

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC.,
Petitioner,

v.

E-VISION SMART OPTICS, INC.,
Patent Owner.

IPR2025-00216
U.S. Patent No. 11,487,138

DECLARATION OF JOHN FELAND, PH.D.

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I, John Feland, Ph.D., declare as follows:

1. I am making this declaration at the request of Luxottica of America Inc. (“Luxottica”).

2. I am being compensated for my work in this matter and I am being reimbursed at cost for my expenses. My compensation in no way depends upon the outcome of this proceeding. I do not own any stock in Luxottica and, to my knowledge, I have no financial interest in Luxottica.

3. In preparing this declaration, I considered the following materials:

Exhibit No.	Description
1001	U.S. Patent No. 11,487,138 to Blum et al. (“138 patent”)
1002	File History of U.S. Patent No. 11,487,138
1005	U.S. Patent App. Publ. No. 2012/0105740 to Jannard et al. (“Jannard-740”)
1006	U.S. Patent App. Publ. No. 2011/0214082 to Osterhout et al. (“Osterhout”)
1007	U.S. Patent App. Publ. No. 2009/0006846 to Rosenblatt (“Rosenblatt”)
1008	Reserved
1009	Reserved
1010	Reserved
1011	Reserved
1012	U.S. Patent No. 6,185,537 to Oh et al. (“Oh”)
1013	Reserved

Exhibit No.	Description
1014	Reserved
1015	Reserved
1016	Reserved
1017	U.S. Patent App. Publ. No. 2006/0132382 to Jannard et al. (“Jannard-382”)
1018	Reserved
1019	Int’l Patent App. Publ. No. 01/95625 to Calderone et al. (“Calderone”)
1020	Int’l Patent App. Publ. No. 99/53612 to Blum et al. (“Blum”)
1021	YouTube Siri Demo Screenshots
1022	Reserved
1023	Reserved
1024	U.S. Patent App. Publ. No. 2012/0016678 to Gruber et al. (“Gruber”)
1025	Excerpts from Graf, Modern Dictionary of Electronics, 7th Edition, 1999
1026	YouTube Siri Demo Transcript
1027	File History of U.S. Patent App. No. 61/583940
1028	U.S. Patent App. Publ. No. 2010/0272304 to Thiel et al. (“Thiel”)
1029	U.S. Patent App. Publ. No. 2010/0330908 to Maddern et al. (“Maddern”)
1030	U.S. Patent App. Publ. No. 2008/0001735 to Tran (“Tran”)
1031	U.S. Patent App. Publ. No. 2019/0081937 to Lu et al. (“Lu”)

Exhibit No.	Description
1032	Bluetooth, Encyclopaedia Britannica, Published April 2024, https://www.britannica.com/print/article/1191284
1033	The Story of Bluetooth: The Slow Road to Becoming an Industry Standard, by Lianne Firth, Published July 2021, https://www.allaboutcircuits.com/news/bluetooth-technology-the-slow-road-to-an-industry-standard
1034	Apple Reinvents the Phone with iPhone, Press Release, January 2007, https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone
1035	Apple iPhone Bluetooth Headset Review, TechCrunch, Dated August 2007, https://techcrunch.com/2007/08/02/apple-iphone-bluetooth-headset-review
1036	The 7 Best Bluetooth Headsets, Business Insider, Dated November 2010, https://web.archive.org/web/20121001210205/http://www.businessinsider.com/the-7-sexiest-bluetooth-headsets-that-work-great-2010-11?op=1
1037	Plantronics Savor M1100 Bluetooth Headset Review: Plantronics Savor M1100 BluetoothHeadset, by Nicole Lee, CNET, Dated October 2010, https://www.cnet.com/reviews/plantronics-savor-m1100-bluetooth-headset-review
1038	Plantronics Voyager PRO+ Bluetooth Headset Review: Plantronics Voyager PRO+ Bluetooth Headset, by Nicole Lee, CNET, Dated September 2010, https://www.cnet.com/reviews/plantronics-voyager-pro-plus-bluetooth-headset-review
1039	MotoSpeak 2.0 Announced for Android, by Ken N., Published October 2010, https://www.phonearena.com/news/MotoSpeak-2.0-announced-for-Android_id13782

Exhibit No.	Description
1040	Motorola CommandOne Bluetooth Headset Review: Motorola CommandOne Bluetooth Headset, by Nicole Lee, CNET, Dated December 2010, https://www.cnet.com/reviews/motorola-commandone-bluetooth-headset-review
1041	Siri, Encyclopaedia Britannica, Published June 2024, https://www.britannica.com/print/article/1908358

4. I have also relied on my education, training, and experience, and my knowledge of pertinent literature in the field of the '138 patent.

I. BACKGROUND

A. Experience and Qualifications

5. My experience and qualifications are summarized in my *curriculum vitae*, a copy of which is provided as Exhibit 1004.

6. I have over 30 years of experience in mechanical engineering, electromechanical engineering, and mechatronics. I graduated from the Massachusetts Institute of Technology with a bachelor of science degree in mechanical engineering in 1994. After graduating from MIT, I attended Stanford University, where I received an M.S. in 1996 and then a Ph.D. in 2005, both also in mechanical engineering. Although my degrees were in mechanical engineering, I completed coursework and research involving electronic circuitry, electromechanical engineering, and mechatronics.

7. Beginning in June 1996, I worked as a mechatronic design engineer for IDEO Product Development. From March 1997 to April 1999, I worked for the National Air Intelligence Center as a Program Manager, Defense Intelligence Systems, managing mission requirements and software development for an \$18 billion missile warning satellite program. From April to July 1999, I served as Director, Measurement and Signals Intelligence Systems, for the Joint Analysis Center, supervising classified intelligence support for Operation Allied Force in Kosovo.

8. From August 1999 to July 2001, I was an Assistant Professor of Engineering Mechanics for the United States Air Force Academy. In that time, I launched the Academy's first mechatronics course. From 2002 to 2004, I worked as a design strategy consultant for Trusted Nomad, taught at Stanford, and worked as Senior Mechanical Engineer for Symyx Technologies, developing MEMS industrial sensors.

9. From December 2004 to August 2008, I worked at Synaptics. While at Synaptics, I designed and built several mobile devices and mobile-device accessories. The team I managed retrofitted or designed from scratch hundreds of capacitive touch interfaces for multiple consumer electronic devices. Through this work, I gained deep experience with manufacturing electronic assemblies and integrating them into a wide array of consumer electronics. This work also provided

me with significant experience in the path to mass production, including how to deliver technological improvements that could be mass produced, as we recommended these prototypes as potential product features for customers. My work at Synaptics included architecting the Onyx, a working multitouch-controlled mobile phone prototype, which gained international recognition in 2006, winning the Red Dot Design Concept Award months ahead of Apple's 2007 launch of the iPhone.

10. After Synaptics, I was Chief Technologist at SK Telecom Americas from September 2008 to September 2009. While at SK Telecom Americas, I evaluated several user experience designs across a range of interfaces, including voice, touch, and gesture. From October 2009 to September 2011, I held positions at Stanford, including Executive Director of the Global Design Innovation course that connects graduate students with corporate partners, as well as Consulting Assistant Professor in the Design Group of the Mechanical Engineering department. In 2012, I served as Distinguished Lecturer at Cogswell Polytechnical College, teaching courses in robotics and entrepreneurship.

11. After leaving SK Telecom in September 2009, I founded Argus Insights, a consulting firm that I have run for nearly 15 years. Some of my projects have included analyzing what UX aspects are driving adoption in autonomous

vehicles and designing UX for industrial cutting tools to lower training requirements and increase operator effectiveness.

12. I am currently a Principal Strategist at CableLabs, a non-profit think tank for the broadband industry. I pursue a mixture of quantitative and qualitative research on consumer behaviors and preferences. I also coach innovation teams and work extensively in artificial intelligence strategy. From April 2017 to September 2018, I served as forum chair and moderator for the IoT (Internet of Things) Forum in Silicon Valley. From August 2018 to January 2022, I also taught engineering at the Nueva School.

13. As shown in my CV, I have authored or co-authored over 30 publications, most of which relate to engineering or design. I am a named inventor on at least six issued patents.

B. Applicable Legal Standards

14. I have been asked to provide my opinion as to whether certain claims of U.S. Patent No. 11,487,138 would have been obvious to a person of ordinary skill in the art (“POSITA”) at the time of the alleged invention, in view of the prior art.

15. I am an engineer and product designer by training and profession. The opinions I am expressing in this report involve the application of my training and technical knowledge and experience to the evaluation of certain prior art with respect to the ’138 patent.

16. Although I have been involved as a technical expert in patent matters before, I am not an expert in patent law. Therefore, the attorneys from Knobbe, Martens, Olson & Bear, LLP have provided me with guidance as to the applicable patent law in this matter. The paragraphs below express my understanding of how I must apply legal principles relating to patent validity in my analysis.

17. It is my understanding that in determining whether a patent claim is obvious in view of the prior art, the Patent Office construes the claim by giving the claim its ordinary and customary meaning ascribed to it by a person of ordinary skill in the art at the time of the invention, consistent with the specification. I also understand that in reading the claim, I must not import limitations from the specification into the claim terms; in other words, I must not narrow the scope of the claim terms by implicitly adding disclosed limitations that have no express basis in the claims.

18. It is my understanding that a claim is “obvious” if the claimed subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time of the alleged invention. I also understand that an obviousness analysis takes into account the scope and content of the prior art, the differences between the claimed subject matter and the prior art, and the level of ordinary skill in the art at the time of the invention.

19. In determining the scope and content of the prior art, it is my understanding that a reference is considered appropriate (e.g., analogous) prior art if it falls within the field of the inventor's endeavor. In addition, a reference is prior art if it is reasonably pertinent to the particular problem with which the inventor was involved. A reference is reasonably pertinent if it logically would have commended itself to an inventor's attention in considering his problem. If a reference relates to the same problem as the claimed invention, that supports use of the reference as prior art in an obviousness analysis.

20. To assess the differences between prior art and the claimed subject matter, it is my understanding that the law requires the claimed invention to be considered as a whole. This "as a whole" assessment requires showing that one of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the elements from the prior art and combined them in the claimed manner.

21. It is my understanding that something is "inherent in," and therefore taught by, the prior art, if it necessarily flows from the explicit disclosure of the prior art. I understand that the fact that a certain result or characteristic may be present in the prior art is not sufficient to establish inherency. However, if the result or characteristic is necessarily present based upon the explicit disclosure in the prior art, it is inherent in the prior art and is therefore disclosed.

22. It is my further understanding that the law recognizes several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. Some of these rationales include: combining prior art elements according to known methods to yield predictable results; simple substitution of one known element for another to obtain predictable results; a predictable use of prior art elements according to their established functions; applying a known technique to a known device (method or product) ready for improvement to yield predictable results; choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; and some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

23. I understand that a prior art reference may also suggest a limitation of the claims. In that case, even if the prior art reference does not explicitly or inherently disclose the limitation, the motivation to modify the prior art reference to include the limitation may exist within the prior art reference itself. Thus, the limitation would have been obvious over that prior art reference alone. This is the case if a person of ordinary skill in the art would have had a simple design choice or a finite number of identified, predictable solutions, for example, and if the modification furthers the goals of the prior art reference.

24. I further understand that the obviousness analysis must be performed from the perspective of a person of ordinary skill in the art at the time of the alleged invention. This is to avoid using impermissible hindsight in the analysis. The claims of the patent must not be used to provide a road map for obviousness; instead, the claims would have been obvious if a person of ordinary skill in the art would have been motivated to combine the teachings of the prior art to arrive at the claimed invention and had a reasonable expectation of success in doing so.

25. I also understand that an obviousness analysis must consider whether there are additional factors that would indicate that the invention would not have been obvious. These factors include whether there was: (i) a long-felt need in the industry; (ii) any unexpected results; (iii) skepticism of the invention; (iv) a teaching away from the invention; (v) commercial success; (vi) praise by others for the invention; and (vii) copying by other companies. I am not aware of any evidence that would suggest that the claims of the '138 patent would have been non-obvious. To the extent Patent Owner submits such evidence during the course of the *inter partes* review, I may provide my opinion on such evidence if asked to do so by counsel.

C. Person of Ordinary Skill in the Art

26. It is my understanding that when interpreting the claims of the '138 patent, I must do so based on the perspective of a person of ordinary skill in the art

at the relevant priority date. As discussed below, I understand the earliest possible priority date to be January 6, 2012.

27. I understand that in determining the level of ordinary skill in the art, several factors are considered. Those factors may include: (i) the type of problems encountered in the art; (ii) prior art solutions to those problems; (iii) the rapidity with which innovations are made; (iv) the sophistication of the technology; and (v) the educational level of active workers in the field. A person of ordinary skill in the art must have the capability of understanding the scientific and engineering principles applicable to the pertinent art.

28. The '138 patent describes the use of well-known technologies relating to eyewear with electronics. Based on my review of the specification and claims of the '138 patent, it is my opinion that a person of ordinary skill in the art would be a person having at least a bachelor's degree in mechanical or manufacturing engineering; mechatronics; electrical engineering plus coursework in mechanical engineering, manufacturing engineering, or mechatronics; or a similar technical degree. A POSITA would have also had at least 2 years of experience designing consumer electronics, such as eyewear with electronics. Additional work experience could serve as a substitute for a formal degree and vice versa. However, my opinions do not turn on this specific definition of the level of ordinary skill. The claims would

been obvious from the perspective of a person of ordinary skill under any reasonable definition.

29. I am able to make this assessment because in the 2000s, I was familiar with design and operation principles common in the mechanical, manufacturing, and mechatronic domains as they relate to the design, specification, and manufacturing of consumer electronic components. I, and the engineers that I worked with during the 2000s, had the requisite knowledge to make and use eyewear as described in the claims of the '138 patent. Because I have worked with and supervised designers, engineers, and software developers, I know very well what their capabilities were in the 2000s, how they would interpret and understand the claims of the '138 patent, and how they would understand the disclosures in the prior art discussed herein. Additionally, I have been a professor of mechanical engineering undergraduate and graduate programs where I developed novel curriculum that integrated mechatronic course content within existing mechanical engineering curriculums. As of May 2007, I had been an assistant professor at the United States Air Force Academy, as well as a graduate teaching assistant at Stanford University within the departments of Engineering Mechanics and Mechanical Engineering respectively.

30. In my opinion, as set forth in more detail below, a person having ordinary skill in the art at the time of the invention would have considered the devices and methods claimed in the '138 patent to be obvious in view of the prior

art. My conclusions that the claims of the '138 patent would have been obvious would remain the same even if the invention date, field of endeavor, or level of ordinary skill were slightly different.

II. THE TECHNOLOGY

31. The '138 patent is “directed to electronic eyewear modules and systems to be worn by a wearer.” Ex. 1001 ('138 patent), 1:66-2:4. The modularity provides “a user with a variety of interchangeable applications” and “[i]n the event that the electronic application modules break, they can also be easily replaced without replacing the entire system.” Ex. 1001 ('138 patent), 2:7-11.

32. Claims 1 and 12 of the '138 patent encompass eyewear with application modules that receive and transmit a verbal query, then receive and provide a response to the verbal query. Ex. 1001 ('138 patent), 24:54-26:45. Claim 6 of the '138 patent encompasses a method involving a microphone and wireless chip, coupled to an eyewear frame, and performing a similar process: receiving and transmitting a verbal query, then receiving and providing a response to the verbal query. Ex. 1001 ('138 patent), 24:54-26:45. Such eyewear and methods were well known by the '138 patent's earliest possible priority date of January 2012.

A. Background of Bluetooth Technology and Its Ubiquity in Wearables

33. Bluetooth technology was formalized as a wireless communication standard in 1999, building on earlier developments in the 1980s and 1990s. Ex. 1032

(Bluetooth - Encyclopaedia Britannica), 1; Ex. 1033 (The Story of Bluetooth), 1-2. Bluetooth was designed for efficient, short-range wireless communication, and its adoption in consumer devices grew rapidly following its standardization. Ex. 1032 (Bluetooth - Encyclopaedia Britannica), 1; Ex. 1033 (The Story of Bluetooth), 1-2.

34. Bluetooth quickly found practical applications, particularly in mobile communication devices such as hands-free headsets. Ex. 1032 (Bluetooth - Encyclopaedia Britannica), 1; Ex. 1033 (The Story of Bluetooth), 2-3. These headsets enabled users to communicate wirelessly with their mobile phones, providing a significant convenience over wired alternatives. Ex. 1033 (The Story of Bluetooth), 2-3. By 2001, Bluetooth-enabled mobile phones, such as those released by Ericsson, and Bluetooth-enabled laptops, such as those released by IBM, were available in the market, demonstrating the widespread adoption of Bluetooth in both mobile and computing devices. Ex. 1032 (Bluetooth - Encyclopaedia Britannica), 1; Ex. 1033 (The Story of Bluetooth), 2-3.

35. Throughout the 2000s, the adoption and integration of Bluetooth in consumer electronics, particularly mobile phones, accelerated significantly. Ex. 1032 (Bluetooth - Encyclopaedia Britannica), 1; Ex. 1033 (The Story of Bluetooth), 2-3. This rapid uptake can be attributed at least in part to the convenience and efficiency Bluetooth offered for wireless communication between devices, especially in the context of hands-free mobile communication.

36. The release of the iPhone in 2007 marked a significant milestone in the smartphone industry. Ex. 1034 (Apple Press Release), 1. From its release, the iPhone natively supported Bluetooth connectivity, underscoring the growing importance and ubiquity of Bluetooth technology at the time. Ex. 1034 (Apple Press Release), 3-4. This was part of a broader trend where smartphones began integrating Bluetooth for various functions, including voice commands relayed through Bluetooth-enabled wearables like headsets. In the same year, Apple introduced its own Bluetooth earpiece, the “iPhone Bluetooth Headset,” designed to communicate with the iPhone:



Ex. 1035 (Apple iPhone Headset Review), 1-3; Ex. 1034 (Apple Press Release), 3.

B. Widespread Availability of Bluetooth Earpieces Offering Voice Control by 2010

37. Bluetooth earpieces with voice control capabilities were widely available on the market by 2010, and they had become ubiquitous by that time. Ex. 1036 (The 7 Best Bluetooth Headsets), 1-4. Several models released in 2010, such as the Motorola Finiti, Motorola CommandOne, Plantronics Savor M1100, and Plantronics Voyager Pro Plus, exemplify the widespread use of Bluetooth technology in consumer electronics. Ex. 1036 (The 7 Best Bluetooth Headsets), 1-

2; Ex. 1037 (Plantronics Savor M1100 Review), 1-7; Ex. 1038 (Plantronics Voyager PRO+ Review), 1-4.



Motorola Finiti



Motorola CommandOne



Plantronics Savor M1100

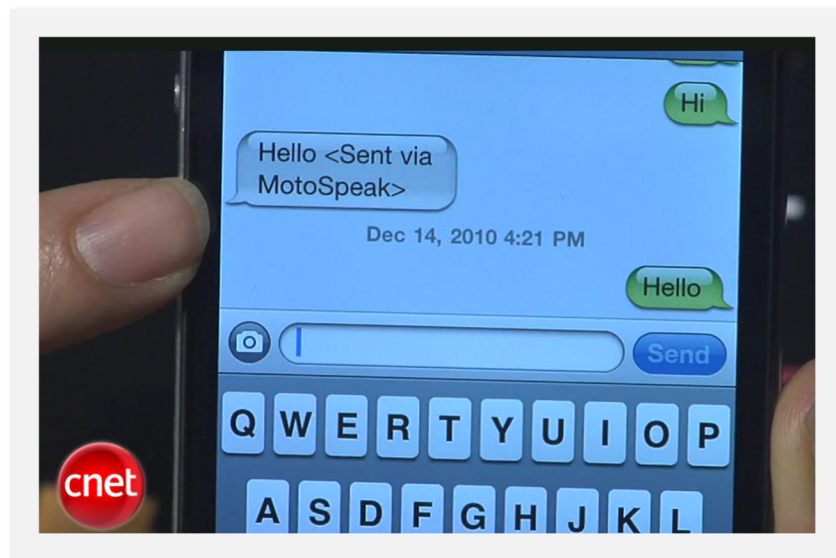


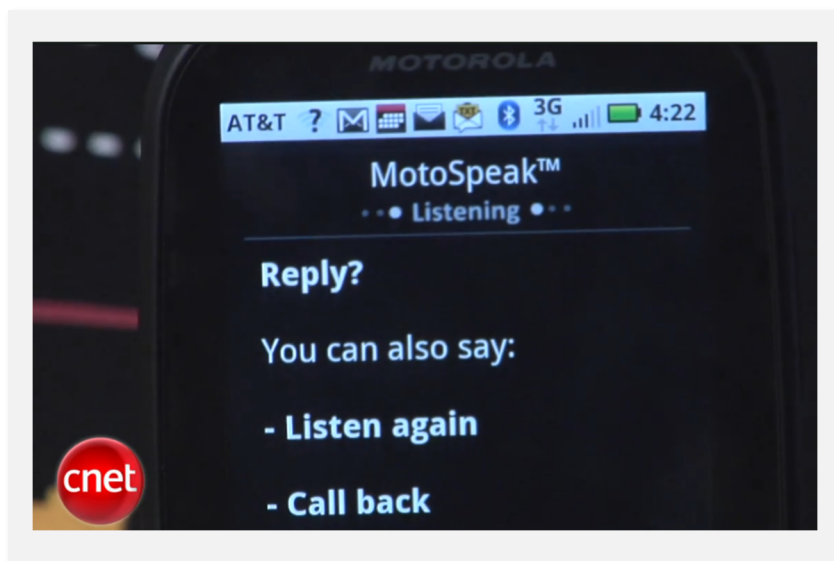
Plantronics Voyager Pro Plus

Ex. 1036 (The 7 Best Bluetooth Headsets), 1-2; Ex. 1037 (Plantronics Savor M1100 Review), 1-7; Ex. 1038 (Plantronics Voyager PRO+ Review), 1-4.

38. These Bluetooth earpiece models offered voice command features that enabled users to control smartphone functions. Ex. 1039 (MotoSpeak 2.0 Announced), 2. For instance, the Motorola Finiti and CommandOne models worked in conjunction with Motorola's Motospeak app for Android and communicated with

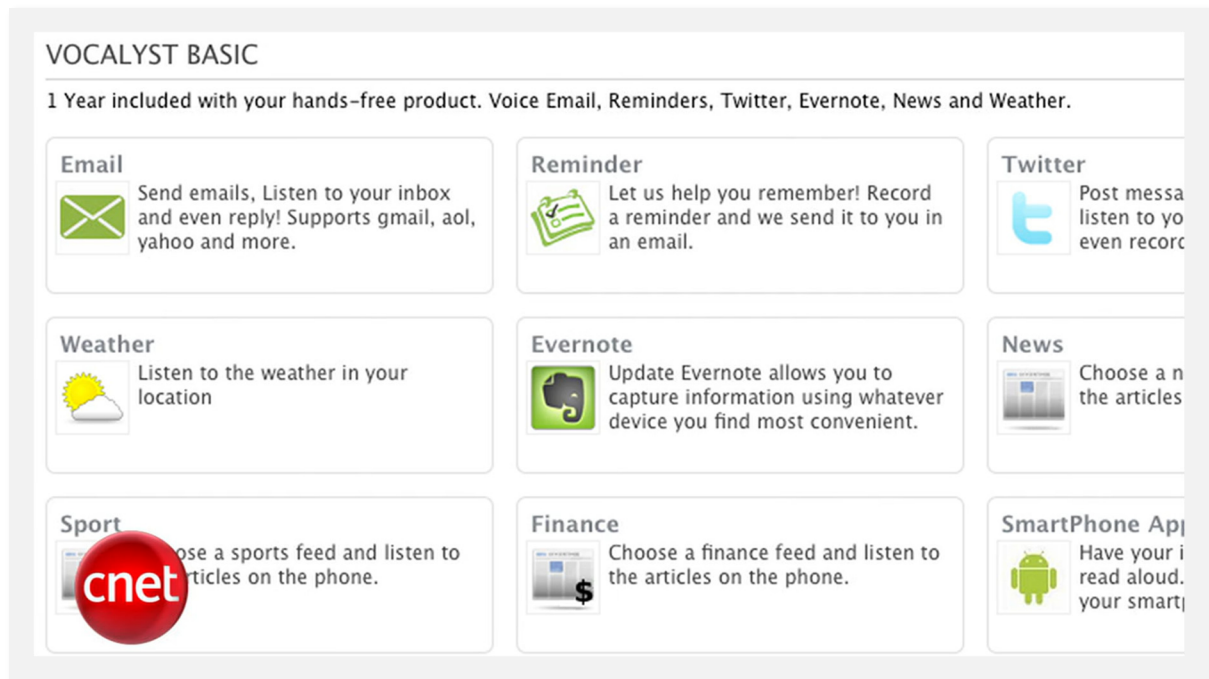
an Android smartphone. Ex. 1039 (MotoSpeak 2.0 Announced), 2. This allowed used to issue voice commands to listen to or send text messages through the Motospeak application:





Ex. 1039 (MotoSpeak 2.0 Announced), 2-3; Ex. 1040 (Motorola CommandOne Review), 1-6 (including full embedded video).

