



- [54] **METHOD FOR MEASURING LIQUID VISCOSITY AND ULTRASONIC VISCOMETER**
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[57] **ABSTRACT**

An ultrasonic viscometer and method for measuring fluid viscosity are provided. Ultrasonic shear and longitudinal waves are generated and coupled to the fluid. Reflections from the generated ultrasonic shear and longitudinal waves are detected. Phase velocity of the fluid is determined responsive to the detected ultrasonic longitudinal waves reflections. Viscosity of the fluid is determined responsive to the detected ultrasonic shear waves reflections. Unique features of the ultrasonic viscometer include the use of a two-interface fluid and air transducer wedge to measure relative signal change and to enable self calibration and the use of a ratio of reflection coefficients for two different frequencies to compensate for environmental changes, such as temperature.

[56] **References Cited**

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**14 Claims, 5 Drawing Sheets**

