

Title (en)

Power sources for downhole electrical heating.

Title (de)

Kraftquelle zum elektrischen Heizen im Bohrloch.

Title (fr)

Source d'énergie pour chauffage électrique dans le puits de forage.

Publication

EP 0387846 A1 19900919 (EN)

Application

EP 90104832 A 19900314

Priority

- CA 2015318 A 19900424
- US 32291189 A 19890314

Abstract (en)

Electrical power sources and systems for heating in or adjacent to an oil well or other mineral well, or for heating other earth media, each comprising an A.C. heating generator that generates an A.C. heating current at a selected heating frequency substantially different from the conventional 50/60 Hz frequency used by power companies; the heating generator may comprise an A.C. to D.C. converter for developing an intermediate D.C. output of predetermined amplitude from a conventional 50/60 Hz A.C. input, and a solid state switching circuit for repetitively sampling the D.C. output of the converter at the selected heating frequency, usually in a range of 0.01 Hz (or even lower) up to about 35 Hz. A heating rate control varies the energy content and the frequency of the A.C. output to suit well requirements. Each power source or system includes output connections for connecting the output of the heating generator to a normally inaccessible main heating electrode, usually located downhole in a well, and to a return electrode; most have the capability of including a very small controllable D.C. component in the output.

IPC 1-7

E21B 36/00; **E21B 36/04**; **E21B 41/02**; **E21B 43/24**

IPC 8 full level

E21B 36/00 (2006.01); **E21B 36/04** (2006.01); **E21B 41/02** (2006.01); **E21B 43/24** (2006.01); **E21B 47/06** (2006.01)

CPC (source: EP)

E21B 36/006 (2013.01); **E21B 36/04** (2013.01); **E21B 41/02** (2013.01); **E21B 43/2401** (2013.01); **E21B 47/06** (2013.01)

Citation (search report)

- [AD] US 4790375 A 19881213 - BRIDGES JACK E [US], et al
- [A] US 4645004 A 19870224 - BRIDGES JACK E [US], et al
- [A] US 4463805 A 19840807 - BINGHAM CLARK [US]
- [AD] US 4793409 A 19881227 - BRIDGES JACK E [US], et al

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Designated contracting state (EPC)

DE GB NL

DOCDB simple family (publication)

EP 0387846 A1 19900919

DOCDB simple family (application)

EP 90104832 A 19900314