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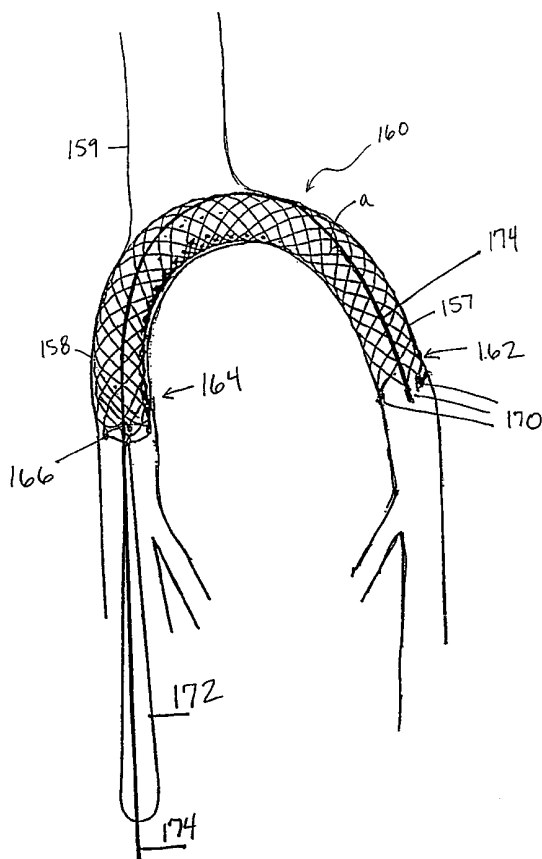
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- (74) Agent: GARRETT, Mark, T.; Fulbright & Jaworski, Suite 2400, 600 Congress Avenue, Austin, TX 78701 (US).
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- (71) Applicant: BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM [US/US]; 201 West 7th Street, Austin, TX 78701 (US).
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[Continued on next page]

(54) Title: WOVEN INTRAVASCULAR DEVICES AND METHODS FOR MAKING THE SAME AND APPARATUS FOR DELIVERY OF THE SAME



(57) Abstract: Self-expandable, woven intravascular devices for use as stents (both straight and tapered), filters (both temporary and permanent) and occluders for insertion and implantation into a variety of anatomical structures. The devices may be formed from shape memory metals such as nitinol. The devices may also be formed from biodegradable materials. Delivery systems for the devices include two hollow tubes that operate coaxially. A device is secured to the tubes prior to the implantation and delivery of the device by securing one end of the device to the outside of the inner tube and by securing the other end of the device to the outside of the outer tube. The stents may be partially or completely covered by graft materials, but may also be bare. The devices may be formed from a single wire. The devices may be formed by either hand or machine weaving. The devices may be created by bending shape memory wires around tabs projecting from a template, and weaving the ends of the wires to create the body of the device such that the wires cross each other to form a plurality of angles, at least one of the angles being obtuse. The value of the obtuse angle may be increased by axially compressing the body.

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INTERNATIONAL SEARCH REPORT

International Application No PCT/US 00/02569
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A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61F2/06 A61F2/01

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	EP 0 782 841 A (BOSTON SCIENT TECH INC) 9 July 1997 (1997-07-09) column 10, line 16 - line 34 column 11, line 32 - column 12, line 44 column 13, line 54 - column 14, line 2 column 18, line 56 - column 20, line 15 column 20, line 41 - line 51; figure ALL --- -/--	1, 2, 5, 8-13, 17-21, 24-30, 34-36, 38-41, 44-51, 68-70

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
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Date of the actual completion of the international search 28 November 2000	Date of mailing of the international search report 07.12.2000
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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 Mary, C
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INTERNATIONAL SEARCH REPORT

Internat. 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.
X	US 5 674 277 A (FREITAG LUTZ) 7 October 1997 (1997-10-07) figures 2B,3-5 column 5, line 55 -column 6, line 30 ---	1,2,6,7, 11,12, 15,20, 21,29,32
X	WO 91 17789 A (STACK RICHARD S ;CLARK HOWARD G III (US); WALKER WILLIAM F (US)) 28 November 1991 (1991-11-28) claims 1-8 figures 2-6 ---	1,20,37
E	WO 00 09059 A (PRODESCO) 24 February 2000 (2000-02-24) figures 14-23G page 25, line 27 -page 32, line 7 page 22, line 1 -page 23, line 18 ---	51-60
P,A	WO 99 32051 A (BANAS CHRISTOPHER E ;KOWLIGI RAJAGOPAL R (US); EDWIN TARUN J (US);) 1 July 1999 (1999-07-01) figure 15 ---	51
X	WO 98 29043 A (COOK UROLOGICAL INC) 9 July 1998 (1998-07-09) figures 1-6 ---	62-64
A	page 9, line 25 -page 13, line 26 ---	65,66
X	US 5 713 917 A (TAHERI SYDE A ET AL) 3 February 1998 (1998-02-03) figures 5-11 column 10, line 66 -column 12, line 56 ---	62,63
A	---	64-66
P,X	US 5 944 738 A (AFREMOV MICHAEL R ET AL) 31 August 1999 (1999-08-31) figures 1-11 claim 1 column 5, line 5 - line 47 -----	67

INTERNATIONAL SEARCH REPORT

International application No.
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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.:

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: 1-50,68-70

An implantable device composed of shape memory wires woven together.

2. Claims: 51-61

A weaving system comprising a specific template.

3. Claims: 62-66

A delivery device with two tubes, a guide wire, to deliver an expandable woven body.

4. Claim : 67

An implantable occluding system.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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