39. Similarly, the Plantronics Savor M1100 and Voyager Pro Plus Bluetooth earpieces were compatible with an application called Vocalyst, which provided a range of voice-controlled features. Ex. 1037 (Plantronics Savor M1100 Review), 1-7; Ex. 1038 (Plantronics Voyager PRO+ Review), 1-4



Ex. 1037 (Plantronics Savor M1100 Review), 1-7 (including full embedded video);
 Ex. 1038 (Plantronics Voyager PRO+ Review), 1-4; *see also*
<https://www.youtube.com/watch?v=tMZCQmYz08k>. These models allowed users
 not only to manage text messages but also to perform a variety of other tasks, such
 as managing emails, hearing weather updates, reading news articles, and posting to
 social media platforms like Twitter, all through voice interaction.

C. Thiel's 2010 Disclosure of Bluetooth-Enabled Eyewear

40. Thiel, a patent application that published in 2010, discloses Bluetooth-
 enabled eyewear. Ex. 1028 (Thiel), Front Page, [0010]. Thiel's eyewear retention
 device is capable of streaming audio from a phone responsive to voice commands.
 Ex. 1028 (Thiel), [0039] (“[A]n audio signal receiver of the type described above in

connection with FIG. 1 (including transceivers) is incorporated into at least one of the audio devices.”), [0043] (“to convert and/or transmit the voice signals to transmitter 34 for communication to a remote device, for example the transmitter using a Bluetooth wireless link or other wireless communication methods and devices to connect to an MP3 player or mobile phone for music and/or phone calls”), [0044] (“Control options can vary, and may include control over audio device and/or receiver and/or remote device functions such as power on/off, volume up/down, track or playlist changes, switching transmit or receive or other communication modes, and others not limited by this disclosure or the claimed subject matter. Controls 38 may also be voice-activated.”). The disclosed eyewear also allows users to control a phone or computer by using voice commands. Ex. 1028 (Thiel), [0044]; *see also* Ex. 1028 (Thiel), [0026]-[0027].

41. Thiel’s eyewear retention device may include two “audio devices 30” that attach to the ends of a conventional eyewear frame as shown in Figures 2 and 3. Ex. 1028 (Thiel), [0039] (“The illustrated example of eyewear retention device 20 uses two audio devices 30, one for each ear.”).

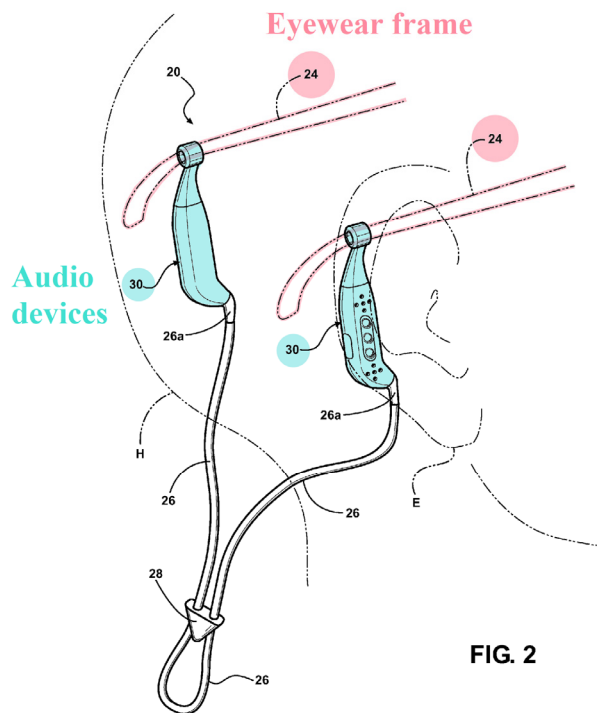


FIG. 2

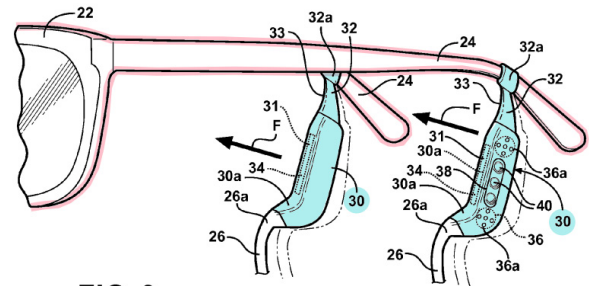


FIG. 3

Ex. 1028 (Thiel), Figs. 2-3.¹ At least one of these audio devices 30 includes a microphone and a Bluetooth transceiver chip. Ex. 1028 (Thiel), [0049] (“Illustrated components in audio device 30 include the previously mentioned microphones 36 Also visible are a Bluetooth type chip or chipset type receiver 44.”). This configuration enables the microphone to capture a user’s voice signals, including voice commands, which the Bluetooth chip then transmits to the user’s Bluetooth-enabled phone. Ex. 1028 (Thiel), [0043]-[0044]. For instance, Thiel provides that a user may issue verbal instructions for initiating music playback on their phone, adjusting the volume, or requesting a different track or playlist. Ex. 1028 (Thiel),

¹ I have added color markup to the figures throughout this declaration.

[0044]. In turn, the phone then transmits the requested audio content to the Bluetooth chip, which relays the audio to speakers within the eyewear for playback. Ex. 1028 (Thiel), [0049] (“The communication and audio signal transmitting and receiving components may be operatively connected as needed by those skilled in the art to enable the receiver 44 to supply audio signals to sound transmitter 34 from a remote device such as an MP3 player or mobile phone or other device.”).

D. Jannard-740’s 2011 Filing on Eyewear with Bluetooth Module

42. Jannard-740, a patent application filed² in 2011, discloses eyewear having a Bluetooth module that may communicate with a cellular phone. Ex. 1005 (Jannard-740), Front Page, [0086].

² Jannard-740 was filed by Petitioner through its subsidiary Oakley, Inc.

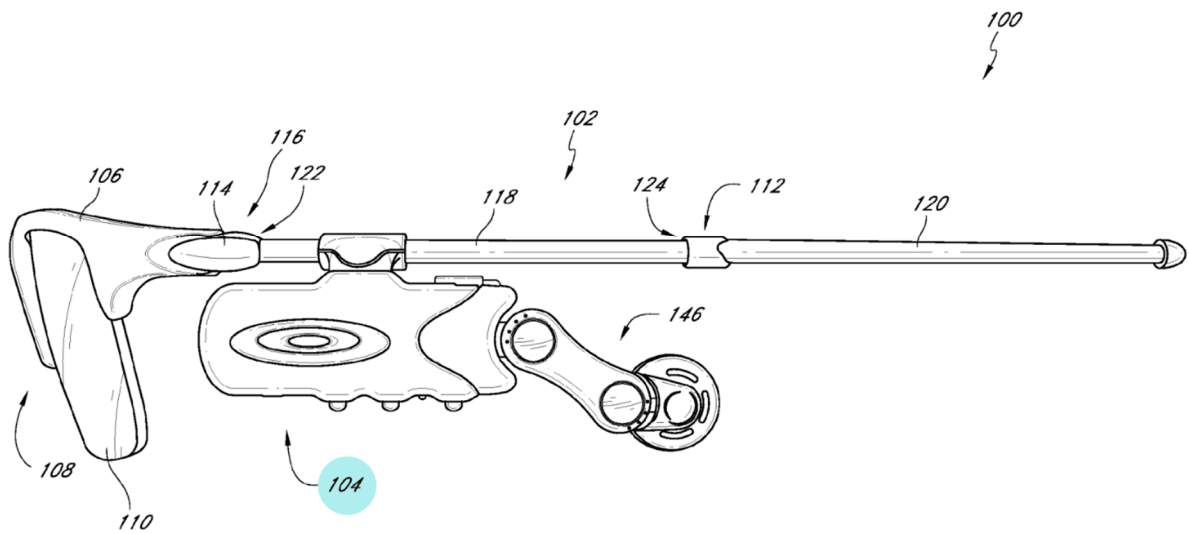


FIG. 1

Ex. 1005 (Jannard-740), Fig. 1. One example of such a module 104 is illustrated above in Figure 1 and below in Figure 3. Ex. 1005 (Jannard-740), [0083]-[0084].

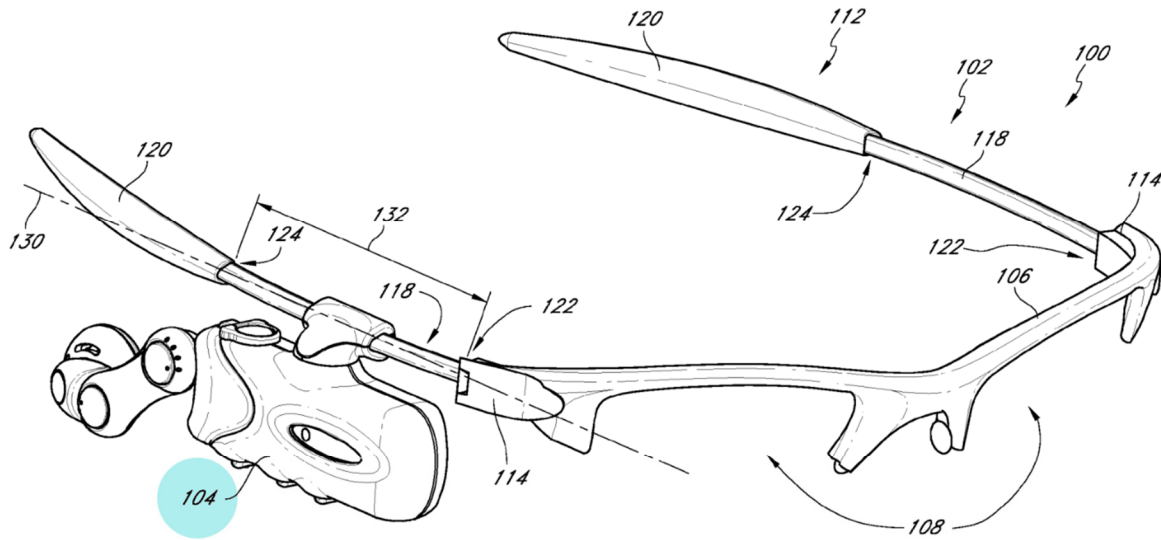


FIG. 3

Ex. 1005 (Jannard-740), Fig. 3. According to Jannard-740, this module may include “a speaker, a microphone, a power supply and a Bluetooth or other radio frequency transceiver for wirelessly communicating with a remote device such as a cellular telephone.” Ex. 1005 (Jannard-740), [0086].

43. Jannard-740 discloses with respect to Figure 51 below that a user can wear an audio device 510C on the user’s head. Ex. 1005 (Jannard-740), [0194] (generally refers to audio device 510C).

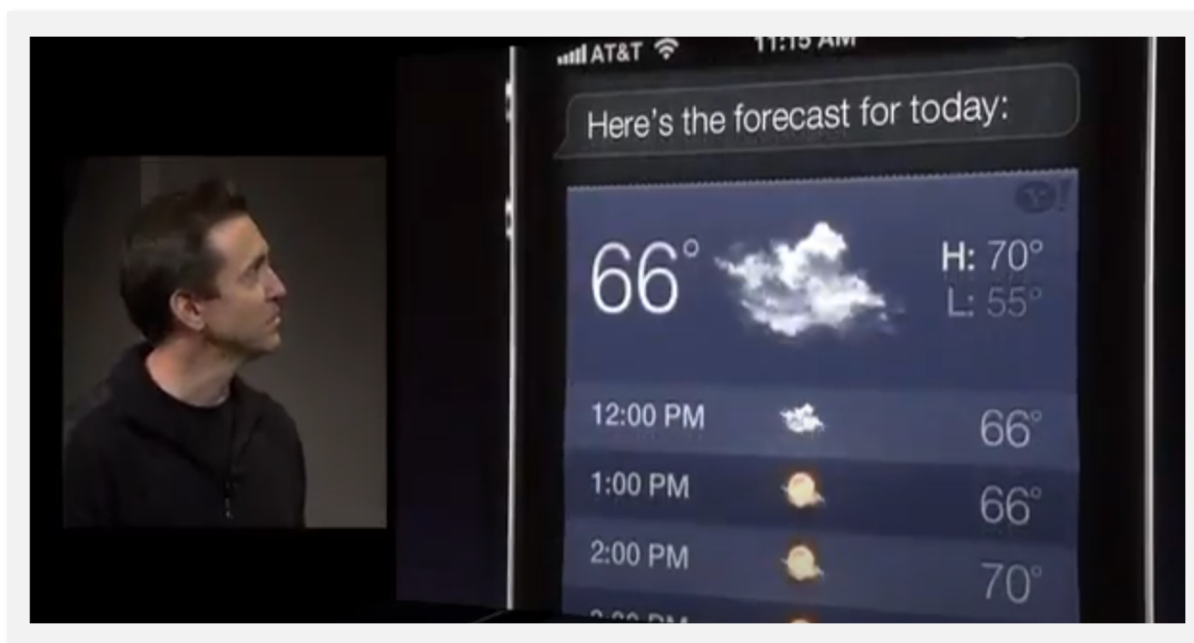
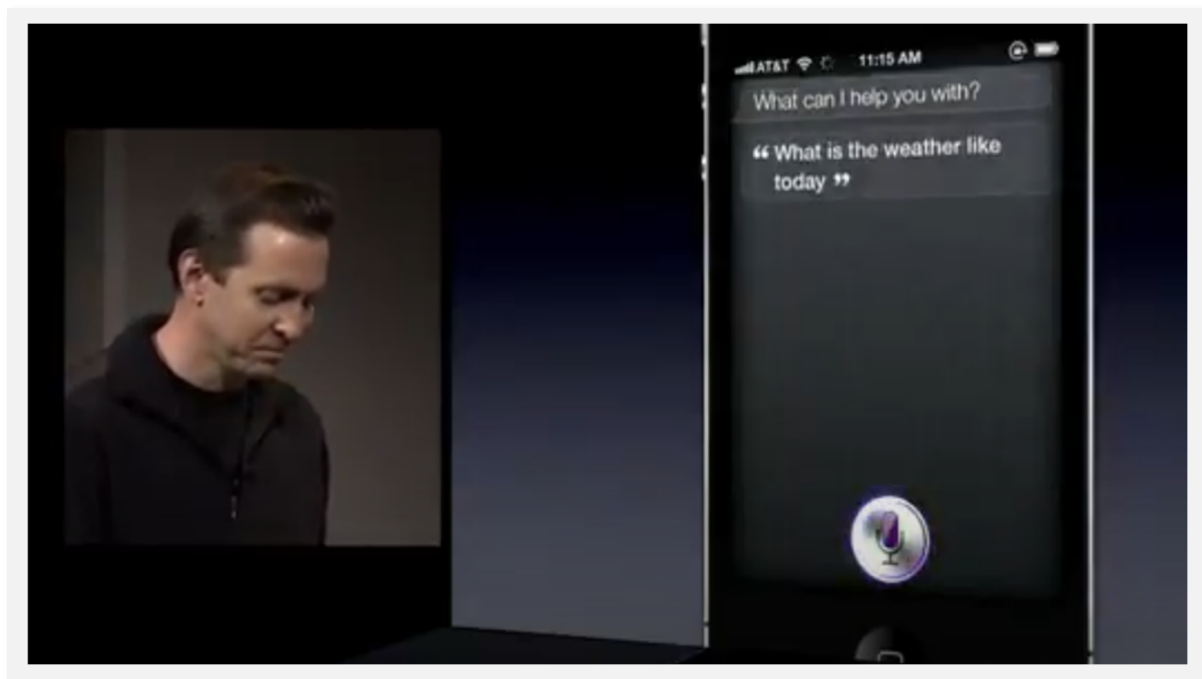
source, such as the Internet. Ex. 1005 (Jannard-740), [0161] (“[B]y providing voice control over system functionality, the user need not manipulate mechanical buttons, switches or controls on the support assembly 300 in order to select different support assembly communication, audio, video functions. Further, providing visual or video illustration of system commands and status can aid the wearer in navigating and operating the assembly.”), [0220], (“[T]he selector 610 may be a voice-activated switch, or a voice-activated control that controls selection between primary and secondary sources 602, 604 based upon verbal commands provided by the wearer.”), [0236] (“Audio network 700 includes a content source 702 coupled to an audio device 704 via communications link 706. The content source 702 is any of a variety of information sources, including, but not limited to, radio stations and/or signals, a satellite radio source, a computer, a network, a storage device, such as a hard drive, a memory card, or a USB (Universal Serial Bus) drive, an audio component (e.g., a stereo receiver, a CD player, a tuner, an MP3 player, a digital audio player, etc.), a database, and/or a communications-enabled device, such as a telephone (including a BLUETOOTH enabled telephone), a PDA, a BLACKBERRY, the Internet, or the like.”). For instance, Jannard-740 incorporates embodiments in which a user requests and listens to content, including an email, from a different device without manually operating that device. Ex. 1005 (Jannard-740), [0188] and [0237]

(incorporating by reference Ex. 1017 (Jannard-382)); Ex. 1017 (Jannard-382), [0295]-[0299].

E. Apple Filed Gruber and Incorporated Siri in iPhones in 2011

45. In 2010, Siri was released as a third-party app on Apple's App Store. Ex. 1041 (Siri - Encyclopaedia Britannica), 2. Siri was soon acquired by Apple, and in October 2011, Apple debuted a version of Siri that was integrated into the operating system of the iPhone 4S. Ex. 1041 (Siri - Encyclopaedia Britannica), 1-2. As part of the release for the iPhone 4S, Apple showcased a Siri demo live at a public Apple Special Event on October 4, 2011. Ex. 1021 (YouTube Siri Demo Screenshots³), 1-15. A POSITA would have been familiar with this Siri demo from its widespread public exposure and coverage. For instance, the demo demonstrated that Siri responded to verbal queries such as "What is the weather like today?":

³ Ex. 1021 is a series of screenshots of a YouTube video documenting this demo (available at <https://www.youtube.com/watch?v=SpGJNPShzRc>).



Ex. 1021 (YouTube Siri Demo Screenshots), 1-2. The demo further showed that Siri responded to “What time is it in Paris”; provided market performance in response to “How is the NASDAQ doing today”; recommended restaurants in

response to “Find me a great Greek restaurant in Palo Alto”; and provided navigation in response to “Give me directions to Hoover Tower.” Ex. 1021 (YouTube Siri Demo Screenshots), 3-7.

46. The demo also explained that Siri enabled users to speak to Siri through Bluetooth headsets:

[N]ow sometimes your phone is locked in your pocket and you're in a hands-free environment[.] [S]o you might have a Bluetooth headset on[,] and you receive a text message or an iMessage[.] [A]nd you hear it come in[,] but it's in your pocket and you don't want to take it out of your pocket[.] [S]o[,] with Siri[,] you can just ask Siri to read it to you[.] [S]o you can just press on that button on the Bluetooth headset[—]I'll simulate it by pressing the home button here[,] but this can all be done handsfree[—]and just ask Siri[,] [“]read my new message[.][”]

Ex. 1026 (YouTube Siri Demo Transcript), 6-8.

47. Aside from the October 2011 demo, Apple filed Gruber in January 2011, which published as U.S. Patent App. Publ. No. 2012/0016678, disclosing the functionality and underlying technology. Ex. 1024 (Gruber), Front Page. Gruber describes electronic devices, including smartphones, that function as intelligent automated assistants. Ex. 1024 (Gruber), [0073], [0138], Abstract. According to

Gruber, its assistant “engages with the user in an integrated, conversational manner,” and, through a natural language dialogue, “automate[s] the use of data and services available over the Internet.” Ex. 1024 (Gruber), [0008], [0120]-[0124].

48. Gruber explains that Siri responds to requests for a restaurant:



FIG. 2

Ex. 1024 (Gruber), Fig. 2. As illustrated, the user speaks a query for a romantic Italian restaurant near their office, and the phone displays the query as conversation bubble 101B. The assistant (Siri) then replies with a list of suggested restaurants (101C, 101D). Ex. 1024 (Gruber), [0161].

49. Gruber also explains that Siri responds to requests about the weather:

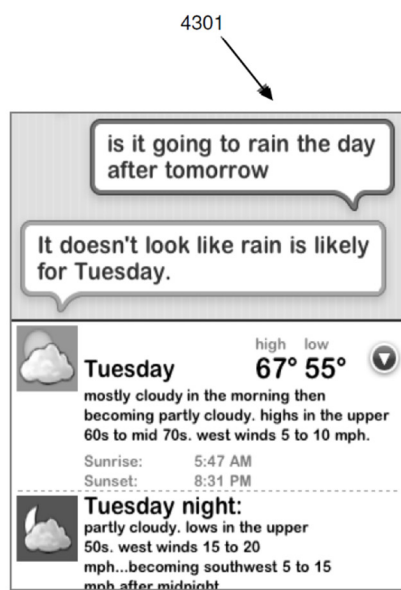


FIG. 43A

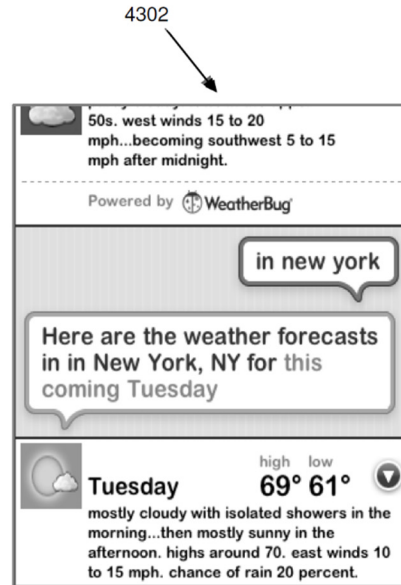
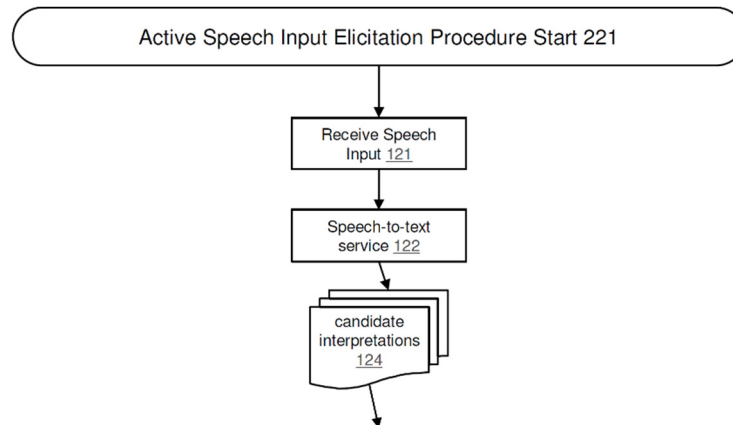


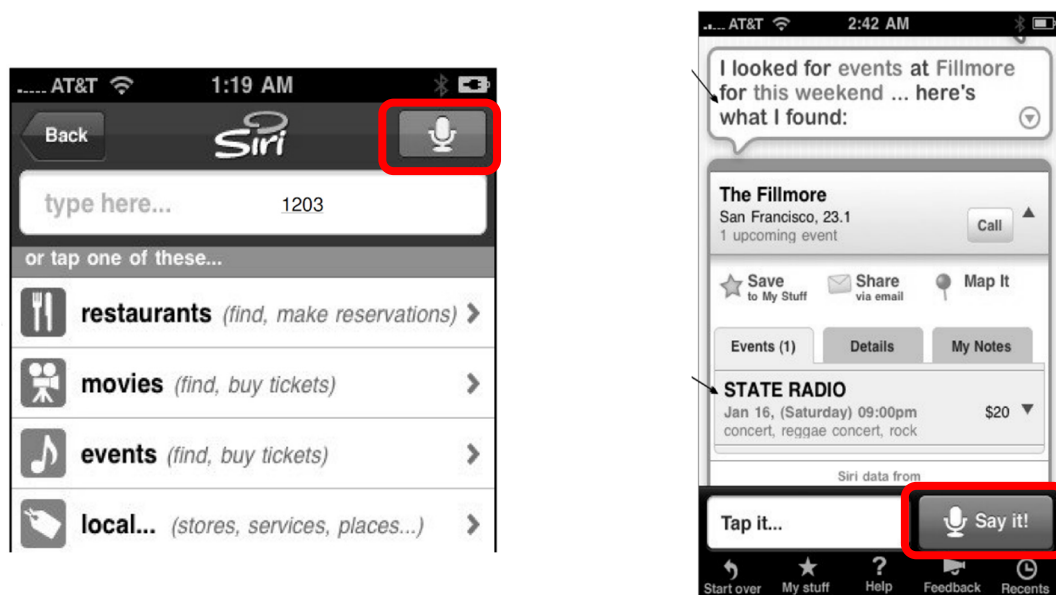
FIG. 43B

Ex. 1024 (Gruber), [0627], Figs. 43A-43B.

