



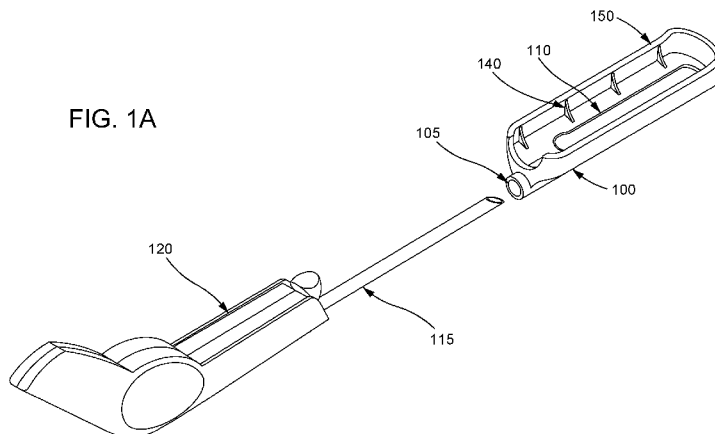
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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, 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.
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[Continued on next page]

(54) **Title:** IMPLANT PLACEMENT AND REMOVAL SYSTEMS



(57) **Abstract:** Devices, methods, and systems are provided for placing an implant into a patient and removing it therefrom.





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— *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))*

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5 January 2017

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US16/35602

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(8) - A61F 2/02; A61J 1/00; A61M 37/00 (2016.01) CPC - A61F 2/02; A61J 1/00; A61K 9/0024; A61M 37/0069 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC(8): A61F 2/02; A61J 1/00; A61M 37/00 (2016.01) CPC: A61F 2/02; A61J 1/00; A61K 9/0024; A61M 37/0069; USPC: 604/57, 61 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) PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, RU, AT, CH, TH, BR, PH, MX, NL, Other Countries (INPADOC); Google Patents; Google; Google Scholar; EBSCO; PubMed/Medline; cannula, guidance, window, translucent, angle, implant, skin		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2014/0257272 A1 (ULTHERA, INC.) September 11, 2014; figures 2A, 3A, 6B, 7, 10A-B; paragraphs [0107]-[0108], [0118], [0125], [0134]-[0136], [0159]	17-18, 21-22 ----- 1-4, 6-11, 12/9-11, 19-20, 23-25
X -- Y	US 2005/0070927 A1 (FEINBERG, ME) March 31, 2005; figures 6-8; paragraphs [0028]-[0031]	26-28, 34 ----- 29-32, 38-44
Y	US 6190350 B1 (DAVIS, CR et al.) February 20, 2001; abstract; figure 4-6, 11-13; column 2, lines 41-43, 50-55; column 3, lines 21-24; column 6, lines 58-65; column 7, lines 31-33; column 9, lines 8-10, 19-21	1-4, 6-11, 12/9-11
Y	US 2006/0106399 A1 (TARAS, JS et al.) May 18, 2006; figures 1-5; paragraphs [0012], [0014], [0028], [0032]; claim 23	19-20
Y	US 2006/0084922 A1 (BOTHA, R) April 20, 2006; paragraph [0042]	23-24
Y	US 6056718 (FUNDERBURK, JV et al.) May 2, 2000; column 4, lines 56-57; claims 1, 2	25
Y	US 2014/0058425 A1 (PORAT, A) February 27, 2014; paragraph [0059]	29
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 29 September 2016 (29.09.2016)		Date of mailing of the international search report <b>29 NOV 2016</b>
Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300		Authorized officer Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US16/35602

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 8262667 B1 (SILVER, WJ et al.) September 11, 2012; figure 2; column 3, lines 3-6, 49-59	30-33
Y	US 2010/0298840 A1 (SCHWARTZ, LD) November 25, 2010; figure 1; paragraphs [0013]-[0015]	36-37
Y	GB 2501400 A (REMOVAID AS) October 23, 2013; abstract; figures 2a, 3a, 8a-c; page 5, lines 12-16; page 9, lines 1-2; page 13, lines 33-34; page 14, lines 4-5, 10-12, 17-19, 24-29; claim 1	38-44
Y	US 2011/0091527 A1 (MOONEN, PJ et al.) April 21, 2011; paragraph [0035]	6
Y	US 2008/0065090 A1 (SCRIBNER, RM et al.) March 13, 2008; figures 12, 14; paragraphs [0128], [0131]	10, 12/10
Y	US 2014/0121741 A1 (SPR THERAPEUTICS, LLC) May 1, 2014; paragraphs [0101], [0112]	11, 12/11
Y	US 2005/0216087 A1 (ZUCHERMAN, JF et al.) September 29, 2005; paragraph [0062]	12/9-11
A	US 2015/0133791 A1 (NATIONAL UNIVERSITY CORPORATION KOCHI UNIVERSITY) May 14, 2015; abstract; figure 1; paragraph [0035]	5

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US16/35602

**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.: 13-16  
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:

Group I: Claims 1-12 and 17-25 are directed toward a placement tool comprising a placement cannula for placing an implant.

Group II: Claims 26-44 are directed toward an implant removal tool comprising a first arm and a second arm.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features.

-\*\*\*-Continued Within the Next Supplemental Box-\*\*\*-

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 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.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.

PCT/US16/35602

-\*\*\*-Continued from Box III - Observations where unity of invention is lacking-\*\*\*-

Group I has a placement tool comprising a handle portion, and a placement cannula movable within or adjacent, and relative to, the handle portion, the cannula having a length, a proximal end arranged near the handle portion and a distal end opposite the proximal end, the placement cannula configured to deliver the implant within a tissue of a patient via an incision in the skin of a patient at an implantation site; and a placement guide having a first surface and pilot-tube, wherein the tube includes a proximal end configured to receive the distal end of the placement cannula; a distal end spaced apart from the proximal end at a first distance; a longitudinal central axis arranged relative to the first surface at either or both of a second distance and an angle; and the placement guide is configured to guide the placement cannula within the tissue to effect implantation of the implant at a determined placement depth beneath the outer surface of the skin of the patient.

Group II has a first arm; a second arm configured at least during use to be spaced apart from and substantially parallel to the first arm; a first opening arranged at a distal end of the first arm; a second opening arranged at a distal end of the second arm; wherein the first opening is configured to corral a first end of a positioned implant; the second opening is configured to corral a second end of the positioned implant; and a locking device is configured to maintain the distance between the first arm and second arm as the arms are brought together.

There are no common special technical features shared between Groups I and II.

Since there are no common special technical features shared between Groups I and II, unity is lacking.