



(51) International Patent Classification:

H02K 21/22 (2006.01)

(21) International Application Number:

PCT/US2012/050501

(22) International Filing Date:

13 August 2012 (13.08.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/522,587	11 August 2011 (11.08.2011)	US
61/590,790	25 January 2012 (25.01.2012)	US
61/665,888	28 June 2012 (28.06.2012)	US

(71) Applicant (for all designated States except US): MOL

BELTING SYSTEMS, INC. [US/US]; 2532 Waldorf Court, Grand Rapids, MI 49544 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): PAULIDES, Johan, H. [NL/NL]; Alpathek Amerongen, Po Box 71, NL-3958 ZV Amerongen (NL). DEGROOT, Michael, Hendrik [US/US]; 9835 Meyers Lake, Rockford, MI 49341 (US). HULSHOF, Gerko [NL/NL]; c/o WE Engineering B.V., Mozartstraat 1, NL-7131 AG Lichtenvoorde (NL). POPESCU, Mircea [GB/GB]; c/o Motor Design Ltd, 4 Scotland Street, Ellesmere, Shropshire SY12 0EC (GB).

(74) Agents: ROHM, Benita, J. et al.; Rohm & Monsanto, PLC, 12 Rathbone Place, Grosse Pointe, MI 48230 (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.

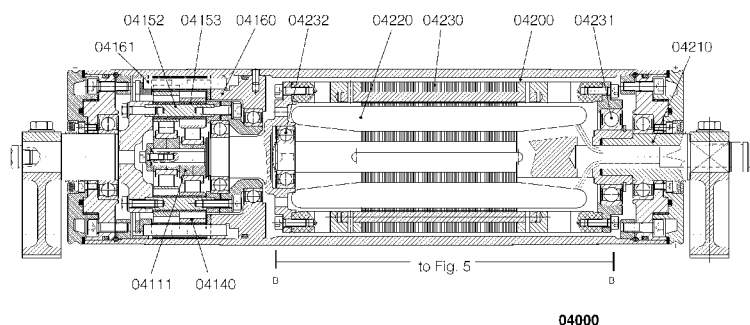
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, 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).

Published:

— without international search report and to be republished upon receipt of that report (Rule 48.2(g))

(54) Title: MOTORIZED DRUM SHELL ARRANGEMENT

Fig. 4



(57) Abstract: A motorized drum having a drum shell with a motor therein, the motor having a stationary shaft, stator windings, and a stator support structure that is affixed to the stationary shaft. A rotor rotates coaxially around the stator, and a cycloidal reducer has an output that rotates at a reduced rate. The reducer output is rotationally fixed to, and is disposed within, the drum shell. An input gear of the reducer received a hollow eccentric input shaft, and is urged into eccentric motion as the input shaft rotates. The output gear urges the drum shell into rotation at same rate of rotation as the output gear. An harmonic drive speed reducer that has an input shaft provides rotatory motion to a wave generator that is disposed against a flexible splined member. The flexible splined member engages a rigid circular spline member at two radially opposed zones. Induction and permanent magnet forms of operation are used.