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*[Continued on next page]*

(54) Title: APPARATUS AND METHOD FOR PHASE EQUILIBRIUM WITH IN-SITU SENSING

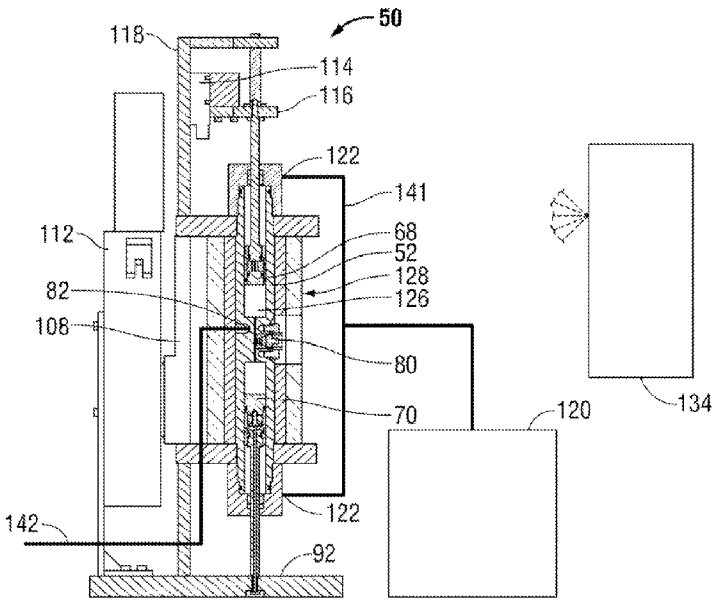



FIG. 2

(57) Abstract: A technique facilitates the monitoring of thermodynamic properties of reservoir fluids. The technique utilizes a modular sensor assembly designed to evaluate a sample of a hydrocarbon-containing fluid within a cell body. A variety of sensors may be selectively placed into communication with a sample chamber within the cell body to evaluate the sample at potentially high pressures and temperatures. The sensors may comprise a density-viscosity sensor located in-situ to efficiently measure both the density and viscosity of the sample as a function of pressure and temperature. Other sensors, such as an optic sensor, may also be positioned to measure parameters of the sample while the sample is retained in the sample chamber.

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