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(54) **High power x-ray tube.**

(57) A high power x-ray generating tube (2) for reducing the effects of excessive heating of the window (16) through which the x-rays (16) are transmitted. The x-ray generating tube consists of a metal center section (6) having a stationary cathode (8) and a rotating anode (10). Various embodiments are employed for deflecting secondary electrons back scattered from the anode away from the window to avoid overheating of the window. A grounded anode simplifies the mechanisms required to prevent overheating.

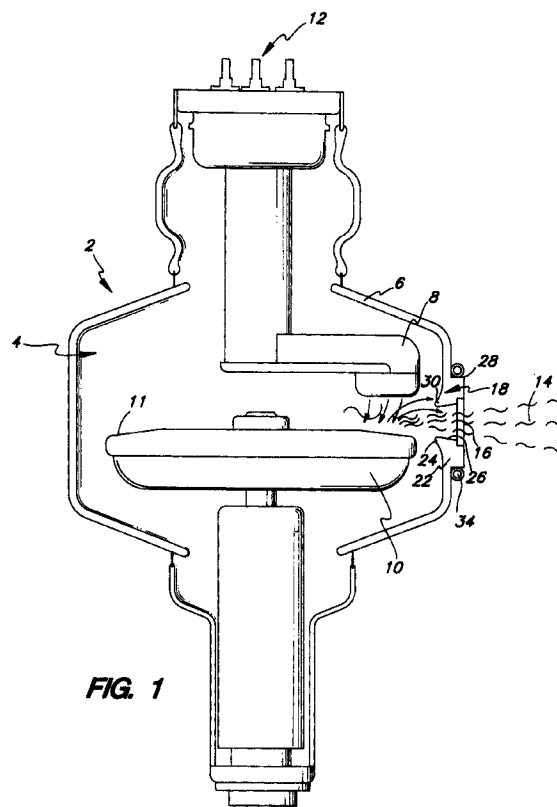


FIG. 1



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	PATENT ABSTRACTS OF JAPAN, vol. 9, no. 251 (E-348)[1974], 8th October 1985; & JP-A-60 101 848 (HITACHI) 05-06-1985 * Whole document *	1	H 01 J 35/16 H 01 J 35/04
Y	IDEM ---	2,3,5-7 ,13-15, 20-23	
Y	US-A-3 334 256 (GAGER) * Figures 3,4; column 1, lines 24-30,33-49; column 2, line 33 - column 4, line 8 *	2,3,23	
Y	US-A-3 124 710 (GRAY) * Column 1, lines 37-45; column 3, lines 6-9,20-31 *	5	
Y	EP-A-0 009 946 (PFIZER INC.) * Page 2, lines 16-21; page 3, lines 27-34; page 6, lines 20-27; page 11, line 29 - page 7, line 3; page 13, lines 9-16; figures 1-3 *	6-7	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
Y	DE-A-2 833 093 (LICENTIA PATENTVERWALTUNGS-GmbH) * Page 3, lines 10-14; page 5, lines 8-23; figure *	13-15, 20-22	H 01 J
A	US-A-1 946 312 (COOLIDGE) * Page 1, lines 70-83; figure *	9,18	
A	US-A-2 665 391 (BLEEKSMa) * Column 1, lines 23-50; column 2, lines 17-30; figure 2 *	9,18	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 07-07-1992	Examiner COLVIN G.G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

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- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-4 731 804 (JENKINS) * Abstract; column 2, lines 10-19; figure 2 * -----	12,19	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 07-07-1992	Examiner COLVIN G.G.
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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-8,16,17,23: Shielding of window against electrons
2. Claims 9-12,18,19: Electrostatic repulsion of electrons from window
3. Claims 13-15,20-22: Cooling jacket around vessel to cool window