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(12) **United States Patent**
Zellner

(10) **Patent No.:** **US 8,180,078 B2**
(45) **Date of Patent:** **May 15, 2012**

(54) **SYSTEMS AND METHODS EMPLOYING
MULTIPLE INDIVIDUAL WIRELESS
EARBUDS FOR A COMMON AUDIO SOURCE**

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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 1187 days.

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LLC

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(57) **ABSTRACT**

(65) **Prior Publication Data**

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Multiple individual wireless earbuds provide audio from a
common audio source. A user may thereby enjoy audio in
both ears while also benefiting from an entirely wireless
configuration. The individual wireless earbuds may each
receive the audio signal from the common audio source and
then produce audio accordingly. Each earbud may have a
channel setting to define whether a given earbud will produce
left channel or right channel audio for a multi-channel audio
signal. The individual wireless earbuds may alternatively
have a master-slave configuration where a master earbud
receives a wireless audio signal from the common source,
plays audio based on the audio signal, and transmits a wire-
less signal based on the wireless audio signal to the slave
earbud. The slave earbud then plays audio based on the wire-
less signal from the master earbud.

(51) **Int. Cl.**
H04R 5/033 (2006.01)

(52) **U.S. Cl.** **381/311**; 381/309

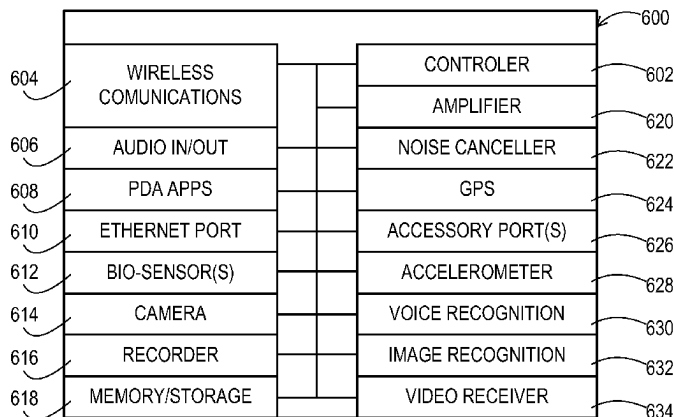
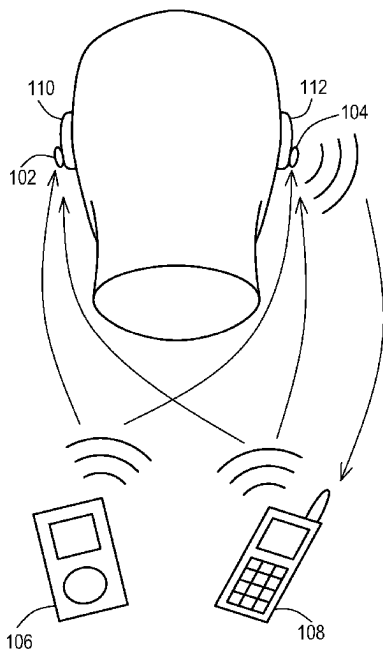
(58) **Field of Classification Search** 381/74,
381/80, 81, 311, 330, 384, 309
See application file for complete search history.

