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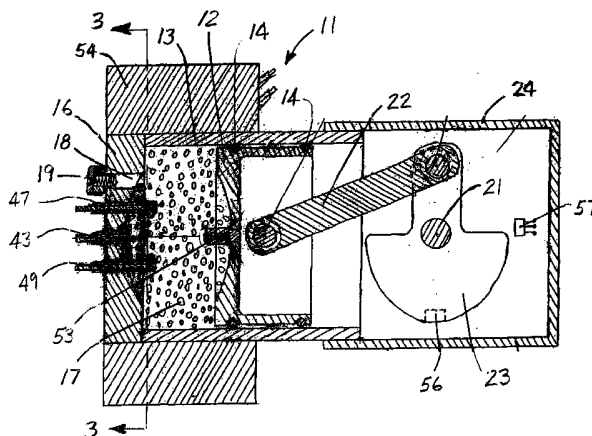
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(54) Title: INTERNAL EXPLOSION ENGINE AND GENERATOR USING NON-COMBUSTIBLE GASES



(57) Abstract: Internal explosion engine and generator having an explosion chamber, a movable member forming one wall of the chamber, a charge of non-combustible gas sealed inside the chamber, means for repeatedly igniting the gas in an explosive matter to drive the movable member from a position of minimum volume to portion of maximum volume, means for returning the movable member from the position of maximum volume to the position of minimum volume, and means coupled to the movable member for providing electrical energy in response to explosion of the gas. In one disclosed embodiment, the movable member is a piston connected to a crankshaft, and it is returned to the position of minimum volume by a flywheel on the crankshaft. In another, two pistons are connected back-to-back in a hermetically sealed chamber to prevent loss of the explosive gas. In one embodiment, the electrical energy is produced by a generator connected to the crankshaft, and in the other it is produced by a coil positioned near a magnet which moves with the pistons.

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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.

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F01B 29/00, 29/10
 US CL : 60/512, 513, 517

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. : 60/512, 513, 517

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)
 PISTON; GENERATOR; PLASMA; AIR

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,416,113 (PORTILLO) 22 November 1983, see entire document.	1-4, 6-17, 19, 20
X	US 4,428,193 (PAPP) 31 January 1984, see entire document.	1-4, 6-17, 19, 20
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Y		5, 18, 21-27
Y	US 2,984,067 (MORRIS) 16 May 1961, see entire document.	5, 21-27
A	US 6,272,855 B1 (LEONARDI) 14 August 2001, see entire document.	
A, E	US 6,739,131 B1 (KERSHAW) 25 May 2004, see entire document.	
A	US 3,237,847 (WILSON) 01 March 1966, see entire document.	

Further documents are listed in the continuation of Box C.

See patent family annex.

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