50. Gruber also includes a section that is titled “Active Speech Input Elicitation.” Ex. 1024 (Gruber), [0309]-[0327]. In this section, Gruber discusses Figure 22 and discloses that a user can speak a query to input it. Ex. 1024 (Gruber), [0309]-[0327].



Ex. 1024 (Gruber), Fig. 22 (excerpt). Gruber further includes other figures that show user interfaces with a speech-input button:



Ex. 1024 (Gruber), Figs. 12 (excerpt), 21 (excerpt).

51. Gruber discloses that its assistant may receive a voice input from a user from “mobile devices such as mobile telephones and tablets” and through “Bluetooth headsets.” Ex. 1024 (Gruber), [0139]-[0146]. Gruber also discloses that its assistant can search the Internet to provide a response. For instance, Gruber’s assistant “may

combine information about products from several review sites, check prices and availability from multiple distributors, and check their locations and time constraints, and help a user find a personalized solution to their problem.” Ex. 1024 (Gruber), [0021]. Gruber’s assistant may also access the Internet to respond about movies, hotels, restaurants, “and any other source of entertainment or social interaction which may be found on the Internet.” Ex. 1024 (Gruber), [0021]; *see also* Ex. 1024 (Gruber), [0021], [0121]-[0124]. According to Gruber, its assistant advantageously provides the “ability to solve user problems by invoking services on their behalf over the Internet.” Ex. 1024 (Gruber), [0129]. The figures in Gruber demonstrate this, with the assistant responding to user queries by retrieving information from websites such as Yelp (Figure 2), Yahoo! (Figure 27), Google Maps (Figure 27), and WeatherBug (Figure 43B).

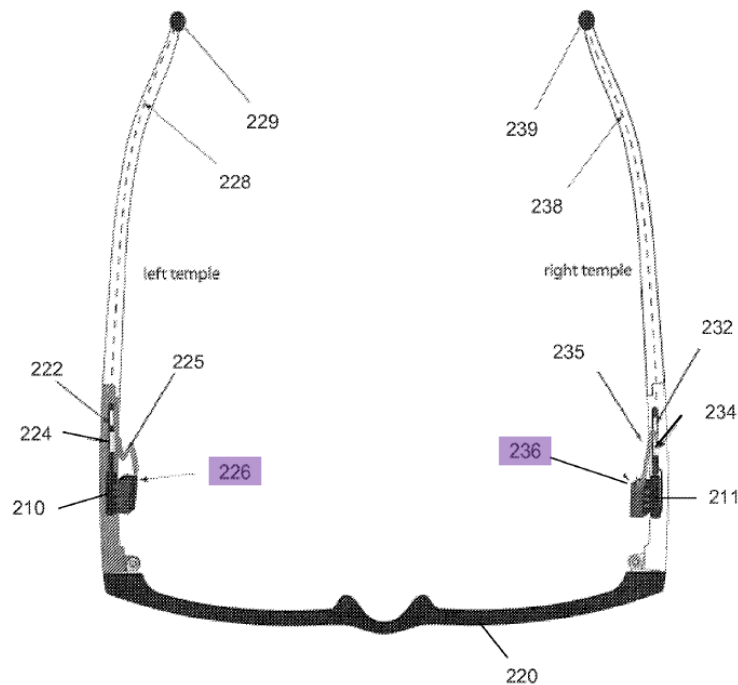
III. THE ’138 PATENT

A. Summary of the ’138 Patent

1. The Specification

52. The ’138 patent discloses electronic eyewear, such as electro-active spectacles or eyeglasses. Ex. 1001 (’138 patent), 14:19-21. According to the ’138 patent, its “electronic eyewear system with a docking station can be easily joined with a plurality of electronic application modules.” Ex. 1001 (’138 patent), 1:66-2:4. These application modules can be “sized to fit within a recess in an eyewear

frame [or] attached external to the eyewear frame.” Ex. 1001 (’138 patent), 9:28-31. The ’138 patent’s Figure 3 shows application modules 226, 236 (purple) which connect to the left and right temples of an eyewear.



Ex. 1001 (’138 patent), Fig. 3.

53. The application modules facilitate interchangeable applications and “may include one or more electronic device(s) configured to perform one or more functions such as, for example, of audio playback, audio recording, ... alertness monitoring, ... [and] wireless communication (e.g. cellular phone, Bluetooth, WiFi, IR, etc.) ... to a user via the eyewear.” Ex. 1001 (’138 patent), 9:32-43, 2:7-9.

54. The application modules can incorporate a wireless chip that wirelessly communicates with other devices, facilitating different functions. Ex. 1001 (’138 patent), 19:4-11. Such communication permits the eyewear to send a verbally query

or a password or for another device to recognize and respond to the presence of the eyewear's wearer based on the communication. Ex. 1001 ('138 patent), 20:2-13, 19:50-55, 19:32-50.

55. The '138 patent discloses an application module can, "by way of a miniature microphone, voice recognition chip ... and also a wireless chip or circuit," communicate with a smart phone "to address any number of questions of the wearer." Ex. 1001 ('138 patent), 20:2-13. The '138 patent provides limited additional disclosure on this other than to state that one example is "to look up the weather on the internet wirelessly and then answer the question about the weather through the speakers or ear buds located within the inventive eyewear." Ex. 1001 ('138 patent), 20:13-16.

2. The Claims

56. The '138 patent includes 20 claims, of which three (claims 1, 11, and 22) are independent. I offer opinions regarding all 20 claims in this declaration.

57. Claim 1 is set forth below:

Claim 1	
1[pre]	Eyewear comprising:
1[a]	an eyewear frame having a first temple and a second temple;
1[b]	a speaker coupled to the eyewear frame; and
1[c]	an application module mechanically coupled to the eyewear frame and operably coupled to the speaker, the application module comprising:
1[d]	a microphone to receive a verbal query from a wearer of the eyewear; and a Bluetooth chip, operably coupled to the microphone and the speaker, to connect to a Bluetooth-enabled external device, to transmit the verbal query to the Bluetooth-enabled external device, to receive a response to the verbal query from the Bluetooth-enabled external device, and to provide the response to the wearer via the speaker,
1[e]	wherein the verbal query causes the Bluetooth-enabled external device to obtain the response to the verbal query via the Internet by searching the Internet for the response to the verbal query.

58. Claim 6 is set forth below:

Claim 6	
6[pre]	A method comprising:
6[a]	receiving, by a microphone mechanically coupled to an eyewear frame, a verbal query from a person wearing the eyewear frame;
6[b]	transmitting, by a wireless chip mechanically coupled to the eyewear frame and operably coupled to the microphone, the verbal query to an external device, the verbal query causing the external device to search the internet for a response to the verbal query;
6[c]	receiving, by the wireless chip, the response to the verbal query from the external device; and
6[d]	providing the response to the verbal query to the person wearing the eyewear frame via a speaker operably coupled to the wireless chip.

59. Claim 12 is set forth below:

Claim 12	
12[pre]	Eyewear comprising:
12[a]	an eyewear frame having a first temple and a second temple; and
12[b]	an application module mechanically coupled to the eyewear frame and operably coupled to a speaker, the application module comprising:
12[c]	a microphone to receive a verbal query from a wearer of the eyewear; and a processor, operably coupled to the microphone and the speaker, to transmit the verbal query to an external device, receive a response to the verbal query from the external device, and provide the response to the wearer via the speaker,
12[d]	wherein the verbal query causes the external device to obtain the response to the verbal query by searching the Internet for the response to the verbal query.

B. Priority Date of the '138 Patent

60. The earliest possible priority date for claims 1-7 and 9-20 of the '138 patent is April 10, 2012, which is the filing date of the '138 patent's second-earliest priority provisional application. These claims are not entitled to priority as of January 6, 2012, because the provisional application filed on that date (application 61/583,940) fails to sufficiently support the claims. Notably, provisional application 61/583,940 does not include the terms "search," "Internet," "verbal," and "query." Ex. 1027 (provisional application 61/583,940), 14-48. Moreover, provisional application 61/583,940 does not disclose the independent claim limitation "by

searching the Internet for the response to the verbal query” using alternative wording. Ex. 1027 (provisional application 61/583,940), 14-48. This confirms that provisional application 61/583,940 fails to support the limitation “by searching the Internet for the response to the verbal query” in independent claim 1, as well as similar limitations in the other independent claims.

61. Claim 8 includes the limitation: “pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device.” However, none of the priority applications for the ’138 patent mentions or otherwise describes “pairing” or its relative timing. Consequently, for Ground 3 (combination of Thiel, Gruber, and Lu) discussed in Section VII below, I have been asked to treat the effective filing date for claim 8 as March 16, 2020—the ’138 patent’s actual filing date. For other grounds, I understand the references are prior art even if the claims are entitled to a priority date of January 6, 2012, or April 10, 2012.

C. Claim Construction

62. It is my understanding that in determining whether a patent claim is obvious in view of the prior art, the Patent and Trademark Office construes the claim by giving the claim terms their plain and ordinary meaning, as they would have been understood by a person of ordinary skill in the art at the time of the invention in view of the intrinsic record (patent claims, patent specification, and file history). For the purposes of this review, and to the extent necessary, I have interpreted each claim

term in accordance with its plain and ordinary meaning as it would have been understood by a person of ordinary skill in the art at the time of the invention, in view of the intrinsic record.

63. I understand that a patent and its prosecution history are considered “intrinsic evidence” and are the most important sources for interpreting claim language in a patent. I also understand that in reading the claim, I must not import limitations from the specification into the claim terms; in other words, I must not narrow the scope of the claim terms by implicitly adding disclosed limitations that have no express basis in the claims. The prosecution history of related patents and applications can also be relevant.

64. I understand that sources extrinsic to a patent and its prosecution history (such as dictionary definitions and technical publications) may also be used to help interpret the claim language, but that such extrinsic sources cannot be used to contradict the unambiguous meaning of the claim language that is evident from the intrinsic evidence.

65. Unless expressly stated herein, I have applied the plain and ordinary meaning of the claim terms, which I understand is the meaning that a person of ordinary skill in the art would have given to terms at the time of the claimed invention based on a review of the intrinsic evidence.

IV. THE PRIOR ART

66. In this declaration, I rely on several references that are prior art to the '138 patent's claims. These references include Thiel (U.S. Patent App. Publ. No. 2010/0272304) (Ex. 1028), Gruber (U.S. Patent App. Publ. No. 2012/0016678) (Ex. 1024), Maddern (U.S. Patent App. Publ. No. 2010/0330908) (Ex. 1029), Lu (U.S. Patent App. Publ. No. 2019/0081937) (Ex. 1031), Jannard-740 (U.S. Patent App. Publ. No. 2012/0105740) (Ex. 1005), and Osterhout (U.S. Patent App. Publ. No. 2011/0214082) (Ex. 1006).

V. THIEL AND GRUBER RENDER OBVIOUS CLAIMS 1-20

A. Claim 1

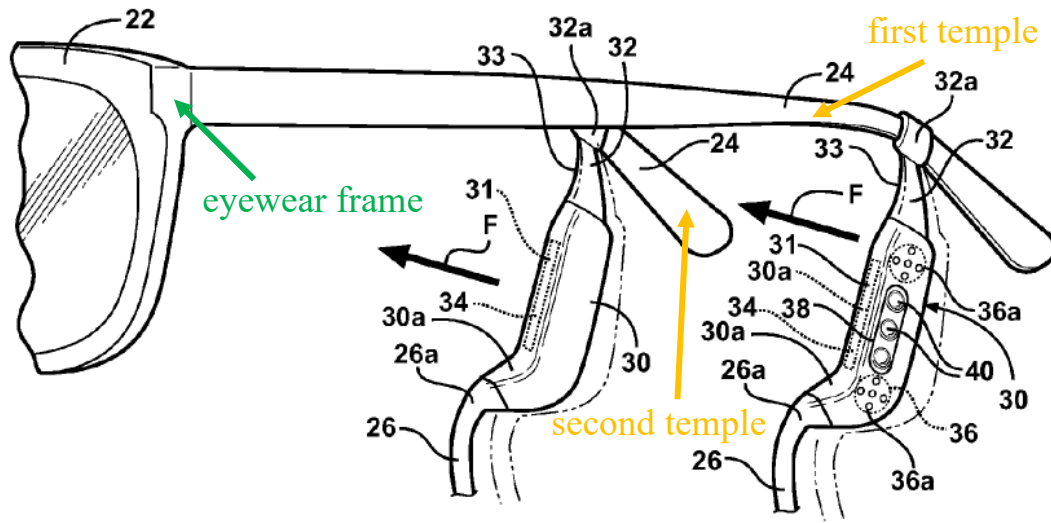
1. Preamble

67. The preamble of claim 1 recites: "Eyewear." Thiel discloses an eyewear retention device that retains eyewear. Ex. 1028 (Thiel), [0024] ("The eyewear retention device is used to retain eyewear, such as (without limitation) glasses, sunglasses, safety glasses or shooting glasses, on a user's head or around a user's neck."); *see also* Ex. 1028 (Thiel), Title, Abstract, [0010]-[0012], [0024].

2. Limitation 1[a]: "an eyewear frame having a first temple and a second temple"

68. Thiel discloses limitation 1[a]. Figure 3 illustrates that the eyewear in Thiel includes an eyewear frame (green) having first and second temples (orange). Ex. 1028 (Thiel), [0024] ("A user can removably connect earpieces of an eyewear

device such as glasses to the eyewear retention device (for example via the illustrated earpiece holders 16 and 17) and wear the retention device such that the device is placed around the user's head or neck to help keep the eyewear in place while being worn by the user.”), [0038] (“An eyewear retention device 20 is adapted to be connected to earpieces 24 of eyewear such as (but not limited to) sunglasses 22.”); *see also* Ex. 1028 (Thiel), [0003], [0006]-[0009].



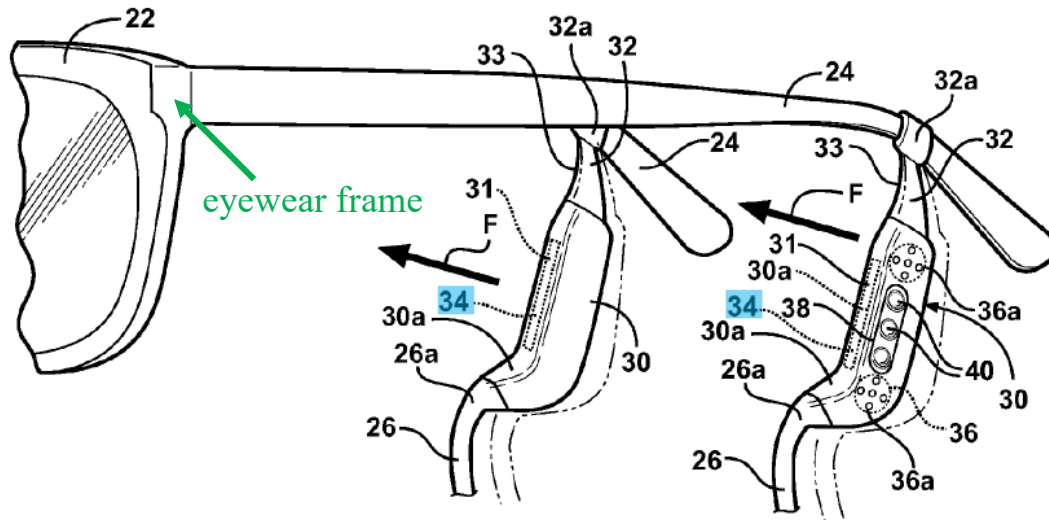
Ex. 1028 (Thiel), Fig. 3. An eyewear frame, like Thiel's, holds lenses through which the wearer sees. Given this, Thiel discloses an “eyewear frame” as the phrase is used in the '138 patent. Ex. 1001 ('138 patent), 8:17-24.

3. **Limitation 1[b]: “a speaker coupled to the eyewear frame”**

69. Thiel discloses limitation 1[b]. Thiel's eyewear retention device includes “a sound transmitter located on a forward-facing inner edge of the audio

device.” Ex. 1028 (Thiel), [0012]; *see also* Ex. 1028 (Thiel), [0042]-[0043], [0049]. This sound transmitter “may transmit the audio signals by air conduction.” Ex. 1028 (Thiel), [0011]; *see also* Ex. 1028 (Thiel), [0030]. A POSITA would have understood that Thiel’s sound transmitter, which transmits by air conduction, is a speaker. Ex. 1028 (Thiel), [0006] (“The audio speakers are intended to float immediately adjacent the user’s ear canal entrances, or to be used as in-ear speakers.”), [0008] (“Walker discloses a tubular strap with tubular ends engaging the ends of the earpieces on a pair of eyeglasses, a miniature radio clipped to one of the tubular earpiece-receiving ends, and an audio speaker on the exterior of each of the tubular ends, the speakers mounted on auxiliary tubes on the exterior of the tubular ends. Speaker wire connecting the two speakers runs through the tubular strap, but is not present in the earpiece-receiving tubular ends, so that the earpieces do not rub the wire when the earpieces are inserted and removed in the strap’s tubular ends. The speakers appear to be of the in-ear “bud” type.”), [0004]; *see also* Ex. 1028 (Thiel), [0043] (“[S]ound transmitter 34 may be any type of audio transmitter or transceiver.”).

70. Thiel shows in Figure 3 sound transmitters 34 (blue) of its eyewear retention device coupled via connectors 32 (i.e., semi-rigid rubber or rubber-like or relatively soft polymer members with tubular sockets or grommets 32a) to the eyewear frame:



Ex. 1028 (Thiel), Fig. 3; *see also* Ex. 1028 (Thiel), [0039] (“The illustrated example of eyewear retention device 20 uses two audio devices 30, one for each ear.”), [0042] (“Each audio device 30 has a sound transmitter 34 located on a forward-facing inner face or edge 31 of the audio device.”). According to the ’138 patent, “‘coupled’ may refer to any manner of connecting two components together in any suitable manner, such as by way of example only: attaching (e.g. attached to a surface), disposing on, disposing within, disposing substantially within, embedding within, embedded substantially within, etc.,” and “coupled” need not be a fixed attachment.” Ex. 1001 (’138 patent), 7:47-65.

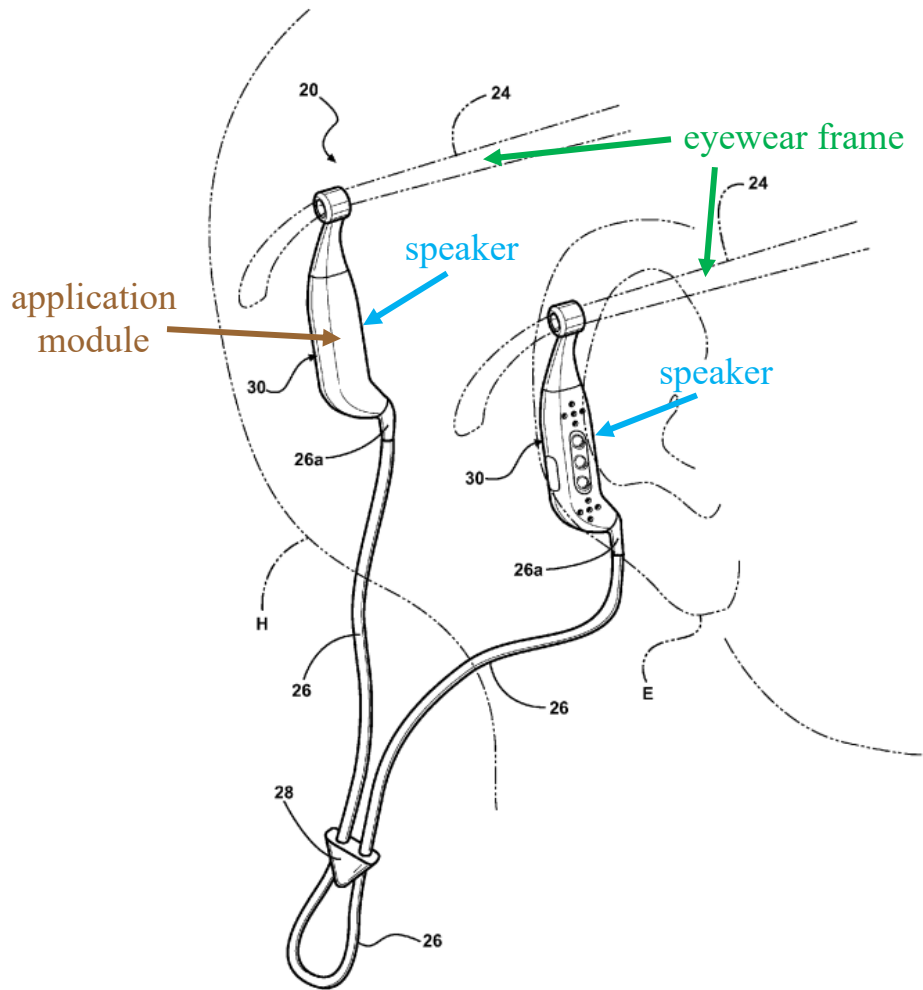
71. Therefore, Thiel discloses a speaker coupled to the eyewear frame.

4. **Limitation 1[c]: “an application module mechanically coupled to the eyewear frame and operably coupled to the speaker”**

72. Thiel discloses limitation 1[c]. The eyewear retention device in Thiel includes an audio device, which is contained in a housing and “adapted to play one

or more audio signals for transmission to one or more surfaces of a human auditory passage at a location proximate to and outside of the ear.” Ex. 1028 (Thiel), Abstract, [0011], [0031] (“Audio devices 4 and 5 are contained in housings 6. Housings 6 may be made of a flexible, comfortable material, such as rubber, but claimed subject matter is not so limited.”); *see also* Ex. 1028 (Thiel), [0049]. Such an audio device is an “application module” as the phrase is used in the ’138 patent. Ex. 1001 (’138 patent), 21:59-62.

73. Thiel’s audio device is shown in Figure 2, where the audio device is mechanically coupled to the eyewear frame. Ex. 1001 (’138 patent), 21:59-62; *see also* Ex. 1028 (Thiel), [0041] (“Audio device 30 is shown connected to earpiece 24 with a connector 32, in the illustrated example a semi-rigid rubber or rubber-like or relatively soft polymer member with a tubular socket or grommet 32a at an upper end, sized and shaped to securely receive the end of earpiece 24 inserted therein. Other types of connection may be used, and claimed subject matter is not limited to the illustrated connector example.”), [0024] (“A user can removably connect earpieces of an eyewear device such as glasses to the eyewear retention device (for example via the illustrated earpiece holders 16 and 17) and wear the retention device such that the device is placed around the user’s head or neck to help keep the eyewear in place while being worn by the user.”).



Ex. 1028 (Thiel), Fig. 2.

