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Swerdloff et al.

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[54] **RADIATION THERAPY SYSTEM WITH CONSTRAINED ROTATIONAL FREEDOM** 519887 3/1977 U.S.S.R. 378/65
 553766 11/1977 U.S.S.R. 378/65

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[73] Assignee: **Wisconsin Alumni Research Foundation**, Madison, Wis.

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,317,616.

[21] Appl. No.: **591,335**

[22] Filed: **Jan. 25, 1996**

Related U.S. Application Data

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[51] Int. Cl.⁶ **A61N 5/10**

[52] U.S. Cl. **378/65; 378/150**

[58] Field of Search **378/65, 150**

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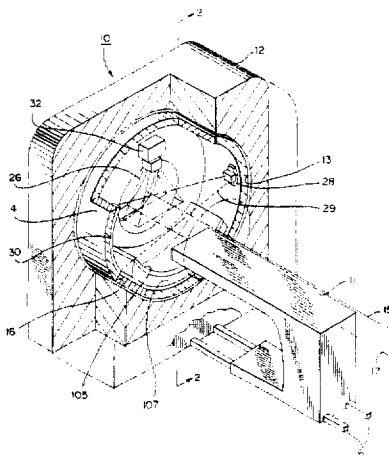
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Attorney, Agent, or Firm—Quarles & Brady

[57] ABSTRACT

A radiation therapy machine has a constrained angular freedom to produce a beam only within a gantry plane. A radiation shield may be stationary and not attached to the gantry or rotating to always block the primary beam. The constrained motion reduces the risk of patient/gantry collision and provides for extremely accurate radiation therapy planning. The therapy machine, so constrained, may include a tomographic imaging system on a single gantry. The two systems cooperate and employ many of the same hardware components to both plan and carry out therapy sessions in which irregularly shaped treatment volumes are accurately irradiated while tissue surrounding those volumes is minimally irradiated.

4 Claims, 11 Drawing Sheets



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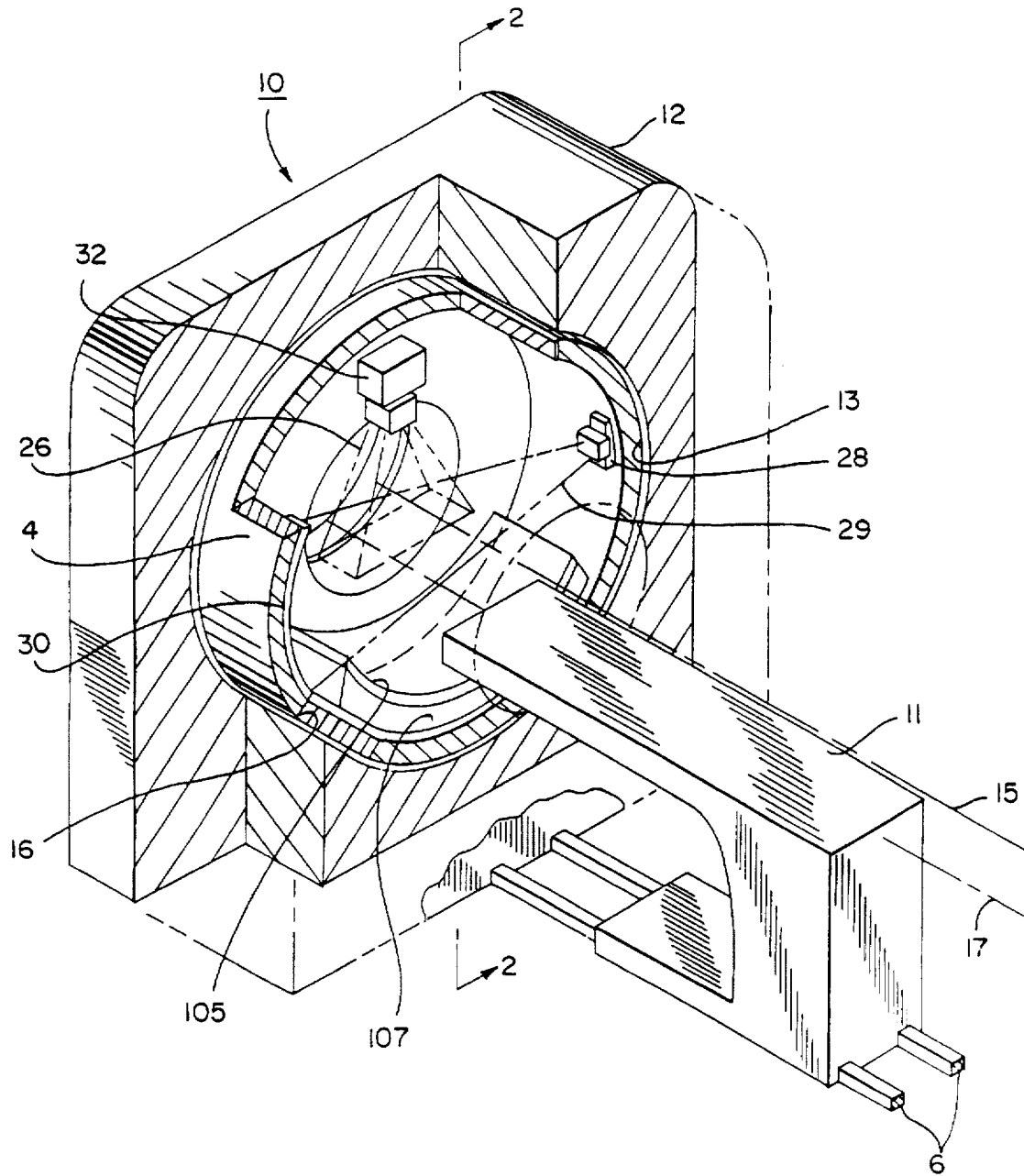


