



(51) International Patent Classification:
G01P 15/097 (2006.01) *G01P 21/00* (2006.01)

(21) International Application Number:
PCT/IL2025/050266

(22) International Filing Date:
20 March 2025 (20.03.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
315720 18 September 2024 (18.09.2024) IL
318446 15 January 2025 (15.01.2025) IL

(71) Applicant: ISRAEL AEROSPACE INDUSTRIES LTD.
[IL/IL]; Ben-Gurion International Airport, 7010000 Lod (IL).

(72) Inventor: GRUVER, Jose Luis; 7/2 Hazohar St., 6082156 Shoham (IL).

(74) Agent: TOPPER, Jonathan; REINHOLD COHN GROUP, 26A Habarzel St., 6971037 Tel Aviv (IL).

(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UY, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ,

(54) Title: COMBINED DIGITAL-ANALOG TWO-BEAM VIBRATING ACCELEROMETER HAVING LINEAR OUTPUT ACROSS COMPLETE RANGE

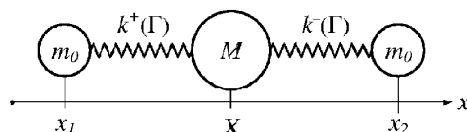


Fig. 2

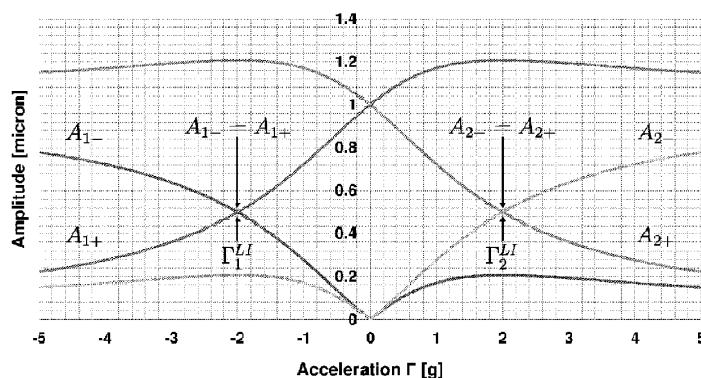


Fig. 3

(57) Abstract: A vibrating beam accelerometer (10) can be modelled mathematically as a system having two beams (11, 11') operating in a differential push-pull mode, such that each of the two beams vibrates at corresponding first and second frequencies of vibration (f_+ , f_-) at which the respective amplitude (A_+ , A_-) is dominant outside a predetermined lock-in zone within which the respective dominant frequencies (f_1 , f_2) of the first and second beam are equal. Acceleration is determined inside a predefined range that includes the lock-in zone, as a function of measured vibration amplitudes of the two beams. Outside the predefined range, acceleration is derived as a function of a difference between the measured vibration frequencies of the two beams.

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DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT,
LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,
SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

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