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[Continued on nextpage]

(54) Title: AN APPARATUS TO DELIVER CONFORMAL RADIOTHERAPY USING EXTERNAL BEAM COBALT 60

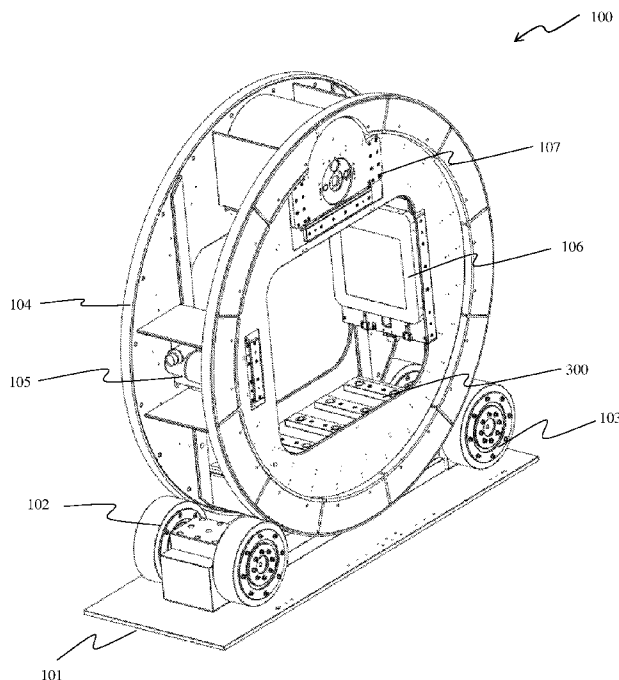


Figure 1

(57) Abstract: An apparatus to deliver conformal radiotherapy using external beam Cobalt 60 source is disclosed. The apparatus comprises an enclosed circular gantry placed above the bearings along with an integrated in house X-ray unit with the X-ray detector, source head and beam stopper. The X-ray unit along with the X-ray detector of the enclosed circular gantry are aligned to the radiation beam plane such that 3-D image of the tumour can be constructed using a cone beam computed tomography (CBCT) and radiation treatment is delivered by beam limiting device, without moving the patient from one patients treatment couch to other thus reducing the inconvenience to the patient achieving high tumour positioning accuracy and for alignment of X-ray and radiation beams.



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UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,  
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**A. CLASSIFICATION OF SUBJECT MATTER**  
**IPC(8) - A61N 5/00, G21G 4/08, H05G 1/02 (2014.01)**  
**USPC - 250/492.1, 250/492.3, 378/65, 378/197, 600/1, 600/2**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 IPC(8)- A61N 5/00, G21G 4/08, H05G 1/02 (2014.01)  
 USPC- 250/492.1, 250/492.3, 378/65

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 IPC(8)- A61N 5/00, G21G 4/08, H05G 1/02 (2014.01);  
 USPC- 250/492.1, 250/492.3, 378/65, 378/197, 600/1, 600/2 (classification, keyword; search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Pat Base, Google Patent, Google Scholar, Free Patents Online  
 Search terms used: radiotherapy, beam, x-ray, circular, ring, gantry, housing, frame, field, shape, dose, deliver, intensity, modulate, shield, stop, leaf, collimator, linear, longitudinal, transverse...

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2012/0189102 A1 (MAURER JR et al.) 26 July 2012 (26.07.2012), Fig. 2A, 2B; para [0003], [0022], [0046], [0049], [0051], [0055]-[0060], [0062], [0065], [0070], [0086]	1-5
Y	US 2012/0043481 A1 (MANSFIELD et al.) 23 February 2012 (23.02.2012). Figs. 9. 11; para [0038], [0043], [0044]-[0050], [0053], [0055], [0057], [0060], [0070]	1-5
Y	US 2009/0262901 A1 (BROAD et al.) 22 October 2009 (22.10.2009), Figs. 4, 5; para [0019], [0021], [0053]-[0056]	4, 5
Y	US 2008/0197304 A1 (URANO et al.) 21 August 2008 (21.08.2008), para [0008]-[0098]	1-5
Y	US 2005/0141671 A1 (PASTYR et al.) 30 June 2005 (30.06.2005), para [0009]-[0058]	1-5
Y	US 6,969,194 B1 (NAFSTADIUS) 29 November 2005 (29.11.2005), col 3, ln 11 to col 12, ln 60	1-5
Y	US 6,459,769 B1 (COSMAN) 01 October 2002 (01.10.2002), col 2, ln 28 to col 9, ln 32	1-5
Y	US 5,166,531 A (HUNTZINGER) 24 November 1992 (24.11.1992), col 3, ln 9 to col 7, ln 7	1-5

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
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