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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :		(11) International Publication Number:
A61F 2/06, A61L 27/00	A3	WO 98/00090
		(43) International Publication Date: 8 January 1998 (08.01.98)

(21) International Application Number: PCT/US97/11106

(22) International Filing Date: 26 June 1997 (26.06.97)

(30) Priority Data:
08/675,644 3 July 1996 (03.07.96) US

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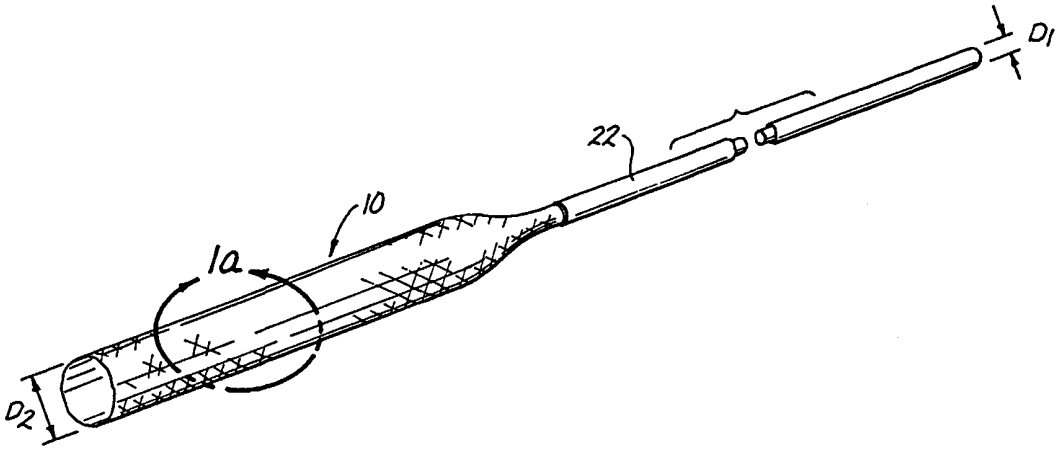
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(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(88) Date of publication of the international search report:
11 June 1998 (11.06.98)

(54) Title: STENTED, RADIALLY EXPANDABLE, TUBULAR PTFE GRAFTS



(57) Abstract

Stented tubular grafts of expanded, sintered polytetrafluoroethylene (PTFE). The stented PTFE grafts of the present invention include an integrally stented embodiment, an externally stented embodiment, and an internally stented embodiment. In each embodiment, the stent may be either self-expanding or pressure-expandable. Also, in each embodiment, the stent may be coated or covered with a plastic material capable of being affixed (e.g., heat fused) to PTFE. Manufacturing methods are also disclosed by the individual components of the stented grafts, are preassembled on a mandrel and are subsequently heated to facilitate attachment of the PTFE layer(s) to one another and/or to the stent. Optionally, the stented graft may be post-flexed and post-expanded following its removal from the mandrel to ensure that the stented graft will be freely radially expandable and/or radially contractible over its full intended range of diameters.

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INTERNATIONAL SEARCH REPORT

Interna al Application No
PCT/US 97/11106

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61F2/06 A61L27/00

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 6 A61F A61L

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	WO 95 26695 A (PROGRAFT MEDICAL INC.) 12 October 1995 see page 41, line 30 - line 33; figure 26 see page 42, line 20 - line 26; claims	1,35, 75-77,92 2-15, 36-43, 81-86 16,19, 22,44, 54-61,93

X Y A	EP 0 556 850 A (ENDOTECH) 25 August 1993 see the whole document	35,53 54-68 1,93,102

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 February 1998	18.03.98

Name and mailing address of the ISA	Authorized officer
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	Steenbakker, J

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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	EP 0 232 543 A (SUMITOMO) 19 August 1987	2-7, 62-68, 81-86
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		see the whole document	
	Y	GB 2 281 865 A (CORDIS) 22 March 1995	12,13, 40,41
		see page 7, line 26-30 - page 13, paragraph 2; figures	
	A	EP 0 177 167 A (THE STERLEY INSTITUTE) 9 April 1986	29, 62-68, 87, 111-115
		see page 2, line 10-47 see page 8, line 14-18	
	A	US 5 527 415 A (DOYLE) 18 June 1996	23-28, 47-52, 69-74, 78-80, 96-100, 105-109
		see abstract; claim 3	
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1	P,X	WO 96 25897 A (MENLO CARE) 29 August 1996 see abstract; figures	1

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INTERNATIONAL SEARCH REPORT

Interna al Application No
PCT/US 97/11106

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 96 28115 A (IMPRA) 19 September 1996 see the whole document ---	1
P,X	WO 97 21401 A (IMPRA) 19 June 1997 see page 5, paragraph 3; figures -----	1

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INTERNATIONAL SEARCH REPORT

Int. ational application No.
PCT/US 97/ 11106

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 ANNEX

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

1. Claims: 1, 2-7, 8-15, 75, 76-77, 81-86 , 92

1.1 Claims 1, 2-7, 75, 81-86: A tubular stented graft having an inner and an outer layer attached to each other and its method for manufacturing.
1.2 Claims 1, 8-15: A tubular stented graft having a specific stent.
1.3 Claims 75, 76-77, 92: A specific method for manufacturing a tubular stented graft.

These subjects have been searched.

2. Claims: 1, 16-22

A tubular stented graft having specific dimensioned inner and outer layers.

3. Claims: 1, 23-28, 75, 78-80

A tubular stented graft having a coating on the stent and its method of manufacturing.

4. Claims: 1, 29-34 and 75, 87-91

A tubular stented graft having particles between the inner and outer layer to promote its attachment and its method of manufacturing.

5. Claims: 35, 36-52 and 93, 94-101

An externally stented tubular graft and its method of manufacturing.

6. Claims: 53, 54-74, 102, 103-115

An internally stented tubular graft and its method of manufacturing.

INTERNATIONAL SEARCH REPORT

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PCT/US 97/11106

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