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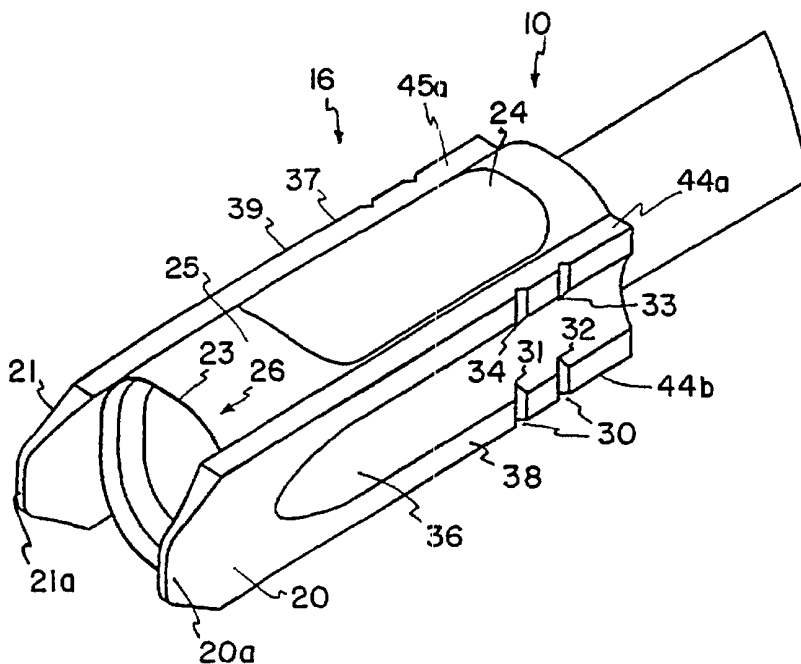
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- (21) International Application Number: PCT/US01/21014
- (22) International Filing Date: 3 July 2001 (03.07.2001) (72) Inventors; and (75) Inventors/Applicants (for US only): **HANSON, David, A.** [US/US]; 2948 Zarthan Avenue South, St. Louis Park, MN 55416 (US). **LONGHINI, Ross, A.** [US/US]; 6155 Courly Alcove, Woodbury, MN 55125 (US). **SEME, Steven, J.** [US/US]; 14590 Joppa Avenue South, Savage, MN 55378 (US).
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US 09/896,926 (CIP)
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[Continued on next page]

(54) Title: BONE PREPARATION INSTRUMENTS



(57) Abstract: Instruments and methods for preparing adjacent bones for fusion, and for inserting implants are disclosed. In one embodiment, the instruments include paddles for spacing the adjacent bones a predetermined distance and a cutting edge to create a channel between the adjacent bones to receive a fusion implant. In another embodiment, the instruments include a bone cutting instrument, a rasp, and an implant inserting tool. The instruments and methods are particularly advantageous for preparing a spiral fusion implant site.



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LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

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Published:

— *with international search report*
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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 01/21014

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/16

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 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)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 063 088 A (WINSLOW CHARLES J) 16 May 2000 (2000-05-16)	1,2,5,7, 9
Y	abstract; figures 1,2,5,7,16,16A column 7, line 19-21 column 7, line 36-39	3,8, 10-24,28
Y	--- PATENT ABSTRACTS OF JAPAN vol. 1996, no. 09, 30 September 1996 (1996-09-30) & JP 08 126647 A (TANAKA IKA KIKAI SEISAKUSHO:KK), 21 May 1996 (1996-05-21)	3,8
A	abstract ---	1,10,17, 29
	-/--	

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

22 November 2001

Date of mailing of the international search report

19.02.02

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/21014

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 56676 A (NICHOLSON JAMES E ;CORTEK INC (US); WHIPPLE DALE E (US); TROMANHAU) 11 November 1999 (1999-11-11) abstract; figures 14,14A,14B page 12, line 19-32 page 26, line 12 -page 27, line 15 ---	1-10
Y	EP 0 880 938 A (UNITED STATES SURGICAL CORP) 2 December 1998 (1998-12-02) abstract; figure 1 column 3, line 28-34 ---	10-24,28
A	EP 0 824 893 A (ARTHREX INC) 25 February 1998 (1998-02-25) column 2, line 43-48; figure 14 -----	9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/21014

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:

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 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.:

1-28

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

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: 1-28

A bone cutting instrument with cutting edges.

1.1. Claims: 1-5, 7-9

The bone cutting instrument with rectangular cutting edges configured and arranged beyond the first and second height dimensions of said first and second paddles.

1.2. Claims: 6,17-28

The cutting instrument associated with a mandrel.

1.3. Claims: 10-16

A channel guide for guiding the bone cutting instrument comprising two tracks and two paddles.

2. Claims: 29-33, 40-44

The bone cutting instrument having not only two but four cutting edges.

3. Claims: 34-39

A rasp comprising a shaft and a head.

4. Claims: 45-49

Implant inserting tool with movable arms.

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 01/21014

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
US 6063088	A	16-05-2000	AU 4991997 A EP 1006955 A2 WO 9817208 A2	15-05-1998 14-06-2000 30-04-1998

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