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**Dyer et al.**

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(54) **EARPHONE AMBIENT EARTIP**  
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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 1434 days.

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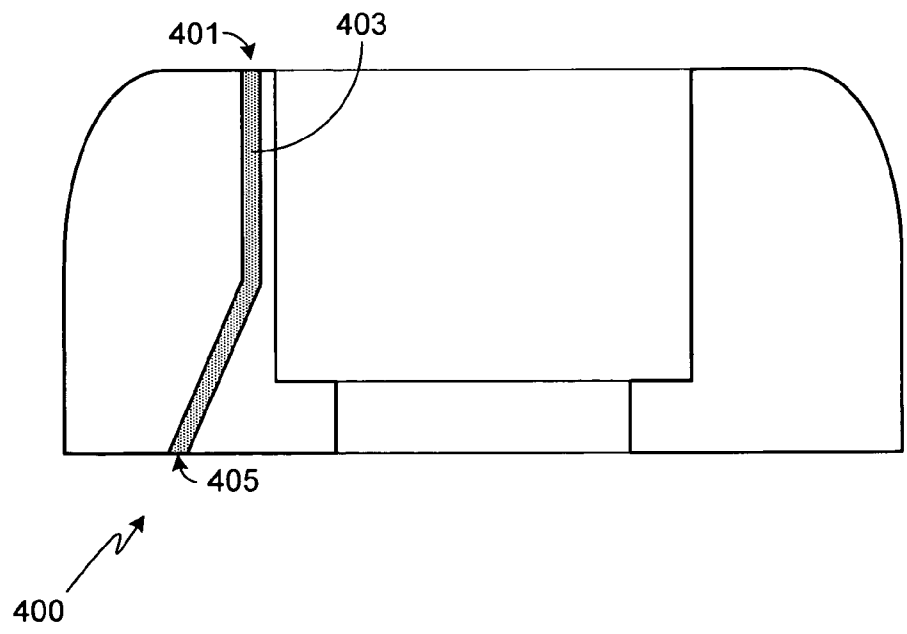
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**H04R 25/00** (2006.01)  
(52) **U.S. Cl.** ..... **381/380**; 381/381; 381/322; 381/328;  
181/130; 181/135  
(58) **Field of Classification Search** ..... 381/312,  
381/322-330, 380-381; 181/130, 135  
See application file for complete search history.

(57) **ABSTRACT**  
An eartip that includes at least one acoustic material filled port is provided. The port and the acoustic material contained therein provide the eartip with a controlled acoustic leakage path, thus allowing the user to tailor the performance of the earphones to which the eartips of the invention are attached. The provided eartip is attachable to a standard, generic earpiece, for example through the use of interlocking members (e.g., channel/lip arrangement). At least one port, in addition to the central opening by which the eartip is attached to the earphone, extends through the eartip. The port can have a circular cross-section, arcuate cross-section, or other shape. If desired, for example to increase the port area, the eartip can be designed with multiple ports surrounding the central opening. Within the port is an acoustic material with the desired acoustic impedance. The eartip can be coded to allow identification of the acoustic qualities of a particular eartip.

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**19 Claims, 8 Drawing Sheets**



