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- (71) Applicant (for all designated States except US): **THE  
GILLETTE COMPANY** [US/US]; Prudential Tower  
Building, Boston, MA 02199 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **RICHARDS,**

**Thomas** [US/US]; 4 Kevin Circle, Framingham, MA 01701 (US). **GILICINSKI, Andrew, G.** [US/US]; 648 Bourne Court, Danville, CA 94506 (US). **PAVLINSKY, Robert** [US/US]; 16 Krystalle Lane, Oxford, CT 06478 (US). **GUAY, Gordon, G.** [US/US]; 18 Regina Drive, Chelmsford, MA 01824 (US).

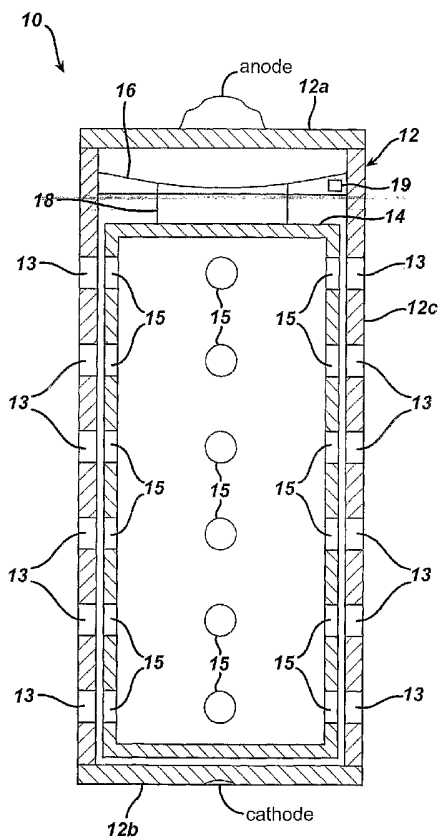
(74) Agents: **GALLOWAY, Peter, D.** et al.; Ladas & Parry LLP, 26 West 61st Street, New York, NY 10023 (US).

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[Continued on next page]

(54) Title: BATTERY



(57) Abstract: A battery includes a battery can housing an cell that supplies electrical energy at terminals of the cell by an electro-chemical reaction with oxygen, the can including, a first member having at least one hole that is exposed to air; and a second member. The battery also includes a mechanism coupled to one of the first and second members to move the one of the first and second members such that when current is drawn from the battery, the opening in the member allows air to pass into the battery, and to move the one of the first and second members such that when current is not drawn from the battery, the opening in the member is not in registration to inhibit air to pass into the battery. The battery also includes a circuit to control the mechanism. In one embodiment the circuit monitors levels of O<sub>2</sub> in an air plenum that surrounds the cell. The circuit to monitor levels of O<sub>2</sub> in the air plenum includes a florescent detector/sensor that senses and responds to changes in O<sub>2</sub> in the plenum by using the "quenching effect" of oxygen on a fluorescent material.

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GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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16 February 2006

*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.*

**Published:**

— *with international search report*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/024103

A. CLASSIFICATION OF SUBJECT MATTER  
H01M2/02 H01M12/06 H01M12/08

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)  
H01M

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, PAJ, 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	US 6 384 574 B1 (MCHUGH WILLIAM T ET AL) 7 May 2002 (2002-05-07)  column 1, line 56 - column 2, line 4 figures 1,5a,5b,5c  -----	1-5, 15-19, 51-53
X	DE 100 10 541 C1 (CMC MAGNETICS CORP., TAIPEH/T'AI-PEI) 8 November 2001 (2001-11-08) paragraphs [0001] - [0023] figure 3  -----	1-5, 15-19, 51-53
A	WO 00/36688 A (ELECTRIC FUEL LIMITED; GIVON, MENACHEM) 22 June 2000 (2000-06-22) page 2, line 28 - page 3, line 17 claims 1-18  -----	1-28, 51-55

Further documents are listed in the continuation of box C.  Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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.

"&" document member of the same patent family

Date of the actual completion of the international search  20 October 2005	Date of mailing of the international search report  20. 12. 2005
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  GONZALEZ-CUENCA, M
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/024103

## Box 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 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:

see additional 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, 51-55

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28,51-55

A battery comprising a battery can housing a cell as described in claim 1

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2. claims: 29-50,56-58

A battery comprising a cell as described in claim 29

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/024103

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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