



(51) International Patent Classification:
G01N 9/00 (2006.01)

(21) International Application Number:
PCT/US2012/057330

(22) International Filing Date:
26 September 2012 (26.09.2012)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: MICRO MOTION, INC. [US/US]; 7070
Winchester Circle, Boulder, Colorado 80301 (US).

(72) Inventors: CASEY, Megan; 1025 Maxwell Avenue #2,
Boulder, Colorado 80304 (US). PANKRATZ, Anthony
William; 17550 West 63rd Drive, Arvada, Colorado 80403
(US).

(74) Agents: WILBERT, David W. et al.; The Ollila Law
Group LLC, 2569 Park Lane, Suite 202, Lafayette, Color-
ado 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, PA, 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,
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 applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))

Published:

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

(54) Title: A VIBRATING DENSITOMETER WITH AN IMPROVED VIBRATING MEMBER

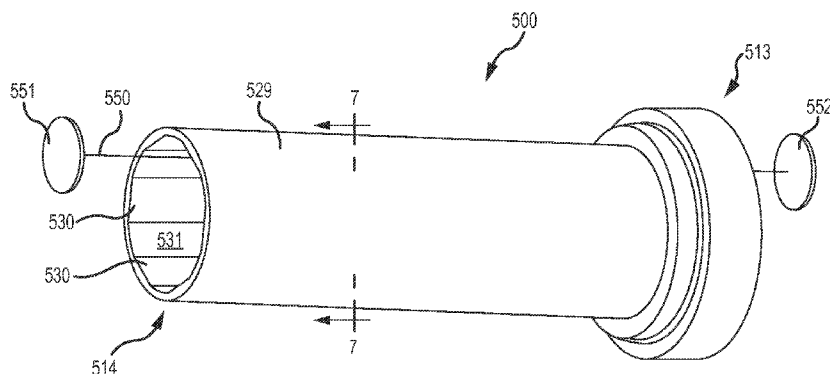


FIG. 5

(57) Abstract: A vibrating member (500) for a vibrating densitometer (800) is provided. The vibrating member (500) includes an in-
ner surface (531) with one or more arcuate portions (730). The inner surface (531) of the vibrating member (500) also includes one
or more raised portions (530) sized and located to increase a frequency separation between a resonant frequency of a desired vibra-
tional drive mode and a resonant frequency of one or more undesired vibrational modes.