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(71) Applicant (for all designated States except US): **JOHNS HOPKINS UNIVERSITY** [US/US]; 3400 N. Charles Street, Baltimore, MD 21218 (US).

(71) Applicant and

(72) Inventor: **WEIHS, Timothy, P.** [US/US]; 3422 University Place, Baltimore, MD 21218 (US).

(74) Agent: **BOOKS, Glen, E.**; Lowenstein Sandler PC, 65 Livingston Avenue, Roseland, NJ 07068 (US).

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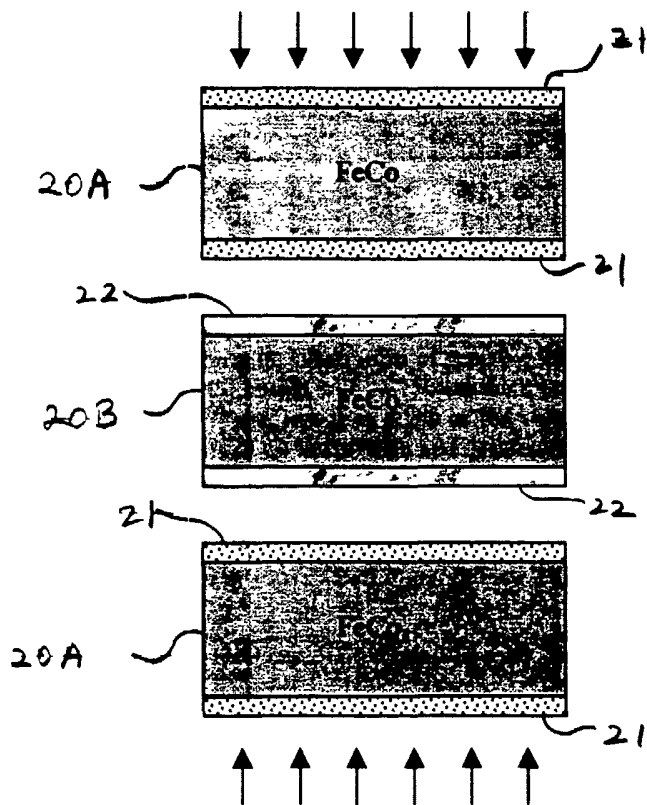
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MAGNETIC DEVICES COMPRISING MAGNETIC META-MATERIALS



(57) Abstract: A magnetic device (23) is made by joining magnetic sheet layers (20) that will react to join the layers into a unitary body. The joining materials are reacted, and the device is formed. In a preferred embodiment, the magnetic material is a soft magnetic material such as FeCo alloy, and the reactive joining materials are aluminum and FeCoOx which react to form nonconducting alumina layers between magnetic regions.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/19947

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : H01F 7/06
 US CL : 29/607, 609, 604; 156/276; 428/900
 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. : 29/607, 609, 604; 156/276; 428/900

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)

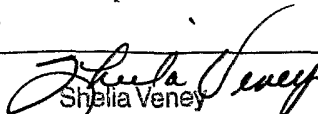
C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,645,917 A (EJIRI et al) 08 July 1977 (08.07.1977), column 9, lines 50-59, column 21, lines 10-25; and see Figure 1.	1-14, 18-28 ----- 15-17
X --- Y	US 4,025,379 A (WHETSTONE) 24 May 1977 (24.05.1977), column 6, lines 25-68, column 11, lines 20-26, see Figures 2 and 4.	1-5, 7-12, 19, 20, 22-28 ----- 6, 13, 14-18, 21
Y ---	US 5,447,782 A (INABA et al) 05 September 1995 (05.09.1995), column 7, lines 30-36; and column 11, lines 21-31.	6, 13-18, 19
A ---	JP 57-111030 A (FUJITSU LTD) 10 July 1982 (10.07.1982), Abstract and Purpose.	1-28

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

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"L" 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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"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 20 February 2003 (20.02.2003)	Date of mailing of the international search report 06 MAR 2003
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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Dexter Tugbang Telephone No. 703-308-0858	 Sheila Veney Parafegal Specialist Group 3700
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/19947

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.: 1-28

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

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BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-28, drawn to a process of making a device.

Group II, claim(s) 29-33, drawn to a product of a magnetic device.

The inventions listed as Groups I and II 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 lacks the corresponding special technical features of an inorganic material as required by Group II; and

Group II lacks the corresponding special technical features of disposing layers of reactive joining materials between layers of magnetic material and a unitary composite, as required by Group I.