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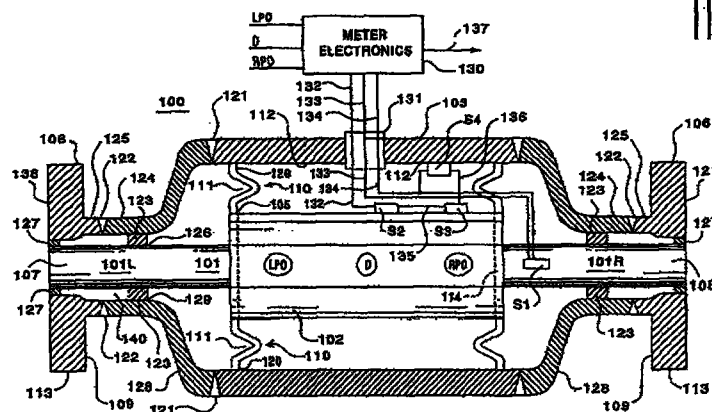
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STACK, Charles, Paul; 818 West Mulberry, Louisville, For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: STRAIGHT TUBE CORIOLIS FLOWMETER

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(57) Abstract: Method and apparatus for providing compensation of mass flow rate and density for the flow tube of a single straight flow tube Coriolis flowmeter. Thermal stress compensation is provided by the use of a plurality of sensors on various portions of the flowmeter. A first sensor is coupled to the flow tube and provides information regarding the flow tube temperature. A plurality of additional sensors are connected to form a network having a two wire output. The additional sensors apply a composite signal over the two wire output of the network to meter electronics. The network signal represents the composite temperature of the flowmeter elements that can cause thermal stress on the flow tube when a temperature differential exists between the flow tube and the temperature of these plurality of elements. The additional elements include the balance bar and the flowmeter case. Sensitivity compensation is provided by the use of a novel algorithm. Density is measured in a single tube flowmeter that is calibrated using two materials of different densities by the use of density equation that has non-linear components representing the deviation of the meter calibration from linear.