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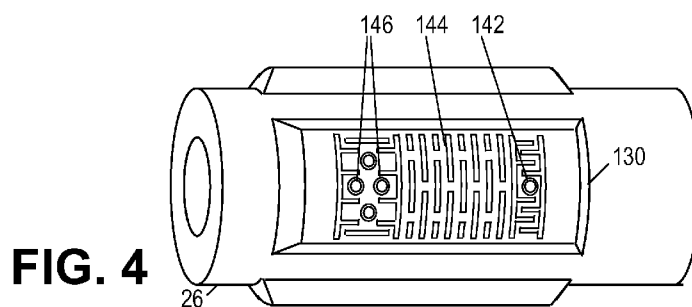
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(54) Title: MICRO-SONIC DENSITY IMAGING WHILE DRILLING SYSTEMS AND METHODS



(57) Abstract: Various micro-sonic density imaging-while-drilling systems and methods are disclosed. In at least some forms, the micro-sonic logging tool is embodied in a drill collar having at least one stabilizer blade. One or more acoustic transmitters are set in a distal face of the stabilizer blade to generate acoustic waves. One or more receivers can also be set in the distal face of the stabilizer blade to detect P-waves and S-waves that have propagated through the formation making up the borehole wall. Processing circuitry measures the velocity or slowness of the acoustic waves and optionally associates the measured values with a spot on the borehole wall as identified. Multiple transmitters can be used if it is desired to obtain compensated measurements. The tool can further include a fluid cell to measure acoustical properties of the borehole fluid, which can be used to convert the formation slowness measurements into density measurements.