 11.

[0022] At the rear, the pad 10 is provided with a layer

19 made of elastic material.

[0023] The front surface 15 is contoured so as to protrude from the rolling band 16 of the roller and is provided with the outlets of through holes 17 that constitute the endings of a vacuum system, which is not shown for the sake of simplicity.

[0024] The pad 10, in particular, has a front surface 15 that is composed of a portion 15a that is parallel to the line that is tangent to the roller 11 and is arranged between two inclined blending portions 15b.

[0025] According to the invention, the front surface 15, in particular the portion 15a, is at least partially knurled, with knurlings 18 of the horizontally elongated parallel type.

[0026] For example, each recess can be approximately 1 mm wide and approximately 0.5 mm deep.

[0027] With reference to Figure 5, a pad 110 for label transfer rollers 11, according to the second embodiment of the invention, comprises a plate-like body 112 made of plastics, which has a rectangular contour with mutually opposite raised rear edges 113 for insertion in a suitable complementarily shaped undercut seat 114 of the roller 11.

[0028] At the rear, the pad 110 has a layer 119 made of elastic material.

[0029] The body 112 is provided laterally with a semicylindrical recess 120 for a pin (not shown) for fixing to the roller 11.

[0030] The front surface 115 is contoured so as to protrude from the rolling band 16 of the roller and is provided with the outlets of through holes 117 that constitute the endings of a vacuum system, which is not shown for the sake of simplicity.

[0031] The pad 110, in particular, has a front surface 115 that is composed of a portion 115a, which is parallel to the line that is tangent to the roller 11, and an inclined blending portion 115b.

[0032] According to the invention, the front surface 115, particularly the portion 115a, is at least partially knurled, with knurlings 118 of the horizontally elongated parallel type.

[0033] As regards operation, the fact that the front surface 15 and 115, which acts as a contrast surface (said contrast being elastic by way of the presence of the layers 19 and 119) for the paste distribution roller is knurled allows the actual contrast surface to be reduced, thus reducing the amount of paste transferred from the roller to the label and avoiding excess deposits that might cause problems.

[0034] Practical tests have demonstrated that the labels are applied adequately to the bottles and that the labeling system is no longer subject to the problems mentioned in the introduction.

[0035] In practice, the materials used, so long as they are compatible with the contingent use, as well as the dimensions, may be any according to requirements.

[0036] The disclosures in Italian Utility Model Application No. PD2002U000057 from which this application

claims priority are incorporated herein by reference.

[0037] 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 pad for label transfer rollers in container labeling systems at least for regions having a cylindrical contour, said pad being of the type that comprises a plate-like body (12, 112) made of plastics with raised mutually opposite rear edges (13, 113) for insertion in a suitable complementarily shaped undercut seat (14, 114) of the roller (11), a front surface (15, 115) that is contoured so as to protrude from a rolling band (16) of the roller (11), and through holes (17, 117) that constitute the endings of a vacuum system, said pad being **characterized in that** its front surface (15, 115) is at least partially knurled.
2. The pad according to claim 1, with a front surface (15) composed of a portion (15a) that is parallel to the line that is tangent to said roller (11) and is arranged between two inclined blending portions (15b), **characterized in that** said portion (15a) that is parallel to the tangent line is knurled.
3. The pad according to claim 1, with a front surface composed of a portion (115a) that is parallel to the line that is tangent to said roller (11) and an inclined blending portion (115b), **characterized in that** said portion (115a) that is parallel to the line that is tangent to the roller is knurled.
4. The pad according to one or more of the preceding claims, **characterized in that** knurling (18, 118) of the horizontally elongated parallel type is provided on said front surface (15, 115).
5. The pad according to one or more of the preceding claims, **characterized in that** said knurling (18, 118) has recesses that are each approximately 1 mm wide and approximately 0.5 mm deep.

