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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 December 2008 (24.12.2008)

PCT

(10) International Publication Number
WO 2008/156529 A1

(51) International Patent Classification:
H01L 21/302 (2006.01)

(21) International Application Number:
PCT/US2008/006095

(22) International Filing Date: 13 May 2008 (13.05.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/820,590 19 June 2007 (19.06.2007) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, 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*

[Continued on next page]

(54) **Title:** SYSTEM, METHOD AND APPARATUS FOR MAINTAINING SEPARATION OF LIQUIDS IN A CONTROLLED MENISCUS

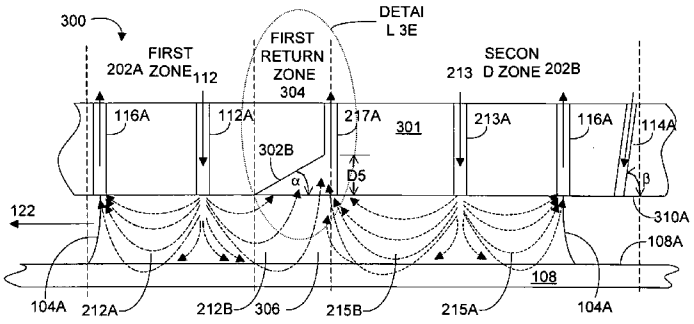

FIGURE 3B

(57) **Abstract:** A system and method of forming and using a proximity head. The proximity head includes a head surface, the head surface including a first zone, a second zone and an inner return zone. The first zone including a first flat surface region and a plurality of first discrete holes. Each one of the plurality of first discrete holes being connected to a corresponding one of a plurality of first conduits. The plurality of first discrete holes residing in the head surface and extending through the first flat surface region. At least a portion of the plurality of first discrete holes are arranged in a first row. The second zone including a second flat region and a plurality of second discrete holes. Each one of the plurality of second discrete holes being connected to a corresponding one of a plurality of second conduits. The plurality of second discrete holes residing in the head surface and extending through the second flat surface region. The inner return zone including a plurality of inner return discrete holes. The inner return zone being disposed between and adjacent to the first zone and the second zone. Each one of the plurality of the inner return discrete holes being connected to a corresponding one of a plurality of inner return conduits. The plurality of inner return discrete holes residing in the head surface and extending through the head surface. At least a portion of the plurality of inner return discrete holes are arranged in an inner return row. The first row and the inner return row being substantially parallel. A first portion of an edge of each one of the plurality of inner return discrete holes is recessed into the head surface.

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