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[54] **HORIZONTAL WELL GRAVITY DRAINAGE COMBUSTION PROCESS FOR OIL RECOVERY**

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[58] Field of Search ..... 166/50, 245, 256, 166/261, 263, 306

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[57] **ABSTRACT**

An in-situ combustion method is provided for the recovery of viscous oil from an oil-bearing reservoir. A linear array of vertical air injection wells is drilled into the reservoir; the wells are completed in the upper portion of the reservoir. One or more gas production wells are provided, remote from the row of injection wells, said gas production wells also being completed in the upper portion of the reservoir. A horizontal oil production well is completed in the bottom portion of the reservoir, aligned with and positioned in spaced relation beneath the vertical injection wells. The reservoir is prepared for ignition and combustion is initiated at each of the injection wells. A hot fluid-transmissive chamber is formed around each of the injection wells as combustion proceeds. Combustion gas communication is established with the gas production wells. Heated oil and water, produced by the combustion front in each hot chamber, drains under the effect of gravity and is produced from the horizontal production well. The main features of the process are the implementation of gravity drainage to a basal horizontal well in a combustion process and the splitting of liquid and gas production.

**6 Claims, 4 Drawing Sheets**