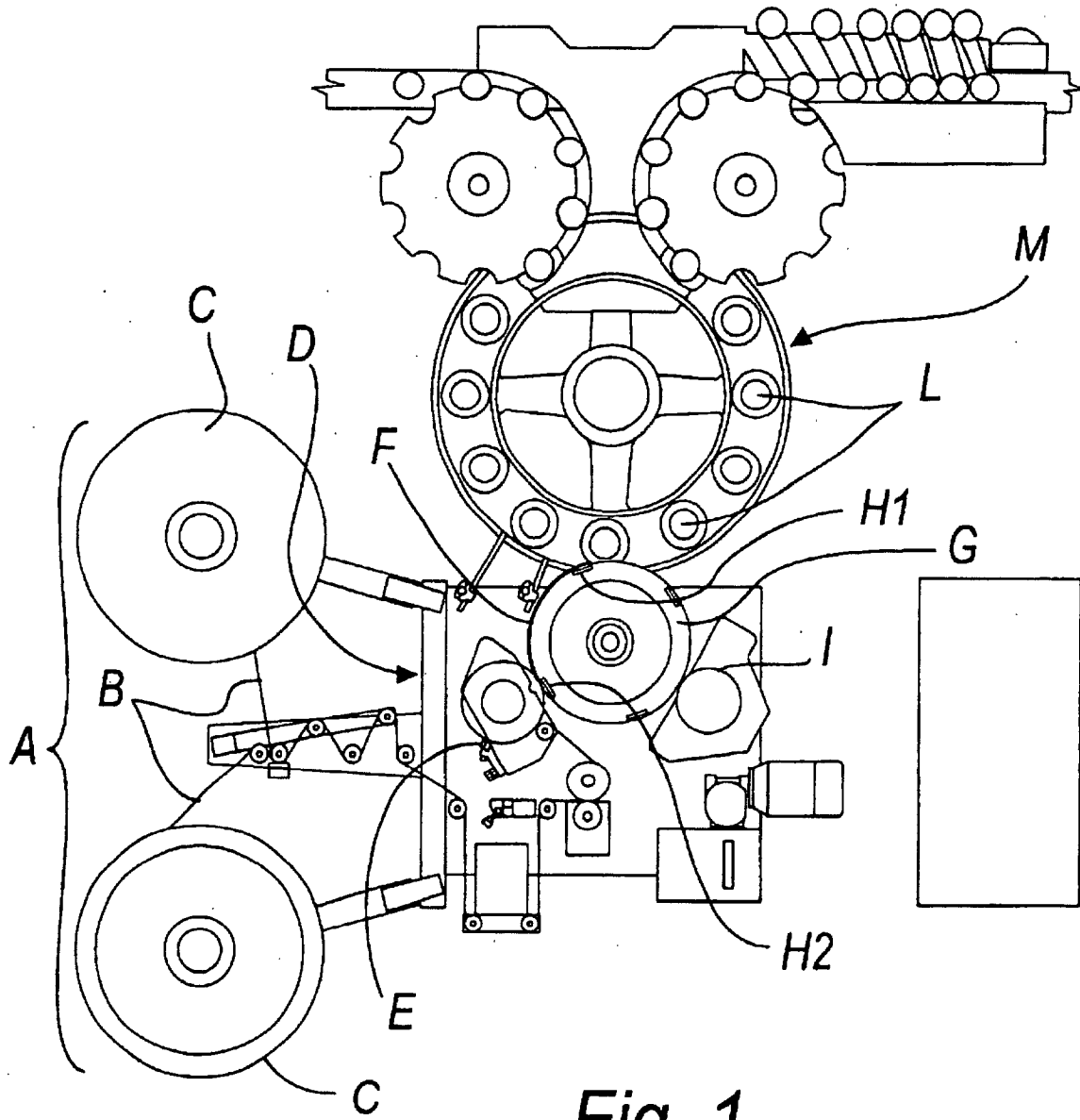
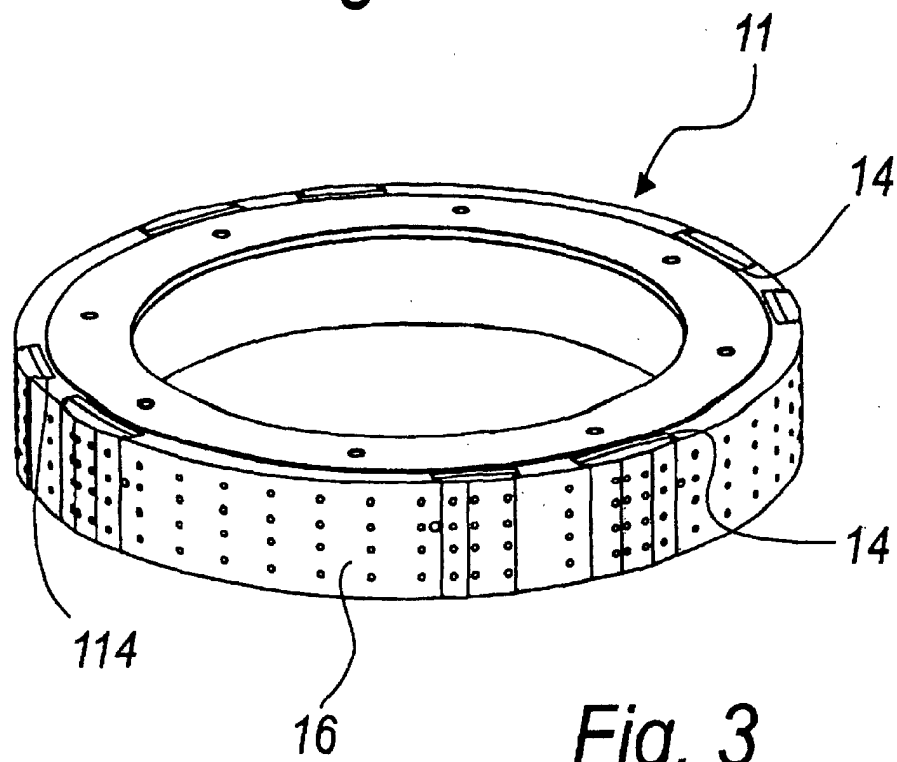
