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(54) **MOTION CANCELLATION OF OPTICAL INPUT SIGNALS FOR PHYSIOLOGICAL PULSE MEASUREMENT**

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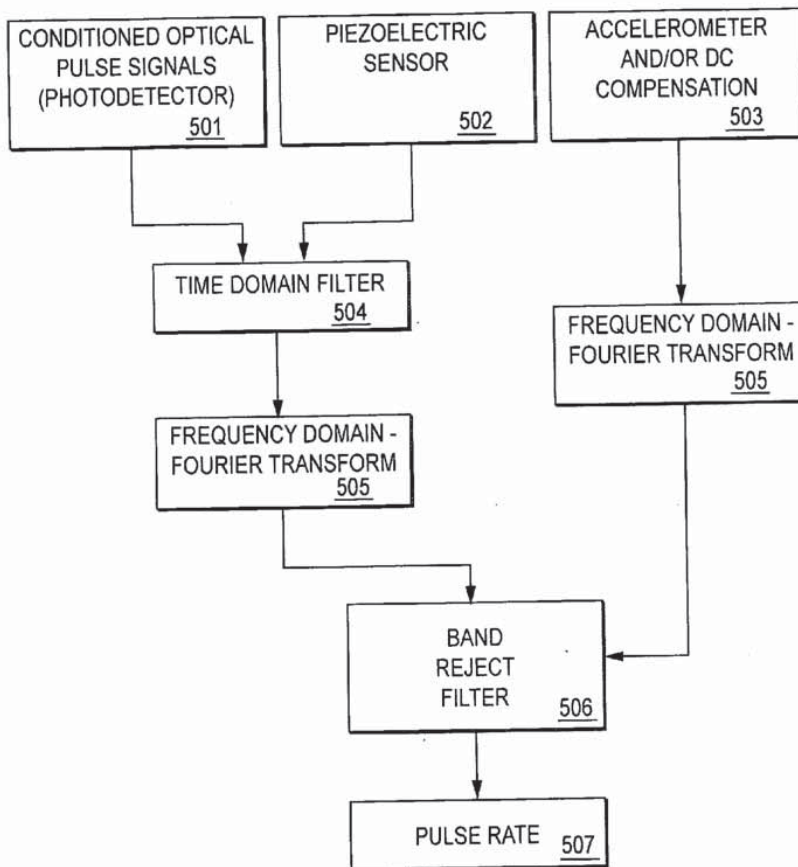
**Related U.S. Application Data**

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(52) **U.S. Cl.** ..... 600/500

(57) **ABSTRACT**  
A pulse rate sensor that includes an accelerometer for measuring periodic motion and a piezo sensor for detecting erratic motion is capable of more accurately determining pulse rate by accounting for these types of motion. The pulse rate sensor in accordance with the present invention diminishes pulse rate signal degradation due to erratic motion through a combination of algorithms that control signal boosting, waveform refinement and signal noise suppression.



