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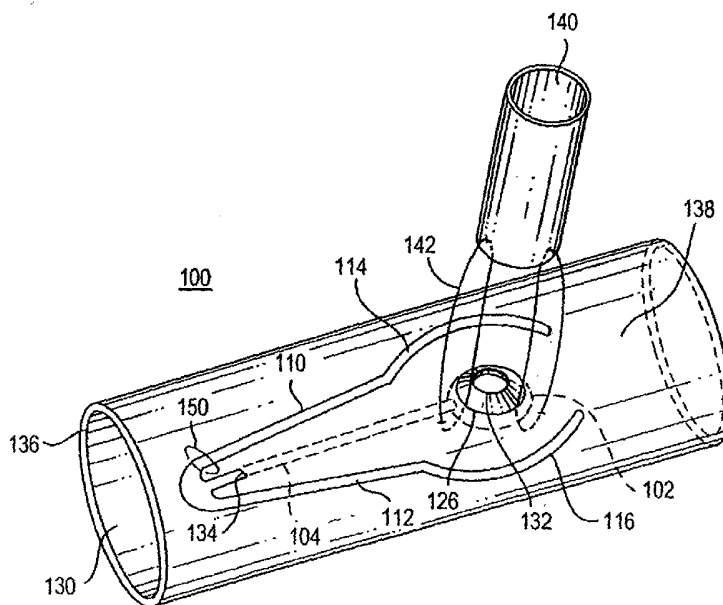
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(54) Title: TEMPORARY HEMOSTATIC PLUG APPARATUS AND METHOD OF USE



(57) Abstract: A temporary hemostatic plug apparatus for use in a patient includes a plug structure configured to be placed within a patient's tubular body structure. The plug structure may be configured to be placed in an incision to create a bloodless operating field for a surgeon to operate, for example to perform an anastomosis. This may be done by deploying the plug structure out from within the lumen to create a hemostatic seal around the incision. Once the surgeon has completed the operation, the plug apparatus may be removed from the lumen through the incision, or through any other point of access in the lumen.

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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/US2004/019173

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61B17/00 A61B17/122 A61B17/12 A61B17/04 A61B17/11</p>		
<p>According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61B</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/116019 A1 (GOLD ADAM ET AL) 22 August 2002 (2002-08-22) abstract paragraph [0041] - paragraph [0044]; figures 1-5,10b paragraph [0056]	1-17
A	US 2002/019648 A1 (AKERFELDT DAN ET AL) 14 February 2002 (2002-02-14) abstract; figures 5,7	1
A	EP 0 895 753 A (ACADEMISCH ZIEKENHUIS UTRECHT) 10 February 1999 (1999-02-10) abstract; figures 1-15	1
A	US 5 951 589 A (LEMPERT TODD E ET AL) 14 September 1999 (1999-09-14) column 5, line 5 - line 21; figures 3,4	5,6
<p><input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.</p>		
<p>° Special categories of cited documents :</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"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</p> <p>"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</p> <p>"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.</p> <p>"&" document member of the same patent family</p>		
<p>Date of the actual completion of the international search 30 September 2004</p>		<p>Date of mailing of the international search report 05 JAN 2005</p>
<p>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</p>		<p>Authorized officer Moers, R</p>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/019173

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.: 43-51
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 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.:

1-17

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: 1-17

Apparatus for temporarily sealing a first opening in a lumen comprising a plug with a shaft wherein both the plug and the shaft are adapted to be inserted into the lumen through a second opening

2. claims: 18-37

Apparatus for temporarily sealing a first opening in a lumen comprising a plug with a shaft wherein the plug is adapted to be inserted in the lumen and against the opening

3. claims: 38-42

Apparatus for temporarily sealing an opening in a lumen comprising a balloon plug with a shaft and a concentric tube over the shaft to modify the shape of the balloon

4. claim: 52

Apparatus for temporarily sealing a first opening in a lumen comprising a coil plug with a shaft and a wire connected to the coil

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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