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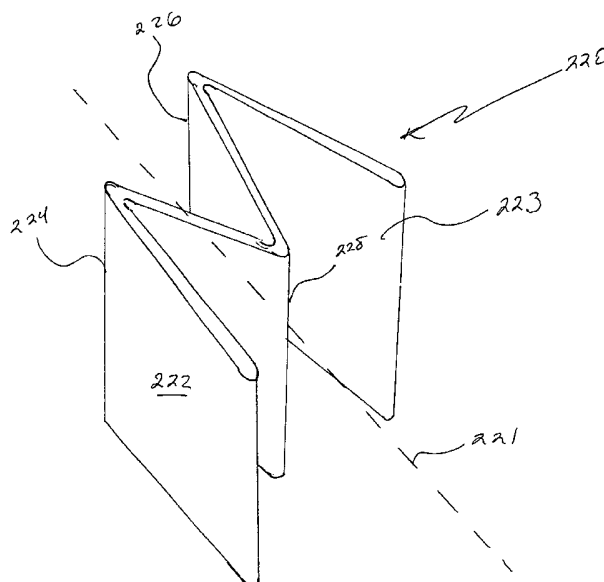
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[Continued on next page]

(54) Title: **LATERALLY EXPANDING INTERVERTEBRAL FUSION DEVICE**



(57) **Abstract:** The invention relates to intervertebral spacers (10, 40, 82A/B, 100, 120, 150, 180, 190 and 220) for use in orthopedic treatment of spinal defects. The intervertebral space is formed of a shape memory polymer. The spacer can be fabricated into a desired configuration and then deformed into an alternative or deformed configuration. Cooling the deformed spacer effectively freezes the spacer into its deformed conformation. The deformed configuration can be selected to facilitate implantation of the spacer into a prepared disc space between adjacent vertebrae. During operation, the surgeon can heat the spacer to allow it to revert to its original configuration. The spacer in its original conformation is sized to restore and/or maintain the adjacent vertebrae in a desired conformation and disc space height.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/46076

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61F2/44

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 7 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)

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 00 59412 A (RAYMEDICA INC) 12 October 2000 (2000-10-12) claims 12,13; figures 7A-10 page 10, line 14 - line 17	1,3,5,6, 13,16,17
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Y	----	8
Y	WO 98 38918 A (BEYAR MORDECHAY ; GLOBERMAN OREN (IL); MAGAL ELAD (IL)) 11 September 1998 (1998-09-11) claims 10,12,16,17; figures 1,2,10D,14-18	
A	----- -/-	1-3,5-7, 9,12,16, 17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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

12 June 2002

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 97 09007 A (ANSON MEDICAL LTD ;ANSON ANTHONY WALTER (GB)) 13 March 1997 (1997-03-13) page 5, paragraph 3 ----	15
A	FR 2 712 486 A (CATON PHILIPPE;SIMON GERARD; BRESLAVE PATRICE) 24 May 1995 (1995-05-24) claims 1,9-11; figures ----	1-3,6,7, 14,17
A	US 5 749 916 A (RICHELSON PHILIP MARC) 12 May 1998 (1998-05-12) figures 1,5 column 6, line 41 - line 54 ----	1-4,6-9, 11,12, 16,17
A	WO 00 25706 A (EBNER HARALD ;LIU MINGYAN (FR); SDGI HOLDINGS INC (US); FOLEY KEVI) 11 May 2000 (2000-05-11) figures 18A,18B page 18, line 17 -page 19, line 8 ----	1-3,6-8, 11,12,17
A	WO 00 44319 A (GLOBERMAN OREN ;SHAVIT RONEN (IL); SHENHAV BOAZ (IL); DISC O TECH) 3 August 2000 (2000-08-03) -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/46076

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.: 18-27
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
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. ☐ 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

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