Apple Inc.  
APL1046

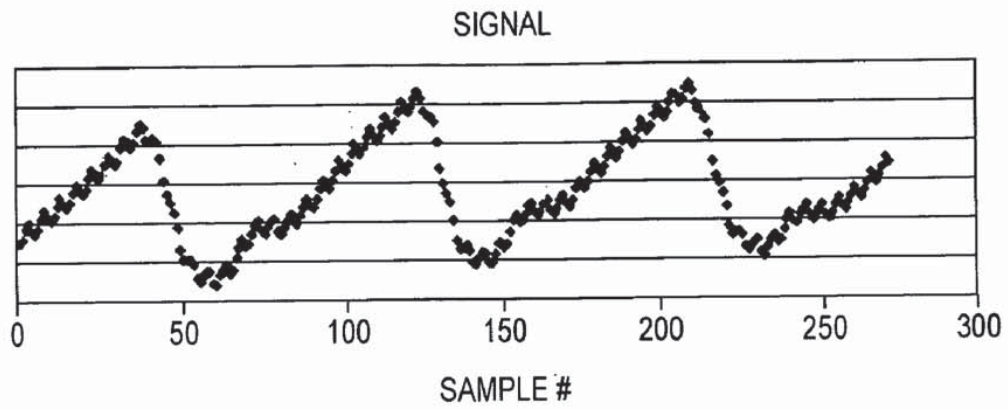


FIG. 1A

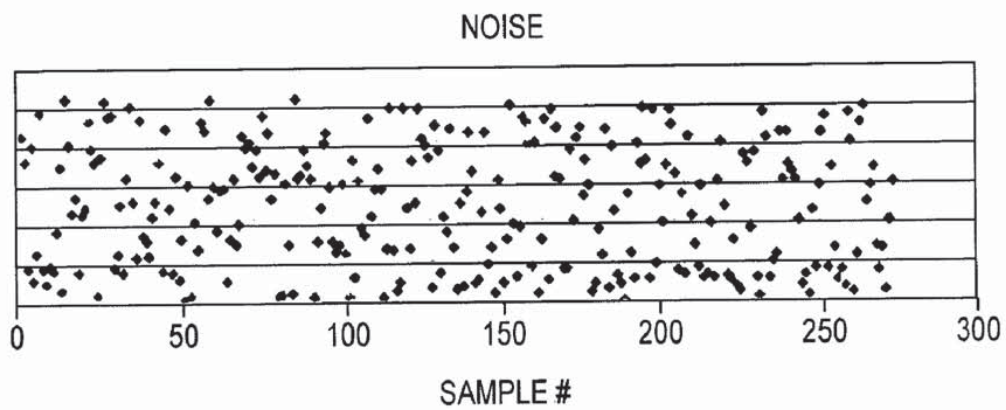


FIG. 1B

