[19] PATENT OFFICE OF THE COOPERATION COUNCIL FOR THE ARAB STATES OF THE GULF

[19] مكتب براءات الاختراع لمجلس التعاون لدول الخليج العربية

# [12] Patent

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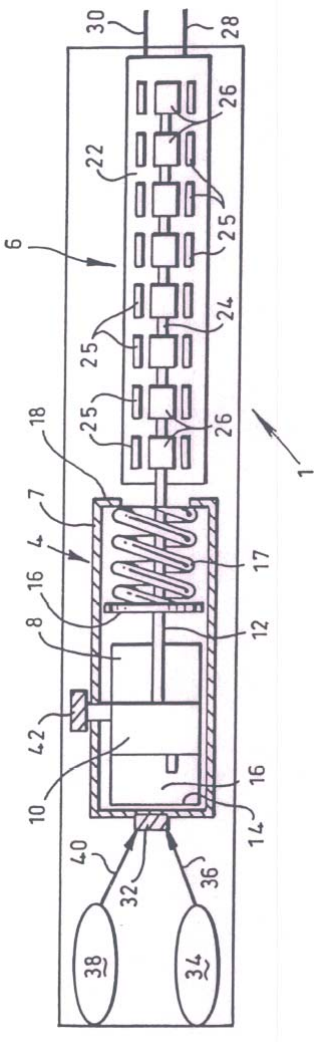
| [21] Application No.: GCC/P/2000/1061<br>[22] Filing Date: 28/11/2000<br>[30] Priority:<br>[31] Priority No. [32] Priority date [33] State<br>99204027.9 29/11/1999 EP<br>[72] Inventors: 1- Stephen Richard Braithwaite, 2- Wilhelmus Hubertus Paulus Maria Heijnen<br>[73] Owner: Shell Internationale Research Maatschappij B. V, Carel van Bylandtlaan 30, 2596 HR The Hague, the Netherlands<br>[74] Agent: Suleiman Ibrahim Al-Ammar | [51] Int.Cl.[7]: E21B 41/00<br>[56] Cited Documents:<br>- US 4805407 A (BUCHANAN RONNIE J) 21 February 1989<br>- EP 0909008 A (HALLIBURTON ENERGY SERV INC) 14 April 1999<br>- EP 0500303 A (HALLIBURTON CO) 26 August 1992<br>- US 5202194 A (VANBERG JR CHARLES F) 13 April 1993 |


## [54] DOWNHOLE ELECTRIC POWER GENERATOR

[57] Abstract: A power generator for use in a wellbore formed in an earth formation, comprising an internal combustion engine having a cylinder and a piston defining a combustion chamber in the cylinder, the engine being arranged to induce a reciprocating movement to the piston relative to the cylinder upon combustion of a combustible gas mixture in the combustion chamber, and a linear electricity generator having a stator and a drive shaft, the generator being arranged to generate electricity upon a reciprocating movement of the drive shaft relative to the stator, wherein the piston is connected to the drive shaft so as to transmit said reciprocating movement of the piston to the drive shaft.

No. of claims: 8 No. of figures: 3

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