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(54) Title: METHODS AND APPARATUS FOR INTRAOCULAR BRACHYTHERAPY

(57) Abstract: Methods and apparatus for intraocular brachytherapy are disclosed in which a cannula is introduced into the eye for delivery of radiation to a target tissue. Techniques for properly locating the cannula with respect to the target tissue, for protecting non-target tissue, for regulating heat generated by x-ray emitters, and for combining therapies are disclosed.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/44335

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61N 5/00 (2007.01) USPC - 600/3 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 (2007.01) USPC - 600/3 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 600/1, 4. (Text Search) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (PGPB, USPT, USOC, EPAB, JPAB); PubMed; DialogPRO (Engineering) and Google Scholar. Search Terms: eye, ocular, brachytherapy, radiation, target, targeted therapy, distance, position, ultrasound, transducer, location, density, fluid, different density, friction, electropolish, reduce friction, polish, surface, dimple																																					
C. DOCUMENTS CONSIDERED TO BE RELEVANT																																					
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 2002/0115902 A1 (DEJUAN et al.) 22 August 2002 (22.08.2002), para [0020], [0029], [0030], [0036].</td> <td>1 - 57</td> </tr> <tr> <td>Y</td> <td>US 2002/0107445 A1 (GOVARI) 08 August 2002 (08.08.2002), para [0003], [0004], [0016], [0077].</td> <td>1 - 9</td> </tr> <tr> <td>Y</td> <td>US 2005/0124843 A1 (SINGH) 09 June 2005 (09.06.2005), para [0003], [00005], [0018].</td> <td>10 - 15</td> </tr> <tr> <td>Y</td> <td>US 5,408,874 A (FLECK et al.) 25 April 1995 (25.04.1995), col 3, ln 43 - 62.</td> <td>16 - 19</td> </tr> <tr> <td>Y</td> <td>US 4,720,286 A (BAILEY et al.) 19 January 1988 (19.01.1988), col 3, ln 66 - 67; col 4, ln 1 - 22.</td> <td>16 - 19</td> </tr> <tr> <td>Y</td> <td>US 6,443,881 B1 (FINGER) 03 September 2002 (03.09.2002), col 3, ln 33-43.</td> <td>20 - 23</td> </tr> <tr> <td>Y</td> <td>US 5,329,923 A (LUNDQUIST) 19 July 1994 (19.07.1994), col 22, ln 34 - 44.</td> <td>24, 25.</td> </tr> <tr> <td>Y</td> <td>US 5,670,558 A (ONISHI et al.) 23 September 1997 (23.09.1997), col 1, ln 12 - 17.</td> <td>26, 27.</td> </tr> <tr> <td>Y</td> <td>US 4,976,720 A (MACHOLD et al.) 11 December 1990 (11.12.1990), col 4, ln 42 - 46.</td> <td>28, 29.</td> </tr> <tr> <td>Y</td> <td>US 5,422,926 A (SMITH et al.) 06 June 1995 (06.06.1995), claim 15; fig. 1, 2; col 1, ln 24 - 27; col 4, ln 38 - 42; col 8, ln 53 - 57; col 13, ln 28 - 31; col 16, ln 25 - 27, 43 - 47; col 17, ln 5 - 8.</td> <td>30, 31, 38 - 45.</td> </tr> <tr> <td>Y</td> <td>US 2002/0072645 A1 (CHORNENKY et al.) 13 June 2002 (13.06.2002), para [0036], [0042].</td> <td>32 - 37</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2002/0115902 A1 (DEJUAN et al.) 22 August 2002 (22.08.2002), para [0020], [0029], [0030], [0036].	1 - 57	Y	US 2002/0107445 A1 (GOVARI) 08 August 2002 (08.08.2002), para [0003], [0004], [0016], [0077].	1 - 9	Y	US 2005/0124843 A1 (SINGH) 09 June 2005 (09.06.2005), para [0003], [00005], [0018].	10 - 15	Y	US 5,408,874 A (FLECK et al.) 25 April 1995 (25.04.1995), col 3, ln 43 - 62.	16 - 19	Y	US 4,720,286 A (BAILEY et al.) 19 January 1988 (19.01.1988), col 3, ln 66 - 67; col 4, ln 1 - 22.	16 - 19	Y	US 6,443,881 B1 (FINGER) 03 September 2002 (03.09.2002), col 3, ln 33-43.	20 - 23	Y	US 5,329,923 A (LUNDQUIST) 19 July 1994 (19.07.1994), col 22, ln 34 - 44.	24, 25.	Y	US 5,670,558 A (ONISHI et al.) 23 September 1997 (23.09.1997), col 1, ln 12 - 17.	26, 27.	Y	US 4,976,720 A (MACHOLD et al.) 11 December 1990 (11.12.1990), col 4, ln 42 - 46.	28, 29.	Y	US 5,422,926 A (SMITH et al.) 06 June 1995 (06.06.1995), claim 15; fig. 1, 2; col 1, ln 24 - 27; col 4, ln 38 - 42; col 8, ln 53 - 57; col 13, ln 28 - 31; col 16, ln 25 - 27, 43 - 47; col 17, ln 5 - 8.	30, 31, 38 - 45.	Y	US 2002/0072645 A1 (CHORNENKY et al.) 13 June 2002 (13.06.2002), para [0036], [0042].	32 - 37	<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>
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Date of the actual completion of the international search 14 June 2007 (14.06.2007)	Date of mailing of the international search report 10 JAN 2008																																				
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774																																				

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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Y	US 2003/0103973 A1 (ROCKWELL et al.) 05 June 2003 (05.06.2003), para [0009], [0011], [0038], [0039], [0042].	46 - 57