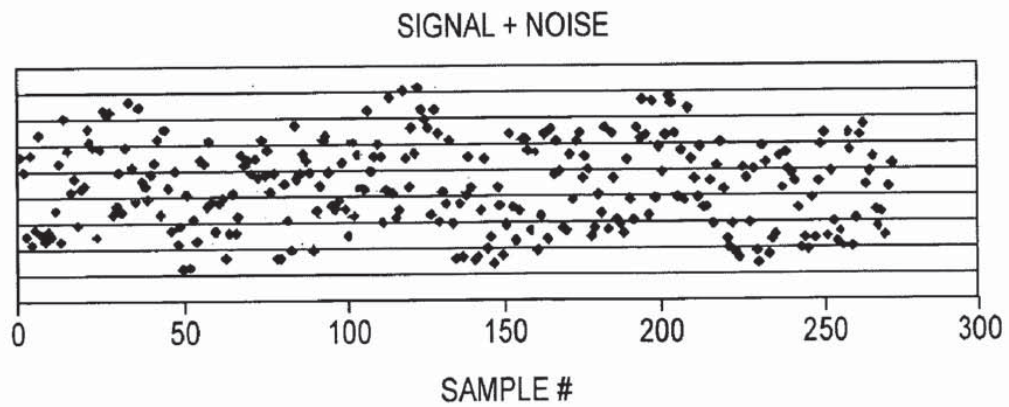


FIG. 1C

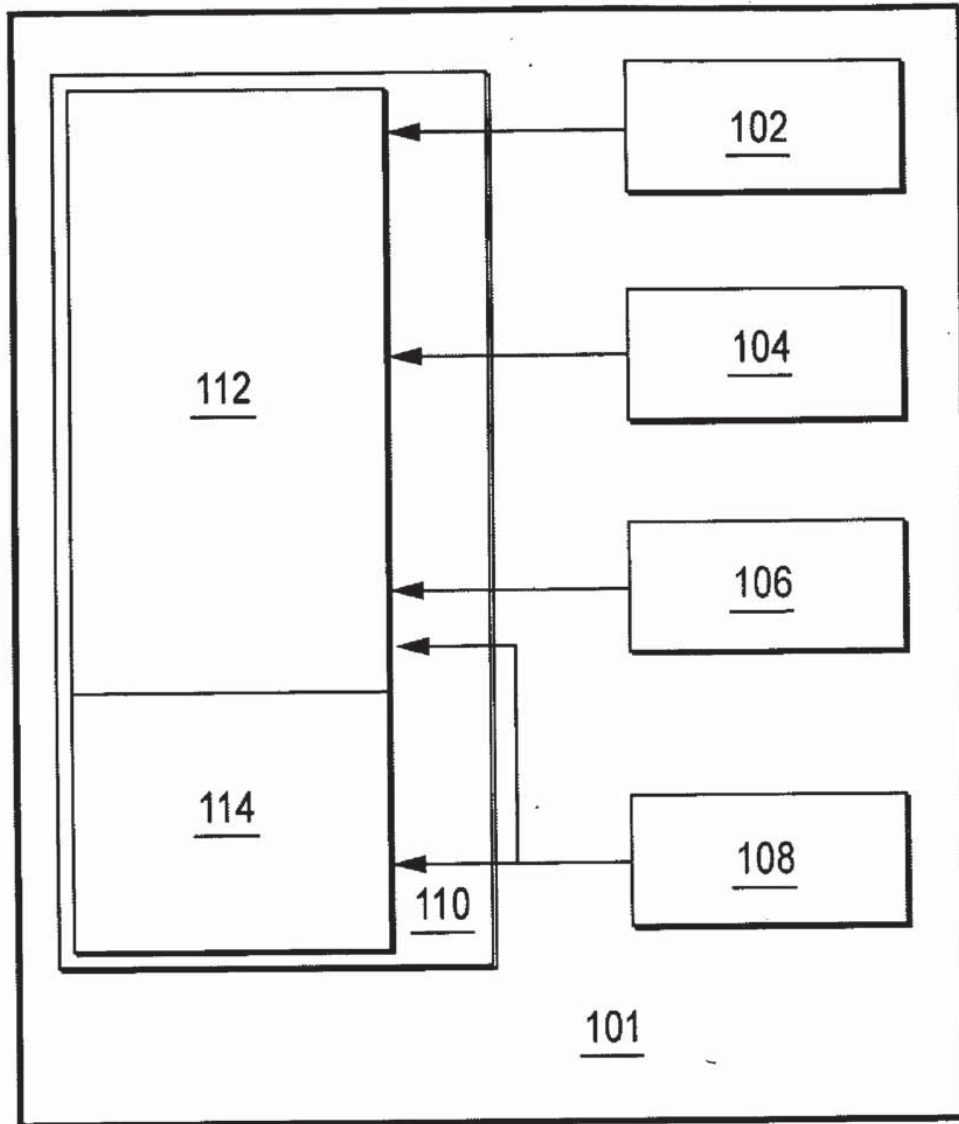


FIG. 2A

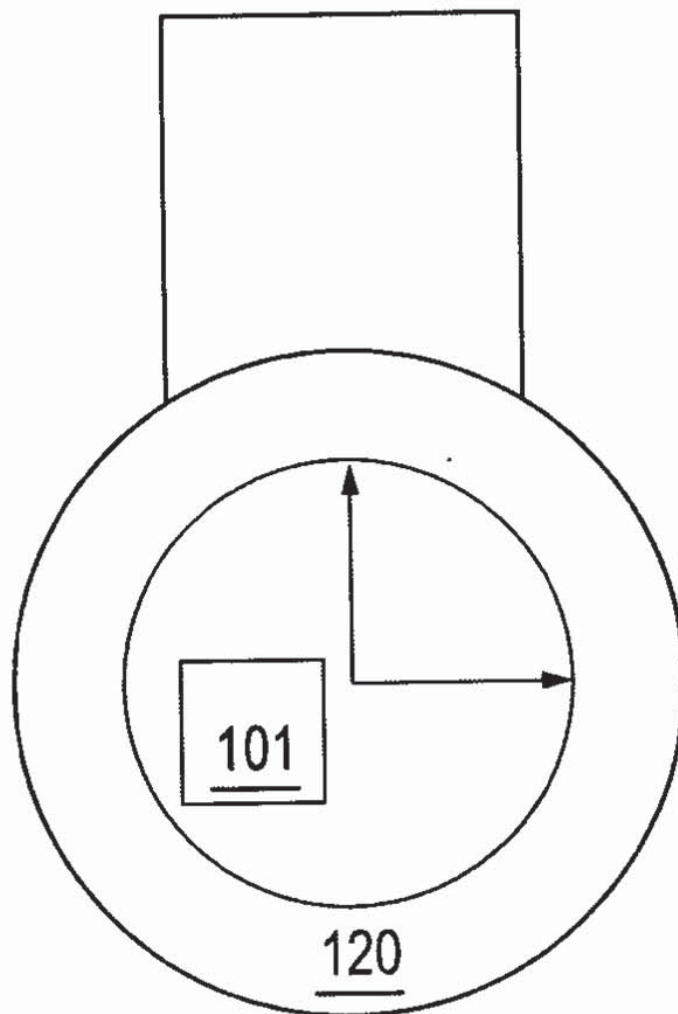


