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(11) **EP 0 998 992 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
13.11.2002 Bulletin 2002/46

(51) Int Cl.7: **B21B 37/62**

(43) Date of publication A2:
10.05.2000 Bulletin 2000/19

(21) Application number: **99202359.8**

(22) Date of filing: **19.07.1999**

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

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(30) Priority: **25.09.1998 GB 9820787**

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(54) **Roll position control in cluster mills**

(57) A dynamic position control means for a cluster mill which has a two-part pre-stressed housing in which the two parts are joined by hydraulic cylinders and associated columns. It comprises an actuating means located between the housings of the mill, so as to vary the relative separation or the relative orientation or both of the two halves of the housing during rolling. The actuating means includes at least one hydraulic lifting ram disposed substantially between the two halves of the

housing, and ideally four hydraulic lifting rams each ram disposed at the corner position of a rectangular housing. The hydraulic lifting rams are of the doughnut type, encompassing each of the hydraulic cylinder's columns. The dynamic position control means includes position monitoring means, in particular, four position transducers mounted between the four respective corners of the housings. Control means then adjust the actuating means in response to the position monitoring means or other measured data.

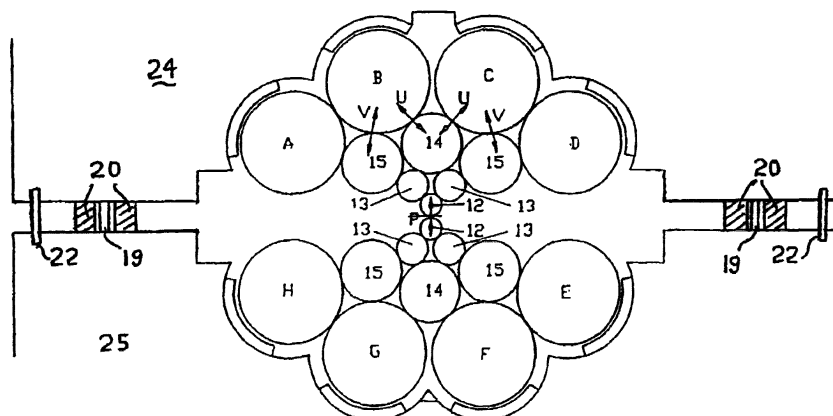


Fig. 2

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PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 99 20 2359 shall be considered, for the purposes of subsequent proceedings, as the European search report

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	EP 0 693 328 A (SENDZIMIR INC T) 24 January 1996 (1996-01-24)	1-3	B21B37/62
A	* column 6, line 29 - column 8, line 9; claims 1,2,5; figures 2,4,5 *	4-7	
X	EP 0 429 812 A (SUNDWIGER EISEN MASCHINEN) 5 June 1991 (1991-06-05)	1-3	
A	* column 2, line 45 - column 3, line 32; claims 1,2; figures 1,3 *	4-7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B21B
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
MUNICH		18 September 2002	Forciniti, M
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 (P04C07)



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**INCOMPLETE SEARCH
SHEET C**

Application Number
EP 99 20 2359

Claim(s) searched completely:
1-7

Claim(s) not searched:
8,9

Reason for the limitation of the search:

The wording of claim 8 and claim 9 presently on file render it difficult, if not impossible, to determine the matter for which protection is sought. Hence the present application fails to comply with the clarity requirements of Article 84 EPC to such an extent that a meaningful search is impossible.

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

EP 99 20 2359

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The members are as contained in the European Patent Office EDP file on
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18-09-2002

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