



(12) **United States Patent**
Russo et al.

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(54) **HUMAN BIOVIBRATIONS METHOD**

(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 608 days.

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(57) **ABSTRACT**

Related U.S. Application Data

This invention relates to the detection of human biovibrations using a digital signal processing (DSP) actigraph worn by the individual, and in at least one method using any noise existing in the signals. Human biovibrations result from the human body having reverberations and oscillations from bodily functioning. The DSP actigraph has been shown to be able to identify heart beat and breathing of an individual. The invention includes a method comprising: recording movement data of an individual that includes biovibrations data, determining when the movement data substantially falls within a predetermined threshold representative of death, and providing a notification. The invention in at least one embodiment includes a method comprising: monitoring activity counts for zero crossing mode, above threshold mode, and proportional integrative mode, providing a notification when all three activity counts are within a respective predetermined range for a period of time.

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See application file for complete search history.

20 Claims, 8 Drawing Sheets

