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(71) Applicant (for all designated States except US): **THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK** [US/US]; Stor Intellectual Property Division, UB Technology Incubator, Suite 111, Amherst, NY 14228-2567 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KESAVADAS, Thenkurussi** [US/US]; 9030 Michael Douglas Drive, Clarence Center, NY 14032 (US). **SRIMATHVEER-AVALLI, Govindaraja** [IN/US]; 234 University Avenue, #3, Buffalo, NY 14223 (US).

(74) Agents: **CUTAIA, Alfonzo, I.** et al.; Hodgson Russ LLP, The Guaranty Building, 140 Pearl Street, Suite 100, Buffalo, NY 14202-4040 (US).

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

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR ENDOVASCULAR TELEROBOTIC ACCESS

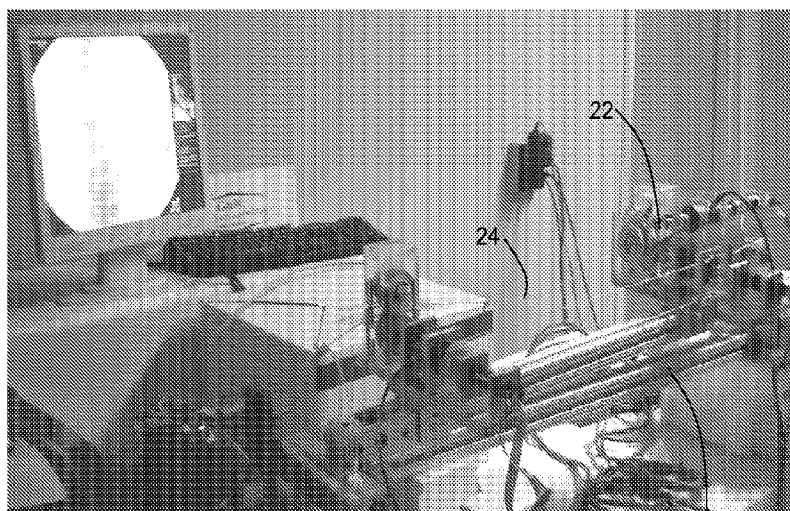


Fig. 1A

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(57) Abstract: A system for manipulating elongate surgical instruments comprises a console, which comprises an input controller. The input controller may have a haptic feedback mechanism. The system further comprises a slave component, which comprises a first linear actuator, a second linear actuator, and a first rotational actuator. Each actuator is in electrical communication with the input controller. The slave component further comprises a force sensor in electronic communication with the input controller. The force sensor is configured to measure a force acting upon the first elongate member on at least one degree of freedom. The force sensor will send a force signal to the haptic feedback mechanism of the input controller.



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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 (Rule 48.2(h))*

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14 July 2011

**A. CLASSIFICATION OF SUBJECT MATTER***A61B 19/00(2006.01)i, B25J 13/08(2006.01)i, B25J 13/06(2006.01)i, B25J 9/00(2006.01)i, B25J 3/00(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)

A61B 19/00; A61M 5/32; A61B 1/00; B25J 1/00; A61B 17/29

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) &amp; Keywords: minimally-invasive surgical apparatus, telerobotic access, elongate instrument, console, slave component, control system, haptic feedback mechanism, force sensor

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6493608 B1 (GUNTER D. NIEMEYER) 10 December 2002 See the whole document, especially Abstract; Columns 3-20, All claims.	1-9,13
A	US 6905460 B2 (YULUN WANG et al.) 14 June 2005 See the whole document, especially Abstract; Columns 1-10, All claims.	1-9,13
A	US 6312435 B1 (WALLACE; DANIEL T. et al.) 06 November 2001 See the whole document, especially Abstract; Columns 3-20, All claims.	1-9,13
A	US 2006-0084927 A1 (MAXIME FORMICHI) 20 April 2006 See the whole document.	1-9,13
A	US 2008-0065098 A1 (DAVID Q. LARKIN) 13 March 2008 See the whole document.	1-9,13

 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

19 MAY 2011 (19.05.2011)

Date of mailing of the international search report

**20 MAY 2011 (20.05.2011)**

Name and mailing address of the ISA/KR

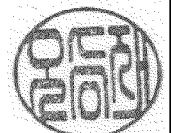
Korean Intellectual Property Office  
Government Complex-Daejeon, 189 Cheongsu-ro,  
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Authorized officer

OH Seung Jae

Telephone No. 82-42-481-8469



**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.: 10-12  
because they relate to subject matter not required to be searched by this Authority, namely:  
Claims 10-12 pertain to methods comprising steps of using the linear actuators to insert the elongate instruments into the vasculature of the individual. The said methods are thus considered a therapeutic method falling into the category of methods for treatment of the human body by surgery or therapy as well as diagnostic methods [Article 17(2)(a)(i) of the PCT and Rule 39.1(iv)].
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:

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 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.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/046873**

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