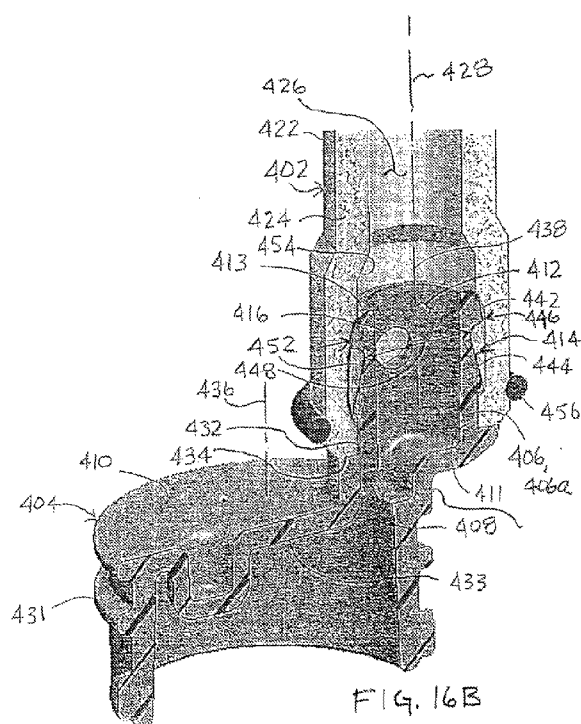




- (51) **International Patent Classification:**
H01L 21/302 (2006.01) *H01L 21/02* (2006.01)
- (21) **International Application Number:**
PCT/US2014/060533
- (22) **International Filing Date:**
14 October 2014 (14.10.2014)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/890,611 14 October 2013 (14.10.2013) US
61/940,744 17 February 2014 (17.02.2014) US
- (71) **Applicant:** ENTEGRIS, INC. [US/US]; 129 Concord Road, Billerica, MA 01821 (US).
- (72) **Inventors:** SMITH, Mark, V.; 4110 Bobble Kay Place, Colorado Springs, CO 80907 (US). BEATTY, Christopher; 7102 Wintery Loop, Colorado Spring, CO 80920 (US). BANDREDDI, Murali; 3775 Oak Meadow Drive, Colorado Springs, CO 80920 (US).
- (74) **Agents:** CHRISTENSEN, Douglas, J. et al.; Christensen Fonder P.A., 33 South Sixth Street, Suite 3940, Minneapolis, MN 55402 (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, BN, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK,

[Continued on next page]

(54) **Title:** TOWERS FOR SUBSTRATE CARRIERS

(57) **Abstract:** A diffuser tower assembly having a diffuser with a flared end and a fitting with an offset portion and nipple sized for the flared end. The assembly may be configured for providing low coverage purging. Diffuser tower assemblies may be in the form of a kit for retrofitting existing front opening wafer containers. The inlet fitting may include structure that enhances purge characteristics near the base of the porous media diffuser for enhanced sweeping of the floor of the substrate container. Embodiments of the disclosure generate an uneven flow distribution that provides a non-uniform flow distribution at the opening. In an embodiment, where the opening is in a substantially vertical orientation, the non-uniform flow distribution is tailored to deliver a greater flow rate to the bottom half of the opening than to the top of the opening.

WO 2015/057739 A1



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, **Published:**
GW, KM, ML, MR, NE, SN, TD, TG).

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