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US Hearing Device Patents for November 2016

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On the Demand side, marketeers talk about creating and growing markets by identifying needs (e.g., hunger) and turning them into wants by creating products that offer more and more satisfaction (e.g., hamburgers, then caviar). Economists talk about growing demand by foreseeing consumer preferences across all possible goods which deliver the greatest satisfaction within their budget constraints (the champagne taste on a beer budget problem). Regardless of approach, it's the collective behavior of consumers that shapes the Market, aka the Demand schedule.

On the Supply side, marketeers talk about creating buzz and excitement to sell new products, coupled with desirable pricing and branding. Economists talk about technological innovation and increased productivity to create new and better products more efficiently than competitors. Regardless of approach, it's the competitive behavior of suppliers that shapes the Supply schedule.

Patents and patent protection of specialized "products" are key competitive behaviors of successful suppliers, especially in technologically intensive areas. They help keep price high enough to encourage continued production and development by protected suppliers; they discourage lesser competitors' endeavors, which may slow innovation in the short run. But in the long run, they shift Demand by creating more utility for consumers.

It's been so since the time of the ancient Greeks, when *"any new refinement in luxury"* was encouraged in the Greek city of Sybaris by ensuring that *"the profits arising from which were secured to the inventor by patent for the space of a year."*

What kind of technologies were being developed and innovated back in 500 BCE by Sybarites, when ancient Greece had only recently emerged from its own Dark Ages and entered the Iron Age in metallurgy? True to their name, and setting the stage for consumers and suppliers throughout the ages, Sybarites were interested in developing and protecting ever more sybaritic tastes, starting with the culinary. According to Phylarchus, *"exclusive rights were granted for one year to creators of unique culinary dishes."*

So much for hamburger and refining the sense of taste by patenting culinary arts. Later cultures expanded into the other four senses, inventing to influence consumer preferences and grow demand by improving consumers' ability to see, feel, smell and hear.

We've Come A Long Way, Baby

The years of plain vanilla amplifiers squealing in the ears and worn only by those with hearing loss are past us. Now, suppliers of Hearables by any name are aiming for the *best* sound, *least* noise, *most* content, *longest* battery life, *fastest* processing, *widest* connectivity, *smallest* size, *greatest* multi-functionality, most comfort, most attractive, and, of course, *broadest* market. And, of course, we sybaritic consumers want it all now, at the lowest price we can get, and preferably over the counter so we can pick it up at takeout, just like our food choices.

Inventors and suppliers are undaunted by this demanding set of demands from the Demand function. On the contrary, they're spurred on to more and better ear device creations, as we've been seeing in the traditional hearing aid manufacturers' products as well as from consumer electronics firms and start ups. The patent applications and awards are proof of progress, as well as protection and pricing. Reading what's envisioned is a bit mind boggling, even if we limit functionality to "only" audio. Consider this dense description in a patent application by Mass Moment LLC:

A multifunctional wearable audio-sensing electronic device is disclosed in which audio is detected, detected audio is analyzed to determine characteristics of the audio, a warning is generated in response to determining that a decibel level of the detected audio is physically harmful, when the wearable audio-sensing electronic device is in a musical tuner mode, a deviation of the audio from a pre-determined audio characteristics of a musical instrument is displayed, when the wearable audio-sensing electronic device is in a hearing aid mode, an identification of the audio and a direction from which the audio originates is displayed, when the wearable audio-sensing electronic device is in an ambiance indicator mode, a visual representation of an audio ambience is displayed, and when the wearable audio-sensing electronic device is in an audio recorder mode, the audio is recorded to the memory and played back. (USPTO #9500515)

Sybarites rejoice. The luxury of exclusive and highly personal audio is available and preferred.

