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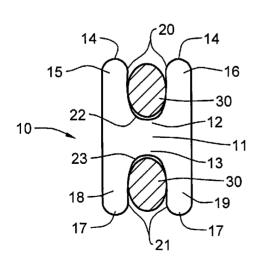
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(88) Date of publication of the international search report: 10 July 2008

(54) Title: INTERCOSTAL SPACER DEVICE AND METHOD FOR USE IN CORRECTING A SPINAL DEFORMITY



(57) Abstract: An intercostal spacer device for placement between two adjacent ribs, includes a spacer member and at least one pair of arms that extend from a first end of the spacer member and at least one pair of arms that extend from a second end of the spacer member. The intercostal spacer device may also include a flexible, fillable container for containing an injectable material that is compressible following implantation. The container is impermeable to the material it will be filled with. A structural mesh, for example, made of PET fabric and interwoven shapememory alloy wire, provides structure for and containment of the container, as well as shape control of the intercostal spacer device. The material can be injected into the container through a conduit. The intercostal spacer device is sized and configured to allow for placement into the intercostal space to produce force for correcting a spinal deformity.

INTERNATIONAL SEARCH REPORT

International application No PCT/US2007/077726

A. CLASSIFICATION OF SUBJECT MATTER INV. A61B17/80 A61B17/70

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{tabular}{ll} Minimum documentation searched (classification system followed by classification symbols) \\ A61B \end{tabular}$

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	FR 2 623 085 A (BREARD FRANCIS [FR]) 19 May 1989 (1989-05-19) page 3, line 31 - page 4, line 21; figures 2,5	1-4,9,10		
X	US 5 261 908 A (CAMPBELL JR ROBERT M [US]) 16 November 1993 (1993-11-16) column 2, line 46 - line 49 column 6, line 9 - line 14; figure 2b	1,2		
X	FR 2 775 183 A (TAYLOR JEAN [FR]) 27 August 1999 (1999-08-27) page 4, line 34 - line 36; figure 1 page 5, line 5 - line 13; figures 3,5	1-4		
X .	FR 2 799 640 A (SPINE NEXT [FR]) 20 April 2001 (2001-04-20) abstract; figure 2	1-4		

X Further documents are listed in the continuation of Box C.	X 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 17 January 2008	Date of mailing of the international search report $26/05/2008$
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Ducreau, Francis

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/077726

(Continue	Non POCHMENTS CONSIDERED TO BE DELEVANT	PC1/US2007/077726			
			1		
ategory*	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.		
(EP 1 138 268 A (COUSIN BIOTECH S A S [FR]; TAYLOR JEAN [FR]) 4 October 2001 (2001-10-04) figure 6		1,2		
			1		
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International application No. PCT/US2007/077726

INTERNATIONAL SEARCH REPORT

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:
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
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 reportcovers 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.:
see annex
Remark on Protest The additional search tees 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: 1-4,9,10

Intercostal spacer device with a spacer member and two pairs of arms

2. claims: 5-8

Intercostal spacer device with a flexible container, a conduit and a structure $% \left(1\right) =\left(1\right) +\left(1\right) +\left($

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2007/077726

Patent document cited in search report	Publication date		Patent family member(s)		Publication date	
FR 2623085 A	19-05-1989	EP	0392124 A	1	17-10-1990	
		ES ·	2043053 T	3	16-12-1993	
•		US	5011484 A		30-04-1991	
US 5261908 A	16-11-1993	NONE				
FR 2775183 A	27-08-1999	DE	69913659 D	1	29-01-2004	
, _ ,	_, ,	DE	69913659 T		09-06-2004	
		EP	1056408 A	1	06-12-2000	
		ES	2211039 T	3	01-07-2004	
		WO	9942051 A	1	26-08-1999	
		US	6626944 B	31	30-09-2003	
FR 2799640 A	20-04-2001	AT	285714 T		15-01-2005	•
		AU	775274 B	32	29-07-2004	
		AU	7800500 A	1	-30-04-2001	
		BR	0014764 A		11-06-2002	
		CA	2387589 A	١1	26-04-2001	
		CZ	20021288 A	۱3 -	14-08-2002	
		DE	60017164 D)1	03-02-2005	
		DE	60017164 T	2	29-09-2005	
		ΕP	1220644 A	\1	10-07-2002	
		ES	2234676 T	3	01-07-2005	
		WO	0128442 A	\1	26-04-2001	
		HU	0203511 A	12.	28-02-2003	
		JP	2003516173 T	-	13-05-2003	
		MX	PA02003813 A	\	13-12-2002	
		NZ	518681 A	1	26-03-2004	
		PL	354534 A	۱1	26-01-2004	
		RU	2243747 C	. 2	10-01-2005	
		TR	200200984 T	2	21-01-2003	
		TW	542713 B	3	21-07-2003	
		UA	71639 C		15-07-2002	
		US	6761720 B		13-07-2004	
		ZA	200202896 A	4	14-04-2003	
EP 1138268 A	04-10-2001	FR	2806616 A	 \ 1	28-09-2001	