(12) International Application Status Report

Received at International Bureau: 25 October 2017 (25.10.2017)
Information valid as of: 14 March 2018 (14.03.2018)
Report generated on: 23 February 2019 (23.02.2019)

(10) Publication number:
WO2018/060910

(43) Publication date:
05 April 2018 (05.04.2018)

(26) Publication language:
English (EN)

(21) Application Number:
PCT/IB2017/055949

(22) Filing Date:
28 September 2017 (28.09.2017)

(25) Filing language:
Italian (IT)

(31) Priority number(s):
102016000097794 (IT)

(31) Priority date(s):
29 September 2016 (29.09.2016)

(31) Priority status:
Priority document received (in compliance with PCT Rule 17.1)

(51) International Patent Classification:
F16C 17/08 (2006.01); **F16C 21/00** (2006.01); ***F16C 23/04*** (2006.01); **F16C 32/06** (2006.01); ***F16C 39/02*** (2006.01)

(71) Applicant(s):
GENIUS ENERGY S.R.L. [IT/IT]; Via G. Rossetti, 11 25128 Brescia (IT) *(for all designated states)*

(72) Inventor(s):
STUCCHI, Angelo; Via Giosuè Carducci, 16 20874 Busnago (MB) (IT)
GALBUSERA, Emanuele; St. Comunale Cascina Camuzzago, 10 20882 Bellusco (MB) (IT)

(74) Agent(s):
BRANCA, Emanuela; c/o Barzano' & Zanardo Milano S.p.A. Via Borgonuovo, 10 20121 Milano (IT)

(54) Title (EN): VERTICAL SUPPORT DEVICE WITH REDUCED ENERGY DISSIPATION FOR ROTATING SHAFTS

(54) Title (FR): DISPOSITIF DE SUPPORT VERTICAL À DISSIPATION D'ÉNERGIE RÉDUITE POUR ARBRES ROTATIFS

(57) Abstract:

(EN): A vertical support device with reduced energy dissipation for rotating shafts comprising a spherical end portion (2) having radius (r), adapted to be rigidly constrained to a rotating vertical shaft, coupled with a rotating and floating plate (3) bearing a hemispherical cap (4), which identifies a complementary concave seat having radius (r) for the spherical end portion (2), also comprising a bearing track (5) for bearing a load (K) that rests on the rotating and floating plate (3), wherein the rotating and floating plate (3), the hemispherical cap (4) and the bearing track (5) are arranged coaxial to a housing hollow body (9) and have an axial hole (33, 51) for the passage of pressurised feed oil for the hydrostatic bearing of the spherical end portion (2), an oil separating film being arranged between the conjugated tracks arranged between the rotating and floating plate (3) and the bearing track (5) as well as between the hemispherical cap (4) and the spherical end portion (2), wherein the rotating and floating plate (3) has maximum outer radius (de/2) greater than the radius of curvature (r) of the spherical end portion (2), the support device also comprising at least one cooling circuit for cooling the bearing track (5).

(FR): L'invention concerne un dispositif de support vertical à dissipation d'énergie réduite pour des arbres rotatifs, comprenant une partie d'extrémité sphérique (2) ayant un rayon (r), conçue pour être fixée de manière rigide à un arbre vertical rotatif, accouplée à une plaque rotative et flottante (3) portant un capuchon hémisphérique (4), qui identifie un siège concave complémentaire ayant un rayon (r) pour la partie d'extrémité sphérique (2), comprenant également une piste de palier (5) pour supporter une charge (K) qui repose sur la plaque rotative et flottante (3), la plaque rotative et flottante (3), le capuchon hémisphérique (4) et la piste de palier (5) étant agencés de manière coaxiale par rapport à un corps creux de boîtier (9) et ayant un trou axial (33, 51) pour le passage d'huile d'alimentation sous pression pour le palier hydrostatique de la partie d'extrémité sphérique (2), un film de séparation d'huile étant disposé entre les pistes conjuguées agencées entre la plaque rotative et flottante (3) et la piste de palier (5) ainsi qu'entre le capuchon hémisphérique (4) et la partie d'extrémité sphérique (2), la plaque rotative et flottante (3) ayant un rayon externe maximal (de/2) supérieur au rayon de courbure (r) de la partie d'extrémité sphérique (2), le dispositif de support comprenant en outre au moins un circuit de refroidissement pour refroidir la piste de palier (5).

International search report:
Received at International Bureau: 19 February 2018 (19.02.2018) [EP]

International Report on Patentability (IPRP) Chapter II of the PCT:
Not available

(81) Designated States:
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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, SA, 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
European Patent Office (EPO) : 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
African Intellectual Property Organization (OAPI) : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG
African Regional Intellectual Property Organization (ARIPO) : BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW
Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, RU, TJ, TM