

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 March 2005 (10.03.2005)

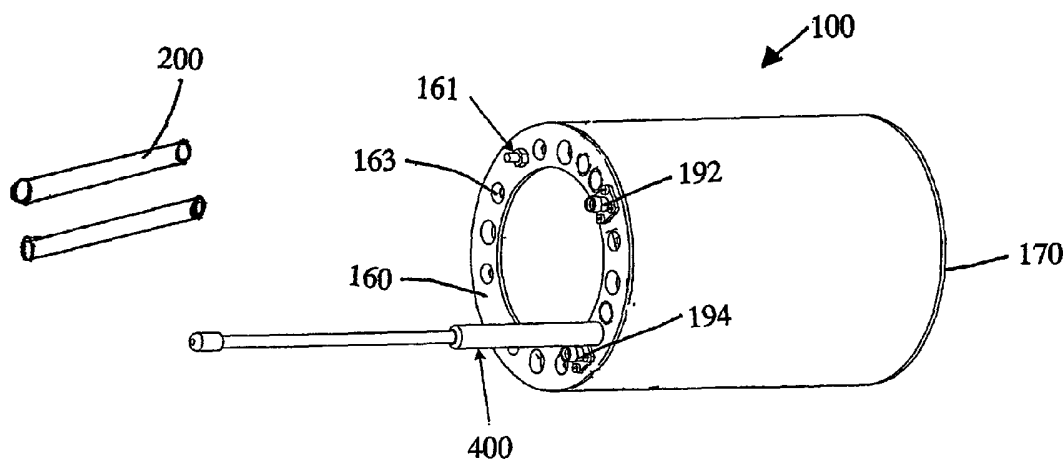
PCT

(10) International Publication Number
WO 2005/020793 A3

- (51) International Patent Classification⁷: G01V 3/00, H01P 7/00
- (21) International Application Number: PCT/US2004/027532
- (22) International Filing Date: 23 August 2004 (23.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/496,739 21 August 2003 (21.08.2003) US
- (71) Applicant (for all designated States except US): INSIGHT NEUROIMAGING SYSTEMS, LLC [US/US]; 60 Prescott Street, Worcester, MA (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LUDWIG, Reinhold [US/US]; 170 Soumi Street, Paxton, MA 01612 (US). FERRIS, Craig, F. [US/US]; 85 South Road, Holden, MA 01520 (US). BOGDANOV, Gene [US/US]; 23 Plymouth Lane, Manchester, CT 06040 (US).
- (74) Agents: SCHECHTER, Peter, C. et al.; Darby & Darby P.C., P.O. Box 5257, New York, NY 10150-5257 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published: — with international search report
- (88) Date of publication of the international search report: 10 November 2005

[Continued on next page]

(54) Title: MICROSTRIP COIL DESIGN FOR MRI APPARATUS



(57) Abstract: A head imaging MRI apparatus includes a microstrip-based RF coil comprising: a cylindrical non-magnetic core module having an outer surface and a longitudinal axis, a cylindrical bore extending through the core module along the longitudinal axis defining an inner surface; a pair of circuit boards carried at or near the end of the core module and a plurality of conductive strip lines. The strip lines extend parallel to the longitudinal axis on the outer surface of the core module. The coil's one or more conductive strips are divided into conductive microstrip segments with one or more tuning capacitors being bridged between two adjacent microstrip segmented sections of a conductive strip. A shield support cylinder, support cylinder, supports a conductive-segmented shield operatively connected to the conductive strips through tunable capacitors at a front and rear of the shield support cylinder, is disposed concentrically about the core module and spaced therefrom to receive tuning capacitors.

WO 2005/020793 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/27532

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : G01V 3/00; H01P 7/00
 US CL : 324/318; 333/219
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 324/318-322, 309-316; 333/219, 222, 227

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 USPT, EPAB, JPAB, TBDB DWPI, USOC, West 2.2

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2003/0146750 A1 (VAUGHAN, JR.) 7 August 2003 (07.08.2003), See entire reference.	1-11, 14-17, 19-24 ----- 18
Y --- A	US 5,557,247 A (VAUGHN, Jr.) 17 September 1996 (17.09.1996), Figure 8a col. 14 lines 33-47.	18 ----- 1-17, 19-24

Further documents are listed in the continuation of Box C. See patent family annex.

<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>
---	---

Date of the actual completion of the international search: 08 April 2005 (08.04.2005) Date of mailing of the international search report: 29 JUL 2005

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Gutierrez Diego Telephone No. (703)305-0956 GROUP 1300 DEBORAH A. THOMAS PARALEGAL SPECIALIST <i>Dat</i>
---	---