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(54) Title: MAGNETOSTRICTIVE/PIEZO REMOTE POWER GENERATION, BATTERY AND METHOD

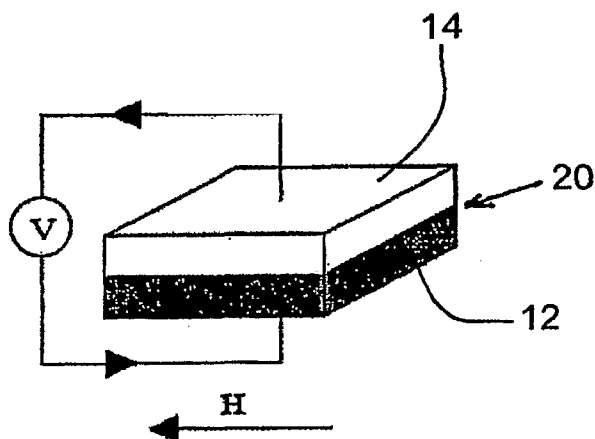


FIG. 2

(57) Abstract: A power generation device generates power by subjecting a composite of magnetostrictive material (12) and piezo material (14) to a magnetic field (H). The composite of magnetostrictive material (12) and piezo material (14) may be incorporated in a battery or other storage device.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/14437

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: H01M 14/00( 2006.01);H01L 41/08( 2006.01)

USPC: 310/26,338,339

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. : 310/26, 338, 339

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
JPO, FPRS, DERWENT, EPO, IBM-TBD all searched via east.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
JPO, esp@cenet, PCT, CIPO all searched via internet.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1339103 (FIAT SpA) 28 November 1973 (28.11.1973), Abstract.	1
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Y		2-12
Y	US 6809516 B1 (LI et al.) 26 October 2004 (26.10.2004)	2
Y	WO 0191200 (ROEDIGER) 29 November 2001 (29.11.2001), Abstract.	1-6
Y	US 6,807,853 B2 (ADAMSON et al.) 26 October 2004 (26.10.2004), Figures 2, 3; Column 8, lines 1-17, lines 40-43.	2-6, 8-12
Y	US 6,437, 558 B2 (LI et al.) 20 August 2002 (20.08.2002), Figure 2.	2
A	US 2008/0129147 A1 (THIESEN et al.) 05 June 2008 (05.06.2008) Figure 1A.	1

☒ 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
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"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		

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**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US07/14437

**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/0255663 A1 (VLAD) 16 November 2006 (16.11.2006), Claims 1-4, 6, 7, 11-13.	1-12

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/14437

### Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

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

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims 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. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

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 additional fees, this Authority did not invite payment of any additional fees.
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 and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.