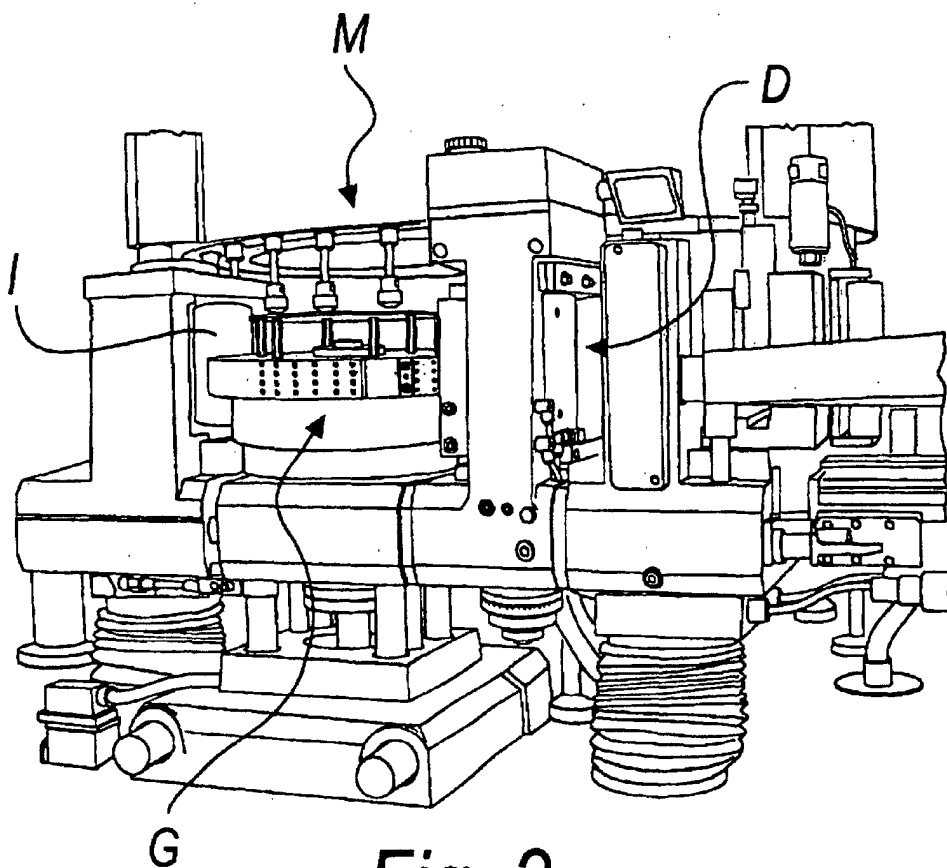
