Direct Drive Micro Hearing Device

Tech ID: 19408 / UC Case 2010-033-0

BRIEF DESCRIPTION

The present invention relates to a hearing device and, more particularly, to a device that can mechanically drive the ossicular chain while being located in the ear canal.

FULL DESCRIPTION

Current art for restoring hearing falls into two broad categories, conventional hearing aids and middle ear implants. Conventional hearing aids rely on amplification of sound to improve hearing. This approach has several disadvantages, including occlusion effects, feedback and stigma associated with visible hearing aids. Middle ear implants overcome these disadvantages by mechanically driving the middle ear but disadvantages include required invasive surgery, high cost and additional surgery for removal.

Researchers at the University of California have developed a small, wearable hearing device that is placed deep within the ear canal. Instead of amplifying sound like traditional hearing aids, the sound is converted to a mechanical output that drives the ossicular chain. This invention will address the major obstacles to hearing instrument adoption - without the tradeoffs associated with current solutions or the need for invasive surgical procedures. This invention will not produce acoustic feedback or occlusion effects common to hearing aids and does not require invasive surgery. The fundamental principle is the converting acoustic energy to mechanical energy that drives the middle ear.

The proposed device will mechanically drive the ossicular chain like a middle ear implant but entirely from deep within the ear canal. Since the fundamental mechanism for stimulation is the same as a middle ear implant, this approach will also have excellent performance and quality. But, due to the being located completely in the ear canal, this approach offers several other compelling advantages, namely: greatly reduced cost, easy accessibility, and easy placement and removal.

SUGGESTED USES

This invention has utility in the area of hearing restoration. Other applications include military applications.

ADVANTAGES

Excellent performance and quality compared to existing hearing aids. Invasive surgery is not required, greatly reduced cost, easy accessibility, and easy placement and removal.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,407,994	08/02/2016	2010-033
United States Of America	Issued Patent	8,885,860	11/11/2014	2010-033

CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.

OTHER INFORMATION

KEYWORDS

hearing aid, auditory

CATEGORIZED AS

- **Communications**
  - Other
- **Medical**
  - Devices
  - Other
- **Sensors & Instrumentation**
  - Medical
- **Engineering**
  - Other

RELATED CASES

2010-033-0

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5270 California Avenue / Irvine,CA
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