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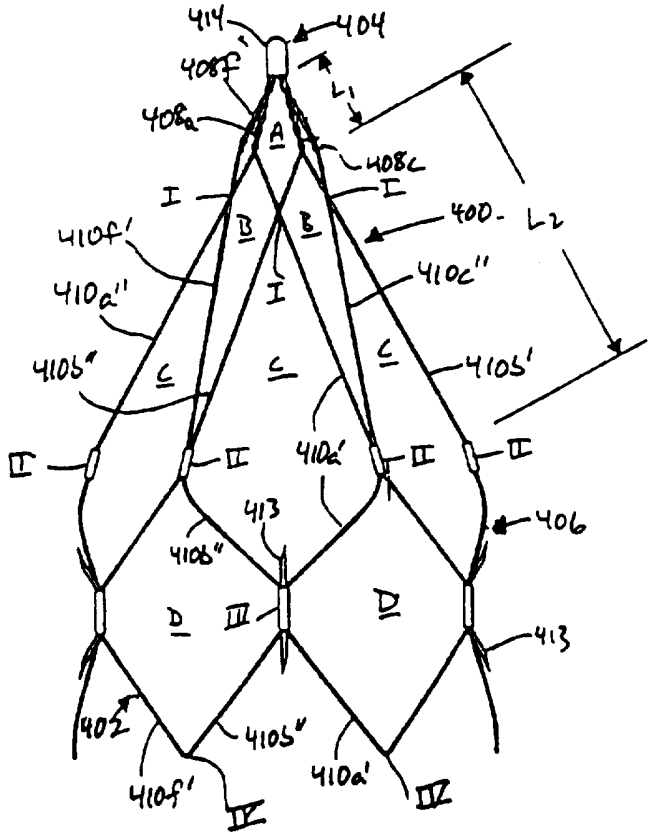
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(88) Date of publication of the international search report:
22 August 1996 (22.08.96)

(54) Title: BLOOD CLOT FILTERING

(57) Abstract

This invention is a blood clot filter having an anchoring portion (402) which includes a generally cylindrical self-expanding body. A generally conical filtering portion (400) is axially aligned with the cylindrical body (402), has an open proximal end (406) coupled to a distal end of the anchoring portion, and an apical distal end (404). In a preferred embodiment, the filter portion (400) is formed from strands (410) of resilient material that extend from the apical distal end (404) to the open proximal end (406). The strands (410) form twisted pairs (408) that converge at the apical distal end (404). The strands (410) diverge from the twisted pairs (408) in crossing paths to form a pattern of open filtering cells (A)(B)(C). The filter also has hooks (413) coupled to the anchoring portion (402) and formed from compliant material having an original shaped that bends under stress yet returns to its original shaped when unstressed.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/15365

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61B 17/00
US CL :606/200

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)

U.S. : 606/191, 198, 195, 194, 200; 604/104

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 practicable, 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	US, A, 4,990,156 (LEFEBVRE) 05 February 1991, see Figs. 1-6, and column 3 line 64 to column 7 line 19.	1-5, 12
X	US, A, 5,221,261 (TERMIN ET AL.) 22 June 1993, see Figs. 1-4.	19-23
A	US, A, 5,190,546 (JERVIS) 02 March 1993, see whole document.	40
A	US, A, 5,108,418 (LEFEBVRE) 28 April 1992, see Figs. 1-3.	39

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier document published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search 24 MAY 1996	Date of mailing of the international search report 12 JUN 1996
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer FOR JEFFREY A. SCHMIDT Telephone No. (703) 308-3141

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/15365

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international 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.: 7-11, 24-29 and 31-44
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:

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.