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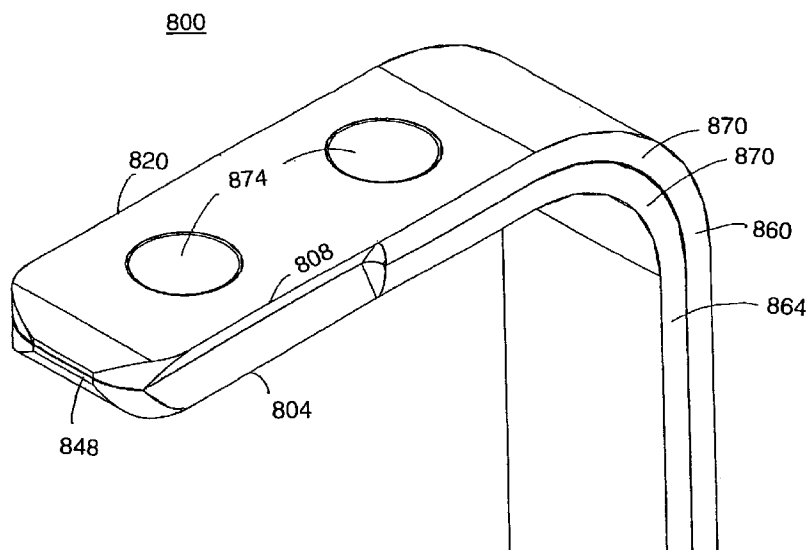
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(54) Title: SPECIALIZED CUTTER BLADES FOR PREPARING INTERVERTEBRAL DISC SPACES



(57) Abstract: Cutter blades made of shape memory materials. Rotation of a cutter blade as part of a cutter assembly within an intervertebral disc space cuts the material present there for removal from the intervertebral disc space. Cutter blades with different attributes (such as throw length, cutter blade angle, type and location of blade edges) are adapted to achieve different objectives within the intervertebral disc space. The use of a hollow ground to enhance the cutting action of a blade edge is described in connection with the creation of cutter blades. A variety of thin cutter blades are described which may be used in the interior of a thin intervertebral disc (having a reduced distance between the endplates of the adjacent vertebral bodies).

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/05403

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61B 17/00 (2007.01)

USPC - 606/79

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(8) - A61B 17/00 (2007.01)

USPC - 606/79

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 606/79, 606/53, 606/61, 606/60 - text word limited - see below

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

PubWEST(USPT,PGPB,EPAB,JPAB); Google; Google Scholar

Search Terms Used: knife, blade, surgery, surgeon, hollow ground, hollow grind, intervertebral, recessed

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0165406 A1 (ASSELL et al.) 28 July 2005 (28.07.2005) Entire document, especially para[0232] - para[0240], para[0260] - para[0269], FIG. 8 and FIG. 15.	1-3,9,11,13,15 and 17-19
Y		4-8,10,12,14,16 and 20-24
Y	US 2005/0230510 A1 (FLANHARDT et al.) 20 October 2005 (20.10.2005) FIG. 7 and para[0041].	4,5 and 8
Y	US 2003/0205024 A1 (PELTON) 06 November 2003 (06.11.2003) Abstract.	6-8
Y	US 5,935,143 A (HOOD) 10 August 1999 (10.08.1999) FIG. 4A and col 6, ln 48-53.	10, 14 and 20-24
Y	US 2005/0228420 A1 (HARDING et al.) 13 October 2005 (13.10.2005). FIG. 9	12 and 16
Y	US 6,574,868 B1 (OVERHOLT) 10 July 2003 (10.07.2003) col 7, ln 4-6.	23

☐ Further documents are listed in the continuation of Box C.

\* 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

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"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

"&amp;" document member of the same patent family

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/05403

## 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:
  
2. ☒ Claims Nos.: 25  
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:  
Claim 25 is an omnibus claim, in that it is unclear what is included or excluded by the claim language. This claim is not drafted in accordance with PCT Rule 6.2(a).
  
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 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.:

### 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.