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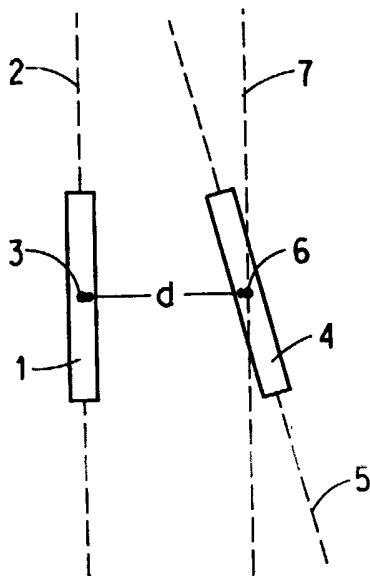
19805 (US). **LAUBACHER, Daniel, B.** [US/US]; 103 Ashley Court, Wilmington, DE 19807 (US). **MCCAMBRIDGE, James, D.** [US/US]; 406 Walnut Lane, Swarthmore, PA 19081 (US). **WILKER, Charles** [US/US]; 7 Madelyn Avenue, Wilmington, DE US (US). **SHENG, Jiunn** [US/US]; 6 Hollister Leigh Court, Newark, DE 19702 (US).

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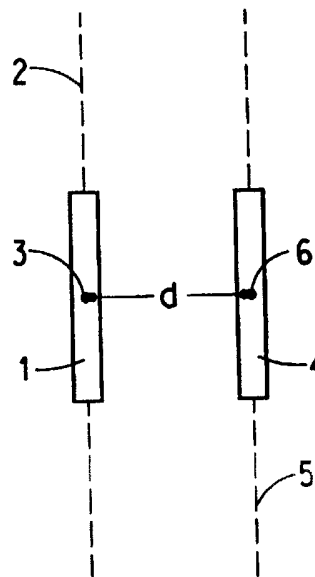
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[Continued on next page]

(54) Title: COUPLED HIGH TEMPERATURE SUPERCONDUCTOR COILS



a



b

(57) Abstract: The frequency of the fundamental symmetric mode of two or more coupled essentially identical high temperature superconductor coils can be tuned, with little degradation in Q, by mechanically displacing the two or more coils with respect to one another. These coupled coils are useful in a detection system for detecting frequencies.



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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01R33/44 G01R33/341 G01R33/3415

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 7 G01R

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 practical, search terms used)

EPO-Internal, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/70356 A (INTERMAGNETICS GENERAL CORP) 23 November 2000 (2000-11-23) page 5 - page 6 page 14 - page 17 -----	1-42
A	US 6 150 816 A (SRINIVASAN RAVI) 21 November 2000 (2000-11-21) the whole document -----	1-42
A	WO 99/45409 A (BTG INT LTD ; ROWE MICHAEL DAVID (GB); SMITH JOHN ALEC SYDNEY (GB)) 10 September 1999 (1999-09-10) the whole document -----	1-42



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Patent family members are listed in annex.

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- *&* document member of the same patent family

Date of the actual completion of the international search

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0070356	A	23-11-2000	AU WO	5441100 A 0070356 A1	05-12-2000 23-11-2000
US 6150816	A	21-11-2000	AU WO	6182798 A 9837438 A1	09-09-1998 27-08-1998
WO 9945409	A	10-09-1999	AU CA EP WO	3267999 A 2322500 A1 1060404 A1 9945409 A1	20-09-1999 10-09-1999 20-12-2000 10-09-1999