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(54) **ENERGY HARVESTER DEVICE FOR IN-EAR DEVICES USING EAR CANAL DYNAMIC MOTION**

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See application file for complete search history.

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(57) **ABSTRACT**

An energy harvester device located into an in-ear device and harvesting energy from dynamic motion of the wall of the outer ear canal receiving the in-ear device therein, with an external sheath of the in-ear device generally assuming the contour of the ear canal wall. The energy harvester device has an energy harvesting module mounting on an inner portion of the in-ear device adjacent the external sheath, and is at least partially elastically deformable under a displacement of the ear canal wall to generate energy corresponding to the displacement of the wall. An energy storage module mounts onto the in-ear device and connects to the energy harvesting module to receive energy there from and supplying the stored energy to an electronic device of the in-ear device. The in-ear device having the energy harvester device therein is also part of the present invention.

15 Claims, 4 Drawing Sheets