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20 Claims, 5 Drawing Sheets



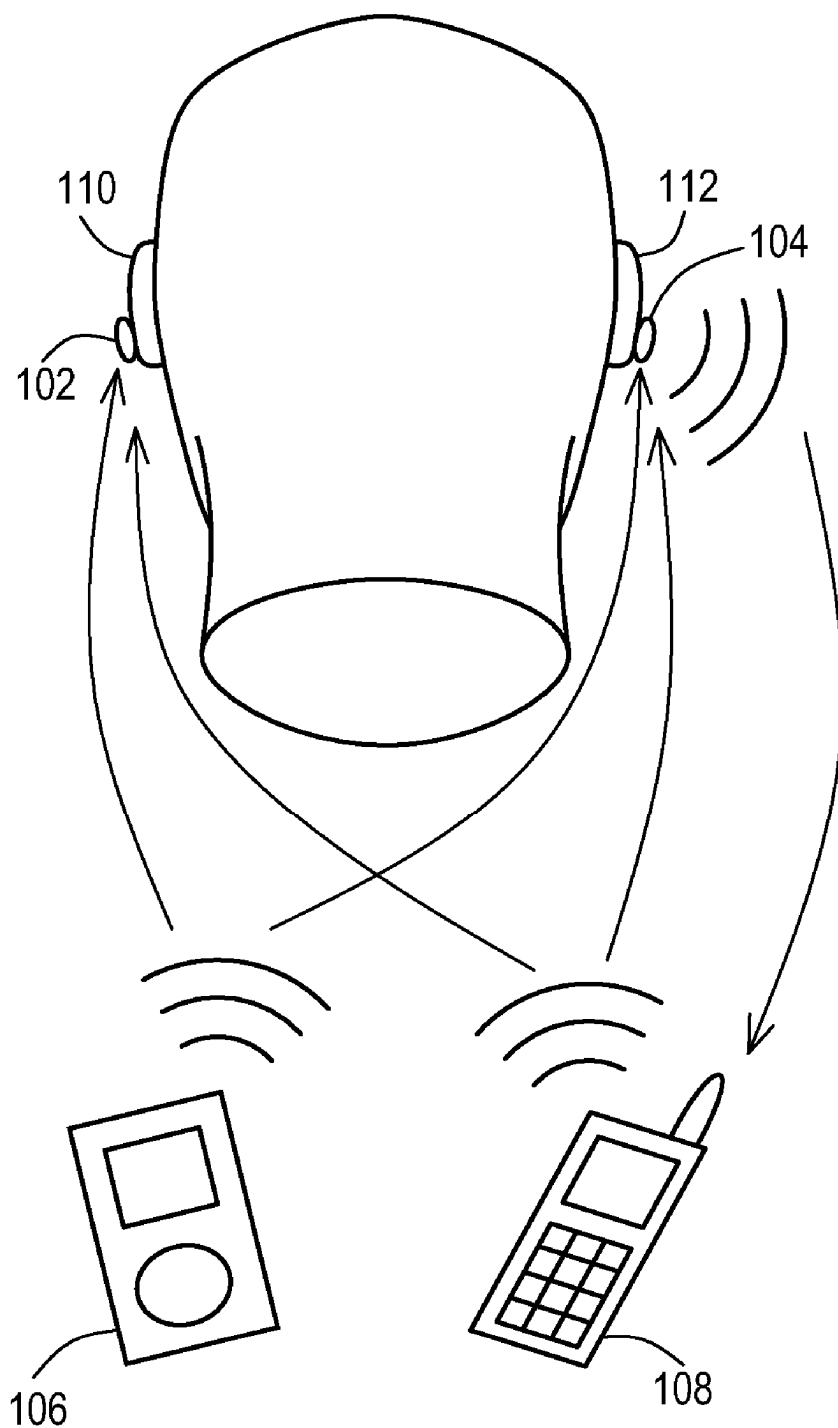


FIG. 1

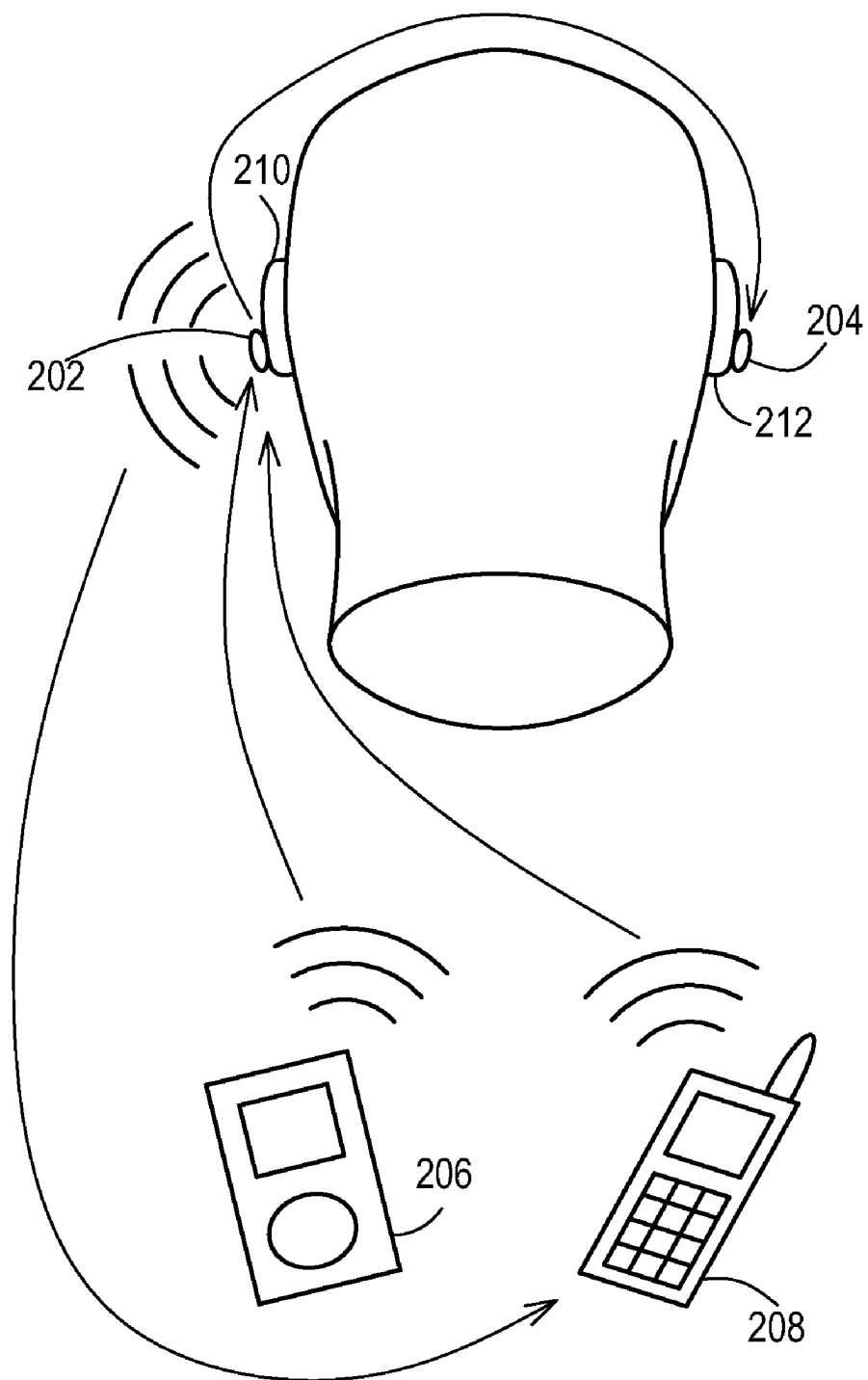


