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[Continued on next page]

(54) Title: MODULAR SEGMENTED INTRAMEDULLARY SYSTEM, APPARATUS AND ASSOCIATED METHODS

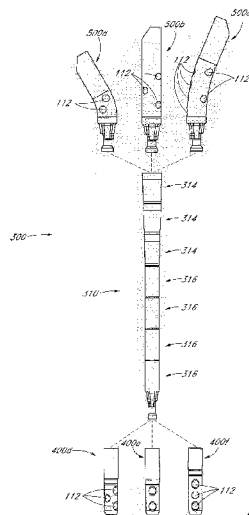


FIG. 79

(57) Abstract: A modular implantable segmented intramedullary structure (300) adapted to be received in the intramedullary canal of a bone configurable between a relatively flexible, bent configuration (307) for implantation or extraction and a relatively rigid, straightened compressed configuration (306) for bone treatment. The segmented intramedullary structure (300) comprises a plurality of interconnected segments (310) with a first interface (310) and a complementarily-shaped second interface (320) such that the first interface of a segment cooperatively engages the second interface of an adjacent segment. The segments define a channel (340) for a tensioning elongate member (350) to lock the structure in a compressed configuration. Methods of manufacturing, assembling, and/or treating a patient with the segmented intramedullary structure include options for real time customizable construction of the segmented intramedullary structure.

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ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *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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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/044898

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B17/72
ADD. A61B17/17 A61B17/92

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/009123 A (STOUT MEDICAL GROUP L P [US]; GREENHALGH SCOTT E [US]; ROMANO JOHN PAU) 18 January 2007 (2007-01-18) figures 2c, 24e, 17, 18 paragraphs [0050], [0051], [0055], [0061] figure 5	1-17
X	US 3 846 846 A (FISCHER A) 12 November 1974 (1974-11-12) figures 1, 2 column 3, line 42 - column 4, line 54 ----- -/--	1, 3, 4, 8-10, 15-17

 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 document 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

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Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/044898

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 2008/116175 A (OSTEOLIGN INC [US]; STONEBURNER JAMES D [US]; HARMON MATTHEW T [US]; T) 25 September 2008 (2008-09-25) claim 12 paragraphs [0059], [0049], [0050], [0036], [0045], [0048] claim 3 figure 33 -----	1-17

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/044898**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.: 33-37
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery, as they encompass the step of implant placement.
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.:

1-17

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: 1-17

Intramedullary bendable fixation structure with plurality of segments

2. claims: 18-32

Assembly for tensioning a surgical elongate member and method for tensioning

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/044898

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2007009123	A	18-01-2007	NONE	
US 3846846	A	12-11-1974	DE 2247560 B1 SU 483817 A3	04-10-1973 05-09-1975
WO 2008116175	A	25-09-2008	AU 2008228710 A1 CA 2678911 A1 CN 101636119 A EP 2129309 A2 JP 2010522046 T US 2008287951 A1 US 2009228007 A1 US 2009216232 A1 US 2009228008 A1	25-09-2008 25-09-2008 27-01-2010 09-12-2009 01-07-2010 20-11-2008 10-09-2009 27-08-2009 10-09-2009