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(54) Title: METHODS, SYSTEMS, AND DEVICES FOR SURGICAL VISUALIZATION AND DEVICE MANIPULATION

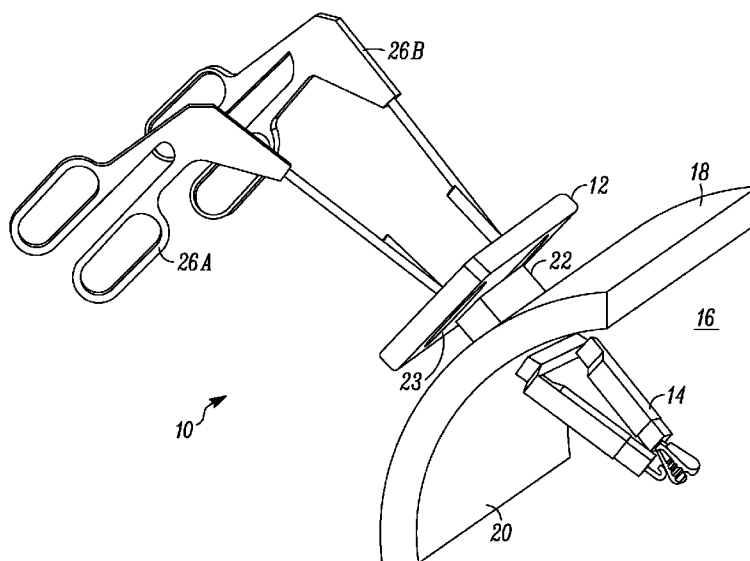


FIG. 1A

(57) Abstract: A surgical device (10) includes a console (12) having a visual display (24) and a manipulator arm (26A,26B), a robotic device (14) having a camera (66) and a connection component. The robotic device is configured to be positioned completely within a body cavity. The camera is configured to transmit visual images to the visual display. The connection component operably couples the console and the robotic device. The manipulator arm is positioned relative to the visual display so as to appear to be penetrating the visual display.



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International application No

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. B25J3/00      B25J13/00      G06F3/033 ADD. A61B19/00      A61B1/06      A61B1/313		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) A61B B25J G06F		
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		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 459 926 B1 (NOWLIN WILLIAM C [US] ET AL) 1 October 2002 (2002-10-01)  figures 20,21,23A,25A,26,27 column 36, lines 24-29	1,3,5-8, 11,18, 20-22
X	US 5 876 325 A (MIZUNO HITOSHI [JP] ET AL) 2 March 1999 (1999-03-02) figures 25A,B,C column 14, lines 1-4	1,3,6
X	US 2004/050394 A1 (JIN SUNGHO [US]) 18 March 2004 (2004-03-18)	1-4,6
Y	figures 3,4 paragraph [0019]	12-14,17
	-/--	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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  4 July 2008		Date of mailing of the international search report  10/11/2008
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer  Schießl, Werner

## 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.
Y	US 2005/288555 A1 (BINMOELLER KENNETH E [US]) 29 December 2005 (2005-12-29) figure 11b	12-14,17
P,X	WO 2007/149559 A (UNIV NEBRASKA [US]; FARRITOR SHANE [US]; LEHMAN AMY [US]; WOOD NATHAN) 27 December 2007 (2007-12-27) figures 17-24 paragraphs [0200], [0206], [0207], [0329], [0338]	1,3,4,6
A	JP 07 136173 A (OLYMPUS OPTICAL CO) 30 May 1995 (1995-05-30) figure 11	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2007/089191

## 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.: 23-26  
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  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
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.:
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.:

see additional sheet(s)

### 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: 1-8,11-22

A surgical / robotic system / device as defined in claims 2, 4 12, or 19 wherein either the console comprises a console magnet and the robotic device comprises a device magnet for magnetic communication with the console magnet or the connection component is wireless. Both provide for communication of the robotic device with the console without a physical connection.

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2. claims: 9, 10

A surgical system wherein the visual display of one console comprises a touch screen in combination with a pen to provide an alternative input means to record information.

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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
US 6459926	B1	US 2006241414 A1	26-10-2006
US 5876325	A	NONE	
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