18/12/02
2002079937

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

ACTION

(43) International Publication Date
10 January 2002 (10.01.2002)

PCT

(10) International Publication Number
WO 02/02279 A3

(51) International Patent Classification[7]: B24D 13/12, 13/14, B24B 37/04, B24D 18/00

(21) International Application Number: PCT/US01/20904

(22) International Filing Date: 29 June 2001 (29.06.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/214,774 29 June 2000 (29.06.2000) US
09/668,142 25 September 2000 (25.09.2000) US

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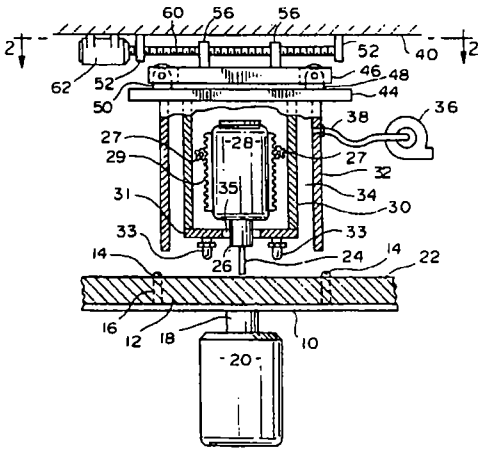
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) Title: GROOVED POLISHING PADS AND METHODS OF USE



(57) Abstract: Grooves are formed in a CMP (12) pad by positioning the pad on a supporting surface with a working surface (22) of the pad in spaced relation opposite to a router bit (24) and at least one projecting stop member (33) adjacent to the router bit, an outer end portion of the bit projecting beyond the stop. When the bit is rotated, relative axial movement between the bit and the pad causes the outer end portion of the bit to cut an initial recess in the pad. Relative lateral movement between the rotating bit and the pad then forms a groove which extends laterally away from the recess and has a depth substantially the same as that of the recess. Different lateral movements between the bit and the pad are used to form a variety of groove patterns, the depths of which are precisely controlled by the stop member(s). The grooves may be formed in the polishing surface and/or the rear opposite surface of the pad and passages may be provided for interconnecting the rear grooves with the polishing surface or the front grooves. Grooves in the polishing surface may be provided with outlets through which a polishing slurry may flow while the polishing surface is in contact with a workpiece surface.

WO 02/02279 A3

(88) Date of publication of the international search report:
30 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.