Title: FUEL REGULATOR FOR NATURAL GAS FIRED CO-GENERATION UNIT

Abstract: A natural gas fuel regulator (10) for a natural gas fueled internal combustion engine (120) for driving a co-generation plant, which allows exhaust recycled gas combustion while maintaining lower head temperatures to reduce thermal NOx emissions. The gas regulator has a modulation chamber, which modulates incremental pressure changes from the carburetion system to allow the engine to respond to load changes without the necessity for dynamic control feed back valve. In one aspect, a non-diaphragm venturi fuel/air mixing unit (108) with post turbo charger throttle adjustment is downstream of the natural gas fuel regulator to provide lean burn, low thermal NOx, operation of the co-generation unit from no load to full load electrical generation.
(88) Date of publication of the international search report:

24 February 2005

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

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : F02B 43/00; G05D 16/02
US CL : 123/527, 137/484.2
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. : 123/525,526,527,528,529, DIG. 12, 463,452,453; 137/340,375,484.2,484.4,484.6,484.8,505.18,505.36,505.37

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

<table>
<thead>
<tr>
<th>Category *</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 5,890,512 A (GOTTHLEF et al) 06 April 1999 (06.04.1999), see whole document.</td>
<td>1-20</td>
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<tr>
<td>A</td>
<td>US 5,381,819 A (GOTTHLEF) 17 January 1995 (17.01.1995), see the whole document.</td>
<td>1-20</td>
</tr>
<tr>
<td>A</td>
<td>US 5,224,457 A (ARSENAULT et al) 06 July 1993 (06.07.1993), see the whole document.</td>
<td>1-20</td>
</tr>
</tbody>
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Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search
12 October 2004 (12.10.2004)

Date of mailing of the international search report
16 Nov 2004

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