



- (51) **International Patent Classification:**
A61F 2/08 (2006.01) *A61F 2/78* (2006.01)
- (21) **International Application Number:**
PCT/US2012/027551
- (22) **International Filing Date:**
2 March 2012 (02.03.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/449,279 4 March 2011 (04.03.2011) US
- (71) **Applicant (for all designated States except US):** CAY-
ENNE MEDICAL, INC. [US/US]; 16597 N. 92nd Street,
Ste 101, Scottsdale, AZ 85260 (US).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** BAIRD, Kevin, S.
[US/US]; 2133 E Robin Ln, Phoenix, AZ 85024 (US).
- (74) **Agent:** STOUT, Donald, E.; Stout, Uxa, Buyan &
Mullins, LLP, 4 Venture, Suite 300, Irvine, CA 92618
(US).
- (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, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

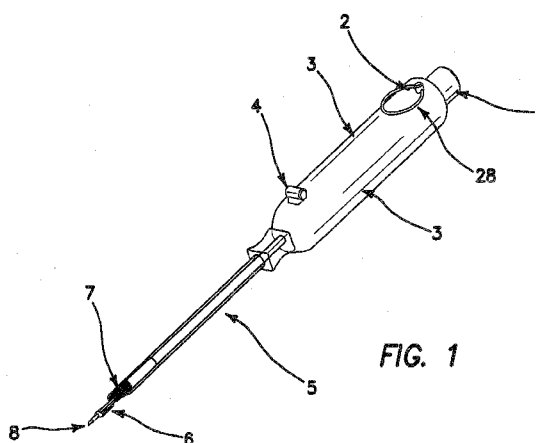
- (84) **Designated States (unless otherwise indicated, for every
kind of regional protection available):** ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, 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, ML, MR, NE, SN, TD, TG).

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))

- (88) **Date of publication of the international search report:**
27 December 2012

(54) **Title:** TENODESIS IMPLANT AND INSERTER AND METHODS FOR USING SAME



(57) **Abstract:** The present invention provides a novel split barbed fixation device for tenodesis, soft tissue reattachment of tendons and ligaments to bones. The insertion device is adapted for an entirely arthroscopic approach while achieving fixation strength with ultimate pullout resistance comparable to interference screws. The device includes an integrated tendon grasper that provides for easy manipulation of the tendon arthroscopically while eliminating the need for external whip stitching of the tendon, thereby reducing preparation time. The device further includes elements that prevent the fixation implant from being destabilized or rotating during deployment and manipulation, including: a depth limiting sheath, a first implant retainer, a first implant retaining step, a tendon grasping needle tube, and an implant keyway for mating the implant to the tube. The implant itself comprises two separate portions mating along a diagonal and having barbed surface features in opposite directions, only one of which contacts the tendon.



A. CLASSIFICATION OF SUBJECT MATTER***A61F 2/08(2006.01)i, A61F 2/78(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)

A61F 2/08; A61B 17/86; A61B 17/56; A61B 17/04

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: KOMPASS, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009-0287259 A1 (TRENHAILE, S. and MAY, T. C.) 19 November 2009 See entire document.	1-14
A	US 2010-0174369 A1 (WANG, B. et al.) 08 July 2010 See entire document.	1-14
A	US 2010-0069958 A1 (SULLIVAN, J. J. and LUNN, R. M.) 18 March 2010 See entire document.	1-14
A	US 2002-0065528 A1 (CLARK, R. and OLSEN, R. E.) 30 May 2002 See entire document.	1-14
A	US 2011-0004258 A1 (STONE, K. T. and DENHAM, G. J.) 06 January 2011 See entire document.	1-14



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

23 OCTOBER 2012 (23.10.2012)

Date of mailing of the international search report

25 OCTOBER 2012 (25.10.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Inho Han

Telephone No. 82-42-481-8744



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/027551

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0287259 A1	19.11.2009	AU 2009-246785 A1 CN 102098984 A EP 2323588 A1 JP 2011-520512 A WO 2009-140034 A1	19.11.2009 15.06.2011 25.05.2011 21.07.2011 19.11.2009
US 2010-0174369 A1	08.07.2010	AU 2008-257217 A1 AU 2008-257217 A2 CA 2688342 A1 EP 2152200 A1 GB 0710023 D0 US 2010-0137917 A1 WO 2008-145984 A1 WO 2008-145984 A8	04.12.2008 28.01.2010 04.12.2008 17.02.2010 04.07.2007 03.06.2010 04.12.2008 20.08.2009
US 2010-0069958 A1	18.03.2010	None	
US 2002-0065528 A1	30.05.2002	US 2004-0158244 A1 US 2005-0070906 A1 US 6558389 B2	12.08.2004 31.03.2005 06.05.2003
US 2011-0004258 A1	06.01.2011	US 2008-0281325 A1 US 7794484 B2	13.11.2008 14.09.2010

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US2012/027551**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.: 15-20
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 15-20 pertain to methods for treatment of the human 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.