



- (51) **International Patent Classification:**
B41J 2/175 (2006.01) *B41J 2/045* (2006.01)
- (21) **International Application Number:**
PCT/US2011/057506
- (22) **International Filing Date:**
24 October 2011 (24.10.2011)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (71) **Applicant** (for all designated States except US): **HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.** [US/US]; 11445 Compaq Center Drive W., Houston, Texas 77070 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants** (for US only): **VAN BROCKLIN, Andrew L.** [US/US]; 1070 NE Circle Blvd., Corvallis, Oregon 97330-4239 (US). **GHOZEIL, Adam L.** [US/US]; 1070 NE Circle Blvd., Corvallis, Oregon 97330-4239 (US). **ANDERSON, Daryl E.** [US/US]; 1070 NE Circle Blvd., Corvallis, Oregon 97330-4239 (US).
- (74) **Agents:** **DEVITO, Victor** et al.; Hewlett-Packard Company, Intellectual Property Administration, 3404 E. Harmony Road, Mailstop 35, Fort Collins, Colorado 80528 (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, 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, 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, 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).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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

(54) **Title:** FLUID EJECTION DEVICES AND METHODS THEREOF

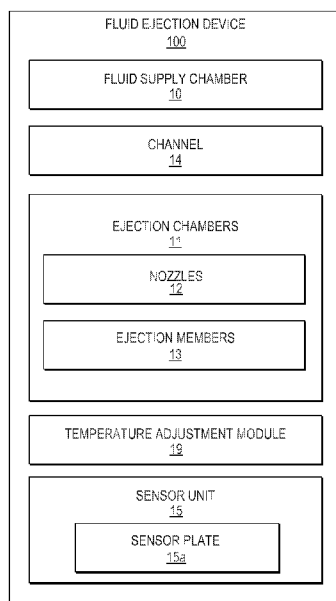


Fig. 1

(57) **Abstract:** Fluid ejection devices and methods thereof are disclosed in the present disclosure. A method includes establishing fluid communication between an ejection chamber and a fluid supply chamber of the fluid ejection device such that the ejection chamber includes a nozzle and an ejection member to selectively eject fluid through the nozzle. The method also includes detecting at least one impedance in the fluid by a sensor unit having a sensor plate.