The November List

Description	Patent Number	Assignee	Issued
Method and Hearing Aid System for Logic-Based Binaural Beam-Forming System	9473860	Sivantos GmbH (Erlangen, DE)	10/18/2016
Cochlear electrode with apical lateral wall section and basal modiolar hugging section	9480838	Med-El Elektromedizinische Geraete GmbH (Innsbruck, AT)	11/01/2016
Inverted Flange Earbud	9485595	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/01/2016
Managing a Hearing Assistance Device Via Low Energy Digital Communications	9485591	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/01/2016
Enhanced Dynamics Processing of Streaming Audio by Source Separation and Remixing	9485589	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/01/2016
Acoustic Device	9485593	Kyocera Corp (Kyoto, JP)	11/01/2016
Wireless Power Transmitter Tuning	9484766	Qualcomm Inc (San Diego, CA)	11/01/2016
Hearing Instrument Comprising Two Antennas	9485592	Sonova AG (Staefa, CH)	11/01/2016
Hearing Device with a Means for Receiver Current Estimation and a Method of Estimating a Receiver Current for a Hearing Device	9484490	Sonova AG (Staefa, CH)	11/01/2016
Systems, Articles, and Methods for Gesture Identification in Wearable Electromyography Devices	9483123	Thalmic Labs Inc. (Kitchener, CA)	11/01/2016
Method and apparatus for microphones sharing a common acoustic volume	9491555	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/08/2016
Method and Apparatus for Programming Hearing Assistance Device Using Perceptual Model	9491556	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/08/2016
Hearing Aid Device with Integrated Antenna	9491554	Oticon A/S (Smorum, Denmark)	11/08/2016
Method of Audio Signal Processing and Hearing Aid System for Implementing the Same	9491553	Ching-Feng Liu & Hsiao-Han Chen (Taiwan inventors)	11/08/2016

Method and Apparatus for Directional Acoustic Fitting of Hearing Aids	9491559	Dean Robert Gary Anderson as Trustee of the D/L Anderson Family Trust (Orem, Utah)	11/08/2016
Electro-acoustic stimulation systems that perform predetermined actions in accordance with evoked responses	9486630	Advanced Bionics AG (Staefa, CH)	11/08/2016
Sound processors having contamination resistant control panels and implantable cochlear stimulation systems including the same	9491530	Advanced Bionics AG (Staefa, CH)	11/08/2016
Cochlear lead	9492654	Advanced Bionics AG (Valencia, CA)	11/15/2016
Flex-based connector for hearing aid	9497554	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/15/2016
Hearing aid using wireless test modes as diagnostic tool	9397553	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/15/2016
Audio system for audio streaming and associated method	9497541	GN ReSound A/S (Ballerup, DK)	11/15/2016
Leaky-wave antenna for hearing device	9496619	Samsung Electronics Co., Ltd. (Suwon-si, KR)	11/15/2016
Implantable fluid delivery apparatus with micro-valve	9498608	Med-El Elektromedizinische Geraete GmbH (Innsbruck, AT)	11/22/2016
Automatic selection of reduction or enhancement of transient sounds	9498626	Med-El Elektromedizinische Geraete GmbH (Innsbruck, AT)	11/22/2016
Pairing method for establishing a wireless audio network	9504076	Sonova AG (Staefa, CH)	11/22/2016
Apparatus for secure hearing device communication and related method	9503437	GN ReSound A/S (Ballerup, DK)	11/22/2016
Hearing Aid	D772417	IMHear Corp (Downers Grove, Ill)	11/22/2016
Hearing Aid and Hearing Aid Dual Use Dongle	9503825	III Holdings 4 LLC (Wilmington, Del)	11/22/2016
Multifunctional Wearable Audio-Sensing Electronic Device	9500515	Mass Moment LLC (New York, NY)	11/22/2016
Method for Adjusting Parameters of a Hearing Aid Functionality Provided in a Consumer Electronics Device	9503824	Jacoti BVB (Wevelgem, Belgium)	11/22/2016
Method and apparatus for a binaural hearing assistance system using monaural audio signals	9510111	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/29/2016
Method and apparatus for communication between hearing assistance devices in a bluetooth network	9510113	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/29/2016
Systems and methods for managing power consumption in a wireless network	9510283	Starkey Laboratories, Inc. (Eden Prairie, MN)	11/29/2016
RF transmitter for electrically short antenna	9509345	Oticon A/S (Smorum, Denmark)	11/29/2016
External microphone array and hearing aid using it	9510112	Oticon A/S (Smorum, Denmark)	11/29/2016
Audio processing pipeline for auditory prosthesis having a common, and two or more stimulator-specific, frequency-analysis stages	9510114	Cochlear Limited (Macquarie University, NSW, AU)	11/29/2016

Editor's note: The Patent Series is updated monthly now, and every two months in the past. Click links for patents approved in October 2016, Sept 2016, Jul/Aug 2016, May/Jun 2016, Mar/Apr 2016, Jan/Feb 2016, Nov/Dec 2015, Sept/Oct 2015, Jul/Aug 2015, May/Jun 2015, Mar/Apr 2015, Jan/Feb 2015, Nov/Dec 2014, Sep/Oct 2014, July/Aug 2014, May/Jun 2014, Mar/Apr

2014, Jan/Feb 2014, Nov/Dec 2013, September/October 2013, Jul/Aug 2013, May/Jun 2013, Mar/Apr 2013, Jan/Feb 2013, Nov/Dec 2012

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