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[Continued on next page]

(54) Title: HIGH PERFORMANCE COMPUTING FOR THREE DIMENSIONAL PROTON COMPUTED TOMOGRAPHY (HPC-PCT)

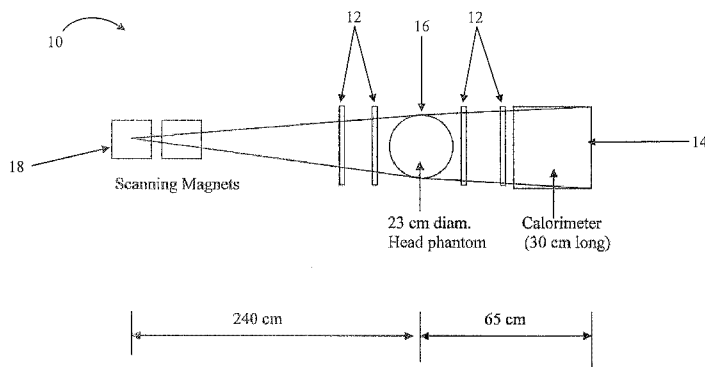


FIGURE 1

(57) Abstract: A proton computed tomography (pCT) detector system, including two tracking detectors in sequence on a first side of an object to be imaged, two tracking detectors in sequence on an opposite side of the object to be imaged, a calorimeter, and a computer cluster, wherein the tracking detectors include plastic scintillation fibers. All fibers in the detector system are read out by Silicon Photomultipliers (SiPM). A method of imaging an object by emitting protons from a source through two tracking detectors, through and around the object, and through two opposite tracking detectors, detecting energy of the protons with a calorimeter, and imaging the object.



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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 2007/0045547 A1 (TUMER) 01 March 2007 (01.03.2007), entire document, especially; FIG 2, 27, 30-32, para [0003], [0006], [0007], [0012], [0013], [0058], [0065], [0066], [0068], [0079], [0080], [0085], [0086], [0091], [0094], [0097], [0099], [0100], [0107], [0109], [0121], [0125], [0148], [0162], [0164], [0166], [0167].	18-20 ----- 1-17, 21-26
Y	US 6,635,877 B2 (KUSUYAMA et al.) 21 October 2003 (21.10.2003), entire document, especially; col 2, ln 27-61, col 4, ln 7-23, col 5, ln 1-23.	1-17, 21-26
Y	US 6,078,052 A (DIFILIPPO) 20 June 2000 (20.06.2000), entire document, especially; col 1, ln 36-50, col 3, ln 30-50, col 5, ln 5-34, col 6, ln 5-46.	12-14, 22
Y	US 2007/0040830 A1 (PAPAGEORGIOU) 22 February 2007 (22.02.2007), entire document, especially; para [0009], [0028], [0032], [0033], [0035], [0037], [0082].	23-26
A	US 2009/0134334 A1 (NELSON) 28 May 2009 (28.05.2009), entire document.	1-26
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