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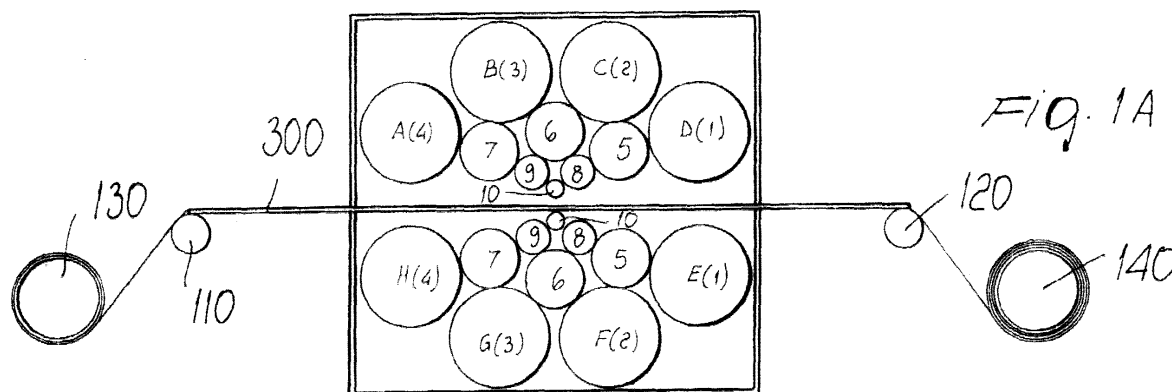
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(54) **Method for the optimization of the configuration of multiroll mill housings, particularly for cluster-type mills**

(57) A method for the optimization of the configuration of multi-roll mill housings, particularly for mills of the cluster type constituted by two half-housings, said housings comprising eccentric rolls, first intermediate rolls, second intermediate rolls, and work rolls, characterized in that it comprises the steps that consist in:

calculating the coordinates of the center of rotation of first intermediate rolls, second intermediate rolls and work rolls on the basis of data related to the position of eccentric rolls and to the diameter of said eccentric rolls;

calculating a position value for said eccentric rolls which satisfies mechanical constraints set by the configuration of said mill;
 calculating the current minimum distance between a line which is tangent to each work roll and a reference axis which represents the edge of the corresponding housing section; and
 calculating the minimum and maximum values of the diameters of part of the rolls of the housing as a function of the diameter of the remaining rolls provided in the housing.





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 98 20 4394

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.6)
A	US 4 248 073 A (TURLEY JOHN W ET AL) 3 February 1981 (1981-02-03) * column 5, line 25 - column 10, line 64; figures 1,2,4,14,15 *	1	B21B38/10 B21B31/26
A	MARCOLINI M: "ABB MASTER IN CONTROL OF SENDZIMIR MILLS" ABB REVIEW, - July 1993 (1993-07) page 17-28 XP000394228 * page 22, right-hand column - page 23 *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 244 (M-1127), 24 June 1991 (1991-06-24) -& JP 03 077702 A (KOBE STEEL LTD), 3 April 1991 (1991-04-03) * abstract; figures *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B21B
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 10 October 2002	Examiner Meritano, L
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 20 4394

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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10-10-2002

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 4248073	A	03-02-1981	DE	2907247 A1	30-08-1979

JP 03077702	A	03-04-1991	JP	1801982 C	26-11-1993
			JP	5005561 B	22-01-1993
			KR	9302864 B1	12-04-1993
