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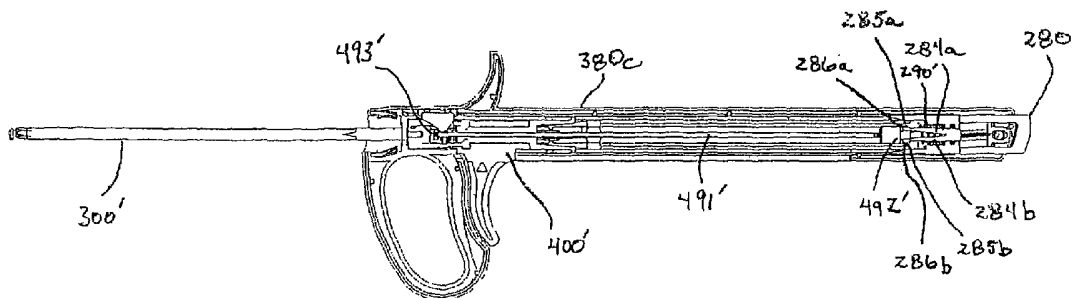
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[Continued on next page]

(54) Title: CLIP APPLIER AND METHODS OF USE



(57) Abstract: An apparatus for delivering a closure element into an opening formed in a blood vessel or other body lumen and methods for manufacturing and using same. The apparatus is configured to retain the closure element such that the closure element is disposed substantially within the apparatus. The apparatus also can engage, and position the closure element substantially adjacent to, the blood vessel wall adjacent to the opening. During deployment of the closure element, the apparatus expands the closure element beyond a natural cross-section of the closure element such that the closure element, when deployed, is configured to engage a significant amount of the blood vessel wall and/or tissue. The closure element is further configured to return to the natural cross-section, thereby drawing the engaged blood vessel wall and/or tissue substantially closed and/or sealed, such that hemostasis within the opening is enhanced.



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/US2004/001585

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B17/00 A61B17/064 A61B17/068

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | WO 01/49186 A (INTEGRATED) 12 July 2001 (2001-07-12) figure 2 ----- | 1 |

☐ 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

25 May 2004

Date of mailing of the international search report

04 NOV 2004

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/001585

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.: 32-49
because they relate to subject matter not required to be searched by this Authority, namely:
Apparatus claims 35-37 are dependent on method claim 34. It is assumed that these claims are intended to be directed to "The method of claim 34...." etc. No meaningful search would in any case be possible with any obvious correction of this obvious error.
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.:

1-18

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ US2004/ 001585

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Apparatus claims 35-37 are dependent on method claim 34. It is assumed that these claims are intended to be directed to "The method of claim 34...." etc. No meaningful search would in any case be possible with any obvious correction of this obvious error.

Continuation of Box II.1

Claims Nos.: 32-49

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ US2004/ 001585

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

Closure delivery apparatus with spring loaded closure carrier

2. claims: 19-23

Closure delivery apparatus with expandable locator

3. claims: 19,24-31

Closure delivery apparatus with cover member

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/001585

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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