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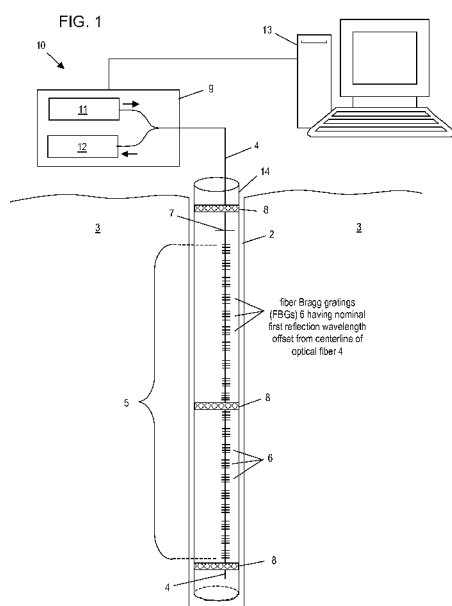
Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: ROTATED SINGLE OR MULTICORE OPTICAL FIBER

(57) Abstract: An apparatus for estimating a shape, the apparatus including: an optical fiber configured to conform to the shape and having a first core offset from a centerline of the optical fiber, the first core having an optical characteristic configured to change due to a change in shape of the optical fiber wherein a change in the optical characteristic is used to estimate the shape. A method for estimating a shape is also disclosed.



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A. CLASSIFICATION OF SUBJECT MATTER***E21B 47/12(2006.01)i, E21B 47/01(2006.01)i***

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)

E21B 47/12; F17D 5/00; G02B 6/26; G02B 6/34; G01N 21/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:optical fiber, first core

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007-0065077 A1 (CHILDERS BROOKS A. et al.) 22 March 2007 See abstract, paragraphs 22, 37, 40-41 and figures 1, 4.	1-3, 5-7, 12, 14, 16-21
Y		13, 15
A		4, 8-11
Y	US 2009-0116000 A1 (KIDDY JASON et al.) 07 May 2009 See abstract, paragraph 32, claim 10 and figure 1.	13, 15
A	US 6256090 B1 (CHEN PETER C. et al.) 03 July 2001 See abstract and figure 3.	1-21
A	US 2006-0045408 A1 (MARTIN JONES et al.) 02 March 2006 See abstract and figure 1.	1-21



Further documents are listed in the continuation of Box C.



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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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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