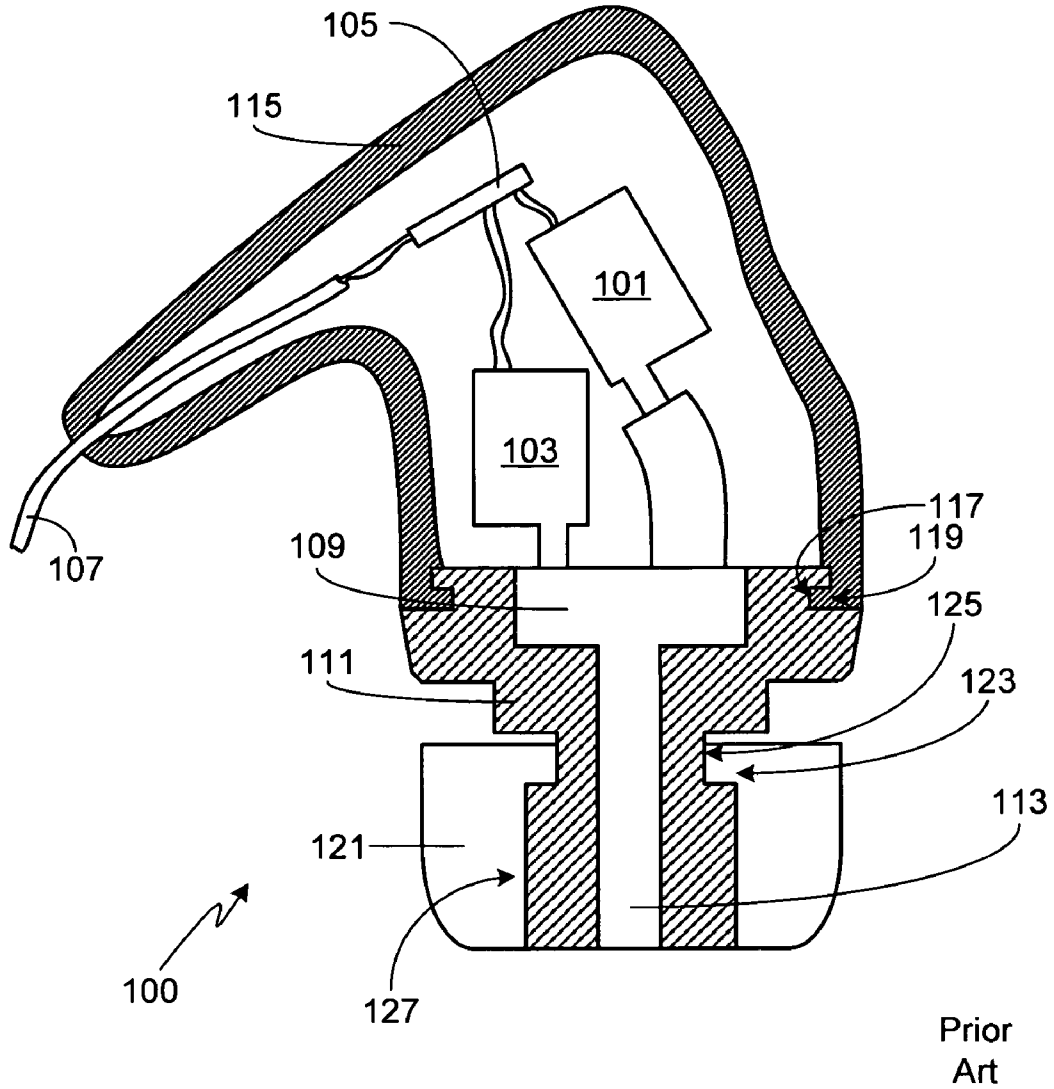
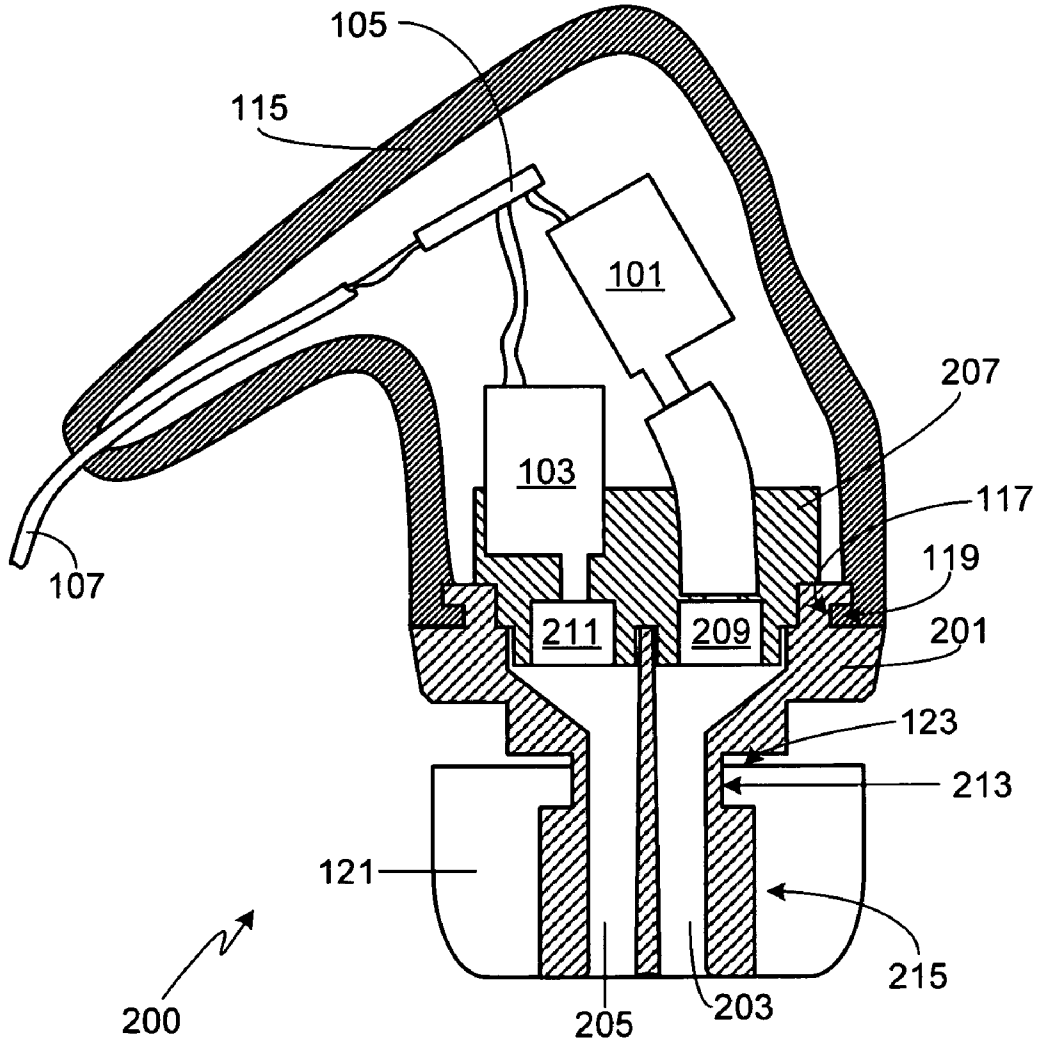
