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(56) Documents Cited:  
US 20080230219 A1 US 20070000662 A1  
US4,667,738A  
US4,046,194A

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(54) Title of the Invention: **Electrofracturing formations**  
Abstract Title: **Electrofracturing formations**

(57) A method is provided to produce hydrocarbons from a formation, the method includes the steps of: placing a pair of electrodes within a formation; applying differential voltages between pairs of electrodes wherein the voltage differences between the electrodes is greater than at least 10,000 volts; and producing hydrocarbons from the formation or an adjacent formation wherein the formation has an initial permeability of less than ten millidarcy. The invention also includes an apparatus effective to release pulses of electrical energy into the formation as this frequency and voltage at least until the formation has reached a point where the electrical potential arcs from one electrode to at least one other electrode.

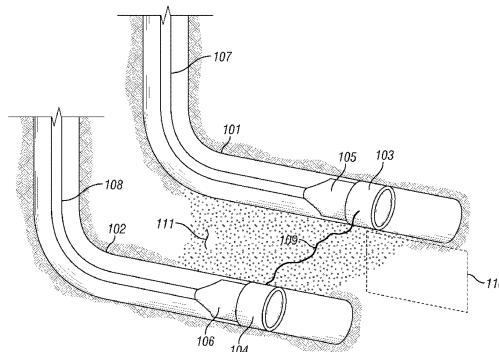


FIG. 1

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