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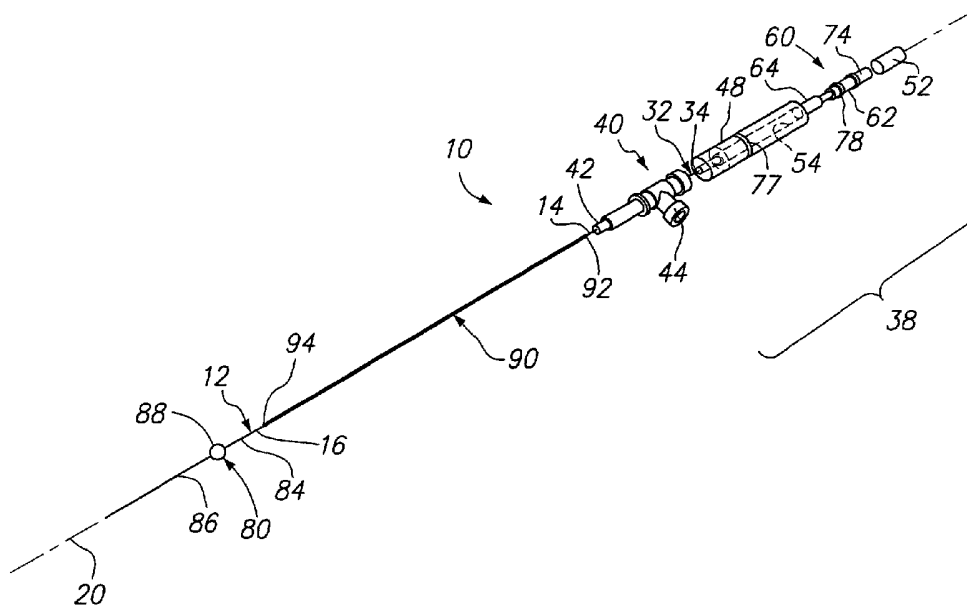
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[Continued on next page]

(54) Title: APPARATUS FOR SEALING A VASCULAR PUNCTURE



(57) Abstract: An apparatus for sealing a puncture communicating with a blood vessel includes an inner member slidable within an outer member, and a balloon coupled to distal ends of the inner and outer members. A proximal end of the outer member includes a port for delivering fluid into the balloon, and a cylinder that communicates with the port. A piston coupled to the inner member is slidable and biased to move distally within the cylinder.

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SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
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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/2004/016938

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 A61B17/00 A61M25/10

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 A61M

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 5 814 016 A (ROTH ALEX T ET AL) 29 September 1998 (1998-09-29) column 26, line 10 - line 55 figures 9a,9b	1-6, 10-19
A	----- US 5 626 601 A (HORZEWSKI MICHAEL J ET AL) 6 May 1997 (1997-05-06) column 3, line 47 - column 5, line 22 figures 1-3	1,3, 12-17,19
A	----- US 4 838 864 A (PETERSON CARL W) 13 June 1989 (1989-06-13) column 4, line 49 - column 5, line 68 figures 11-15	2,7-10, 18

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 November 2004

Date of mailing of the international search report

02 MAR 2005

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/016938

## Box 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.:  
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 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:

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.:

1-19

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: 1-19

Balloon catheter having a piston means inside said catheter to flatten the profile of the balloon upon inflation and biasing the balloon in a reduced cross.section deflated position.

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2. claims: 1,20-22,23-26

Assembly for delivering a multi-component biological sealant to a body puncture site.

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/016938

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