74. According to Thiel, the components of its audio device “may be operatively connected as needed by those skilled in the art to enable the receiver 44 to supply audio signals to sound transmitter 34 from a remote device such as an MP3 player or mobile phone or other device, and to receive audio signals and control signals from microphones 36 and control panel 38, respectively, and to transmit them to a remote device such as an MP3 player or mobile phone or other device.” Ex. 1028 (Thiel), [0049]; *see also* Ex. 1028 (Thiel), [0005], [0010]-[0011], [0026]-

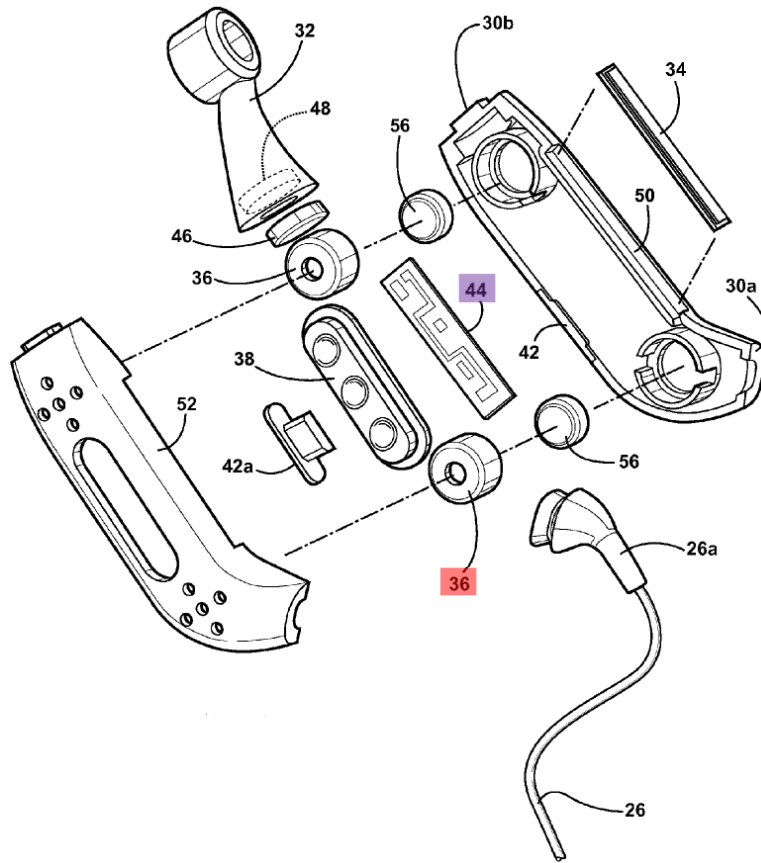
[0027], [0030]. The eyewear retention device in Thiel accordingly has “coupled” components, including an application module mechanically coupled to the eyewear frame and operably coupled to the speaker, per the broad usage of “coupled” in the ’138 patent. Ex. 1001 (’138 patent), 7:47-65.

75. As illustrated in Figure 2 above, Thiel discloses configurations in which its eyewear retention device includes two different audio devices, each independently coupled to the eyewear frame. Ex. 1028 (Thiel), Fig. 2; *see also* Ex. 1028 (Thiel), [0039]. Thiel provides that these configurations may include “[w]iring 60 for audio signals ... between audio devices 30 on opposite ends of strap 26 may exit the lower end 30a of the audio device and run through the interior of strap 26 (as illustrated, with strap 26 being tubular or hollow), or along the exterior of the strap.” Ex. 1028 (Thiel), [0049], Figs. 2-5; *see also* Ex. 1028 (Thiel), [0039], [0046], [0032], [0037]. Additionally, Thiel discloses that a transceiver of the eyewear retention device may be incorporated into just one of the two audio devices. Ex. 1028 (Thiel), [0039] (“In the illustrated example an audio signal receiver of the type described above in connection with FIG. 1 (including transceivers) is incorporated into at least one of the audio devices.”). These disclosures together confirm that a first audio device of Thiel’s eyewear retention device is operably coupled to transmit audio both to its own speaker and to the speaker of a second audio device of the eyewear retention device.

76. Therefore, Thiel discloses an application module mechanically coupled to the eyewear frame and operably coupled to the speaker.

5. **Limitations 1[d] and 1[e]: “a microphone to receive a verbal query from a wearer of the eyewear; and a Bluetooth chip, operably coupled to the microphone and the speaker, to connect to a Bluetooth-enabled external device, to transmit the verbal query to the Bluetooth-enabled external device, to receive a response to the verbal query from the Bluetooth-enabled external device, and to provide the response to the wearer via the speaker” and “wherein the verbal query causes the Bluetooth-enabled external device to obtain the response to the verbal query via the Internet by searching the Internet for the response to the verbal query”**

77. Thiel discloses limitation 1[d]. The audio device in Thiel can include one or more microphones 36 (red) and a Bluetooth type chip or chipset type receiver 44 (purple), as illustrated in Figure 5. Ex. 1028 (Thiel), [0043], [0046]-[0047], [0049]; *see also* Ex. 1028 (Thiel), [0027].



Ex. 1028 (Thiel), Fig. 5. These components, as I explained for limitation 1[c], “may be operatively connected as needed by those skilled in the art to enable the receiver 44 to supply audio signals to sound transmitter 34 from a remote device such as an MP3 player or mobile phone or other device, and to receive audio signals and control signals from microphones 36 and control panel 38, respectively, and to transmit them to a remote device such as an MP3 player or mobile phone or other device.” Ex. 1028 (Thiel), [0049]; *see also* Ex. 1028 (Thiel), [0043]-[0044], [0010], [0037], [0006]. Thiel’s microphone captures voice signals from the user, which may include voice commands. Ex. 1028 (Thiel), [0043]-[0044]. Thiel’s Bluetooth chip transmits

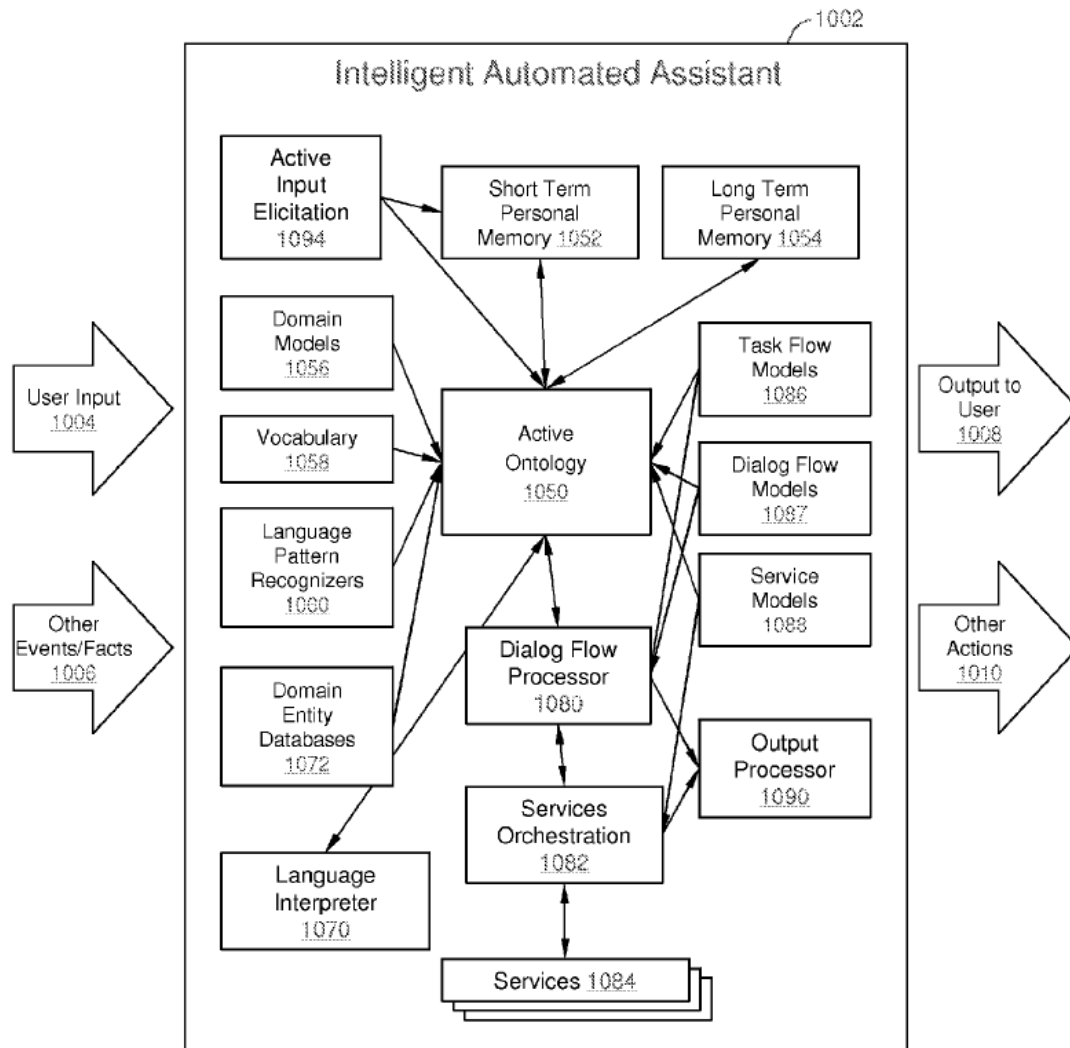
the voice commands from the user to a Bluetooth-enabled phone or other external device. Ex. 1028 (Thiel), [0043]-[0044]. This allows a user, for instance, to provide verbal instructions to initiate music playback on the phone, turn volume up or down, and request a new music track or playlist. Ex. 1028 (Thiel), [0044]. In turn, the phone in Thiel sends the requested audio content back to the Bluetooth chip, which provides the audio content to speakers for user playback. Ex. 1028 (Thiel), [0049].

78. Given this, Thiel discloses, as specified in limitation 1[d], that its application module comprises a microphone to receive a verbal query from a wearer of the eyewear, and a Bluetooth chip, operably coupled to the microphone and the speaker, to connect to a Bluetooth-enabled external device, to transmit the verbal query to the Bluetooth-enabled external device, to receive a response to the verbal query from the Bluetooth-enabled external device, and to provide the response to the wearer via the speaker.

79. The description in Thiel of using Bluetooth to communicate voice commands to external devices, such as phones, for requesting audio content represents a limited portion of Bluetooth's applications by the 2012 claimed priority date of the '138 patent. As I explained above, it was well known by the end of 2011 that Bluetooth headsets could be used with apps like Siri, allowing users to send verbal queries to phones, receive responses from the phones, and hear playback of the responses over speakers. *Supra* §II.

80. Gruber describes a Bluetooth-enabled external device, like a smart phone, that operates as an intelligent automated assistant. Ex. 1024 (Gruber), [0079] (“[V]arious types of interfaces may be provided such as, for example, ... Bluetooth™ ... and the like.”), [0139]-[0140] (“Examples of different types of input data/information which may be accessed and/or utilized by intelligent automated assistant 1002 may include ... : Voice input: from mobile devices such as mobile telephones and tablets, computers with microphones, Bluetooth headsets.”), [0073] (“[T]he intelligent automated assistant techniques disclosed herein may be implemented on hardware or a combination of software and hardware.”), Abstract; *see also* Ex. 1024 (Gruber), [0075] (“[T]here is shown a block diagram depicting a computing device 60 suitable for implementing at least a portion of the intelligent automated assistant features and/or functionalities disclosed herein. Computing device 60 may be, for example, ... mobile computing device (e.g., personal digital assistant, mobile phone, smartphone, laptop, tablet computer, or the like) Computing device 60 may be adapted to communicate with other computing devices, such as clients and/or servers, over a communications network such as the Internet, using known protocols for such communication, whether wireless or wired.”).

81. Gruber shows in Figure 1 an example of one such device:



Ex. 1024 (Gruber), Fig. 1. In one example, Gruber explains that a user can request weather information:

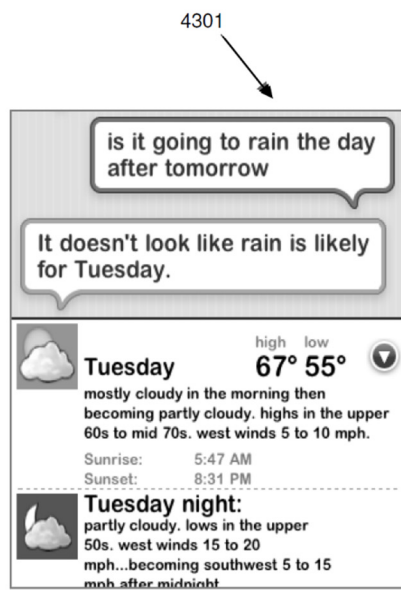


FIG. 43A

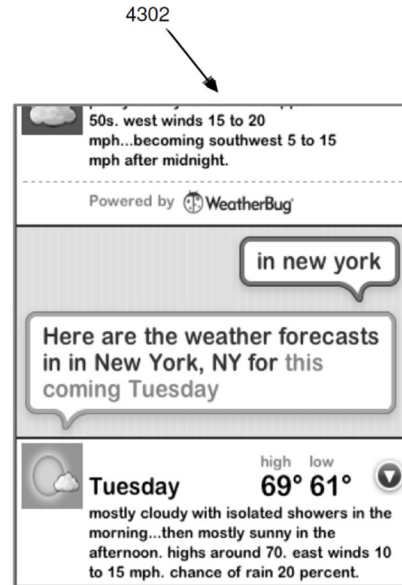


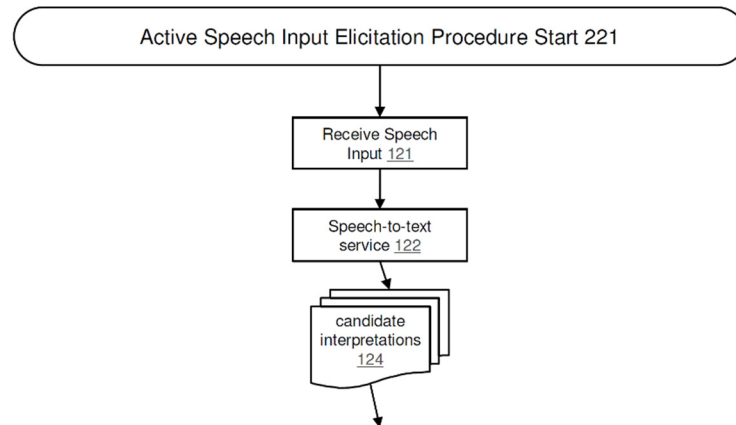
FIG. 43B

Ex. 1024 (Gruber), Figs. 43A-43B, [0627]. In turn, Gruber's assistant responds to the request, such as by providing a weather forecast. Ex. 1024 (Gruber), Figs. 43A-43B, [0627].

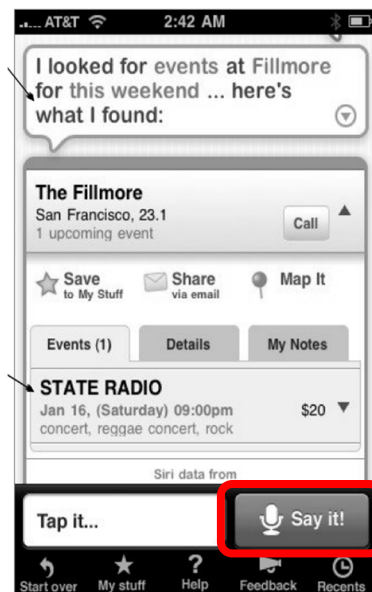
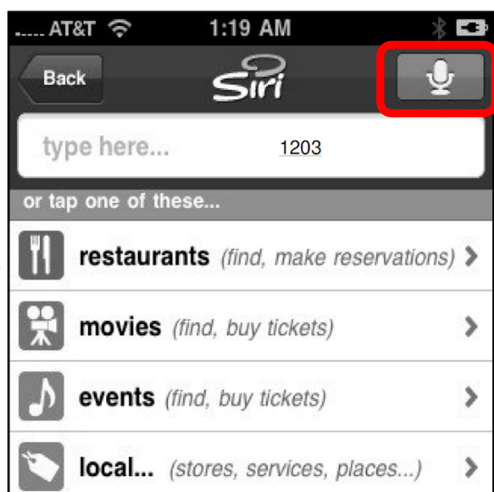
82. Gruber provides that its device enables operations via natural language dialog and processes voice input from other devices, including "Bluetooth headsets." Ex. 1024 (Gruber), [0119]-[0124], [0139]-[0140], [0647]. This configuration facilitates the use of voice-based communication methods in which speech is used for inputs and also outputs, "allowing for an embodiment of the assistant for the blind." Ex. 1024 (Gruber), [0090] ("[T]he system of the invention can be implemented using voice-based communication methods, allowing for an embodiment of the assistant for the blind whose equivalent of a web browser is

driven by speech and uses speech for output.”); *see also* Ex. 1024 (Gruber), [0152]-[0155] (“Speech output, may include one or more of the following (or combinations thereof): Synthesized speech[,], Sampled speech[,], Recorded messages[.]”), [1024]. Gruber explains that its device may “automat[e] the use of data and services available over the Internet to discover, investigate, select among, reserve, and otherwise learn about things to do[,], places to go[,], places to eat or drink[,], times and places to meet others, and any other source of entertainment or social interaction which may be found on the Internet.” Ex. 1024 (Gruber), [0021]; *see also* Ex. 1024 (Gruber), [0010] (“[T]he intelligent automated assistant systems of the present invention can perform any or all of: actively eliciting input from a user, interpreting user intent, disambiguating among competing interpretations, requesting and receiving clarifying information as needed, and performing (or initiating) actions based on the discerned intent. Actions can be performed, for example, by activating and/or interfacing with any applications or services that may be available on an electronic device, as well as services that are available over an electronic network such as the Internet.”), [0120]-[0124], [0129] (“The ability to solve user problems by invoking services on their behalf over the Internet, using APIs. ... [S]ome embodiments of automated assistants 1002 described herein may automate research and problem-solving activities. The ability to invoke multiple services for a given request also provides broader functionality to the user than is achieved by visiting a

single site, for instance to produce a product or service or find something to do.”), Claim 44 (“[T]he services orchestration component calls at least one service for performing an operation via the Internet.”). Inputting of a verbal query is illustrated by Gruber’s Figure 22. Ex. 1024 (Gruber), [0309]-[0327].



Ex. 1024 (Gruber), Fig. 22 (excerpt). Gruber also describes user interfaces that have speech-input buttons:



Ex. 1024 (Gruber), Fig. 12 (excerpt). Ex. 1024 (Gruber), Fig. 21 (excerpt).

83. In light of this discussion in Gruber that the user may interact with Gruber’s assistant, as well as a POSITA’s knowledge of Bluetooth headsets, a POSITA would have found it obvious that Gruber contemplated using a headset that has a microphone and Bluetooth chip, as limitation 1[d] specifies and Thiel exemplifies.

84. Further, limitation 1[e] is disclosed by Gruber. Gruber discloses that its assistant determines responses to queries from users by looking up information via the Internet. In one example, Gruber’s assistant “may combine information about products from several review sites, check prices and availability from multiple distributors, and check their locations and time constraints, and help a user find a personalized solution to their problem.” Ex. 1024 (Gruber), [0021]. The assistant

also retrieves information from the Internet to output responses about movies, hotels, restaurants, “and any other source of entertainment or social interaction which may be found on the Internet.” Ex. 1024 (Gruber), [0021]; *see also* Ex. 1024 (Gruber), [0121]-[0124]. According to Gruber, advantages of its assistant include the “ability to solve user problems by invoking services on their behalf over the Internet.” Ex. 1024 (Gruber), [0129]. This is shown in multiple figures in Gruber, where its assistant responds to user queries by obtaining information via the Internet from various sites, such as Yelp (Figure 2), Yahoo! (Figure 27), Google Maps (Figure 27), and WeatherBug (Figure 43B). *See also* Ex. 1024 (Gruber), [0010], [0120]-[0124], [0129], Claim 44.

85. A POSITA would have been motivated to combine Thiel’s Bluetooth-enabled eyewear with Gruber’s device operating as an assistant (e.g., a smartphone running Siri) and had a reasonable expectation of success in doing so. Thiel compares its application module to a Bluetooth headset (Ex. 1028 (Thiel), [0005]), while Gruber references using its device with headsets, such as Bluetooth headsets (Ex. 1024 (Gruber), [0658], [0140]). As I explained above, Thiel provides that its Bluetooth-enabled eyewear communicates verbal queries to an external device, such as a mobile phone, which responds with requested audio content; Gruber provides that its external device, such as a mobile phone, operates as an assistant to retrieve information from the Internet responsive to verbal queries provided via a Bluetooth

headset. A POSITA would have been familiar with using a Bluetooth headset to communicate with an external device, such as a phone operating as Gruber's assistant. Moreover, as I explained in Section II.E, a POSITA would have been familiar with the Siri demo in October 2011 and understood that Siri running on the iPhone was usable with a Bluetooth headset.

86. A POSITA would have understood that combining Thiel and Gruber would have been a combination of prior-art elements from Thiel and Gruber according to known methods, yielding predictable and already-demonstrated results. This combination would have represented nothing more than a simple substitution of Gruber's device operating as an assistant (e.g., a phone running Siri) for the external device (e.g., phone) discussed in Thiel, with which the eyewear module in Thiel communicates, producing predictable results. Additionally, a POSITA would have been motivated to combine Thiel with Gruber to obtain the benefits disclosed in Gruber and augment the functionality of Thiel's eyewear module to include abilities in addition to enabling user requests and control (e.g., of audio content). This combination would have enabled Thiel's eyewear module to retrieve answers to verbal queries by users on many topics, such as weather, nearby restaurants, and directions. Ex. 1024 (Gruber), [0120]. This combination would generally have done nothing more than arrange known elements with each performing the same function it had been known to perform, augmenting the functionality of Thiel's eyewear

module, and provide results that were known to a POSITA from the commonplace use of Bluetooth headsets to communicate with iPhones running Siri.

87. A POSITA would have reasonably expected success in constructing and using this combination because this would have required at most minimal software and/or hardware changes to Thiel's application module and/or external device. Such software and/or hardware changes would not have been difficult and would have been within the capabilities of a POSITA in view of Gruber. This conclusion is further supported by the fact that all iPhones were able to use Siri upon its release without any hardware modifications, requiring only software changes to the "connected device." Moreover, millions of existing Bluetooth headsets on the market were compatible with Siri without any need for hardware adjustments.

88. Therefore, Thiel and Gruber render obvious claim 1.

B. Claims 2, 3, and 4

89. Claims 2, 3, and 4 each depend from claim 1. Claim 2 recites "wherein the Bluetooth-enabled external device is configured to control an external audio device based at least in part on an instruction from the wearer." Claim 3 recites "wherein the Bluetooth-enabled external device is configured to control an external video device based at least in part on an instruction from the wearer." Claim 4 recites "wherein the Bluetooth-enabled external device is configured to control light and/or

temperature in an environment of the wearer based at least in part on preferences of the wearer.”

90. These dependent claim limitations are disclosed by Gruber. According to Gruber, its intelligent automated assistant, responsive to user instructions, “may be configured, designed, and/or operable to provide various different types of operations, functionalities, and/or features, such as ... operating devices locally or remotely (e.g., ... controlling light and temperature, ... playing music or video ... and the like).” Ex. 1024 (Gruber), [0123]; *see also* Ex. 1024 (Gruber), [0021]. This indicates that a user may instruct Gruber’s assistant to control an external device (e.g., device operating remotely) to initiate or stop playing music or video on an external device and that a user may implement the user’s preferences on lighting and temperature by instructing the assistant to control light or temperature or both. This disclosure in Gruber applies to any user, including one that is wearing Thiel’s eyewear module. Moreover, despite these dependent claims not requiring a wearer of an eyewear module like Thiel’s to communicate a user’s instructions (e.g., for controlling music, video, light, or temperature) through a Bluetooth connection between the eyewear module and Gruber’s device operating as the assistant, the wearer could communicate these instructions from the eyewear module through such a Bluetooth connection.