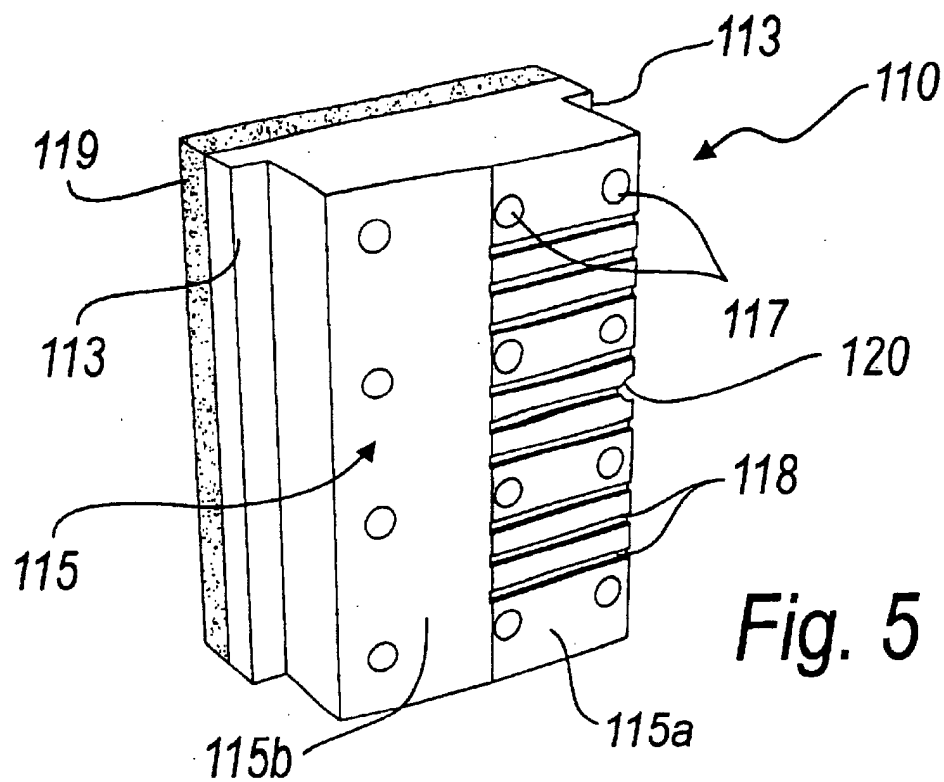
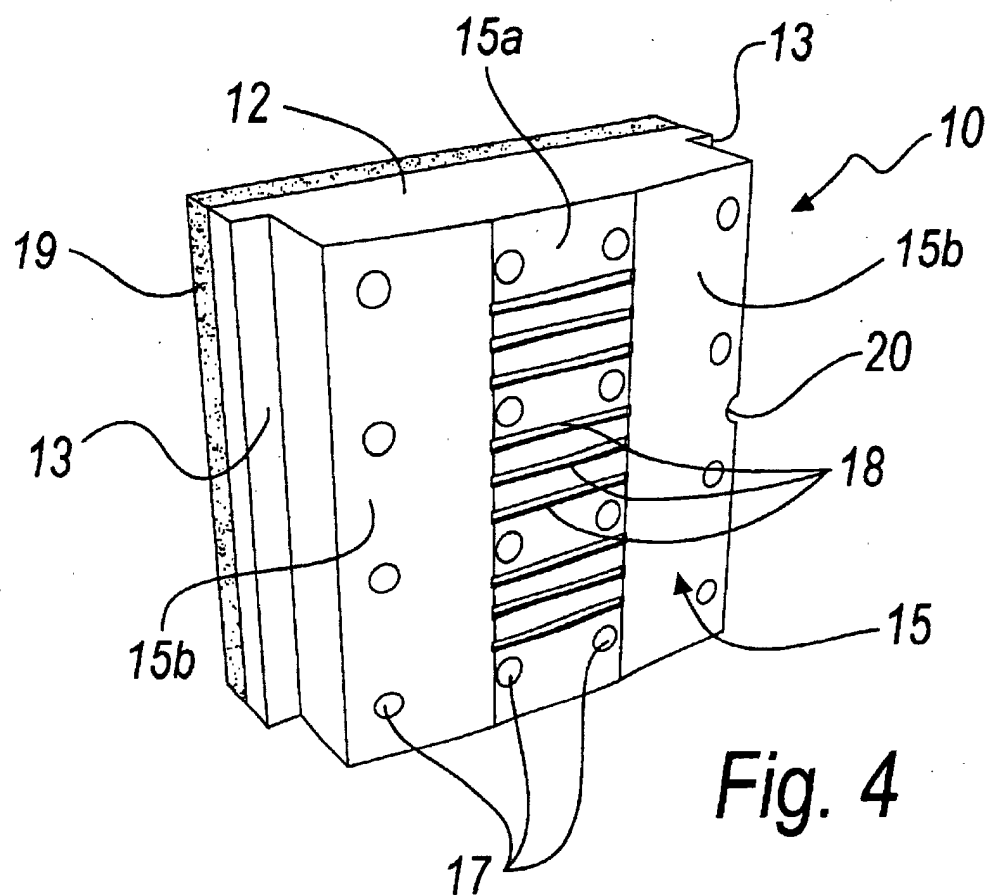


