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(54) **Surgical instrument with wireless communication between control unit and remote sensor**

(57) A surgical instrument, such as an endoscopic or laparoscopic instrument. The surgical instrument may comprise an end effector (12) comprising at least one sensor (368). The surgical instrument may also comprise an electrically conductive shaft (8) having a distal end connected to the end effector (12) wherein the sensor (368) is electrically insulated from the shaft (12). The surgical instrument may also comprise a handle connected to a proximate end of the shaft (12). The handle may comprise a control unit (300) electrically coupled (400) to the shaft such that the shaft (8) radiates signals as an antenna from the control unit (300) to the sensor (368) and receives radiated signals from the sensor (368). Other components electrically coupled to the shaft may also radiate the signals.

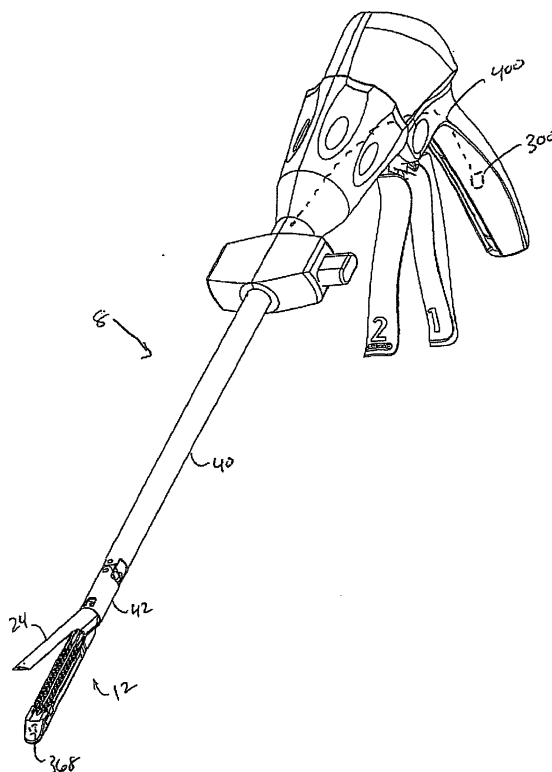


FIG. 16



EUROPEAN SEARCH REPORT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	WO 03/090630 A (TYCO HEALTHCARE [US]; HEINRICH RUSSELL [US]; CUNY DOUGLAS J [US]) 6 November 2003 (2003-11-06) * the whole document *	1,3-8, 10-13	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 26 October 2009	Examiner Strazdauskas, Gedas
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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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
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26-10-2009

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

专利名称(译)	在控制单元和远程传感器之间进行无线通信的手术器械		
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优先权	11/651807 2007-01-10 US		
其他公开文献	EP1943955A2 EP1943955B1		
外部链接	Espacenet		

摘要(译)

手术器械，例如内窥镜或腹腔镜器械。手术器械可包括末端执行器（12），末端执行器（12）包括至少一个传感器（368）。手术器械还可包括导电轴（8），其具有连接到末端执行器（12）的远端，其中传感器（368）与轴（12）电绝缘。手术器械还可包括连接到轴（12）的近端的手柄。手柄可包括与轴电连接（400）的控制单元（300），使得轴（8）将信号作为天线从控制单元（300）辐射到传感器（368）并接收来自传感器的辐射信号。（368）。电耦合到轴的其他部件也可以辐射信号。

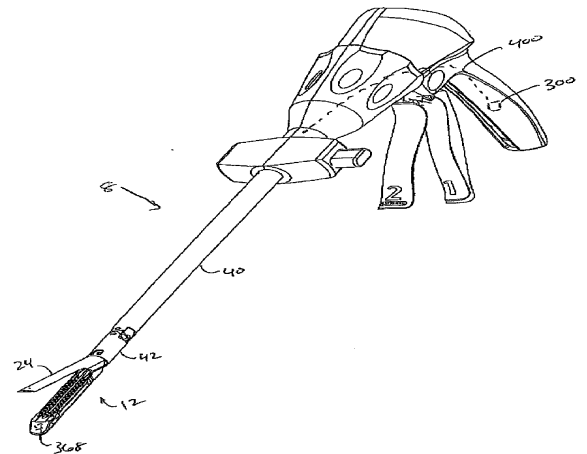


FIG. 16