91. Therefore, Thiel and Gruber render obvious claims 2, 3, and 4.

C. Claim 5

92. Claim 5 depends from claim 1. Claim 5 recites “wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip.”

93. According to Thiel, its application module (audio device) can have multiple different “controls 38 operable by the user.” Ex. 1028 (Thiel), [0044]. Thiel discloses that such controls can include buttons which are manually operated by a user, or “[c]ontrols 38 may also be voice-activated.” Ex. 1028 (Thiel), [0044]. A POSITA would have been motivated to implement such voice activation functionality by incorporation of a voice recognition chip in Thiel’s application module and coupling of the voice recognition chip to the microphone and the Bluetooth chip. To implement the voice activation of controls disclosed in Thiel, voice recognition processing would have been needed to identify which control the user intends to activate. Such chips were readily available on the market in modular form and provided the POSITA an “off the shelf” solution that offered greater efficiency and reduced costs compared to developing a custom component for voice recognition. Incorporating the voice recognition chip and operably coupling it to the microphone and Bluetooth chip involves the use of a known technique (using off-the-shelf voice recognition chip to implement voice-activation functionality) to improve a known device and method (Thiel’s application module with voice-

activated controls) that is ready for improvement and yields predictable results (eyewear application module with voice recognition chip for facilitating controls that are voice-activated). As confirmed by Caldron (Ex. 1019), which published in 2001, a POSITA would have commonly used and been motivated to incorporate a voice recognition chip for voice functionality. Ex. 1019 (Caldron), 1:9-13 (“Currently, voice operated functions using the latest voice recognition technologies are limited to a handful of applications, such as toys, appliances, some computers, voice dictation, cellular phones, and voice control of one’s home. Most of these applications use voice recognition technology running on a computer or voice recognition chip technology.”); *see also* Ex. 1020 (Blum), 19:28-20:1 (disclosing use of “voice recognition chip”). A POSITA would have had a reasonable expectation of success of incorporating and coupling the voice recognition chip because the voice recognition chip is an off-the-shelf solution providing voice functionality for a device with electronic components like a microphone and Bluetooth chip. *See also* Ex. 1019 (Caldron), 1:9-13; Ex. 1020 (Blum), 19:28-20:1 (disclosing use of “voice recognition chip”); Ex. 1012 (Oh), 3:52-64.

94. Therefore, Thiel and Gruber render obvious claim 5.

D. Claim 6

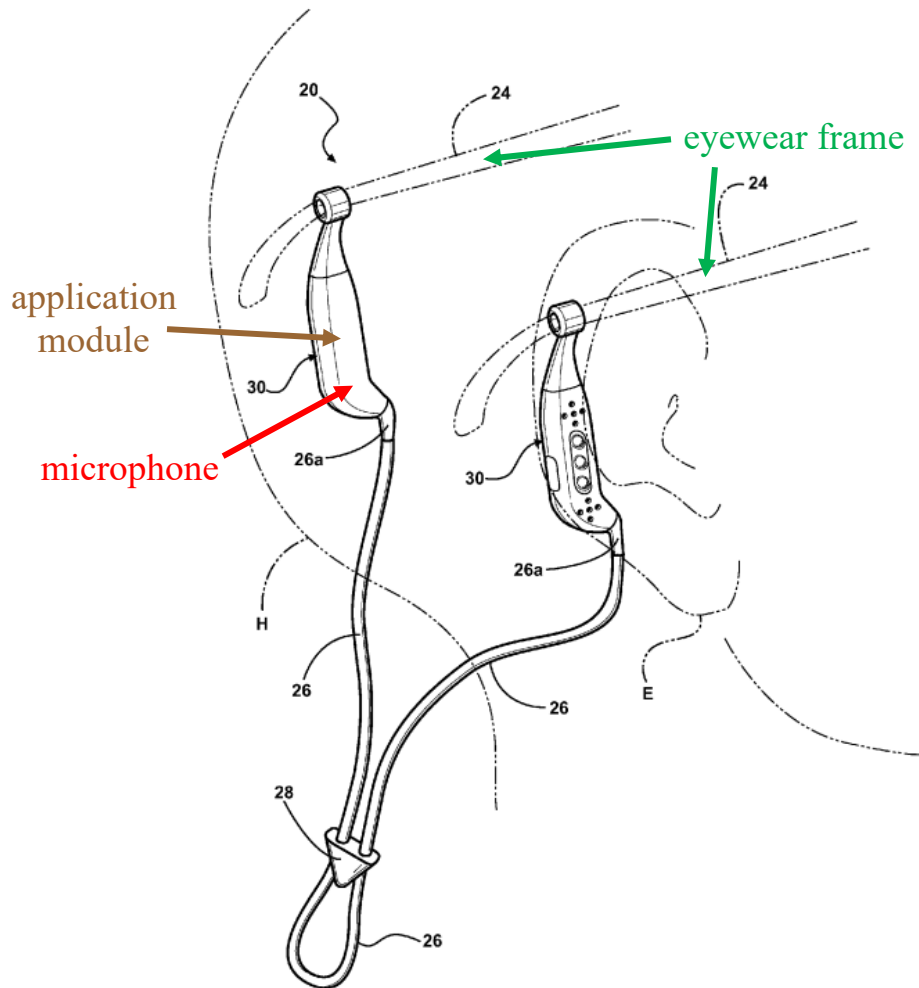
1. Preamble

95. The preamble of claim 1 recites: “[a] method.” Thiel discloses methods. Ex. 1028 (Thiel), [0013] (“Claimed subject matter, however, as to structure, organization and method of operation, together with objects, features, and advantages thereof, may best be understood by reference to the following detailed description if read with the accompanying drawings.”), [0022] (“[N]umerous specific details are set forth in order to provide a thorough understanding of the invention as defined in the claimed subject matter, and as an example of how to make and use the invention. ... In other instances, well-known methods, procedures, and components have not been described in detail.”), [0037] (“One method by which the eyewear retention device may be used is by connecting strap 1 to the earpieces of an eyewear device.”), [0043] (“If a transceiver type, associated audio device 30 is provided with one or more microphones 36 located on the audio device 30 to receive voice signals from the user, for example through openings 36 a or other sound-transmissive regions or surfaces on the audio, and to convert and/or transmit the voice signals to transmitter 34 for communication to a remote device, for example the transmitter using a Bluetooth wireless link or other wireless communication methods and devices to connect to an MP3 player or mobile phone for music and/or phone calls. Transmitter 34 may be capable of communicating with more than one

type of remote device, or of using more than one type of wireless communication method.”).

2. **Limitation 6[a]: “receiving, by a microphone mechanically coupled to an eyewear frame, a verbal query from a person wearing the eyewear frame”**

96. Limitation 6[a] is disclosed by the combination of Thiel and Gruber for the reasons I explained for limitations 1[c] and 1[d] and because Thiel’s application module includes a microphone that is mechanically coupled to an eyewear frame, as shown in Figure 2. *Supra* §§V.A.4-5.



Ex. 1028 (Thiel), Fig. 2.

3. **Limitation 6[b]: “transmitting, by a wireless chip mechanically coupled to the eyewear frame and operably coupled to the microphone, the verbal query to an external device, the verbal query causing the external device to search the internet for a response to the verbal query”**

97. Limitation 6[b] is disclosed by the combination of Thiel and Gruber for the reasons I explained for limitations 1[c], 1[d], and 1[e] and because Thiel’s application module includes a wireless chip (e.g., Bluetooth chip) that is

mechanically coupled to an eyewear frame, as shown in Figure 2. *Supra* §§V.A.4-5.

4. **Limitation 6[c]: “receiving, by the wireless chip, the response to the verbal query from the external device”**

98. Limitation 6[c] is disclosed by the combination of Thiel and Gruber for the reasons I explained for limitation 1[d]. *Supra* §V.A.5.

5. **Limitation 6[d]: “providing the response to the verbal query to the person wearing the eyewear frame via a speaker operably coupled to the wireless chip”**

99. Limitation 6[d] is disclosed by the combination of Thiel and Gruber for the reasons I explained for limitation 1[d]. *Supra* §V.A.5.

100. A POSITA would have been motivated to combine Thiel with Gruber and reasonably expected success in arriving at claim 6 for the same reasons as I explained for claim 1. *Supra* §V.A.

101. Therefore, Thiel and Gruber render obvious claim 6.

E. **Claim 7**

102. Claim 7 depends from claim 6. Claim 7 recites “wherein the verbal query is a query about weather and the response to the verbal query includes information about the weather.”

103. This dependent claim limitation is disclosed by Gruber. According to Gruber, its assistant “may be configured, designed, and/or operable to provide various different types of operations, functionalities, and/or features, such as ...

enable the operation of applications and services via natural language dialog that are otherwise provided by dedicated applications with graphical user interfaces including ... getting weather conditions and forecasts.” Ex. 1024 (Gruber), [0120]-[0124]. Additionally, Gruber provides an example in which a user asks the assistant about the weather and receives weather information for New York in response. Ex. 1024 (Gruber), [0627] (“In this example, the user has asked about the local weather, then just says ‘in new york’. Screen 4301 shows the initial response, including local weather. When the user says ‘in new york’, assistant 1002 uses short term personal memory component(s) 1052 to access the dialog context and thereby determine that the current domain is weather forecasts. This enables assistant 1002 to interpret the new utterance ‘in new york’ to mean ‘what is the weather forecast in New York this coming Tuesday?’”. Screen 4302 shows the appropriate response, including weather forecasts for New York.”); *see also* Ex. 1024 (Gruber), [0628] (“[W]hat was stored in short term memory was not only the words of the input ‘is it going to rain the day after tomorrow?’ but the system’s semantic interpretation of the input as the weather domain and the time parameter set to the day after tomorrow.”), [0021] (“[A]t least one intelligent automated assistant system embodiment disclosed herein may be configured or designed to include functionality for enabling the operation of applications and services via natural language dialog that may be otherwise provided by dedicated applications with graphical user interfaces including ... getting weather

conditions and forecasts.”), [0244], [0586], [0934] (“I know about ... weather.”), [0937] (Anchor text: weather). This example is depicted in Figures 43A and 43B of Gruber.

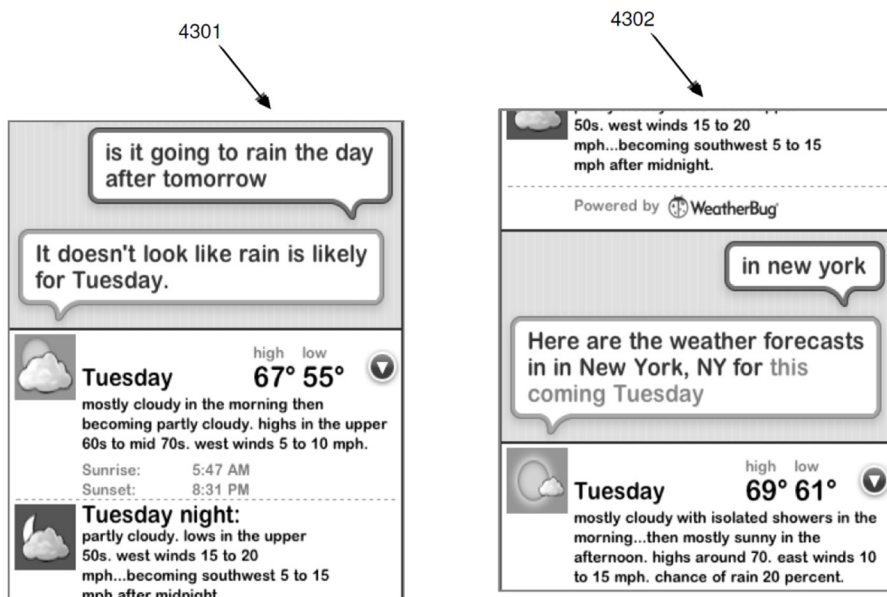


FIG. 43A

FIG. 43B

Ex. 1024 (Gruber), Figs. 43A-43B, [0627].

104. Therefore, Thiel and Gruber render obvious claim 7.

F. Claim 8

105. Claim 8 depends from claim 6. Claim 8 recites “wherein the wireless chip is a Bluetooth wireless chip, and further comprising: pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device.” The term “pairing” does not appear in the ’138 patent other than in claim 8. The ’138 patent does not state how to achieve “pairing” or when pairing

should occur. *Supra* §III.B. This lack of discussion suggests that the '138 patent assumes a POSITA would have been readily familiar with Bluetooth pairing and its timing. I agree with this assumption, as pairing and the timing of pairing before user data communication are essential parts of the Bluetooth standard. For applications in which a Bluetooth service may share private data or permit one device to control another, it is essential to ensure security by identifying trusted devices. Bluetooth pairing, as part of the Bluetooth standard, establishes a protocol for recognizing trusted devices and associating them with cryptographic keys.

106. Regardless, this dependent claim limitation would have been obvious in light of Thiel and Gruber. Thiel discloses that its wireless chip is a Bluetooth wireless chip and that its Bluetooth wireless chip communicates with and transmits the verbal query to a Bluetooth-enabled external device, as I explained for limitation 1[d]. *Supra* §V.A.5. It would have been known to a POSITA that, for instance, in compliance with the Bluetooth standard or in view of security reasons, Thiel's Bluetooth devices would pair prior to transmitting user data like a verbal query for searching. *See also* Ex. 1029 (Maddern), [0040] ("Generally, before the user can use the headset or speakerphone with a mobile telephone, the devices must be paired, such as with Bluetooth. Pairing creates a stored link between the phone and the headset."); Ex. 1007 (Rosenblatt), [0031] ("[H]ost device 120 or other device 130 may require the user to initially set up communications links 140 and 142 with key

110. For example, the user may pair key 110 with host device 120 and other device 130.”). Likewise, Gruber discloses that its device that operates as an intelligent automated assistant may be a Bluetooth-enabled external device which communicates wirelessly with other apparatuses and may control or be controlled by such other apparatuses. Ex. 1024 (Gruber), [0079] (“[V]arious types of interfaces may be provided such as ... BluetoothTM.”), [0139]-[0140] (“Bluetooth headsets”); *see also* Ex. 1024 (Gruber), [0075] (“Computing device 60 may be adapted to communicate with other computing devices, such as clients and/or servers, over a communications network such as the Internet, using known protocols for such communication, whether wireless or wired.”). It would have been known to a POSITA that, for instance, in compliance with the Bluetooth standard or in view of security reasons, Gruber’s Bluetooth devices would pair prior to transmitting user data like a verbal query that would cause the intelligent automated assistant to search the Internet. *See also* Ex. 1029 (Maddern), [0040]; Ex. 1007 (Rosenblatt), [0031].

107. Therefore, Thiel and Gruber render obvious claim 8.

G. Claims 9 and 10

108. Claims 9 and 10 both depend from claim 6. Claim 9 recites “further comprising: controlling light in an environment of the person wearing the eyewear frame based at least in part on preferences of the person wearing the eyewear frame.” Claim 10 recites “further comprising: controlling a temperature of an environment

of the person wearing the eyewear frame based at least in part on preferences of the person wearing the eyewear frame.”

109. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claim 4. *Supra* §V.B.

110. Therefore, Thiel and Gruber render obvious claims 9 and 10.

H. Claim 11

111. Claim 11 depends from claim 5. Claim 11 recites “wherein the external device is at least one of a cell phone, a smart phone, a computer, an iPad, and/or a tablet.” I understand that claim 11’s dependency from claim 5 rather than claim 6 seems to be the result of a Patent Office printing error. Ex. 1002 (’138 Patent File History), 10, 22. Given this, I analyze claim 11 as if it depended from claim 6 and also as if it depended from claim 5. My analysis remains the same whether claim 11 depends from claim 5 or 6, as claim 11 specifies the type of device for the recited “external device,” which performs the same role in claims 1, 5, and 6.

112. This dependent claim limitation is disclosed by Thiel. According to Thiel, “[its] eyewear retention device may employ Bluetooth technology and/or wireless technology and be capable of transmitting one or more audio signals received from a sound transmission device, such as a cellular telephone, CD player, MP3 player, compressed audio signal player, computer, portable computer, PDA, mobile communications device or other audio transmission device.” Ex. 1028

(Thiel), [0010]; *see also* Ex. 1028 (Thiel), [0026], [0055], [0005], Claim 5, Claim 14.

113. In addition, Gruber discloses this dependent claim limitation. Specifically, Gruber provides the following:

[C]omputing device 60 [is] suitable for implementing at least a portion of the intelligent automated assistant features and/or functionalities disclosed herein. Computing device 60 may be, for example, an end-user computer system, network server or server system, mobile computing device (e.g., personal digital assistant, mobile phone, smartphone, laptop, tablet computer, or the like), consumer electronic device, music player, or any other suitable electronic device, or any combination or portion thereof. Computing device 60 may be adapted to communicate with other computing devices, such as clients and/or servers, over a communications network such as the Internet, using known protocols for such communication, whether wireless or wired.

Ex. 1024 (Gruber), [0075]; *see also* Ex. 1024 (Gruber), [0074], [0091], [1024].

114. Therefore, Thiel and Gruber render obvious claim 11.

I. Claim 12

1. Preamble

115. The preamble of claim 12 recites: “[e]yewear.” For the reasons I explained for claim 1’s preamble, this is also disclosed by Thiel. *Supra* §V.A.1.

2. Limitations 12[a] and 12[b]: “an eyewear frame having a first temple and a second temple” and “an application module mechanically coupled to the eyewear frame and operably coupled to a speaker”

116. Limitations 12[a] and 12[b] are disclosed by the combination of Thiel and Gruber for the reasons I explained for limitations 1[a] and 1[c]. *Supra* §§V.A.2, V.A.4.

3. Limitation 12[c]: “a microphone to receive a verbal query from a wearer of the eyewear; and a processor, operably coupled to the microphone and the speaker, to transmit the verbal query to an external device, receive a response to the verbal query from the external device, and provide the response to the wearer via the speaker”

117. Limitation 12[c] is disclosed by the combination of Thiel and Gruber in part for the reasons I explained for limitation 1[d]. *Supra* §V.A.5. Limitation 12[c] is also disclosed by Thiel because Thiel’s application module includes a “Bluetooth type chip or chipset type receiver.” Ex. 1028 (Thiel), [0049]; *see also* Ex. 1028 (Thiel), [0027]. The Bluetooth type chip or chipset type receiver is or includes a processor for receiving and providing signals, where the processor is capable of receiving data, manipulating it, and supplying results. Ex. 1025 (Modern

Dictionary of Electronics), 3. The processor is operably coupled to the microphone and speaker so that this processor enables audio device operation by receiving signals from the microphone, providing signals to the speaker, and wirelessly communicating with external devices. Ex. 1028 (Thiel), Claims 12-13 (“the receiver is capable of receiving the one or more audio signals, wherein the receiver is further capable of remotely communicating with a sound transmission device” and “wherein the receiver further comprises a transceiver capable of sending one or more audio signals”), 4, [0026]-[0027], [0049], [0055].

4. **Limitation 12[d]: “wherein the verbal query causes the external device to obtain the response to the verbal query by searching the Internet for the response to the verbal query”**

118. Limitation 12[d] is disclosed by the combination of Thiel and Gruber for the reasons I explained for limitation 1[e]. *Supra* §V.A.5.

119. A POSITA would have been motivated to combine Thiel with Gruber and reasonably expected success in arriving at claim 12 for the same reasons as I explained for claim 1. *Supra* §V.A.

120. Therefore, Thiel and Gruber render obvious claim 12.

J. Claim 13

121. Claim 13 depends from claim 12. Claim 13 recites “wherein the external device is a smart phone.”

122. This dependent claim limitation is disclosed by Thiel and Gruber for the reasons I explained for claim 11. *Supra* §V.H.

123. Therefore, Thiel and Gruber render obvious claim 13.

K. Claim 14

124. Claim 14 depends from claim 13. Claim 14 recites “wherein the application module further comprises a wireless chip, operably coupled to the processor, to wirelessly transmit the verbal query to the external device.”

125. For the reasons I explained for limitation 1[d], Thiel describes a Bluetooth chip. *Supra* §V.A.5. That Bluetooth chip is an example of a wireless chip that facilitates wireless communication via Bluetooth. Furthermore, for the reasons I explained for limitation 12[c], Thiel’s Bluetooth type chip or chipset type receiver is or includes a processor. *Supra* §V.I.3. Consequently, Thiel’s Bluetooth type chip or chipset type receiver is operably coupled to the processor, and together they facilitate the wireless transmission of the verbal query.

126. Under an alternative mapping where the processor is an additional processor, a POSITA would have found it obvious that Thiel’s application module with the Bluetooth type chip or chipset type receiver included an additional processor, or a POSITA would have been motivated to modify it to include an additional processor. Specifically, a POSITA would have been motivated to configure Thiel’s application module to have a wireless chip dedicated to handling

wireless communication and an additional processor dedicated to handling overall processing and control tasks. Such a configuration would have aligned with established engineering practices for optimizing system performance through assigning specialized roles to components. This would have improved the application module's efficiency, reliability, and scalability—particularly in resource-intensive or multitasking scenarios. Such a configuration also represents the use of a known technique (additional processor used for control and processing) to improve a known device and method (Bluetooth type chip or chipset type receiver in Thiel's for communicating wirelessly) that is ready for improvement and yields predictable results (configuration of wireless chip in Thiel to work together with additional processor for transmitting verbal query, receiving response to verbal query, and providing response via speaker). Additionally, it would have been a straightforward, off-the-shelf, and cost-effective solution to configure Thiel's audio device with an additional processor for implementing control functionality.

127. Therefore, Thiel and Gruber render obvious claim 14.

L. Claim 15

128. Claim 15 depends from claim 14. Claim 15 recites “wherein the wireless chip is a Bluetooth chip.”

129. This dependent claim limitation is disclosed by Thiel for the reasons I explained for claim 14. *Supra* §V.K.

130. Therefore, Thiel and Gruber render obvious claim 15.

M. Claim 16

131. Claim 16 depends from claim 12. Claim 16 recites “wherein the external device is a computer.”

132. This dependent claim limitation is disclosed by Thiel and Gruber for the reasons I explained for claim 11. *Supra* §V.H.

133. Therefore, Thiel and Gruber render obvious claim 16.

N. Claims 17 and 18

134. Claims 17 depends from claim 12, and claim 18 depends from claim 17. Claim 17 recites “wherein the verbal query includes a query about the weather.” Claim 18 recites “wherein a response to the query includes information about the weather.”

135. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claim 7. *Supra* §V.E.

136. Therefore, Thiel and Gruber render obvious claims 17 and 18.

O. Claims 19 and 20

137. Claims 19 and 20 both depend from claim 12. Claim 19 recites “wherein the external device is configured to control an external audio device based at least in part on an instruction from the wearer.” Claim 20 recites “wherein the

external device is configured to control an external video device based at least in part on an instruction from the wearer.”

138. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claims 2 and 3. *Supra* §V.B.

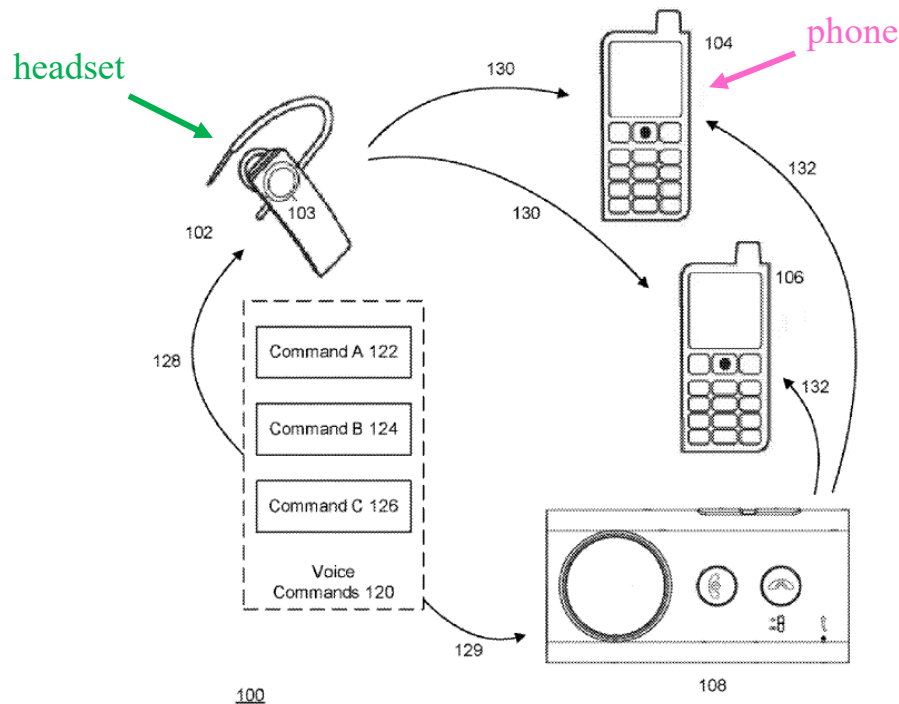
139. Therefore, Thiel and Gruber render obvious claims 19 and 20.

