



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
27.11.2013 Bulletin 2013/48

(51) Int Cl.:
B24D 5/06 (2006.01) **B24D 5/10** (2006.01)
B24D 13/02 (2006.01) **B24D 13/20** (2006.01)
B24B 27/00 (2006.01) **B24B 41/00** (2006.01)

(43) Date of publication A2:
16.02.2011 Bulletin 2011/07

(21) Application number: **10171593.6**

(22) Date of filing: **02.08.2010**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR
Designated Extension States:
BA ME RS

(71) Applicant: **Canon Kabushiki Kaisha**
Tokyo 146-8501 (JP)

(72) Inventor: **Masuyama, Kenichi**
Tokyo 146-8501 (JP)

(74) Representative: **TBK**
Bavariaring 4-6
80336 München (DE)

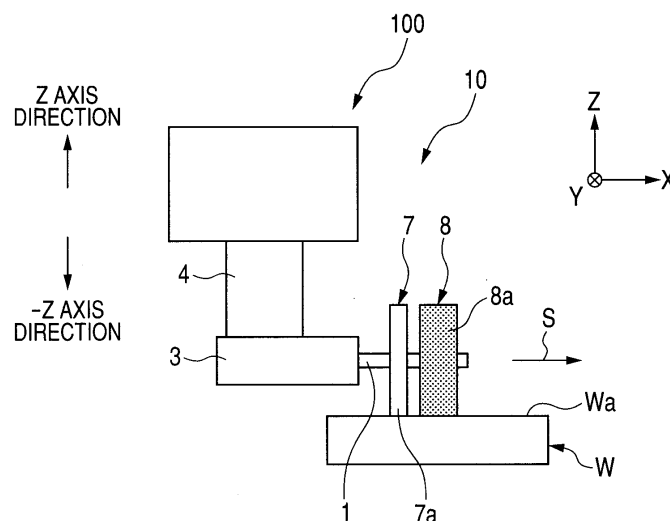
(30) Priority: **03.08.2009 JP 2009181085**

(54) **Polishing method for a workpiece and polishing tool used for the polishing method**

(57) Provided is a polishing tool capable of forming a high-quality surface of a workpiece in a short period of time. The polishing tool (10) comprises a rotation shaft (1) arranged parallel to a feed direction (S) of the polishing tool relative to a workpiece (W) and at least two polishing bodies (7,8). The first polishing body (8) includes a foamed resin such as a foamed polyurethane resin, and has an outer peripheral surface (8a) having a porosity

higher than the porosity of the second polishing body (7). The second polishing body (7) comprises a non-foamed resin such as a non-foamed polyurethane resin being a material more rigid than the material used for the first polishing body (8). During polishing, the first polishing body (8) removes material from the surface (Wa) of the workpiece (W), and the second polishing body (7) smoothes an unevenness resulting from the material removal with the first polishing body (8).

FIG. 1





EUROPEAN SEARCH REPORT

Application Number
EP 10 17 1593

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 23 31 646 A1 (EVERTZ EGON) 28 February 1974 (1974-02-28)	1,3	INV. B24D5/06 B24D5/10 B24D13/02 B24D13/20 B24B27/00 B24B41/00
Y	* page 1, paragraph 1 * * page 3, paragraph 2 * * page 5 * * figure 1 *	2,4-6	
Y,D	----- JP H11 90806 A (RICOH KK) 6 April 1999 (1999-04-06) * the whole document *	5,6	
Y	----- GB 2 069 893 A (BRAASCH G) 3 September 1981 (1981-09-03) * figures 2,3 * * page 3, lines 13-19 *	2	
Y	----- GB 523 879 A (JAMES HENRY FLETCHER; MITCHELL S EMERY WHEEL COMPANY; DUNCAN MCNEIL AN) 24 July 1940 (1940-07-24) * page 2, lines 64-71; figure 2 * -----	4	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B24B B24D
Place of search		Date of completion of the search	Examiner
Munich		22 October 2013	Endres, Mirja
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			

2
EPO FORM 1503 03.82 (P04C01)

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

EP 10 17 1593

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-10-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2331646 A1	28-02-1974	DE 2331646 A1	28-02-1974
		JP S49132688 A	19-12-1974
JP H1190806 A	06-04-1999	NONE	
GB 2069893 A	03-09-1981	CA 1154258 A1	27-09-1983
		DK 26181 A	22-07-1981
		ES 8200830 A1	16-02-1982
		FR 2473933 A1	24-07-1981
		GB 2069893 A	03-09-1981
		IT 1145909 B	12-11-1986
		NL 8007032 A	17-08-1981
		SE 8100090 A	22-07-1981
GB 523879 A	24-07-1940	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82