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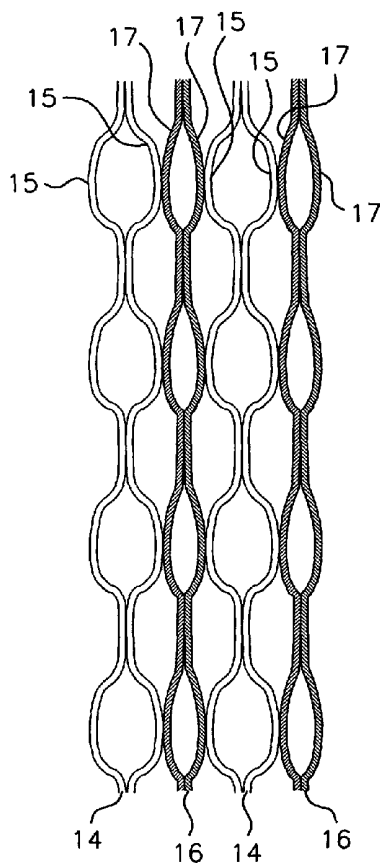
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[Continued on next page]

(54) Title: ENDOLUMINAL DEVICE HAVING SUPERELASTIC AND PLASTICALLY DEFORMABLE SECTIONS



(57) Abstract: An endoluminal device, such as a stent or a vena cava filter, comprising at least one superelastic section and at least one plastically deformable section. The superelastic section may comprise, for example, a superelastic grade of nitinol, whereas the plastically deformable section may comprise, for example, gold, platinum, tantalum, titanium, stainless steel, tungsten, a nickel alloy, a cobalt alloy, a titanium alloy, or a combination thereof. Each plastically deformable section may merely comprise a constrained portion of the superelastic section comprising a plastically deformable material, such as gold. The device enables deployment by a method comprising introducing the device into a body lumen with the device radially constrained in a first configuration having a first diameter; allowing the device to self-expand into a second configuration having a second diameter less than or equal to a fully-self-expanded diameter; and then optionally "fine-tuning" the device by forcibly expanding the device into a third configuration having a third diameter in a range between the second diameter and less than or equal to a fully-forcibly-expanded diameter. The superelastic and plastically deformable sections may be tubular sections placed end-to-end, such that the plastically deformable section can be conformed to fit a tapered section of a lumen.

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**Published:**

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- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 01/30102

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61F2/06 A61F2/01 A61L31/14 A61L31/02

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 A61F A61L B32B

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.          |
|------------|---|--------------------------------|
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| A          | ---   | 27-29                          |
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| A          | ---   | 16,17,19                       |
|            | -/--  |                                |

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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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "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
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- "&" document member of the same patent family

Date of the actual completion of the international search

21 June 2002

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## INTERNATIONAL SEARCH REPORT

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
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| A          | ---   | 16,17,19              |
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| A          | US 5 815 904 A (DONADIO III JAMES V ET<br>AL) 6 October 1998 (1998-10-06)<br>claim 1; figures   | 33                    |
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/30102**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.: 39-47  
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 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.:

**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: 1-32

An endoluminal device comprising a superelastic section and a plastically deformable section  
(Problem: to combine crush resistance and longitudinal flexibility of superelastic material with rigidity of plastically deformable material)

2. Claims: 33-38

A method of manufacturing an endoluminal device by forming three composite layers and cutting or etching away portions of the composite tube  
(Problem: manufacturing of a composite tube with a certain pattern)

## INTERNATIONAL SEARCH REPORT

 Internat  
 al Application No  
 PCT/US 01/30102

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