

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 November 2009 (19.11.2009)

PCT

(10) International Publication Number
WO 2009/139898 A8

- (51) International Patent Classification:
F16K 99/00 (2006.01) B01L 3/00 (2006.01)
 - (21) International Application Number:
PCT/US2009/003024
 - (22) International Filing Date:
15 May 2009 (15.05.2009)
 - (25) Filing Language: English
 - (26) Publication Language: English
 - (30) Priority Data:
61/053,812 16 May 2008 (16.05.2008) US
 - (71) Applicant (for all designated States except US): PRESIDENT AND FELLOWS OF HARVARD COLLEGE [US/US]; 17 Quincy Street, Cambridge, MA 02138 (US).
 - (72) Inventors; and
 - (75) Inventors/Applicants (for US only): ABATE, Adam, R. [US/US]; 24 Berkeley Street, Apt. #1, Somerville, MA 02143 (US). WEITZ, David, A. [US/US]; 213 Green Road, Bolton, MA 01740 (US).
 - (74) Agents: OYER, Timothy, J. et al.; Wolf, Greenfield & Sacks, P.C, Federal Reserve Plaza, 600 Atlantic Avenue, Boston, MA 02210-2206 (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, 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, ST, 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, MK, 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 (Art. 21(3))
- (88) Date of publication of the international search report:
4 March 2010

[Continued on next page]

(54) Title: VALVES AND OTHER FLOW CONTROL IN FLUIDIC SYSTEMS INCLUDING MICROFLUIDIC SYSTEMS

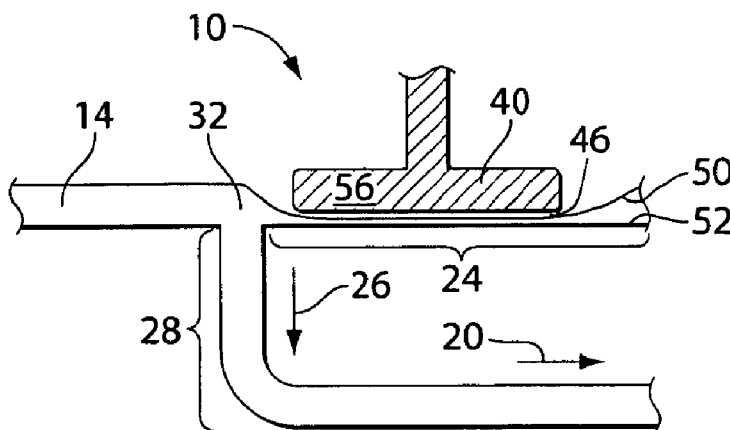


Fig. 1B

(57) Abstract: Articles and methods for controlling flow in fluidic Systems, especially in microfluidic Systems, are provided. A microfluidic System includes a configuration such that the actuation of a single valve can allow the switching of fluids from a first fluid path (e.g., a first channel section) to a second fluid path (e.g., a second channel section). This may be achieved by incorporating a valve (38) with a first channel section (24), which may have a lower hydrodynamic resistance than a second channel section (28) prior to actuation of the valve. Actuation of the valve (38) can cause only the hydrodynamic resistance of the first channel section (24) to increase, thereby redirecting fluid flow into the second channel section (28) (which now has a relatively lower hydrodynamic resistance). The valve comprises a control channel (40) for introducing a positive or reduced pressure, and is adapted to modulate fluid flow in an adjacent channel section by constricting or expanding the channel section (24).



WO 2009/139898 A8



(48) Date of publication of this corrected version:

22 April 2010

(15) Information about Correction:

see Notice of 22 April 2010