

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number
WO 2005/064648 A1

(51) International Patent Classification⁷: **H01L 21/00**

(21) International Application Number:
PCT/US2004/042871

(22) International Filing Date:
20 December 2004 (20.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/745,219 22 December 2003 (22.12.2003) US

(71) Applicant (for all designated States except US): **LAM RESEARCH CORPORATION** [US/US]; 4650 Cushing Parkway, Fremont, CA 94538 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DAVIS, Glenn, W.** [US/US]; 2213 Stratford Drive, Milpitas, CA 95035 (US). **WOODS, Carl** [US/US]; 333 Village Creek Road, Aptos, CA 95003 (US). **PARKS, John** [US/US]; 1196 Promenade

Street, Hercules, CA 94547 (US). **REDEKER, Fred, C.** [US/US]; 1801 Sioux Drive, Fremont, CA 94539 (US). **RAVKIN, Mike** [US/US]; 1215 West Knickerbocker Drive, Sunnyvale, CA 94087 (US). **ORBOCK, Michael, L.** [US/US]; 3741 NW 163rd Terrace, Beaverton, OR 97006 (US).

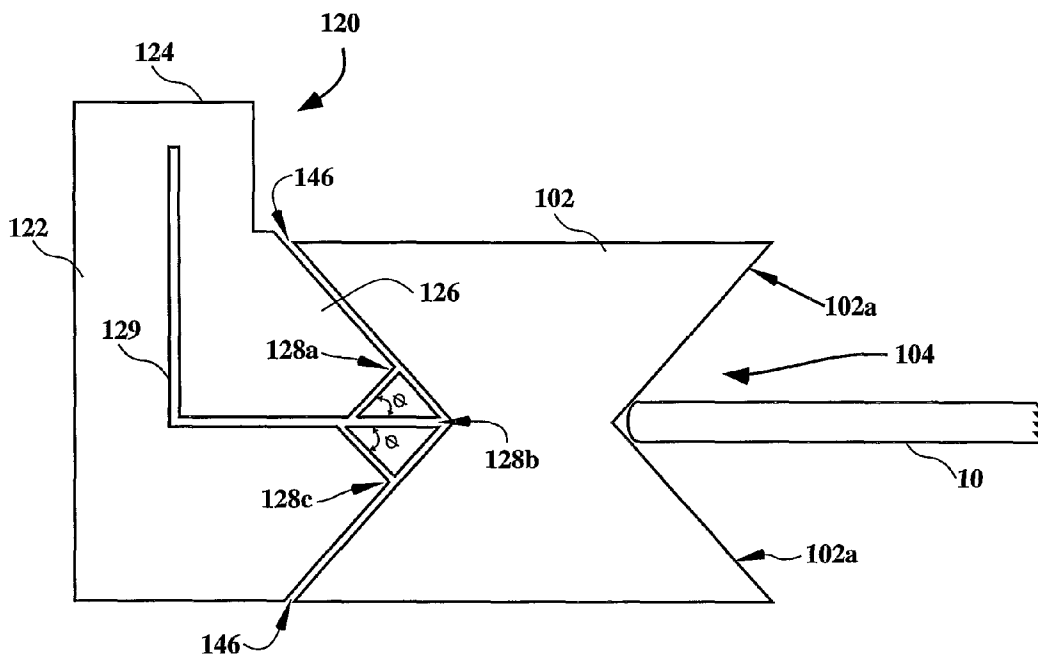
(74) Agent: **VON WOHL, Rick**; Martine & Penilla, LLP, 710 Lakeway Drive, Suite 200, Sunnyvale, CA 94085 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: **EDGE WHEEL DRY MANIFOLD**



(57) Abstract: A apparatus for drying a substrate (10) includes a vacuum manifold (120) positioned adjacent to an edge wheel (102). The edge wheel includes an edge wheel groove (104) for receiving a peripheral edge of a substrate, and the edge wheel is capable of rotating the substrate at a desired set velocity. The vacuum manifold includes a proximity end (126) having one or more vacuum ports (128) defined therein. The proximity end is positioned at least partially within the edge wheel groove, and using supplied vacuum removes fluids that accumulate in the edge wheel groove and prevents re-deposit of trapped fluids around the peripheral edge of the substrate.

WO 2005/064648 A1



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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.