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[Continued on next page]

- (54) **Title:** SELF-GUIDED GEOSTEERING ASSEMBLY AND METHOD FOR OPTIMIZING WELL PLACEMENT AND QUALITY

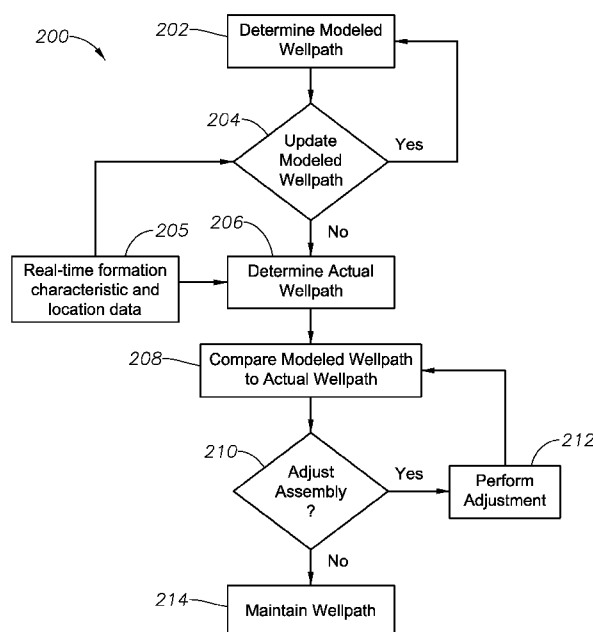


FIG. 2

- (57) **Abstract:** A self-guided geosteering assembly having an on-board, automated guidance system that incorporates a detailed subsurface earth model and well path to geosteer the assembly along a formation. While advancing along the formation, the guidance system continually monitors data related to formation characteristics and the formation/tool location, compares the data to the earth model and well path, and adjusts the direction of the assembly accordingly. In addition, the data may be utilized to update the earth model in real-time.



Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

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