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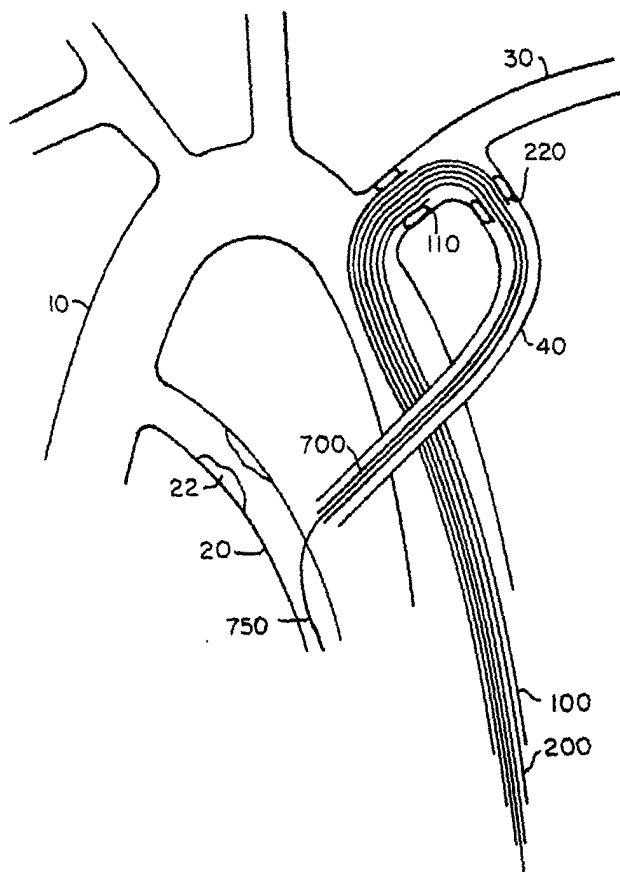
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[Continued on next page]

(54) Title: MINIMALLY INVASIVE MEDICAL BYPASS METHODS AND APPARATUS USING PARTIAL RELOCATION OF TUBULAR BODY CONDUIT



(57) Abstract: A tubular body conduit can be partly relocated intralumenally (e.g., to provide a bypass around a narrowing of a tubular body conduit). The tubular body conduit may be plugged intralumenally beyond the part to be relocated. Then the conduit is cut intralumenally. The severed portion of the conduit is relocated intralumenally (e.g., to place the severed end adjacent the side wall of another conduit). The side wall of the other conduit is penetrated intralumenally and the two conduits are connected by a connector that is installed intralumenally.



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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 98/09187

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B17/12

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 A61B A61F 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 98 38939 A (SCIMED LIFE SYSTEMS INC) 11 September 1998 see page 6, line 20 - page 13, line 2; figures 1-5 ---	15, 24-27
X A	US 5 499 995 A (TEIRSTEIN PAUL S) 19 March 1996 see column 3, line 6 - line 52; figures 1,2 ---	15-18, 22, 23 24-26
X A	US 4 710 192 A (LIOTTA DOMINGO S ET AL) 1 December 1987 see column 4, line 40 - column 5, line 44; figures 1-3 ---	15-18, 23 24-26
X A	DE 92 05 797 U (SCHIMITZ-RODE THOMAS ET AL) 17 June 1992 see page 3, paragraph 2; figures 1-3 ---	15-17 24-26
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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

11 January 1999

Date of mailing of the international search report

25. 01. 99

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/09187

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 5 527 338 A (PURDY PHILLIP D) 18 June 1996	15-18,23
A	see column 7, line 32 - column 10, line 33; figures 7-11 ---	24-26
X	US 5 192 301 A (KAMIYA TETSURO ET AL) 9 March 1993	15
A	see column 8, line 35 - line 59; figures 1-9,28,29 ---	24-26
A	WO 94 12136 A (BOSTON SCIENT CORP) 9 June 1994 see abstract; figure 1 ---	15,22-26
A	EP 0 249 338 A (BARD INC C R) 16 December 1987 see abstract; figure 1 ---	15
A	WO 97 12555 A (CEDARS SINAI MEDICAL CENTER) 10 April 1997 see page 15, line 3 - page 17, line 18 see page 30, line 11 - page 31, line 22; figures 1,2,12-16 ---	24,29-32
A	US 5 522 834 A (FONGER JAMES D ET AL) 4 June 1996 see abstract; figure 1 ---	24,33, 34,38,39
A	WO 96 40354 A (HEARTPORT INC) 19 December 1996 see page 20, line 32 - page 22, line 17 see page 24, line 10 - page 27, line 28; figures 10-15,22-26 ---	24
A	WO 95 17127 A (RYGAARD JOERGEN A ;OTICON AS (DK)) 29 June 1995 see page 8, line 6 - page 9, line 30; figures 1,4 ---	24,29-32
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A	EP 0 453 071 A (EVEREST MEDICAL CORP) 23 October 1991 see page 2, line 13 - line 41; figure 1 -----	24,41

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 98/09187

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.: 1-14
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.:
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: 15-23

Independent Claim 15:

Apparatus for installing a plug in a lumen of a body conduit comprising:

a longitudinal structure configured for insertion into and along the lumen, the longitudinal structure being adapted to releasably carry a plug structure and to releasably retain the plug structure in a configuration small enough to pass along the lumen with the longitudinal structure, and the longitudinal structure including a plug releasing substructure configured to selectively release the plug structure from the longitudinal structure so that the plug structure can enlarge to plug the lumen.

2. Claims: 24-41

Independent Claim 24:

Apparatus for relocating a patient's tubular body conduit comprising:

a longitudinal structure configured for insertion into and along the lumen of the conduit, the longitudinal structure including:

a first substructure configured to make an annular cut in the conduit;

a second substructure configured to shift the cut end of the conduit to a new location in the patient's body; and

a third substructure configured to connect the cut end of the conduit to the patient's body at the new location.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/09187

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Information on patent family members

International Application No

PCT/US 98/09187

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