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- (51) **International Patent Classification:**
H01F 6/06 (2006.01) **H01F 6/04** (2006.01)
- (21) **International Application Number:**
PCT/IB2009/054429
- (22) **International Filing Date:**
9 October 2009 (09.10.2009)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/100,717 27 September 2008 (27.09.2008) US
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- (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, 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, KI, 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, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, 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:

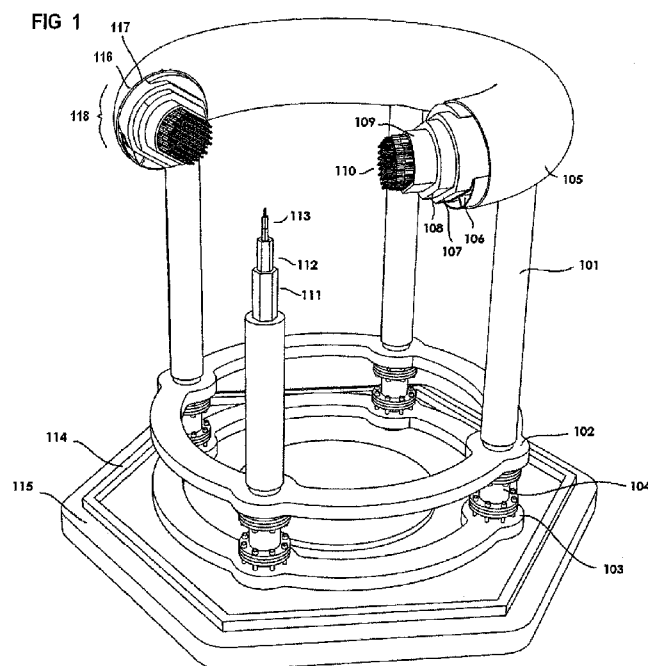
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

[Continued on next page]

- (54) Title:** METHOD AND APPARATUS FOR ELECTRICAL, MECHANICAL AND THERMAL ISOLATION OF SUPER-CONDUCTIVE MAGNETS



- (57) Abstract:** A method and apparatus of electrical, mechanical and thermal isolation of superconductive magnet coils includes a superconductive magnet for environments wherein large differences of electrical potential between the interior superconductive winding and the exterior of the device, on the order of 103 to 106 Volts may exist. The methods and apparatus also includes insulation, cooling, and structural elements such that the interior of the device is capable of maintaining cryogenic temperatures needed for superconductivity, even in the presence of high heat flux incident on the overall winding housing. Finally, a device includes structural elements for support against gravity and other forces exerted on the assembly that include expansion jointing and stabilization to minimize warping or bending of the assembly due to temperature gradients. These supports include accoutrements for supplying electrical power, cryogenic coolant, and other supply leads to the magnet head, while also being isolated from thermal and electrical effects.



— *the filing date of the international application is within two months from the date of expiration of the priority period (Rule 26bis.3)*

(88) Date of publication of the international search report:
22 July 2010