FIG. 2B

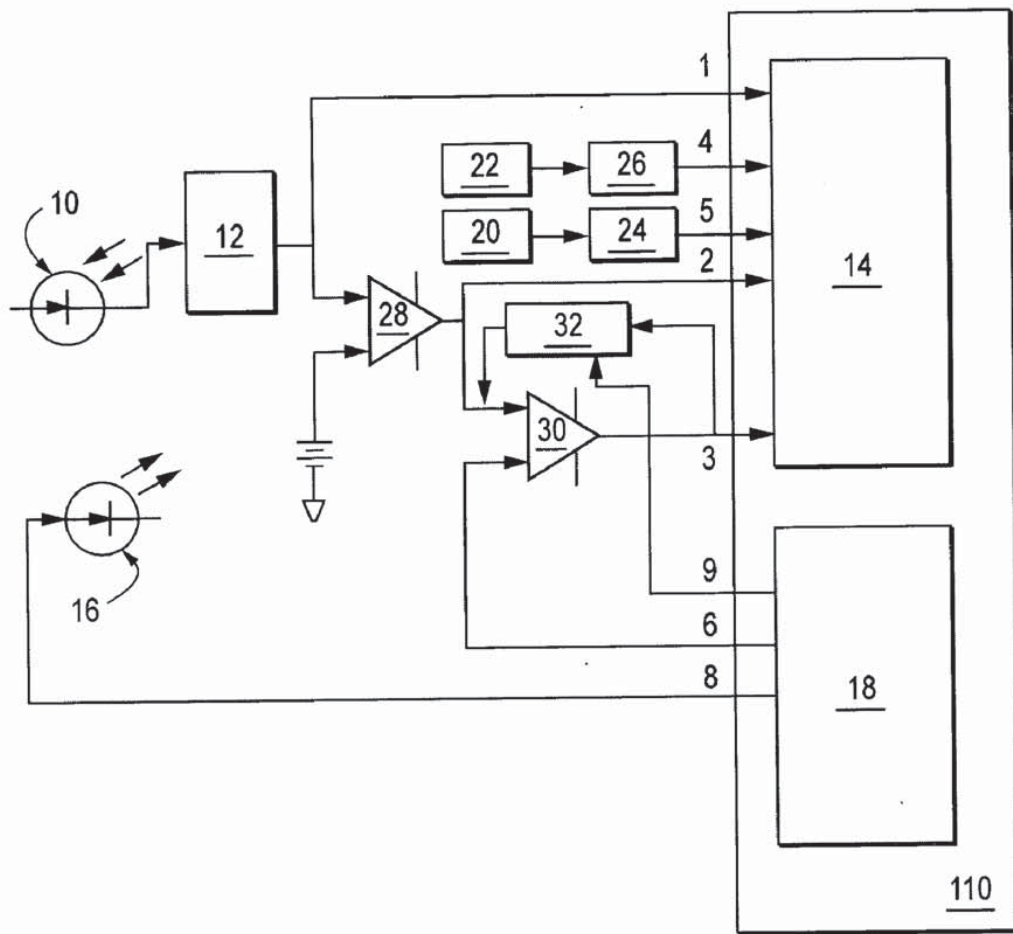


FIG. 3

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