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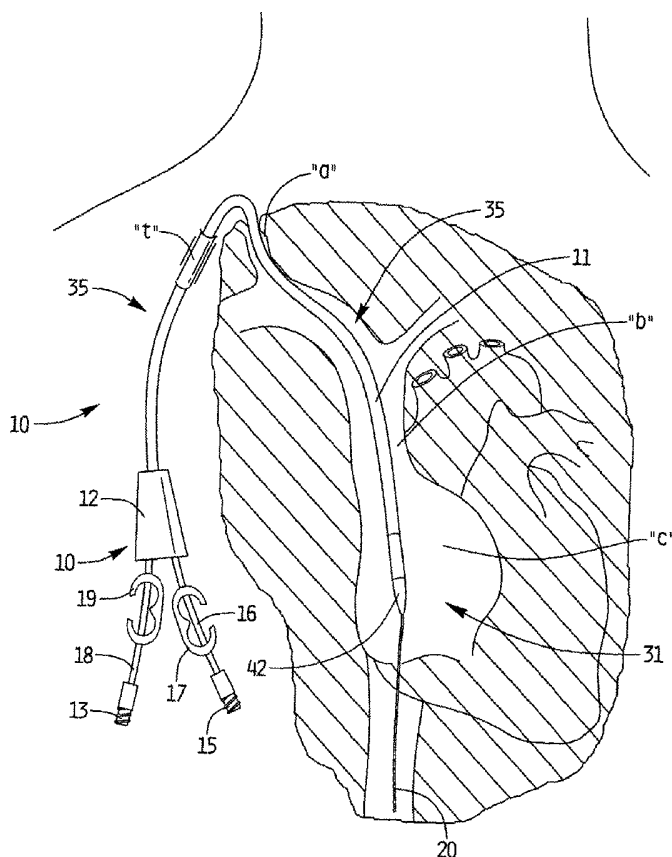
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: DIALYSIS CATHETER



(57) Abstract: A dialysis catheter (10) comprising a catheter body (11) having a proximal portion (33), a distal portion (31), a first longitudinally extending central lumen (40, 41, 45) configured to deliver blood, and at least three longitudinally extending lumens (34a-34c) positioned radially of the central lumen (40, 41, 45) and configured to withdraw blood from a patient. At least one blood delivery opening (47) is formed in the distal portion of the catheter body (11) and in fluid communication with the first lumen (40, 41, 45) and configured for passage of blood therethrough. At least three blood withdrawal openings (50a, 50b, 50c) are formed in the outer wall of the catheter body (11), wherein each of the openings is in fluid communication with one of the at least three lumens (34a-34c) and is configured for passage of blood from a patient.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/00186

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61M25/00

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 7 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, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 797 869 A (LEBLANC MICHAEL R ET AL) 25 August 1998 (1998-08-25) column 6, paragraph 3; claims 1,17,18,20; figures 2,3,5	1-5,7, 13,21,28
A	US 4 668 221 A (LUTHER RONALD B) 26 May 1987 (1987-05-26) column 3, line 13-16 column 5, line 16-24; figures 12,13	1,21,28
A	WO 97 37699 A (NOZUE YASUHIKO ;OKADA YOSUKE (JP); SUZUKI NOBUAKI (JP); SHERWOOD M) 16 October 1997 (1997-10-16) the whole document	1
A	US 5 556 390 A (HICKS ALLEN J) 17 September 1996 (1996-09-17) column 3, line 17-29; claim 5	1
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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

21 January 2003

Date of mailing of the international search report

29. 04. 2003

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 02/00186

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.:

1-16, 21-25, 28-30

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: 1-16,21-25,28-30

A dialysis catheter with a body, a central lumen to deliver blood, at least three radially positioned lumens to withdraw blood from a patient, and openings communicating with these lumens.

2. Claims: 17-20

A catheter for delivering and withdrawing blood from a patient, having a body, a distal tip, a first lumen and two others independent of the first one, and a stiffening insert.

3. Claims: 26,27

A system for placement of a dialysis catheter having a dilating trocar and a catheter.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/00186

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 301 854 A (LAUB GLENN W) 1 February 1989 (1989-02-01) column 3, line 20-27; figure 2 -----	12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/00186

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			EP 0301854 A2	01-02-1989
