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(54) Title: RECREATIONAL BONE CONDUCTION AUDIO DEVICE, SYSTEM



(57) Abstract: A waterproof recreational audio device (1 and 28-30) and method that transmits sound via transcutaneous bone conduction provides high fidelity musical signals to a user. The device can be worn on the head of a user and integrated into various types of headgear. The device is tunable for sound quality and comfort by adjusting and moving the sound transmitting transducers around the head of the user. The present invention uses commercially available transducers (2) to produce sounds in the low (27), mid (26), and high (25) frequency ranges. A sound source for the musical signal can also be provided as part of the waterproof recreational audio device. Controls (21) enable the user to select volume levels for the high, mid, and low frequency ranges, while a volume limiter restricts the mid range to a preset maximum volume level to allow external ambient sounds to be heard via the ear canal and protects the hearing of the user.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04R 25/00
US CL : D14/192; 2/dig.11; 181/129,131; 379/430; 381/311,334,376; 455/351

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,683,587 A (SILVERMAN) 28 July 1987 (28.07.1987), see figures.	1-11, 14-42
X	US 5,537,667 A (KENNING et al) 16 July 1996 (16.07.1996), see figures.	1-47
X	US 4,682,363 A (GOLDFARB et al) 21 July 1987 (21.07.1987), see figures.	1-11, 15-47
A	US 5,034,995 A (CICCONE) 23 July 1991 (23.07.1991), see figures	1-47

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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