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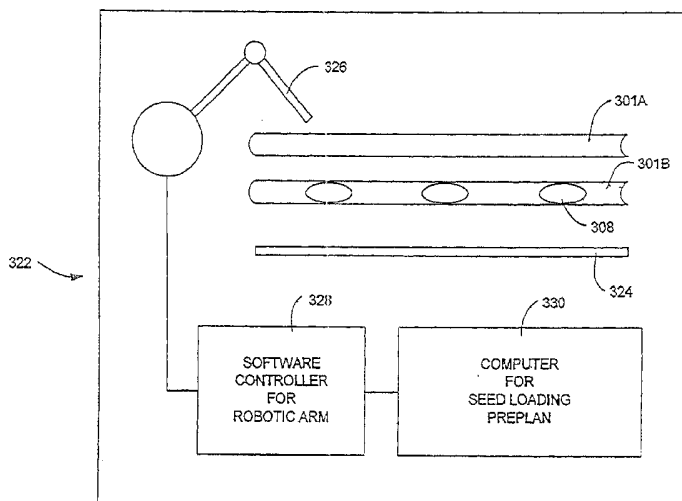
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13 November 2003

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: SYSTEM FOR MANUFACTURING INTERSTITIAL RADIATION THERAPY SEED STRANDS



(57) Abstract: A delivery system and method for interstitial radiation therapy comprising substantially axially stiff and longitudinally flexible elongated members made of material which is bioabsorbable in living tissue and a plurality of radioactive seeds (308) dispersed in a predetermined array within the elongate member. The radioactive seeds can be dispersed within assembled half-shells (301A, 301B) made of the same material. The housing for the radiation seeds can also be manufactured from extruded material. A system (322) for manufacturing the interstitial radiation therapy seed strands that automatically makes the seed strands at the patient's bedside also includes a robotic arm (326), software controller (328), and computer (330). The delivery system and method further customize the seed strands based on a prescription.



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**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US02/34967

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(7) : B23P 17/00, 25/00; A61N 5/00; B32B 31/06; B29C 35/08, 65/00; B66C 3/00; B25J 11/00; B29D 9/00;  
 US CL : 29/458, 527.1, 527.2; 600/ 3, 7, 8; 264/40.1, 261, 248; 425/145, 500, 507, 508; 901/15; 414/729  
 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)  
 U.S. : 29/458, 527.1, 527.2; 600/ 3, 7, 8; 264/40.1, 261, 248; 425/145, 500, 507, 508; 901/15; 414/729

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, E	US 6,539,247 B2 (SPETZ) 25 MARCH 2003, see entire document.	15 and 16
Y	US 5,761,877 A (QUANDT) 09 JUNE 1998, see column 3, line 8 - column 4, line 21; column 5, lines 33-37, and Figures 1-2.	1-4
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A		5-16
Y	US 5,460,592 A (LANGTON et al.) 24 OCTOBER 1995, see column 4, line 58- column 6, line 49, and Figures 1, 2, and 7.	1-4
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A		5-16
A	US 5,339,812 A (HARDY et al.) 23 AUGUST 1994, see entire document.	15 and 16

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

* 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 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
"I" 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	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search: 03 August 2003 (03.08.2003)  
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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. (703)305-3230  
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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/34967

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US02/34967

**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

Group I, claim(s) 1-9 and 12, drawn to an apparatus for manufacturing interstitial radiation therapy seed strands.

Group II, claim(s) 10, 11, and 1-15, drawn to a method of manufacturing an interstitial radiation therapy seed strand.

Group III, claim(s) 16, drawn to a method of manufacturing an interstitial radiation therapy seed strand.

The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I requires the special technical feature of a seed dispenser which is not by Groups II and III; Group II requires the special technical feature of using software to independently determine the spacing between each pair of radioactive seed elements which is not by Groups I and III; Group III requires the special technical feature of accepting a treatment plan that independently determines the spacing between each pair of radioactive seed elements which is not required by Groups I and II. Therefore, restriction as indicated is proper.

**Continuation of B. FIELDS SEARCHED Item 3:**

EAST

search terms: radiation, seeds, robots, controller, computer, radioactive, seed dispenser, process, procedure, method, apparatus, device, tool, delivering, terwilliger, lamoureux