FIG. 2

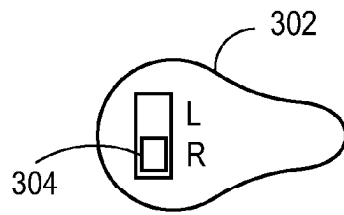


FIG. 3A

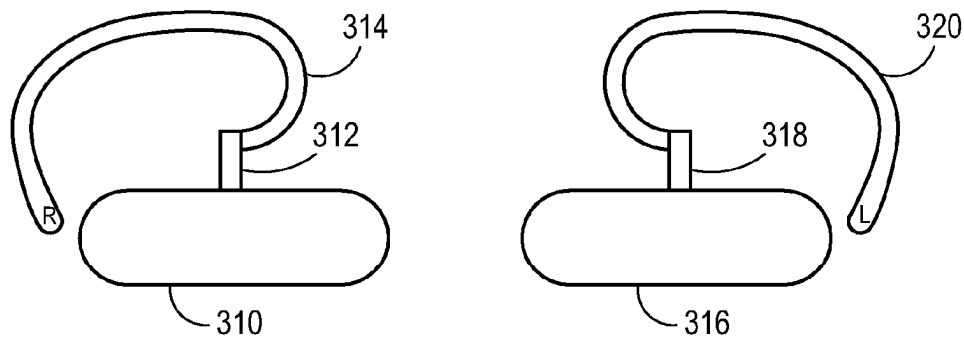


FIG. 3B

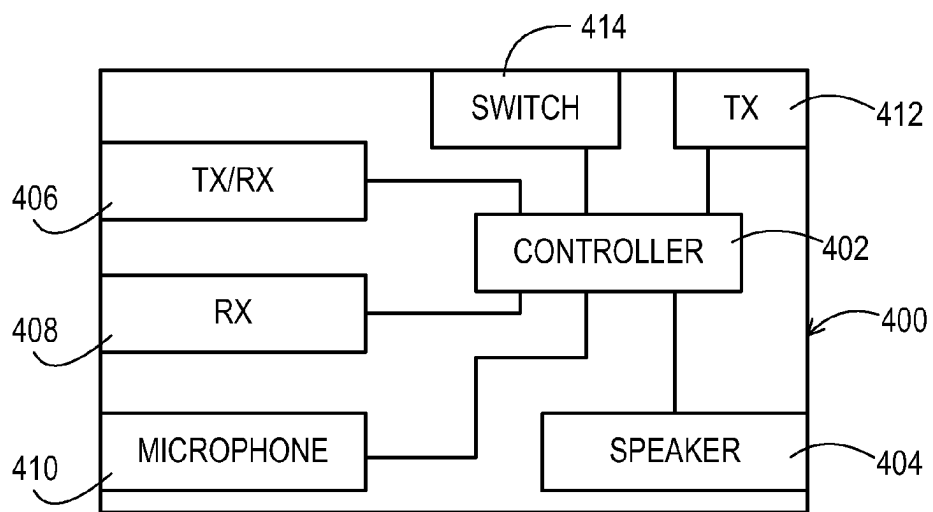


