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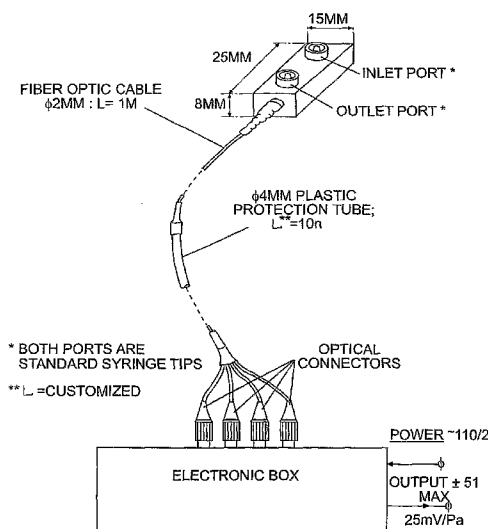
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[Continued on next page]

(54) Title: RESPIRATORY VOLUME/FLOW GATING, MONITORING, AND SPIROMETRY SYSTEM FOR MRI



(57) Abstract: A respiratory volume/flow monitoring system, including a pneumotach that measures micromovements of a membrane in a MRI environment, gates (triggers) a MRI machine to start image acquisition at specific lung volumes or airflow rates during the breathing cycle or other breathing maneuvers of a patient. The system provides breathing motion artifact suppression for any imaging test susceptible to breathing motion artifact, allows respiratory monitoring of the subject during an MRI procedure, and provides the capability to perform spirometric testing while the subject is in the MRI environment. The preferred embodiments of this invention are also applicable for patients undergoing CT imaging or any other imaging modality that allows external triggering.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0100843 A1 (HOFFMAN) 29 May 2003 (29.05.2003) Entire document	1-2, 5-8
Y	US 6,631,716 (ROBINSON et al) 14 Oct 2003 (14.10.2003) Entire document	3, 4
X	US 5,975,748 (EAST, IV et al) 02 Nov 1999 (02.11.1999) Entire document	1-2, 5-8
Y	US 6,186,956 B1 (MCNAMEE) 13 Feb 2001 (13.02.2001) Entire document	3, 4
Y	US 6,118,847 (HERNANDEZ-GUERRA et al) 12 Sept 2000 (12.09.2000) Entire document	3, 4
X,P	US 2005/0187464 A1 (HO et al) 25 Aug 2005 (25.08.2005) Entire document	1-8

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