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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number
WO 01/19438 A1

(51) International Patent Classification[7]: A61M 15/00, B05B 1/32

(21) International Application Number: PCT/US00/25145

(22) International Filing Date:
13 September 2000 (13.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/153,647 13 September 1999 (13.09.1999) US

(71) Applicant: SHEFFIELD PHARMACEUTICALS, INC. [US/US]; 425 South Woodsmill Road, Suite 207, St. Louis, MO 63017 (US).

(72) Inventors: PAVKOV, Richard, M.; 39819 Birchwood, Plymouth, MI 48170 (US). ARMER, Thomas, A.; 19000 Tilson Avenue, Cupertino, CA 95014 (US).

(74) Agents: HOPKINS, Brian, P. et al.; Fitzpatrick, Cella, Harper & Scinto, 30 Rockefeller Plaza, New York, NY 10112-3801 (US).

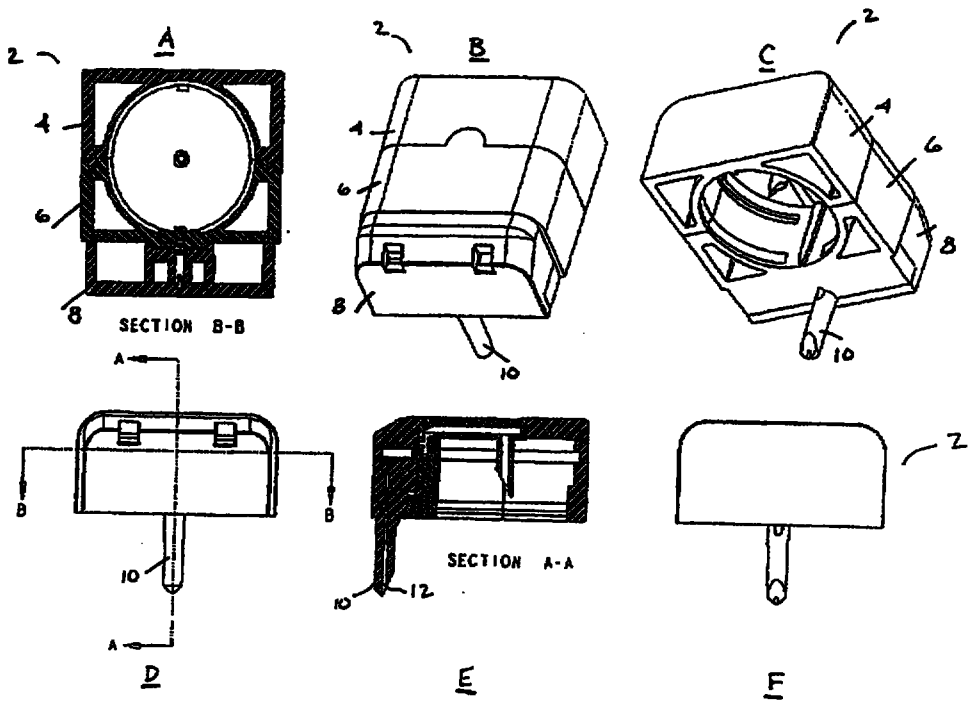
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *With international search report.*

*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.*

(54) Title: FLOW CONTROL AND FILTRATION METHOD AND APPARATUS




(57) Abstract: A porous material valve (18) is placed in the fluid conveyance path of a fluid dispensing apparatus (2). By selecting a specific thickness of the porous material, the size of the pores, the pore volume, and the hydrophillic/hydrophobic balance of the material, a predetermined activation/closure pressure and flow rate is achieved.

WO 01/19438 A1