Fig. 1







European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 01 4466

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 872 424 A (SASIB LABELLING SPA) 21 October 1998 (1998-10-21) * column 4, line 1 - line 12; figure 5 *	1	B65C9/18 B65C9/14
A	US 5 779 835 A (YAGER MICHAEL ET AL) 14 July 1998 (1998-07-14) * column 6, line 47 - line 58; figures 4,6 *	1	
A	US 5 111 633 A (DRAGHETTI FIORENZO) 12 May 1992 (1992-05-12) * column 3, line 56 - column 4, line 6; figure 1 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		5 November 2003	Martínez Navarro, A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 01 4466

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.

05-11-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0872424	A	21-10-1998	IT	PR970016 A1	18-09-1998
			DE	69815586 D1	24-07-2003
			EP	1279604 A1	29-01-2003
			EP	0872424 A2	21-10-1998
			US	6044887 A	04-04-2000
US 5779835	A	14-07-1998	US	5749990 A	12-05-1998
			AT	194567 T	15-07-2000
			AT	214017 T	15-03-2002
			AT	214018 T	15-03-2002
			AU	4638796 A	17-06-1996
			DE	69517999 D1	17-08-2000
			DE	69517999 T2	07-12-2000
			DE	69525775 D1	11-04-2002
			DE	69525775 T2	18-07-2002
			DE	69525776 D1	11-04-2002
			DE	69525776 T2	08-08-2002
			DK	792238 T3	23-10-2000
			DK	884244 T3	10-06-2002
			DK	884245 T3	10-06-2002
			EP	0792238 A2	03-09-1997
			EP	0884244 A1	16-12-1998
			EP	0884245 A1	16-12-1998
			ES	2148592 T3	16-10-2000
			ES	2175565 T3	16-11-2002
			ES	2175566 T3	16-11-2002
			GR	3034382 T3	29-12-2000
			PT	792238 T	31-10-2000
			PT	884244 T	30-08-2002
			PT	884245 T	30-08-2002
			WO	9615943 A2	30-05-1996
			US	5522960 A	04-06-1996
			US	5480502 A	02-01-1996
US 5111633	A	12-05-1992	IT	1235977 B	15-12-1992
			BR	9006384 A	24-09-1991
			DE	4040261 A1	20-06-1991
			FR	2655947 A1	21-06-1991
			GB	2239646 A ,B	10-07-1991
			JP	6211210 A	02-08-1994

EPO FORM P0459

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