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(30) Priority: **31.07.2000 IT BO000467**

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(54) **Packaging machine**

(57) The magazine (8) for the cardboard blanks (C) is located in the input part of the said machine, in line, and outside any higher external profile, and in this magazine the blanks are stacked on edge, with their greatest dimensions in a vertical plane and with their flat faces positioned transversely with respect to the direction of discharge and feed of the said blanks. Means (12-27) cyclically draw the leading blank from the magazine and deposit the said blank on an inclined ascending conveyor (20) located under the path along which the products are stored (1) and grouped (2), the conveyor being provided with pairs of teeth (120) which push the blank from behind and being connected to programmable driving means, to ensure that, when the format of the blanks changes, a predetermined part (S) of each blank is al-

ways brought into alignment with the front edge of the group of products (P') formed by the said grouping line. The product storage line is designed for lateral connection to a line (5, 5') for feeding the said products (P) which thus do not interfere with the said blank feed magazine. Downstream from the product grouping line (2), a folder arm (29) carries out the first raising of the rear panel (C4) of a packaging blank which is already carrying a group of products, and then the raising of the front panels (C1, C2) of the following blank, to prepare these panels for the final raising by other means and to prevent the said panels from interfering with each other, while providing a reduced interval between the advancing groups of products and having the consequent objective of increasing the output of the machine.

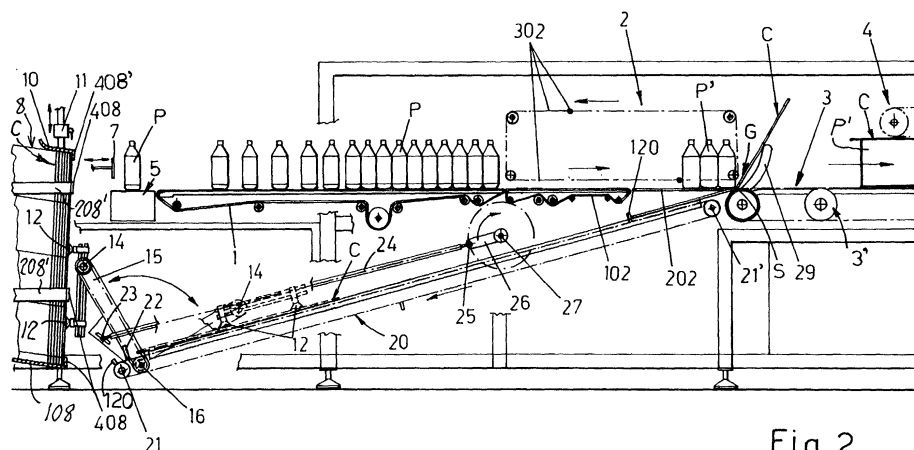


Fig. 2

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## EUROPEAN SEARCH REPORT

Application Number  
EP 01 11 7138

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)
X	US 4 887 414 A (ARENA JOHN P) 19 December 1989 (1989-12-19) * column 4, line 19-42; figures 2A,3 *	11	B65B21/24 B65B5/02 B65B43/18
A	---	1,2	
A	EP 0 786 407 A (BAUMER SRL) 30 July 1997 (1997-07-30) * column 6, line 56 - column 7, line 13; figures 1,5,6 *	1,6,10	
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A	EP 0 849 176 A (SMI S P A) 24 June 1998 (1998-06-24) * column 5, line 3-28; figures 8,9 *	1,4,6,8, 9,11	
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A	EP 0 640 527 A (OCME SRL) 1 March 1995 (1995-03-01) * column 4, line 1-8; figures 2,4-8 *	1,6,10	
A	---		
A	US 4 878 337 A (RAUDAT JOHN L ET AL) 7 November 1989 (1989-11-07) * abstract; figure 1A *	1,4,6,8, 11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15 August 2003	Examiner Grentzius, W
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	

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### 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:



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**LACK OF UNITY OF INVENTION**  
**SHEET B**

Application Number  
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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: 1-9,11

Packaging machine with a particular arrangement of the magazine

2. Claim : 10

Packaging machine with particular means for avoiding interference between subsequent cardboard blanks

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

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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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15-08-2003

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