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(54) **Title:** RESERVOIR CHARACTERIZATION UTILIZING INVERSION OF RESAMPLED SEISMIC DATA

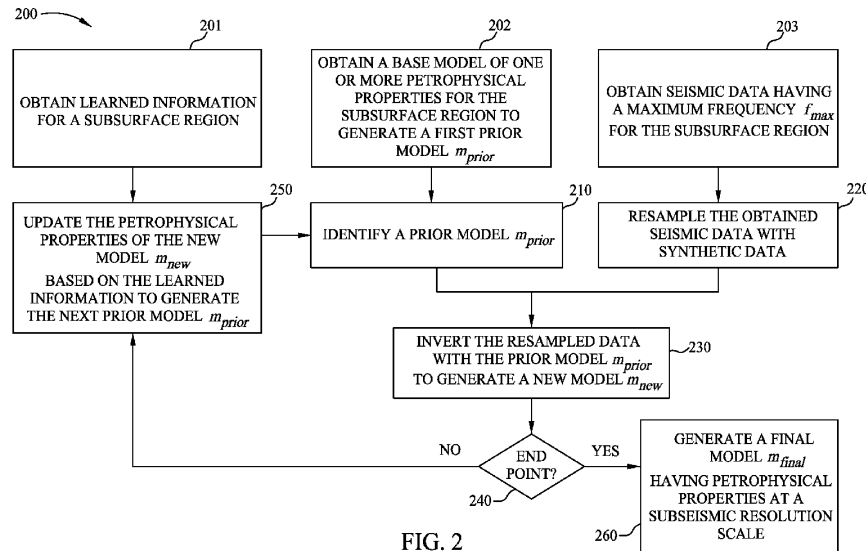


FIG. 2

(57) **Abstract:** A method and apparatus for generating an image of a subsurface region including obtaining geophysical data/properties for the subsurface region; resampling the geophysical data/properties to generate a resampled data set; iteratively (a) inverting the resampled data set with an initial prior model to generate a new model; and (b) updating the new model based on learned information to generate an updated prior model; substituting the initial prior model in each iteration with the updated prior model from an immediately-preceding iteration; and determining an end point for the iteration. A final updated model may thereby be obtained, which may be used in managing hydrocarbons. Inversion may be based upon linear physics for the first one or more iterations, while subsequent iterations may be based upon non-linear physics.

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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