



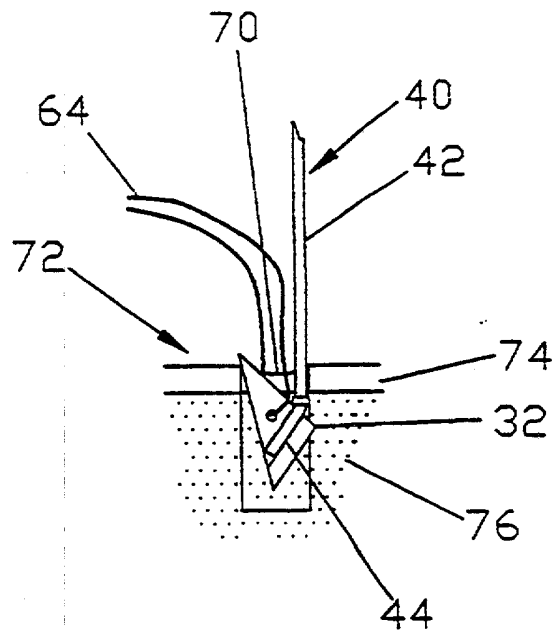
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>A61B 17/04</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 95/08295</b> (43) International Publication Date: 30 March 1995 (30.03.95)</p>
<p>(21) International Application Number: PCT/US94/10610 (22) International Filing Date: 19 September 1994 (19.09.94) (30) Priority Data: 08/124,163 20 September 1993 (20.09.93) US (71)(72) Applicant and Inventor: BARTLETT, Edwin, C. [US/US]; 609 Bremerton Drive, Greenville, NC 27858 (US). (74) Agent: PANDISCIO, Mark, J.; Pandiscio &amp; Pandiscio, 470 Totten Pond Road, Waltham, MA 02154 (US).</p>		<p>(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  (88) Date of publication of the international search report: 15 June 1995 (15.06.95)</p>

(54) Title: APPARATUS AND METHOD FOR ANCHORING SUTURES

(57) Abstract

A suture anchor having a conical surface and a bore in which an end of an insertion tool is inserted. The insertion end of the insertion tool is made of material having elastic properties. The bore and base of the suture anchor are angled with respect to the central axis of the suture anchor and preferably are parallel to each other. During insertion, the suture anchor is reoriented to fit into the hole, thereby bending the elastic end of the insertion tool. When the suture anchor is within cancellous bone tissue, the elastic properties of the insertion tool deploys the suture anchor to an orientation in which the suture anchor cannot fit through the bone hole, thereby firmly anchoring the suture anchor in the human bone.



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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 94/10610

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 A61B17/04

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 6 A61B A61F

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 practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,5 192 303 (GATTURNA ET AL.) 9 March 1993 cited in the application see abstract; figures 6,16,17 ---	1,16,21
A	US,A,3 973 277 (SEMPLE ET AL.) 10 August 1976 see column 2, line 61 - column 3, line 23; figures 1-3 ---	1
A	US,A,5 203 787 (NOBLITT ET AL.) 20 April 1993 cited in the application see abstract; figures 3A-D ---	1
	-/--	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

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- \*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

3 May 1995

Date of mailing of the international search report

17.05.95

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Inter. nal Application No  
PCT/US 94/10610

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,5 176 682 (CHOW) 5 January 1993  see abstract; figures 1,10-12 see column 2, line 48 - line 51 ---	1,14,16, 21
Y	US,A,4 741 330 (HAYHURST) 3 May 1988 see column 8, line 39 - line 52 ---	14,15
Y	US,A,4 605 414 (CZAJKA) 12 August 1986 see column 3, line 4 - line 11; figure 2 ---	14,15
A	US,A,5 067 962 (CAMPBELL ET AL.) 26 November 1991 see abstract; figure 3 ---	14,15
A	WO,A,93 09730 (BAHUAUD) 27 May 1993 see page 5, line 33 - line 40; figure 3 -----	14,15

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 94/ 10610

**Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

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

1. Claims: 1-13, 16-26 A suture anchor having a shape and a bore such that an insertion tool having a flexible end first bends and then returns to a straight configuration when the anchor is pushed in a bone hole.
  2. Claims: A suture anchor consisting of human bone.
- Claims not searched 27-37: See Rule 39.1 (iv) PCT.

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.
- No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 94/10610

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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