THREE-DIMENSIONAL COMPUTER GRAPHICS SIMULATION AND COMPUTERIZED NUMERICAL OPTIMIZATION FOR DOSE DELIVERY AND TREATMENT PLANNING


Assignee: Medical Instrumentation and Diagnostics Corporation, Albuquerque, N. Mex.; by said Laura D. Brynildson and Gary W. Glover

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Primary Examiner—Kyle L. Howell
Attorney, Agent, or Firm—Jeffrey D. Myers; Donovan F. Duggan; Deborah A. Peacock

ABSTRACT
An optimized dose delivery system using computer graphics simulation techniques and computerized numerical optimization. A volume, such as a tumor volume, is graphically simulated and meshed with node points. The dose delivery is calculated depending upon input variables, deriving an objective function related to dose efficacy. A numerical optimization algorithm optimizes the input variables based upon such objective function.

16 Claims, 9 Drawing Sheets