



- (51) **International Patent Classification:**
G01N 9/26 (2006.01) *G01F 1/74* (2006.01)
- (21) **International Application Number:**
PCT/US2012/049133
- (22) **International Filing Date:**
1 August 2012 (01.08.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (71) **Applicant (for all designated States except US):** **MICRO MOTION, INC.** [US/US]; 7070 Winchester Circle, Boulder, Colorado 80301 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **SCHOLLENBERGER, Frederick Scott** [US/US]; 550 45th Street, Boulder, Colorado 80305 (US). **WEINSTEIN, Joel** [US/US]; 2954 Kalmia Avenue, Apt. 40, Boulder, Colorado 80301 (US). **SHEPHERD, David John** [NZ/NZ]; 24B Moata rd, One Tree Hill, Auckland, 1061 (NZ).
- (74) **Agents:** **WILBERT, David, W.** et al.; The Ollila Law Group LLC, 2569 Park Lane, Suite 202, Lafayette, Colorado 80026 (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, 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, 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,

[Continued on next page]

(54) **Title:** FLUID CHARACTERISTIC DETERMINATION OF A MULTI-COMPONENT FLUID WITH COMPRESSIBLE AND INCOMPRESSIBLE COMPONENTS

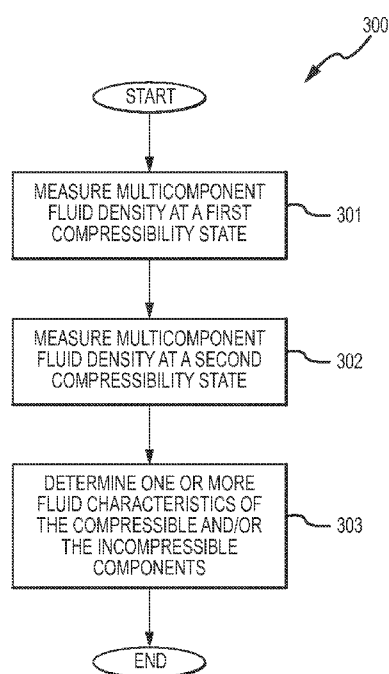


FIG. 3

(57) **Abstract:** A method for determining fluid characteristics of a multicomponent fluid is provided. The method includes a step of measuring a first density, ρ_1 , of a multicomponent fluid comprising one or more incompressible components and one or more compressible components at a first density state. The method further includes a step of adjusting the multicomponent fluid from the first density state to a second density state. A second density, ρ_2 , of the multicomponent fluid is then measured at the second density state and one or more fluid characteristics of at least one of the compressible components or the incompressible components are determined.



MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, **Published:**
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, — *with international search report (Art. 21(3))*
GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))*