

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 July 2001 (19.07.2001)

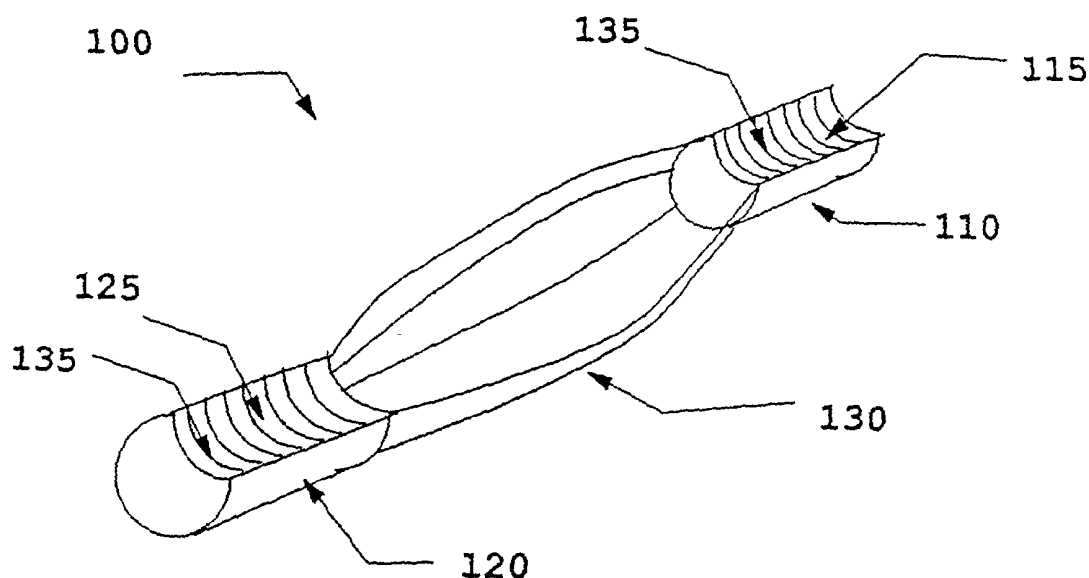
PCT

(10) International Publication Number
WO 01/50999 A3

- (51) International Patent Classification⁷: **A61F 2/08**
- (21) International Application Number: PCT/US01/01008
- (22) International Filing Date: 11 January 2001 (11.01.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/481,319 11 January 2000 (11.01.2000) US
09/528,034 17 March 2000 (17.03.2000) US
- (71) Applicant: **REGENERATION TECHNOLOGIES, INC.** [US/US]; 1 Innovation Drive, Alachua, FL 32615 (US).
- (74) Agent: **VAN DYKE, Timothy, H.**; Bencen & Van Dyke, P.A., 1630 Hillcrest Street, Orlando, FL 32803 (US).
- (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (72) Inventors: **CARTER, Kevin, C.**; 8502 N.W. 35th Road, Gainesville, FL 32606 (US). **ESCH, Michael**; 1 Innovation Drive, Alachua, FL 32615 (US). **LAROCHELLE, Paul**; 616 Hawksbill Island Drive, Satellite Beach, FL 32937 (US).
- Published:
— with international search report
- (88) Date of publication of the international search report:
24 January 2002

[Continued on next page]

(54) Title: MATERIALS AND METHODS FOR IMPROVED BONE TENDON BONE TRANSPLANTATION



(57) Abstract: Disclosed herein is an improved Bone Tendon Bone graft for use in orthopedic surgical procedures. Specifically exemplified herein is a Bone Tendon Bone graft comprising one or more bone blocks having a groove cut into the surface thereof, wherein said groove is sufficient to accommodate a fixation screw. Also disclosed is a method of harvesting grafts that has improved efficiency and increases the quantity of extracted tissue and minimizes time required by surgeon for implantation.

WO 01/50999 A3



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 01/01008

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61F2/08

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 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	US 5 067 962 A (CAMPBELL TODD D ET AL) 26 November 1991 (1991-11-26) column 2, line 48 - line 60; figures ---	1-3,5, 10,11, 28,29
X	US 5 871 504 A (ANDERSON SHARON K ET AL) 16 February 1999 (1999-02-16) column 5, line 51 - line 63; figures ---	1,2,5, 10,11, 28,29
A	---	4,6
X	US 5 004 474 A (FRONK DAVID M ET AL) 2 April 1991 (1991-04-02) column 11, line 3 - line 15; figures 3,7 --- -/--	1,7,10



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

4 October 2001

Date of mailing of the international search report

18 10 2001

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

Neumann, E

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/01008

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 98 22047 A (CURLEY LUKE ;MEDISOLVE LTD (IE); FEENEY MICHAEL (IE); LENNON DONAL) 28 May 1998 (1998-05-28) the whole document ----	1,6,8,9, 28
X	FR 2 739 773 A (MAIRE PHILIPPE) 18 April 1997 (1997-04-18) page 7, line 9 - line 12; figures ----	32,33
X	US 5 772 664 A (DESATNICK ALLEN H ET AL) 30 June 1998 (1998-06-30) the whole document -----	32

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/01008

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.: 12-14, 15-20, 21-26
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.: 27
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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

As a result of the prior review under R. 40.2(e) PCT,
no additional fees are to be refunded.

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-11,28-31

Subject 1.1 (claims 1-11):

A bone tendon bone graft comprising a tendon attached to bone blocks wherein the bone block is shaped into a dowel

Subject 1.2 (claims 28-31):

A bone tendon bone graft comprising a tendon attached to bone blocks wherein the bone block is tapered

2. Claims: 32-36

A device for extracting bone grafts comprising a shaft and cylinder portion having teeth at one end and comprises at least one slot

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 27

Obscurity objection: There are no technical features present in claim 27 (Article 6 PCT)

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/01008

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5067962	A	26-11-1991	NONE	
US 5871504	A	16-02-1999	NONE	
US 5004474	A	02-04-1991	EP 0502989 A1 JP 5502395 T WO 9107929 A2	16-09-1992 28-04-1993 13-06-1991
WO 9822047	A	28-05-1998	AU 5407598 A IE 970811 A1 WO 9822047 A1	10-06-1998 20-05-1998 28-05-1998
FR 2739773	A	18-04-1997	FR 2739773 A1 AU 7303996 A EP 0957781 A1 WO 9714361 A1	18-04-1997 07-05-1997 24-11-1999 24-04-1997
US 5772664	A	30-06-1998	NONE	