



(51) International Patent Classification:

**B01J 19/00** (2006.01) **C07K 1/00** (2006.01)  
**B01J 19/18** (2006.01) **C07K 2/00** (2006.01)  
**C12M 1/00** (2006.01) **C07K 14/00** (2006.01)  
**C12M 3/00** (2006.01) **C07H 1/00** (2006.01)  
**C12N 5/071** (2010.01) **C07H 21/00** (2006.01)  
**C12N 5/04** (2006.01) **C07K 1/107** (2006.01)  
**C12N 1/00** (2006.01)

(21) International Application Number:

PCT/US2012/029083

(22) International Filing Date:

14 March 2012 (14.03.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/453,099 15 March 2011 (15.03.2011) US

(71) Applicant (for all designated States except US): **ABEC, INC.** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US).

(72) Inventors; and

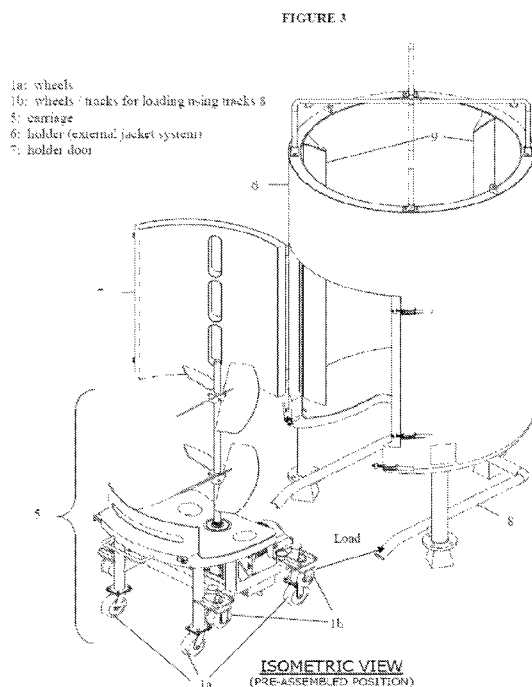
(75) Inventors/Applicants (for US only): **KNIGHT, Cameron** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US). **JONES, Todd** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US). **COLE, Brady** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US). **KUBERA, Paul** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US). **DONOVAN, Cindy, L.** [US/US]; 3998 Schelden Circle, Bethlehem, PA 18017-8936 (US).

(74) Agent: **HALLORAN, Patrick, J., Ph.D., J.D.**; 3141 Muirfield Road, Center Valley, PA 18034 (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, QA, RO, RS, RU, RW, SC, SD,

[Continued on next page]

(54) Title: REACTOR SYSTEMS



(57) Abstract: This disclosure relates to equipment utilized to manufacture chemical agents, particularly biopharmaceuticals. In some embodiments, reactor systems comprising a mobile carriage assembly; a disposable reaction container removably attached to the carriage assembly; and, a carriage holder into which the mobile carriage assembly may be removably inserted are provided.



SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS,  
SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**(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, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT,

**Published:**

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*