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71 Applicant: **Fletcher, J. Lawrence, 3102 South Pacific, Santa Ana California 92704 (US)**

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72 Inventor: **Fletcher, J. Lawrence, 3102 South Pacific, Santa Ana California 92704 (US)**

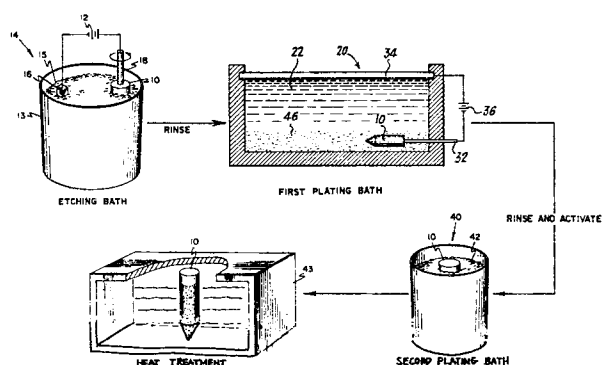
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74 Representative: **Walters, Frederick James et al, URQUHART-DYKES & Lord St. Martin's House 140 Tottenham Court Road, London, W1P 0JN (GB)**

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54 **Bonding process for grinding tools.**

57 A bonding process for grinding tools in which a metallic workpiece (10) is pre-etched (14) to form cavities in the surface of the workpiece for individually receiving abrasive particles to be bonded thereto. The etched workpiece is at least partially embedded in a layer (46) of the abrasive particles in a first plating bath (20) comprising an aqueous solution of metal ions (22) and an electromotive force is imposed across the workpiece and an anode (34) so that the abrasive particles become partially embedded in the cavities in the workpiece surface as metal is plated on to the surface and around the abrasive particles adjacent to the surface. A second plating of metal in a second plating bath (40) securely bonds the particles to the workpiece and can provide the workpiece with a predetermined hardness for a particular application. The dual bonding process can be repeated for each layer to make multi-layered tools.





European Patent
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EUROPEAN SEARCH REPORT

0004449
Application number

EP 79 30 0429

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ²)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<u>GB - A - 1 311 854</u> (U.K. ATOMIC ENERGY AUTHORITY) * page 2, lines 26-45; claims 1-12 * ---	1	C 25 D 15/00 B 24 D 3/05
	<u>GB - A - 966 604</u> (MATTSSON) * page 2, lines 42-87; claims 1-12 * ---	1	
	<u>DE - C - 752 952</u> (FINZLER) * page 2, lines 75-91; claims 1-3 * ---	1	
	<u>FR - A - 2 075 972</u> (KAMPSCHULTE) * example 1; claims 1-4 * ---	1	TECHNICAL FIELDS SEARCHED (Int.Cl. ²)
	<u>US - A - 3 957 593</u> (HAACK) * column 3, lines 30-47; claims 1-4 * ---	1	C 25 D 15/00 C 25 D 15/02
	<u>US - A - 2 360 798</u> (SELIGMAN) * page 4, left-hand column, lines 17-60; claims 1-9 * ---	1	
X, P	<u>US - A - 4 079 552</u> (FLETCHER) * column 2, lines 45-66; column 3, lines 5-60; column 4, lines 6-60; column 5, lines 10-28; claims 1-7 * ---	1, 3, 4, 5, 6, 7, 8, 10	
A	<u>US - A - 3 356 599</u> (WEISS)		CATEGORY OF CITED DOCUMENTS
A	<u>US - A - 3 973 925</u> (ASAEDA)		X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
A	<u>FR - A - 1 147 811</u> (FERRAND)		
A	<u>FR - A - 2 134 846</u> (NASCH) -----		
	The present search report has been drawn up for all claims		&: member of the same patent family, corresponding document
Place of search The Hague		Date of completion of the search 25-06-1979	Examiner VAN LEEUWEN