FIG. 1

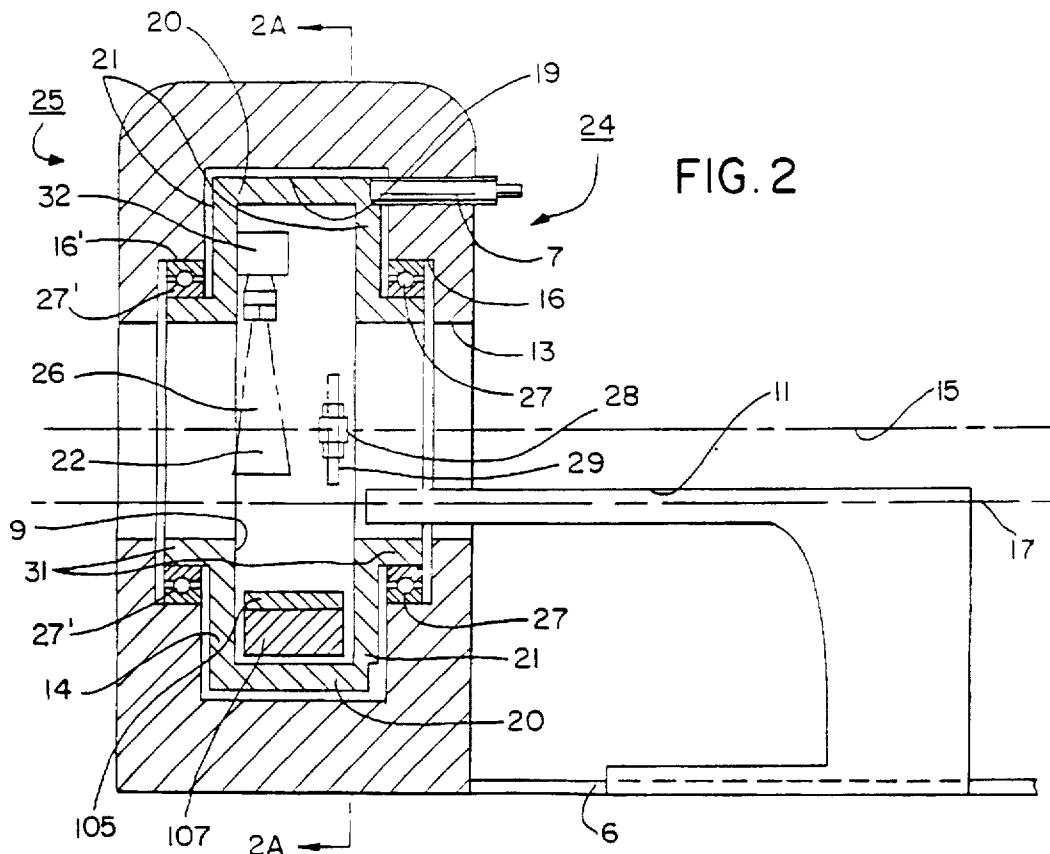


FIG. 2

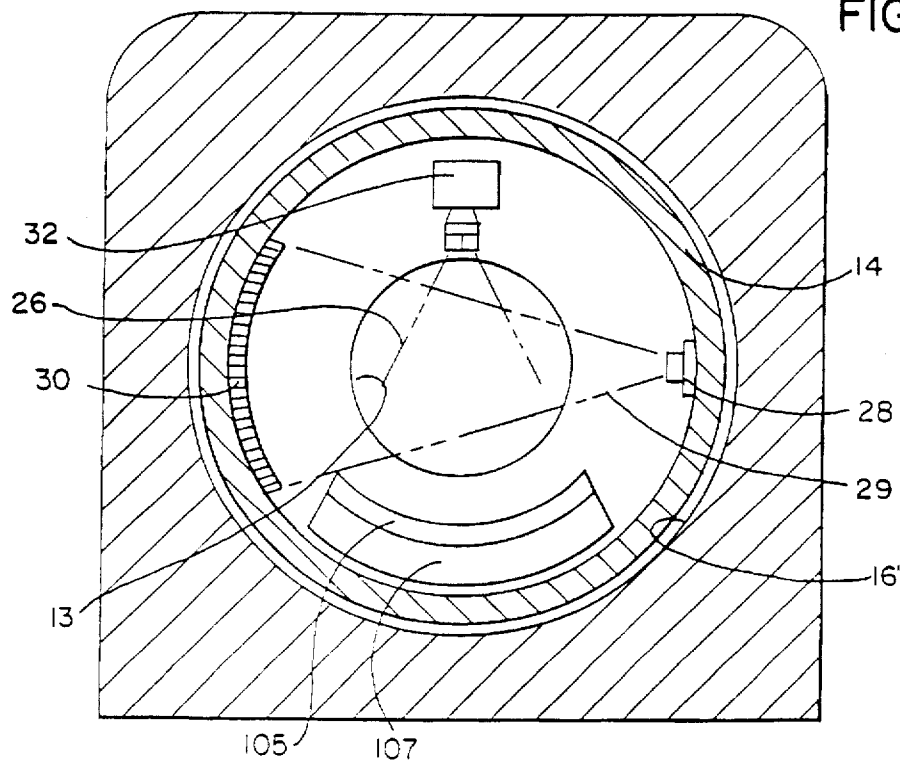


