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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) **Title:** REAL-TIME DOSE COMPUTATION FOR RADIATION THERAPY USING GRAPHICS PROCESSING UNIT
ACCELERATION OF THE CONVOLUTION/SUPERPOSITION DOSE COMPUTATION METHOD

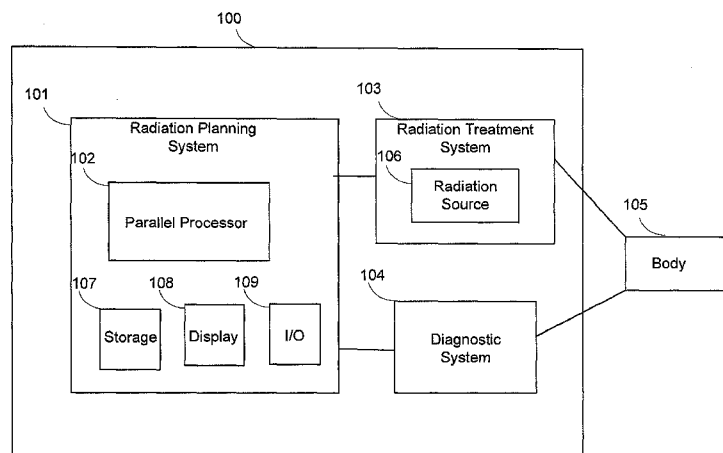


FIG. 1

(57) **Abstract:** A system for radiation therapy including a radiation planning system, wherein the radiation planning system comprises a parallel processor adapted to receive input information concerning a body having an intended radiation treatment region and to output information for providing radiation treatment to the intended radiation treatment region of the body, wherein the parallel processor is adapted to perform a plurality of reverse ray tracing calculations based on the input information concerning the body in determining the output information for providing radiation treatment, each of the plurality of reverse ray tracing calculations comprising: calculating a first physical property corresponding to a first sub-region of the intended radiation treatment region of the body that is intersected by a ray traced between a source position and the intended radiation treatment region; and calculating, subsequent to the first-mentioned calculating, a second physical property corresponding to a second sub-region of the intended radiation treatment region that is intersected by the ray at a location closer to the source position than is the first sub-region.



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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
Korean utility models and applications for utility models since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 04729099 A (Picker International, Inc.) 01.03.1988 See Figures 2-5 and Claims 1,6.	1-27
A	US 06148272 A (The Regents of the University of California) 14.11.2000 See Columns 1-3 and Claims 1-6.	1-27
A	US 05602892 A (Jorge Llacer) 11.02.1997 See Abstract and Claim 1.	1-27
A	US 06345114 B1 (Wisconsin Alumni Research Foundation) 05.02.2002 See Abstract and Figures 2-5.	1-27

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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