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(54) Computer controlled universal grinder and method for grinding hypotrochoidal, epitrochoidal and circular bearing races.

(57) A grinding machine for grinding epitrochoidal, hypotrochoidal, and circular bearing races in one set-up without having to move the part and to insure near perfect concentricity between all of the bearing races.

A machine blank is mounted on an upper rotary table that is in turn mounted on a lower rotary table. The upper table is driven both by the lower table and by an independent servomotor. The net speed of the upper table is the difference between the two driving speeds of the tables. The axis of rotation of the upper table is capable of being offset from the axis of rotation of the lower table. The two tables are rotated in opposite directions while a grinding wheel is moved laterally into contact with the surface of a rough-machined part to form the trochoidal surface. The characteristics are determined by the amount of the offset, the diameter of any rollers that are to be positioned between the trochoidal surfaces in the speed change device, and the relative speeds of the two tables. After the trochoidal surface or surfaces are completed, the lower table is stopped in its home position and the upper table is driven in order to grind the circular bearing race or races. Three independently-driven grinding spindles are provided.

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EUROPEAN SEARCH REPORT

Application Number

EP 89 10 5689

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.5)
X,Y,A	US-A-3 554 082 (A.FAULCON) * abstract @ column 1, line 1 - column 2, line 16; figures *	1,2,3,4, 5-12	B 24 B 19/06 B 24 B 19/08 B 24 B 19/09
Y	GB-A-2 115 730 (NTN TOYO BEARING COMPANY LTD.) * page 2, lines 101 - 103; figure 4 *	3	
Y	DE-A-2 544 666 (GEBRÜDER GRIESHABER METALL-WARENFABRIK) * page 6, line 10 - page 8, line 8; figures *	4	
A	US-A-3 857 203 (H.ASANO ET AL.) * column 1, line 45 - column 3, line 20; figures *	5-12	
A	GB-A-2 782 03 (L.K.BRAREN) * page 1, line 9 - page 2, line 101; figures *	5-12	
A	US-A-2 151 483 (A.A.NICHOLS) * column 3, lines 1 - 14 *	7,8,10,12	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 24 B
B 23 F
F 16 H

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	07 November 90	VAGLIENTI G.L.M.

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same catagory
A: technological background
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