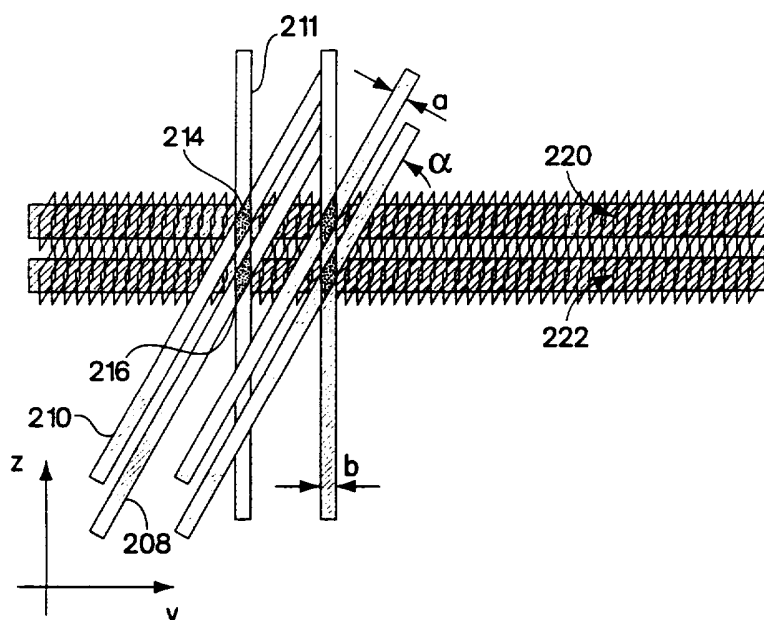


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(54) Title: LINE SCAN DIFFUSION IMAGING**(57) Abstract**

Magnetic resonance imaging apparatus and methods, including providing selective radio frequency pulses including pairs of pulses, which define planes with an intersection that defines an imaging volume. The imaging volumes are part of a first image surface passing through the sample and having a spatial orientation that differs from the spatial orientation of the planes. The method further includes providing magnetic diffusion gradients in the sample which are associated with at least a subset of the volumes, and acquiring a series of nuclear magnetic resonance echo signals resulting from the intersection, with at least a subset of the echo signals being responsive to the gradients. The signals are processed to obtain an image that includes lines corresponding to the imaging volumes.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/13234**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) : G01R 33/561, 33/563; A61B 5/055

US CL : 324/307,309; 128/653.3

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)

U.S. : 324/307,309; 128/653.3

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,025,788 A (DUMOULIN) 25 June 1991, col. 12, line 33 - col. 16, line 24 and col. 16, line 61 - col. 17, line 21;	39
A	Figures 1-3b	1-38, 40-47
A	US 5,345,175 A (KASUBOSKI et al) 6 September 1994	1-47
A	US 5,410,248 A (DUMOULIN) 25 April 1995	1-47

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

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