



(51) International Patent Classification:

A61B 5/00 (2006.01) A61B 17/00 (2006.01)
A61B 5/0215 (2006.01) A61B 17/12 (2006.01)

(21) International Application Number:

PCT/IB2016/052616

(22) International Filing Date:

7 May 2016 (07.05.2016)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/157,991 7 May 2015 (07.05.2015) US
62/306,134 10 March 2016 (10.03.2016) US

(71) Applicant: **VECTORIOUS MEDICAL TECHNOLOGIES LTD.** [IL/IL]; 24 Raoul Wallenberg Street, Ziv Towers, Building A, 3rd Floor, 6971921 Tel-Aviv (IL).

(72) Inventors: **GOLDSSTEIN, Oren**; 105 Herzl Street, 22447 Nahriya (IL). **LEVI, Yair**; Shoham 33/6 Street, Haifa (IL). **HARARI, Boaz**; 7/50 Derech Hamelech Street, 55900 Ganey Tikva (IL).

(74) Agent: **WINSSTEIN, Ronny**; Argaman Intellectual Property LTD, 2 HaEmek, 4700331 Ramat-Hasharon (IL).

(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, IR, IS, JP, KE, KG, KN, KP, KR, 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.

(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, ST, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: HEART IMPLANT WITH SEPTUM GRIPPER

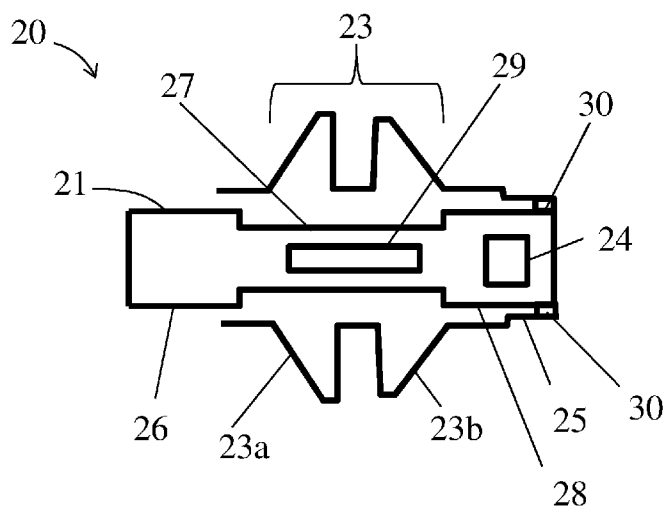


FIG. 2B

(57) Abstract: Implant (e.g., sensory implant) positionable within subject's left heart atrium, for facilitating functional activity thereof, such as sensing or/and measuring physiological conditions or/and parameters. Implant includes: implant body housing physiological parameter sensing or/and measuring means; coupling means for coupling with an implant deployment device; and septum gripper having a flexible gripping sleeve fixedly connected to implant body wall, and selectively shapeable to pass through organ wall septum opening, and for gripping onto organ wall, such that implant body is fixatable or/and stabilizable across organ wall and through septum opening, to facilitate sensing or/and measuring in subject's body organ. Also disclosed are: a system including the implant, a process control unit, and a transcatheter implant deployment device; and an implant for implantation in subject's body organ separated by an organ wall, and configured for inductive coupling with electronic unit located outside subject's body and for interactively communicating with electronic unit.



— *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))*

(88) Date of publication of the international search report:
2 February 2017

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2016/052616

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B5/00 A61B5/0215
 ADD. A61B17/00 A61B17/12

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)

A61B

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2014/170771 A1 (VECTORIOUS MEDICAL TECHNOLOGIES LTD [IL]) 23 October 2014 (2014-10-23) figures 1-3 pages 7, 8	1-14, 16-21
X	US 2012/022507 A1 (NAJAFI NADER [US] ET AL) 26 January 2012 (2012-01-26) figures 1-10	1-13, 15-21
A	WO 2008/042229 A2 (NMT MEDICAL INC [US]; CAHILL RYAN [US]) 10 April 2008 (2008-04-10) the whole document	1-21
X	US 2005/065589 A1 (SCHNEIDER RICHARD LEE [US] ET AL) 24 March 2005 (2005-03-24)	23-28,31
Y	the whole document	22,29,30
	----- -/-	



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 another 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

13 December 2016

Date of mailing of the international search report

21/12/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Mathis, Martin

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2016/052616

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/288596 A1 (EIGLER NEAL L [US] ET AL) 29 December 2005 (2005-12-29) paragraph [0086] -----	29,30
Y	US 2009/192381 A1 (BROCKWAY BRIAN P [US] ET AL) 30 July 2009 (2009-07-30) paragraph [0056] -----	22

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2016/052616

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.:
because they relate to subject matter not required to be searched by this Authority, namely:
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:

see additional sheet

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 fees, this Authority did not invite payment of additional fees.
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-21

An implant for sensing or/and measuring a physiological parameter in a subject's body organ separated by an organ wall, the implant comprising:
an implant body comprising a rigid body wall for housing physiological parameter sensing or/and measuring means, and a septum gripper suitable for gripping onto the organ wall, so that said implant body is fixatable across the organ wall, so as to facilitate the sensing or/and measuring in the subject's body organ.

2. claims: 22-31

An implant suitable for implantation in a subject's body organ separated by an organ wall, and configured for interactively communicating with an electronic unit, the implant comprising:
an implant body having specific electrical properties, housing an RF antenna, and
a septum gripper having specific electrical properties, so that data transmittal disturbances between the RF antenna and the electronic unit can be minimized.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2016/052616

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014170771 A1	23-10-2014	EP 2986252 A1	24-02-2016
		JP 2016516509 A	09-06-2016
		US 2016022216 A1	28-01-2016
		WO 2014170771 A1	23-10-2014
US 2012022507 A1	26-01-2012	US 2012022507 A1	26-01-2012
		US 2014207153 A1	24-07-2014
WO 2008042229 A2	10-04-2008	US 2008086168 A1	10-04-2008
		WO 2008042229 A2	10-04-2008
US 2005065589 A1	24-03-2005	US 2005065589 A1	24-03-2005
		US 2008051863 A1	28-02-2008
US 2005288596 A1	29-12-2005	US 2005288596 A1	29-12-2005
		US 2005288604 A1	29-12-2005
		US 2005288722 A1	29-12-2005
		US 2016007924 A1	14-01-2016
		WO 2005107583 A2	17-11-2005
US 2009192381 A1	30-07-2009	US 2009192381 A1	30-07-2009
		US 2012220849 A1	30-08-2012
		US 2013012800 A1	10-01-2013
		US 2016066850 A1	10-03-2016
		WO 2009097527 A1	06-08-2009