FIG. 4

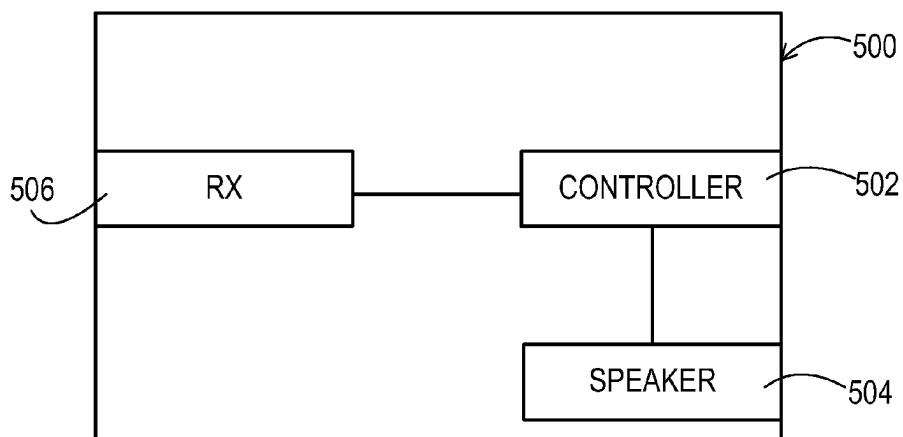


FIG. 5

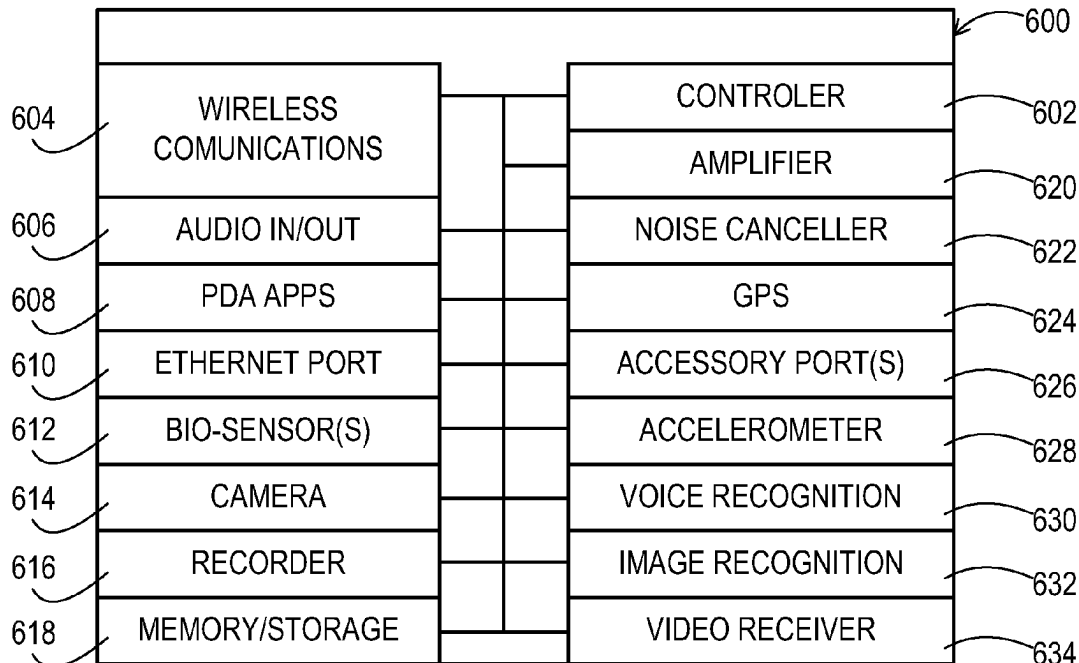


FIG. 6

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