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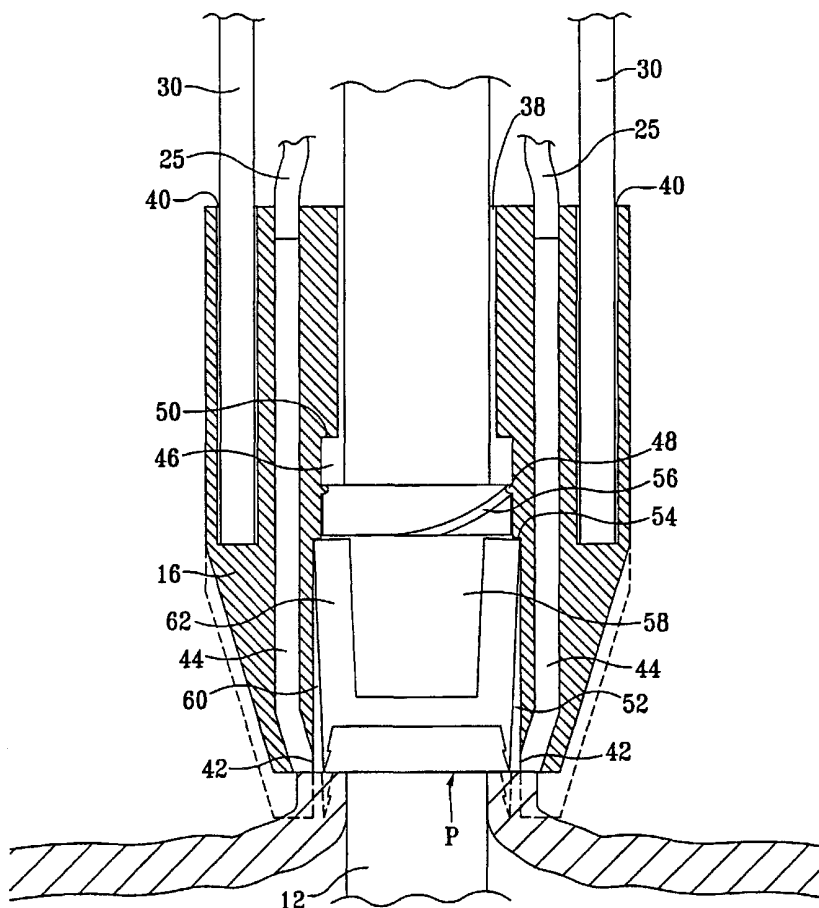
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- 09/478,179 5 January 2000 (05.01.2000) US
09/546,998 11 April 2000 (11.04.2000) US
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(54) Title: APPARATUS FOR CLOSING TISSUE PUNCTURES



(57) Abstract: Apparatus (10) for closing a puncture P in a wall of a vessel V includes an introducer sheath (12) and a housing (16) slidably disposed on an exterior surface of the sheath (12). A clip (62) is releasably disposed within a chamber of the housing (16), the clip (62) being expandable from a deployed configuration wherein tissue engaging portions of the clip (62) are directed inwards towards one another, and an expanded delivery configuration. An actuator (18) is attached to the housing (16) for deploying the clip (16) from the chamber. The clip (62) is preferably biased to the deployed configuration, and may be bioabsorbable. The housing (16) is advanced along the sheath (12) until the clip (62) pierces tissue surrounding a puncture P. The sheath (12) is withdrawn, causing the clip (62) to resiliently return to its deployed configuration and draw tissue together to close the puncture P.

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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

In ternational Application No

PCT/US 01/00286

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B17/00

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 A61B

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 62408 A (BY-PASS, LTD.) 9 December 1999 (1999-12-09) the whole document ---	1,9, 13-17,21
A	WO 97 07741 A (YOON) 6 March 1997 (1997-03-06) abstract; figures page 2, paragraph 3; claims 1,16 ---	1
A	US 5 782 861 A (Cragg et al.) 21 July 1998 (1998-07-21) cited in the application abstract; figures column 4, line 62 -column 6, line 42 ---	1
A	EP 0 774 237 A (UNITED STATES SURGICAL CORPORATION) 21 May 1997 (1997-05-21) abstract; figures ---	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

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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Date of mailing of the international search report

31. 07. 01

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/00286

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 478 354 A (TOVEY ET AL.) 26 December 1995 (1995-12-26) cited in the application abstract; figures 1-11 ---	1
P,X	WO 00 56223 A (BY-PASS, INC.) 28 September 2000 (2000-09-28) the whole document -----	1,2,5, 12-15,21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/00286

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.:

1-21

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: 1-21

Apparatus for closing a puncture in a body lumen

2. Claims: 22-37

Apparatus for approximating opposing edges of a puncture in a wall of a vessel

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/00286

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