VI. THIEL, GRUBER, AND MADDERN RENDER OBVIOUS CLAIM 5

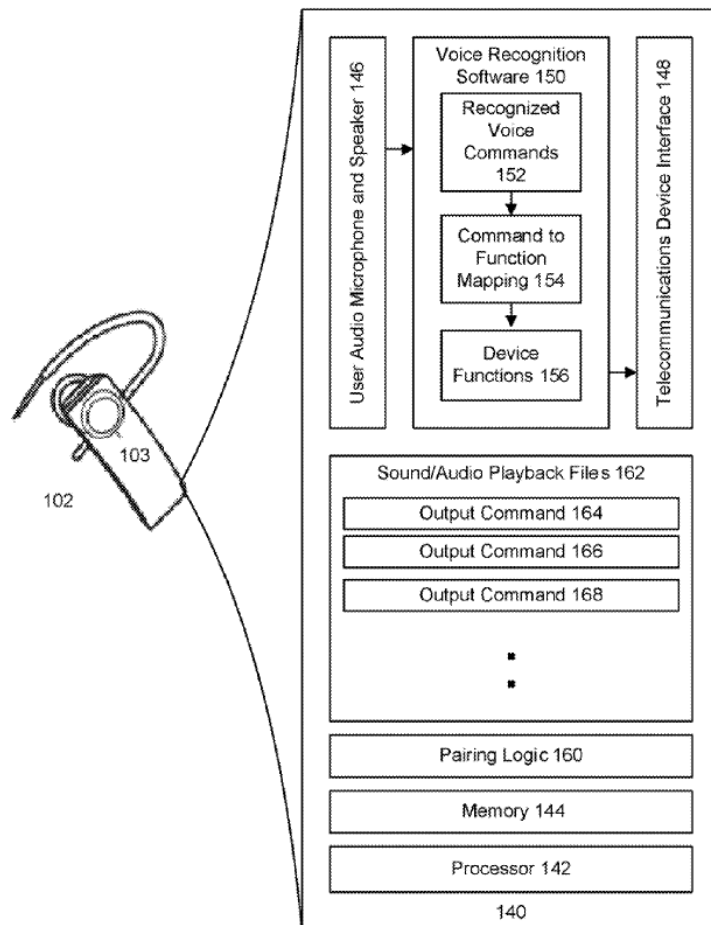
140. Claim 5 depends from claim 1. Claim 5 recites “wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip.”

141. If Patent Owner asserts that Thiel and Gruber do not teach or suggest that the application module comprises a voice recognition chip, this is also disclosed by Maddern.

142. As illustrated in Figure 1 below, Maddern describes a headset (green) which communicates with other devices, including a phone (pink), via Bluetooth. Ex. 1029 (Maddern), Abstract, [0004], [0013].



Ex. 1029 (Maddern), Fig. 1. The headset can be controlled by the user through voice commands. Maddern’s headset’s “voice recognition software 150 includes programming that recognizes voice commands 152 from the user, maps the voice commands to a list of available functions 154, and prepares corresponding device functions 156 for communication to the telephone or other device via the telecommunications device interface.” Ex. 1029 (Maddern), [0037]. This configuration is depicted in Figure 2 below.



Ex. 1029 (Maddern), Fig. 2. Maddern discloses that “[e]ach of [these] components [including the voice recognition software 150] can be provided on one or more integrated circuits or electronic chips in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037].

143. A POSITA would have been motivated, in view of Maddern, to include a voice recognition chip in the application module of the combination of Thiel and Gruber, where that voice recognition chip is operably coupled to the application module’s microphone and Bluetooth chip, for facilitating the voice functions disclosed in Thiel and/or Gruber. Incorporating such a chip in the application

module would have been achieved with a reasonable expectation of success because Maddern describes such a chip desirably provides voice recognition functionality “in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037]. The combination also involves the use of a known technique (using voice recognition chip in headset to implement voice recognition functionality) to improve a known device and method (Thiel’s application module for eyewear that functions as headset) that is ready for improvement and yields predictable results (implementing voice recognition functionality in eyewear application module with voice recognition chip to achieve small form factor).

144. Therefore, Thiel, Gruber, and Maddern render obvious claim 5.

VII. THIEL, GRUBER, AND LU RENDER OBVIOUS CLAIM 8

145. Claim 8 depends from claim 6. Claim 8 recites “wherein the wireless chip is a Bluetooth wireless chip, and further comprising: pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device.”

146. If Patent Owner asserts that Thiel and Gruber do not teach or suggest pairing the Bluetooth wireless chip as recited in claim 8, this is also disclosed by Lu.

147. Lu provides the following:

For products such as a Bluetooth device, pairing is very important. Building a Bluetooth connection between two

devices and completing a pairing process represent that a security channel is built up and secure data communication can be started between the devices.

Ex. 1031 (Lu), [0004]. This discussion in Lu is consistent with my analysis for claim 8 regarding the combination of Thiel and Gruber and indicates the significance of pairing as part of the Bluetooth standard. *Supra* §V.F. It would have been known to a POSITA further based on Lu that, for example, for security reasons, the Bluetooth devices in Thiel and Gruber should be configured to pair before transmitting user data like a verbal query for searching. A POSITA would have been motivated and reasonably expected success, in view of Lu, in pairing Thiel's Bluetooth wireless chip with Gruber's external device prior to transmitting the verbal query. This would desirably enable Thiel's Bluetooth wireless chip and Gruber's external device to establish a secure channel for communication, as described in Lu, prior to Thiel's Bluetooth wireless chip transmitting the verbal query via the secure channel.

148. The combination involves the use of a known technique (pairing Bluetooth devices to provide secure channel for communication) to improve a known device and method (Thiel-Gruber's application module for eyewear that transmits verbal query to external device and receives response via Bluetooth communication) that is ready for improvement and yields predictable results (pairing

eyewear application module and external device prior to communicating to secure channel for communication).

149. Therefore, Thiel, Gruber, and Lu render obvious claim 8.

VIII. JANNARD-740 RENDERS OBVIOUS CLAIMS 1-2, 5-6, 8, 11-16, AND 19

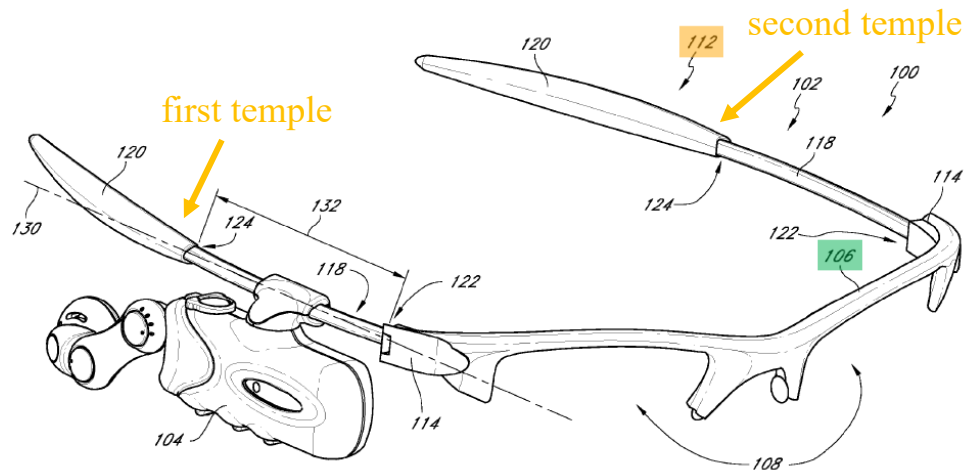
A. Claim 1

1. Preamble

150. The preamble of claim 1 recites: “Eyewear.” Jannard-740 discloses eyewear. Ex. 1005 (Jannard-740), Title (“Eyewear with detachable adjustable electronics module”), Abstract, [0080], [0154], [0167], [0215], [0237].

2. Limitation 1[a]: “an eyewear frame having a first temple and a second temple”

151. Jannard-740 discloses limitation 1[a]. Jannard-740 illustrates in Figure 3 that its eyewear includes a frame 106 (green) having first and second temples 112 (orange). Ex. 1005 (Jannard-740), [0082] (“[T]he support 102 includes eyeglasses, which have a frame 106 that can include at least one orbital or lens support 108. The orbital 108 is adapted to hold at least one lens 110 in the field of vision of the wearer of the support assembly 100.”), [0083]; *see also* Ex. 1005 (Jannard-740), [0010], [0160], [0189]-[0191].



Ex. 1005 (Jannard-740), Fig. 3. Jannard-740 discloses “eyewear frame” as the phrase is used in the ’138 patent. Ex. 1001 (’138 patent), 8:17-24.

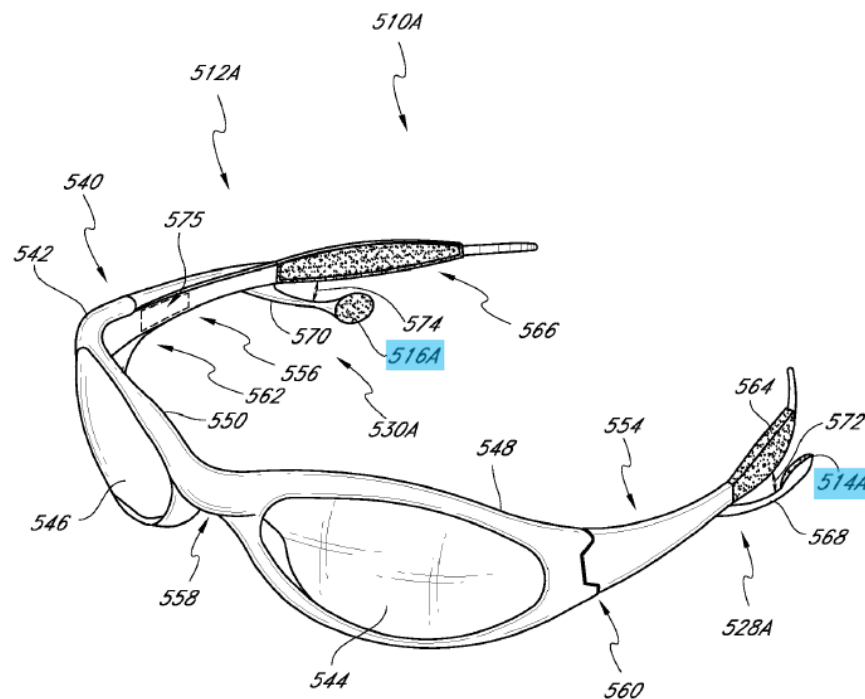
3. **Limitation 1[b]: “a speaker coupled to the eyewear frame”**

152. Jannard-740 discloses limitation 1[b]. For example, Jannard-740 provides:

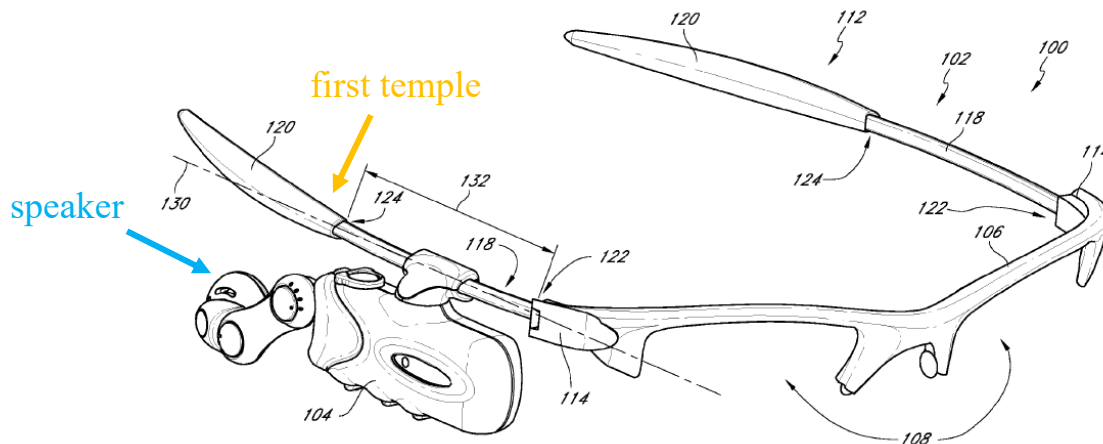
The system comprises an eyeglass, having a right earstem and a left earstem. A first speaker is supported by the right earstem, and a second speaker is supported by the left earstem. An electronics module is supported by the eyeglass and in electrical communication with each of the first and second speakers.

Ex. 1005 (Jannard-740), [0010]; *see also* Ex. 1005 (Jannard-740), Claim 1 (“a first speaker supported by one of the right and left earstems”). Jannard-740’s Figure 49 illustrates one embodiment having dual speakers (blue) that are coupled to the eyewear frame. Ex. 1005 (Jannard-740), [0191]; *see also* Ex. 1005 (Jannard-740),

Fig. 43, [0160] (“[C]ommunication from the cellular telephone is received by the first detachable module 304 and audio signals are provided to a user’s first ear by a speaker coupled to the first detachable module 304 and audio signals from the cellular telephone are provided to the wearer’s second ear via a speaker coupled to the second detachable module 306 that is in communication with the first detachable module 304.”).



Ex. 1005 (Jannard-740), Fig. 49. Additionally, Jannard-740 discloses other embodiments that have a single speaker, such as in Figure 3 which illustrates a speaker (blue) coupled to the eyewear frame (i.e., the first temple (orange)). Ex. 1005 (Jannard-740), [0093]-[0094].



Ex. 1005 (Jannard-740), Fig. 3, [0089] (disclosing “rail” and “module clamp”), [0091] (disclosing “speaker”). The eyewear system in Jannard-740 has “coupled” components, including a speaker coupled to the eyewear frame, per the broad usage of “coupled” by the ’138 patent. Ex. 1001 (’138 patent), 7:47-65.

153. Therefore, Jannard-740 discloses a speaker coupled to the eyewear frame.

4. **Limitation 1[c]: “an application module mechanically coupled to the eyewear frame and operably coupled to the speaker”**

154. Jannard-740 discloses limitation 1[c]. For example, as I explained for limitation 1[b], Jannard-740 provides “[a]n electronics module is supported by the eyeglass and in electrical communication with each of the first and second speakers.”

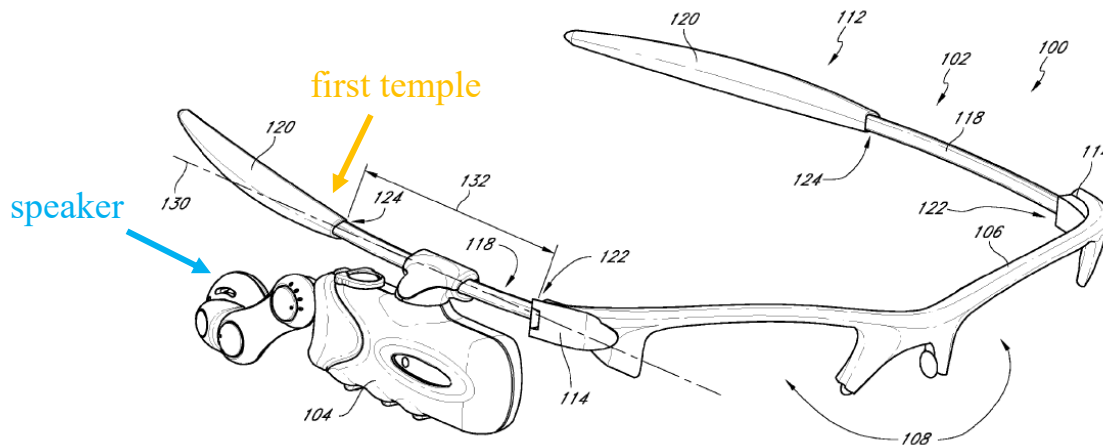
Ex. 1005 (Jannard-740), [0010]; *supra* §VIII.A.3. In addition, Jannard-740 discloses “[t]he electronics module 172 includes electronics for receiving signals from an external source and providing audio signals to the wearer through the speaker 144.”

Ex. 1005 (Jannard-740), [0104]. Jannard-740 also provides:

[C]ommunication from the cellular telephone is received by the first detachable module 304 and audio signals are provided to a user's first ear by a speaker coupled to the first detachable module 304 and audio signals from the cellular telephone are provided to the wearer's second ear via a speaker coupled to the second detachable module 306 that is in communication with the first detachable module 304.

Ex. 1005 (Jannard-740), [0160]. Accordingly, Jannard-740 discloses an "application module" as the phrase is used in the '138 patent. Ex. 1001 ('138 patent), 21:59-62.

155. Jannard-740 describes an application module that is mechanically coupled to the eyewear frame. As illustrated in Figure 3, Jannard-740's module 104 is mechanically coupled to the first temple 112 (orange) and operably coupled to the speaker (blue). Ex. 1005 (Jannard-740), [0084], [0094].



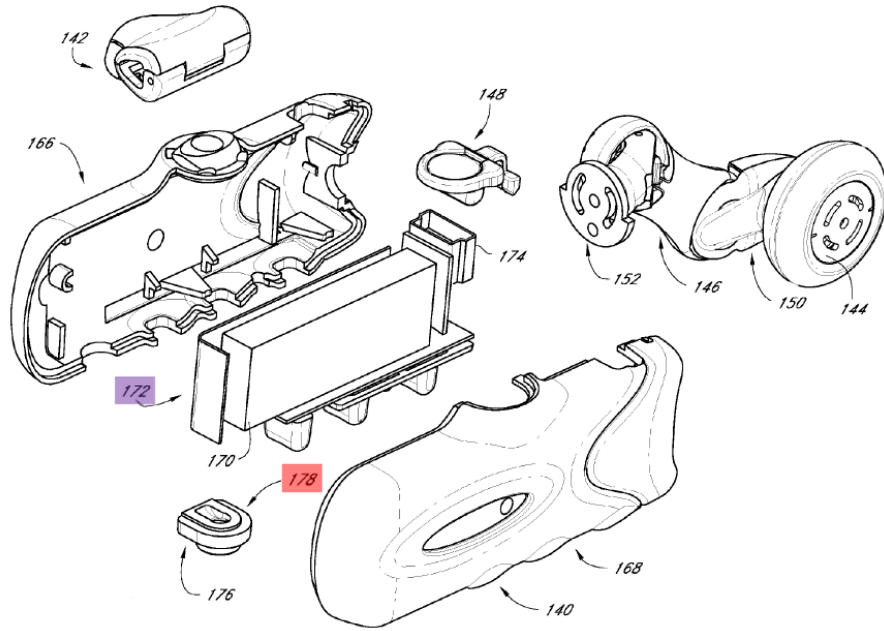
Ex. 1005 (Jannard-740), Fig. 3, [0089], [0091]. The eyewear system in Jannard-740 has “coupled” components, including an eyewear frame mechanically coupled to an application module and a speaker operably coupled to an application module, per the broad usage of “coupled” by the ’138 patent. Ex. 1001 (’138 patent), 7:47-65.

156. Therefore, Jannard-740 discloses an application module that is mechanically coupled to the eyewear frame and operably coupled to the speaker.

5. **Limitations 1[d] and 1[e]: “a microphone to receive a verbal query from a wearer of the eyewear; and a Bluetooth chip, operably coupled to the microphone and the speaker, to connect to a Bluetooth-enabled external device, to transmit the verbal query to the Bluetooth-enabled external device, to receive a response to the verbal query from the Bluetooth-enabled external device, and to provide the response to the wearer via the speaker” and “wherein the verbal query causes the Bluetooth-enabled external device to obtain the response to the verbal query via the Internet by searching the Internet for the response to the verbal query”**

157. Jannard-740 discloses limitations 1[d] and 1[e]. For example, Jannard-740 provides that “[a]t least partially inside of [the module 104’s] housing 140 are a power module 170, an electronics module 172, a data port 174 and a holder 176 that

supports a microphone 178.” Ex. 1005 (Jannard-740), [0102]; *see also* Ex. 1005 (Jannard-740), [0194]-[0196], [0204]-[0207]. Figure 12 of Jannard-740 illustrates the microphone 178 (red) and electronics module 172 (purple).



Ex. 1005 (Jannard-740), Fig. 12. Jannard-740 discloses that, in some embodiments, “[the] electronics module 172 includes a Bluetooth transceiver” for “wirelessly communicating with a remote device such as a cellular telephone.” Ex. 1005 (Jannard-740), [0104], [0086]; *see also* Ex. 1005 (Jannard-740), [0158], [0160], [0163]. According to Jannard-740, such a transceiver can be implemented as a RF transceiver chip. Ex. 1005 (Jannard-740), [0235] (“Texas Instruments, National Semiconductor, Motorola manufacture and develop single RF transceiver chips”). This chip is a wireless chip and, where it is configured to communicate via a Bluetooth protocol with a Bluetooth-enabled external device, is a Bluetooth chip.

See also Ex. 1005 (Jannard-740), [0158], [0204], [0207], [0218], [0227]. Jannard-740 also provides other embodiments that have microphones and transceivers. Ex. 1005 (Jannard-740), [0194]-[0196], [0205]-[0206].

158. Therefore, Jannard-740 discloses the application module comprising a microphone and a Bluetooth chip.

159. Jannard-740 also provides that its microphone receives a verbal query from a wearer of the eyewear. Jannard-740's eyewear "can include software that provides the wearer with oral and/or visual popdown-type menus for navigating through the multitude of commands that may be available." Ex. 1005 (Jannard-740), [0161]. Jannard-740 confirms that "by providing voice control over system functionality, the user need not manipulate mechanical buttons, switches or controls on the support assembly 300 in order to select different support assembly communication, audio, video functions." Ex. 1005 (Jannard-740), [0161]. This voice control can permit the wearer to "control[] selection between primary and secondary sources 602, 604 based upon verbal commands provided by the wearer." Ex. 1005 (Jannard-740), [0220]; *see also* Ex. 1005 (Jannard-740), [0185] ("allow the user to more conveniently select input from any of a variety of sources"), [0202] ("The primary source 602 and secondary source 604 may be any source, conduit, or provider of audio, video or audio/video information selected by the wearer or by the manufacturer."), [0208] ("The source electronics may alternatively be carried by or

internal to (carried in a cavity or alternatively embedded within) the wearable electronic interface 601.”) (“The secondary source may be a cell phone, GPS device or other external device which is in radio communication as needed, with the interface.”), [0195] (“[T]he user U can send voice signals or commands to the cellular phone by speaking into a microphone on the audio device 510C.”), [0104], [0193]-[0194], [0198]. Jannard-740 explains that such sources (for example, “a computer, a network, a storage device, ..., an audio component ..., a database, and/or communications-enabled device, such as a telephone (including a BLUETOOTH enabled telephone), a PDA, a BLACKBERRY, the Internet, or the like”) store content accessible to the wearer and comprise “any of a variety of information, including but not limited to, audio files, entertainment, news, media, music, photos, videos, advertising, etc.” Ex. 1005 (Jannard-740), [0193]-[0194], [0236], [0211]; *see also* Ex. 1005 (Jannard-740), [0196].

160. Furthermore, Jannard-740’s Bluetooth chip is operably coupled to the microphone and speaker. Jannard-740 discloses that “the electronics module 172 may also allow signals received by the electronics module 172 through the microphone 178 to be transmitted to an external receiver. For example, in one embodiment, electronics module 172 includes a Bluetooth transceiver,” which communicates wirelessly. Ex. 1005 (Jannard-740), [0104], [0086]. Jannard-740 also explains that “[t]he electronics module 172 includes electronics for receiving

signals from an external source and providing audio signals to the wearer through the speaker 144, such as for receiving audio, audio-video or video only signals.” Ex. 1005 (Jannard-740), [0104]. In one example, Jannard-740’s module 510C communicates with an external device B, such as a cellular phone, and the external device B in turn communicates with a remote network R, such as wireless internet service provider. Ex. 1005 (Jannard-740), [0193]-[0195], Fig. 51. According to Jannard-740, “the user U can send voice signals or commands to the cellular phone by speaking into a microphone on the audio device 510C.” Ex. 1005 (Jannard-740), [0195]. “The headset may nonetheless communicate with a remote source R, by relaying the signal through the off board electronics B with or without modification.” Ex. 1005 (Jannard-740), [0198]. Jannard-740 provides that “[i]n this manner, the driver electronics may be off loaded from the headset, to reduce bulk, weight and power consumption characteristics.” Ex. 1005 (Jannard-740), [0198].

161. Therefore, Jannard-740 discloses a Bluetooth chip, operably coupled to the microphone and the speaker, to connect to a Bluetooth-enabled external device, to transmit the verbal query to the Bluetooth-enabled external device, to receive a response to the verbal query from the Bluetooth-enabled external device, and to provide the response to the wearer via the speaker.

162. A POSITA would have been motivated to configure Jannard-740’s verbal query to cause the Bluetooth-enabled external device to obtain the response

to the verbal query via the Internet by searching the Internet for the response to the verbal query. For example, a POSITA would have been motivated to use Jannard-740 with a verbal request for specific email, audio file, or news, where the response to the verbal query would have been a specific email, audio file, or news.

