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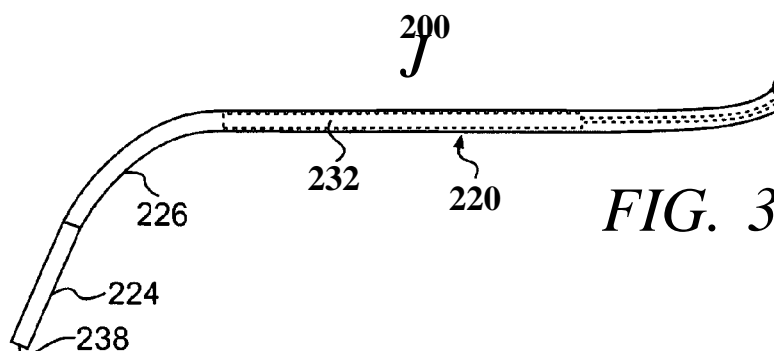
— with international search report (Art. 21(3))

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claims and to be republished in the event of receipt of  
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(88) Date of publication of the international search report:

28 July 2011

(54) Title: FLEXIBLE ENDOSCOPE WITH MODIFIABLE STIFFNESS



(57) Abstract: An apparatus includes a flexible elongate member that defines a lumen and is configured to be inserted within a body passageway of a patient. The flexible elongate member includes a proximal portion, a distal portion, and a medial portion disposed between the proximal portion and the distal portion. The distal portion is movable between a substantially linear configuration and a curved configuration. A stiffening member is coupled to the flexible elongate member. The stiffening member is movable to a selected location along a length of the flexible elongate member to provide modified flexibility to the selected location of the flexible elongate member. The stiffening member may include a first portion and a second portion, the first portion having a first stiffness and the second portion having a second stiffness different than the first stiffness. The stiffening member may be disposed within a lumen or at an exterior portion of the flexible elongate member.

# INTERNATIONAL SEARCH REPORT

International application No

PCT/US201G/054685

## A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B1/005

ADD. A61B1/G0

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 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	US 2009/112226 A1 (SELF THOMAS G [US] ET AL) 30 April 2009 (2009-04-30) paragraphs [G010] , [0036]; figures 1-5 -----	1-6
X	US 2006/258987 A1 (LENTZ D C [US] ET AL) 16 November 2006 (2006-11-16) paragraphs [G02G] , [0022], [0G26] , [0030], [0031]; figures 1-5 -----	1-5
X	US 2006/264907 A1 (ESKRIDGE JOSEPH [US] ET AL) 23 November 2006 (2006-11-23) paragraphs [G039] , [0047]; figures 1-2C -----	1,2,4,6
X	US 2004/015151 A1 (CHAMBERS JEFFREY W [US]) 22 January 2004 (2004-G1-22) paragraphs [0024] , [0033]; figures 1-3D -----	1,2,4



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 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

24 January 2011

Date of mailing of the international search report

17/06/2011

Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2G 1G/054685

## 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.:  
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 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 fee, 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.:
  
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 - 6

### 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: 1-6

a stiffening member including two different portions having different stiffness

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2. claims: 7-13

a stiffening member defining a lumen (e.g. working channel)

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3. claims: 14-20

a sleeve coupled to and configured to be slidably movable relative to a flexible elongate member, said latter being formed of a shape memory material

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US201G/054685

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009112226 A1	30-04-2009	W0 2009058682 A2	07-05-2009
US 2006258987 A1	16--11--2006	NONE	
US 2006264907 A1	23--11--2006	NONE	
US 2004015151 A1	22--01--2004	US 2007049899 A1	01-03-2007