FIG. 2A

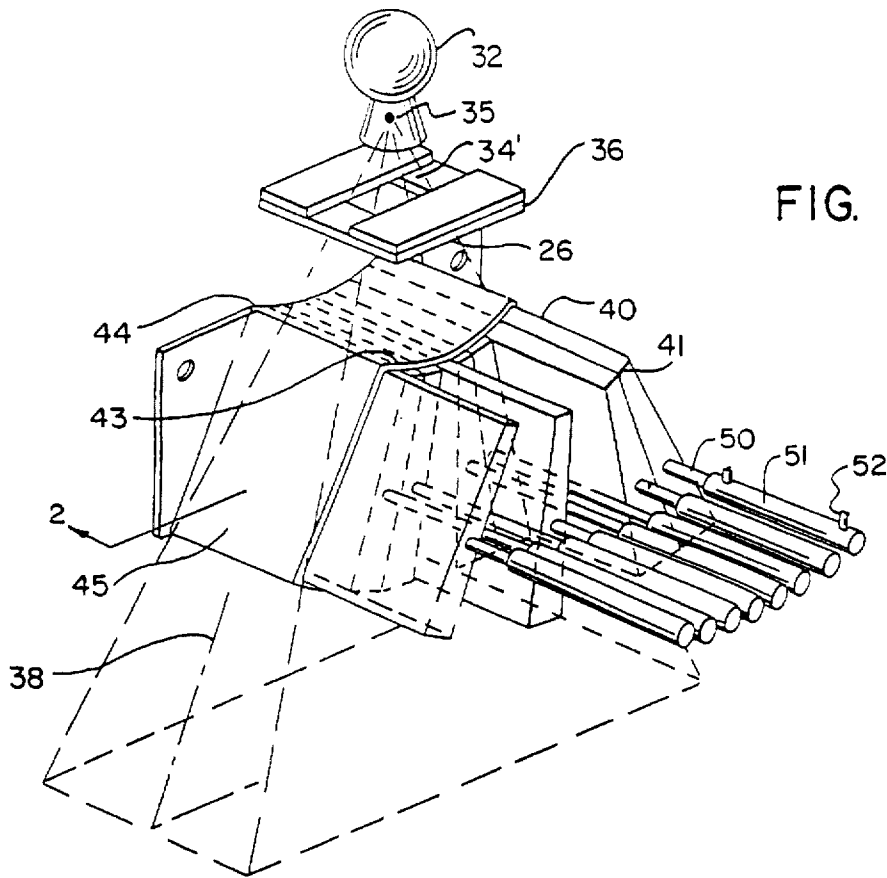


FIG. 3

