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(54) Title of the Invention: Enhanced cement bond and micro-annulus detection and analysis
Abstract Title: Enhanced cement bond and micro-annulus detection and analysis

(57) Methods and apparatus for inspecting oilfield infrastructure components. Methods include methods of identifying a micro-annulus outside a casing in a cemented wellbore. Methods may include transmitting an acoustic pulse incident on the casing; making a measurement of a first acoustic impedance property value from pulse-echo information generated responsive to an echo of the acoustic pulse reflected from the casing; propagating a circumferential guided wave in the casing; making a measurement of a second acoustic impedance property value from propagating wave information generated responsive to the propagating acoustic wave; and determining from the first acoustic impedance value and the second acoustic impedance value a presence of a micro-annulus between the casing and the cement.

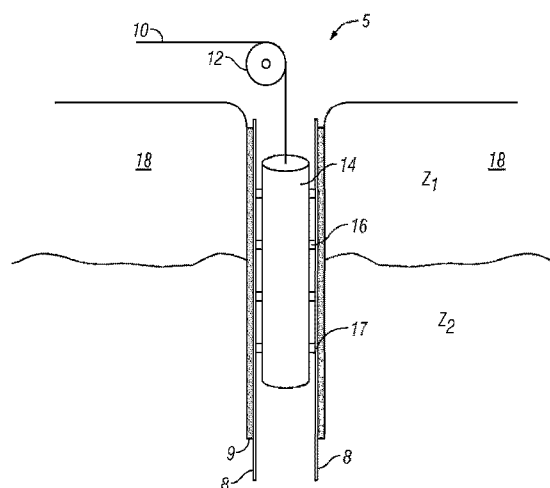


FIG. 1
(Prior Art)