163. In connection with Figure 51, Jannard-740 discloses a user wearing an audio device 510C. Ex. 1005 (Jannard-740), [0194] (generally refers to audio device 510C).

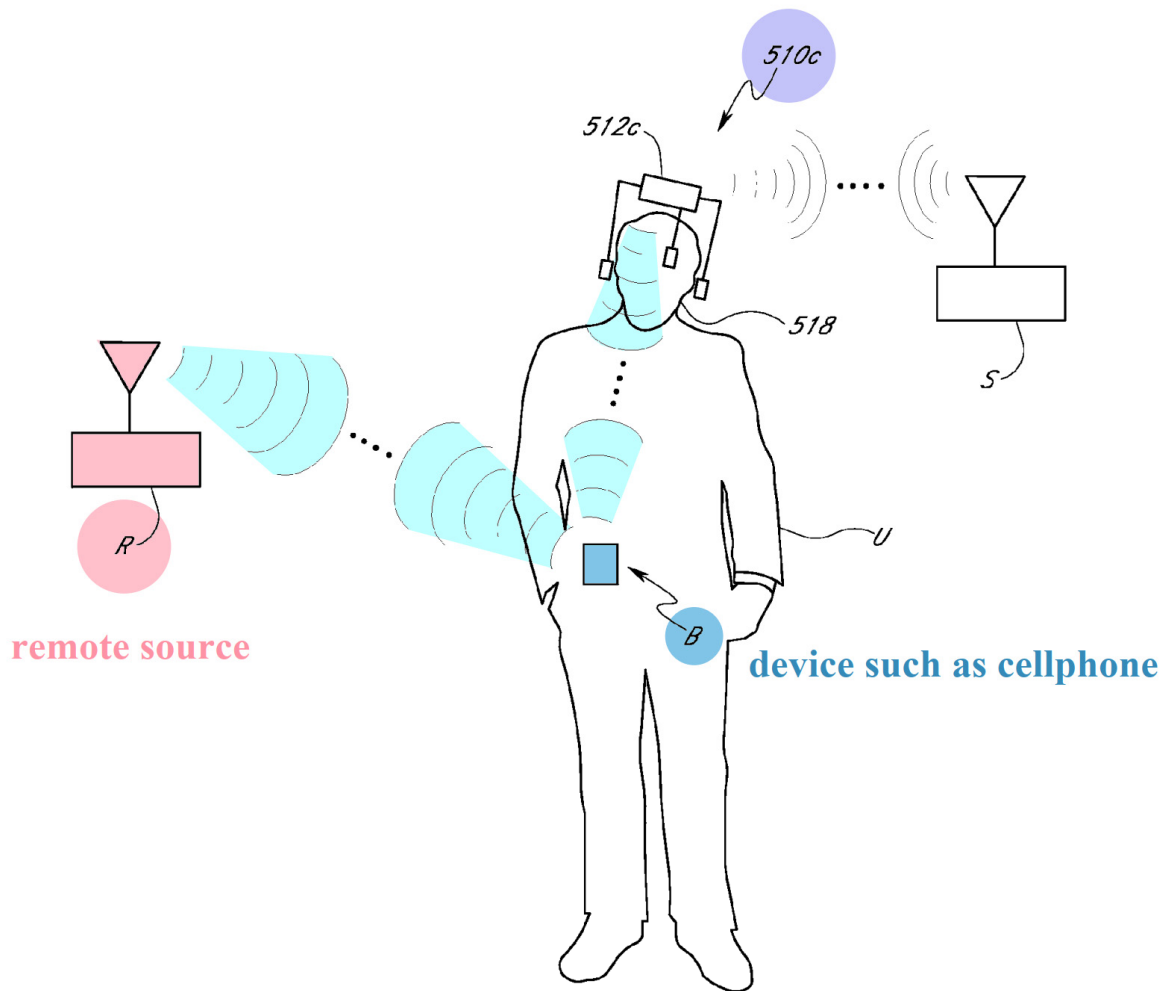


FIG. 51

Ex. 1005 (Jannard-740), Fig. 51. According to Jannard-740, the audio device communicates with other devices, including a device B (for instance, a “cellular phone” or “palmtop computer”), that is carried by the user. Ex. 1005 (Jannard-740), [0194]. This phone or computer further communicates with a “remote source R” over a “wireless data network.” Ex. 1005 (Jannard-740), [0195].

164. Jannard-740 also discloses that a user can issue voice commands to offboard electronics, like a cellular phone, that can communicate with a remote source, such as the Internet. Ex. 1005 (Jannard-740), [0161], [0220], [0236]. For example, Jannard-740 incorporates embodiments in which a user requests and listens to content, including an email, from a different device without manually operating that device. Ex. 1005 (Jannard-740), [0188] and [0192] and [0237] (incorporating by reference Ex. 1017 (Jannard-382)); Ex. 1017 (Jannard-382), [0295]-[0299].

165. According to Jannard-740, its eyewear systems include “interface electronics for interacting with a wireless network and/or providing content to a user.” Ex. 1005 (Jannard-740), [0003]; *see also* Ex. 1005 (Jannard-740), [0240]; Ex. 1017 (Jannard-382) (incorporated by reference in Ex. 1005 (Jannard-740)), [0187], [0290], [0296]. Such a configuration with an audio device and intermediate Internet-connected source device would enable the eyewear’s wearer to verbally request Internet-accessible content (for instance, specific email, audio file, or news) through the source device. This would be consistent with Jannard-740’s encouragement to adopt voice control functionality and that “[t]he headset may nonetheless communicate with a remote source R, by relaying the signal through the off board electronics B with or without modification” so that “[i]n this manner, the driver electronics may be off loaded from the headset, to reduce bulk, weight and power consumption characteristics.” Ex. 1005 (Jannard-740), [0161], [0198]. A POSITA

would have been motivated to implement Jannard-740's system this way for many reasons.

166. First, this implementation involves nothing more than the simple addition of one known element (external source device searching Internet for particular content) to another known element (Jannard-740's application module that transmits voice commands to and receives specific content from Bluetooth-enabled external source device) to obtain predictable results (eyewear application module which transmits verbal query for specific content from Bluetooth-enabled external source device, where verbal query causes source device to search Internet for and then provide specific content).

167. Second, this implementation involves the use of a known technique (use of external source device to search Internet for specific content) to improve a similar device and method (Jannard-740's application module with Bluetooth wireless communications that facilitates diverse functions including requesting and receiving content from Bluetooth-enabled external source device) in the same way.

168. Third, this implementation involves the use of a known technique (searching for content on Internet and transmitting content to eyewear application module) to improve a known device and method (Jannard-740's application module that processes voice commands and requests content from Bluetooth-enabled external source device) that is ready for improvement and yields predictable results

(configuring eyewear application module with verbal content search functionality which causes Bluetooth-enabled external source device to search Internet for and provide specific content).

169. A POSITA would have had a reasonable expectation of success when incorporating this functionality in Jannard-740's system. Such incorporation would have been trivial for a POSITA as it would have required limited software and/or hardware updates that would have been familiar to a POSITA.

170. The '138 patent also fails to explain any specifics about how to implement the voice-control operations of limitations 1[d] and 1[e]. Instead, the '138 patent provides that voice-control operations could relate to the weather. Ex. 1001 ('138 patent), 20:2-21. Such limited disclosure of implementation details is unsurprising because these limitations would have been obvious to a POSITA. Using an electronic device to receive via Bluetooth queries, such as a query related to the weather, and process those queries was widely known prior to the earliest claimed priority date of January 6, 2012. As I discussed previously, Apple held a widely viewed demo of its Siri technology on October 4, 2011. *Supra* §II.E. Ex. 1021 is a series of screenshots of a YouTube video documenting this demo (available at <https://www.youtube.com/watch?v=SpGJNPShzRc>). One of the first demo examples of the Siri technology was the query: "What is the weather like today?" Ex. 1021 (YouTube Siri Demo Screenshots), 1. The Siri technology responded with:

“Here’s the forecast for today:” followed by temperatures and sky conditions. Ex. 1021 (YouTube Siri Demo Screenshots), 2. Other examples of queries from the demo included: “What time is it in Paris,” “How’s the NASDAQ doing today,” “Find me a great Greek restaurant in Palo Alto,” “Give me directions to Hoover Tower,” “Define mitosis,” “How many dollars is €45,” and “How many days are there until Christmas.” Ex. 1021 (YouTube Siri Demo Screenshots), 3-15. As I also previously discussed, the demo specifically discussed using a Bluetooth headset to interact with Siri for voice queries. *Supra* §II.E; Ex. 1026 (YouTube Siri Demo Transcript), 6-8.

171. Therefore, it would have been obvious in light of Jannard-740 for the verbal query (for example, request for specific email, audio file, or news) to cause the Bluetooth-enabled external device to obtain the response (for example, specific email, audio file, or news) to the verbal query via the Internet by searching the Internet for the response to the verbal query. Accordingly, Jannard-740 renders obvious limitations 1[d] and 1[e].

172. Therefore, Jannard-740 renders obvious claim 1.

B. Claim 5

173. Claim 5 depends from claim 1. Claim 5 recites “wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip.”

174. Jannard-740 discloses claim 5 at least through its incorporation by reference of Jannard-382. Ex. 1005 (Jannard-740), [0188], [0192], [0237]. For example, Jannard-740 in its incorporation of Jannard-382 discloses electronic eyewear that “include ASIC-based noise-canceling technology, such as is available in chips from Andrea Electronics Corporation (AEC), to enable voice recognition in ambient noise up to about 130 Db or more.” Ex. 1017 (Jannard-382), [0265]. A POSITA would have been motivated to incorporate a voice recognition chip into Jannard-740’s application module, operably coupled to Jannard-740’s microphone and Bluetooth chip, in view of the disclosures incorporated from Jannard-382. This incorporation would enable the voice functions described in Jannard-740. As confirmed by Caldron (Ex. 1019), which published in 2001, a POSITA would have commonly used and been motivated to incorporate a voice recognition chip for voice functionality. Ex. 1019 (Caldron), 1:9-13 (“Currently, voice operated functions using the latest voice recognition technologies are limited to a handful of applications, such as toys, appliances, some computers, voice dictation, cellular phones, and voice control of one’s home. Most of these applications use voice recognition technology running on a computer or voice recognition chip technology.”); *see also* Ex. 1020 (Blum), 19:28-20:1 (disclosing use of “voice recognition chip”). A POSITA would have had a reasonable expectation of success of incorporating the voice recognition chip because the voice recognition chip is an

off-the-shelf solution that provides voice recognition functionality. *See also* Ex. 1019 (Caldrone), 1:9-13; Ex. 1020 (Blum), 19:28-20:1 (disclosing use of “voice recognition chip”); Ex. 1012 (Oh), 3:52-64.

175. Therefore, Jannard-740 renders obvious claim 5.

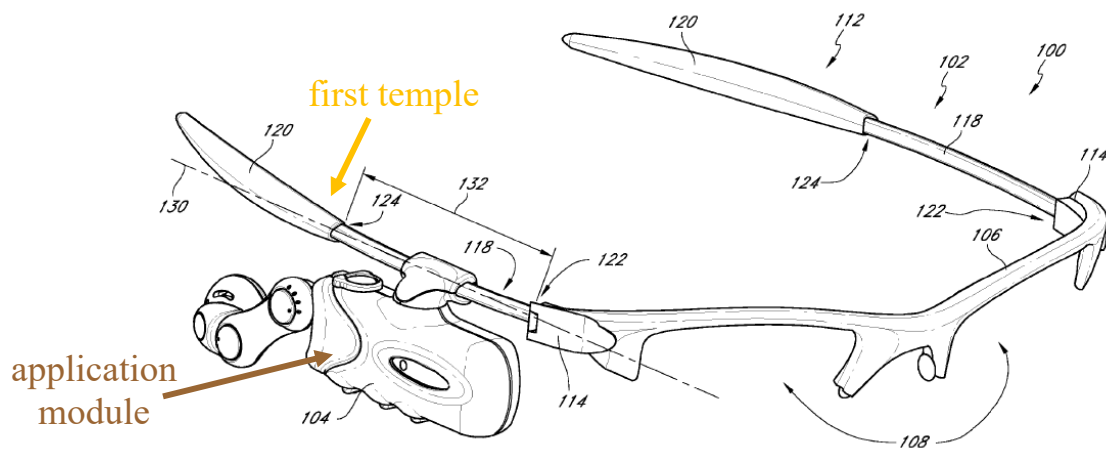
C. Claim 6

1. Preamble

176. The preamble of claim 1 recites: “[a] method.” Jannard-740 describes “methods.” Ex. 1005 (Jannard-740), [0189] (“[I]t is to be understood that the methods and principles discussed herein are readily applicable to the production of frames for unitary lens eyeglass systems and protective goggle systems as well.”), [0241] (“[W]hile the present support assembly, support, detachable module and methods have been described in the context of a particularly preferred embodiment, the skilled artisan will appreciate, in view of the present disclosure, that certain advantages, features and aspects of the support assembly, support, detachable module and method may be realized in a variety of other devices.”).

2. Limitations 6[a] and 6[b]: “receiving, by a microphone mechanically coupled to an eyewear frame, a verbal query from a person wearing the eyewear frame” and “transmitting, by a wireless chip mechanically coupled to the eyewear frame and operably coupled to the microphone, the verbal query to an external device, the verbal query causing the external device to search the internet for a response to the verbal query”

177. Limitations 6[a] and 6[b] are disclosed by Jannard-740 for the reasons I explained for limitations 1[c], 1[d], and 1[e] and because Jannard-740's application module with its microphone and wireless chip (for example, Bluetooth chip) is mechanically coupled to an eyewear frame, as shown in Figure 3. *Supra* §§VIII.A.4-5.



Ex. 1005 (Jannard-740), Fig. 3; *see also* Ex. 1005 (Jannard-740), Figs. 43, 49.

3. **Limitations 6[c] and 6[d]: “receiving, by the wireless chip, the response to the verbal query from the external device” and “providing the response to the verbal query to the person wearing the eyewear frame via a speaker operably coupled to the wireless chip”**

178. Limitations 6[c] and 6[d] are rendered obvious by Jannard-740 for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §§VIII.A.5.

179. Therefore, Jannard-740 renders obvious claim 6.

D. Claim 8

180. Claim 8 depends from claim 6. Claim 8 recites “wherein the wireless chip is a Bluetooth wireless chip, and further comprising: pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device.” As I explained previously, the term “pairing” does not appear in the ’138 patent other than in claim 8, and the ’138 patent does not state how to achieve “pairing” or when pairing should occur. *Supra* §§III.B, V.F. This lack of discussion suggests that the ’138 patent assumes a POSITA would have been be readily familiar with Bluetooth pairing and its timing, which I agree with, as pairing and its timing are essential parts of the Bluetooth standard. For applications in which a Bluetooth service may share private data or permit one device to control another, it is essential to ensure security by identifying trusted devices. Bluetooth pairing, as part of the Bluetooth standard, establishes a protocol for recognizing trusted devices and associating them with cryptographic keys.

181. Regardless, this dependent claim limitation would have been obvious in light of Jannard-740. Jannard-740 discloses that its wireless chip is a Bluetooth chip and that the Bluetooth chip communicates with and transmits the verbal query to a Bluetooth-enabled external device, as I explained for limitation 1[d]. *Supra* §VIII.A.5. It would have been known to a POSITA that, for instance, in compliance with the Bluetooth standard or in view of security reasons, Jannard-740's Bluetooth devices would pair prior to transmitting user data like a verbal query for searching. *See also* Ex. 1029 (Maddern), [0040] ("Generally, before the user can use the headset or speakerphone with a mobile telephone, the devices must be paired, such as with Bluetooth. Pairing creates a stored link between the phone and the headset."); Ex. 1007 (Rosenblatt), [0031] ("[H]ost device 120 or other device 130 may require the user to initially set up communications links 140 and 142 with key 110. For example, the user may pair key 110 with host device 120 and other device 130.").

182. Therefore, Jannard-740 renders obvious claim 8.

E. Claim 11

183. Claim 11 depends from claim 5. Claim 11 recites "wherein the external device is at least one of a cell phone, a smart phone, a computer, an iPad, and/or a tablet." I understand that claim 11's dependency from claim 5 rather than claim 6 seems to be the result of a Patent Office printing error. Ex. 1002 ('138 Patent File History), 10, 22. Given this, I analyze claim 11 as if it depended from claim 6 and

also as if it depended from claim 5. My analysis remains the same whether claim 11 depends from claim 5 or 6, as claim 11 specifies the type of device for the recited “external device,” which performs the same role in claims 1, 5, and 6.

184. This dependent claim limitation is disclosed by Jannard-740. Jannard-740’s external device is a smart phone or computer for the reasons I discussed for limitations 1[d] and 1[e]. *Supra* §VIII.A.5.

185. Therefore, Jannard-740 renders obvious claim 11.

F. Claim 12

1. Preamble

186. The preamble of claim 12 recites: “[e]yewear.” For the reasons I explained for claim 1’s preamble, this is also disclosed by Jannard-740. *Supra* §VIII.A.1.

2. Limitations 12[a] and 12[b]: “an eyewear frame having a first temple and a second temple” and “an application module mechanically coupled to the eyewear frame and operably coupled to a speaker”

187. Limitations 12[a] and 12[b] are disclosed by Jannard-740 for the reasons I explained for limitations 1[a] and 1[c]. *Supra* §§VIII.A.2, VIII.A.4.

3. **Limitations 12[c] and 12[d]: “a microphone to receive a verbal query from a wearer of the eyewear; and a processor, operably coupled to the microphone and the speaker, to transmit the verbal query to an external device, receive a response to the verbal query from the external device, and provide the response to the wearer via the speaker” and “wherein the verbal query causes the external device to obtain the response to the verbal query by searching the Internet for the response to the verbal query”**

188. Limitations 12[c] and 12[d] are rendered obvious by Jannard-740 for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §VIII.A.5. Furthermore, Jannard-740 provides that its electronics module includes a processor that receives and provides signals, including signals processed by Jannard-740’s wireless chip (for example, Bluetooth transceiver), provided from Jannard-740’s microphone, and provided to Jannard-740’s speaker. Ex. 1005 (Jannard-740), [0104] (“The electronics module 172 includes electronics for receiving signals from an external source and providing audio signals to the wearer through the speaker 144, such as for receiving audio, audio-video or video only signals. ... [I]n one embodiment, electronics module 172 includes a Bluetooth transceiver.”); *see also* Ex. 1005 (Jannard-740), [0003] (devices include “processors”). A POSITA would have understood that the processor is a part of the electronics module that is capable of receiving data, manipulating it, and supplying results. Ex. 1025 (Modern Dictionary of Electronics), 3. Accordingly, Jannard-740 renders obvious limitations 12[c] and 12[d].

189. Therefore, Jannard-740 renders obvious claim 12.

G. Claim 13

190. Claim 13 depends from claim 12. Claim 13 recites “wherein the external device is a smart phone.”

191. This dependent claim limitation is disclosed by Jannard-740 for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §VIII.A.5.

192. Therefore, Jannard-740 renders obvious claim 13.

H. Claim 14

193. Claim 14 depends from claim 13. Claim 14 recites “wherein the application module further comprises a wireless chip, operably coupled to the processor, to wirelessly transmit the verbal query to the external device.”

194. This dependent claim limitation is disclosed by Jannard-740. Jannard-740’s electronics module includes a wireless chip for wirelessly transmitting the verbal query to the external device for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §VIII.A.5. Moreover, because both the wireless chip and processor are part of the electronics module, Jannard-740’s wireless chip is operably coupled to the processor to facilitate Bluetooth data communication and processing. *See also* Ex. 1005 (Jannard-740), [0104] (“The electronics module 172 includes electronics for receiving signals from an external source and providing audio signals to the wearer through the speaker 144, such as for receiving audio, audio-video or video only signals. ... [I]n one embodiment, electronics module 172 includes a Bluetooth

transceiver.”), [0003] (“The present inventions are directed to wearable audio devices, and in particular, devices that humans can wear on their heads and which include electronics such as, for example, speakers, microphones, processors, transmitters, receivers, video display technology, and/or interface electronics for interacting with a wireless network and/or providing content to a user.”).

195. Therefore, Jannard-740 renders obvious claim 14.

I. Claim 15

196. Claim 15 depends from claim 14. Claim 15 recites “wherein the wireless chip is a Bluetooth chip.”

197. This dependent claim limitation is disclosed by Jannard-740 for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §VIII.A.5.

198. Therefore, Jannard-740 renders obvious claim 15.

J. Claim 16

199. Claim 16 depends from claim 12. Claim 16 recites “wherein the external device is a computer.”

200. This dependent claim limitation is disclosed by Jannard-740 for the reasons I explained for limitations 1[d] and 1[e]. *Supra* §VIII.A.5.

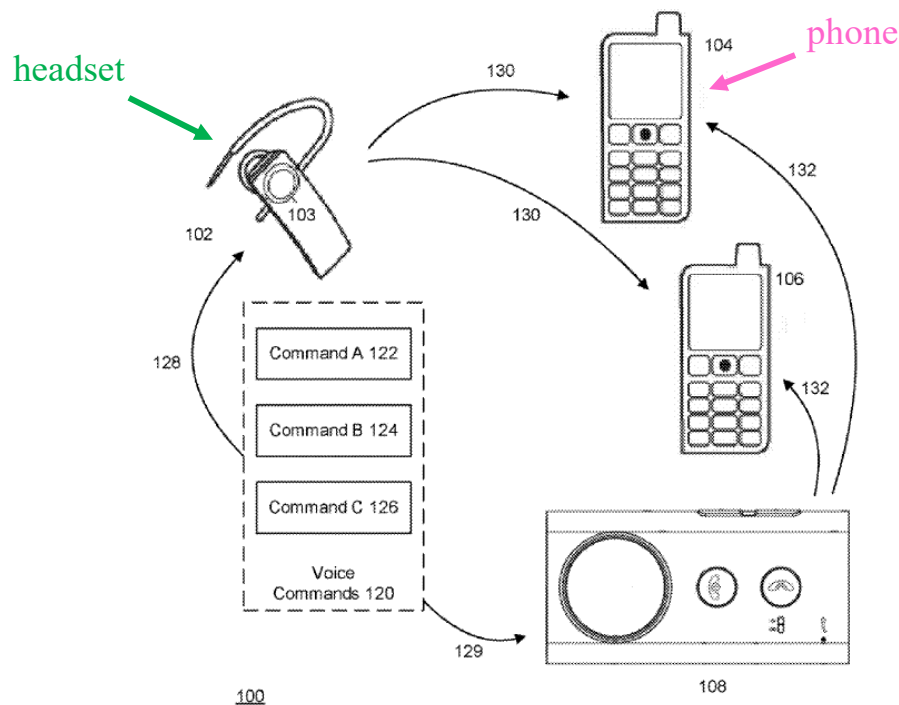
201. Therefore, Jannard-740 renders obvious claim 16.

IX. JANNARD-740 AND MADDERN RENDER OBVIOUS CLAIM 5

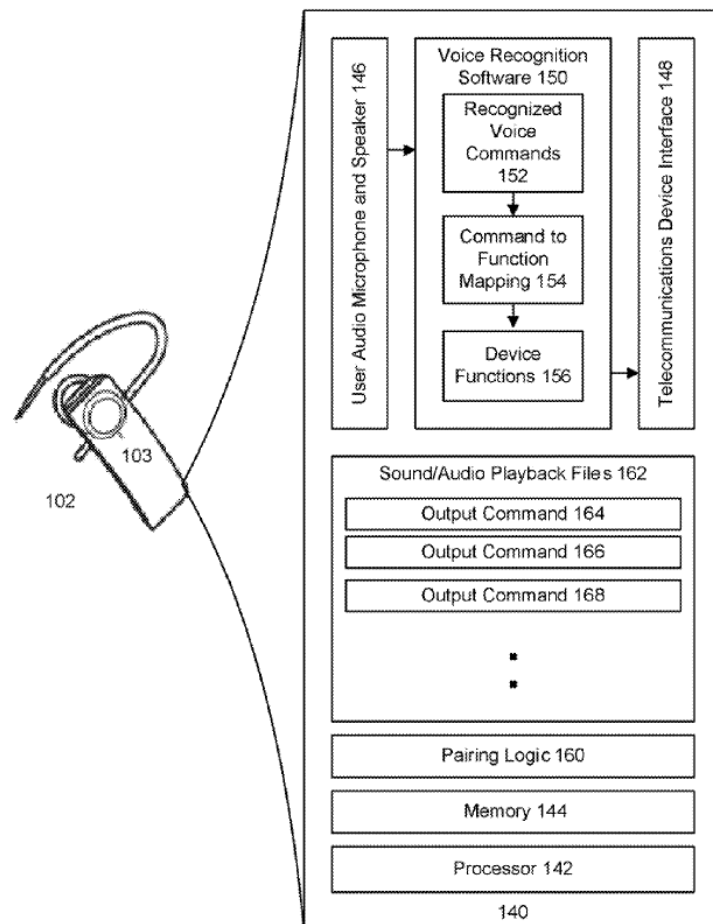
202. Claim 5 depends from claim 1. Claim 5 recites “wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip.”

