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54 **Improved microfinishing apparatus and method.**

57 A microfinishing apparatus and method is disclosed particularly useful for microfinishing workpiece surfaces such as are found in journal bearings and cylinder bores with a coated abrasive tape (30), which is brought into contact with a relatively rotating workpiece surface and is pressed against that surface by an insert (36). The insert (36) is made from a relatively rigid substance such as honing stone material. Since the insert (36) is made from a rigid material, the insert surface shape is generated in the workpiece surface and therefore geometry corrections in the workpiece surface can be accomplished. In alternate embodiments (Figure 6) of this invention, the rigid inserts have relieved portions or noncylindrical surfaces such that a desired surface profile in the workpiece surface is generated. In another embodiment (Figure 10), one or more flexible inserts are added to the rigid insert enabling the fillet radius area to be microfinished. In yet another embodiment (Figure 11), coated abrasive tape includes a multiplicity of perforations thereby permitting the exchange of cutting fluids between the surfaces. Finally, several means (Figure 12) for supporting the rigid inserts for slight rotation relative to the workpiece surface are described.

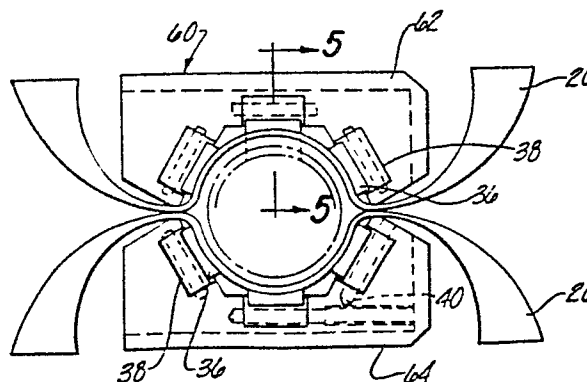


Fig-4



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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. 4)
X	US-A-1 905 821 (DUNBAR et al.) * page 1, line 1 - page 3, line 13; figures 1, 2 *	1,3,4, 6,7,15 ,17,25	B 24 B 35/00
X	--- FACHBERICHTE FÜR OBERFLÄCHENTECHNIK, vol. 8, no. 9/10, 1970, pages 203-208; G. HAASIS "Bandfinishen - ein wirtschaftliches Feinbearbeitungsverfahren" * pages 203, 204 *	1,14, 19,21	
A	--- US-A-2 270 522 (HAEGER et al.) * page 1, left-hand column, lines 1-21; page 2, left-hand column, lines 27-37; figures 4, 5 *	1	
A	--- US-A-1 993 543 (EGGER) * page 2, right-hand column, lines 51-75; page 3, left-hand column, lines 60-67; figures 5, 9 *	1,3	TECHNICAL FIELDS SEARCHED (Int. Cl. 4) B 24 B 5/42 B 24 B 33/04 B 24 B 35/00 B 24 B 37/00
A	--- US-A-2 166 009 (INDGE) * page 3, right-hand column, lines 3-9; page 4, left-hand col- umn, line 60 - right-hand column, line 13; figure 2 *	1,3	
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The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 03-12-1986	Examiner MARTIN A E 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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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			Page 2
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	US-A-2 502 381 (INDGE) * column 3, lines 1-60; figures 2, 5 *	2	
A	DE-C- 881 915 (JUNKERS) * claim 1; figure 1 *	3	
A	SOVIET INVENTIONS ILLUSTRATED, Section Mechanical, Week B21, 4th July 1979, abstract no. E6645 P61, Derwent Publications Ltd., London, GB; & SU - A - 616 117 (CAR PROD TECHN INST) 10-07-1978	11	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
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