



(51) International Patent Classification:
H01L 31/00 (2006.01)

(21) International Application Number:
PCT/US2010/020245

(22) International Filing Date:
6 January 2010 (06.01.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/204,382 6 January 2009 (06.01.2009) US

(71) Applicant (for all designated States except US): **1366 TECHNOLOGIES INC.** [US/US]; 45 Hartwell Avenue, Lexington, MA 02421 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SACHS, Emanuel, M.** [US/US]; 18 Moreland Avenue, Newton, MA 02459 (US). **WALLACE, Richard, L.** [US/US]; 51 Nashoba Rd., Acton, MA 01720 (US). **BREDT, James, F.** [US/US]; 73 Templeton Parkway, Watertown, MA 02172 (US). **POLITO, Benjamin, F.** [US/US]; 214R Harvard St #2, Cambridge, MA 02139 (US). **ERSEN, Ali** [US/US]; 145 Algonquin Road, Chestnut Hill, MA 02467 (US).

(74) Agent: **WEISSBURG, Steven, J.**; 190 Walden St., 3rd Floor, Cambridge, MA 02140 (US).

(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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: DISPENSING LIQUID CONTAINING MATERIAL TO PATTERNED SURFACES USING A DISPENSING TUBE

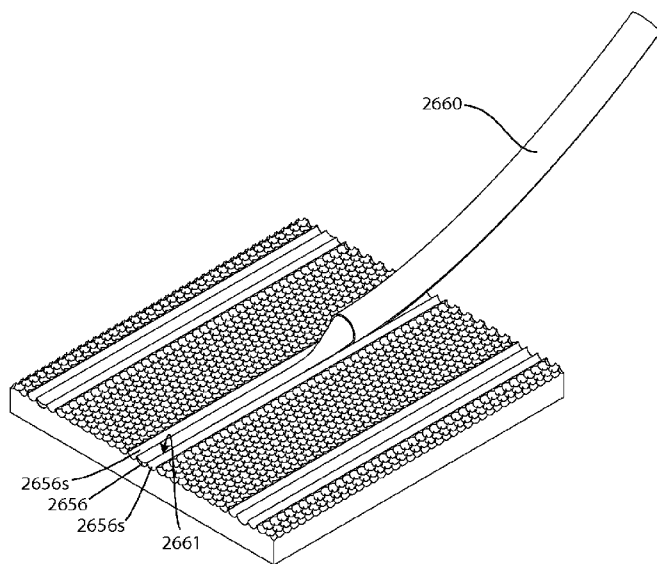


Fig. 26

(57) Abstract: Materials that contain liquid are deposited into grooves upon a surface of a work piece, such as a silicon wafer to form a solar cell. Liquid can be dispensed into work piece paths, such as grooves under pressure through a dispensing tube. The tube mechanically tracks in the groove. The tube may be small and rest at the groove bottom, with the sidewalls providing restraint. Or it may be larger and ride on the top edges of the groove. A tracking feature, such as a protrusion, Non-circular cross-sections, molded-on protrusions and lobes also enhance tracking. The tube may be forced against the groove by spring or magnetic loading. Alignment guides, such as lead-in features may guide the tube into the groove. Restoring features along the path may restore a wayward tube. Many tubes may be used. Many work pieces can be treated in a line or on a drum.



-
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*