203. If Patent Owner asserts that Jannard-740 does not teach or suggest that the application module comprises a voice recognition chip, this is also disclosed by Maddern.

204. As illustrated in Figure 1 below and as I explained previously, Maddern describes a headset (green) which communicates with other devices, including a phone (pink), via Bluetooth. Ex. 1029 (Maddern), Abstract, [0004], [0013]; *see supra* §VI.



Ex. 1029 (Maddern), Fig. 1. The headset can be controlled by the user through voice commands. Maddern's headset's "voice recognition software 150 includes programming that recognizes voice commands 152 from the user, maps the voice commands to a list of available functions 154, and prepares corresponding device functions 156 for communication to the telephone or other device via the telecommunications device interface." Ex. 1029 (Maddern), [0037]. This configuration is depicted in Figure 2 below.



Ex. 1029 (Maddern), Fig. 2. Maddern discloses that "[e]ach of [these] components [including the voice recognition software 150] can be provided on one or more

integrated circuits or electronic chips in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037].

205. A POSITA would have been motivated, in view of Maddern, to include a voice recognition chip in Jannard-740’s application module, where that voice recognition chip is operably coupled to the application module’s microphone and Bluetooth chip, for facilitating the voice functions disclosed in Jannard-740 and/or Jannard-382. Incorporating such a chip in the application module would have been achieved with a reasonable expectation of success because Maddern describes such a chip desirably provides voice recognition functionality “in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037]. The combination also involves the use of a known technique (using voice recognition chip in headset to implement voice recognition functionality) to improve a known device and method (Jannard-740’s application module for eyewear that functions as headset) that is ready for improvement and yields predictable results (implementing voice recognition functionality in eyewear application module with voice recognition chip to achieve small form factor).

206. Therefore, Jannard-740 and Maddern render obvious claim 5.

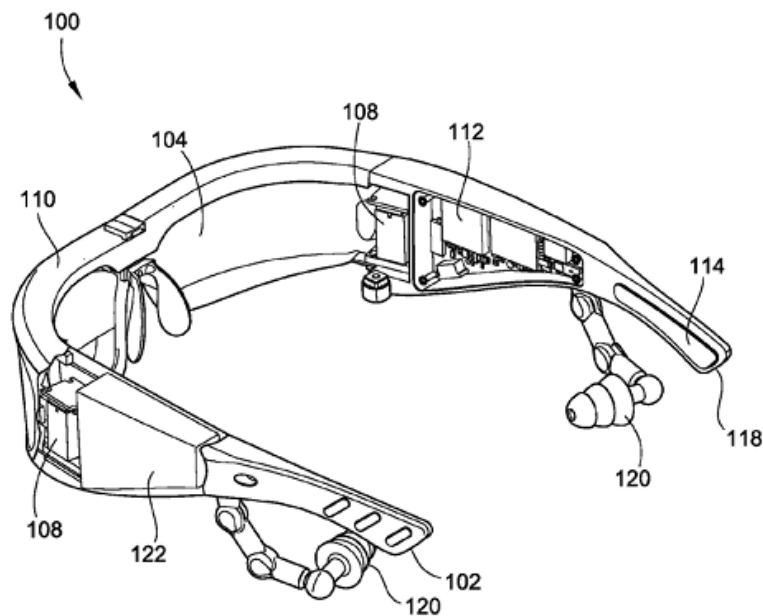
X. JANNARD-740 AND OSTERHOUT RENDER OBVIOUS CLAIMS 7, 17, AND 18

207. Claim 7 depends from claim 6 and recites “wherein the verbal query is a query about weather and the response to the verbal query includes information

about the weather.” Claims 17 depends from claim 12, and claim 18 depends from claim 17. Claim 17 recites “wherein the verbal query includes a query about the weather,” and claim 18 recites “wherein a response to the query includes information about the weather.”

208. Jannard-740 indicates that its verbal query may be a request for news and the response may be the news, as I explained for claim 1. *Supra* §§VIII.A.5. While Jannard-740 does not expressly state the type of news requested, Osterhout provides that weather is a type of news that would be requested with eyewear.

209. Like Jannard-740, Osterhout describes eyewear with electronic components, such as those illustrated below in Figure 1. Ex. 1006 (Osterhout), [0125]-[0126], [0135]-[0136].



Ex. 1006 (Osterhout), Fig. 1. Osterhout's electronic components permit the eyewear to perform operations like processing voice commands, communicating wirelessly with remote devices, and retrieving information. Ex. 1006 (Osterhout), [0267], [0299], [0309]-[0311]. According to Osterhout, "[i]nformation and content related to ... weather ... may be accessed by the eyepiece and projected on to the lens of the eyepiece for the user to view and interact with." Ex. 1006 (Osterhout), [0302]; *see also* Ex. 1006 (Osterhout), [0302] ("[C]ontent may then be searched relating to the ... local weather.").

210. In view of Osterhout, a POSITA would have been motivated to configure the verbal query processed by Jannard-740's application module and external source device as a query about the weather, where the response provides information about the weather. It would have been known to a POSITA from Osterhout that a query about the weather is relevant and of interest to an eyewear's wearer and that Jannard-740's application module is desirably usable to receive and transmit to this query. The combination of Jannard-740 and Osterhout involves the use of a known technique (eyewear requesting weather information) to improve a known device and method (Jannard-740's application module which receives verbal queries and transmits them to external source device and also receives and provides responses to verbal queries) that is ready for improvement and yields predictable results (eyewear application module which receives weather-related verbal query

and transmits it to external device and, in response, receives and provides weather information). A POSITA would have found that incorporating such functionality in Jannard-740's application module and external source device would have been trivial in view of Osterhout's disclosure, as this would have required minimal, if any, software and/or hardware changes to Jannard-740's system.

211. Therefore, Jannard-740 and Osterhout render obvious claims 7, 17, and 18.

XI. JANNARD-740 AND GRUBER RENDER OBVIOUS CLAIMS 1-20

A. Claim 1

212. Jannard-740 renders obvious claim 1 for the reasons I previously explained in Section VIII.A. However, if Patent Owner asserts that Jannard-740 does not suggest that the application module receives and transmits a verbal query and that the verbal query causes the Bluetooth-enabled external device to search the Internet for the response, this is also disclosed by Gruber for the reasons I previously explained in Section V.A.5.

213. A POSITA would have been motivated, and found it obvious, to integrate Gruber's device or its features in the system of Jannard-740. Jannard-740's Bluetooth-enabled module is described by Jannard-740 as a headset (Ex. 1005 (Jannard-740), [0196], [0198], [0233]), while Gruber references using its device with headsets, such as Bluetooth headsets (Ex. 1024 (Gruber), [0658], [0140]).

Specifically, a POSITA would have been motivated to incorporate Gruber's device or its features into the application module of Jannard-740 to realize the benefits outlined in Gruber, including utilizing a remote device such as Gruber's as an intelligent automated assistant for the application module of Jannard-740. This remote device would be "configured, designed, and/or operable to provide various different types of operations, functionalities, and/or features generally relating to intelligent automated assistant technology," such as "automat[ing] the application of data and services available over the Internet to discover, find, choose among, purchase, reserve, or order products and services" and "enabl[ing] the operation of applications and services via natural language dialog" (Ex. 1024 (Gruber), [0119]-[0124]), as described in Gruber.

214. Such a combination would create a system where (i) Jannard-740's application module receives a verbal query with its microphone and transmits the verbal query with the electronics module and its Bluetooth chip, (ii) the verbal query causes Jannard-740's external source device which operates as an intelligent automated assistant (as Gruber describes) to obtain a response to the verbal query by searching the Internet for the response and then to transmit the response to the Jannard-740's application module, and (iii) Jannard-740's application module with the electronics module and the Bluetooth chip receives the response from Jannard-740's external source device and provides the response to the wearer via the speaker.

215. This implementation of Jannard-740's application module and/or its external source device involves the simple addition of one known element (remote device which provides intelligent automated assistant functionality that includes searching Internet) to another known element (Jannard-740's application module which processes and transmits voice input to external source device and subsequently receives and audibly provides responses) to obtain predictable results (eyewear application module that transmits verbal query to external source device and provides response via speaker, where external source device searches Internet for response). Also, the combination of Jannard-740 and Gruber involves the use of a known technique (remote device which searches Internet for response to verbal query received from another apparatus) to improve a similar device and method (Jannard-740's application module which transmits voice command to external device and provides response with speaker) in the same way. The combination also reflects the use of a known technique (remote device which searches Internet for response to verbal query received from another apparatus) to improve a known device and method (Jannard-740's application module which transmits voice input to external source device and provides response from external source device with speaker) that is ready for improvement and yields predictable results (eyewear application module which transmits verbal query to external source device and

provides response from external source device via speaker, where external source device searched Internet for and transmitted response).

216. A POSITA would have reasonably expected success in using a device like Gruber's together with Jannard-740's application module because this would have required minimal software and/or hardware changes to Jannard-740's application module and/or external source device. Such software and/or hardware changes would not have been difficult and would have been within the capabilities of a POSITA in view of Gruber.

217. Therefore, Jannard-740 and Gruber render obvious claim 1.

B. Claims 2, 3, and 4

218. Claims 2, 3, and 4 each depend from claim 1. Claim 2 recites "wherein the Bluetooth-enabled external device is configured to control an external audio device based at least in part on an instruction from the wearer." Claim 3 recites "wherein the Bluetooth-enabled external device is configured to control an external video device based at least in part on an instruction from the wearer." Claim 4 recites "wherein the Bluetooth-enabled external device is configured to control light and/or temperature in an environment of the wearer based at least in part on preferences of the wearer."

219. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claims 2 and 3 in Section V.B. This disclosure in Gruber

applies to any user, including one that is wearing Jannard-740's eyewear module. Moreover, despite these dependent claims not requiring a wearer of an eyewear module like Jannard-740's to communicate a user's instructions (e.g., for controlling music, video, light, or temperature) through a Bluetooth connection between the eyewear module and Jannard-740's device operating as the assistant, the wearer could communicate these instructions from the eyewear module through such a Bluetooth connection.

220. Therefore, Jannard-740 and Gruber render obvious claims 2, 3, and 4.

C. Claim 5

221. Claim 5 depends from claim 1. Claim 5 recites "wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip."

222. This dependent claim limitation is disclosed by Jannard-740 for the reasons I explained for claim 5 in Section VIII.B.

223. Therefore, Jannard-740 and Gruber render obvious claim 5.

D. Claim 6

224. Jannard-740 renders obvious claim 6 for the reasons I previously explained in Section VIII.C. However, if Patent Owner asserts that Jannard-740 does not suggest that the wireless chip receives and transmits a verbal query and that the verbal query causes the external device to search the Internet for the response,

this is also disclosed by Gruber for the reasons I previously explained in Sections V.A and V.D. A POSITA would have been both motivated to and reasonably expected success in using a device like Gruber's operating as an intelligent automated assistant together with Jannard-740's wireless chip for the reasons I explained for claim 1. *Supra* §XI.A.

225. Therefore, Jannard-740 and Gruber render obvious claim 6.

E. Claim 7

226. Claim 7 depends from claim 6. Claim 7 recites "wherein the verbal query is a query about weather and the response to the verbal query includes information about the weather."

227. This dependent claim limitation is disclosed by Gruber for the reasons I explained for claim 7 in Section V.E.

228. Therefore, Jannard-740 and Gruber render obvious claim 7.

F. Claim 8

229. Claim 8 depends from claim 6. Claim 8 recites "wherein the wireless chip is a Bluetooth wireless chip, and further comprising: pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device."

230. This dependent claim limitation is taught by Jannard-740 for the reasons I explained for claim 8 in Section VIII.D.

231. Additionally, this dependent claim limitation is taught by Gruber for the reasons I explained for claim 8 in Section V.F.

232. Therefore, Jannard-740 and Gruber render obvious claim 8.

G. Claims 9 and 10

233. Claims 9 and 10 both depend from claim 6. Claim 9 recites “further comprising: controlling light in an environment of the person wearing the eyewear frame based at least in part on preferences of the person wearing the eyewear frame.” Claim 10 recites “further comprising: controlling a temperature of an environment of the person wearing the eyewear frame based at least in part on preferences of the person wearing the eyewear frame.”

234. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claim 4. *Supra* §V.B.

235. Therefore, Jannard-740 and Gruber render obvious claims 9 and 10.

H. Claim 11

236. Claim 11 depends from claim 5. Claim 11 recites “wherein the external device is at least one of a cell phone, a smart phone, a computer, an iPad, and/or a tablet.” I understand that claim 11’s dependency from claim 5 rather than claim 6 seems to be the result of a Patent Office printing error. Ex. 1002 (’138 Patent File History), 10, 22. Given this, I analyze claim 11 as if it depended from claim 6 instead of claim 5.

237. This dependent claim limitation is taught by Jannard-740 for the reasons I explained for claim 11 in Section VIII.E.

238. Additionally, if Patent Owner asserts that Jannard-740 does not suggest this dependent claim limitation, this is taught by Gruber for the reasons I explained for claim 11 in Section V.H.

239. Therefore, Jannard-740 and Gruber render obvious claim 11.

I. Claim 12

240. Jannard-740 renders obvious claim 12 for the reasons I previously explained in Section VIII.F. However, if Patent Owner asserts that Jannard-740 does not suggest that the application module receives and transmits a verbal query and that the verbal query causes the Bluetooth-enabled external device to search the Internet for the response, this is also disclosed by Gruber for the reasons I previously explained in Sections V.A and V.I. A POSITA would have been both motivated to and reasonably expected success in using a device like Gruber's operating as an intelligent automated assistant together with Jannard-740's application module for the reasons I explained for claim 1. *Supra* §XI.A.

241. Therefore, Jannard-740 and Gruber render obvious claim 12.

J. Claim 13

242. Claim 13 depends from claim 12. Claim 13 recites "wherein the external device is a smart phone."

243. This dependent claim limitation is taught by Jannard-740 for the reasons I explained for claim 13 in Section VIII.G.

244. Additionally, if Patent Owner asserts that Jannard-740 does not suggest this dependent claim limitation, this is taught by Gruber for the reasons I explained for claim 11 in Section V.H.

245. Therefore, Jannard-740 and Gruber render obvious claim 13.

K. Claims 14 and 15

246. Claim 14 depends from claim 13 and recites “wherein the application module further comprises a wireless chip, operably coupled to the processor, to wirelessly transmit the verbal query to the external device.” Claim 15 depends from claim 14 and recites “wherein the wireless chip is a Bluetooth chip.”

247. These dependent claim limitations are taught by Jannard-740 for the reasons I explained for claims 14 and 15 in Sections VIII.H-I.

248. Therefore, Jannard-740 and Gruber render obvious claims 14 and 15.

L. Claim 16

249. Claim 16 depends from claim 12. Claim 16 recites “wherein the external device is a computer.”

250. This dependent claim limitation is taught by Jannard-740 for the reasons I explained for claim 16 in Section VIII.J.

251. Additionally, if Patent Owner asserts that Jannard-740 does not suggest this dependent claim limitation, this is taught by Gruber for the reasons I explained for claim 11 in Section V.H.

252. Therefore, Jannard-740 and Gruber render obvious claim 16.

M. Claims 17 and 18

253. Claims 17 depends from claim 12, and claim 18 depends from claim 17. Claim 17 recites “wherein the verbal query includes a query about the weather.” Claim 18 recites “wherein a response to the query includes information about the weather.”

254. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claim 7 in Section V.E.

255. Therefore, Jannard-740 and Gruber render obvious claims 17 and 18.

N. Claims 19 and 20

256. Claims 19 and 20 both depend from claim 12. Claim 19 recites “wherein the external device is configured to control an external audio device based at least in part on an instruction from the wearer.” Claim 20 recites “wherein the external device is configured to control an external video device based at least in part on an instruction from the wearer.”

257. These dependent claim limitations are disclosed by Gruber for the reasons I explained for claims 2 and 3 in Section V.B.

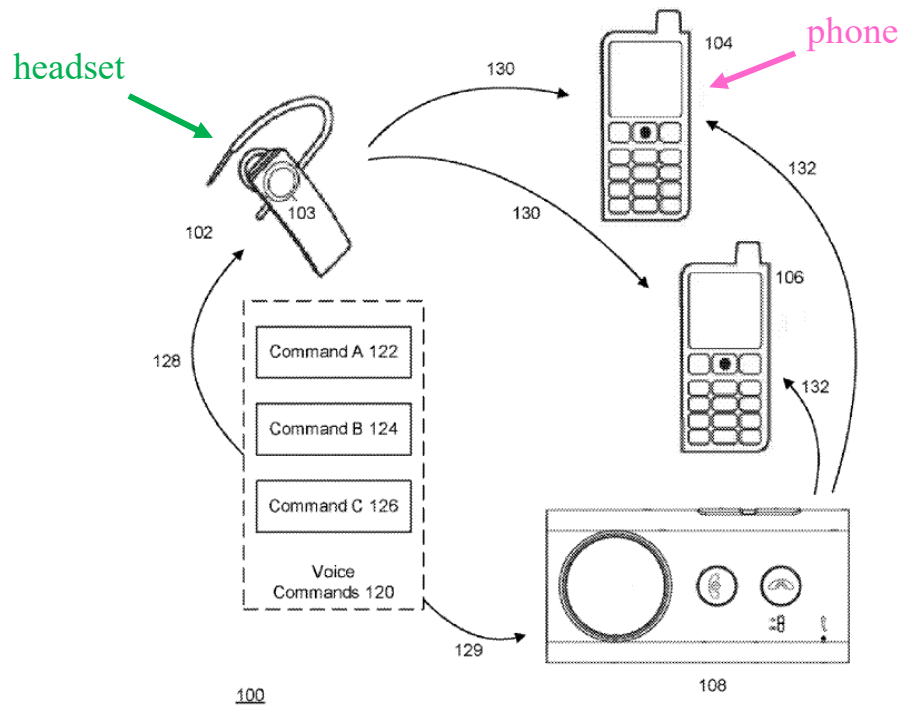
258. Therefore, Jannard-740 and Gruber render obvious claims 19 and 20.

**XII. JANNARD-740, GRUBER, AND MADDERN RENDER OBVIOUS
CLAIM 5**

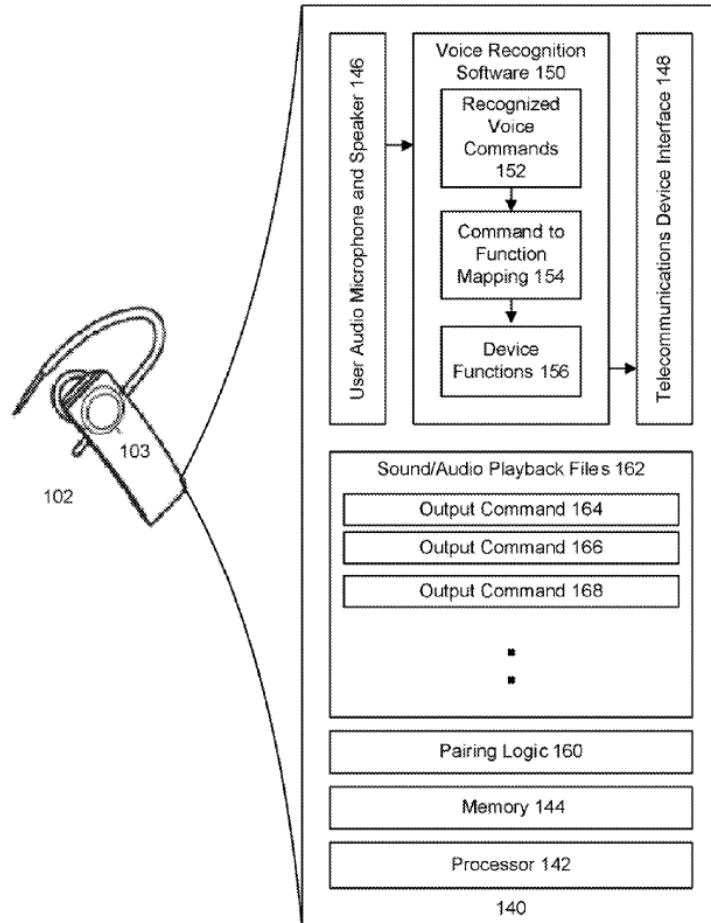
259. Claim 5 depends from claim 1. Claim 5 recites “wherein the application module further comprises: a voice recognition chip operably coupled to the microphone and the Bluetooth chip.”

260. If Patent Owner asserts that Jannard-740 and Gruber do not teach or suggest that the application module comprises a voice recognition chip, this is also disclosed by Maddern.

261. As illustrated in Figure 1 below and as I explained previously, Maddern describes a headset (green) which communicates with other devices, including a phone (pink), via Bluetooth. Ex. 1029 (Maddern), Abstract, [0004], [0013]; *see supra* §§VI, IX.



Ex. 1029 (Maddern), Fig. 1. Maddern’s headset’s “voice recognition software 150 includes programming that recognizes voice commands 152 from the user, maps the voice commands to a list of available functions 154, and prepares corresponding device functions 156 for communication to the telephone or other device via the telecommunications device interface.” Ex. 1029 (Maddern), [0037]. This configuration is depicted in Figure 2 below.



Ex. 1029 (Maddern), Fig. 2. Maddern discloses that “[e]ach of [these] components [including the voice recognition software 150] can be provided on one or more integrated circuits or electronic chips in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037].

262. A POSITA would have been motivated, in view Maddern, to include a voice recognition chip in the application module of the combination of Jannard-740 and Gruber, where that voice recognition chip is operably coupled to the application module’s microphone and Bluetooth chip, for facilitating the voice functions disclosed in Jannard-740 and/or Gruber. Incorporating such a chip in the application

module would have been achieved with a reasonable expectation of success because Maddern describes such a chip desirably provides voice recognition functionality “in a small form factor for fitting within a headset.” Ex. 1029 (Maddern), [0037]. The combination also involves the use of a known technique (using voice recognition chip in headset to implement voice recognition functionality) to improve a known device and method (Jannard-740-Gruber’s application module for eyewear that functions as headset) that is ready for improvement and yields predictable results (implementing voice recognition functionality in eyewear application module with voice recognition chip to achieve small form factor). A POSITA furthermore would have found that incorporating such a chip would have been trivial in view of Maddern’s disclosure.

263. Therefore, Jannard-740, Gruber, and Maddern render obvious claim 5.

XIII. SECONDARY CONSIDERATIONS

264. I am not aware of any secondary considerations of non-obviousness that would support non-obviousness of the ’138 patent. I am not aware of any products sold by Patent Owner in the United States that would be covered by the ’138 patent.

265. Given that the eyewear claimed in the ’138 patent are not new, and were invented long before January 2012, I am not aware of any longfelt need in the industry, unexpected results, skepticism of the claimed inventions, or teaching away from the claimed inventions. I am also not aware of any praise for the alleged

inventions or copying of the alleged inventions by other companies. If Patent Owner identifies any alleged evidence of secondary considerations in the future, I reserve the right to respond to that information.

XIV. CONCLUSION

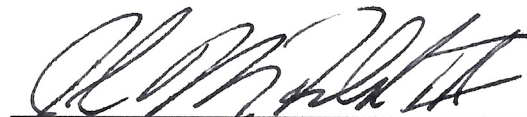
For the foregoing reasons, it is my opinion that the claims of the '138 patent would have been obvious in view of the prior art discussed above and the knowledge of one of ordinary skill in the art at the time of the alleged invention.

I reserve the right to supplement my opinions in the future to respond to any arguments or positions that the patent owner may raise, taking account of new information as it becomes available to me.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: 20 Nov 2024

By:



John Feland, Ph.D.