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(54) Title: DIAPHONIC ACOUSTIC TRANSDUCTION COUPLER AND EAR BUD

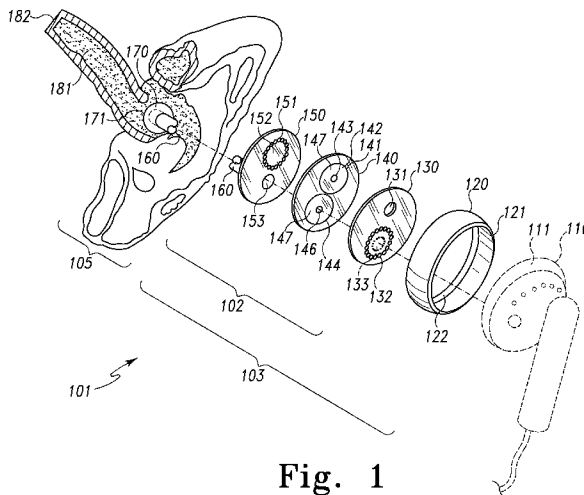


Fig. 1

(57) Abstract: The disclosed methods and devices incorporate a novel expandable bubble portion which provides superior fidelity to a listener while minimizing listener fatigue. The expandable bubble portion may be expanded through the transmission of low frequency audio signals or the pumping of a gas to the expandable bubble portion. In addition, embodiments of the acoustic device may be adapted to consistently and comfortably fit to any ear, providing for a variable, impedance matching acoustic seal to both the tympanic membrane and the audio transducer, respectively, while isolating the sound-vibration chamber within the driven bubble. This reduces the effect of gross audio transducer vibration excursions on the tympanic membrane and transmits the audio content in a manner which allows the ear to utilize its full inherent capabilities.

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## INTERNATIONAL SEARCH REPORT

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**PCT/US2008/070896****A. CLASSIFICATION OF SUBJECT MATTER****H04R 25/00(2006.01)i**

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

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC : H04R

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

Korean Utility models and applications for Utility models since 1975  
Japanese Utility models and applications for Utility models since 1975

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

PAJ, FPD, USPAT, eKIPASS, IEEE, YAHOO, GOOGLE , Keyword: "bubble, transducer, expand, inflate"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5063946 A (Hiroshi Wada) 12 November 1991 (See Abstract, Figs.1, 2, column 3 line 14-column 4 line 9)	1-51
A	US 4009707 A (John W Ward) 01 March 1977 (See Abstract, Figs.2-3, column 3 line 27-column 5 line 64)	1-51
A	KR 10-1990-0013806 A (KOSS CORP) 06 September 1990 (See Figs.1,2, 5, claim 1-10)	1-51
A	JP 06-335473 A (SHIMIZU CONSTRUCTION CO LTD) 06 December 1994 (See Abstract, Figs.1, 4, clims 1-2, paragraphs [0009]-[0014])	1-51

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

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5063946 A	12.11.1991	JP 02-211125 A	22.08.1990
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