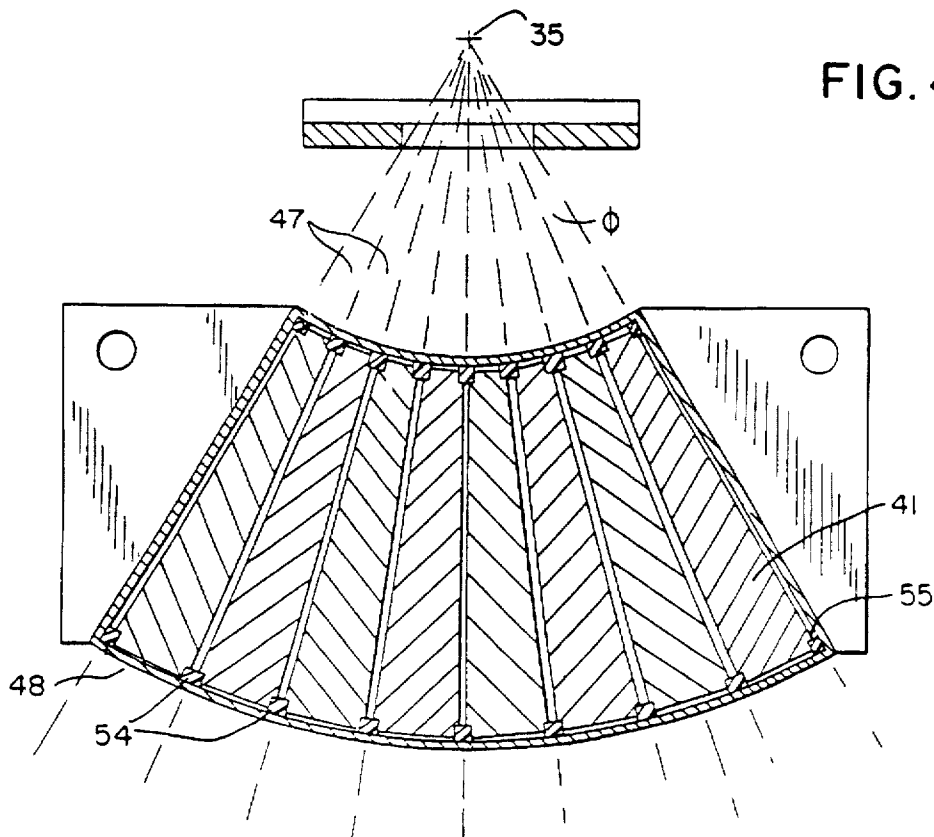


FIG. 4

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