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(21) International Application Number: PCT/US96/03280 (22) International Filing Date: 12 March 1996 (12.03.96) (30) Priority Data: 08/404,340 15 March 1995 (15.03.95) US (71) Applicant: MICRO MOTION, INC. [US/US]; 7070 Winchester Circle, Boulder, CO 80301 (US). (72) Inventors: VAN CLEVE, Craig, Brainard; 226 High Street, P.O. Box 1382, Lyons, CO 80540 (US). LOVING, Roger, Scott; 2160 James Canyon Drive, Boulder, CO 80302 (US). (74) Agents: DUFT, Donald, M. et al.; Duft, Graziano & Forest, P.C., Suite 140, 1790 - 30th Street, Boulder, CO 80301-1018 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: CORIOLIS EFFECT MASS FLOWMETER USING CONCENTRIC ROTORS (57) Abstract A Coriolis flowmeter having an outer rotor (307) positioned within a housing (301) and having a recess coaxial (341) with a center axis of rotation. A Coriolis rotor (314) is positioned in the recess of the outer rotor and has a center of rotation coaxial with the center axis of rotation. The Coriolis rotor has a plurality of holes (312), each of which extends from the outer periphery of said Coriolis rotor to a center recess of said Coriolis rotor. The outer rotor has a plurality of holes (309), each of which extends from the outer periphery of the outer rotor to the recess of said outer rotor with at least some of said holes in said outer rotor being aligned with a corresponding one of said plurality of said holes in said Coriolis rotor. A material inlet (302) extends fluid through holes of both the outer rotor and the Coriolis rotor to a material outlet (304) of the flowmeter. Both rotors rotate about the center axis of rotation when material is received and passes through the holes of the rotors. Coriolis forces generated by the material flowing through the rotor holes and the concurrent rotation of both rotors cause the Coriolis rotor to assume an angular offset from the outer rotor about the center axis of rotation. Sensing coils (323, 324) and magnets (316, 344) generate output signals indicative of the magnitude of the angular offset of the Coriolis rotor and the mass flow rate of the flowing material.		