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(54) AUXILIARY IMAGE DISPLAY AND MANIPULATION ON A COMPUTER DISPLAY IN A MEDICAL ROBOTIC SYSTEM

(57) To assist a surgeon performing a medical procedure, auxiliary images generally indicating internal details of an anatomic structure being treated are displayed and manipulated by the surgeon on a computer display screen to supplement primary images generally of an external view of the anatomic structure. A master input device controlling a robotic arm in a first mode may be switched by the surgeon to a second mode in order to function instead as a mouse-like pointing device to facilitate the surgeon performing such auxiliary information display and manipulation.

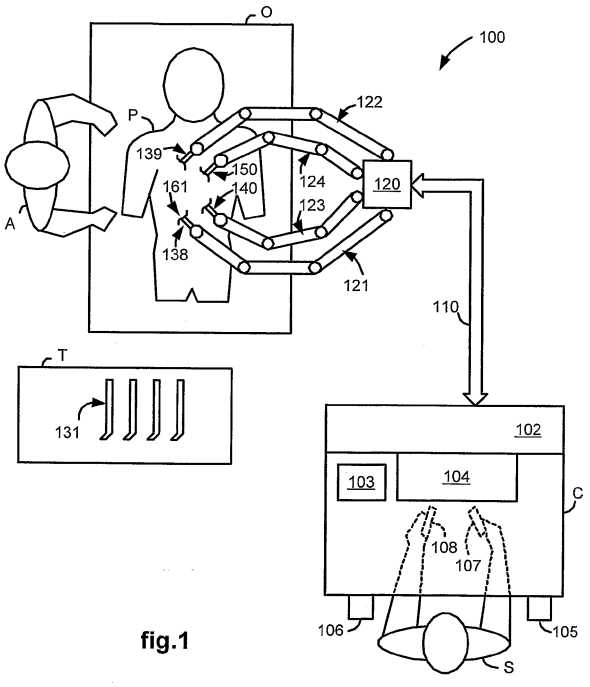

fig.1

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EUROPEAN SEARCH REPORT

Application Number
EP 16 19 5634

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y A	US 2004/106916 A1 (QUAID ARTHUR E [US] ET AL) 3 June 2004 (2004-06-03) * paragraphs [0029], [0030], [0112], [0116] * -----	1,2 3 10	INV. A61B90/00 A61B18/14 G06F3/01
Y	US 6 522 906 B1 (SALISBURY JR J KENNETH [US] ET AL) 18 February 2003 (2003-02-18) * column 24, line 62 - line 67 * -----	3	
E	WO 2007/030173 A1 (INTUITIVE SURGICAL INC [US]) 15 March 2007 (2007-03-15) * paragraphs [0072], [0088], [0089] * -----	1-3	

TECHNICAL FIELDS SEARCHED (IPC)

A61B
G06F

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	28 June 2017	Angeli, Markus

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

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Application Number
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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-4, 10-18

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 16 19 5634

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4

   A medical robotic system with a master input device directed to a grabbing function for facilitating movement of an image.

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2. claims: 5-9

   A medical robotic system with a master input device directed to a gripper for facilitating the input to the master input device.

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3. claims: 10-18

   A medical robotic system with a master input device directed to a processor defined to define a cut plane for facilitating the indication of two dimensional slices.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 19 5634

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-06-2017

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	在医疗机器人系统中的计算机显示器上的辅助图像显示和操纵		
公开(公告)号	EP3162318A3	公开(公告)日	2017-08-09
申请号	EP2016195634	申请日	2006-10-19
[标]申请(专利权)人(译)	直观外科手术操作公司		
申请(专利权)人(译)	Intuitive Surgical公司运营，INC.		
当前申请(专利权)人(译)	Intuitive Surgical公司运营，INC.		
[标]发明人	HOFFMAN BRIAN KUMAR RAJESH LARKIN DAVID PRISCO GIUSEPPE SWARUP NITISH ZHANG GUANGHUA G		
发明人	HOFFMAN, BRIAN KUMAR, RAJESH LARKIN, DAVID PRISCO, GIUSEPPE SWARUP, NITISH ZHANG, GUANGHUA G		
IPC分类号	A61B90/00 A61B18/14 G06F3/01		
CPC分类号	A61B18/1482 A61B34/10 A61B34/30 A61B34/37 A61B34/70 A61B34/71 A61B34/76 A61B90/36 A61B90/361 A61B90/37 A61B2090/101 A61B2090/364 A61B2090/374 A61B2090/3782 A61N7/022 G06F3/011 G06F3/016 G06F3/0346 G06F3/0481 G06F3/04817 G06F3/04842 G06F3/04845 G06F3/04847 G06F3/0486 G06F2203/014 G06F2203/04804 G06F2203/04806 A61B1/00193 A61B1/04 A61B1/313 A61B5/055 A61B5/742 A61B18/12 A61B2018/00577 A61B2018/00595 A61B2018/00982 A61B2018/00994 A61B2090/378		
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摘要(译)

为了帮助外科医生执行医疗程序，通常指示正在治疗的解剖结构的内部细节的辅助图像由外科医生在计算机显示屏上显示和操纵，以补充解剖结构的外部视图的主要图像。在第一模式中控制机器人臂的主输入设备可以由外科医生切换到第二模式，以便替代地起到类似鼠标的指示设备的作用，以便于外科医生执行这种辅助信息显示和操纵。

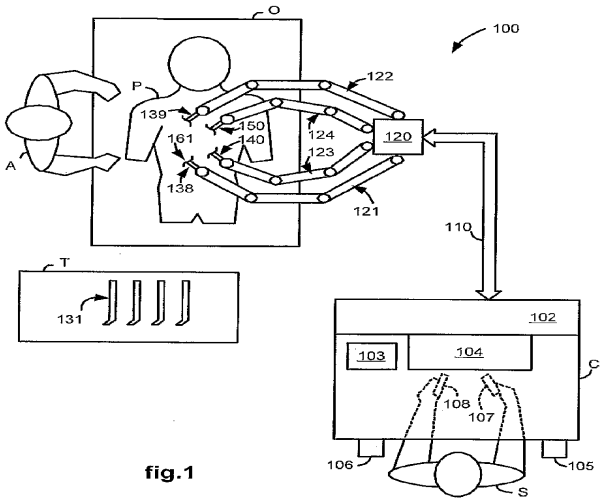
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fig.1