

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 November 2006 (23.11.2006)

PCT

(10) International Publication Number
WO 2006/124805 A3

(51) International Patent Classification:
F01N 3/00 (2006.01)

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2006/018784

(22) International Filing Date: 16 May 2006 (16.05.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/681,023 16 May 2005 (16.05.2005) US

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, 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, IS, IT, LT, LU, LV, 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).

(71) Applicant and
(72) Inventor: RUTLEDGE, Keith [US/US]; 28100 Blue Lake Road, P.O. Box 94, Willits, CA 95490 (US).

Declaration under Rule 4.17:
— of inventorship (Rule 4.17(iv))

(74) Agent: LANGE, Keith, R.; Hall, Vande Sande & Pequignot, LLP, 10220 River Road, Suite 200, Potomac, MD 20854 (US).

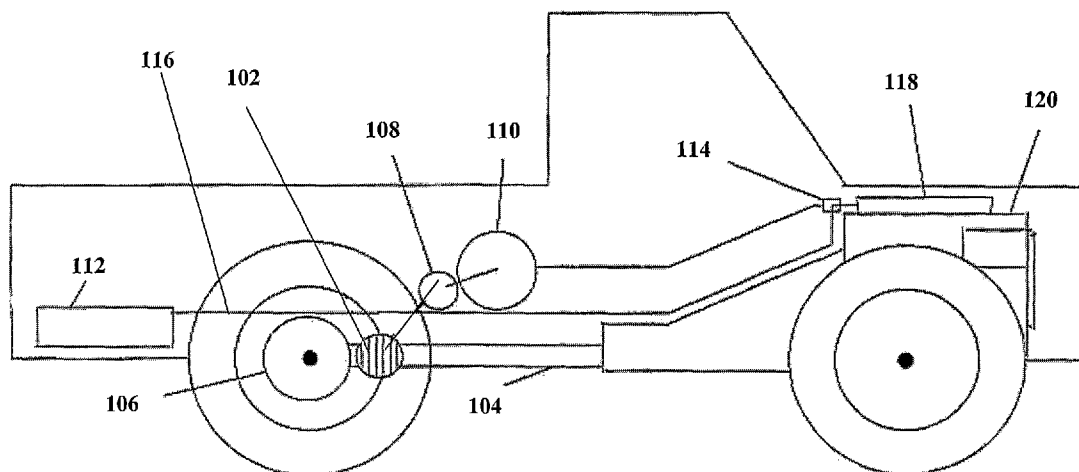
Published:
— with international search report

(88) Date of publication of the international search report:
31 May 2007

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

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: ENERGY CONVERSION SYSTEM FOR HYDROGEN GENERATION AND USES THEREOF



(57) Abstract: The present invention relates to a system capable of using kinetic/inertial and renewable energy to generate hydrogen for use as a fuel in vehicles and other applications. In certain embodiments, this invention relates to a system in which hydrogen is generated (102) during vehicle braking and which is operable with an internal combustion engine, and which can be retrofitted to vehicles with such an engine as well as to stationary combustion devices. Methods for generating hydrogen to power vehicles and vehicles utilizing the inventive technology are also provided. The present invention also relates to stationary devices, such as space heaters and water heaters, capable of generating hydrogen for use as a fuel additive therewith, and methods of generating hydrogen using such devices.

WO 2006/124805 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/18784

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: F01N 3/00(2006.01)

 USPC: 123/3
 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. : 123/3

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.
Y	US 4,085,709 A (TANGRI) 25 April 1978 (25.04.1978), Figure 1.	1-44
Y,P	US 6,981,367 B2 (CHILDS et al) 03 January 2006 (03.01.2006), Figure 1.	1-44
Y	US 6,314,918 B1 (MCFARLAND et al) 13 November 2001 (13.11.2001), Figure 1.	1-44
Y	US 6,155,212 A (MCALISTER) 05 December 2000 (05.12.2000) Figure 1.	1-44
Y	US 6,857,397 B2 (ZAGAJA et al) 22 February 2005 (22.02.2005), Figure 1.	1-44

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	
"P"	document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search
26 December 2006 (26.12.2006)

Date of mailing of the international search report
05 MAR 2007

Name and mailing address of the ISA/US
 Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 Facsimile No. (571) 273-3201

Authorized officer
 Steve Cronin
 Telephone No. 571-272-4838-1