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CA, CH, 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, 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.

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- Published:
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(54) Title: TRANSFER COIL ARCHITECTURE

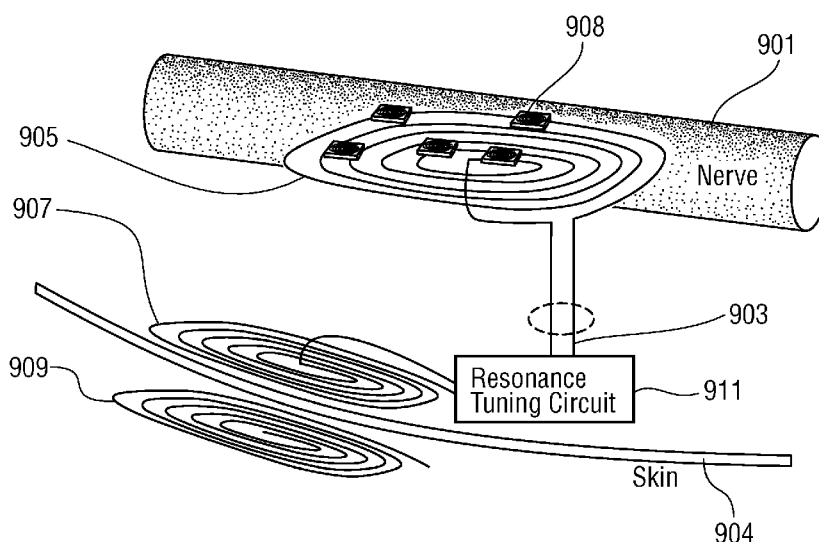


FIG. 9C

(57) Abstract: A system of wireless microtransponders, each including a RF resonator circuit for wireless power induction. An external power coil transmits RF energy at a matching or harmonic frequency to deliver power by near field induction to an intermediate, subcutaneous coil. Power is initially transmitted to a subdermal coil and relayed to the subcutaneous coil. The subcutaneous coil is used to transfer the RF signal and power the microtransponder using the resonator circuit. The external power coil RF frequency is tuned to match or be a harmonic of the micro-coil within the resonator.



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A. CLASSIFICATION OF SUBJECT MATTER*A61F 2/48(2006.01)i, A61F 2/02(2006.01)i*

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)

IPC A61F 2/48, A61F 2/02

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

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO internal) & keywords: implant, transponder, power coupling, and coil

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/0137652 A1 (LAWRENCE JAMES CAULLER et al.) 23 JUNE 2005 See paragraph [33]-[49]; Figures. 7-8.	1-20, 38-43, 50-54
A	US 6415184 B1 (AKIRA ISHIKAWA et al.) 2 JULY 2002 See column 4, line 48-column 5, line 14; Figure. 1.	1-20, 38-43, 50-54
A	US 6788975 B1 (TODD K. WHITEHURST et al.) 7 SEPTEMBER 2004 See column 7, line 58-column 14, line 9; Figures. 3-5.	1-20, 38-43, 50-54

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 21-37, 44-49, 55-59
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 21-37, 44-49 and 55-59 pertain to methods for treatment of the human or animal body by surgery, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/084911

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005/0137652 A1	23.06.2005	None	
US 6415184 B1	02.07.2002	None	
US 6788975 B1	07.09.2004	US 7493172 B2 US 2004/0172089 A1	17.02.2009 02.09.2004