

Title (en)

Thermomechanical electrical power supply apparatus for a downhole tool.

Title (de)

Thermomechanische Stromversorgungsvorrichtung für ein Werkzeug im Bohrloch.

Title (fr)

Dispositif thermomécanique d'alimentation en énergie électrique pour un outil de fond de puits.

Publication

**EP 0238337 A2 19870923 (EN)**

Application

**EP 87302375 A 19870319**

Priority

US 84192486 A 19860320

Abstract (en)

A downhole tool for an oil or gas well includes a self-contained power supply having a housing (6) in which a primary fuel source (18), a Stirling cycle engine (20), and a linear alternator (22) are disposed. The primary fuel source includes a radioisotope which, by its radioactive decay, provides heat to operate the Stirling engine which in turn drives the linear alternator to provide a suitable electrical output for use by the circuit of the downhole tool.

A power supply apparatus for an oil or gas well downhole tool comprises a system requiring energy from the supply and a receptacle for holding the power supply all contained within the downhole tool. The apparatus includes a housing, removable fuel capsule for generating thermal energy, a Stirling cycle engine to convert the thermal energy into mechanical motion. The mechanical motion is converted to usable electrical energy for the system within the downhole tool and an external means of connecting the electrical energy to the downhole tool operating system.

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**E21B 41/00**; **F02G 1/043**

IPC 8 full level

**E21B 41/00** (2006.01); **F02G 1/043** (2006.01)

CPC (source: EP)

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Cited by

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