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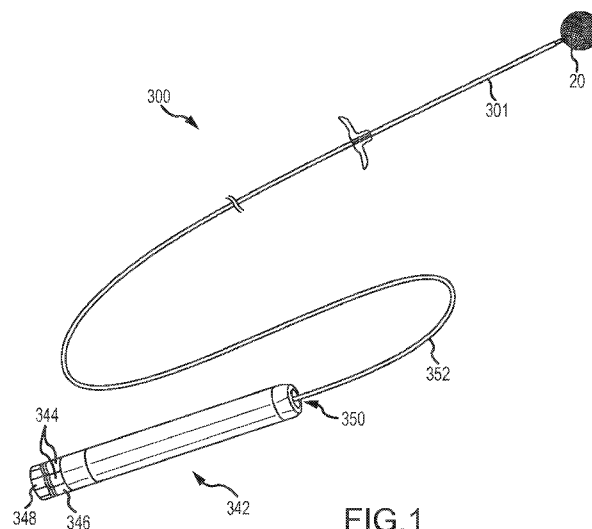


FIG. 1

(57) Abstract: Vascular delivery systems (300) configured to deliver an implant (20) to a location within a vasculature can include one or more control wires (332) controllable by a user to detach the implant (20) from the delivery system (300). Control wires (332) can cause a feature (334) of the delivery system to mechanically engage a hub (50) at a proximal end of an implant (20). Proximal or distal movement of the control wire (332) can allow the feature (334) to disengage from the hub (50), thereby allowing release of the implant (20).



# INTERNATIONAL SEARCH REPORT

International application No <b>PCT/US2014/029647</b>
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**A. CLASSIFICATION OF SUBJECT MATTER**  
**INV. A61B17/12**  
**ADD.**

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)  
**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 practicable, 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.
X	US 2011/202085 A1 (LOGANATHAN SIDDHARTH [US] ET AL) 18 August 2011 (2011-08-18) figures 18, 21, 24B-25B paragraphs [0076], [0083] - [0084] -----	1-4
X	US 2011/319926 A1 (BECKING FRANK P [US] ET AL) 29 December 2011 (2011-12-29) figures 18, 22A-24A paragraphs [0077], [0082] - [0084] -----	6-9
X	WO 2008/127525 A1 (BOSTON SCIENT SCIMED INC [US]; MIRIGIAN GREG [US]) 23 October 2008 (2008-10-23) figures 1-3B paragraphs [0030], [0036] - [0042], [0056] - [0058] ----- -/--	11-14

Further documents are listed in the continuation of Box C.

See patent family 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 application or patent 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
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- "&" document member of the same patent family

Date of the actual completion of the international search

15 January 2015

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Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2014/029647

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/076623 A1 (MATHIS MARK L [US] ET AL ARONSON NATHAN [US] ET AL) 19 March 2009 (2009-03-19) figures 19A-19B paragraph [0122] -----	11-14

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2014/029647

## Box No. 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.: 5, 10, 15, 21, 27  
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 No. 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 fees, this Authority did not invite payment of additional fees.
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.:  
1-4, 6-9, 11-14
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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- 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: 1-4

A vascular delivery system, comprising an implant having, at a proximal region, a hub, so that the implant is rotatably attached at the distal end of the delivery system, the control wire can be used as a guide wire and the detachment mechanism allows a simple design.

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2. claims: 6-9

A vascular delivery system, comprising an implant having, at a proximal region, a hub, so that the implant is rotatably attached at the distal end of the delivery system and the rotation of the attached implant can be blocked.

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3. claims: 11-14

A vascular delivery system, comprising an implant having, at a proximal region, a hub, so that the implant is rotatably attached at the distal end of the instrument, the control wire can be used as a guide wire and jamming of the detachment mechanism is avoided.

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4. claims: 16-20

A vascular delivery system, comprising an implant having, at a proximal region, a hub, so that the implant is non-rotatably attached at the distal end of the delivery system and the inner lumen of the delivery system is used for the detachment mechanism to obtain a low-profile instrument.

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5. claims: 22-26

A vascular delivery system, comprising an implant having, at a proximal region, a hub, so that the implant is non-rotatably attached at the distal end of the delivery system and the inner lumen of the delivery system is preserved (e.g. for the delivery of the implant over a guidewire or to deliver materials to the inside of the implant).

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2014/029647

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