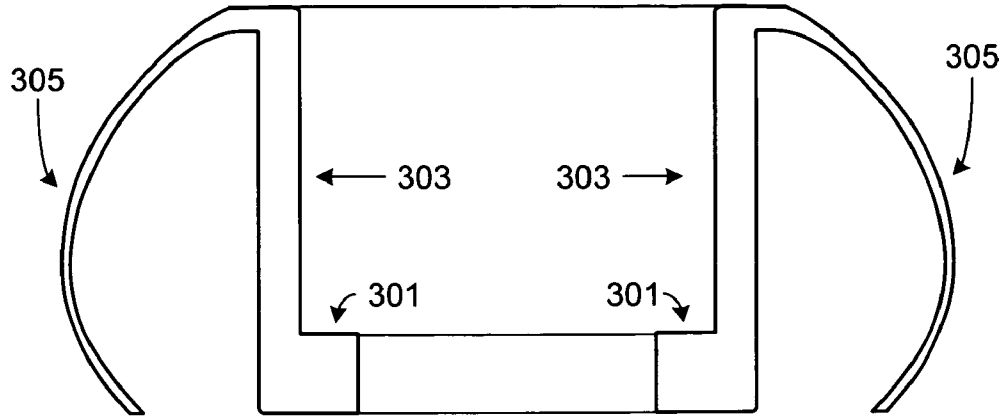


FIG. 1



Prior Art

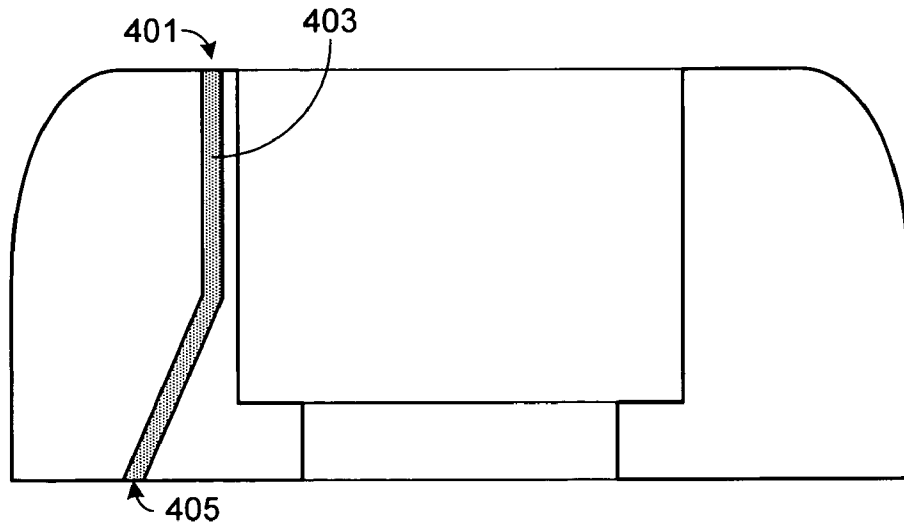
FIG. 2



300

FIG. 3

Prior Art



400

FIG. 4

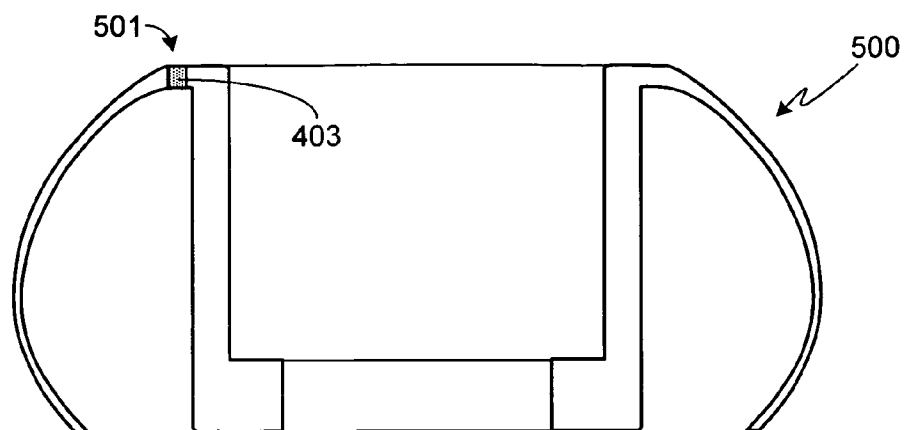


FIG. 5

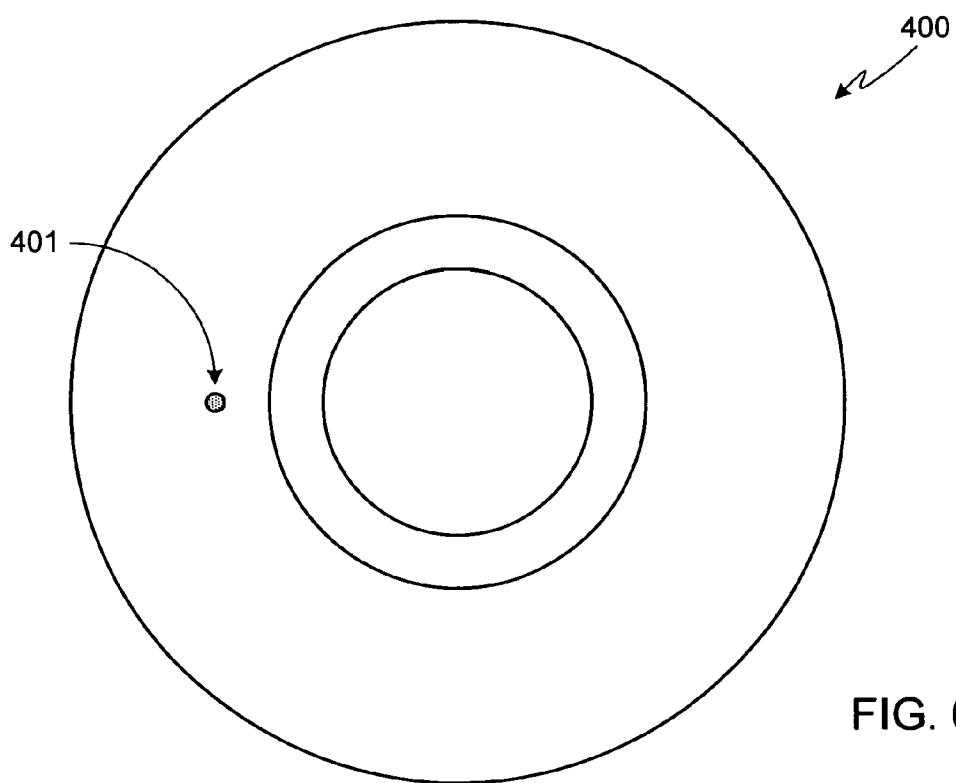


FIG. 6

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